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Sunday, July 11

SYMPOSIA AND ORAL SESSIONS

Triennial Growth Symposium
Dietary Regulation of Growth and Development

Chairs: **Mogens Vestergaard, Aarhus University; Sylvia Poulos, The Coca-Cola Company**
Sponsors: EAAP, Pfizer Animal Health, Elanco Animal Health
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8:00 AM **Introduction.**
W. T. Oliver.

8:05 AM 1 **Vitamin D mediated phosphate homeostasis—Implications for skeleton growth and mineralization.**
T. D. Crenshaw*, *University of Wisconsin*, *Madison.*

8:55 AM 2 **Effects of polymeric carbohydrates on growth and development.**
K. E. Bach Knudsen*, *Aarhus University, Faculty of Agricultural Sciences*, *Department of Animal Health and Bioscience, Tjele, Denmark*.

9:45 AM **Break**

10:05 AM 3 **Effect of feed additives on cattle growth and development.**
R. A. Zinn*[1], P. Garces-Yepez[2], and J. Salinas-Chavira[3], [1]*University of California*, *Davis,* [2]*UNAM*, *Mexico City, DF, MX*, [3]*UAT*, *Ciudad Victoria, Tam., MX*.

10:55 AM 4 **Host targeted antibody strategies for preventing growth depression due to microbial colonization.**
M. E. Cook*[1,2] and S. M. Huebner[2], [1]*University of Wisconsin, Department of Animal Sciences*, *Madison,* [2]*University of Wisconsin, Department of Nutritional Sciences*, *Madison.*

11:45 AM **Lunch**

1:15 PM 5 **Neural regulation of feed intake: modification by hormones, fasting and disease.**
J. L. Sartin*[1], B. K. Whitlock[2], and J. A. Daniel[3], [1]*Auburn University*, *Auburn, AL,* [2]*University of Tennessee*, *Knoxville,* [3]*Berry College*, *Mt. Berry, GA.*

2:05 PM 6 **Leucine acts as a nutrient signal to stimulate protein synthesis.**
T. A. Davis*, A. Suryawan, R. A. Orellana, and M. L. Fiorotto, *USDA/ARS Children's Nutrition Research Center, Department of Pediatrics, Baylor College of Medicine, Houston, TX.*

2:55 PM 7 **Important roles for L-glutamine in swine nutrition and growth.**
G. Wu*, F. W. Bazer, G. A. Johnson, R. C. Burghardt, D. A. Knabe, T. E. Spencer, X. L. Li, and J. J. Wang, *Texas A&M University*, *College Station.*

ASAS Western Section Graduate Paper Competition

Chair: **Kristi Cammack, University of Wyoming**
401/402

9:00 AM 8 **Feedlot performance and carcass quality of conventionally raised lambs implanted with zeranol versus naturally raised lambs.**
S. R. Eckerman*[1,2], G. P. Lardy[1], M. M. Thompson[2], B. W. Neville[1], M. L. Van Emon[1,2], P. T. Berg[1], and C. S. Schauer[2], [1]*North Dakota State University, Department of Animal Sciences*, *Fargo,* [2]*Hettinger Research Extension Center*, *Hettinger, ND*.

9:15 AM 9 **Effects of rumen protected arginine supplementation on ewe serum amino acid concentration, circulating progesterone, and ovarian blood flow.**
C. S. Saevre*[1,2], J. S. Caton[1], J. S. Luther[3], A. M. Meyer[1], D. V. Dhuyvetter[4], R. Musser[5], J. D. Kirsch[1], M. Kapphahn[1], D. A. Redmer[1], and C. S. Schauer[2], [1]*Department of Animal Sciences, North Dakota State University*, *Fargo,* [2]*Hettinger Research Extension Center, North Dakota State University*, *Hettinger,* [3]*University of Wisconsin River Falls*, *River Falls,* [4]*Ridley Block Operations*, *Mankato, MN,* [5]*SODA Feed Ingredients LLC*, *Mankato, MN.*

9:30 AM	10	**Effect of wet distillers grains with solubles on rumen bacterial community profiles in individually fed cattle.** L. N. Tracey*[1], J. Browne-Silva[1], C. H. Ponce[2], J. B. Osterstock[3], J. C. MacDonald[2,3], M. Brown[2,3], and S. L. Lodge-Ivey[1], [1]*New Mexico State University, Las Cruces,* [2]*West Texas A&M, Canyon,* [3]*Texas AgriLife Research, Amarillo, TX.*
9:45 AM	11	**Forage selection preferences by multiparous and primiparous beef cows grazing native tallgrass range during winter.** N. A. Sproul*, L. W. Murray, J. R. Jaeger, D. A. Blasi, L. N. Edwards, G. J. Eckerle, L. A. Pacheco, and K. C. Olson, *Kansas State University*, *Manhattan.*
10:00 AM	12	**Dry matter intake is repeatable over parities and residual feed intake is negatively correlated with dry matter digestibility in gestating cows.** T. J. McDonald*, B. M. Nichols, M. M. Harbac, T. M. Norvell, and J. A. Paterson, *Montana State University*, *Bozeman*.
10:15 AM		**Break**
10:30 AM	13	**The relative importance of weaning management and vaccination history on performance by ranch-direct beef calves during weaning and receiving.** M. J. Macek*[1], J. W. Iliff[1], K. C. Olson[1], J. R. Jaeger[2], T. B. Schmidt[3], D. U. Thomson[1], and L. A. Pacheco[1], [1]*Kansas State University*, *Manhattan,*[2]*Western Kansas Agricultural Research Center*, *Hays,* [3]*Missisippi State University*, *Starkville.*
10:45 AM	14	**Effects of sun-curing and harvest maturity on concentration and protein-binding capacity of condensed tannins in sericea lespedeza (*Lespedeza cuneata*).** G. J. Eckerle*[1], K. C. Olson[1], J. R. Jaeger[2], J. L. Davidson[3], T. K. Kraft[1], and L. A. Pacheco[1], [1]*Kansas State University*, *Manhattan,* [2]*Western Kansas Agricultural Research Center*, *Hays,* [3]*Greenwood County Extension*, *Eureka, KS.*
11:00 AM	15	**Effects of gestational dietary metabolizable protein level and dry matter intake on subsequent production traits in primiparous heifers.** B. M. Nichols*[1], T. J. McDonald[1], M. M. Harbac[1], A. J. Roberts[2], and J. A. Paterson[1], [1]*Department of Animal and Range Sciences, Montana State University*, *Bozeman,* [2]*USDA-ARS, Fort Keogh Livestock and Range Research Laboratory*, *Miles City, MT.*
11:15 AM	16	**Sampling bias when estimating adipocyte cellularity.** G. D. Cruz*[1], J. A. Oliveira[2], T. R. Famula[1], and J. G. Fadel[1], [1]*University of California*, *Davis,* [2]*Universidade Federal de Goiás*, *Goiânia, Goiás, Brazil*.
11:30 AM	17	**Effect of forage energy intake and supplementation on marbling deposition in growing beef cattle.** E. D. Sharman*, P. A. Lancaster, G. G. Hilton, C. R. Krehbiel, and G. W. Horn, *Oklahoma Agricultural Experiment Station*, *Stillwater*.
11:45 AM	18	**Grazing patterns of Angus, Brangus and Brahman cows in the Chihuahuan Desert.** M. L. Russell*, D. W. Bailey, M. G. Thomas, B. K. Witmore, and C. C. Bailey, *New Mexico State University*, *Las Cruces.*
12:00 PM		**Break**
1:15 PM	19	**Arginine supplementation does not alter nitrogen metabolism of beef steers during a lipopolysaccharide challenge.** B. H. Carter*[1], C. A. Löest[1], G. G. Gilliam[1], B. C. Graham[1], J. A. Carroll[2], C. T. Collier[2], and D. M. Hallford[1], [1]*New Mexico State University*, *Las Cruces,* [2]*USDA ARS*, *Lubbock, TX.*
1:30 PM	20	**Calcium and phosphorus metabolism in finishing steers supplemented with vitamin D_3.** J. S. Schutz*[1], M. R. Genho[2], J. A. Scanga[3], K. E. Belk[1], G. C. Smith[1], and T. E. Engle[1], [1]*Colorado State University*, *Fort Collins,* [2]*Ascendant Partners, Inc., Greenwood Village, CO,* [3]*Elanco Animal Health*, *Greenfield, IN.*
1:45 PM	21	**Genetic and environmental influences on distribution patterns of beef cattle grazing foothill rangeland.** D. W. Bailey[1], S. Marta*[1], D. Jensen[2], D. L. Boss[2], and M. G. Thomas[1], [1]*New Mexico State University*, *Las Cruces,* [2]*Montana State University*, *Havre.*
2:00 PM	22	***Propionibacterium acidipropionici* P169 and glucogenic precursors to improve rumen parameters associated with low quality forage.** P. H. Sanchez*, L. Tracey, J. Browne-Silva, and S. L. Lodge-Ivey, *New Mexico State University*, *Las Cruces.*
2:15 PM		**Break**
2:30 PM	23	**Effects of supplemental docosahexaenoic acid to ewes on lamb production, immunocompetence, serum metabolites, and thermogenesis.** J. I. Keithly*, R. W. Kott, J. G. Berardinelli, S. Moreaux, and P. G. Hatfield, *Montana State University*, *Bozeman*.
2:45 PM	24	**Sustainability implications of feedlot management practices.** K. L. Cooprider*, F. M. Mitloehner, and A. L. Van Eenennaam, *University of California*, *Davis*.

3:00 PM | 25 | **Effect of ram exposure on temporal patterns of progesterone and metabolic hormones concentrations in 18-mo-old virgin Targhee ewes during the transition into the breeding season.**
R. B. McCosh*[1], E. M. Berry[1], M. E. Wehrman[1], R. R. Redden[1], R. W. Kott[1], D. Hallford[2], and J. G. Berardinelli[1], [1]*Montana State University*, *Bozeman,* [2]*New Mexico State University*, *Las Cruces.*

3:15 PM | 26 | **Conjugated linoleic acid decreases prostaglandin synthesis in bovine luteal cells.**
K. C. P. May*, G. Bobe, C. J. Mueller, and M. J. Cannon, *Oregon State University*, *Corvallis*.

3:30 PM | **Break**

3:45 PM | 27 | **Camelina meal and crude glycerin as feed supplements for developing replacement beef heifers.**
P. Moriel*, B. I. Cappellozza, V. Nayigihugu, K. M. Cammack, and B. W. Hess, *University of Wyoming*, *Laramie*.

4:00 PM | 28 | **Use of a portable near infrared spectrophotometer to predict nutrient composition of feces from Holstein cattle fed high-concentrate diets.**
J. D. Allen*, D. R. Tolleson, L. W. Hall, C. D. Burrows, G. Xie, and G. C. Duff, *University of Arizona*, *Tucson*.

4:15 PM | 29 | **Effects of implant type and protein source on growth performance of steers grazing summer pasture.**
C. P. McMurphy*, E. D. Sharman, D. A. Cox, G. W. Horn, and D. L. Lalman, *Oklahoma State University*, *Stillwater*.

4:30 PM | 30 | **The effect of morbidity on feedlot performance and carcass quality in feedlot steers.**
K. J. Austin*[1], J. L. Seabrook[1], T. E. Engle[1], R. K. Peel[1], C. M. McAllister[1], B. W. Brigham[1], R. M. Enns[1], R. L. Weaber[2], H. Van Campen[1], G. H. Loneran[3], J. L. Salak-Johnson[4], and C. C. L. Chase[5], [1]*Colorado State University*, *Fort Collins,* [2]*University of Missouri*, *Columbia*, [3]*West Texas A&M University*, *Canyon*, [4]*University of Illinois*, *Urbana*, [5]*South Dakota State University*, *Brookings*.

4:45 PM | 31 | **Changes in hepatic gene expression in steers administered high-S water with or without supplemental Mo.**
K. L. Kessler*[1], K. C. Olson[2], C. L. Wright[2], K. J. Austin[1], and K. M. Cammack[1], [1]*University of Wyoming*, *Laramie*, [2]*South Dakota State University*, *Brookings*.

Symposium: National Extension Workshop
The Impact of Major Food Policy Shifts on the US Food Supply and its Producers:Animal Welfare Issues

Chair: **Tamilee Nennich, Purdue University**

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9:30 AM | 32 | **Washington update.**
R. D. Reynnells*, *USDA/NIFA/PAS*, *Washington, DC*.

9:45 AM | 33 | **The impact of major food policy shifts on the US food supply and its producers: Animal welfare issues.**
J. Reynolds*, *University of California*, *Davis*.

10:15 AM | **Purchasing strategies for retailers in light of shifting policies.**
Mike Morris, *KFC Quality Assurance*.

10:45 AM | 34 | **Animal agricultural conflict as competing worldviews.**
W. Jamison*, *Cornerstone Public Relations, LLC*, *Tequesta, FL*.

11:15 AM | 35 | **Update on the *Guide for the Care and Use of Agricultural Animals in Research and Teaching*.**
J. J. McGlone*[1] and J. Swanson[2], [1]*Texas Tech University*, *Lubbock*, [2]*Michigan State University*, *East Lansing*.

11:45 AM | 36 | **Update on horse slaughter.**
K. Martinson*[1] and T. Lenz[2], [1]*University of Minnesota*, *St. Paul,* [2]*Pfizer Animal Health*, *Louisburg, KS.*

Informal Nutrition Symposium
Connecting Nutrition, Biochemistry, Genetics, Physiology and Microbiology to Enhance Our Knowledge in Improving Animal Agriculture
Chair: **Mamduh Sifri, Archer Daniels Midland Alliance Nutrition, Inc.**
Korbel Ballroom 1abc

1:00 PM **Welcome and introduction.**
M. Sifri, *Archer Daniels Midland Alliance Nutrition, Inc., Quincy, IL*.

1:10 PM **Factors impacting intestinal secretions and turnover and how these endogenous losses affect nutrient utilization.**
T. J. Applegate, *Purdue University, W. Lafayette, IN*.

1:50 PM **Factors impacting passage rate and the impact of passage rate on nutrient utilization.**
R. Angel, *University of Maryland, College Park*.

2:30 PM **Intestinal microbial ecology and poultry production: Current status and challenges for the future.**
M. Lee and A. Pedroso, *Poultry Diagnostic and Research Center, University of Georgia, Athens*.

3:30 PM **Break**

3:45 PM **What the dickens has genetic selection done to these chickens? An Alice in Wonderland adventure through immunity, metabolism, and productivity through time.**
B. D. Humphrey*[1] and K. Klasing[2], [1]*California Polytechnic State University, San Luis Obispo,* [2]*University of California, Davis*.

4:45 PM **Review and discussion.**
D. Korver*[1] and W. Saylor[2], [1]*University of Alberta, Edmonton, Canada*, [2]*University of Delaware, Newark*.

OTHER EVENTS

Johne's Disease Integrated Program (JDIP) Meeting
Grand Hyatt Denver
1:00 – 6:00 PM

Late-Breaking Abstracts
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3:00 – 5:00 PM

Opening Session
Wells Fargo Theatre, Convention Center
7:00 – 8:00 PM

Opening Reception
Korbel Ballroom, Convention Center
8:00 – 10:00 PM

Monday, July 12

POSTER PRESENTATIONS

Animal Behavior and Well-Being
Livestock

M1 **Rubber flooring impact on health of dairy cows.**
S. D. Eicher*[1], D. C. Lay Jr. [1], J. D. Arthington[2], and M. M. Schutz[3], [1]*USDA-ARS*, *West Lafayette, IN,* [2]*University of Florida*, *Ona,* [3]*Purdue University*, *West Lafayette, IN*.

M2 **Rubber flooring impact on production and herdlife of dairy cows.**
M. M. Schutz*[1] and S. D. Eicher[2], [1]*Purdue University*, *West Lafayette, IN,* [2]*USDA- ARS*, *West Lafayette, IN.*

M3 **Motivation to walk affects speed but not gait score in dairy cattle.**
A. K. Barrientos*, M. A. G. von Keyserlingk, and D. M. Weary, *University of British Columbia*, *Vancouver, Canada*.

M4 **Resting patterns of dairy cows and housing characteristics.**
A. Bach*[1,2] and I. Guasch[1], [1]*Department of Ruminant Production, IRTA*, *Caldes de Montbui, Spain*, [2]*ICREA*, *Barcelona, Spain*.

M5 **Short-term overcrowding did not affect the feed intake, hygiene, or stress response of Holstein dairy cows.**
P. D. Krawczel*[1,2], L. B. Klaiber[1], R. E. Butzler[1], L. M. Klaiber[1], M. P. Carter[1], H. M. Dann[1], C. S. Mooney[1], and R. J. Grant[1], [1]*William H. Miner Agricultural Research Institute*, *Chazy, NY*, [2]*The University of Vermont, Department of Animal Science*, *Burlington*.

M6 **Greater feed bin stocking density increases the social aggression of postpartum dairy cows.**
P. D. Krawczel*[1,2], D. M. Weary[3], R. J. Grant[1], and M. A. G. von Keyserlingk[3], [1]*William H. Miner Agricultural Research Institute*, *Chazy, NY*, [2]*The University of Vermont, Department of Animal Science*, *Burlington,* [3]*Animal Welfare Program, University of British Columbia*, *Vancouver, BC, Canada*.

M7 **Lying and standing behavior on farms using deep-bedded versus mattress freestalls.**
K. Ito*, M. A. G. von Keyserlingk, and D. M. Weary, *University of British Columbia*, *Vancouver, BC, Canada*.

M8 **Limit-feeding dairy heifers: Effects of feed bunk space and provision of a low nutritive feedstuff.**
K. Stevenson, B. L. Kitts, A. M. Greter, and T. J. DeVries*, *Dept. of Animal and Poultry Science, University of Guelph, Kemptville Campus*, *Kemptville, ON, Canada*.

M9 **Effect of feed type exposure on diet selection behavior of dairy calves.**
E. K. Miller-Cushon* and T. J. DeVries, *Dept. of Animal and Poultry Science, University of Guelph, Kemptville Campus*, *Kemptville, ON, Canada*.

M10 **Lying time and animal activity after surgical castration of Holstein bulls recorded with pedometers.**
S. Marti*[1], M. Devant[1], and A. Bach[1,2], [1]*Department of Ruminant Production, IRTA*, *Barcelona, Spain*, [2]*ICREA*, *Barcelona, Spain*.

M11 **Dairy cattle welfare assessment in 25 farms in southern Brazil.**
G. B. Bond*[1], A. Ostrensky[2], R. Almeida[1], and C. F. M. Molento[1], [1]*Universidade Federal do Paraná*, *Curitiba, PR, Brazil*, [2]*Pontifícia Universidade Católica do Paraná*, *Curitiba, PR, Brazil*.

M12 **Correlations between production traits and dairy cattle welfare indicators in 19 farms in southern Brazil.**
G. B. Bond*[1], A. Ostrensky[2], R. Almeida[1], and C. F. M. Molento[1], [1]*Universidade Federal do Paraná*, *Curitiba, PR, Brazil*, [2]*Pontifícia Universidade Católica do Paraná*, *Curitiba, PR, Brazil*.

M13 **Effect of food restriction on the behavior of penned goats kids.**
D. Oliveira, I. A. M. A. Teixeira*, S. F. Souza, M. J. R. Paranhos da Costa, K. T. Resende, A. G. Pascoa, O. Boaventura Neto, and T. F. V. Bompadre, *Universidade Estadual Paulista/UNESP*, *Jaboticabal, SP 14884900, Brazil*.

M14 **Effect of metabolizable energy levels on the feeding behavior of Santa Inês sheep.**
R. M. Fontenele*, E. S. Pereira, P. G. Pimentel, M. S. de Souza Carneiro, A. B. S. Villarroel, and J. G. L. R. Filho, *Federal University Ceará*, *Fortaleza, Ceará, Brazil*.

M15 **Evaluation of feed behavior traits in beef heifers using a GrowSafe intake measurement system.**
E. Mendes*, G. Cartens, and L. Tedeschi, *Texas A&M University*, *College Station*.

M16 **Feeding behavior and ruminal acidosis in beef cattle offered a total mixed ration or dietary components separately.**
D. Moya*[1], A. Mazzenga[2], L. Holtshausen[3], G. Cozzi[2], L. González[4], S. Calsamiglia[1], D. Gibb[3], T. McAllister[3], K. Beauchemin[3], and K. Schwartzkopf-Genswein[3], [1]*UAB*, *Barcelona, Spain*, [2]*UP*, *Padova, Italy*, [3]*Agriculture Canada*, *Lethbridge, Canada*, [4]*University of Manitoba*, *Winnipeg, Canada*.

M17 **Association between facial hair whorl and temperament in noncastrated male cattle *Bos taurus* and *Bos indicus*.**
R. Rivas*[1,2], A. Schmidek[2], E. N. Andrade[3,2], F. D. Resende[2], G. R. Siqueira[2], M. H. Faria[2], and R. O. Roça[3], [1]*Centro Universitário da Fundação Educacional de Barretos - UNIFEB, Barretos, SP, Brazil*, [2]*Agência Paulista de Tecnologia do Agronegócio - APTA, Colina, SP,Brazil*, [3]*Universidade Estadual Paulista Júlio de Mesquita Filho - UNESP, Botucatu, SP, Brazil*.

M18 **Comparison of adrenal responsiveness to corticotropin-releasing hormone (CRH) in Angus and Brahman steers of divergent temperament.**
K. O. Curley Jr. *[1,2], J. A. Carroll[3], R. C. Vann[4], R. D. Randel[1], and T. H. Welsh Jr.[1], [1]*Texas AgriLife Research, College Station,*[2]*Texas AgriLife Research, Overton,* [3]*USDA ARS, Lubbock, TX,* [4]*MAFES, Raymond, MS.*

M19 **Evaluation of temperament on pregnancy rate in beef embryo recipient cows.**
S. S. Jennings*[1], K. J. Stutts[1], C. R. Looney[2], and T. H. Welsh Jr. [3], [1]*Sam Houston State University, Huntsville, TX,* [2]*OvaGenix, Inc., Bryan, TX,* [3]*Texas AgriLife Research, College Station*.

M20 **Ingestive behavior and physiological parameters of crossbreed heifers under different feeding schedules.**
R. A. S. Pessoa*[1], F. M. Silva[1], M. A. Ferreira[1], M. Azevedo[1], L. H. S. Gomes[1], E. C. Silva[1], J. G. R. Cunha[1], A. S. S. Filho[2], D. C. Santos[2], and J. C. V. Oliveira[2], [1]*Universidade Federal Rural de Pernambuco, Recife, Pernambuco, Brasil,* [2]*Instituto Agronômico de Pernambuco, Recife, Pernambuco, Brazil.*

M21 **Influence of exercise on feedlot performance and carcass characteristics in steers.**
B. J. Howell*[1], J. R. Brethour[2], and T. Noffsinger[3], [1]*Fort Hays State University, Hays,* [2]*Agricultural Research Center, Kansas State University, Hays,* [3]*Production Animal Consultants, Benkelman, NE*.

M22 **Lack of magnetic orientation of beef cattle.**
M. Erikson*, E. Leduc, R. Prince, and G. Gallagher, *Berry College, Mount Berry, GA.*

M23 **Effect of cattle liner microclimate on core body temperature and shrink in market-weight heifers transported during summer months.**
M. Bryan*[2,1], K. Schwartzkopf-Genswein[1], T. Crowe[2], L. González[3], and J. Kastelic[1], [1]*Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada,* [2]*University of Saskatchewan, Saskatoon, Saskatchewan,* [3]*University of Manitoba, Winnipeg, Manitoba, Canada*.

Animal Health
Inflammation, Infection, and Stress

M24 **Natural resistance-associated macrophage protein (Nramp1) and goat health.**
Y. Ahmed, M. Worku*, H. Mukhtar, and R. Noble, *North Carolina Agricultural and Technical State University, Greensboro*.

M25 **Identification of serum biomarkers in poultry with leg problems.**
K. S. Rasaputra*[1,2], R. Liyanage[1], J. O. Lay Jr. [1], and N. C. Rath[2], [1]*University of Arkansas, Fayetteville,* [2]*Agricultural Research Service/USDA, Fayetteville, AR.*

M26 **The detection of bovine respiratory disease in low risk cattle using infrared thermography.**
A. L. Schaefer*[1], N. . J. Cook[2], C. Bench[3], J. Colyn[1], B. Chabot[1], T. Liu[1], P. Lepage[1], D. Froehlich[2], L. Holt-Klimek[1], S. Marchand[1], J. Basarab[2], and E. Okine[3], [1]*Agriculture and Agri-Food Canada, Lacombe Research Centre, Lacombe, Alberta,* [2]*Alberta Agriculture, Lacombe Alberta,* [3]*Department of AFNS, University of Alberta, Edmonton Alberta*.

M27 **Feeding *Lactobacillus* spp. and *Bacillus* spp. does not improve growth or survival of channel catfish experimentally challenged with *Edwardsiella ictaluri*.**
B. C. Peterson*[1], M. L. Wood[1], N. J. Booth[1], M. Morgan[2], N. Pumford[2], G. Tellez[2], and B. M. Hargis[2], [1]*USDA/ARS, Stoneville, MS,* [2]*University of Arkansas, Fayetteville.*

M28 **Effects of intravenous *Escherichia coli* (*E. coli*) dose on the pathophysiological response of colostrum-fed Jersey calves.**
M. A. Ballou*[1], J. W. Dailey[2], L. E. Hulbert[1,2], C. J. Cobb[1], and J. A. Carroll[2], [1]*Texas Tech University, Department of Animal Science, Lubbock,* [2]*Livestock Issues Research Unit, USDA-ARS, Lubbock, TX.*

M29 ***Eimeria tenella* oocyst output in cecal or fecal material following challenge in restrict fed broilers.**
A. Jordan*[1], D. Caldwell[1], J. Klein[1], J. Coppedge[1], S. Pohl[1], K. Jessen[1], S. Fitz-Coy[2], and J. Lee[1], [1]*Texas A&M University, College Station,* [2]*Intervet/Schering-Plough Animal Health, Summit, NJ.*

M30 **Effect of aqueous iodine supplementation on growth and dental condition of newly weaned piglets.**
A. L. Tucker* and R. M. Friendship, *University of Guelph, Guelph, Ontario, Canada*.

M31 **Interaction of breed and quantity of milk replacer on innate immune competence of dairy calves.**
M. A. Ballou* and C. J. Cobb, *Department of Animal and Food Sciences, Texas Tech University, Lubbock.*

M32 **Effects of neomycin and oxytetracycline (N/T) fed at treatment rate for 14 days in calf milk replacer (CMR) on calf performance and health.**
D. Shields*[1], R. Blome[2], D. Wood[2], and J. Sowinski[2], [1]*Merrick's, Inc., Middleton, WI*, [2]*Animix*, *Juneau, WI*.

M33 **The effect of adding the organic complex of zinc, copper, manganese and cobalt on hoof health and performance in feedlot cattle.**
G. R. Noori[1], H. Amanlou[1], D. Zahmatkesh[1], E. Mahjoubi*[1], and Y. Mokhtabad[2], [1]*Zanjan University*, *Zanjan, Iran*, [2]*Azad University*, *Mazandaran, Iran*.

M34 **The effect of early feeding on blood factors, immune system, digestive tract and intestinal morphology of broiler chicks.**
M. Asgari[1], S. Rahimi*[1], M. Kiaei[2], and M. A. Karimi Torshizi[1], [1]*Tarbiat Modares University*, *Tehran, Tehran, Iran*, [2]*University of Tehran*, *Tehran, Tehran, Iran*.

M35 **Evaluation of effect of sodium bicarbonate as a top-dress on preventing laminitis and performance in feedlot cattle.**
G. R. Noori[1], H. Amanlou[1], D. Zahmatkesh[1], E. Mahjoubi*[1], and Y. Mokhtabad[2], [1]*Zanjan University*, *Zanjan, Iran*, [2]*Azad University*, *Mazandaran, Iran*.

M36 **Expression of members of the Wingless gene family in goats.**
M. Worku*, H. Mukhtar, and N. Mikiashvili, *North Carolina Agricultural and Technical State University*, *Greensboro*.

M37 **Dynamic changes in physiological responses to heat stress in cattle of different geographic origins.**
P. A. Eichen*, H. L. Vellios, B. S. Scharf, J. S. Johnson, D. K. Kishore, E. A. Coate, and D. E. Spiers, *University of Missouri*, *Columbia.*

M38 **Patterns of heat response and adaptation on summer pasture: A comparison of heat sensitive (Angus) and tolerant (Romosinuano) cattle.**
J. S. Johnson*, B. Scharf, R. L. Weaber, P. A. Eichen, and D. E. Spiers, *University of Missouri*, *Columbia*.

M39 **Taguchi approach for anti-heat-stress prescription compatibility in mice spleen lymphocytes in vitro.**
X.-Y. Zhu*[1], G.-L. Cheng[2,3], F. -H. Liu[2,3], J. Yu[2], Y.-J. Wang[1], T.-Q. Yu[2], J.-Q. Xu[1], and M. Wang[1], [1]*TCVM Laboratory, CAU-BUA TCVM Teaching & Research Team, College of Veterinary Medicine, China Agricultural University, Beijing, China,* [2]*Department of Animal Science and Technology, Beijing University of Agriculture*, *Beijing, China*, [3]*Beijing Key Laboratory of TCVM, CAU-BUA TCVM Teaching & Research Team*, *Beijing, China*.

M40 **Effect of heat stress on the rat small intestine: A morphological and gene expression study.**
A. Lu*[1], G. Cheng[1,2], W. Luan[1], B. Zhou[1], F. Liu[1,2], and J. Xu[3], [1]*Department of Animal Science and Technology, Beijing University of Agriculture, Beijing, Beijing, China*, [2]*Beijing Key Laboratory of TCVM, CAU-BUA TCVM Teaching & Research Team, Beijing, China*, [3]*TCVM Laboratory, CAU-BUA TCVM Teaching & Research Team, College of Veterinary Medicine, China Agricultural University*, *Beijing, China*.

M41 **Study of immune expression profile of heat stress-induced rat using gene microarray.**
A. Lu*[1], G. Cheng[1,2], W. Luan[1], J. Yu[1], B. Zhou[1], F. Liu[1,2], and J. Xu[3], [1]*Department of Animal Science and Technology, Beijing University of Agriculture*, *Beijing, China*, [2]*Beijing Key Laboratory of TCVM, CAU-BUA TCVM Teaching & Research Team*, *Beijing, China*, [3]*TCVM Laboratory, CAU-BUA TCVM Teaching & Research Team, College of Veterinary Medicine*, *Beijing, China*.

M42 **Study of the mechanism of heat stress-induced IEC-6 cell apoptosis.**
W. Luan[1], K. Guo[1], G. Cheng[1,2], J. Yu[1], F. Liu*[1,2], and J. Xu[3], [1]*Department of Animal Science and Technology, Beijing University of Agriculture, Beijing, China.*, [2]*Beijing Key Laboratory of TCVM, CAU-BUA TCVM Teaching & Research Team*, *Beijing, China*, [3]*TCVM Laboratory, CAU-BUA TCVM Teaching & Research Team, College of Veterinary Medicine, China Agricultural University*, *Beijing, China*.

M43 **Coagulase-negative staphylococci mastitis management.**
T. E. Quirk*, L. K. Fox, J. L. Capper, D. D. Hancock, and J. R. Wenz, *Washington State University*, *Pullman*.

M44 **Morphometric evaluation of udders in Gir cows and the prevalence of subclinical mastitis.**
M. A. F. Porcionato[1], M. V. Santos*[1], C. B. M. Reis[1], M. M. Stradiotto[2], C. S. Cortinhas[1], and W. V. B Soares[3], [1]*Department of Nutrition and Animal Production, FMVZ/USP, Pirassununga, Brazil*, [2]*Department of Basic Science, FZEA/USP, Pirassununga, Brazil*, [3]*Institute of Zootecny, IZ/APTA, Mococa, Brazil*.

M45 **Comparison of 16S rRNA gene sequencing and aerobic culture results performed on milk samples from cows with clinical mastitis.**
J. R. Wenz*, T. E. Besser, and L. K. Fox, *Washington State University*, *Pullman.*

M46 **Hyphenated mass spectrometry investigations applied to the characterization of organic chelates.**
A. Yiannikouris*[1], C. Connolly[2], R. Power[1], and R. Lobinski[3], [1]*Alltech Inc., Nicholasville, KY*, [2]*Alltech Ireland*, *Dunboyne, County Meath, Ireland*, [3]*CNRS UMR 5254*, *Pau, France*.

M47 **Methods to predict true disease prevalence in beef cattle.**
C. M. McAllister*[1], B. W. Brigham[1], R. K. Peel[1], H. Van Campen[1], G. H. Loneragan[2], R. L. Weaber[3], J. L. Salak-Johnson[4], and C. C. L. Chase[5], [1]*Colorado State University*, *Fort Collins*, [2]*West Texas A&M University*, *Canyon*, [3]*University of Missouri*, *Columbia*, [4]*University of Illinois*, *Urbana*, [5]*South Dakota State University*, *Brookings*.

M48 **A research model for inducing leg problems in broilers.**
R. F. Wideman*[1], F. Khajali[2], K. R. Hamal[1], A. F. Wideman[1], and H. Lester[1], [1]*University of Arkansas Division of Agriculture*, *Fayetteville,* [2]*Shahrekord University, Faculty of Agriculture*, *Shahrekord, Iran*.

M49 **Microbial diversity in the ileal and cecal contents of broilers using pyrosequencing.**
S. J. Eom*[1], H. J. Kim[1], C. J. Cha[2], and G. B. Kim[1], [1]*Department of Animal Science and Technology, Chung-Ang University*, *Anseong, South Korea*, [2]*Department of Biotechnology (BK21 Program), Chung-Ang University*, *Anseong, South Korea*.

M50 **Use of infrared thermography to monitor risk factors in newborn piglets.**
J. Morales[1], A. Manso[1], M. Aparicio[1,2], and C. Pineiro*[1], [1]*PigCHAMP Pro Europa*, *Segovia, Spain*, [2]*Centro de Experimentación y Formación en Porcino*, *Segovia, Spain*.

M51 **Relationship between lying patterns, feeding management, and incidence of intramammary infection in dairy cows milked in an automated system.**
T. J. DeVries*[1], K. E. Leslie[2], H. W. Barkema[3], J. Rodenburg[4], and G. Seguin[5], [1]*University of Guelph, Kemptville Campus*, *Kemptville, ON, Canada*, [2]*University of Guelph*, *Guelph, ON, Canada*, [3]*University of Calgary*, *Calgary, AB, Canada*, [4]*DairyLogix Consulting*, *Woodstock, ON, Canada*, [5]*Dairy Farmers of Ontario*, *Casselman, ON, Canada*.

M52 **Proteomics analysis of plasma and milk protein between healthy dairy cows and *Staphylococcus aureus* infected-subclinical cows.**
Y. X. Yang*, G. L. Cheng, H. L. Zhao, X. C. Jiang, and S. Chen, *Anhui Academy of Agricultural Sciences*, *Hefei Anhui, China*.

M53 **Developmental changes in plasma proteins during the transition period in dairy cows.**
Y. X. Yang[1,2], S. S. Li[1], J. Q. Wang*[1], D. P. Bu[1], L. Y. Zhang[1], and L. Y. Zhou[1], [1]*State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*, [2]*Institute of Animal Science and Veterinary Medicine, Anhui Academy of Agricultural Sciences*, *Hefei, China*.

M54 **Effects of single and combined *Mycoplasma gallisepticum* vaccination on blood electrolytes and acid–base balance in commercial egg-laying hens.**
H. A. Olanrewaju*, S. D. Collier, and S. L. Branton, *USDA-ARS*, *Starkville, MS.*

M55 **Continuously growing chicken liver cell lines for the vaccine production against poultry viruses.**
J. Y. Lee* and B.-W. Kong, *University of Arkansas*, *Fayetteville*.

M56 **Effect of rabbit *Sacculus rotundus* antimicrobial peptides on serum antibody titers of AIV and NDV in chicken.**
R. P. She*[1], K. Z. Wang[2], W. M. Ma[1], Y. Ding[1], and J. Tang[1], [1]*College of Veterinary Medicine, China Agricultural University*, *Beijing, China*, [2]*Research Center of Laboratory Animal*, *Jinan, Shandong, China*.

Animal Health-Johne's Disease (JDIP)
Johne's Disease

M57 **Results from the U. S. National Johne's Disease Demonstration Herd Project: Most important areas from the Johne's risk assessment.**
C. Fossler* and J. Lombard, *USDA:APHIS:VS*, *Fort Collins, CO*.

M58 **Evaluation of the next generation Parachek ELISA for high-throughput detection of Johne's disease in milk and serum samples.**
P. Schacher[1], A. Zurfluh[1], D. Zwald[1], T. Byrem[2], and A. J. Raeber*[1], [1]*Prionics AG*, *Schlieren, Switzerland*, [2]*AntelBioSystems Inc.*, *Lansing, MI*.

M59 **Analysis of the immune response to a major membrane protein of *Mycobacterium avium* ssp. *paratuberculosis* in experimentally and naturally infected cattle.**
G. S. Abdellrazeq*[1], H. M. Rihan[2], M. J. Hamilton[3], A. J. Allen[3], K. T. Park[3], J. P. Bannantine[4], J. R. Stabel[4], and W. C. Davis[3], [1]*Faculty of Vet Med, Alexandria University*, *Edfina, Rosetta-line, Behera Province, Egypt*, [2]*Faculty of Vet Med, Mansoura Univ*, *El Mansoura, Egypt,* [3]*Washington State University*, *Pullman,* [4]*USDA-ARS National Animal Disease Center*, *Ames, IA*.

M60 **Flow cytometric and in-house ELISA methods of milk testing for Johne's disease diagnosis.**
A. Wadhwa*[1], J. P. Bannantine[2], B. A. Elliot[1], M. C. Scott[1], and S. Eda[1], [1]*University of Tennessee, Knoxville*, [2]*United States Department of Agriculture*, *Ames, IA.*

M61 **Induction of B cell responses upon experimental infection of neonatal calves with *Mycobacterium avium* ssp. *paratuberculosis*.**
J. R. Stabel*[1], J. P. Bannantine[1], S. Eda[2], and S. Robbe-Austerman[3], [1]*USDA-ARS-NADC*, *Ames, IA,* [2]*University of Tennessee*, *Knoxville,* [3]*USDA-APHIS-NVSL*, *Ames, IA.*

M62 **Deletion of *relA* attenuates in vivo survival of *Mycobacterium avium* ssp. *paratuberculosis*.**
K. T. Park*[1], A. J. Allen[2], M. J. Hamilton[1], A. Grimm[1], H. M. Rihan[3], G. S. Abdellrazeq[4], and W. C. Davis[1], [1]*Department of Veterinary Microbiology and Pathology, Washington State University*, *Pullman,* [2]*Department of Veterinary Clinical Sciences, Washington State University*, *Pullman,* [3]*Department of Bacteriology, Mycology and Immunology, Mansoura University*, *Egypt*, [4]*Department of Microbiology, Alexandria University*, *Egypt*.

M63 **Microfluidic system for serodiagnosis of Johne's disease.**
S. Eda*[1], A. Wadhwa[1], J. P. Bannantine[2], M. C. Scott[1], R. W. Shaw[3], and R. S. Foote[3], [1]*University of Tennessee, Knoxville*, [2]*United States Department of Agriculture*, *Ames, IA,* [3]*Oak Ridge National Laboratory*, *Oak Ridge, TN.*

M64 **Evaluation of *Mycobacterium avium* ssp. *paratuberculosis* strains and a locus associated with tissue infection.**
H. L. Neibergs*[1], Y. Schukken[2], R. H. Whitlock[3], A. Pradhan[2], J. M. Smith[4], and E. Hovingh[5], [1]*Washington State University*, *Pullman*, [2]*Cornell University*, *Ithaca, NY*, [3]*University of Pennsylvania*, *Kennett Square*, [4]*University of Vermont*, *Burlington*, [5]*Pennsylvania State University*, *University Park*.

M65 **Genome sequence of a *Mycobacterium avium* ssp. *paratuberculosis* isolate from a patient with Crohn's disease.**
L. Li*[1], A. Amonsin[2], S. Sreevatsan[3], and V. Kapur[1], [1]*Penn State University*, *University Park,* [2]*Chulalongkorn University*, *Bangkok, Thailand*, [3]*University of Minnesota*, *St. Paul.*

M66 **Impact of vaccination against Johne's disease on lactation performance of dairy cows: Milk production, reproduction and overall culling.**
J. R. Lima*[1], E. Patton[2], B. Knust[1], J. Bohn[3], and S. J. Wells[1], [1]*University of Minnesota*, *St. Paul*, [2]*Wisconsin Department of Agriculture*, *Madison*, [3]*Veterinary Clinic*, *Amery, WI*.

M67 **Effect of Tri-Lution, a synbiotic, on milk production and shedding of *Mycobacterium avium* ssp. *paratuberculosis* (MAP) in a commercial dairy herd.**
D. M. Albin*, C. Jones-Anding, D. P. Casper, D. A. Spangler, and G. A. Ayangbile, *Agri-King, Inc., Fulton, IL*.

M68 **Survivability of *Mycobacterium avium* ssp. paratuberculosis in grass silage after fermentation and exposure to low pH and high organic acids.**
S. A. Flis*[1], K. L. Cook[2], and C. S. Ballard[3], [1]*Bourdeau Bros., Middlebury, VT*, [2]*USDA–ARS*, *Bowling Green, KY*, [3]*W. H. Miner Agricultural Research Institute*, *Chazy, NY*.

M69 **A membrane-associated serine protease of *Mycobacterium avium* ssp. *paratuberculosis* plays a role in resistance to phagosomal acid stress.**
A. Kugadas*[1], H. K. Janagama[1], E. A. Lamont[1], and S. Sreevatsan[1,2], [1]*Department of Veterinary Population Medicine, University of Minnesota*, *St. Paul*, [2]*Department of Veterinary Biomedical Sciences, University of Minnesota*, *St. Paul*.

M70 **Quantifying Johne's disease infectivity in Indiana dairy herds.**
C. C. Wu*, T. L. Lin, A. Storm, C. A. Alinovi, and M. P. Ward, *Purdue University*, *West Lafayette, IN*.

M71 **Preliminary observation of an indigenous Johne's disease vaccine study in infected cattle herd in India.**
S. V. Singh*, A. Srivastva, B. Singh, A. Kumar, A. V. Singh, and P. K. Singh, *Central Institute for Research on Goats*, *Makhdoom, Farah, Mathura (UP), India*.

Breeding and Genetics
Beef Cattle

M72 **Association of a single nucleotide polymorphism of calpain 1 gene with meat tenderness of the yak.**
X. J. Wu[1], L. Yang[1], H. L. Wang[1], L. P. Zhang[1], J. H. Wang[1], M. A. Brown*[2], and J. P. Wu[1], [1]*Gansu Agricultural University*, *Lanzhou, Gansu, China*, [2]*USDA-ARS, Grazinglands Research Laboratory*, *El Reno, OK.*

M73 **The effects of single nucleotide polymorphisms of calpastatin gene on meat tenderness of the yak.**
J. H. Wang[1], J. P. Wu*[1], H. L. Wan[1], L. Yang[1], X. J. Wu[1], M. A. Brown[2], and L. P. Zhang[1], [1]*Gansu Agricultural University*, *Lanzhou, Gansu, China*, [2]*USDA-ARS, Grazinglands Research Laboratory*, *El Reno, OK.*

M74 **Estimation of inbreeding and effective population size of fullblood Wagyu cattle registered with the American Wagyu Association.**
H. L. Neibergs*[1], R. Zanella[1], J. F. Taylor[2], C. T. Gaskins[1], J. J. Reeves[1], and J. M. de Avila[1], [1]*Washington State University*, *Pullman*, [2]*University of Missouri*, *Columbia*.

M75 **Genetic network update for economically important traits in a Wagyu × Limousin reference population.**
Z. Jiang*[1], J. J. Michal[1], T. F. Daniels[1], J. Chen[1], Z. X. Pan[1], T. Kunej[1], M. D. Garcia[2], C. T. Gaskins[1], J. R. Busboom[1], L. J. Alexander[3], R. W. Wright Jr. [1], and M. D. MacNeil[3], [1]*Washington State University*, *Pullman,* [2]*Louisiana State University*, *Baton Rouge,* [3]*USDA-ARS, Fort Keogh Livestock and Range Research Laboratory*, *Miles City, MT.*

M76 **Genetic trends for image analysis traits in Japanese Black cattle.**
Y. Nakahashi*, S. Ido, and K. Kuchida, *Obihiro University of A & VM*, *Obihiro-Shi, Hokkaido, Japan*.

M77 **Multivariate analyses of weight traits fitting reduced rank and factor analytic models in Nellore cattle.**
A. A. Boligon*[1], A. B. Bignardi[1], M. E. Z. Mercadante[2], and L. G. Albuquerque[1], [1]*FCAV/UNESP*, *Jaboticabal, São Paulo, Brazil*, [2]*Instituto de Zootecnia*, *Sertãozinho, São Paulo, Brazil*.

M78 **Genetic parameters for weight traits from birth to 630 days of age in Guzera cattle by random regression models.**
I. S. Silva*[1], I. U. Packer[2], L. O. C. Silva[3], C. M. R. Melo[4], and R. A. A. Torres Junior[3], [1]*University of Brasília - UnB*, *Brasília /DF, Brazil*, [2]*University of São Paulo - USP/ESALQ*, *Piracicaba/SP, Brazil*, [3]*Embrapa Gado de Corte*, *Campo Grande/MS, Brazil*, [4]*Federal University of Santa Catarina - UFSC*, *Florianópolis/SC, Brazil.*

M79 **Principal component analysis of traits contributing to genetic evaluation of Brahman bulls in Brazil.**
J. C. Souza*[1], L. O. C. Silva[2], A. Gondo[2], P. B. Ferraz Filho[3], J. A. Freitas[4], C. H. M. Malhado[5,7], R. L. Weaber[6], and W. L. Lamberson[6], [1]*Mato Grosso do Sul Federal University - UFMS*, *Aquidauana, MS, Brazil*, [2]*Empresa Brasileira de Pesquisa Agropecuaria - EMBRAPA*, *Campo Grande, MS, Brazil*, [3]*Mato Grosso do Sul Federal University - UFMS*, *Tres Lagoas, MS, Brazil*, [4]*Parana Federal University - UFPR*, *Palotina, PR, Brazil*, [5]*UESB*, *Jequie, BA, Brazil*, [6]*Animal Sciences, MU - USA*, *Columbia, Missouri*, [7]*Scholarship of CNPq*, *Brazilia, DF - Brazil*.

M80 **Allelic frequencies of polymorphisms associated with feed efficiency in Aberdeen Angus cattle in Uruguay.**
A. I. Trujillo, P. Grignola, I. Pandulli, P. Nicolini, A. Casal, A. Espasandin, F. Peñagaricano, and M. Carriquiry*, *Universidad de la Republica*, *Montevideo, Montevideo, Uruguay*.

M81 **Techniques for sifting inconsistent data points from repeatedly weighed beef cattle.**
S. E. Speidel*, C. M. McAllister, D. H. Crews Jr., and R. M. Enns, *Colorado State University*, *Fort Collins.*

M82 **Use of principal component approach to predict direct genomic breeding values for meat traits in Italian Simmental Bulls.**
M. A. Pintus[1], G. Gaspa[1], N. P. P. Macciotta*[1], P. Carnier[2], E. L. Nicolazzi[3], C. Dimauro[1], D. Vicario[4], P. Ajmone-Marsan[3], A. Nardone[5], and A. Valentini[5], [1]*Università di Sassari*, *Sassari, Italy,* [2]*Università di Padova*, *Padova, Italy,* [3]*Università di Piacenza*, *Piacenza, Italy*, [4]*ANAPRI*, *Udine, Italy,* [5]*Università della Tuscia*, *Viterbo, Italy*.

M83 **Genetic analysis of visual score data with different distributions and genetic parameters using linear and nonlinear models.**
F. Barichello*[1], M. M. Alencar[2], and R. A. A. Torres Júnior[3], [1]*UNESP*, *Jaboticabal, SP, Brazil,* [2]*Embrapa Southeast Livestock*, *São Carlos, SP, Brazil,* [3]*Embrapa Beef Cattle*, *Campo Grande, MS, Brazil*.

M84 **Multibreed genetic evaluation of calving ease and birth weight using a threshold-linear model in Gelbvieh cattle.**
S. Tsuruta*, A. H. Nelson, J. K. Bertrand, and I. Misztal, *University of Georgia*, *Athens*.

M85 **Comparison of a feed efficiency measure for steer progeny produced from divergently mated sires and dams phenotyped for residual feed intake.**
N. O. Minton*, R. L. Weaber, R. L. Kallenbach, and M. S. Kerley, *University of Missouri*, *Columbia.*

M86 **The relationship of bovine respiratory disease and carcass ultrasound measures.**
B. W. Brigham*[1], C. M. McAllister[1], R. K. Peel[1], H. Van Campen[2], R. L. Weaber[3], G. H. Loneragan[4], J. L. Salak-Johnson[5], C. C. L. Chase[6], E. J. Pollak[7], and R. M. Enns[1], [1]*Department of Animal Science, Colorado State University*, *Fort Collins,* [2]*Department of Microbiology, Immunology and Pathology, Colorado State University*, *Fort Collins,* [3]*Department of Animal Science, University of Missouri*, *Columbia,* [4]*Department of Agricultural Sciences, West Texas A&M University*, *Canyon,* [5]*Department of Animal Sciences, University of Illinois*, *Urbana,* [6]*Department of Biology and Microbiology, South Dakota State University*, *Brookings,* [7]*Department of Animal Science, Cornell University*, *Ithaca, NY*, [8]*Department of Agricultural Sciences, West Texas A&M University*.

M87 **Performance and live-ultrasound traits of beef cattle breeds associated with DNA commercial markers.**
F. Loya-Olguín*[1], M. Encinias[2], R. E. Kirksey[2], L. Lauriault[2], and L. Avendaño-Reyes[1], [1]*Universidad Autonoma d Baja California*, *Ejido Nuevo Leon, Valle de Mexicali, Baja California, Mexico*, [2]*New Mexico State University*, *Las Cruces.*

M88 **No evidence for association between leptin polymorphism C. 73 C>T and bovine viral diarrhea virus (BVDV) vaccine response.**
X. Fang*[1], L. A. Hoff[1], J. A. Walker[1], K. C. Olson[1], G. A. Perry[1], J. X. Wu[1], C. Maltecca[2], and M. G. Gonda[1], [1]*South Dakota State University*, *Brookings*, [2]*North Carolina State University*, *Raleigh*.

M89 **A genotype combination approach using μ-calpain as a candidate gene for growth, carcass, and meat quality in bulls of Senepol and Charolais inheritance.**
P. Rivera*, J. Bosques, A. Casas, D. Cianzio, and M. Pagan, *University of Puerto Rico at Mayaguez*, *Mayaguez, Puerto Rico*.

M90 **An insertion/deletion polymorphism at the bovine calpastatin locus is associated with economically important traits.**
N. Vega*[1], D. Velez[1], A. Casas[1], D. Cianzio[1], C. W. Ernst[2], and M. Pagan[1], [1]*University of Puerto Rico*, *Mayaguez, Puerto Rico*, [2]*Michigan State University*, *East Lansing*.

M91 **Partial characterization of bovine complement receptor-2 (CR2) in Angus cattle.**
S. A. Olenich*, X. Fang, L. A. Hoff, J. A. Walker, K. C. Olson, G. A. Perry, and M. G. Gonda, *South Dakota State University*, *Brookings*.

M92 **Evaluation of insertion/deletion and single nucleotide polymorphisms identified at the bovine insulin-like growth factor binding protein-2 locus.**
D. Velez*[1], C. W. Ernst[2], and M. Pagan[1], [1]*University of Puerto Rico at Mayaguez, Mayaguez, Puerto Rico,* [2]*Michigan State University, East Lansing.*

Food Safety 1

M93 **Residue of melamine and cyanuric acid in milk and tissues of dairy cows fed with different doses of melamine.**
J. S. Shen, J. Q. Wang*, H. Y. Wei, D. P. Bu, P. Sun, G. C. Luan, and Z. F. Zhou, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China.*

M94 **Factors affecting microbiological and physicochemical characteristics of milk produced in dairies located in Central Mexico (Altos de Jalisco).**
A. S. Aguilar, M. A. Lopez-Carlos, C. F. Arechiga*, J. I. Aguilera, F. Mendez-Llorente, H. Rodriguez, M. Rincon, and C. Diaz-Mora, *University of Zacatecas, Zacatecas, Mexico.*

M95 **Determination of Cd and Pb content on tissues of beef cattle raised in a tropical pasture based system in Brazil.**
J. R. Lima*[1], M. B. M. Teixeira[2], J. L. B. Silva[2], E. F. Silva[2], R. G. Reis[2], L. R. D. A. Neto[1], H. M. Queiroz[2], and L. G. Nussio[1], [1]*University of São Paulo/ESALQ, Piracicaba, Brazil,* [2]*Ministry of Agriculture, Livestock and Food Supply, Campinas, São Paulo, Brazil.*

M96 **Effects of iodine intake and teat dipping practices on milk iodine concentrations.**
S. I. Borucki Castro*[1], R. Berthiaume[1], A. Fouquet[2], A. Robichaud[2], F. Beraldin[2], and P. Lacasse[1], [1]*Dairy and Swine Research and Development Centre, Agriculture and Agri-Food Canada, Sherbrooke, Québec, Canada,* [2]*Food Directorate, Health Products and Food Branch, Health Canada, Montréal, Québec, Canada.*

M97 **Iodine concentrations in feeds in farms with contrasting levels of iodine in milk.**
S. I. Borucki Castro*[1], P. Lacasse[1], A. Fouquet[2], A. Robichaud[2], F. Beraldin[2], and R. Berthiaume[1], [1]*Dairy and Swine Research and Development Centre. Agriculture and Agri-Food Canada, Sherbrooke, Québec, Canada,* [2]*Food Directorate, Health Products and Food Branch, Health Canada, Montréal, Québec, Canada.*

M98 **European Union principles for the risk assessment of feed additives.**
M. Anguita*, J. Galobart, and C. Roncancio-Peña, *European Food Safety Authority, Parma, Italy.*

M99 **Development an on-farm technique using lactic acid bacteria as a biomarker to detect of toxins in milk.**
M. H. Hathurusinghe*[1], A. AbuGhazaleh[2], M. R. Reddy[1], S. A. Ibrahim[1], M. Tajkarimi[1], and D. Song[1], [1]*North Carolina Agricultural and Technical State University, Greensboro,* [2]*Southern Illinois University, Carbondale.*

M100 **Food safety in developing countries using no technology: The Wagashi study case.**
F. La Terra[1], G. Belvedere[1], M. Manenti[1], C. Pediliggieri[1], S. Mirabella[1], J. C. Codjia[2], S. Doko[3], and G. Licitra*[1,4], [1]*CoRFiLaC, Regione Siciliana, Ragusa, Italy,* [2]*University of Abomey-Calavi, Benin,* [3]*University of Parakou, Benin,* [4]*DACPA, Catania University, Catania, Italy.*

M101 **Stress-induced adaptive tolerance response influences virulence in *Campylobacter jejuni*.**
G. S. Kumar*, I. Hanning, Y. Ma, and M. Slavik, *University of Arkansas, Fayetteville.*

M102 ***Salmonella* Enteritidis challenge in chicks of different genotypes.**
P. E. N. Givisiez*[1], E. G. Santos[1], F. G. P. Costa[1], J. H. V. Silva[1], and A. Berchieri Jr. [2], [1]*Universidade Federal da Paraiba, Areia, PB, Brazil,* [2]*Universidade Estadual Paulista, Jaboticabal, SP, Brazil.*

MONDAY POSTERS

Forages and Pastures
Dairy Forages and Forage Quality

M103 **Effect of feeding distillers dried grains to lactating cows on farms in the southern dairy region of Chile.**
R. Shaver*[1], R. Ehrenfeld[2], M. Olivares[2], J. Cuellar[3], and F. Inostroza[1], [1]*University of Wisconsin, Madison,* [2]*Cooprinsem, Osorno, Chile,* [3]*US Grains Council, Bogota, Columbia.*

M104 **Yield and quality of grasses and legumes for dairy cattle feeding.**
E. E. Corea Guillén*[1], J. M. Flores Tensos[1], F. M. Salinas Munguia[1], E. A. Crespin Payés[1], and J. A. Elizondo-Salazar[2], [1]*Departamento de Zootecnia, Facultad de Ciencias Agronómicas, Universidad de El Salvador, El Salvador,* [2]*Estación Experimental Alfredo Volio Mata. Facultad de Ciencias Agroalimentarias, Universidad de Costa Rica, Costa Rica.*

M105 **Quality of ensiled grasses and legumes for dairy cattle feeding.**
E. E. Corea Guillén*[1], J. M. Flores Tensos[1], F. M. Salinas Munguia[1], E. A. Crespin Payés[1], and J. A. Elizondo-Salazar[2], [1]*Departamento de Zootecnia, Facultad de Ciencias Agronómicas, Universidad de El Salvador, El Salvador*, [2]*Estación Experimental Alfredo Volio Mata. , Facultad de Ciencias Agroalimentarias, Universidad de Costa Rica, Costa Rica*.

M106 **Chewing and ruminating with various forage qualities in non-lactating dairy cows.**
M. Fustini*[1], A. Palmonari[1], A. J. Heinrichs[2], and A. Formigoni[1], [1]*Università di Bologna, Bologna, Italy*, [2]*Department of Dairy and Animal Science, The Pennsylvania State University, University Park*.

M107 **The effect of management on corn silage quality.**
L. O. Abdelhadi*[1], C. A. Malaspina[2], W. R. Barneix[2], P. A. Saravia[2], and C. de Elia[3], [1]*Est. El Encuentro, Research & Extension in Ruminant Nutrition, Cnel. Brandsen, Buenos Aires, Argentina*, [2]*CACF, Argentina*, [3]*Alltech Biotechnology, Argentina*.

M108 **Whole-plant corn quality parameters for ensiled and unensiled samples: Effects of hybrid and length of fermentation.**
C. M. Fish*[1,2], R. D. Shaver[1], D. C. Weakley[2], J. G. Lauer[1], and T. E. Piper[2], [1]*University of Wisconsin, Madison,* [2]*Land O' Lakes Inc., Shoreview, MN.*

M109 **Fermentation characteristics of corn-lablab bean silage mixtures.**
F. E. Contreras-Govea*[1], M. A. Marsalis[2], S. V. Angadi[3], G. R. Smith[4], and L. M. Lauriault[5], [1]*New Mexico State University, Plant and Environmental Sciences Department, Artesia,* [2]*New Mexico State University, Extension Plant Sciences Department, Clovis,* [3]*New Mexico State University, Plant and Environmental Sciences Department, Clovis,* [4]*Texas AgriLife Research, Texas A&M University System, Overton,* [5]*New Mexico State University, Plant and Environmental Sciences Department, Tucumcari.*

M110 **Fermentation characteristics of forage sorghum-lablab bean silage mixtures.**
F. E. Contreras-Govea*[1], M. A. Marsalis[2], S. V. Angadi[3], G. R. Smith[4], and L. M. Lauriault[5], [1]*New Mexico State University, Plant and Environmental Sciences Department, Artesia,* [2]*New Mexico State University, Extension Plant Sciences Department, Clovis,* [3]*New Mexico State University, Plant and Environmental Sciences Department, Clovis,* [4]*Texas AgriLife Research, Texas A&M University System, Overton,* [5]*New Mexico State University, Plant and Environmental Sciences Department, Tucumcari.*

M111 **Growing degree-days as corn silage harvest indicator.**
J. S. Oliveira*[1], E. J. D. de Almeida[2], F. C. F. Lopes[1], and E. C. M. de Lanes[3], [1]*Embrapa Gado de Leite, Juiz de Fora, MG, Brazil*, [2]*Universidade Federal de Juiz de Fora, Juiz de Fora, MG, Brazil*, [3]*Centro de Ensino Superior de Juiz de Fora, Juiz de Fora, MG, Brazil*.

M112 **Production and quality of alfalfa harvested at different stages of maturity.**
R. Copado[1], C. Arzola*[1], J. A. Payan[2], J. Salinas[3], O. Ruiz[1], C. Rodriguez-Muela[1], E. Rodriguez[1], J. A. Ortega[1], and O. Serna[2], [1]*Universidad Autonoma de Chihuahua, Chihuahua, Chih., Mexico*, [2]*INIFAP, Chihuahua, Chih., Mexico*, [3]*Universidad Autonoma de Tamaulipas, Cd. Victoria, Tams., Tams, Mexico.*

M113 **Gas production profiles of two varieties of alfalfa harvested on different stages of maturity.**
O. Serna-Beltran[1,2], C. Arzola*[1], E. Santellano-Estrada[1], J. A. Payan-Garcia[2], A. Corral-Luna[3,1], O. Ruiz[1], C. Rodriguez-Muela[1], and J. Salinas[4], [1]*Universidad Autonoma de Chihuahua, Chihuahua, Mexico*, [2]*Instituto Nacional de Investigaciones Forestales, Agricolas y Pecuarias, Delicias, Chihuahua, Mexico*, [3]*Department of Animal Sciences, University of Illinois at Urbana-Champaign*, [4]*Universidad Autonoma de Tamaulipas, Reynosa, Tams., Mexico*.

M114 **Can different ME estimation methods give different values for tanniferous forages?**
H. Khalilvandi-Behroozyar*[1,2], M. Dehghan-Banadaky[1], and K. RezaYazdi[1], [1]*Department of Animal Science, University of Tehran, Karaj, Tehran, Iran*, [2]*Department of Animal Science, University of Urmia, Urmia, West Azerbaijan, Iran*.

M115 **Ruminal degradability of nutrients in Sainfoin, a tanniferous legume forage.**
H. Khalilvandi-Behroozyar*[1,2], K. RezaYazdi[1], and M. Dehghan-Banadaki[1], [1]*Department of animal Science, University of Tehran, Karaj, Tehran, Iran*, [2]*Department of Animal Science, University of Urmia, Urmia, West Azerbaijan, Iran*.

M116 **A survey of molds and yeasts in Canadian corn silage.**
H. V. L. N. Swamy*, A. M. A. Heeg, and A. B. Rae, *Alltech Canada, Guelph, ON, Canada*.

M117 **A survey of mold count and identification in Pennsylvanian dairy feed ingredients.**
H. V. L. N. Swamy*[1], J. M. Lawrence[2], and N. J. Adams[2], [1]*Alltech Canada, Guelph, ON, Canada*, [2]*Alltech California, Fresno*.

Forages and Pastures
Grazing and Forage Management

M118 **Summer annuals for fall grazing in the high elevation Intermountain West.**
J. B. Hall*, B. R. Johnson, R. H. Stokes, and R. Ambrosek, *University of Idaho*, *Moscow*.

M119 **Biological parameters by spring and fall-calving cows grazing with full access, limited access, or no access to endophyte-infected tall fescue–2 year summary.**
J. Caldwell*[1], K. Coffey[1], M. Looper[2], D. Kreider[1], E. Kegley[1], J. Jennings[3], C. West[1], D. Hubbell III[1], J. Tucker[1], A. Young[1], T. Hess[1], M. Popp[1], M. Savin[1], D. Philipp[1], C. Rosenkrans Jr. [1], [1]*University of Arkansas*, *Fayetteville,* [2]*USDA-ARS*, *Booneville, AR,* [3]*University of Arkansas Cooperative Extension Service*, *Little Rock.*

M120 **Immune function responses by spring- and fall-born calves weaned from wild-type or non-toxic endophyte-infected tall fescue.**
M. A. Ata*[1], K. P. Coffey[1], J. D. Caldwell[1], E. B. Kegley[1], M. L. Looper[2], A. N. Young[1], D. Philipp[1], C. P. West[1], G. F. Erf[1], D. S. Hubbell, III[1], and C. F. Rosenkrans Jr. [1], [1]*University of Arkansas*, *Fayetteville,* [2]*USDA-ARS*, *Booneville, AR.*

M121 **Antagonism of 5-hydroxytryptamine$_{2A}$ receptor results in decreased contractile response of bovine lateral saphenous vein to tall fescue alkaloids.**
J. L. Klotz*[1], J. R. Strickland[1], L. P. Bush[2], B. H. Kirch[1], K. R. Brown[1], and G. E. Aiken[1], [1]*USDA-ARS, FAPRU*, *Lexington, KY*, [2]*University of Kentucky*, *Lexington*.

M122 **Tall fescue alkaloids cause vasoconstriction in equine medial palmar artery and vein.**
J. L. Klotz*[1] and K. J. McDowell[2], [1]*USDA-ARS, FAPRU*, *Lexington, KY*, [2]*University of Kentucky*, *Lexington*.

M123 **Comparison of management strategies commonly used to lessen or alleviate the symptoms of fescue toxicosis in cattle using meta-analysis.**
J. Hawley*, J. D. Caldwell, E. B. Kegley, and K. P. Coffey, *University of Arkansas*, *Fayetteville*.

M124 **Yield potential of eastern gamagrass in central Wisconsin.**
W. K. Coblentz*[1], W. E. Jokela[1], M. G. Bertram[2], and P. C. Hoffman[2], [1]*US Dairy Forage Research Center*, *Marshfield, WI*, [2]*University of Wisconsin*, *Madison*.

M125 **Nutritive value of pearl millet hay as affected by moisture concentration and bale sampling depth.**
J. Kanani*, D. Philipp, K. P. Coffey, A. N. Young, R. Rhein, and J. D. Caldwell, *University of Arkansas*, *Fayetteville.*

M126 **Characterization of plant cuticular wax markers in native grazing pastures of southwest Virginia.**
A. E. Tanner*[1], S. R. Blevins[1], E. Green[2], R. W. Mayes[2], and R. M. Lewis[1], [1]*Virginia Tech*, *Blacksburg,* [2]*The Macaulay Land Use Research Institute*, *Aberdeen, Scotland, UK*.

M127 **Statistical variation in predicting dry matter intake of Brahman bulls using the n-alkane technique.**
A. D. Aguiar*[1,4], L. O. Tedeschi[1], F. M. Rouquette[2], T. D. A. Forbes[3], C. M. Hensarling[3], and R. D. Randel[2], [1]*Texas A&M University*, *College Station,* [2]*Texas AgriLife Research*, *Overton,* [3]*Texas AgriLife Research*, *Uvalde,* [4]*University of Florida*, *Gainesville.*

M128 **A comparison of anatomical and compositional differences of residual feed intake (RFI)-indexed Brahman bulls under grazing conditions.**
T. D. A. Forbes*[1], F. M Rouquette[2], L. O. Tedeschi[3], R. D. Randel[2], and F. R. B Ribeiro[4], [1]*Texas AgriLife Research*, *Uvalde,* [2]*Texas AgriLife Research*, *Overton,* [3]*Texas A&M University*, *College Station,* [4]*Texas A&M University–Commerce*.

M129 ***Cenchrus ciliaris* in a silvopastoral system with *Prosopis juliflora*.**
T. Clavero* and R. Razz, *Centro de Transferencia de Tecnologia en Pastos y Forrajes. , Universidad del Zulia., Maracaibo, Estado Zulia, Venezuela*.

M130 **Quantifying terpenes in rumen fluid, serum, and plasma from sheep.**
R. E. Estell*[1], S. A. Utsumi[2], and A. F. Cibils[3], [1]*USDA, ARS, Jornada Experimental Range*, *Las Cruces, NM,* [2]*Michigan State University, Kellogg Biological Station*, *Hickory Corners,* [3]*New Mexico State University*, *Las Cruces.*

M131 **The effect of supplementing corn by-products or mesquite twigs on daily gain of Creole × Zebu young steers: A simulation model.**
J. Maria Tapia-González*[1], A. Tewolde-Medhin[2], W. E. Grant[3], J. C. Martinez-González[2], H. Diaz-Solís[4], A. Moreno-Valdéz[5], O. D. Montañez-Valdez[1], J. A. Martínez- Ibarra[1], and Gonzalo Rocha-Chavez[1], [1]*CUSUR, U de G*, *Ciudad Guzman, Jalisco, Mexico*, [2]*Unidad Académica Multidisciplinaria Agronomía y Ciencias, UAT*, *Cd. Victoria, Tamaulipas, México*, [3]*Wildlife and Fisheries Sciences, Texas A&M University*, *College Station,* [4]*Área de Recursos Naturales, UAAAN*, *Saltillo Coahuila, México*, [5]*Área de Recursos Naturales, Instituto Tecnológico de Ciudad Victoria*, *Cd. Victoria, Tamaulipas, México*.

Immunology and Pathology
Poultry Immunology and Pathology

M132 **Effects of dietary beta-glucan on the T helper cytokine balance in the intestine of broiler chicks.**
C. M. Cox*[1], L. H. Stuard[1], S. Kim[1], A. P. McElroy[1], M. Bedford[2], and R. A. Dalloul[1], [1]*Virginia Tech*, *Blacksburg*, [2]*AB Vista Feed Ingredients*, *Marlborough, United Kingdom*.

M133 **Effect of capsicum and turmeric oleoresins with betaine on the performance of broilers challenged with coccidiosis.**
V. Brito[1], C. Moynat*[2], A. Casarin[3], M. Forat[3], and D. Bravo[1], [1]*Euronutec*, *Queretaro, Mexico*, [2]*Pancosma*, *Geneva, Switzerland*, [3]*Instituto Internacional de Investigacion Animal*, *Mexico*.

M134 **Excess dietary amino acids reduce splenic pro-inflammatory cytokine mRNA abundance and increase anti-inflammatory cytokine mRNA abundance during an acute phase response.**
A. Diaz[1], N. Hamel[1], K. Martorana[1], R. Angel[2], and B. D. Humphrey*[1], [1]*California Polytechnic State University*, *San Luis Obispo*, [2]*University of Maryland*, *College Park.*

M135 **Effects of repeated intravenous lipopolysaccharide injection on hematological characteristics of chicken blood.**
O. T. Bowen, R. F. Wideman, R. L. Dienglewicz, and G. F. Erf*, *Department of Poultry Science, Division of Agriculture, University of Arkansas*, *Fayetteville.*

M136 **Effects of dietary conjugated linoleic acid on macrophage functions in broilers immunosuppressed with cyclophosphamide.**
D. Liu*, F. Y. Long, Y. M. Guo, Z. Wang, and J. M. Yuan, *China Agriculture University*, *Beijing, China*.

M137 **Broiler breeder feeding programs and trace minerals on cytokine gene expression response in progeny.**
N. M. Leandro[1,2], R. Ali[1], M. Koci[1], V. Moraes[1], M. J. Wineland[1], J. Brake[1], and E. O. Oviedo-Rondón*[1], [1]*North Carolina State University*, *Raleigh,* [2]*Universidade Federal de Goiás*, *Goiania, GO, Brazil*, [3]*Universidade Estadual Paulista, UNESP*, *Jaboticabal, SP, Brazil*.

M138 **Copy number variants in two genetically distinct chicken lines.**
X. Li*[1], W. Chou[1], S. J. Lamont[2], R. Croomjmas[3], and H. Zhou[1], [1]*Texas A&M University*, *College Station,* [2]*Iowa State University*, *Ames,* [3]*Wageningen University*, *PO Box 338, Wageningen, the Netherlands*.

M139 **Phage display selection and characterization of a single-chain antibody (scFv) against chicken CD40.**
D. Abi-Ghanem*[1], C. -H. Chen[1], L. Njongmeta[1], J. Bray[1], W. Mwangi[1], S. D. Waghela[1], J. L. McReynolds[2], and L. R. Berghman[1], [1]*Texas A&M University*, *College Station*, [2]*U. S. Department of Agriculture, Agricultural Research Service*, *College Station, TX*.

M140 **Functional characterization of the avian macrophage migration inhibitory factor (MIF).**
S. Kim*[1], K. B. Miska[2], M. C. Jenkins[2], R. H. Fetterer[2], C. M. Cox[1], L. H. Stuard[1], and R. A. Dalloul[1], [1]*Animal & Poultry Sciences, Virginia Tech*, *Blacksburg,* [2]*Animal Parasitic Diseases Laboratory, ARS, USDA*, *Beltsville, MD*.

M141 **U. S. Veterinary Immune Reagent Network.**
H. Lillehoj*[1], S. -H. Lee[1], D. -K. Kim[1], M. -S. Park[1], D. Tompkins[2], C. Baldwin[2], J. LaBresh[3], and B. Wagner[4], [1]*USDA-ARS*, *Beltsville, MD,*[2]*University of Massachusetts*, *Amherst,* [3]*Kingfisher Biotech*, *St. Paul, MN,* [4]*Cornell University*, *Ithaca, NY.*

Lactation Biology 1

M142 **Expression of the development gene CAMK2G in the virgin mammary gland of the dairy goat.**
L. N. Wang, C. Li, Q. Z. Li*, and C. Y. Yuan, *Key Laboratory of Dairy Science of Education Ministry, Northeast Agricultural University*, *Harbin, China*.

M143 **Effects of thyroxine, glucagon, and insulin on mRNA levels of heat shock proteins in bovine mammary epithelial cells under heat stress in vitro.**
R. L. Cui[1], J. Q. Wang*[1], H. Y. Wei[1], D. P. Bu[1], H. Hu[1,2], and L. Y. Zhou[1], [1]*State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*, [2]*Faculty of Animal Science & Technology, Gansu Agriculture University*, *Lanzhou, China*.

M144 **Immunodetection of the secreted forms of osteopontin in bovine milk.**
N. Bissonnette[1,3], C. Thibault[1], and G. Robitaille*[2], [1]*Agriculture and Agri-Food Canada, Dairy and Swine Research and Development Centre*, *Sherbrooke, QC, Canada*, [2]*Agriculture and Agri-Food Canada, Food Research and Development Centre*, *Saint-Hyacinthe, QC, Canada*, [3]*Université de Sherbrooke*, *Sherbrooke, QC, Canada*.

M145 **Differentiatied immortalized porcine mammary epithelial cells grown on polysulfone hollow fiber provide a potential cell culture system for expression of recombinant proteins.**
T. C. Kuan*[1], Y. L. Sun[2], C. Y. Yen[1], and C. S. Lin[1], [1]*Department of Biological Science and Technology, National Chiao Tung University*, *Hsinchu, Taiwan*, [2]*Division of Biotechnology, Animal Technology Institute Taiwan*, *Miaoli, Taiwan*.

M146 **Effects of nutrient restriction on mammary cell activity and hormonal statement in lactating dairy cows.**
F. Dessauge*[1,2], V. Lollivier[1,2], E. Cutullic[1,2], J. Portanguen[1,2], C. Disenhaus[1,2], S. Barbey[3], B. Ponchon[1,2], and M. Boutinaud[1,2], [1]*INRA UMR 1080 Dairy Production*, *Saint Gilles, France*, [2]*Agrocampus UMR 1080 Dairy Production*, *Rennes, France*, [3]*INRA UE 326 Domaine Experimental du Pin au Haras*, *Le Pin au Haras, France*.

M147 **Effects of incremental sunflower seed supplementation on milk composition and mammary expression of genes regulating fatty acid uptake and lipogenesis.**
J. W. Møller, T. Bjørn, P. K. Theil, M. T. Sørensen, and K. Sejrsen*, *Faculty of Agricultural Science, Aarhus University*, *Tjele, Denmark*.

M148 **Principal component analysis of milk fatty acid composition and the relationships between stearoyl CoA desaturase genotype and conjugated linoleic acid production in dairy cattle.**
J. Thomson*, L. Clark, M. Oba, and S. Moore, *University of Alberta*, *Edmonton, AB, Canada*.

M149 **Improved lactation persistence and altered milk composition in growth hormone-treated mice is not linked to dramatic changes in mammary mitochondrial biogenesis or the degree of mTOR or AMP kinase phosphorylation.**
W. Olea*[1], A. Parlow[2], R. Collier[3], and D. Hadsell[1], [1]*Baylor College of Medicine*, *Houston, TX,* [2]*Harbor-UCLA Medical Center*, *Torrance, CA,* [3]*University of Arizona*, *Tucson.*

Meat Science and Muscle Biology
Beef Quality

M150 **Beef quality of bovines supplemented with vitamin E.**
G. Aranda-Osorio*[1], H. Barragan-Gonzalez[1], M. Huerta-Bravo[1], O. Hernandez-Mendo[2], E. Maldonado-Siman[1], and J. C. Garcia-Ortiz[1], [1]*Universidad Autonoma Chapingo*, *Chapingo, Mexico*, [2]*Colegio de Posgraduados*, *Montecillos, Mexico*.

M151 **Effect of vitamin E supplementation on the finishing of beef cattle.**
G. Aranda-Osorio*[1], P. De la Cruz-Honorato[1], R. Hernadez-Arrieta[1], O. Hernandez-Mendo[2], and J. C. Garcia-Ortiz[1], [1]*Universidad Autonoma Chapingo*, *Chapingo, Mexico*, [2]*Colegio de Posgraduados*, *Montecillos, Mexico*.

M152 **Influence of different forms of lipid supplements on physical characteristics of heifers' meat fed on feedlot system.**
M. C. A. Santana*[1], T. T. Berchielli[1], R. A. Reis[1], G. T. Pereira[1], and R. C. Canesin[1], [1]*São Paulo State University*, *Jaboticabal, São Paulo, Brazil*, [2]*Bellman Animal Nutrition Mineral Supplements*, *Jaboticabal, São Paulo, Brazil*.

M153 **Effect of maternal nutritional status on muscle development and carcass characteristics in heifer progeny.**
L. V. Nicodemus*, K. R. Underwood, J. F. Tong, P. L. Price, B. W. Hess, S. I. Paisley, W. J. Means, R. J. McCormick, and M. Du, *Department of Animal Science, University of Wyoming*, *Laramie.*

M154 **Nutrient restriction during early prenatal growth and carcass characteristics of beef steers.**
T. A. Pye*, B. H. Boehmer, R. P. Wettemann, and G. W. Horn, *Oklahoma Agricultural Experiment Station*, *Stillwater*.

M155 **Residual feed intake in three-cross beef heifers: Color and chemical composition of *Longissumus dorsi* muscle.**
S. F. Reis[1], P. V. R. Paulino*[1], S. R. Medeiros[2], S. C. Valadares Filho[1], G. L. D. Feijó[2], R. A. A. Torres Júnior[2], R. O. Cristaldo[2], R. A. Silva[2], D. A. Fausto[3], and J. Cavali[1], [1]*Universidade Federal de Viçosa*, *Viçosa, MG, Brazil*, [2]*EMBRAPA Gado de Corte*, *Campo Grande, MS, Brazil*, [3]*Universidade de São Paulo*, *Piracicaba, SP, Brazil*.

M156 **Residual feed intake in three-cross beef heifers: Sensorial traits of *Longissimus dorsi* muscle.**
S. F. Reis[1], P. V. R. Paulino*[1], R. A. Silva[3], S. R. Medeiros[2], S. C. Valadares Filho[1], G. L. D. Feijó[2], R. A. A. Torres Júnior[2], F. A. Curci[2], and M. A. Rezende[2], [1]*Universidade Federal de Viçosa*, *Viçosa, MG, Brazil*, [2]*EMBRAPA Gado de Corte*, *Campo Grande, MS, Brazil*, [3]*Universidade Federal do Mato Grosso do Sul*, *Campo Grande, MS, Brazil*.

M157 **Ageing process influence on fatty acids relations in yearling bulls fed different sources of omega3 and omega6.**
A. A. M. Sampaio[1], T. M. Pivaro[1], E. A. Oliveira*[1], W. Henrique[2], B. L. Rosa[1], and A. R. M. Fernandes[3], [1]*FCAV/UNESP*, *Jaboticabal, SP, Brazil*, [2]*APTA*, *São José do Rio Preto, SP, Brazil*, [3]*UFGD*, *Dourados, MS, Brazil*.

M158 **Feeding flaxseed to beef cows increases concentrations of omega-3 fatty acids and linolenic acid biohydrogenation intermediates in subcutaneous fat.**
M. L. He[1,3], T. A. McAllister*[1], J. P. Kastelic[1], Y. -H. Chung[1], K. A. Beauchemin[1], P. S. Mir[1], J. L. Aalhus[2], M. E. R. Dugan[2], and N. Aldai[2], [1]*Lethbridge Research Centre, Agriculture and Agri-Food Canada*, *Lethbridge, AB, Canada*, [2]*Lacombe Research Centre, Agriculture and Agri-Food Canada*, *Lacombe, AB, Canada*, [3]*University of Saskatchewan, Saskatoon*, *Saskatoon, SK, Canada*.

M159 **Effect of finishing system on subcutaneous fat melting point and fatty acid composition.**
S. K. Duckett*[1], J. P. S. Neel[2], W. S. Swecker[3], J. P. Fontenot[3], and W. Clapham[2], [1]*Clemson University*, *Clemson, SC,* [2]*USDA-ARS*, *Beaver, WV,* [3]*Virginia Tech University*, *Blacksburg.*

M160 **Effects of supplemental dietary lipid sources on fatty acids compositions of *Longissimus* muscle in yearling bulls.**
E. A. Oliveira*[1], A. A. M. Sampaio[1], W. Henrique[2], B. L. Rosa[1], T. M. Pivaro[1], and A. R. M. Fernandes[3], [1]*FCAV/UNESP*, *Jaboticabal, SP, Brazil*, [2]*APTA*, *São José do Rio Preto, SP, Brazil*, [3]*UFGD*, *Dourados, MS, Brazil*.

M161 **Fatty acid profile of intramuscular fat of young bulls grazing tropical pasture and supplemented with different strategies.**
J. Cavali[1], P. V. R. Paulino*[1], I. M. Oliveira[1], M. M. C. Silva[1], H. J. Fernandes[2], R. Mezzomo[1], J. F. H. Rodrigues[1], É. E. L. Valente[1], S. F. Reis[1], and L. A. M. Gomide[1], [1]*Universidade Federal de Viçosa*, *Viçosa, MG, Brazil*, [2]*Universidade Estadual do Mato Grosso do Sul*, *Aquidauana, MS, Brazil*.

M162 **How do n-3 fatty acids affect human perception of ground beef?**
T. Jiang*, J. R. Busboom, M. L. Nelson, and R. Mengarelli, *Washington State University*, *Pullman.*

M163 **Geometrical isomers of octadecenoic, octadecadienoic and octadecatrienoic acids from subcutaneous fat of British or Continental versus Nellore crossbred cattle slaughtered at different end points.**
R. Mello*[1], A. C. de Queiroz[2], F. D. de Resende[3], D. P. Duarte Lanna[4], M. H. de Faria[3], and E. da Costa Eifert[4], [1]*Universidade Federal de Santa Maria*, *Santa Maria, RS, Brazil*, [2]*Universidade Federal de Viçosa*, *Viçosa, MG, Brazil*, [3]*Agência Paulista de Tecnologia dos Agronegócios*, *Colina, SP, Brazil*, [4]*Universidade de São Paulo □ Escola Superior de Agricultura □Luiz de Queiroz□*, *Piracicaba, SP, Brazil*.

M164 **Fatty acid profiles of subcutaneous adipose tissue from cross young bulls produced by different genetic groups sires and slaughtered with distinct weights.**
R. Mello*[1], A. C. de Queiroz[2], F. D. de Resende[3], D. P. Duarte Lanna[4], M. H. de Faria[3], and E. da Costa Eifert[4], [1]*Universidade Federal de Santa Maria*, *Santa Maria, RS, Brazil*, [2]*Universidade Federal de Viçosa*, *Viçosa, MG, Brazil*, [3]*Agência Paulista de Tecnologia dos Agronegócios*, *Colina, SP, Brazil*, [4]*Universidade de São Paulo □ Escola Superior de Agricultura □Luiz de Queiroz□*, *Piracicaba, SP, Brazil*.

M165 **Meat quality of Nellore heifers finished at pasture, in tropical conditions, supplemented with crushed sunflower.**
S. L. N. Cerilo*, R. H. de Tonissi e Buschinelli de Goes, H. L. Lima, A. R. Mendes Fernandes, K. Alves de Souza, D. de Faria Pereira, K. C. da Silva Brabes, and A. F. Marquez, *Universidade Federal da Grande Dourados*, *Dourados, MS, Brazil*.

M166 ***Longissimus dorsi* muscle fiber profile in young bulls grazing tropical pasture and supplemented with different strategies.**
J. Cavali*[1], P. V. R. Paulino[1], I. Lage[2], C. A. Neves[1], M. V. Santos[1], M. F. Paulino[1], R. Justino[3], J. F. H. Rodrigues[4], and D. Melo[1], [1]*Universidade Federal de Viçosa*, *Viçosa, MG, Brazil*, [2]*Universidade Federal dos Vales do Jequitinhonha e Mucuri*, *Diamantina, MG, Brazil*, [3]*JBS Friboi*, *Barretos, SP, Brazil*, [4]*Universidade Estadual Paulista*, *Jaboticabal, SP, Brazil*.

M167 **Effect of concentrate- vs. forage-based finishing diet on carcass traits, beef palatability, and color stability of longissimus muscle from Angus heifers.**
A. J. Garmyn*, D. L. VanOverbeke, R. G. Mateescu, and G. G. Hilton, *Oklahoma State University*, *Stillwater.*

M168 **Does creep feed and backgrounding energy source affect lifetime growth performance and carcass characteristics of nursing calves pastured on annual ryegrass?**
M. S. Gadberry*[1], P. A. Beck[2], B. Barham[1], W. Whitworth[3], and J. Apple[4], [1]*University of Arkansas*, *Little Rock*, [2]*University of Arkansas*, *Hope*, [3]*University of Arkansas*, *Monticello*, [4]*University of Arkansas*, *Fayetteville*.

M169 **Does creep feed and backgrounding energy source affect lifetime growth performance and carcass characteristics of nursing calves pastured on improved warm-season grasses?**
B. Barham*[1], P. A. Beck[2], M. S. Gadberry[1], W. Whitworth[3], and J. Apple[4], [1]*University of Arkansas*, *Little Rock*, [2]*University of Arkansas*, *Hope*, [3]*University of Arkansas*, *Monticello*, [4]*University of Arkansas*, *Fayetteville*.

M170 **Genetic group and slaughter weight influence on meat quality of feedlot cattle.**
R. Mello*[1], F. D. de Resende[2], A. C. de Queiroz[3], M. H. de Faria[2], R. A. Possenti[2], and G. F. Alleoni[2], [1]*Universidade Federal de Santa Maria*, *Santa Maria, RS, Brazil*, [2]*Agência Paulista de Tecnologia dos Agronegócios*, *Colina, SP, Brazil*, [3]*Universidade Federal de Viçosa*, *Viçosa, MG, Brazil*.

M171 **Animal health effects on carcass quality.**
T. M. Jeske*, R. J. Maddock, and K. R. Carlin, *North Dakota State University*, *Fargo.*

M172 **Effect of garlic and onion on the thiobarbituric acid reactive substances (TBARS), volatile compounds and sensory evaluations of irradiated cooked ground beef.**
H. S. Yang*, G. D. Kim, K. Y. Seo, E. Y. Jung, and S. T. Joo, *Division of Applied Life Science (BK21 Program), Graduate School of Gyeongsang National University, Jinju, Gyeongnam 660-701, Republic of Korea*.

Graduate Student Poster Competition
National ADSA Dairy Foods Poster

M173 **Angiostatin-like peptides in milk: Potential development for dairy products capable of cancer prevention.**
E. Stefanutti* and R. Jiménez-Flores, *California Polytechnic State University*, *San Luis Obispo*.

M174 **The effect of different inulin types on the formation of rennet-induced gels.**
A. Foo*, A. R. Hill, and M. Corredig, *University of Guelph*, *Guelph, Ontario, Canada*.

M175 **Impact of temperature and fat content on bleaching of liquid whey.**
M. A. D. Listiyani*[1], R. E. Campbell[1], R. E. Miracle[1], D. M. Barbano[2], and M. A. Drake[1], [1]*North Carolina State University*, *Raleigh*, [2]*Cornell University*, *Ithaca, NY.*

M176 **Bleaching liquid Cheddar whey using ultraviolet radiation.**
E. J. Kang* and M. A. Drake, *North Carolina State University*, *Raleigh.*

M177 **Development and analysis of a dairy-based nutrient dense gel food rich in milk bioactives.**
M. Cleveland* and R. Jiménez-Flores, *California Polytechnic State University*, *San Luis Obispo.*

M178 **Identification of bioactive peptides derived from fermentation of organic milk.**
S. R. Pritchard*, M. Phillips, and K. Kailasapathy, *University of Western Sydney*, *East Richmond, New South Wales, Australia*.

M179 **Increasing stringiness of low fat Mozzarella cheese using polysaccharides.**
E. N. Oberg*[1], K. M. Larsen[1], D. A. Irish[1], M. M. Motawee[2,1], and D. J. McMahon[1], [1]*Western Dairy Center, Utah State University*, *Logan, ..,*[2]*National Organization for Drug Control and Research*, *Cairo, Egypt*.

M180 **Enrichment of low fat Cheddar cheese with dietary fiber.**
R. Wadhwani*, D. J. McMahon, and D. A. Irish, *Utah State University*, *Logan.*

M181 **Development of a rapid method for determination of lactose in process cheese using blood glucose meter.**
A. C. Biswas*, J. Amamcharla, and L. E. Metzger, *Midwest Dairy Foods Research Center, Dairy Science Department, South Dakota State University*, *Brookings.*

M182 **Monitoring changes in the non-casein nitrogen fraction of raw milk during storage using casein/fat standardizer (CFS).**
P. Salunke*, J. Amamcharla, and L. E. Metzger, *Midwest Dairy Foods Research Centre, South Dakota State University*, *Brookings.*

M183 **Impact of xylitol on the functional properties of low fat process cheese.**
A. Kommineni*, J. Amamcharla, and L. E. Metzger, *Midwest Dairy Foods Research Center, South Dakota State University*, *Brookings.*

M184 **Application of salt whey in process cheese food made from young Cheddar cheese containing exopolysaccharides.**
O. Janevski*, A. N. Hassan, and L. Metzger, *South Dakota State University*, *Brookings*.

M185 **Prediction of water activity of natural cheese using a model cheese system.**
J. Grummer* and T. C. Schoenfuss, *University of Minnesota*, *St. Paul*.

M186 **Optimization of a CO_2 injection method for increasing the permeate flux in cold microfiltration of skim milk.**
T. J. Tan*, A. Sauer, and C. I. Moraru, *Cornell University, Ithaca, NY.*

M187 **Polysaccharide addition to low fat Cheddar cheese to improve texture.**
R. Kumar* and T. C. Schoenfuss, *University of Minnesota*, *St. Paul.*

M188 **Effect of concentration and temperature on the rheological properties of 95% serum protein (SP) reduced micellar casein concentrates (MCC).**
A. Sauer*, C. Beliciu, and C. I. Moraru, *Cornell University*, *Ithaca, NY.*

M189 **Formation of bacterial biofilms on spiral wound reverse osmosis whey concentration membranes and its influence on retentate quality.**
M. Avadhanula*, A. C. Biswas, S. Anand, and A. Hassan, *Midwest Dairy Foods Research Center, Dairy Science Department, South Dakota State University*, *Brookings.*

M190 **Thermal aggregation of whey proteins in the presence of buttermilk.**
M. Saffon*[1], M. Britten[2], and Y. Pouliot[1], [1]*STELA Dairy Research Center, Institute of Nutraceuticals and Functional Food (INAF), Université Laval*, *Québec, QC, Canada*, [2]*Food Research and Development Center (FRDC), Agriculture and Agri-Food Canada*, *St-Hyacinthe, Québec, Canada*.

Graduate Student Poster Competition
National ADSA Production MS Poster
Chair: **Arnold Hippen, South Dakota State University**

M191 **Assessment of tannin-free and tanniniferous legumes in lactating dairy diets using continuous culture.**
C. M. Williams*[1], C. M. Dschaak[1], J. -S. Eun[1], J. W. MacAdam[2], and A. J. Young[1], [1]*Department of Animal, Dairy, and Veterinary Sciences, Utah State University*, *Logan,* [2]*Department of Plants, Soils, and Climate, Utah State University*, *Logan.*

M192 **Post-treatment outcomes of clinical mastitis on commercial dairy farms.**
C. Pinzón-Sánchez*, C. Hulland, and P. L. Ruegg, *University of Wisconsin*, *Madison*.

M193 **Assessment of prior grazing experiences on adaption to pasture and performance of dairy heifers.**
F. Lopes*[1], D. K. Combs[1], P. C. Hoffman[1], N. M. Esser[1], and W. Coblentz[2,1], [1]*University of Wisconsin*, *Madison,* [2]*US- Department of Agriculture/Agricultural Research Service*, *Marshfield, WI.*

M194 **Seasonal variation of nutrients and in vitro dry matter degradability of forage hay.**
L. Shi*, N. Li, T. Shenkoru, W. Yang, S. McConahey, and T. Wuliji, *University of Nevada*, *Reno*.

M195 **Performance of Holstein heifers supplemented with probiotics.**
J. Graves*[1], S. Hill[1], E. Suever[1], B. Rude[1], J. Brett[2], and Y. Vizzier-Thaxton[3], [1]*Department of Animal and Dairy Science, Mississippi State University*, *Mississippi State*, [2]*College of Veterinary Medicine, Mississippi State University*, *Mississippi State*, [3]*Department of Poultry Science, Mississippi State University*, *Mississippi State*.

Graduate Student Poster Competition
National ADSA Production PhD Poster
Chair: **Arnold Hippen, South Dakota State University**

M196 **Effects of condensed tannins supplementation on ruminal fermentation and lactational performance of dairy cows when fed high or low forage diet.**
C. M. Dschaak*, C. M. Williams, M. S. Holt, J.-S. Eun, and A. J. Young, *Department of Animal, Dairy, and Veterinary Sciences, Utah State University*, *Logan.*

M197 **Relationships between prepartum energy intake and reproductive parameters in Holstein cows.**
F. C. Cardoso*, M. R. Murphy, and J. K. Drackley, *University of Illinois*, *Urbana*.

M198 **Effectiveness of an herbal remedy compared to control or traditional therapy in dry off treatments.**
K. A. E. Mullen*, K. L. Anderson, and S. P. Washburn, *North Carolina State University*, *Raleigh*.

M199 **Serum pregnancy-associated glycoprotein (PAG) and progesterone concentrations after induction of pregnancy loss at day 39 of gestation in lactating dairy cows.**
J. O. Giordano*[1], J. N. Guenther[1], G. Lopes Jr.[1], M. F. McGrath[2], and P. M. Fricke[1], [1]*University of Wisconsin*, *Madison*, [2]*Monsanto Agricultural Company*, *St. Louis, MO*.

M200 **Prepartum 2,4-thiazolidinedione alters gene expression of peroxisome proliferator-activated receptor gamma and leptin in the adipose tissue of dairy cows.**
K. M. Schoenberg*, K. L. Perfield, S. L. Giesy, Y. R. Boisclair, and T. R. Overton, *Cornell University*, *Ithaca, NY*.

M201 **Effects of cobalt supplementation and vitamin B_{12} injections on energy metabolism of dairy cows.**
M. S. Akins*[1], S. J. Bertics[1], M. T. Socha[2], and R. D. Shaver[1], [1]*University of Wisconsin*, *Madison*, [2]*Zinpro Corporation*, *Eden Prairie, MN*.

M202 **Genetic analysis of type traits in the Holstein population of Iran.**
M. R. Bakhtiarizadeh*, M. M. Shahr Babak, and A. Pakdel, *Tehran University*, *Karaj, Tehran*.

M203 **Effects of porcine relaxin on motility characteristics of boar sperm as assessed by computer-assisted sperm analysis (CASA).**
J. C. Rodriguez-Munoz*, J. M. Feugang, M. Crenshaw, S. T. Willard, and P. L. Ryan, *Mississippi State University*.

Nonruminant Nutrition
Amino Acids
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M204 **Response surface model for broiler chickens performance fed diets varying in digestible protein and amino acids.**
H. Ahmadi and A. Golian*, *Ferdowsi University of Mashhad*, *Mashhad, Khorasan Razavi, Iran*.

M205 **Partitioning of lysine stable isotopes in broiler breeders during the transition into sexual maturity.**
R. D. Ekmay*, C. Salas, J. England, and C. N. Coon, *University of Arkansas*, *Fayetteville*.

M206 **Varying levels of dietary methionine inclusion on the hematology and serum biochemistry of broilers.**
G. O. Adeyemo* and A. D. Ologhobo, *University of Ibadan*, *Ibadan, Oyo, Nigeria*.

M207 **Separate response to lysine and methionine in broiler starter diets.**
C. Lu*[1], C. A. Coto[1], A. Karimi[2], J. H. Park[1], Y. Min[1], and P. W. Waldroup[1], [1]*University of Arkansas*, *Fayetteville,* [2]*University of Kurdistan*, *Kurdistan, Iran*.

M208 **Effect of crude protein and essential:nonessential amino acids ratio on nitrogen balance in broiler.**
C. C. Goulart[1], F. G. P. Costa*[1], E. T. Nogueira[2], M. Kutschenko[2], H. S. Rostagno[3], C. F. S. Oliveira[1], R. C. L. Neto[1], and V. P. Rodrigues[1], [1]*Federal University of Paraiba*, *Areia, PB, Brazil*, [2]*Ajinomoto Animal Nutrition*, *Sao Paulo, SP, Brazil*, [3]*Federal University of Viçosa*, *MG, Brazil*.

M209 **True ileal amino acid digestibility and protein utilization in broilers fed various levels of canola meal and phytase.**
C. Kong* and O. Adeola, *Purdue University*, *West Lafayette, IN.*

M210 **Separate response to lysine and methionine in broiler grower diets.**
C. Lu*[1], C. A. Coto[1], A. Karimi[2], J. H. Park[1], Y. Min[1], and P. W. Waldroup[1], [1]*University of Arkansas*, *Fayetteville,* [2]*University of Kurdistan*, *Kurdistan, Iran*.

M211 **Digestible arginine:lysine ratios for broilers during the starter and finisher periods.**
A. Campos[1], E. T. Nogueira[2], L. F. Albino[1], and H. S. Rostagno*[1], [1]*Federal University of Viçosa*, *Viçosa, MG, Brazil*, [2]*Ajinomoto of Brazil/Ajinomoto Animal Nutrition*, *São Paulo, SP, Brazil*.

M212 **Effect of a mono component protease on true amino acid digestibility of a corn and soybean meal diet for chicks.**
R. K. G. Messias[1], L. F. T. Albino[1], J. O. B. Sorbara[2], and H. S. Rostagno*[1], [1]*Universidade Federal de Viçosa*, *Viçosa, MG, Brazil*, [2]*DSM Nutritional Products*, *São Paulo, SP, Brazil*.

M213 **Performance of white commercial layers fed with different of threonine: lysine ratio.**
F. G. P. Costa*[1], M. R. Lima[1], E. T. Nogueira[2], L. Sá[2], J. H. V. Silva[1], H. S. Rostagno[3], C. C. Goulart[1], R. B. Souza[1], S. A. N. Morais[1], and G. S. Lima[1], [1]*Federal University of Paraiba*, *Areia, PB, Brazil*, [2]*Ajinomoto Animal Nutrition*, *Sao Paulo, SP, Brazil*, [3]*Federal University of Viçosa*, *MG, Brazil*.

M214 **Digestible valine:lysine and isoleucine:lysine ratios for brown egg laying hens.**
G. Lelis[1], E. T. Nogueira[2], L. F. Albino[1], and H. Rostagno*[1], [1]*Federal University of Viçosa*, *Viçosa, MG, Brazil*, [2]*Ajinomoto of Brazil/Ajinomoto Animal Nutrition*, *São Paulo, SP, Brazil*.

M215 **Influence of diet formulation technique on requirements of sulfur amino acids and lysine to brown egg laying hens.**
J. H. V. Da Silva*[1,2], P. B. Lacerda[1], D. V. Gonçalves Vieira[2], C. T. Silva[2], J. J. Filho[1], M. L. Gomes Ribeiro[1], J. M. Batista De Souza[1], J. A. De Araújo[1], E. L. Da Silva[1], and F. G. Perazzo Costa[2], [1]*CCHSA-Universidade Federal da Paraíba*, *Bananeiras, Paraíba, Brazil*, [2]*CCA-Universidade Federal da Paraíba*, *Areia, Paraíba, Brazil*.

M216 **Amino acid digestibility in corn, soybean meal, field peas, and corn co-products fed to weanling pigs.**
G. I. Petersen* and H. H. Stein, *University of Illinois*, *Urbana*.

M217 **Pyrolic infusion of arginine increases portal vein blood flow in growing pigs.**
S. W. Kim*[1], M. I. Perret-Gentil[2], M. W. Hart[3], and R. D. Mateo[4], [1]*North Carolina State University*, *Raleigh*, [2]*The University of Texas at San Antonio*, [3]*Georgia State University*, *Atlanta*, [4]*Texas Tech University*, *Lubbock*.

M218 **Apparent and standardized ileal digestibilities of amino acids for pigs fed corn-soybean meal-based diets at varying crude protein levels.**
H. Zhai* and L. Adeola, *Purdue University*, *West Lafayette, IN*.

M219 **Influence of total lysine level provided during the finishing period on carcass, meat and fat characteristics of heavy barrows and gilts.**
M. A. Latorre*[1], J. A. Rodríguez-Sánchez[2], M. Blanco[2], M. A. Sanz[2], and M. Joy[2], [1]*Universidad de Zaragoza*, *Spain*, [2]*CITA de Aragón*, *Zaragoza, Spain*.

M220 **Comparison of amino acid digestibility of corn, corn distillers dried grains with solubles (DDGS), meat and bone meal (MBM), and poultry-by-product meal (PBPM) determined with the precision-fed cecectomized rooster assay and the standardized ileal amino acid digestibility chick assay.**
E. J. Kim*[1], P. L. Utterback[1], T. J. Applegate[2], and C. M. Parsons[1], [1]*University of Illinois at Urbana-Champaign*, [2]*Purdue University*, *West Lafayette, IN*.

M221 **Feeding a diet containing specific excess amino acids minimizes the reduction in performance and carcass traits associated with an inflammatory response.**
A. Diaz[1], M. Raymond[1], R. Angel[2], and B. D. Humphrey*[1], [1]*California Polytechnic State University*, *San Luis Obispo,* [2]*University of Maryland*, *College Park.*

M222 **Amino acid digestibility of various feedstuffs of plant and animal origin using three different methods.**
E. J. Kim*, C. M. Jacobs, P. L. Utterback, and C. M. Parsons, *University of Illinois at Urbana-Champaign*.

M223 **Effect of the use of L-valine and metabolizable energy levels of diet on nitrogen intake, retention and apparent excretion in broilers.**
F. G. P. Costa*[1], C. C. Goulart[1], E. T. Nogueira[2], M. Kutschenko[2], J. H. V. Silva[1], V. P. Rodrigues[1], G. B. V. Lobato[1], and R. C. L. Neto[1], [1]*Federal University of Paraiba*, *Areia, PB, Brazil*, [2]*Ajinomoto Animal Nutrition*, *Sao Paulo, SP, Brazil*.

M224 **Effect of the use of L-valine and metabolizable energy levels of diet on body composition of broilers.**
F. G. P. Costa*[1], C. C. Goulart[1], E. T. Nogueira[2], M. Kutschenko[2], J. H. V. Silva[1], V. P. Rodrigues[1], and R. C. L. Neto[1], [1]*Federal University of Paraiba*, *Areia, PB, Brazil*, [2]*Ajinomoto Animal Nutrition*, *Sao Paulo, SP, Brazil*.

M225 **Different protein and conjugated linolenic acid levels on broilers diets.**
T. Previero[1], C. J. C. Castillo[2], N. B. Petroli[1], R. Albuquerque[3], C. S. S. Araujo*[4], and L. F. Araujo[1], [1]*University of Sao Paulo*, *Pirassununga, SP, Brazil*, [2]*University of Sao Paulo*, *Piracicaba, SP, Brazil*, [3]*University of Sao Paulo*, *Sao Paulo, SP, Brazil*, [4]*Poultry Nutritionist*, *Pirassununga, SP, Brazil*.

M226 **Effect of dietary arginine, glutamine, and tryptophan on growth performance, gut morphology, and meat quality of broilers.**
S. J. Park*[1], C. Z. Alvarado[1], and S. W. Kim[2], [1]*Texas Tech University*, *Lubbock*, [2]*North Carolina State University*, *Raleigh*.

M227 **Dietary supplementation of L-glutamine and L-glutamate or sodium butyrate during early growth of female broilers.**
Y. Avellaneda*[1], J. Hernandez[1], C. Ariza-Nieto[2], and G. Afanador[1,2], [1]*Universidad Nacional de Colombia*, *Bogota, Colombia*, [2]*CORPOICA*, *Bogota, Colombia*.

M228 **Evaluation of the fixed crude protein conversion factor (6. 25) versus ingredient specific conversion factors.**
N. Sriperm*[1], G. M. Pesti[1], and P. B. Tillman[2], [1]*University of Georgia*, *Athens,* [2]*Ajinomoto Heartland LLC*, *Chicago, IL.*

M229 **Effect of dietary probiotic and prebiotic on ileal nutrient digestibility of Ross broiler chickens.**
H. Ziaie*[1], A. Zeinali[2], M. Bashtani[3], M. A. Karimi Torshizi[4], G. H. Hadarbadi[1], H. Farhangfar[3], and A. Nasr Abad[1], [1]*Agriculture and Natural Resources Research Center*, *Birjand, South Khorasan, Iran*, [2]*Ferdowsi University*, *Mashhad, Iran*, [3]*Birjand University*, *Birjand, Khorasan. Iran*, [4]*Tarbiat Moddares University*, *Tehran, Iran*.

M230 **Tryptophan, niacin, and insulin metabolism in weaned pigs?**
J. J. Matte*[1], Y. Primot[2], and N. LeFloc'h[3], [1]*Agriculture & Agri-Food Canada*, *Dairy & Swine R & D Centre, Sherbrooke, QC, Canada*, [2]*Ajinomoto-Eurolysine SAS*, *Paris, France*, [3]*Institut National de la Recherche Agronomique (INRA)*, *UMR-SENAH, St-Gilles, France*.

M231 **Effect of glutamine and temperature on performance of broiler chickens.**
S. Cerrate*, R. Ekmay, C. Salas, and C. Coon, *University of Arkansas*, *Fayetteville*.

M232 **Effect of dietary protein content on cecal microbial ecosystem and mortality of young rabbits.**
S. Chamorro[1], R. Carabaño[2], J. García[2], I. Badiola[3], G. G. Mateos*[2], and C. de Blas[2], [1]*Instituto del Frío-ICTAN, CSIC*, *Madrid, Spain*, [2]*Universidad Politécnica de Madrid*, *Madrid, Spain*, [3]*CReSA (UAB-IRTA)*, *Bellaterra, Spain*.

M233 **Effect of lysine and leucine levels in wheat-based diets on the expression of two cationic amino acid-transporter proteins in growing pigs.**
M. A. Barrera, A. Morales*, M. Cervantes, A. B. Araiza, E. Avelar, and D. González, *ICA, Universidad Autónoma de Baja California*, *Mexicali*.

M234 **Effect of high lysine and leucine levels in wheat-based diets on performance and muscle expression of myosin mRNA in growing pigs.**
M. A. Barrera[1], M. Cervantes*[1], A. Morales[1], A. Araiza[1], D. Cervantes[1], V. Méndez[1], and H. Bernal[1], [1]*ICA, Universidad Autónoma de Baja California*, *Mexicali, BC, México*, [2]*Universidad Autónoma de Nuevo León*, *Monterrey, NL, México*.

M235 **The effect of different animal and vegetable protein sources on the feed intake and weight gain of piglets.**
D. Solà-Oriol[1], J. Figueroa[1], E. Borda*[2], C. Chetrit[2], and J. F. Pérez[1], [1]*Universitat Autònoma de Barcelona*, *Bellaterra, Spain*, [2]*Bioiberica*, *Palafolls, Spain*.

M236 **Aflatoxins and productive performance of two broiler breeder genotypes.**
A. Scher*[1], A. P. Rosa[1], J. M. Santurio[2], A. Londero[1], T. N. N. Vieira[1], and J. A. G. Ferreira Jr.[1], [1]*Poultry Laboratory – Universidade Federal de Santa Maria*, *RS, Brazil*, [2]*Lapemi–Universidade Federal de Santa Maria*, *RS, Brazil*.

M237 **Progeny of broiler breeders from two genotypes intoxicated with aflatoxins.**
A. Scher*[1], A. P. Rosa[1], J. M. Santurio[2], A. Londero[1], G. Farina[1], and J. A. G. Ferreira Jr.[1], [1]*Poultry Science Lab – Universidade Federal de Santa Maria*, *Santa Maria, RS, Brazil*, [2]*Lapemi– Universidade Federal de Santa Maria*, *Santa Maria, RS, Brazil*.

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Feed Ingredients

M238 **The effects of the dietary supplementation with essential oils from selected species of the Lamiaceae family on the performance of growing broiler chickens.**
L. Roldan*[1], C. Ariza-Nieto[2], G. Diaz[1], and G. Afanador[1,2], [1]*Universidad Nacional de Colombia*, *Bogota, Colombia*, [2]*CORPOICA*, *Bogota, Colombia*.

M239 **Effect of crude glycerine on the performance of female broilers chickens at high altitude.**
C. Ariza-Nieto*[1], Y. Avellaneda[1], and G. Afanador[1,2], [1]*CORPOICA*, *Bogota, Colombia*, [2]*Universidad Nacional de Colombia*, *Bogota, Colombia*.

M240 **Vitamin E, herbs and spices in broilers diets: Evaluation of oxidative stability of pre-cooked meat balls.**
A. M. C. Racanicci*[1], J. F. M. Menten[2], and M. Nascente[1], [1]*University of Brasília (UnB)*, *Brasília, DF, Brazil*, [2]*University of São Paulo (ESALQ)*, *Piracicaba, SP, Brazil*.

M241 **Effect of technical-grade glycerin on the performance of brown laying hens at high altitude.**
Y. Avellaneda*[1], D. Cifuentes[1], G Afanador[1,2], and C. Ariza-Nieto[1], [1]*CORPOICA*, *Bogota, Colombia*, [2]*Universidad Nacional de Colombia*, *Bogota, Colombia*.

M242 **Effects of Korean herb supplementation (Paeniae radix, Angelicae gigantis radix, Cnidium rhizome and Polygoni multiflori radix) on growth performance, nutrient digestibility, blood characteristics, meat quality and fatty acid content of meat of growing pigs.**
Q. W. Meng*, J. S. Yoo, H. J. Kim, J. P. Wang, J. H. Jung, and I. H. Kim, *Department of Animal Resource and Science, Dankook University*, *Cheonan, Choongnam, Korea*.

M243 **Effects of dietary bamboo vinegar supplementation on growth performance, blood characteristics, meat quality, fatty acid content and fecal malodor emission in finishing pigs.**
Q. W. Meng*, J. H. Lee, H. D. Jang, T. X. Zhou, L. Yan, and I. H. Kim, *Department of Animal Resource and Science, Dankook University*, *Choenan, Choongnam, Korea*.

M244 **The effects of caper (*Capparis ovata* Desf.) on some hematological parameters and organs of Lohmann roosters.**
O. Yildiz-Gulay*[1], M. S. Gulay[1], A. Balic[2], and A. Ata[1], [1]*Mehmet Akif Ersoy University, Faculty of Veterinary Medicine*, *Burdur, Turkey*, [2]*Sakarya Toyota Hospital*, *Sakarya, Turkey*.

M245 **Safety evaluation of Event 5307 transgenic corn in broiler chickens.**
A. Sauvé[2] and J. T. Brake*[1], [1]*Department of Poultry Science, North Carolina State University, Raleigh,* [2]*Syngenta Biotechnology, RTP*, *Raleigh, NC*.

M246 **Effect of garlic extract (Garlicon) on piglet productive performance in the nursery period.**
J. Morales[1], R. López[2], P. Coscojuela[2], and C. Piñeiro*[1], [1]*PigCHAMP Pro Europa*, *Segovia, Spain*, [2]*Prebia Feed Extracts*, *Toledo, Spain*.

M247 **Effect of different levels of substitution of maniçoba hay on the performance of free-range birds in the semi-arid region.**
P. E. N. Givisiez*[1], M. A. S. F. Campos[2], C. C. Goulart[1], F. G. P. Costa[1], and J. H. V. Silva[1], [1]*Universidade Federal da Paraiba*, *Areia, PB, Brazil*, [2]*Universidade Federal do Rio Grande do Norte*, *Natal, RN, Brazil*.

M248 **Performance of broilers fed mash or pellet diets containing whole or ground pearl millet.**
T. R. Torres[1], M. C. M. M. Ludke*[1], J. V. Ludke[2], C. B. V. Rabello[1], M. A. M. Faria[1], E. M. S. R. Andrade[1], E. J. O. Souza[1], and M. R. Lima[1], [1]*Universidade Federal Rural de Pernambuco*, *Recife, Pernambuco, Brasil*, [2]*Embrapa Suínos e Aves*, *Concordia, Santa Catarina, Brasil*.

M249 **Using marine algae *chlorella vulgaris* as a prebiotic alternative on broiler chicks.**
M. Rezvani*, M. Zaghari, M. Shivazad, and H. Moravej, *University of Tehran*, *Karaj, Tehran, Iran*.

M250 **Effects of mung bean waste on pelleting characteristics, growth performance, nutrient digestibility and carcass quality in broilers.**
N. Amornthewaphat*, P. Rungcharoen, Y. Ruangpanit, S. Rattanatabtimthong, and S. Attamangkune, *Kasetsart University*, *Bangkok, Thailand*.

M251 **Effects of dietary grape seed polyphenols on plasma lipid and mineral contents, and intestinal microflora in broiler chicks.**
A. Viveros*[1], S. Chamorro[2], A. Brenes[2], C. Romero[3], I. Arija[1], and C. Centeno[2], [1]*facultad de Veterinaria, UCM, Madrid, Spain*, [2]*Instituto del Frio-Ictan, CSIC, Madrid, Spain*, [3]*Escuela Tecnica Superior de Ingenieros Agronomos, UPM, Madrid, Spain*.

M252 **Comparison of dietary supplementation of cumin essential oil and prebiotic on humoral immune response, blood metabolites and performance of broiler chickens.**
M. Aami-Azghadi., A. Golian*, H. Kermanshahi, and M. Sedghi, *Ferdowsi University of Mashhad*, *Mashhad, Khorasan Razavi, Iran*.

M253 **Effect of ginger root and ginger oil on antioxidant status and meat quality of broilers.**
G. F. Zhang[1], Z. B. Yang*[1], Y. Wang[2], W. R. Yang[1], and S. Z. Jiang[1], [1]*Shandong Agricultural University*, *Tai-an, Shandong, China*, [2]*Agriculture and Agri-Food Canada, Lethbridge Research Centre*, *Lethbridge, AB, Canada*.

M254 **Utilization of mexican sunflower (*Tithonia diversifolia*, Hemsley A gray) leaf meal on the average production cost and returns of broiler chicks.**
A. H. Ekeocha*[1], A. Akinfemi[1], O. A. Adu[1], and O. A. Adebiyi[1], [1]*Department of Animal Science University of Ibadan., Ibadan, Oyo State, Nigeria*, [2]*Faculty of Agriculture, Nasarawa State University, Shabu - Lafia Campus, Nasarawa State, Nigeria*, [3]*Department of Animal Production and Health, Federal University of Technology, Akure, Ondo State, Nigeria*, [4]*Department of Animal Science, University of Ibadan, Ibadan, Oyo State, Nigeria*.

M255 **Dietary supplementation of medicinal plants and organic acid on serum lipid profile in Ross broilers.**
H. Ziaie*[1], A. Zeinali[2], G. H. Hadarbadi[1], M. A. Karimi Torshizi[4], M. Bashtani[3], and H. Farhangfar[3], [1]*Agriculture and Natural Resources Research Center, Birjand, South Khorasan, Iran*, [2]*Ferdowsi University, Mashhad, Iran*, [3]*Birjand University, Birjand, Khorasan. , Iran*, [4]*Tarbiat Moddares University, Tehran, Iran*.

M256 **Changes of internal egg quality during cold storage when hens fed diets containing cottonseed meal treated with sodium bentonite.**
A. Gilani, H. Kermanshahi, A. Golian*, and A. Tahmasbi, *Ferdowsi University of Mashhad, Mashhad, Iran*. .

M257 **Sensory characteristics of table eggs from laying hens fed diets containing hemp oil or hemp seed.**
E. Goldberg*, D. Ryland, N. Gakhar, J. D. House, and M. Aliani, *University of Manitoba, Winnipeg, MB, Canada*.

M258 **Effect of guar meal as a source of protein on laying hens performance.**
P. Soleimani, A. Golian*, H. Kermanshahi, and M. Sedghi, *Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran*.

M259 **Effect of dietary supplementation of licorice extract on egg quality and performance of hens.**
M. Sedghi, A. Golian*, and P. Soleimani, *Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran*.

M260 **Effects of fermented garlic powder supplementation on production performance, egg quality and blood characteristics of laying hens.**
J. S. Yoo*, H. J. Kim, J. P. Wang, X. Ao, J. H. Jung, and I. H. Kim, *Department of Animal Resource and Science, Dankook University, Cheonan, Choongnam, Korea*.

M261 **Effects of marine algae (*Spirulina platensis*) on egg yolk color and laying hens performance.**
N. Zahroojian, H. Moravej*, and M. Shivazd, *University of Tehran, Karaj, Tehran, Iran*.

M262 **Use of salvage pet food in diets of weaned pigs.**
J. P. Holt and S. J. Gasca*, *Illinois State University, Normal*.

M263 **Effect of meat powder supplementation on growth performance, nutrient digestibility and blood characteristics of growing pigs.**
S. M. Hong*, J. H. Lee, J. P. Wang, Q. W. Meng, B. W. Yang, and I. H. Kim, *Department of Animal Resource and Science, Dankook University, Cheonan, Choongnam, Korea*.

M264 **Effects of fermented garlic powder on growth performance and blood profiles of weanling pigs.**
J. P. Wang*, J. H. Lee, H. J. Kim, L. Yan, S. M. Hong, and I. H. Kim, *Department of Animal Resource and Science, Dankook University, Cheonan, Choongnam, Korea*.

M265 **Evaluation of algae meal from *Nannochloropsis oculata* as a protein source for non-ruminant animals.**
B. A. Howe*[1], I. N. Roman-Muniz[1], B. D. Willson[2], and S. L. Archibeque[1], [1]*Department of Animal Sciences, Colorado State University, Fort Collins*, [2]*Department of Mechanical Engineering, Colorado State University, Fort Collins*.

M266 **The effect of supplementation with ginger on dietary oxidation stability.**
X. Zhao and Z. B. Yang*, *Shandong Agricultural University, Tai-an, Shandong, China*.

M267 **Effects of dietary wild–ginseng adventitious root meal on egg quality, egg production, and fatty acid content of yolk in egg produced by laying hens.**
H. J. Kim*, J. S. Yoo, J. P. Wang, Q. W. Meng, B. W. Yang, and I. H. Kim, *Department of Animal Resource and Science, Dankook University, Cheonan, Choongnam, Korea*.

M268 **Effect of a mixture of turmeric and capsicum oleoresins and of a garlic botanical on broiler chickens performance and intestinal histology.**
D. Bravo*[1], T. G. Petrolli[2], L. F. T. Albino[2], and H. S. Rostagno[2], [1]*Pancosma, Geneva, Switzerland*, [2]*Federal University of Viçosa, Department of Animal Science, Viçosa, Brazil*.

M269 **Effects of dietary medicinal plants (artemisia, acanthopanax, and garlic) on productive parameters in pigs.**
J. H. Jung*[1], H. D. Jang[1], T. X. Zhou[1], S. H. Oh[2], R. C. Noble[2], and I. H. Kim[1], [1]*Department of Animal Resource and Science, Dankook University, Cheonan, Choongnam, Korea*, [2]*Department of Animal Science, North Carolina A&T State University, Greensboro*.

M270 **Effects of cassava on production performance and relative organ weight in Korean native broilers.**
J. H. Lee*, H. D. Jang, J. P. Wang, T. X. Zhou, and I. H. Kim, *Department of Animal Resource and Science, Dankook University, Cheonan, Choongnam, Korea*.

M271 **Effects of cassava on production performance and egg quality in laying hens.**
J. H. Lee*, H. J. Kim, J. P. Wang, T. X. Zhou, and I. H. Kim, *Department of Animal Resource and Science, Dankook University, Cheonan, Choongnam, Korea*.

M272 **Inclusion of shrimp heads meal (*Litopenaeus* spp.) and red crab meal (*Pleuroncodes planipes*) in rations for laying hens, and its effect on the egg physical and sensorial quality, at different time and temperature of storage.**
E. M. Carranco. *[1], L. Sangines[1], E. Morales[2], E. Avila[3], B. Fuente[3], R. Ramirez[3], S. Carrillo[1], C. Calvo[1], and F. Perez-Gil[1], [1]*Instituto Nacional de Ciencias Medicas y Nutricion Salvador Zubiran, Mexico, D. F., Mexico*, [2]*Universidad Autonoma Metropolitana, Mexico, D. F., Mexico*, [3]*Universidad Nacional Autonoma de Mexico, Mexico, D. F., Mexico*.

M273 **The effect of medicinal plants and plant extracted oils on broiler duodenum morphology and immunological profile.**
L. Stef*[1], G. Dumitrescu[1], D. Drinceanu[1], D. Stef[1], D. Mot[1], C. Julean[1], R. Tetileanu[1], and N. Corcionivoschi[2], [1]*Banat's University of Agricultural Sciences and Veterinary Medicine, Department of Animal Science, Timisoara, Romania*, [2]*University College Dublin, Ireland*.

M274 **Effects of dietary polyphenol-rich grape products on gut morphology and intestinal microflora in broiler chicks.**
A. Viveros*[1], S. Chamorro[2], M. Pizarro[1], W. Siqueira[3], C. Centeno[2], I. Arija[1], and A. Brenes[2], [1]*Facultad de Veterinaria, UCM, Madrid, Spain*, [2]*Instituto del Frio-Ictan, CSIC, Madrid, Spain*, [3]*Faculdade de Veterinaria, Universidade Estadual do Ceara, Fortaleza, Brazil*.

M275 **Effects of hemp oil on the expression of FADS1, FADS2, and ELOVL5 in laying hens.**
M. Jing*, N. Gakhar, E. Goldberg, and J. D. House, *University of Manitoba, Winnipeg, Canada*.

M276 **Dietary supplementation effects of oregano essential oils on intestinal digest microbial community in broilers under high altitude conditions.**
L, Betancourt*[1,2], V, Phandanouvong[3], F, Rodriguez[3], C, Ariza-Nieto[3], M, Hume[4], D, Nisbet[4], and G, Afanador-Téllez[2], [1]*Universidad de La Salle, Bogotá, Colombia*, [2]*Universidad Nacional de Colombia, Bogotá, Colombia*, [3]*CORPOICA, Bogotá, Colombia*, [4]*USDA, ARS, FFSRU, College Station, TX*.

Physiology and Endocrinology
Nutritional Effects on Reproduction and Development

M277 **Effects of body weight loss on serum progesterone concentrations of non-lactating dairy cows.**
R. Rodrigues*[1], C. Trevisanuto[1], T. Leiva[1], M. Barbosa[1], R. Cooke[2], and J. L. Vasconcelos[1], [1]*FMVZ - UNESP, Botucatu, SP, Brazil*, [2]*Oregon State University, Burns.*

M278 **Effects of maternal metabolizable protein supplementation in late gestation on uterine and umbilical blood flows in sheep.**
L. E. Camacho*[1], L. A. Lekatz[1], M. L. VanEnom[2], C. S. Schauer[2], K. R. Maddock Carlin[1], and K. A. Vonnahme[1], [1]*Center for Nutrition and Pregnancy, Department of Animal Sciences, North Dakota State University, Fargo,*[2]*Hettinger Research Extension Center, North Dakota State University, Hettinger.*

M279 **Effects of maternal protein supply on offspring somatotropic axis: Serum IGF-binding proteins 2 and 3 in pigs at weaning and market weight.**
A. Ooster*[1], U. Müller[1], H. Sauerwein[1], I. Lang[2], M. Peters[2], C. Rehfeldt[2], and C. C. Metges[2], [1]*University of Bonn, Bonn, Germany*, [2]*Leibniz Institute for Farm Animal Biology, Dummerstorf, Germany*.

M280 **The impact of maternal obesity on offspring hypothalamic-pituitary-adrenal axis response to stress.**
N. M. Long*[1], A. B. Uthlaut[1], P. W. Nathanielsz[2], and S. P. Ford[1], [1]*Center for the Study of Fetal Programming, Animal Science Department, University of Wyoming, Laramie, ,*[2]*Center for Pregnancy and Newborn Research, Department of Obstetrics and Gynecology, University of Texas Health Sciences Center, San Antonio.*

M281 **Effects of two-stage and total vs. fenceline weaning on the physiology and performance of beef calves.**
C. Campistol*[1], H. G. Kattesh[1], J. C. Waller[1], E. L. Rawls[1], J. D. Arthington[2], T. E. Engle[3], and J. A. Carroll[4], [1]*University of Tennessee, Knoxville,* [2]*University of Florida - IFAS, Range Cattle Research and Education Center, Ona,* [3]*Colorado State University, Fort Collins,* [4]*Livestock Issues Research Unit, USDA-ARS, Lubbock, TX.*

M282 **Effects of dietary n-3 fatty acids on timing of estrus onset and LH surge in synchronized estrous cycles of dairy cows.**
M. Zachut*[1,2], H. Lehrer[1], A. Arieli[2], L. Livshitz[1], and U. Moallem[1], [1]*Agriculture Research Organization, Bet Dagan, Israel*, [2]*Faculty of Agriculture, Hebrew University, Rehovot, Israel*.

M283 **The effects of ancient Mediterranean aphrodisiac capari (*Capparis ovata* Desf.) on some reproductive parameters of Lohmann roosters.**
A. Ata, M. S. Gulay*, and O. Yildiz-Gulay, *Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Burdur, Turkey*.

Physiology and Endocrinology
Pregnancy

M284 **Blood urea nitrogen and nonesterified fatty acid concentrations in the umbilical blood of fetal pigs at day 90 and 110 of gestation.**
T. A. Wilmoth*, C. O. Lemley, and M. E. Wilson, *West Virginia University*, *Morgantown.*

M285 **Effect of dry period lengths on follicular dynamics in early lactation Holstein cows.**
A. Soleimani*[1,2], A. Heravi Moussavi[2], M. Danesh[2], G. Golian[2], and S. Safa[2], [1]*Islamic Azad University-Kashmar Branch*, *Kashmar, Khorasan Razavi, Iran*, [2]*Ferdowsi University of Mashhad*, *Mashhad, Khorasan Razavi, Iran*.

M286 **The application of Target bovine CL progesterone test kit for early pregnancy diagnosis in ewes.**
W. Chen*, T. Wuliji, H. Wang, N. Li, and A. Qi, *Animal Biotechnology, University of Nevada-Reno*.

Physiology and Endocrinology
Reproductive Endocrinology

M287 **Endocrine events during the periestrus period and the effect of various PMSG on estrus synchronization in shall ewes.**
T. Saberifar, H. Kohram*, and E. Dirandeh, *University of Tehran*, *Karaj, Tehran, Iran*.

M288 **Reproductive endocrine profile in ewes with different thickness of dorsal fat added with bypass fat.**
R. Nieto[1], T. Sánchez[1], O. Mejía[2], L. Olivares[3], J. Peralta[4], J. Cordero[1], P. Molina[1], M. Cárdenas[5], E. García*[6], and N. Cedillo[4], [1]*Colegio de Postgraduados*, *Montecillo, Edo. de México*, [2]*CEIEPO, FMVZ. UNAM*, *Tres Marías México*, [3]*Universidad Autónoma del Edo. de México*, *Edo. de México*, [4]*Universidad Autónoma del Edo. de Hidalgo*, *Tulancingo, México*, [5]*INNSZ*, *Mexico City, México*, [6]*CUCSur, Universidad de Guadalajara*, *Autlán, Jalisco, México*.

M289 **Effects of human chorionic gonadotropin on serum progesterone concentrations, embryonic survival and lambing rates in ewes.**
L. M. Lankford*[1], D. T. Yates[2], R. A. Halalsheh[1], P. L. Black[1], D. M. Hallford[1], and T. T. Ross[1], [1]*New Mexico State University*, *Las Cruces*, [2]*University of Arizona*, *Tucson*.

M290 **Administration of genistein does not alter anterior pituitary concentrations of LH and IGF-I in ovariectomized gilts.**
C. Paulson*, A. Taylor, and J. Clapper, *South Dakota State University*, *Brookings.*

M291 **Changes in plasma concentrations of growth hormone and luteinizing hormone in ewes following central and peripheral treatment with kisspeptin.**
B. K. Whitlock*[1], J. A. Daniel[2], B. P. Steele[3], and J. L. Sartin[3,4], [1]*Department of Large Animal Clinical Sciences, College of Veterinary Medicine, The University of Tennessee*, *Knoxville,* [2]*Department of Animal Science, Berry College*, *Mt. Berry, GA,* [3]*Department of Anatomy, Physiology and Pharmacology, College of Veterinary Medicine, Auburn University*, *Auburn, AL,* [4]*Agricultural Experiment Station, Auburn University*, *Auburn, AL*.

M292 **Temporal changes during the periparturient period on metabolic and endocrine parameters of spring-calving beef cows in grazing conditions.**
A. L. Astessiano*[1], R. Pérez-Clariget[1], G. Quintans[2], P. Soca[1], and M. Carriquiry[1], [1]*School of Agronomy, Udelar*, *Uruguay*, [2]*Instituto Nacional de Investigación Agroprcuaria*, *Treinta y Tres, Uruguay*.

M293 **Metabolic measurements in the sow and relationship to post-weaning reproductive performance.**
L. A. Rempel*, J. L. Vallet, and D. J. Nonneman, *USDA, ARS, USMARC*, *Clay Center, NE.*

M294 **Lipoic acid decreases progesterone clearance rates in ovariectomized ewes.**
R. S. Mottet*[1], C. O. Lemley[2], E. L. Berg[1], E. P. Berg[1], and K. A. Vonnahme[1], [1]*North Dakota State University*, *Fargo,* [2]*West Virginia University*, *Morgantown*.

M295 **Zearalenone increases reproductive tract development, but not skeletal muscle signaling in prepubertal gilts.**
W. T. Oliver*[1], J. R. Miles[1], D. E. Diaz[2], J. J. Dibner[2], G. E. Rottinghaus[3], and R. J. Harrell[2], [1]*USDA, ARS, U. S. Meat Animal Research Center, Clay Center, NE,*[2]*Novus International, Inc., St. Charles, MO,*[3]*Veterinary Medical Diagnostic Laboratory, University of Missouri, Columbia.*

M296 **Quantitative bioluminescence imaging of porcine antral follicles in vitro.**
S. Jung* and S. T. Willard, *Mississippi State University*, *Mississippi State*.

M297 **Feed restriction and pre-synchronization on progesterone concentration and LH peak in ewes on a synchronization program.**
P. Molina[1], T. Sánchez[1], M. E. Ortega[1], L. Olivares[2], O. Mejía[3], M. Cárdenas[4], E. García*[5], J. Cordero[1], J. Peralta[6], and R. Nieto[1], [1]*Programa de Ganadería, Colegio de Postgraduados, Texcoco, México*, [2]*UAEM*, *Edo. México*, [3]*CEIEPO, UNAM*, *Tres Marías, México*, [4]*INNSZ*, *Mexico City*, [5]*CUCSUR*, *Autlán, Jalisco, México*, [6]*ICAP, UAEH*, *Hidalgo, México*.

M298 **Progesterone and insulin concentration on ewes with different body condition fed bypass fat in a superovulatory program.**
P. Molina[1], T. Sánchez[1], M. E. Ortega[1], L. Olivares[2], O. Mejía[3], M. Cárdenas[4], E. García*[5], J. Cordero[1], J. Peralta[6], and R. Nieto[1], [1]*Programa de Ganadería, Colegio de Postgraduados, Texcoco, México*, [2]*UAEM, Edo. México*, [3]*CEIEPO, UNAM, Tres Marías, México*, [4]*INNSZ, México City*, [5]*CUCSUR UADG, Autlán Jal., México*, [6]*ICAP UAEH, Hidalgo, México*.

Physiology and Endocrinology
Reproductive Management

M299 **Effect of prepartum somatotropin on milk production, metabolism, and reproduction in primiparous Holstein dairy cows.**
A. Schneider*, E. Schwegler, P. Montagner, L. T. Hax, M. M. Antunes, E. Schmitt, F. A. B. Del Pino, I. Bianchi, and M. N. Corrêa, *Federal University of Pelotas, Pelotas, RS, Brazil*.

M300 **Effect of dietary energy on ovarian development and fertility in postpuberal beef heifers.**
S. E. Echternkamp*, R. A. Cushman, and C. L. Ferrell, *USDA, ARS, US Meat Animal Research Center, Clay Center, NE.*

M301 **The pH decreases in the vaginal portion of the cervix in mares near ovulation.**
J. J. Parrish*, *University of Wisconsin, Madison*.

M302 **Main endocrine-metabolic differences between 1st and 2nd lactation of the dairy cows around calving.**
G. Bertoni*, R. Lombardelli, F. Piccioli-Cappelli, and E. Trevisi, *Istituto di Zootecnica, Universitá Cattolica S. Cuore, Piacenza, Italy*.

M303 **Effect of thermal preconditioning during the prebreeder period on breeder turkey hens' reproductive performance.**
S. W. Kang*, S. Kosonsiriluk, S. J. Welch, and M. E. El Halawani, *University of Minnesota, St. Paul.*

Production, Management and the Environment
Microbiology

M304 **In vitro investigation of anti-*Escherichia coli* O157:H7 effects of free fatty acids under acidic conditions.**
J. Yang*[1,2], X. Hou[1], P. S. Mir[2], and T. A. McAllister[2], [1]*Inner Mongolia Agricultural University, Hohhot,China*, [2]*Agriculture and Agri-Food Canada Research Centre, Lethbridge, AB, Canada*.

M305 **A more specific and sensitive detection method for avian influenza H5N1 using antibodies against N1 subtype and red blood cell amplification in an impedance biosensor.**
J. Lum*[1], R. Wang[1], D. Abi-Ghanem[2], B. Hargis[1], L. Berghman[2], S. Tung[1], and Y. Li[1], [1]*University of Arkansas, Fayetteville,* [2]*Texas A&M University, College Station.*

M306 **Survival of *Escherichia coli* O157:H7 incubated with corn- or wheat-based dried distillers grains with solubles in ruminal or fecal inoculum.**
H. E. Yang[1,2], W. Z. Yang[1], J. J. McKinnon[2], T. W. Alexander[1], Y. L. Li[1], and T. A. McAllister*[1], [1]*Agriculture and Agri-Food Canada Research Centre, Lethbridge, AB, Canada*, [2]*University of Saskatchewan, Saskatoon, SK, Canada*.

M307 **The effect of fungus myceliated grain supplementation in different feeding phases on coccidiosis and production performance of broilers.**
W. L. Willis, O. S. Iskhuemhen, S. L. Hurley, D. Wall*, R. C. Minor, and E. I. Ohimain, *North Carolina Agricultural and Technical State University, Greensboro.*

Production, Management and the Environment
Poultry

M308 **Tibial dyschondroplasia in four crosses of male commercial broilers and its relationship to gait score.**
P. Y. Hester*[1], P. N. Talaty[1], and M. N. Katanbaf[2], [1]*Purdue University, W. Lafayette, IN,* [2]*Cobb-Vantress, Inc., Monticello, KY.*

M309 **Impact of egg storage on blastodermal cell viability and embryonic metabolism in broiler breeders.**
J. A. Hamidu*[1], Z. Uddin[1], G. M. Fasenko[2], and D. R. Barreda[1], [1]*University of Alberta, Edmonton, Alberta, Canada*, [2]*University of New Mexico, Albuquerque.*

M310 **Influence of hen's age and phenotypic correlation between external and internal traits of eggs.**
O. T. F. Abanikannda* and A. O. Leigh, *Lagos State University*, *Ojo - Lagos, Nigeria*.

M311 **Effects of heat stress on egg production and quality in two strains of layers.**
L. A. Mack*[1], J. N. Felver-Gant[1], R. L. Dennis[2], and H. W. Cheng[2], [1]*Purdue University*, *West Lafayette, IN*, [2]*LBRU, USDA-ARS*, *West Lafayette, IN*.

M312 **Effect of litter type and wetness on foot pad dermatitis in broiler chickens.**
O. Cengiz*[1], J. B. Hess[2], and S. F. Bilgili[2], [1]*Adnan Menderes University*, *Aydin, Turkey*, [2]*Auburn University*, *Auburn, AL*.

M313 **Eggshell quality of Japanese quail (*Coturnix japonica*) after long-term selection for egg production.**
M. M. Fathi*[1], A. E. El-Dlebshany[2], and M. Bahie El-Deen[2], [1]*Al-Qassim University*, *Buridah, Al-Qassim, Saudi Arabia*, [2]*Alexandria University*, *El-Shatby, Alexandria, Egypt*.

M314 **Effects of ambient temperature on body weight, cloacal temperature and blood traits in Pekin ducks.**
J. F. Huang*[1], C. H. Su[1], C. C. Lin[2], J. H. Lin[1], and S. R. Lee[1], [1]*Ilan Branch, Livestock Research Institute*, *Ilan, Taiwan*, [2]*National Ilan University*, *Ilan, Taiwan*.

M315 **The study on correlation between the liver enzyme activity and dioxin contents in the eggs of laying Brown Tsaiya ducks.**
C. C. Lin*[1], T. H. Ueng[2], Y. H. Lin[1], J. F. Huang[3], and S. R. Lee[3], [1]*National Ilan University*, *Ilan, Taiwan*, [2]*National Taiwan University*, *Taipei, Taiwan*, [3]*Ilan Branch, Livestock Research Institute*, *Ilan, Taiwan*.

M316 **Safety of industrial hemp as feed ingredient in the diets of laying hens and its impact on their performance.**
N. Gakhar*, E. Goldberg, and J. D. House, *University of Manitoba*, *Winnipeg, MB, Canada*.

M317 **Duckweed as a feed ingredient in laying hen diet and its effect on egg production and composition.**
K. E. Anderson*, Z. Lowman, A. Stomp, and J. Chang, *North Carolina State University*, *Raleigh.*

M318 **Blood lipid concentration and performance parameters of broilers fed tomato pomace and turmeric powder under heat stress conditions.**
S. J. Hosseini-Vashan[2,1], A. Golian*[1], A. Yaghobfar[2], H. Lotfolahian[2], and P. Esmaeilinasab[3], [1]*Ferdowsi University of Mashhad*, *Mashhad, Khorasan Razavi, Iran*, [2]*Animal Science Research Institute*, *Karaj, Tehran, Iran*, [3]*Birjand University*, *Birjand, Khorasan Jonobi, Iran*.

M319 **Reduction of *Clostridium perfringens* colonization in turkey poults by feeding Primalac.**
S. Rahimi[1], J. L. Grimes*[2], S. Kathariou[2], and R. Siletzky[2], [1]*Tarbiat Modares University*, *Tehran, Iran*, [2]*North Carolina State University*, *Raleigh*.

M320 **Influence of *Bacillus subtilis* PB6 (CloSTAT) on the performance of Hyline W-98 layers from 68-102 weeks of age.**
M. Elliot[1], R. Myers[2], A. Lamptey[2], and A. G. Yersin*[2], [1]*A&E Nutrition Services, LLC*, *Lititz, PA,* [2]*Kemin AgriFoods*, *Des Moines, Iowa*.

M321 **Do dietary protein:energy ratios modify growth and frame size of young broiler breeder females?**
E. Mba*, R. A. Renema, A. Pishnamazi, and M. J. Zuidhof, *University of Alberta*, *Edmonton, AB, Canada*.

M322 **Population densities impacts on feed intake and growth performance in Japanese quail.**
D. Cardoso-Jiménez[1], A. Z. M. Salem*[1,2], R. Rojo[1], S. R. Rebollar[1], and A. Perez-Cháves[1], [1]*Universidad Autónoma del Estadode México*, *Centro Universitario UAEM-Temascaltepec, Estado de México, México*, [2]*University of Alexandria*, *Department of Animal Production, Faculty of Agriculture (El-Shatby), Egypt*.

M323 **Effects of dietary energy and broiler breeder hen energetic efficiency on egg production and fertility.**
T. G. V. Moraes*, M. J. Zuidhof, A. Pishnamazi, and R. A. Renema, *University of Alberta*, *Edmonton, Alberta, Canada*.

M324 **Growth performance of Pearl Grey guinea fowl subjected to varying floor densities from hatch to fourteen weeks of age.**
S. Nahashon*, J. Tyus, and D. Wright, *Tennessee State University*, *Nashville.*

Production, Management and the Environment
Small Ruminant

M325 **Feedlot performance and carcass traits of hairsheep lambs treated with a β-adrenergic agonist during summer.**
J. V. Velázquez-Morales, F. D. Álvarez-Valenzuela, N. G. Torrentera-Olivera, J. Rodríguez-García, U. Macías-Cruz, A. Correa-Calderón, and L. Avendaño-Reyes*, *Instituto de Ciencias Agricolas, Universidad Autonoma de Baja California, Ejido Nuevo Leon, Valle de Mexicali, Baja California, Mexico.*

M326 **Genetic factors affecting survival rate and litter size of Pelibuey ewes under two times of weaning in northwestern Mexico.**
U. Macías-Cruz[1], F. D. Alvarez-Valenzuela[1], A. Correa-Calderón[1], L. Molina-Ramírez[2], and L. Avendaño-Reyes*[1], [1]*Instituto de Ciencias Agrícolas, Universidad Autónoma de Baja California, Ejido Nuevo León, Valle de Mexicali, Baja Cañifornia, México*, [2]*Centro de Bachillerato Tecnológico Agropecuario No. 41, Poblado Benito Juárez, Valle de Mexicali, Baja California, México.*

M327 **Artificial insemination in reindeer using frozen-thawed semen.**
M. P. Shipka*[1], J. E. Rowell[1], and S. Bychawski[2], [1]*University of Alaska Fairbanks, Fairbanks,* [2]*Optimum Genetics, Regina, Saskatchewan, Canada.*

M328 **Constant long artificial days increase milk production in Alpine goats in northern Mexico.**
R. Rodríguez-Martínez*[1], C. A. Meza-Herrera[2], M. A. De Santiago-Miramontes[1], M. Mellado[3], and F. G. Véliz[1], [1]*Universidad Autónoma Agraria Antonio Narro, Torreón, Coahuila, Mexico*, [2]*Universidad Autónoma Chapingo, Unidad Regional Universitaria de Zonas Áridas, Bermejillo, Durango, México*, [3]*Universidad Autónoma Agraria Antonio Narro, Buenavista, Saltillo, Coahuila.*

M329 **Blood selenium levels in mule deer in eastern Washington.**
E. López-Pérez*[1], L. A. Shipley[2], and W. Myers[3], [1]*Universidad Autónoma Chapingo, México*, [2]*Washington State University*, [3]*Washington Department of Fish and Wildlife.*

M330 **Breeding performance of rams in two Wyoming producer flocks.**
B. M. Alexander*[1], N. Cockett[2], T. L. Hadfield[2], and G. E. Moss[1], [1]*University of Wyoming, Laramie,* [2]*Utah State University, Logan.*

M331 **Breaking resistance of lamb ears according to ear tag insertion position and sheep breed.**
G. Caja*[1], H. Xuriguera[2], M. A. Rojas-Olivares[1], S. González-Martín[2], A. A. K. Salama[1], S. Carné[1], and J. J. Ghirardi[1], [1]*Universitat Autònoma de Barcelona, Bellaterra, Barcelona, Spain*, [2]*Universitat de Barcelona, Barcelona, Spain.*

Production, Management and the Environment
Swine

M332 **Animal weight gain in a pastured hog production system.**
S. Pietrosemoli*[1,2], J. C. Guevara[2], J. Cardona[3], W. Maradiaga[3], A. Lobo[3], and J. T. Green[4,2], [1]*Animal Science Dept., North Carolina State University, Raleigh,* [2]*Alternative Swine Research and Extension Project, Raleigh, NC,*[3]*Universidad Nacional de Agricultura, Catacamas, Olancho, Honduras,* [4]*Crop Science Dept., North Carolina State University, Raleigh.*

M333 **Analysis of the effect of complexed trace minerals on the prevalence of lameness and severity of claw lesions in stall-housed sows.**
S. S. Anil*[1], L. Anil[2], J. Deen[1], Sam K. Baidoo[2], M. E. Wilson[3], and C. Rapp[4], [1]*Veterinary Population Medicine, University of Minnesota, St Paul,* [2]*Southern Research and Outreach Center, University of Minnesota, Waseca,* [3]*Zinpro Corporation, Eden Prairie, MN,* [4]*Zinpro Performance Minerals, Boxmeer, the Netherlands.*

M334 **Comparison of the production performance of group-housed sows receiving complexed trace minerals.**
S. S. Anil*[1], L. Anil[2], J. Deen[1], S. K. Baidoo[2], M. E. Wilson[3], and T. L. Ward[3], [1]*Veterinary Population Medicine, University of Minnesota, St Paul,* [2]*Southern Research and Outreach Center, University of Minnesota, Waseca, Zinpro Corporation, Eden Prairie, MN.*

M335 **Risk factors associated with frequency of abortion in swine farms.**
N. M. Rainho[1], M. Aparicio[1], M. A. de Andrés[1], J. Morales[1], R. Pallás[2], V. Rodríguez-Estévez[3], and C. Piñeiro*[1], [1]*PigCHAMP Pro Europa, Segovia, Spain*, [2]*Kubus, SA, Madrid, Spain*, [3]*Universidad de Córdoba, Spain.*

M336 **Analysis of the effect of high ambient temperature on growing pigs performance: A meta-analysis approach.**
D. Renaudeau* and J. L. Gourdine, *Institut National de la Recherche Agronomique, UR143, Petit-Bourg, French West Indies.*

M337 **Weight gain of Duroc pigs managed in a Sudangrass (*Sorghum bicolor*) pasture.**
S. Pietrosemoli*[1,2], J. C. Guevara[2], A. Lobo[3], J. Cardona[3], W. Maradiaga[3], and J. T. Green[4,2], [1]*Animal Science Department. , North Carolina State University, Raleigh,* [2]*Alternative Swine Research and Extension Project, Raleigh, NC,* [3]*Universidad Nacional de Agricultura, Catacamas, Olancho, Honduras,* [4]*Crop Science Department, North Carolina State University, Raleigh, NC.*

M338 **Heat challenge effect on peripheral blood mononuclear cells viability: Comparison of a tropical and a temperate pig breed.**
J. C. Bambou, R. Grondin, J. L. Gourdine, and D. Renaudeau*, *Institut National de la Recherche Agronomique, UR143, Petit Bourg, French West Indies, France.*

Ruminant Nutrition
Beef: Additives and Supplements

M339 **Manipulation of rumen fermentation and ecology of swamp buffalo by coconut oil and garlic powder supplementation.**
P. Kongmun*[1,2], M. Wanapat[1], and Z. Yu[2], [1]*Khon Kaen University*, *Khon Kaen, Thailand,* [2]*The Ohio State University*.

M340 **Adding whole hops to high concentrate diets enhances in vitro ruminal fermentation.**
N. Narvaez*, Y. Wang, Z. Xu, and T. McAllister, *Agriculture and Agri-Food Canada*, *Lethbridge, AB, Canada*.

M341 **Effects of hops on in vitro ruminal fermentation of high forage diets.**
N. Narvaez*, Y. Wang, Z. Xu, and T. McAllister, *Agriculture and Agri-Food Canada*, *Lethbridge, AB, Canada*.

M342 **Microencapsulation strategies to protect plant extracts against heat process of manufacture diets.**
P. W. Cardozo*[1], D. Ribera[1], A. Viso[1], H. Mengel[2], and M. Coenen[3], [1]*Research and Development Department, Carotech Technologies S. A*, *Tarragona, Spain*, [2]*KoVet, Coordination Staff for Veterinary Clinical Studies, Faculty of Veterinary Medicine, University of Leipzig*, *Leipzig, Germany*, [3]*Institute Animal Nutrition, Nutrition Diseases and Dietetics, Faculty of Veterinary Medicine, University of Leipzig*, *Leipzig, Germany*.

M343 **Encapsulated combination of cinnamaldehyde and garlic oil as rumen modifiers in early-lactating dairy cows.**
X. Guozhong[1], X. Junxin[1], P. W. Cardozo*[2], and D. Yingying[2], [1]*Institute of Shanghai Dairy Science*, *Shanghai, China*, [2]*Research and Development Department*, *Tarragona, Spain*.

M344 **Effect of chestnut tannins on rumen activity of dairy sheep grazing on pasture.**
A. Nudda*[1], G. Battacone[1], R. Boe[1], R. Rubattu[1], A. H. D. Francesconi[1], M. Decandia[2], and G. Pulina[1], [1]*Dipartimento di Scienze Zootecniche, University of Sassari*, *Sassari, Italy*, [2]*Agricultural Research Agency of Sardinia - AGRIS Sardegna*, *Sassari, Italy*.

M345 **Effect of the inclusion of treated apple waste on in vitro ruminal fermentation of alfalfa hay.**
Y. Castillo-Castillo[1], O. Ruiz-Barrera*[2], C. Arzola-Alvarez[2], C. Rodriguez-Muela[2], A. Elias-Iglesias[3], C. Angulo-Montoya[2], O. La O-Leon[3], and J. A. Ortega[2], [1]*Universidad Autónoma de Ciudad Juárez.*, *Nuevo Casas Grandes, Chih, México*, [2]*Universidad Autónoma de Chihuahua.*, *Chihuahua, Chih, México*, [3]*Instituto de Ciencia Animal, La Habana, Cuba.*

M346 **Effects of hops on rumen fermentation, growth, carcass traits, and shedding of *Escherichia coli* by feedlot cattle.**
Y. Wang*[1], A. V. Chaves[1,2], F. L. Rigby[3], M. L. He[1], and T. A. McAllister[1], [1]*Agriculture and Agri-Food Canada Research Centre*, *Lethbridge, AB, Canada*, [2]*The University of Sydney*, *Sydney, NSW, Australia*, [3]*Yakima*, *WA*.

M347 **Effect of phlorotannins from brown seaweed on ruminal bacteria.**
Y. Wang*, L. J. Yanke, Z. Xu, and T. A. McAllister, *Agriculture and Agri-Food Canada Research Centre*, *Lethbridge, AB, Canada*.

M348 **Additives (sodium monensin, salinomycin, and virginiamycin) for Nellore bulls feedlot fed high concentrate finishing rations.**
C. Sitta*, F. A. P. Santos, G. B. Mourão, A. M. Pedroso, R. Carareto, J. R. R. Dórea, T. G. Neri, and D. A. Rodrigues, *University of Sao Paulo*, *Piracicaba, SP, Brazil*.

M349 **In vitro effect of peppermint (*Mentha piperita*) essential oil and nonfiber carbohydrates on gas production parameters of alfalfa hay.**
M. Danesh Mesgaran*[1], E. Jani[2], A. Vakili[1], A. Solaimany[2], and H. Jahani-Azizabadi[1], [1]*Dept. Animal Science, Ferdowsi University of Mashhad, Mashhad, Iran*, [2]*Islamic Azad University*, *Kashmar, Iran*.

M350 **Effect of fennel (*Foeniculume vulgare*) essential oil on in vitro gas production parameters of alfalfa hay supplemented with sucrose or starch.**
M. Danesh Mesgaran*[1], E. Jani[2], A. Vakili[1], H. Jahani-Azizabadi[1], and A. Solaimany[2], [1]*Dept. Animal Science, Ferdowsi University of Mashhad, P O Box 91775-1163*, *Mashhad, Iran*, [2]*Islamic Azad University*, *Kashmar, Iran*.

M351 **Effect of individual and mixed natural tree extracts on in vitro ruminal fermentation profiles in sheep.**
F. S. Jiménez-Peralta[1], A. Z. M. Salem*[1,4], H. Ammar[2], M. Ronquio[3], and P. B. Albarrán[1], [1]*Autónoma del Estado de México*, *Centro Universitario UAEM-Temascaltepec, Estado de México, C. P. 51300, México*, [2]*Ecole Supérieure d'Agriculture de Mograne*, *Zaghouan, 1121 Mograne, Tunisia*, [3]*Universidad Autónoma del Estado de México*, *Facultad de veterinaria, Toluca, Mexico*, [4]*Alexandria University*, *Department of Animal Production, Faculty of Agriculture (El-Shatby), Egypt*.

M352 **Medium-term oral administration of extracts impacts on in vitro rumen fermentative activity of some tree leaves in sheep.**
A. Z. M. Salem*[1,4], F. S. Jiménez-Peralta[1], H. Ammar[2], R. R. Rojo[1], L. M. Camacho[3], and D. Cardoso-Jiménez[1], [1]*Universidad Autónoma del Estado de México, Estado de México*, *Centro Universitario UAEM-Temascaltepec, Estado de México, C. P. 51300, México*, [2]*Ecole Supérieure d'Agriculture de Mograne*, *Zaghouan, 1121 Mograne, Tunisia*, [3]*Universidad Autónoma de Guerrero*, *Facultad de veterinaria, México*, [4]*University of Alexandria*, *Department of Animal Production, Faculty of Agriculture (El-Shatby), Egypt*.

M353 **Effect of cumin essential oil on in vitro gas production parameters of alfalfa hay, barley grain, and sugar beet pulp.**
M. Sadjadian, M. Danesh*, A. R. Vakili, H. Jahani, and J. Amini, *Ferdowsi University of Mashhad*, *Mashhad, Iran*.

M354 **Influence of two browse extracts-rich secondary compounds and their mixture on lamb feed intake and growth performance.**
A. Z. M. Salem*[1,4], H. P. Mejia[1], H. Ammar[2], M. Ronquio[3], J. L. Tinoco[1], R. Rojo[1], and A. M. Garcia[1], [1]*Universidad Autónoma del Estado de México*, *Centro Universitario UAEM-Temascaltepec, Estado de México, C. P. 51300, México*, [2]*Ecole Supérieure d'Agriculture de Mograne*, *Zaghouan, 1121 Mograne, Tunisia*, [3]*Universidad Autónoma del Estado de México*, *Departmento de Nutricion Animal, Facultad de Veterinaria, Toluca, Mexico*, [4]*University of Alexandria*, *Department of Animal Production, Faculty of Agriculture (El-Shatby), Egypt*.

M355 **Effect of polyclonal antibody preparation on ruminal microbial diversity population in cattle fed three different energetic sources.**
W. Otero[1], C. Marino*[2], M. Stradiotto[4], C. Barreto[3], V. Pellizari[3], M. Arrigoni[2], and P. Rodrigues[1], [1]*University of Sao Paulo, FMVZ*, *Pirassununga, Brazil*, [2]*University of Sao Paulo State, FMVZ*, *Botucatu, Brazil*, [3]*University of Sao Paulo, ICB II*, *Sao Paulo, Brazil*, [4]*University of Sao Paulo, FZEA*, *Pirassununga, Brazil*.

M356 **Effect of polyclonal antibody preparation on ruminal protozoa population in cattle fed three different energetic sources.**
W. Otero[1], C. Marino*[2], M. Stradiotto[4], C. Barreto[3], V. Pellizari[3], M. Arrigoni[2], and P. Rodrigues[1], [1]*University of Sao Paulo, FMVZ*, *Pirassununga, Brazil*, [2]*University of Sao Paulo State, FMVZ*, *Botucatu, Brazil*, [3]*University of Sao Paulo, ICB*, *Sao Paulo, Brazil*, [4]*University of Sao Paulo, FZEA*, *Pirassununga, Brazil*.

M357 **Effects of ethanol extracts of two specific mixtures of herbs and spices on in vitro rumen microbial fermentation.**
N. Narvaez*[1], Y. Wang[1], T. A. McAllister[1], and C. Benchaar[2], [1]*Agriculture and Agri-Food Canada*, *Lethbridge Research Centre, Alberta*, [2]*Agriculture and Agri-Food Canada*, *Dairy and Swine R&D Centre, Sherbrooke, Quebec*.

M358 **Assessment of the effects of two herbs and spices mixtures and their ethanol extracts on in vitro rumen microbial fermentation.**
N. Narvaez*[1], Y. Wang[1], T. A. McAllister[1], and C. Benchaar[2], [1]*Agriculture and Agri-Food Canada*, *Lethbridge Research Centre, AB, Canada,* [2]*Agriculture and Agri-Food Canada*, *Dairy and Swine R&D Centre, Sherbrooke, QC, Canada.*

M359 **Use of pine sawdust (*Pinnus patula*) as a fiber source in lamb finishing rations.**
E. C. Guerra-Medina[1], O. D. Montañez-Valdez*[2], M. A. Cobos-Peralta[3], and M. Pérez-Sato[4], [1]*Centro Universitario de la Costa Sur de la Universidad de Guadalajara*, *Autlán, Jalisco, México*, [2]*Centro Universitario del Sur de la Universidad de Guadalajara*, *Ciudad Guzmán, Jalisco, México*, [3]*Colegio de Postgraduados*, *Montecillo, Texcoco, México*, [4]*Benemérita Universidad Autónoma de Puebla*, *Puebla, Puebla, México*.

M360 **Effect of an inoculum and additive on in situ nutrients digestibility of sugar cane silage.**
J. A. Reyes-Gutiérrez[1,2], O. D. Montañez-Valdez*[1], R. Rodríguez-Macías[2], M. A. Ruiz-López[2], E. Salcedo-Pérez[2], and M. R. Rodriguez-Ramirez[3], [1]*Centro Universitario del Sur de la Universidad de Guadalajara*, *Ciudad Guzmán, Jalisco, México*, [2]*Centro Universitario de Ciencias Biológicas y Agropecuarias de la Universidad de Guadalajara*, *Las Agujas, Jalisco, México*, [3]*Instituto Nacional de Investigaciones Agricolas y Pecuarias*, *Tecomán, Colima, México*.

M361 **The effects of cinnamaldehyde and garlic extract on feed intake and nutrient digestibility by lambs.**
T. M. Norvell*, B. M. Nichols, T. J. McDonald, M. M. Harbac, and J. A. Paterson, *Department of Animal and Range Sciences, Montana State University*, *Bozeman.*

M362 **Interaction of rumen pH, cinnamaldehyde, and eugenol mixture and capsicum oleoresin on in vitro fermentation pattern and methane production.**
D. Bravo[1], S. Calsamiglia*[2], N. D. Pyatt[3], and P. H. Doane[3], [1]*Pancosma*, *Geneva, Switzerland*, [2]*Universitat Autonoma de Barcelona*, *Spain*, [3]*ADM Research*, *Decatur, IL*.

M363 **Influence of condensed tannin supplementation on intake, ruminal and total digestibility, rate of digestion, and urinary excretion of urea and total nitrogen of beef steers fed high concentrate diet.**
R. Mezzomo*[1], P. V. R. Paulino[1], S. C. Valadares Filho[1], J. P. I. S. Monnerat[1], G. S. Viana[1], M. G. Machado[1], J. C. M. Lima[1], T. S. Martins[1], P. Lencioni[2], and D. Grandini[3], [1]*Universidade Federal de Viçosa*, *Viçosa, MG, Brazil*, [2]*Silva Team*, *Buenos Aires, Argentina*, [3]*Nutron*, *Itapira, SP, Brazil*.

M364 **Effect of Copaiba (*Copaifera* sp.) oils on in vitro rumen fermentation of coastcross hay.**
R. C. Araujo*[1], A. V. Pires[1], A. L. Abdalla[2], M. R. S. R. Peçanha[2], and A. S. Morsy[2], [1]*ESALQ, Universidade de São Paulo*, *Piracicaba, SP, Brazil*, [2]*CENA, Universidade de São Paulo*, *Piracicaba, SP, Brazil*.

M365 **Effects of garlic oil on methane production, microbial growth and diet fermentation in Rusitec fermenters.**
M. D. Carro*[1,2], M. L. Tejido[1,2], C. Saro[1,2], and M. J. Ranilla[1,2], [1]*Dept. Producción Animal, Universidad de León*, *León, Spain*, [2]*Instituto de Ganadería de Montaña (CSIC-ULE)*, *Finca Marzanas, León, Spain*.

M366 **Effect of Copaiba (*Copaifera* sp.) oils on in vitro rumen fermentation of a high-concentrate diet.**
R. C. Araujo*[1], A. V. Pires[1], A. L. Abdalla[2], L. A. Castilho[2], and R. C. Lucas[2], [1]*ESALQ, Universidade de São Paulo*, *Piracicaba, SP, Brazil*, [2]*CENA, Universidade de São Paulo*, *Piracicaba, SP, Brazil*.

M367 **Effects of supplemental poultry fat on calves grazing bermudagrass pasture.**
J. G. Powell*, T. J. Wistuba, and E. B. Kegley, *University of Arkansas*, *Fayetteville*.

M368 **Studying the effect of different direct fed microbials on rumen fermentation in vitro.**
D. Barrau, M. Quintino Cintora, and N. D. Walker*, *Lallemand Animal Nutrition*, *Montreal, QC, Canada*.

M369 **Effect of a commercial microbial inoculant (Promote) on corn silage and animal performance.**
C. J. Fruge*, F. M. LeMieux, W. A. Storer, and T. H. Shields, *McNeese State University*, *Lake Charles, LA*.

M370 **Effects of Fibrozyme on in vitro ruminal digestion and fermentation of a corn and wet distillers-based finishing beef diet with and without monensin.**
J. M. Tricarico, M. A. Witt, and J. S. Jennings*, *Alltech Inc., Brookings, SD*.

M371 **Influence of condensed tannin supplementation on protein efficiency, microbial protein yield, nitrogen balance and ruminal fermentation characteristics in beef steers fed high concentrate diet.**
R. Mezzomo*[1], P. V. R. Paulino[1], M. S. Duarte[1], L. S. Moura[1], L. H. P. Silva[1], E. San Vito[1], L. D. A. Rufino[1], C. Cabral[2], D. Grandini[3], and S. C. Valadares Filho[1], [1]*Universidade Federal de Viçosa*, *Viçosa, MG, Brazil*, [2]*Silva Team*, *Buenos Aires, Argentina*, [3]*Nutron*, *Itapira, SP, Brazil*.

M372 **Effects of supplementing an exogenous proteolytic enzyme on growth performance in growing beef steers.**
J. M. Vera[1], C. T. Noviandi*[1], Arief[2], J. -S. Eun[1], and D. R. ZoBell[1], [1]*Department of Animal, Dairy, and Veterinary Sciences, Utah State University*, *Logan, ,*[2]*Faculty of Animal Science, Andalas University*, *Padang, West Sumatra, Indonesia*.

M373 **Effects of zinc and chlortetracycline supplements on growth performance, blood metabolites, carcass characteristics, and claw health in young Holstein bulls.**
H. Fagari-Nobijari[1], H. Amanlou[1], M. Dehghan-Banadaky*[2], and M. H. Shahir[1], [1]*University of Zanjan*, *Zanjan, Iran*, [2]*University of Tehran*, *Karaj, Tehran, Iran*.

M374 **The use of copper and chlortetracycline supplements for improving of growth performance, carcass characteristics, and claw health in young Holstein bulls.**
H. Fagari-Nobijari[1], H. Amanlou[1], M. Dehghan-Banadaky*[2], and A. Shabani[3], [1]*University of Zanjan*, *Zanjan, Iran*, [2]*University of Tehran*, *Karaj, Tehran, Iran*, [3]*Tabriz Islamic Azad University*, *Tabriz, Iran*.

M375 **Chlortetracycline supplementation affected carcass characteristics and claw health in young Holstein bulls.**
H. Fagari-Nobijari[1], M. Dehghan-Banadaky*[2], S. H. Hosseini-Sabeghi[3], H. Amanlou[1], and A. Shabani[4], [1]*University of Zanjan*, *Zanjan, Iran*, [2]*University of Tehran*, *Karaj, Tehran, Iran*, [3]*Ghaemshahr Islamic Azad University*, *Ghaemshahr, Iran*, [4]*Tabriz Islamic Azad University*, *Tabriz, Iran*.

Ruminant Nutrition
Dairy: Forages, Fiber, Grazing

M376 **Effect of chestnut tannins supplement on milk production traits of dairy sheep on pasture.**
A. Nudda*[1], G. Battacone[1], A. Fenu[1], M. Decandia[2], M. Sitzia[2], M. Acciaro[2], and G. Pulina[1], [1]*Dipartimento di Scienze Zootecniche, University of Sassari*, *Sassari, Italy*, [2]*Agricultural Research Agency of Sardinia - AGRIS Sardegna*, *Sassari, Italy*.

M377 **The estimation of rumen fungi growth on maize stubble treated with steam and sodium hydroxide by using of quantitative competitive polymerase chain reaction.**
M. Chaji* and T. Mohammadabadi, *Department of Animal Science, Ramin (Khuzestan) Agricultural and Natural Resources University*, *Ahwaz (Molassani), Khuzestan, Iran*.

M378 **The in vitro fermentation of sesame straw processed with alkali by rumen isolated bacteria.**
T. Mohammadabadi* and M. Chaji, *Department of Animal Science, Ramin (Khuzestan) Agriculture and Natural Resources University*, *Ahwaz (Molassani), Khuzestan, Iran*.

M379 **Synergism between cellulolytic and non-cellulolytic rumen bacteria on different fibrous substrates: Study in semi-defined cultures.**
J. Chiquette* and K. Lauzon, *Agriculture Canada*, *Sherbrooke, Quebec, Canada*.

M380 **Effects of chemical treatments on in situ ruminal degradation of canola straw in Holstein cows.**
M. Ghiasvand, M. Dehghan-Banadaky*, and K. Rezayazdi, *Department of Animal Sci., Campus of Agriculture, University of Tehran*, *Karaj, Tehran, Iran*.

M381 **Effect of rice bran extracts on fermentation, protein, dry matter, and organic matter digestibility in rumen in vitro.**
D. Srichana*[1] and S. Kondo[2], [1]*Department of Agricultural Technology, Faculty of Science & Technology, Thammasat University*, *Pathumtani, Thailand*, [2]*Faculty of Medicne, Thammasat University*, *Pathumtani, Thailand*.

M382 **The effect of sewage irrigation on mineral composition and in-vitro digestibility of forage sorghum.**
E. Yosef*[1], J. Miron[1], E. Zukermann[2], M. Nikbachat[1], and D. Ben-Ghedalia[1], [1]*ARO Israel*, *Bet-Dagan Israel*, [2]*Extension Service-Ministry of agriculture*, *Bet-Dagan, Israel*.

M383 **Kinetics of degradation assessment and prediction of the fraction of indigestible neutral detergent fiber by-products.**
J. G. L. Regadas Filho[1], E. S. Pereira*[2], P. G. Pimentel[2], T. S. Oliveira[1], M. R. G. F. Costa[2], and I. S. G Maia[2], [1]*Universidade Federal de Viçosa*, *MG, Brazil*, [2]*Universidade Federal do Ceará*, *Fortaleza, Brazil*.

M384 **Plant bioactive screening of vegetation browsed/grazed by goats on Mexican semiarid rangelands.**
H. M. Cuchillo*[1], D. C. Puga[1], O. A. Navarro[2], and F. R. Perez-Gil[1], [1]*Departamento de Nutrición Animal, INCMNSZ*, *Mexico, Distrito Federal, México*, [2]*Facultad de Química, UNAM*, *Mexico, Distrito Federal, México*.

M385 **The effects of high pressure steam treatment on some chemical and physical characteristics of sugarcane pith.**
M. Chaji*[1], A. A. Naserian[2], R. Valizadeh[2], and T. Mohammadabadi[1], [1]*Ramin Agricultural and Natural Resources University*, *Ahwaz, Khuzestan, Iran*, [2]*Ferdowsi University of Mashhad*, *Mashhad, Khorasan Razavi, Iran*.

M386 **Effects of chemical treatment on the digestibility of corn stover in diets with modified distillers grains with solubles.**
J. L. Anderson*[1], J. R. Russell[1], D. D. Loy[1], N. A. Pyatt[2], M. J. Cecava[2], and P. H. Doane[2], [1]*Iowa State University*, *Ames*, [2]*Archer Daniels Midland*, *Decatur, IL*.

M387 **Partial replacement of corn silage and alfalfa silage with Italian ryegrass silage in diets of high producing dairy cows.**
J. T. Woolever* and D. K. Combs, *University of Wisconsin-Madison*.

M388 **Effect of a live yeast, *Saccharomyces cerevisiae* I-1077 on in situ ruminal degradation of alfalfa hay and fiber-associated microbes.**
F. Chaucheyras Durand[1,2], A. Ameilbonne[1,2], N. D. Walker*[1], P. Mosoni[2], and E. Forano[2], [1]*Lallemand Animal Nutrition*, *Blagnac, France*, [2]*INRA*, *Saint-Genes Champanelle, France*.

M389 **Evaluating the effect of an active dry yeast on fibre digestion in vitro and in situ.**
N. D. Walker* and M. E. Quintino Cintora, *Lallemand Animal Nutrition*, *Montreal, QC, Canada*.

M390 **Influence of Rumensin200 and tallow on the rumen parameters and fiber digestion in dairy cows.**
H. Castillo, M. Rivas*, D. Dominguez, L. Durán, M. Arana, G. Villalobos, and J. A. Ortega, *Universidad Autonoma de Chihuahua*, *Chihuahua, Chihuahua, Mexico*.

M391 **Nutrient demand interacts with orchardgrass maturity to affect dry matter intake and yields of milk and milk fat.**
K. L. Kammes* and M. S. Allen, *Michigan State University*, *East Lansing*.

M392 **High total nonstructural carbohydrates timothy enhanced performance of mid-lactation dairy cows.**
A. F. Brito*[1], G. F. Tremblay[3], A. Bertrand[3], Y. Castonguay[3], G. Bélanger[3], R. Michaud[3], and R. Berthiaume[4], [1]*University of New Hampshire*, *Durham*, [2]*Université Laval*, *Québec, QC, Canada*, [3]*Agriculture and Agri-Food Canada*, *Québec, QC, Canada*, [4]*Agriculture and Agri-Food Canada*, *Sherbrooke, QC, Canada*.

M393 **Modification of the Penn State Particle Separator with 3. 18- or 4. 76-mm perforated steel sieves to measure physically effective fiber.**
K. W. Cotanch*, J. D. Darrah, C. S. Ballard, and R. J. Grant, *William H. Miner Agricultural Research Institute*, *Chazy, NY*.

M394 **Effect of the level of forage and monensin on *trans*-18:1 isomers and CLA in milk.**
R. Mohammed*[1], J. J. Kennelly[1], and J. K. G. Kramer[2], [1]*University of Alberta*, *Edmonton, Alberta, Canada*, [2]*Guelph Food Research Centre*, *Guelph, Ontario, Canada*.

M395 **Comparison between the Penn State Particle Separator and the Z-Box to estimate the peNDF content of dairy cow rations.**
A. S. Atzori*, P. Carta, and A. Cannas, *Dipartimento di Scienze Zootecniche, University of Sassari*, *Sassari, Sardinia, Italy*.

M396 **Effects of methionine analogues on rumen fibrolytic activities and fibrolytic microorganisms.**
E. Devillard*[1], C. Martin[2], D. Morgavi[2], E. Forano[2], and P. Mosoni[2], [1]*Adisseo SAS, 03600 Commentry, France*, [2]*INRA de Theix*, *63122 St Genes Champanelle, France*.

M397 **Effect of soybean hulls levels on ruminal parameters of dairy cows grazing elephant grass.**
J. C. Martinez*[1,3], T. V. Voltolini[4], A. V. Pirez[2], and F. A. P. Santos[2], [1]*São Paulo State University*, *Jaboticabal, São Paulo, Brazil*, [2]*São Paulo University*, *Piracicaba, São Paulo, Brazil*, [3]*University of California*, *Davis,* [4]*Embrapa Semi-árido*, *Petrolina, Pernambuco, Brazil*.

M398 **Effects of crude protein levels in the supplementation of dairy cows grazing elephant grass on milk yield and composition.**
M. A. C. Danes*, F. A. P. Santos, L. J. Chagas, J. R. R. Dorea, and A. M. Pedroso, *University of Sao Paulo*, *Piracicaba, Brazil*.

M399 **Effect of soybean hulls levels on performance of dairy cows grazing elephant grass.**
J. C. Martinez*[1,3], T. V. Voltolini[4], and F. A. P. Santos[2], [1]*São Paulo State University*, *Jaboticabal, São Paulo, Brazil*, [2]*São Paulo State University*, *Piracicaba, São Paulo, Brazil*, [3]*University of California*, *Davis,* [4]*Embrapa Semi-árido*, *Petrolina, Pernambuco, Brazil*.

M400 **Evaluation of starch digestibility and physico-chemical properties of Monsanto corn hybrids.**
D. Ngonyamo-Majee*[1], P. Feng[2], J. Hinen[1], G. Hartnell[1], B. Kutzner[1], M. Brandt[1], and M. Stephens[1], [1]*Monsanto Company*, *St. Louis, MO,*[2]*Monsanto Company*, *Ankeny, IA.*

M401 **Growth performance of Bluchi female lambs fed by diets containing different levels of date palm leaves.**
R. Valizade, A. Salahi*, and M. Mahmodi, *Ferdowsi University*, *Mashhad, Iran*.

M402 **Effect of date palm leaves substitution with wheat straw on health and rumen parameter of Saanen dairy goats.**
A. Salahi*, R. Valizade, A. Naserian, and A. Tahmasbi, *Ferdowsi University*, *Mashhad, Iran*.

M403 **Milk production and composition of Saanen dairy goat fed by ration containing date palm leaves.**
A. Salahi*, R. Valizade, A. Naserian, and A. Tahmasbi, *Ferdowsi University*, *Mashhad, Iran*.

M404 **Effects of an alfalfa feeding strategy in the first week postpartum on feed intake and ketogenic status in transition cows.**
M. Larsen* and N. B. Kristensen, *Faculty of Agricultural Science, Aarhus University*, *Tjele, Denmark*.

M405 **Milk production efficiency improves with addition of an exogenous fibrolytic enzyme to a total mixed ration.**
L. Holtshausen*[1], Y. -H. Chung[1], H. Gerardo-Cuervo[2], M. Oba[2], and K. A. Beauchemin[1], [1]*Agriculture and Agri-Food Canada*, *Lethbridge, Alberta, Canada*, [2]*University of Alberta*, *Edmonton, Canada*.

M406 **Effect of different sources of pectin feedstuffs on chewing activities in early lactating Holstein cows.**
M. Kordi*, A. Naserian, R. Valizade, and A. Tahmasbi, *Ferdowsi University*, *Mashhad, Iran*.

M407 **Effect of different sources of pectin feedstuffs on blood metabolites in early lactating Holstein cows.**
M. Kordi*, A. Naserian, R. Valizade, and A. Tahmasbi, *Ferdowsi University*, *Mashhad, Iran*.

M408 **Effects of forage family (alfalfa vs. orchardgrass) on apparent ruminal synthesis of niacin and vitamin B6 in lactating dairy cows.**
M. Seck*[1,3], J. A. Voelker Linton[2], M. S. Allen[2], P. Y. Chouinard[3], and C. L. Girard[1], [1]*Agriculture and Agri-Food Canada*, *Sherbrooke, Quebec, Canada*, [2]*Department of Animal Science, Michigan State University*, *East Lansing,* [3]*Departement de sciences animales, Universite Laval*, *Quebec, Quebec, Canada*.

M409 **Effect of the volatile fraction from silage and forage:concentrate ratio on ruminal degradation of fresh chopped or ensiled sugarcane.**
J. L. P. Daniel*[1], L. G. Nussio[1], R. C. Amaral[1], S. G. Toledo Filho[1], J. R. Lima[1], E. Cabezas[1], and O. C. M. Queiroz[2], [1]*University of Sao Paulo, Luiz de Queirozâ College of Agriculture*, *Piracicaba, SP, Brazil*, [2]*University of Florida*, *Gainesville.*

M410 **Performance of lactating crossbreed cows on tropical pasture fed by supplements with soybean meal and Optigen or urea.**
D. C. Abreu*[1], R. P. Lana[1], A. S. Oliveira[1], F. A. Barbosa[2], F. L. Andrade[1], P. T. Silva[1], and F. A. C. Neto[3], [1]*Universidade Federal de Viçosa*, *Viçosa, MG, Brazil*, [2]*Universidade de Brasília*, *Brasília, DF, Brazil*, [3]*Colorado State University*, *Fort Collins*.

M411 **Modeling degradation characteristics and nutrient availability of anthocyanidin accumulating Lc-alfalfa and alfalfa selected for a low initial rate of degradation in dairy cows.**
A. Jonker*[1,2], M. Gruber[2], Y. Wang[3], and P. Yu[1], [1]*Department of Animal and Poultry Science, College of Agriculture and Bioresources, University of Saskatchewan*, *Saskatoon, SK, Canada*, [2]*Saskatoon Research Centre, Agriculture and Agri-Food Canada*, *Saskatoon, SK, Canada*, [3]*Lethbridge Research Centre, Agriculture and Agri-Food Canada*, *Lethbridge, AB, Canada*.

M412 **Influence of reconstituted and silage sorghum grain on site and extent digestion in finishing cattle.**
U. A. González[1,3], M. González[1], A. Plascencia[2], and L. Corona*[3], [1]*Universidad Autónoma del Estado de México*, *Toluca, Estado de México,México*, [2]*Universidad Autónoma de Baja California*, *Mexicali, BC, México*, [3]*Universidad Nacional Autónoma de México*, *Cd. Universitaria, DF, México*.

M413 **Effect of germinated and ensiling sorghum grain on digestion and ruminal fermentation by feedlot cattle.**
F. Rodríguez[1], S. E. Buntinx[1], M. E. Ortega[2], and L. Corona*[1], [1]*Universidad Nacional Autónoma de México*, *Cd. Universitaria, DF, México*, [2]*Colegio de Posgraduados*, *Montecillo, Edo. de México, México*.

M414 **Performance of beef heifers finished at pasture in tropical conditions and supplemented with sunflower crushed seeds, in dry season.**
S. L. N. Cerilo*, R. H. de Tonissi e Buschinelli de Goes, H. L. Lima, K. A. de Souza, A. F. Marquez, T. da Cunha Cornélio, K. A. Guimarães Nogueira, D. de Faria Pereira, E. R. de Oliveira, and A. M. de Araújo Gabriel, *Universidade Federal da Grande Dourados*, *Dourados, MS, Brazil*.

M415 **Ingestive behavior of grazing Nellore steers supplemented with increased levels of energetic concentrate.**
J. R. R. Dorea, F. A. P. Santos, A. L. Marra, L. R. D. Agostinho Neto, D. C. Balestrin, M. A. C. Danes*, V. N. Gouvea, and A. M. Pedroso, *University of Sao Paulo*, *Piracicaba, Brazil*.

M416 **The effect of rumen protozoa of water buffalo and cow on fiber digestion in vitro.**
S. Jabbari*, M. Eslami, M. Chaji, T. Mohammadabadi, and M. Bojarpour, *Department of Animal Science, Ramin (Khuzestan) Agriculture and Natural Resources University*, *Ahwaz (Molassani), Khuzestan, Iran*.

M417 **The degradation of alfalfa treated with enzyme and or sodium hydroxide by rumen anaerobic fungi.**
T. Mohammadabadi* and M. Chaji, *Department of Animal Science, Ramin (Khuzestan) Agriculture and Natural Resources University, Ahwaz (Molassani), Khuzestan, Iran.*

M418 **Exchanging tropical fiber sources on intake and ingestive behavior of feedlot rations in beef cattle.**
R. S. Goulart*, V. P. Santos, G. B. Muraro, J. L. P. Daniel, R. C. Amaral, S. G. Toledo Filho, E. H. Cabezas, L. G. Nussio, and A. V. Pires, *University of São Paulo-ESALQ, Piracicaba, SP, Brazil.*

M419 **Effect of levels of fiber and corn grain processing in diets for finishing Zebu cattle.**
R. C. Carareto*, F. A. P. S Santos, G. B. M Mourão, A. M. P Pedroso, C. S Sitta, W. A. Angolini, and B. C. Correa, *University of Sao Paulo, Piracicaba, São Paulo, Brazil.*

M420 **Influence of daily ingestion of alfalfa treated with quebracho tannins on in vitro fermentative activity of some browse species.**
H. Ammar[1,2], S. López[2], A. Z. M. Salem*[3,4], and J. S. González[2], [1]*Ecole Supérieure d'Agriculture de Mograne, Dept. Production Agricole, 1121-Zaghouan, Tunisia*, [2]*Instituto de Ganadería de Montaña (CSIC-Universidad de León), León, Spain*, [3]*Universidad Autónoma del Estado de México, Centro Universitario UAEM-Temascaltepec, Estado de México, México*, [4]*Alexandria University, Department of Animal Production, Faculty of Agriculture (El-Shatby), Egypt.*

M421 **Productive characteristics and chemical composition of elephant grass (*Pennisetum purpureum* Schum, cv. Mineiro) submitted to chemical and organic fertilization.**
T. S. Oliveira*[1], J. C. Pereira[1], R. A. M. Vieira[4], J. G. L. Regadas Filho[1], and E. F. Aguiar[2], [1]*Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil*, [2]*Universidade Federal do Vale do Jequitinhonha e Mucuri, Diamantina, Minas Gerais, Brazil*, [3]*Universidade Estadual de Montes Claros, Janaúba, Minas Gerais, Brazil*, [4]*Universidade Estadual do Norte Fluminense Darcy Ribeiro, Campo dos Goytacazes, Rio de Janeiro, Brazil.*

M422 **Effects of condensed tannins supplementation in a lactating dairy TMR diet on ruminal fermentation in continuous culture, maintained at high and low pH.**
C. M. Dschaak*, C. M. Williams, J.-S. Eun, and A. J. Young, *Department of Animal, Dairy, and Veterinary Sciences, Utah State University, Logan.*

M423 **Milk fatty acid composition of grazing dairy cows supplemented with soy and fish oils.**
G. M. Martínez[1], G. A. Gagliostro*[2], D. A. Garciarena[1], V. I. Cejas[3], M. A. Rodríguez[3], R A Castañeda[3], and M. Balán[4], [1]*INTA EEA Salta, Salta, Argentina*, [2]*INTA EEA Balcarce, Balcarce. Buenos Aires, Argentina*, [3]*INTI Lácteos, San Martín, Buenos Aires, Argentina*, [4]*Prodeo SRL, Chivilcoy, Buenos Aires, Argentina.*

M424 **Does the in situ ruminal degradation of feeds vary with the finishing ration fed to beef cattle?**
Y. L. Li*[1,2] and W. Z. Yang[1], [1]*Agriculture and Agri-Food Canada, Research Centre, Lethbridge, AB, Canada*, [2]*Feed Research Institute, Chinese Academy of Agricultural Sciences, Beijing, China.*

M425 **Performance of grazing dairy cows supplemented with soy and fish oils.**
G. M. Martínez[1], G. A. Gagliostro*[2], and D. A. Garciarena[2], [1]*INTA EEA Salta, Salta, Argentina*, [2]*INTA EEA Balcarce, Balcarce, Buenos Aires, Argentina.*

M426 **Effect of production system on metabolic and endocrine responses of grass fed cows.**
L. D. Kaufmann[1], A. Münger[1], H. A. van Dorland[2], R. M. Bruckmaier[2], and F. Dohme*[1], [1]*Agroscope Liebefeld-Posieux, Research Station ALP, Posieux, Switzerland*, [2]*University of Bern Vetsuisse Faculty, Veterinary Physiology, Bern, Switzerland.*

M427 **Production of dairy cows fed varying levels of total mixed ration and pasture.**
A. Quilaguy-Ayure, G. A. Gagliostro*, D. A. Garciarena, L. Antonacci, and C. A. Cangiano, *INTA EEA Balcarce, Balcarce, Buenos Aires, Argentina.*

M428 **Effect of different pectin rich by products on feed intake, milk production, and composition and ruminal pH of lactating dairy cows.**
M. Kordi*, A. Naserian, R. Valizade, and A. Tahmasbi, *Ferdowsi University, Mashhad, Iran.*

M429 **Modification of the Z-Box system for assessing particle distribution of forages and total mixed rations.**
K. W. Cotanch*[1], C. S. Ballard[1], J. W. Darrah[1], L. M. Klaiber[1], R. J. Grant[1], and K. Yagi[2], [1]*W. H. Miner Agricultural Research Institute, Chazy, NY*, [2]*Zen-Noh National Federation of Agricultural Co-operative Associations, Tokyo, Japan.*

M430 **Zinc and heat treatments reduce ruminal protein degradation of grass leaf protein.**
K. L. Kammes*, B. D. Bals, B. E. Dale, and M. S. Allen, *Michigan State University, East Lansing.*

Ruminant Nutrition
Methods, Models, etc.

M431 **Prediction of residual feed intake in beef heifers by infrared thermography.**
J. J. Colyn*[1], A. L. Schaefer[1], J. A. Basarab[2], E. K. Okine[3], T. Liu[1], K. L. Robertson[2], and S. L. Scott[4], [1]*Agriculture and Agrifood Canada, Lacombe Research Centre, Lacombe, AB, Canada*, [2]*Alberta Agriculture, Lacombe, AB, Canada*, [3]*Department AFNS, University of Alberta, Edmonton, AB, Canada*, [4]*Agriculture and Agrifood Canada, Brandon, MB, Canada*.

M432 **Predicting ME and metabolizable protein (MP) balances of Santa Gertrudis cows under grazing conditions using a nutrition model.**
A. D. Aguiar*[1,4], L. O. Tedeschi[1], K. McCuistion[2], D. S. DeLaney[3], and S. Moore[3], [1]*Texas A&M University, College Station, ,*[2]*Texas A&M University-Kingsville, Kingsville, ,*[3]*King Ranch, Kingsville, TX,*[4]*University of Florida, Gainesville.*

M433 **Estimating rumen microbial crude protein in vitro using purine analysis or real-time PCR.**
E. Castillo-Lopez*, P. J. Kononoff, and J. L. Miner, *University of Nebraska-Lincoln, Lincoln*.

M434 **An in vitro gas production technique to evaluate the effect of microwave irradiation on fermentation potential of cottonseed hulls using medium of ruminal fungal isolation.**
A. Faramarzi Garmroodi, M. Danesh Mesgaran*, H. Jahani-Azizabadi, A. R. Vakili, A. Tahmasbi, and A. R. Heravi Moussavi, *Dept. of Animal Science (Excellence Center for Animal Science), Ferdowsi University of Mashhad, Mashhad, Iran*.

M435 **The effect of microwave irradiation on gas production parameters of cottonseed hulls using medium containing ruminal bacterial isolation.**
A. Faramarzi Garmroodi, M. Danesh Mesgaran*, H. Jahani-Azizabadi, A. R. Vakili, A. Tahmasbi, and A. R. Heravi Moussavi, *Dept. of Animal Science (Excellence Center for Animal Science), Ferdowsi University of Mashhad, Mashhad, Iran.*

M436 **The influence of extrusion of low-glucosinolate full-fat rapeseed and whole pea on site and extent of protein digestion in dairy cows.**
C. Bayourthe* and F. Enjalbert, *UMR 1289 INRA/INPT/ENVT TANDEM, 31326 Castanet-Tolosan, France*.

M437 **In situ ruminal degradability of dry matter and crude protein of soybean meal treated with formaldehyde and extrusion.**
A. A. Naserian* and H. Gholizadeh, *Ferdowsi University of Mashhad, Mashhad, Iran*.

M438 **Disappearance of total carotenoids in the rumen and intestine of steers measured using a mobile nylon bag technique.**
R. G. Cruz-Monterrosa*[1], I. Guerrero-Legarreta[1], and E. Ramirez-Bribiesca[2], [1]*Universidad Autonoma Metropolitana, D. F., Mexico*, [2]*Colegio de Postgraduados, Texococo Mexico*.

M439 **The relationship between intestinal digestibility of crude protein and dry matters and the protein fractions with ruminant feedstuffs.**
R. Zhou, J. Q. Wang*, F. M. Pan, D. P. Bu, H. Y. Wei, and L. Y. Zhou, *State Key Laboratory, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, . . China*.

M440 **Withdrawn by author**

M441 **Enzymatic activity of microorganisms attached to solid residues of *Festulolium*, fermentation variables and in vitro kinetics of gas production.**
I. Almaraz-Buendía[1], S. S. González–Muñoz*[1], O. Loera[2], L. A. Miranda-Romero[3], M. A. Cobos-Peralta[1], M. Meneses-Mayo[1], B. Alarcón-Zúñiga[3], and R. Bárcena-Gama[1], [1]*Colegio de Postgraduados, Montecillo, Edo. de México, México*, [2]*Universidad Autóoma Metropolitana-Iztapalapa, México D. F., México*, [3]*Universidad Autónoma Chapingo, Chapingo, Edo. de México, México*.

M442 **Use of in vitro starch and neutral detergent fiber degradation rates to predict carbohydrate availability.**
M. A. Brooks*, N. F. Johnson, R. M. Harvey, and M. S. Kerley, *University of Missouri, Columbia.*

M443 **Effect of lysozyme-adapted *Lactobacillus acidophilus* on fermentation in an artificial rumen system (Rusitec).**
M. L. He[1,3], T. A. McAllister*[1], and L. M. Rode[2], [1]*Agriculture and Agri-Food Canada, Research Centre, Lethbridge, AB, Canada*, [2]*AB Sage Biosciences Inc., Edmonton, AB, Canada*, [3]*University of Saskatchewan, Saskatoon, SK, Canada*.

M444 **Development of a PCR assay for the detection of *Zymomonas mobilis* in distillers grains.**
M. A. Rasmussen* and F. H. Benahmed, *U. S. Food and Drug Administration, Center for Veterinary Medicine, Office of Research, Laurel, MD*.

M445 **Intake prediction using *n*-alkanes in beef cattle fed a mixture of switchgrass and alfalfa hay.**
S. J. Chavez*, C. Baum-Lane, E. Leonard, J. Burns, and G. B. Huntington, *North Carolina State University, Raleigh.*

M446 **A comparison of methods to evaluate in vitro intestinal digestibility.**
D. A. Ross*, M. M. McCullouch, and M. E. Van Amburgh, *Cornell University, Ithaca, NY.*

M447 **The role of ADIN in determining nutrient availability in new co-products from bio-ethanol processing.**
W. G. Nuez-Ortín* and P. Yu, *Department of Animal and Poultry Science, College of Agriculture and Bioresources, University of Saskatchewan, Saskatoon, SK, Canada*.

M448 **A comparison of models used to estimate kinetics of in vitro degradation of alfalfa hay dry matter.**
C. A. Old*[1] and D. A. Sapienza[2], [1]*California Chapter of the American Registry of Professional Animal Scientists*, *LeGrand, CA*, [2]*Sapienza Analytica, LLC*, *Des Moines, IA*.

M449 **Application of near infrared spectroscopy to estimate composition of NuPro.**
G. A. Harrison*, M. D. Meyer, E. C. Taylor, and K. A. Dawson, *Alltech*, *Nicholasville, KY.*

M450 **Ability of NIR to predict crude fat, fatty acids and unsaturated fatty acids in total mixed ration fed to dairy cattle.**
S. Weaver*[1], R. Ward[1], and R. A. Patton[2], [1]*Cumberland Valley Analytical Services*, *Maugansville, MD*, [2]*Nittany Dairy Nutrition*, *Mifflinburg, PA*.

M451 **Evaluation of models to predict passage rate in cattle.**
S. J. Krizsan*[1], S. Ahvenjärvi[2], and P. Huhtanen[1], [1]*Department of Agricultural Research for Northern Sweden, Swedish University of Agricultural Sciences*, *Umeå, Sweden*, [2]*MTT-Agrifood Research Finland, Animal Production Research*, *Jokioinen, Finland*.

M452 **Net portal absorption of energy nutrients in ruminants: Assessment of prediction models.**
C. Loncke*[1], P. Nozière[1], G. Kraft[1], I. Savary-Auzeloux[1], J. Vernet[1], H. Lapierre[2], D. Sauvant[3], and I. Ortigues-Marty[1], [1]*INRA, UR 1213*, *Theix, France*, [2]*Agriculture and Agri-Food Canada*, *Sherbrooke, QC, Canada*, [3]*INRA-AgroParisTech, UMR 791*, *Paris, France*.

Small Ruminant
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M453 **Milk yield and composition from dairy ewes fed two sources of lipid supplements associated or not with conjugated linoleic acid (CLA).**
M. Baldin[1], R. Dresch[1], J. Souza[1], E. C. Sandri[1], F. Batistel[1], E. Ticiani[1], A. Panzera[1], L. O. Tedeschi[3], M. A. S. Gama[2], D. Fernandes[1], and D. E. Oliveira*[1], [1]*Santa Catarina State University*, *Chapecó, Brazil*, [2]*National Dairy Cattle Research Center*, *Juiz de Fora, MG, Brazil*, [3]*Texas A&M University*, *College Station*.

M454 **New management technique in early lactation can improve profitability in dairy sheep farms.**
S. P. G. Rassu, C. Carzedda, A. Mazzette, C. Dimauro, A. Mazza, and G. Pulina*, *Dipartimento di Scienze Zootecniche, University of Sassari*, *Sassari, Italy*.

M455 **Assessment of milk yield and milk composition in ewes fed diets with canola, sunflower, or castor oil.**
M. O. Maia*, I. Susin, A. V. Pires, E. M. Ferreira, R. S. Gentil, C. Q. Mendes, D. B. Galvani, and A. L. M. Selegato, *University of São Paulo/ESALQ*, *Piracicaba, SP, Brazil*.

M456 **Effect of different vegetable oils fed to lactating ewes on milk and cheese fatty acid profile.**
R. Bodas[1], P. Gómez-Cortés[2], A. R. Mantecón[1], M. Juarez[2], M. A. De la Fuente[2], and T. Manso*[3], [1]*Instituto de Ganaderia de Montaña (CSIC-ULE)*, *León, Spain*, [2]*Instituto del Frío (CSIC)*, *Madrid, Spain*, [3]*E. T. S. Ingenierías Agrarias (Universidad de Valladolid)*, *Palencia, Spain*.

M457 **Milk performance of ewes fed fish oil and soybean oil.**
E. M. Ferreira*, A. V. Pires, I. Susin, C. Q. Mendes, S. Gilaverte, R. S. Gentil, M. O. Maia, D. B. Galvani, and R. C. M. Meneghini, *University of São Paulo/ESALQ*, *Piracicaba, SP, Brazil*.

M458 **Evaluation of inbreeding depression effect on birth weight of Baluchi sheep breed of Iran.**
G. Motaghinia*[1], H. Farhangfar[1], M. Bashtani[1], A. Shadparvar[2], H. Saraee[1], H. Janati[3], and J. Modarresi[4], [1]*Birjand University*, *Birjand, Iran*, [2]*Guilan University*, *Rasht, Iran*, [3]*Baluchi Sheep Breeding Station*, *Mashhad, Iran*, [4]*Agricultural Jihad Organisation*, *Birjand, Iran*.

M459 **Cubicle use and maternal bonding in sheep: tests of an alternative lambing management strategy.**
N. L. Pettifor* and M. L. Thonney, *Cornell University*, *Ithaca, NY.*

M460 **Selective genotyping using genome-wide association studies (GWAS) that are associated with fiber diameter in Merino sheep.**
M. Goher*, W. Rauw, D. Thin, and L. Gomez-Raya, *University of Nevada Reno*, *Reno*.

M461 **An alternative wool harvesting system for wool sheep flocks.**
T. Wuliji*[1], T. Watts[2], A. Qi[1], and T. Filbin[3], [1]*University of Nevada*, *Reno,* [2]*Heiniger Australia Pty*, *Perth, Western Australia, Australia*, [3]*Rafter 7 Ranch*, *Yerington, NV*.

M462 **Comparison of two instruments for measuring fiber characteristics of wool.**
F. A. Pfeiffer*, C. J. Lupton, and D. F. Waldron, *Texas AgriLife Research*, *San Angelo*.

M463 **Comparison of Rambouillet sheep with Australian Merino F1 crosses.**
C. J. Lupton*[1], F. A. Pfeiffer[1], W. S. Ramsey[2], M. W. Salisbury[3], D. F. Waldron[1], J. W. Walker[1], and T. D. Willingham[1], [1]*Texas AgriLfe Research*, *San Angelo,* [2]*Texas A&M University*, *College Station,* [3]*Angelo State University*, *San Angelo, TX*.

M464 **Effects of substituting distillers dried grains for cottonseed meal and milo on wool and carcass characteristics in lamb finishing diets.**
T. R. Whitney*, A. E. Lee, M. G. Williamson, C. D. Swening, and R. L. Noland, *Texas AgriLife Research Center*, *San Angelo*.

M465 **Nutrient intake in Santa Inês sheep fed different levels of metabolizable energy in the ration.**
R. M. Fontenele*, E. S. Pereira, P. G. Pimentel, M. S. de Souza Carneiro, A. B. S. Villarroel, and J. G. L. Regadas Filho, *Federal University Ceará*, *Fortaleza, Ceará, Brazil*.

M466 **Body composition and net energy requirements for growth of Santa Inês lambs.**
J. G. L. Regadas Filho[2], E. S. Pereira[1], P. V. R. Paulino*[2], A. B. S. Villarroel[1], P. G. Pimentel[1], R. M Fontenele[1], and I. S. G Maia[1], [1]*Universidade Federal do Ceará*, *Fortaleza, Brazil*, [2]*Universidade Federal de Viçosa*, *MG, Brazil*.

M467 **Body composition and net protein requirements for Santa Inês lambs.**
J. G. L. Regadas Filho[2], E. S. Pereira[1], P. V. R. Paulino*[2], A. B. S. Villarroel[1], P. G. Pimentel[1], R. M. Fontenele[1], M. R. G. F. Costa[1], and M. S. Duarte[2], [1]*Universidade Federal do Ceará*, *Fortaleza, Brazil*, [2]*Universidade Federal de Viçosa*, *MG, Brazil*.

M468 **Effects of dietary copper level on serum cholesterol and nonesterified fatty acids in lambs.**
S. Hasanlou*, A. Zali, M. Ganjkhanlou, and M. Dehghan, *Tehran University*, *Tehran, Iran*.

M469 **Effects of dietary copper level on growth, performance, and carcass characteristics in lambs.**
S. Hasanlou*, A. Zali, M. Ganjkhanlou, and M. Dehghan, *Tehran University*, *Tehran, Iran*.

M470 **Effect of zilpaterol and ractopamine feeding program on growth performance and carcass characteristics of finishing lambs.**
M. A. Lopez-Carlos*[1,2], R. G. Ramirez[2], J. I. Aguilera-Soto[1], C. F. Arechiga[1], F. Mendez-Llorente[1], H. Rodriguez[1], and M. Rincon[1], [1]*Universidad Autonoma de Zacatecas*, *Zacatecas, Mexico.*, [2]*Universidad Autonoma de Nuevo Leon*, *Nuevo Leon, Mexico.*

M471 **Use of zeranol and reimplantation on performance of finishing hair lambs.**
D. Domínguez, G. Amaya*, G. Villalobos, H. Castillo, J. A. Ortega, and L. Carlos, *Universidad Autónoma de Chihuahua*, *Chihuahua, Chihuahua, México*.

M472 **Fatty acid profile and lipid oxidation of meat from Sarda lambs managed in different feeding systems.**
S. P. G. Rassu, C. Carzedda, R. Boe, M. G. Manca, and A. Nudda*, *Dipartimento di Scienze Zootecniche, University of Sassari*, *Sassari, Italy*.

M473 **Deciding whether light lambs should be weaned or left with the dam until slaughter age.**
M. Terré[1], A. Nudda[2], and A. Bach*[3,1], [1]*Institut de Recerca i Tecnologia Agroalimentàries*, *Barcelona, Spain*, [2]*University of Sassari*, *Sassari, Italy*, [3]*Institució Catalana de Recerca i Estudis Avançats*, *Barcelona, Spain*.

M474 **Lamb finalization allowing free-choice intake of roughage and concentrate.**
P. Martinez-Hernandez*, C. Sanchez-DelReal, E. Cortes-Diaz, E. Maldonado-Siman, and R. Lazo-Soto, *Animal Science Department, University of Chapingo*, *Texcoco, Mexico, Mexico*.

SYMPOSIA AND ORAL SESSIONS

Graduate Student Paper Competition
ADSA Southern Section
Chair: Patrick French, The Old Mill-Troy
303

9:30 AM 37 **Biohydrogentation intermediates of ^{13}C labeled docosahexanoic acid in ruminal batch cultures.**
C. M. Klein* and T. C. Jenkins, *Clemson University*, *Clemson, SC*.

9:45 AM 38 **Cows genetically more susceptible to mastitis have altered neutrophil migration patterns.**
A. A. Elliott*, S. Minkin, J. Biggerstaff, J. Dunlap, and G. M. Pighetti, *University of Tennessee*.

10:00 AM 39 **Effects of different levels of cottonseed hulls on rumen development and growth in dairy calves.**
R. M. Doescher*, C. C. Williams, C. F. Hutchison, B. F. Jenny, and A. H. Dolejsiova, *Louisiana State University AgCenter*, *Baton Rouge*.

Graduate Student Paper Competition
ADSA-ASAS Northeast Section
Chair: Kristen E. Govoni, University of Connecticut
405

9:30 AM 40 **Effects of herbs and essential oils on in vitro batch culture ruminal fermentation.**
J. A. Tekippe*[1], A. N. Hristov[1], K. S. Heyler[1], V. D. Zheljazkov[2], J. Ferreira[3], and G. A. Varga[1], [1]*Pennsylvania State University*, *University Park,* [2]*Mississippi State University, NMREC*, *Verona,* [3]*USDA-ARS*, *Beaver, WV*.

41 **Withdrawn by author**

9:45 AM 42 **Use of environmental protection best management practices by Maryland horse farm operators.**
N. M. Fiorellino*, K. M. Wilson, and A. O. Burk, *University of Maryland*, *College Park*.

10:00 AM 43 **Sources of variation and importance of the quantification of the in vitro NDF digestibility for estimating rates of NDF digestion.**
E. Raffrenato* and M. E. Van Amburgh, *Cornell University*, *Ithaca, NY*.

10:15 AM 44 **Effect of capsicum oil on feeding behavior and milk production in lactating dairy cattle.**
L. R. Tager* and K. M. Krause, *West Virginia University*, *Morgantown.*

10:30 AM **Break**

10:45 AM 45 **Digestive fate of free ferulic acid in lactating dairy cows.**
M. A. Soberon*, D. J. R. Cherney, and D. A. Ross, *Cornell University*, *Ithaca, NY*.

11:00 AM 46 **The effect of form of trace mineral supplementation on lactation, neutrophil function, and vaccination response in Holstein cows.**
L. M. Nemec*[1], J. D. Richards[2], C. Atwell[2], D. E. Diaz[2], and T. F. Gressley[1], [1]*University of Delaware*, *Newark*, [2]*Novus International Inc., St. Charles, MO*.

11:15 AM 47 **The effects of length of storage on the composition and nutritive value of corn silage.**
M. C. Der Bedrosian*[1], L. Kung, Jr. [1], and K. E. Nestor, Jr. [2], [1]*University of Delaware*, *Newark,* [2]*Mycogen Seeds*, *Indianapolis, IN*.

11:30 AM 48 **Effect of forage particle length on rumen fermentation and chewing activity of late lactating and dry dairy cows.**
F. X. Suarez-Mena*, G. I. Zanton, and A. J. Heinrichs, *The Pennsylvania State University*, *University Park*.

Alpharma Beef Cattle Nutrition Symposium
"Parameterizing" Health and Performance Expectations of Feedlot Cattle

Chair: **Richard Zinn, University of California-Davis**

Sponsor: Alpharma Animal Health

Korbel Ballroom 3a

9:30 AM 49 **Practical relationships between morbidity and growth performance.**
V. R. Bremer[1], G. E. Erickson*[1], T. J. Klopfenstein[1], D. R. Smith[1], K. J. Hanford[1], R. E. Peterson[2], L. O. Burciaga-Robles[2], D. B. Faulkner[3], and C. R. Krehbiel[4], [1]*University of Nebraska*, *Lincoln*, [2]*Feedlot Health Management Services*, *Okotoks, Alberta, Canada*, [3]*University of Illinois*, *Urbana*, [4]*Oklahoma State University*, *Stillwater*.

10:20 AM 50 **Predictability of feedlot cattle growth performance.**
M. L. Galyean*, N. DiLorenzo, J. P. McMeniman, and P. J. Defoor, *Texas Tech University*, *Lubbock.*

11:10 AM 51 **Applying detection controls in assessing variance in feedlot cattle performance.**
R. A. Zinn*, *University of California*, *Davis*.

Animal Behavior and Well-Being Symposium
Animal Welfare Assurance: Science and Application

Chair: **Trevor DeVries, University of Guelph**

Sponsors: AAALAC, EAAP

403/404

9:30 AM **Opening remarks**
T. DeVries, *University of Guelph., Guelph, ON, Canada.*

9:40 AM 52 **Resource-based versus animal-based criteria in on-farm evaluation of welfare.**
A. Butterworth*, *University of Bristol, Clinical Veterinary Science*, *Langford, N Somerset, UK*.

10:25 AM 53 **Developing animal welfare standards: translating experimental studies to the farm.**
J. Rushen*[1], E. Vasseur[2], and A. M. de Passillé[1], [1]*Agriculture and Agri-Food Canada*, *Agassiz, BC, Canada*, [2]*University of British Columbia*, *Vancouver, BC, Canada*.

11:10 AM 54 **Integration of science, regulation, and training in animal welfare auditing programs.**
J. C. Swanson*, *Michigan State University*, *East Lansing.*

Animal Health-Johne's Disease (JDIP)
Basic Biology/Immunology/Vaccine Development

Chair: **Kenneth E. Olson, KEO Consulting**

503/504

9:30 AM **Introduction**
K. E. Olson.

9:45 AM 55 **A novel approach to evaluate the cost-benefit of use of Johne's disease vaccine while considering effects on the bovine tuberculosis eradication program.**
F. J. Zagmutt*[1], L. A. Espejo[2], H. Groenendaal[1], J. R. Lima[2], E. Patton[3], I. A. Gardner[4], and S. Wells[2], [1]*Vose Consulting, Boulder, CO*, [2]*College of Veterinary Medicine, University of Minnesota*, *St. Paul,* [3]*Division of Animal Health, Wisconsin DATCP*, *Madison,* [4]*School of Veterinary Medicine, University of California, Davis*.

10:00 AM 56 **Stochastic simulations of a multi-group compartmental model for Johne's disease on US dairy herds with test-based culling intervention.**
Z. Lu*, Y. H. Schukken, R. L. Smith, and Y. T. Gröhn, *Cornell University, Ithaca, NY.*

10:15 AM 57 **Unrestricted transmission of highly pathogenic Indian Bison type of *Mycobacterium avium* ssp. *paratuberculosis* in India.**
S. V. Singh*, B. Singh, A. Tiwari, A. Kumar, P. K. Singh, and A. V. Singh, *Central Institute for Research on Goats*, *Makhdoom, Farah, Mathura (UP), India*.

10:30 AM	58	**_Mycobacterium avium_ ssp. _paratuberculosis_ produces endospores.** E. A. Lamont*[1], J. P. Bannantine[4], A. Armién[1], D. S. Ariyakumar[3], and S. Sreevatsan[1,2], [1]*Veterinary Population Medicine, University of Minnesota, St. Paul,* [2]*Department of Biomedical Sciences, University of Minnesota, St. Paul,* [3]*Veterinary Diagnostic Lab, University of Minnesota, St. Paul,* [4]*National Animal Disease Center, USDA-Agricultural Research Service, Ames, IA.*
10:45 AM	59	**Transcriptional analysis of MAP genes contributing to invasion and persistence in ileal mucosa of cattle.** S. Khare*[1], K. Drake[2], and L. G. Adams[1], [1]*Department of Veterinary Pathobiology, Texas A&M University, College Station,* [2]*Seralogix Inc., Austin, TX.*
11:00 AM	60	**The transcriptome of _Mycobacterium avium_ ssp. _paratuberculosis_ during infection.** C.-W. Wei and A. M. Talaat*, *University of Wisconsin-Madison, Madison.*
11:15 AM	61	**The response of auxotrophic MAP leuD mutant under environment stresses.** J.-W. Chen*, J. Scaria, S. Chandra, and Y. F. Chang, *Cornell University, Ithaca, NY.*
11:30 AM	62	**A gene specific to _Mycobacterium avium_ ssp. _paratuberculosis_, but only at the transcription-translation level.** J. P. Bannantine*[1], R. E. Briggs[1], E. A. Lamont[2], J. R. Stabel[1], and S. Sreevatsan[2], [1]*National Animal Disease Center, Ames, IA,* [2]*University of Minnesota, St. Paul.*
11:45 AM	63	**Binding affinity of _Mycobacterium avium_ ssp. _paratuberculosis_ 85 complex to 40 kDa domain of fibronectin.** C. J. Kuo*[1], J. Bannantine[2], V. Kapur[3], and Y. F. Chang[1], [1]*Cornell University, Ithaca, NY,* [2]*NADC, Ames, IA,* [3]*Pennsylvania State University, University Park.*
12:00 PM	64	**_MAP_ induces calcium-dependent phagosome acidification to enlist IL-1β processing and macrophage recruitment.** E. A. Lamont*[1], S. M. O'Grady[3], T. Eckstein[4], and S. Sreevatsan[1,2], [1]*Veterinary Population Medicine, University of Minnesota, St. Paul,* [2]*Department of Veterinary Biomedical Sciences, University of Minnesota, St. Paul,* [3]*Department of Animal Sciences, University of Minnesota, St. Paul,* [4]*Department of Microbiology, Immunology and Pathology, Colorado State University, Fort Collins.*
12:15 PM	65	**Macrophages infected with _Mycobacterium avium_ ssp. _paratuberculosis_ are highly resistant to apoptosis, while uninfected culture mates are highly apoptotic.** E. Kabara* and P. M. Coussens, *Michigan State University, East Lansing.*

Breeding and Genetics
Feed Intake and Utilization
Chair: Kent Weigel, University of Wisconsin
Korbel Ballroom 4def

9:30 AM	66	**Genetic correlations of gross feed efficiency with yield, body weight, body condition score, and energy balance in dairy cattle.** C. D. Dechow*[1], J. Vallimont[1], M. D. Dekleva[1], J. M. Daubert[1], and J. W. Blüm[2,1], [1]*Pennsylvania State University, University Park,* [2]*University of Bern, Switzerland.*
9:45 AM	67	**Genetic characterization of feed intake and utilization in performance tested beef bulls.** D. H. Crews Jr. *[1], C. T. Pendley[1], G. E. Carstens[2], and E. D. M. Mendes[2], [1]*Colorado State University, Fort Collins,* [2]*Texas A&M University, College Station.*
10:00 AM	68	**Analysis of published genetic parameter estimates for feed utilization traits in beef cattle.** C. T. Pendley*, R. M. Enns, and D. H. Crews Jr., *Colorado State University, Fort Collins.*
10:15 AM	69	**Heritability and genetic correlations of residual feed intake between Angus and Simmental bulls and resulting steer relatives.** W. C. Rutherford*, L. A. Kriese-Anderson, and G. S. Hecht, *Auburn University, Auburn, AL.*
10:30 AM	70	**A region on BTA6 is associated with feed intake and gain in beef cattle.** A. K. Sexten*[1,2], L. A. Kuehn[1], T. P. L. Smith[1], H. C. Freetly[1], W. M. Snelling[1], and A. K. Lindholm-Perry[1], [1]*USDA, ARS, US Meat Animal Research Center, Clay Center, NE,* [2]*Oklahoma State University, Stillwater.*
10:45 AM	71	**A neural network approach for association between a low-density whole genome SNP marker panel and residual feed intake and dry matter intake.** H. Wang*[1], X. Liu[1], B. Woodward[2], S. Bauck[2], and R. Rekaya[1], [1]*University of Georgia, Athens,* [2]*Merial Limited, Duluth, GA.*

11:00 AM	72	**Effects of divergent selection for serum insulin-like growth factor-I concentration on mature weight and growth curves in Angus cattle.** Q. Qin* and M. E. Davis, *The Ohio State University*, *Columbus*.
11:15 AM	73	**Bayesian estimation of a genetic covariance matrix with different degrees of belief via a generalized inverted Wishart distribution.** R. J. C. Cantet*, *Facultad de Agronomía, Universidad de Buenos Aires - CONICET*, *Buenos Aires, Argentina*.
11:30 AM	74	**A simulation approach for analyzing genomic data using a package of specific FORTRAN 90 functions.** P. Faux*[1,2] and N. Gengler[1,3], [1]*University of Liège - Gembloux Agro-Bio Tech*, *Gembloux, Belgium*, [2]*National Research Fund*, *Luxembourg, Luxembourg*, [3]*National Fund for Scientific Research*, *Brussels, Belgium*.

ASAS-EAAP Global Issues Symposium
Contemporary and Emerging Issues and International Animal Agriculture Joint Symposium: Global Livestock Production to 2050: Challenges and Opportunities

Chair: **Frank Mitloehner, University of California-Davis**

Sponsors: ASAS, EAAP, Elanco Animal Health

Korbel Ballroom 3b

9:30 AM		**Introduction**
9:35 AM	75	**Perspectives for livestock production in developing countries—Changes in production systems needed to meet projected demand.** R. D. Sainz*[1], G. B. Martha Jr. [2,3], and L. G. Barioni[4], [1]*University of California*, *Davis*, [2]*Embrapa Cerrados/Embrapa Strategic Studies and Training*, *Brasília-DF, Brazil*, [3]*Fellow, National Research Council*, *Brazil*, [4]*Embrapa Agricultural Informatics*, *Campinas-SP, Brazil*.
10:35 AM	76	**A European perspective on the challenges for livestock farming to achieve a sustainable contribution to food security and a reduced impact on the environment.** P. Herpin*[1], R. Duijghuisen[2], J. Oldham[3], P. Vriesekoop[2], and J. Williams[1], [1]*INRA*, *France*, [2]*Wageningen UR*, *the Netherlands*, [3]*Scottish Agricultural College*, *Scotland*.
11:35 AM	77	**Sustainability of livestock production globally.** H. Steinfeld*, *UN Food and Agriculture Organization*, *Rome, Italy*.

Extension Education 1

Chair: **Glenn Selk, Oklahoma State University**

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9:30 AM	78	**Multi-state Beef Reproduction Task Force provides science-based recommendations for the application of reproductive technologies.** S. K. Johnson*[1], R. N. Funston[2], J. B. Hall[3], D. J. Kesler[4], J. W. Lauderdale[5], G. C. Lamb[6], D. J. Patterson[7], G. A. Perry[8], and D. R. Strohbehn[9], [1]*Kansas State University*, [2]*University of Nebraska*, [3]*University of Idaho*, [4]*University of Illinois*, [5]*Michigan State University*, [6]*University of Florida*, [7]*University of Missouri*, [8]*South Dakota State University*, [9]*Iowa State University*.
9:45 AM	79	**Fundamentals of beef reproduction and management: Focus on estrus synchronization. A new web-based curriculum.** D. J. Patterson*[1], R. D. Geisert[1], D. C. Busch[2], N. R. Leitman[3], S. E. Poock[1], J. L. Parcell[1], and M. F. Smith[1], [1]*University of Missouri*, *Columbia,* [2]*KABA Select Sires, Inc., Louisville, KY,* [3]*Boehringer Ingelheim Vetmedica Inc., St. Joseph, MO*.
10:00 AM	80	**Transferring reproductive technologies to the field: Fixed-time AI and high accuracy sires.** D. J. Patterson*, D. A. Mallory, J. L. Parcell, S. E. Poock, and M. F. Smith, *University of Missouri*, *Columbia.*
10:15 AM	81	**Evaluation of attitudes, knowledge gained and anticipated behaviors of extension clientele completing food defense training conducted regionally in Missouri.** R. L. Weaber*, C. L. Lorenzen, M. K. Hendrickson, A. D. Clarke, M. C. Shannon, R. M. Torres, and K. L. Savage-Clarke, *University of Missouri, Columbia.*

10:30 AM 82 **Documenting a 60-year trend in improved efficiency for the United States swine industry.**
M. S. Carlson*, J. A. Lory, R. E. Massey, B. Young, J. Zulovich, S. Edwards, R. Plain, and T. J. Safranski, *University of Missouri, Columbia.*

10:45 AM **Break**

11:00 AM 84 **A survey of the economic, environmental, public policy and production issues facing animal agriculture in Louisiana.**
T. A. Lavergne*, S. M. DeRouen, and G. M. Hay, *Louisiana State University AgCenter, Baton Rouge.*

11:15 AM 85 **The value of poultry litter to crop producers in south Georgia.**
C. S. Dunkley* and D. L. Cunningham, *University of Georgia, Athens.*

11:30 AM 86 **Testing foam depopulation equipment in the field.**
D. P. Hougentogler*, E. R. Benson, R. L. Alphin, and C. A. Kinney, *University of Delaware, Newark.*

11:45 AM 87 **Assessing the potential economic value of an automated temperature monitoring system using stochastic simulation.**
J. M. Bewley*[1,2] and M. M. Schutz[2], [1]*University of Kentucky, Lexington,* [2]*Purdue University, West Lafayette, IN.*

12:00 PM 83 **Missouri Goat Camp: Collaborative effort to enhance successful goat production projects by Missouri youth.**
E. L. Walker*[1], B. Fay[2], H. Swartz[3], and C. Clifford-Rathert[3], [1]*Missouri State University, Springfield,* [2]*University of Missouri, Greenfield,* [3]*Lincoln University, Jefferson City, MO.*

Food Safety Symposium
Potential Impact of Reduced Antibiotic Use and the Roles of Prebiotics, Probiotics, and other Alternatives in Antibiotic-Free Broiler Production
Chair: **Michael Hume, USDA-ARS, SPARC, FFSRU**
401/402

9:30 AM 89 **Probiotics and direct-fed microbials: Practical applications and real-world needs.**
J. T. Barton*, *The Poultry Federation Lab.*

10:00 AM 90 **Probiotics: Current limitations and future potential in commercial poultry.**
B. M. Hargis*[1], G. Tellez[1], R. E. Wolfenden[1], S. Shivaramaiah[1], A. D. Wolfenden[1], S. E. Higgins[2], and T. E. Porter[2], [1]*University of Arkansas, Fayetteville,* [2]*University of Maryland, College Park.*

10:30 AM 1087 **Alternatives to antibiotic treatment for necrotic enteritis.**
C. L. Hofacre*[1], M. Lee1, and G. Mathis[2], [1]*The University of Georgia, Athens,* [2]*Southern Poultry Research, Athens, GA.*

11:00 AM 88 **Historic perspective: Prebiotics, probiotics, and other alternatives to antibiotics.**
M. E. Hume*, *USDA, ARS, Food and Feed Safety Research Unit, College Station, TX.*

11:30 AM **Experiences with drug-free broiler production.**
J. Smith, *Fieldale Farms, Baldwin, GA.*

12:00 PM **Application and consequences of bacteriocins to control Campylobacter in poultry production.**
N. Stern, *USDA, ARS, SAA, Poultry Microbiological Safety Research Unit, Athens, GA.*

Forages and Pastures
Grazing and Forage Management
Chair: **John Arthington, University of Florida Range Cattle Research and Education Center**
304

9:30 AM 92 **Effects of microclimate and pasture characteristics on temporal/spatial distribution of beef cows in Midwestern pastures.**
D. A. Bear*, J. R. Russell, and D. G. Morrical, *Iowa State University, Ames.*

9:45 AM 93 **Preference for diverse pastures by sheep in response to intraruminal administrations of tannins, saponins, and alkaloids.**
J. J. Villalba*[1], F. D. Provenza[1], A. K. Clemensen[1], R. Larsen[2], and J. Juhnke[1], [1]*Utah State University, Logan,* [2]*University of California, Templeton.*

10:00 AM	94	**Grazing behavior of cattle and sheep grazing alone or together on grass swards differing in plant species diversity.** H. M. Cuchillo* and J. Isselstein, *Georg-August University of Goettingen, Institute of Grassland Science*, *Goettingen, Germany.*
10:15 AM	95	**Evaluation of dairy heifer performance and pasture composition when co-grazing heifers and goats.** T. S. Dennis*, L. J. Unruh-Snyder, M. K. Neary, J. E. Tower, and T. D. Nennich, *Purdue University*, *West Lafayette, IN*.
10:30 AM	96	**Effects of aluminum from water-treatment-residual applications to pastures on mineral status of cattle and forage mineral concentrations.** R. K. Madison, L. R. McDowell*, G. A. O'Connor, N. S. Wilkinson, P. A. Davis, A. T. Adesogan, T. L. Felix, and M. Brennan, *University of Florida*, *Gainesville.*
10:45 AM	97	**Effect of maturity and nitrogen fertilization on bahiagrass production and nutritive value.** N. M. Kenney*, J. E. Sawyer, R. O. Dittmar III, and T. A. Wickersham, *Texas A&M University*, *College Station*.
11:00 AM		**Break**
11:15 AM	98	**Effect of mineral supplementation on the performance by stocker cattle grazing winter-wheat pasture.** S. A. Gunter*[1] and G. F. Combs[2], [1]*USDA-ARS, Southern Plains Range Research Station*, *Woodward, OK,* [2]*USDA-ARS, Grand Forks Human Nutrition Research Center*, *Grand Forks, ND*.
11:30 AM	99	**Effect of corn hybrid on the amount of residue available for grazing relative to grain yield.** J. A. Musgrave*, L. A. Stalker, T. J. Klopfentein, M. C. Stockton, and K. H. Jenkins, *University of Nebraska*, *Lincoln*.
11:45 AM	100	**Replacing synthetic N with clovers or alfalfa in bermudagrass pastures for growing calves.** P. Beck*[1], D. Hubbell[1], T. Hess[1], K. Haas[2], and J. Jennings[1], [1]*University of Arkansas*, *Fayetteville,* [2]*Haas Hay & Cattle Co., Gurley, AL.*
12:00 PM	101	**Effects of winter swath grazing barley and millet on background and feedlot performance and rumen metabolism of beef calves.** R. Kumar*[1], H. A. Lardner[1,2], and J. J. McKinnon[1], [1]*University of Saskatchewan*, *Saskatoon, Canada*, [2]*Western Beef Development Centre*, *Humboldt, Saskatchewan, Canada*.

Graduate Student Symposium
Transitions: Preparing for Your Future

Chair: **Allison Meyer, North Dakota State University**

Sponsors: ASAS, ADSA, Lucta, West Central

Korbel Ballroom 4abc

9:30 AM		**The importance of leadership in industry careers.** J. Simmons, *Elanco*.
9:55 AM		**Non-traditional career pathways for animal science students.** S. P. Poulos, *The Coca-Cola Company, Atlanta, GA*.
10:20 AM		**Panel discussion**
10:35 AM		**Student opportunities in ASAS.** H. M. White, *Purdue University, West Lafayette, IN.*
10:40 AM	102	**Surviving the transition from thesis to published manuscript: An editor's perspective of the review process.** J. L. Sartin*, *Auburn University, Auburn, AL.*
11:05 AM	103	**Taking the reins: Transitioning from PhD student to associate professor.** K. A. Vonnahme*, *Department of Animal Sciences*, *Fargo, ND.*
11:30 AM	104	**Animal scientists of the future—Embrace change, challenges, and opportunities.** M. E. Benson*, *Washington State University*, *Pullman.*
11:55 AM		**Panel discussion**

Growth and Development
Regulatory Mechanisms in Growth and Development
Chairs: **Nick Gabler, Iowa State University; Sally Johnson, University of Florida**
Korbel Ballroom 1ab

9:30 AM 105 **The effect of feeding frequency on circulating thyroid hormones in turkey chicken.**
A. Towhidi*, A. Yahyabeig, and E. Dirandeh, *University of Tehran, Karaj, Tehran, Iran*.

9:45 AM 106 **The role of syndecan-4 cytoplasmic domain in turkey skeletal muscle growth and development.**
Y. Song*[1], D. C. McFarland[2], and S. G. Velleman[1], [1]*Ohio Agricultural Research and Development Center, The Ohio State University, Wooster,* [2]*Department of Animal and Range Sciences, South Dakota State University, Brookings.*

10:00 AM 107 **Comparative phylogenetic analysis of gut microbiota of broilers fed with and without antibiotics.**
P. Singh*[1], A. Karimi[2], P. W. Waldroup[1], and Y. M. Kwon[1], [1]*University of Arkansas, Fayetteville,* [2]*University of Kurdistan, Sanadaj, Kurdistan, Iran*.

10:15 AM 108 **Impact of feeding raw materials on intestinal viscosity and performance of broilers.**
F. Nuyens[1], I. Somers[1], S. Van De Craen[1], W. Röser[1], C. Chudaske[2], and S. Van Dyck*[1], [1]*Kemin AgriFoods Europe, Herentals, Belgium*, [2]*Südzucker AG Mannheim/Ochsenfurt, Ochsenfurt, Germany*.

10:30 AM 109 **Ontogenic changes in the activation of translation initiation factors postfeeding are not seen in adolescent Thoroughbred mares.**
A. L. Wagner*, J. C. Gould, R. B. Ennis, and K. L. Urschel, *University of Kentucky, Lexington*.

10:45 AM 110 **Productive performance of pigs vaccinated against gonadotropin releasing factor compared to surgically castrated males and gilts from two different sire lines.**
J. I. Morales[1], M. P. Serrano*[2], L. Cámara[2], C. H. Zúñiga[2], J. P. López[1], and G. G. Mateos[2], [1]*Copiso S. A., Soria, Spain*, [2]*Universidad Politécnica de Madrid, Madrid, Spain*.

11:00 AM 111 **Effects of nutrient balance and implant status on IGF-1 and PUN concentrations of feedlot calves.**
T. Lee*, L. K. Mamedova, S. Guillossou, B. J. Bradford, C. D. Reinhardt, and D. U. Thomson, *Kansas State University, Manhattan*.

11:15 AM 112 **Growth hormone and insulin-like growth factor I have different effects on bovine myoblasts and myotubes in culture.**
X. Ge* and H. Jiang, *Virginia Polytechnic Institute and State University, Blacksburg*.

11:30 AM 113 **Trenbolone regulates myogenic differentiation via inducing androgen receptors and Î²-catenin interaction in muscle-derived stem cells of cattle.**
J. X. Zhao*, J. Hu, M. J. Zhu, W. J. Means, and M. Du, *Department of Animal Science, University of Wyoming, Laramie.*

11:45 AM 114 **Increasing days on the finishing diet equalizes carcass grade distributions of zilpaterol-HCl fed heifers.**
B. C. Bernhard*[1], R. S. Swingle[2], T. E. Lawrence[3], W. T. Nichols[4], D. A. Yates[4], J. P. Hutcheson[4], M. N. Streeter[4], J. C. Brooks[1], M. F. Miller[1], B. J. Johnson[1], and R. J. Rathmann[1], [1]*Texas Tech University, Lubbock,* [2]*Cactus Research Ltd., Amarillo, TX,* [3]*West Texas A&M University, Canyon,* [4]*Intervet Schering Plough Animal Health, DeSoto, KS.*

12:00 PM 115 **Mitochondrial complex I protein is correlated to residual feed intake in beef cattle.**
M. H. Ramos* and M. S. Kerley, *University of Missouri, Columbia*.

12:15 PM 116 **Bone tissue-specific over-expression of growth differentiation factor 11 propeptide transgene causes homeotic transformation of the seventh cervical vertebra into a thoracic vertebra in mice.**
Z. Li*, M. Kawassumi, B. Zhao, S. Moisyadi, and J. Yang, *University of Hawaii at Manoa, Honolulu*.

Horse Species 1
Chair: **Betsy Greene, University of Vermont**
Korbel Ballroom 1e

9:30 AM 117 **Soaking hay in water to reduce soluble carbohydrate concentrations prior to horse feeding.**
K. Martinson*[1], C. Sheaffer[1], and H. Jung[1,2], [1]*University of Minnesota, St. Paul,* [2]*USDA-ARS, St. Paul, MN.*

9:45 AM 118 **Fasting length and hay type on metabolic parameters in the horse.**
A. M. Bruce* and E. L. Wagner, *Auburn University, Auburn, AL*.

10:00 AM	119	**Effects of endophyte-infested fescue seed consumption on post exercise recovery of horses in humid climates.** J. A. Ford*, G. W. Webb, S. P. Webb, H. M. Hurshman, E. L. Walker, and B. Onyango, *Missouri State University*, *Springfield*.
10:15 AM	120	**Digestibility of oats in horses using the substitution approach.** A. D. Woodward*[1], A. Willyard[1], A. Buckley[1], J. Liesman[1], C. F. M. de Lange[2], and N. L. Trottier[1], [1]*Michigan State University*, *East Lansing*, [2]*University of Guelph*, *Ontario, Canada*.
10:30 AM		**Break**
10:45 AM	121	**Effect of dietary energy manipulation on mares and their foals: Performance and hormones of mares in late gestation.** K. N. Winsco*[1], J. A. Coverdale[1], and C. J. Hammer[2,3], [1]*Department of Animal Science, Texas A&M University*, *College Station,* [2]*Department of Animal Sciences, North Dakota State University*, *Fargo,* [3]*Center for Nutrition and Pregnancy*, *Fargo, ND.*
11:00 AM	122	**Evaluation of the capacity for maternal transfer and foal synthesis of long-chain polyunsaturated fatty acids.** L. K. Warren*, J. Kivipelto, and E. Gettinger, *University of Florida*, *Gainesville*.
11:15 AM	123	**Profiling the change in fecal microbial populations of mares and foals over time.** J. E. Earing*[1], A. C. Durig[1], G. L. Gellin[2], M. D. Flythe[2], and L. M. Lawrence[1], [1]*University of Kentucky, Lexington,* [2]*USDA-ARS*, *Lexington, KY*.
11:30 AM	124	**Stallion spermatozoal parameters of motility and conception rates on a large commercial ranch.** A. L. Garcia[1], H. A. Brady*[1], M. A. Ballou[1], D. D. Varner[2], C. C. Love[2], and G. Blodgett[3], [1]*Texas Tech University*, *Lubbock,* [2]*Texas A&M University*, *College Station,* [3]*6666 Ranch*, *Guthrie, TX*.
11:45 AM		**Break**
12:00 PM	125	**Weight estimation in miniature horses and Shetland ponies.** A. M. Bruce*, E. L. Wagner, and P. J. Tyler, *Auburn University*, *Auburn, AL*.
12:15 PM	126	**Evaluation of body weight estimation methods in horses.** E. L. Wagner* and P. J. Tyler, *Auburn University*, *Auburn, AL.*

National ADSA Dairy Foods Oral
Dairy Foods Oral Student Competition
Chair: **Kasipathy Kailasapathy, University of Western Sydney**

501/502

9:30 AM	127	**The effect of sodium gluconate on pH, lactose, lactic and, and water-soluble Ca changes during Cheddar cheese ripening.** C. Phadungath*[1] and L. E. Metzger[2], [1]*Midwest Dairy Foods Research Center, University of Minnesota*, *St Paul,* [2]*Midwest Dairy Foods Research Center, South Dakota State University*, *Brookings.*
9:45 AM	128	**The impact of starter culture and annatto on the flavor and functionality of whey protein concentrate.** R. E. Campbell*, R. E. Miracle, and M. A. Drake, *North Carolina State University*, *Raleigh.*
10:00 AM	129	**Exopolysaccharides modify the functional properties of whey protein concentrate.** G. Deep* and A. Hassan, *Midwest Dairy Foods Research Center, Dairy Science Department*, *South Dakota State University, Brookings*.
10:15 AM	130	**Evaluation of the effects of cheese milk fat content on the lipid composition and flavor of liquid whey and whey protein concentrate.** A. E. Croissant*[1], L. Dean[2], and M. A. Drake[1], [1]*North Carolina State University*, *Raleigh,* [2]*USDA-ARS, North Carolina State University*, *Raleigh*.
10:30 AM	131	**Growth and production of volatile compounds by *Lactobacillus casei* in Cheddar cheese extract under Cheddar cheese ripening condition.** H. Cai*[1], M. Budinich[1], W. Tan[1], E. Miracle[2], J. Broadbent[3], M. A. Drake[2], and J. Steele[1], [1]*University of Wisconsin*, *Madison*, [2]*North Carolina State University*, *Raleigh*, [3]*Utah State University*, *Logan*.
10:45 AM	132	**Interaction between casein micelles and serum protein/κ–casein complexes during renneting of heat–treated skim milk.** P. Kethireddipalli*, A. R. Hill, and D. G. Dalgleish, *University of Guelph*, *Guelph, ON, Canada*.

11:00 AM	133	**Starter cultures and cattle feed manipulation enhance conjugated linoleic acid levels in Cheddar cheese.** M. S. Mohan*, S. Anand, K. F. Kalscheur, and A. N. Hassan, *Midwest Dairy Foods Research Center, South Dakota State University*, *Brookings*.
11:15 AM	134	**Transcriptional stress responses to hydrogen peroxide in *Bifidobacterium longum*.** T. S. Oberg*[1], J. L. Steele[2], S. C. Ingham[2], and J. R. Broadbent[1], [1]*Utah State University*, *Logan,* [2]*University of Wisconsin*, *Madison.*
11:30 AM	135	**Positive influence of milk on the expression of some stress-induced genes in *Bifidobacterium longum*.** W. Dominguez* and D. J. O'Sullivan, *University of Minnesota*.
11:45 AM	136	**Impact of color of low fat Cheddar cheese on consumer preference.** R. Wadhwani*, D. J. McMahon, and C. Maughan, *Utah State University*, *Logan.*

Nonruminant Nutrition
Amino Acids 1
Chair: **Ryan Dilger, University of Illinois**
Sponsor: Novus International Inc.
Korbel Ballroom 2c

9:30 AM	137	**Dietary supplementation of L-glutamine and L-glutamate to newly hatched broiler chickens.** Y. Zhao*[1], P. R. Ferket[1], G. Wu[2], K. Nakagawa[3], and S. W. Kim[1], [1]*North Carolina State University*, *Raleigh*, [2]*Texas A&M University*, *College Station*, [3]*Ajinomoto Co. Inc., Tokyo, Japan*.
9:45 AM	138	**The digestible lysine requirement of Cobb 500 × Hubbard M99 male broilers from 35 to 49 days.** M. D. Dimova*[1], R. B. Shirley[2], J. L. Usry[2], P. B. Tilman[2], M. E. Freeman[1], and A. J. Davis[1], [1]*University of Georgia*, *Athens,* [2]*Ajinomoto Heartland, LLC*, *Chicago, IL*.
10:00 AM	139	**The effect of dietary pea and amino acid levels on the performance of broiler chickens.** S. M. Ebsim*[1], T. D. Warkentin[2], and H. L. Classen[1], [1]*Department of Animal and Poultry Science, University of Saskatchewan*, *Saskatoon, Saskatchewan, Canada*, [2]*Crop Development Centre, University of Saskatchewan*, *Saskatoon, Saskatchewan, Canada*.
10:15 AM	140	**Effect of a mono component protease on true amino acid digestibility of full fat soy for broiler chickens using different methods.** R. K. G. Messias[1], L. F. T. Albino[1], J. O. B. Sorbara*[2], and H. S. Rostagno[1], [1]*Universidade Federal de Viçosa*, *Viçosa, MG, Brazil*, [2]*DSM Nutritional Products*, *São Paulo, SP, Brazil*.
10:30 AM	141	**Ileal digestibility of the amino acids of soybean meals of different origin in broilers.** M. Frikha[1], M. P. Serrano[1], D. G. Valencia[2], C. Centeno[3], R. Lázaro[1], and G. G. Mateos*[1], [1]*Universidad Politécnica de Madrid*, *Madrid, Spain*, [2]*Nutral S. A., Madrid, Spain*, [3]*CSIC*, *Madrid, Spain*.
10:45 AM		**Break**
11:00 AM	142	**Nutrient density and balanced amino acids to ME ratio are drivers of growth, feed efficiency and carcass yield in broiler chickens.** L. F. Romero*[1] and V. Ravindran[2], [1]*Danisco Animal Nutrition*, *Marlborough, UK*, [2]*Massey University*, *Palmerston North, New Zealand*.
11:15 AM	143	**Digestible lysine requirements of Cobb × Cobb 700 male broilers from twenty-eight to forty-two days of age.** W. A. Dozier III*[1], A. Corzo[2], M. T. Kidd[2], and P. B. Tillman[3], [1]*Auburn University*, *Auburn, AL*, [2]*Mississippi State University*, *Mississippi State,* [3]*Ajinomoto Heartland LLC*, *Chicago, IL*.
11:30 AM	144	**Maximizing the use of supplemental amino acids in diets for 7- kilogram pigs.** V. D. Naranjo*[1], T. D. Bidner[1], R. L. Payne[2], and L. L Southern[1], [1]*LSU Agricultural Center*, *Baton Rouge,*[2]*Evonik-Degussa Corporation*, *Kennesaw, GA.*
11:45 AM	145	**Well-fed piglets prefer amino acids that elicit umami taste.** G. Tedo*[1], E. Roura[1], M. Reina[2], J. L. Ruiz-de la Torre[3], and X. Manteca[3], [1]*Lucta SA*, *Barcelona, Spain*, [2]*Celltec-University of Barcelona*, *Barcelona, Spain*, [3]*Autonomous University of Barcelona*, *Barcelona, Spain*.

Nonruminant Nutrition
Dietary Fat
Chair: **LeAnn Johnston, Prairie Swine Centre**
Sponsor: Alltech
301/302

9:30 AM 146 **Effect of fat source and levels, with lysophospholipids, on broiler performance, fatty acid digestibility and apparent metabolizable energy content in feed.**
B. K. Zhang*[1], H. T. Li[2], Y. M. Guo[1], and D. Q. Zhao[1], [1]*China Agricultural University*, *Beijing, China*, [2]*Kemin Industries Co. Ltd*, *Zhuhai, China*.

9:45 AM 147 **Effect of dietary fat on the production and composition of emu oil.**
D. C. Bennett*, W. E. Code, and K. M. Cheng, *University of British Columbia*, *Vancouver, BC, Canada*.

10:00 AM 148 **Whole body retention of highly unsaturated n-3 fatty acids (HUFA) and apparent conversion from 18:3n-3 are independent of body weight in pigs fed flaxseed diets.**
H. R. Martínez Ramírez*[1], J. K. G. Kramer[2], and C. F. M. de Lange[1], [1]*Centre for Nutritional Modeling, Department of Animal and Poultry Science, University of Guelph*, *Guelph, ON, Canada,* [2]*Agriculture and Agri-Food Canada*, *Guelph, ON, Canada*.

10:15 AM 149 **Effect of dietary conjugated linoleic acid on markers of intramuscular adipocytes in pork.**
K. M. Barnes*[1], N. Winslow[1], A. Shelton[1], and M. J. Azain[2], [1]*West Virginia University*, *Morgantown,* [2]*University of Georgia*, *Athens*.

10:30 AM 150 **Effects of dietary polyunsaturation level and genistein supplementation on performance and meat quality in quails reared under heat stress.**
N. Sahin* and C. Orhan, *Firat University Faculty of Veterinary Medicine Department of Animal Nutrition*, *Elazig, Turkey*.

10:45 AM 151 **Evaluating the efficacy of OptiCal under varying levels of dietary fat inclusion.**
J. D. Hamburg*[1], A. B. Batal[1], and S. D. Frankenbach[2], [1]*University of Georgia*, *Athens,* [2]*JBS United Inc., Indianapolis, IN.*

11:00 AM **Break**

11:15 AM 152 **Fat digestibility in enzymatically treated soybean meal without and with choice white grease and vegetable oil.**
K. P. Goebel* and H. H. Stein, *University of Illinois*, *Urbana*.

11:30 AM 153 **Effect of dietary DHA levels and different sources of oil (fat) on egg yolk DHA and n-3 fatty acids levels.**
M. K. Manangi*, B. Wuelling, J. Hux, S. Carter, C. D. Knight, and M. Vazquez-Anon, *Novus International, Inc.*, *St. Charles, MO*.

11:45 AM 154 **Effect of different levels of flaxseed and DHA GOLD on egg yolk DHA deposition.**
M. K. Manangi*, B. Wuelling, J. Hux, S. Carter, C. D. Knight, and M. Vazquez-Anon, *Novus International, Inc.*, *St. Charles, MO*.

12:00 PM 155 **The interaction of dietary fatty acids on the egg yolk fatty acid composition.**
R. Poureslami*[1,4], K. Raes[2], and E. Delezie[3], G. Huyghebaert[3], A. B. Batal[1], and S. De Smet[4], [1]*University of Georgia*, *Athens,* [2]*University College West-Flanders*, *Kortrijk, Belgium*, [3]*Institute for Agricultural and Fisheries Research*, *Melle, Belgium*, [4]*Ghent University*, *Melle, Belgium*.

12:15 PM 156 **The effect of omega-3 fatty acid rich algae biomass supplementation on production and egg and plasma components from 61 to 69 weeks of age.**
H. M. Yakout*[1], C. L. Novak[2], and Z. Wen[3], [1]*Alexandria University*, *Alexandria, Egypt*, [2]*Land O'Lakes Purina Feed*, *Kansas City, MO,* [3]*Virginia Tech*, *Blacksburg.*

Nonruminant Nutrition Symposium
Nutrigenomics
Chair: **Scott Radcliffe, Purdue University**
Korbel Ballroom 1cd

9:30 AM **Introduction**

9:35 AM 157 **Practical uses of nutrigenomics and gene expression patterns to develop and evaluate nutritional strategies.**
K. A. Dawson*, *Alltech Center for Animal Nutrigenomics and Applied Animal Nutrition*, *Nicholasville, KY*.

10:10 AM 158 **Early life nutritional conditioning with dietary phosphorus.**
C. M. Ashwell*[1] and R. Angel[2], [1]*Department of Poultry Science, North Carolina State University*, *Raleigh*, [2]*Department of Animal and Avian Sciences, University of Maryland*, *College Park*.

10:45 AM **Break**

11:00 AM 159 **Using nutrigenomics to elucidate interrelationships in trace mineral metabolism.**
S. L. Hansen*[1], J. W. Spears[2], and R. S. Fry[2], [1]*Iowa State University*, *Ames*, [2]*North Carolina State University*, *Raleigh*.

11:35 AM 160 **A functional genomics view of selenium in energy metabolism, obesity, and diabetes.**
X. G. Lei*, *Cornell University*, *Ithaca, NY*.

12:10 PM **Discussion**

Physiology and Endocrinology
Dairy Cow Synchronization and Fertility
Chair: **Paul Fricke, University of Wisconsin-Madison**
505/506

9:30 AM 161 **Alternative protocols to presynchronize estrous cycles in dairy cattle before a timed AI program.**
J. S. Stevenson*, *Kansas State University*, *Manhattan.*

9:45 AM 162 **Effects of presynchronizations with GnRH/PGF$_{2\alpha}$ vs. progesterone before Ovsynch in noncyclic dairy cows.**
G. Yilmazbas-Mecitoglu*[1], A. Keskin[1], A. Gumen[1], E. Karakaya[1], R. Darici[2], and H. Okut[3], [1]*University of Uludag*, *Bursa, Turkey*, [2]*Tarfas Co., Bursa, Turkey*, [3]*University of Yuzuncu Yil*, *Van, Turkey*.

10:00 AM 163 **Comparison of estrus and ovulation synchronisation protocols: Effects on ovarian follicular dynamics, corpus luteum growth, and circulating steroid concentrations in lactating dairy cows.**
M. M. Herlihy*[1,2], M. A. Crowe[2], M. G. Diskin[3], and S. T. Butler[1], [1]*Teagasc Moorepark DPRC*, *Cork, Ireland*, [2]*University College Dublin*, *Ireland*, [3]*Teagasc Athenry APRC, Galway, Ireland*.

10:15 AM 164 **Effects of reducing interval from GnRH to PGF$_{2\alpha}$ in Ovsynch protocol on pregnancy rate in cyclic lactating dairy cows.**
A. Gumen*[1], G. Yilmazbas-Mecitoglu[1], A. Keskin[1], E. Karakaya[1], Y. Celik[2], and H. Okut[3], [1]*University of Uludag*, *Bursa, Turkey*, [2]*TARFAS Co., Bursa, Turkey*, [3]*University of Yuzuncu Yil*, *Van, Turkey*.

10:30 AM 165 **Presynchronization with hCG 7 d before initiation of Resynch improves fertility similar to a Double-Ovsynch Resynch protocol in lactating dairy cows.**
J. O. Giordano*, J. N. Guenther, M. S. Ares, M. C. Wiltbank, and P. M. Fricke, *University of Wisconsin*, *Madison*.

10:45 AM 166 **Comparison of responses to Ovsynch for Holstein-Friesian and Swedish-Red cows.**
A. Keskin*[1], G. Yilmazbas-Mecitoglu[1], A. Gumen[1], E. Karakaya[1], Y. Celik[2], H. Okut[3], and M. C. Wiltbank[4], [1]*University of Uludag, Gorukle, Bursa, Turkey*, [2]*TARFAS Co, Karacabey, Bursa, Turkey*, [3]*University of Yuzuncu Yil*, *Van, Turkey*, [4]*University of Wisconcin-Madison*, *Madison.*

11:00 AM 167 **Manipulation of protein feed levels during Ovsynch TAI and early embryonic development to improve fertility in lactating dairy cows.**
M. B. Gordon* and R. Rajamahendran, *University of British Columbia*, *Vancouver, BC, Canada*.

11:15 AM 168 **Reproductive tract differences in repeat-breeder cows.**
R. A. Cushman*, J. R. Miles, and S. E. Echternkamp, *U. S. Meat Animal Research Center*, *Clay Center, NE.*

11:30 AM	169	**The effect of supplementation with conjugated linoleic acid on the reproductive performance of lactating dairy cows.** I. A. Hutchinson*[1,2], P. Lonergan[2], A. C. O. Evans[2], R. J. Dewhurst[3], and S. T. Butler[1], [1]*Teagasc, Moorepark DPRC, Cork, Ireland*, [2]*University College Dublin, Dublin, Ireland*, [3]*Teagasc, Grange, Meath, Ireland*.
11:45 AM	170	**The impact on pregnancy rates in dairy cattle artificially inseminated with semen prepared by number of progressively motile sperm.** L. Rabinovitch*[1], U. Shalit[1], M. Deutsch[1], Y. Zeron[2], and P. Chenoweth[3], [1]*Medical Electronic Systems, Caesarea, Israel*, [2]*Sion A. I. Company, Shikmim, Israel*, [3]*Charles Sturt University, Wagga Wagga, New South Wales, Australia*.
12:00 PM	171	**Effect of flunixin meglumine on prostaglandin metabolites and progesterone in lactating dairy cows.** A. Ahmadzadeh*[1], S. Read[1], K. G. Carnahan[1], and J. C. Dalton[2], [1]*University of Idaho, Moscow*, [2]*University of Idaho, Calwell R&E*.
12:15 PM	172	**Development of a mechanistic metabolic model of regulation of reproductive processes in dairy cattle.** P. Celi[2], I. Lean[2], H. Raadsma[2], A. Rabiee[2], and J. P. McNamara*[1], [1]*Washington State University, Pullman,* [2]*University of Sydney, Camden, NSW, Australia*.

Production, Management and the Environment
Poultry 1
Chair: Sacit F. Bilgili, Auburn University
Korbel Ballroom 1f

9:30 AM	173	**Effect of dietary supplementation of mannan-oligosaccharides and Lactobacillus-based probiotics on indigenous intestinal bacterial ecology and intestinal microarchitecture of broilers reared under heat stress.** M. U. Sohail*, I. Ahmad, H. Rehman, K. Ashraf, S. Yousaf, S. Ashraf, and H. Zaneb, *University of Veterinary and Animal Sciences, Lahore, Punjab, Pakistan.*
9:45 AM	174	**Effects of turning frequency during incubation on broiler embryonic development.** Y. M. Lin*[1], J. T. Brake[1], S. Yahav[2], and O. Elibol[3], [1]*North Carolina State University, Department of Poultry Science, Scott Hall, Raleigh, ,*[2]*Institute of Animal Science, ARO, The Volcani Center, Bet-Dagan, Israel,* [3]*Department of Animal Science, Faculty of Agriculture, University of Ankara, Ankara, Turkey*.
10:00 AM	175	**Effects of arginine, vitamin E and mannanoligosaccharides after coccidiosis vaccination and challenge in broiler chickens.** D. J. Chan-Diaz*[1,2], D. Caldwell[2], S. Pohl[2], G. Casco[2], A. Pro[1], S. Fitz-Coy[3], and C. A. Ruiz-Feria[1], [1]*Texas A&M University, College Station*, [2]*Colegio de Postgraduados, Montecillos, Mexico*, [3]*Intervet/Schering-Plough Animal Health, Millsboro, DE*.
10:15 AM	176	**The effect of double interspiking on fertility, stress, and hormone levels in broiler breeder males in heat-stressed environments.** K. M. Chung*, M. O. Smith, and H. G. Kattesh, *University of Tennessee, Knoxville*.
10:30 AM	177	**Effects of breeder feeding and trace mineral source on leg health and bone traits of broiler progeny.** P. E. Eusebio-Balcazar*[1], E. O. Oviedo-Rondón[1], A. Mitchell[2], J. Brake[1], M. J. Wineland[1], V. Moraes[1,3], and N. Leandro[1,4], [1]*North Carolina State University, Raleigh,* [2]*USDA-ARS, BARC, Beltsville, MD*, [3]*Universidade Estadual Paulista, UNESP, Jaboticabal, SP, Brazil*, [4]*Universidade Federal de Goiás, Goiania, GO, Brasil*.
10:45 AM	178	**Dietary vitamin E supplementation and shelf life of ground broiler chicken meat during refrigerated storage.** B. Saenmahayak*, M. Singh, J. B. Hess, W. A. Dozier III, and S. F. Bilgili, *Auburn University, Auburn, AL.*
11:00 AM	179	**Impact of feeding time and photoperiod on egg production patterns in broiler breeder females.** D. C. Paul*, M. J. Zuidhof, A. Pishnamazi, and R. A. Renema, *University of Alberta, Edmonton, Alberta, Canada*.
11:15 AM	180	**Dietary camelina meal for broiler chickens: Growth performance at 0, 5, and 10% inclusion rates.** R. M. Hulet*, P. H. Patterson, A. Y. Pekel, and T. L. Cravener, *The Pennsylvania State University, University Park.*
11:30 AM	181	**Evaluation of a poultry house for the presence of *Salmonella* and fungi at different sites through the broiler production continuum.** J. A. Byrd*, C. L. Sheffield, and T. C. Crippen, *USDA-ARS-Food and Feed Safety Research Unit, College Station, TX*.
11:45 AM	182	**Effect of abrupt versus gradual changes to daylength on productivity of broilers.** K. Schwean-Lardner* and H. L. Classen, *University of Saskatchewan, Saskatoon, SK, Canada*.

12:00 PM 183 **Influence of long-bright, increasing-dim, and split-dark-bright lighting programs and strain on broiler performance.**
R. J. Lien*, J. B. Hess, and S. F. Bilgili, *Auburn University*, *Auburn, AL*.

12:15 PM 184 **Free-choice feeding of free-range meat chickens.**
A. C. Fanatico*[1], V. B. Brewer[2], C. M. Owens[2], and A. M. Donoghue[1], [1]*USDA Agricultural Research Service, Poultry Production and Product Safety Research*, *Fayetteville, AR*, [2]*University of Arkansas, Department of Poultry Science*, *Fayetteville.*

Production, Management and the Environment
Poultry 2
Chair: **Todd J. Applegate, Purdue University**
Korbel Ballroom 3c

9:30 AM 185 **Omega-3 PUFA and lutein enrichment: Different feeding strategies and effect on storage stability.**
S. Nain* and R. A. Renema, *University of Alberta*, *Edmonton, AB, Canada*.

9:45 AM 186 **Effect of egg storage conditions on gene expression during turkey embryonic development.**
J. A. Hamidu*[1], M. Li[1], G. M. Fasenko[2], and L. L. Guan[1], [1]*University of Alberta*, *Edmonton, Alberta, Canada*, [2]*University of New Mexico*, *Albuquerque.*

10:00 AM 187 **Body weight change, breast muscle, and reproductive tract development in broiler breeder hens and their effects on fertility and egg production.**
N. Leksrisompong*, J. T. Brake, and E. O. Oviedo-Rondon, *North Carolina State University, Department of Poultry Science, Scott Hall*, *Raleigh.*

10:15 AM 188 **Effects of temperature on egg size and quality.**
A. G. C. DesLauriers*, M. J. Zuidhof, R. A. Renema, D. Paul, and A. Pishnamazi, *University of Alberta*, *Edmonton, Alberta, Canada*.

10:30 AM 189 **The impact of distillers dried grains plus solubles (DDGS) diets on hen performance, egg quality, and manure nutrients.**
P. H. Patterson, A. Y. Pekel, A. Adrizal, H. K. Burley*, T. L. Cravener, E. F. Wheeler, and P. A. Topper, *The Pennsylvania State University*, *University Park*.

10:45 AM 190 **Breeder hen age affects chick early innate immune function.**
M. L. Johnson* and D. R. Korver, *University of Alberta*, *Edmonton, Canada*.

11:00 AM 191 **Sperm production and testicular development of broiler breeder males reared on shortened growth cycles.**
J. R. Moyle*, S. M. Whipple, D. E. Yohoo, and R. K. Bramwell, *University of Arkansas*, *Fayetteville.*

11:15 AM 192 **Germination of *Bacillus subtilis* C-3102 in the gut of conventional and germ-free chicken.**
T. Hamaoka*[1], N. Otomo[1], B. Y. Lee[1], Y. Tadano[2], T. Marubashi[2], J. Marshall[3], and A. Van Kessel[3], [1]*Calpis U. S. A., Inc., Mt. Prospect, IL*, [2]*Calpis Co. Ltd., Tokyo, Japan*, [3]*University of Saskatchewan*, *Saskatchewan, Canada*.

11:30 AM 193 **Examining the sitter duck condition.**
K. Murdoch[1], K. Seward[1], J. Riley[1], D. T. Ort[2], and M. J. Wineland*[2], [1]*Maple Leaf Farms*, *Milford, IN*, [2]*North Carolina State University*, *Raleigh.*

11:45 AM 194 **The effects of body weight on production and overall fertility and duration of fertility in broiler breeder hens.**
R. K. Bramwell*, D. E. Yoho, J. R. Moyle, and S. M. Whipple, *Department of Poultry Science, University of Arkansas*, *Fayetteville.*

12:00 PM 195 **Comparing the physiological capacity for fertility in caged broiler breeder hens from four commercial strains.**
R. K. Bramwell*, J. R. Moyle, S. M. Whipple, and D. E. Yoho, *Department of Poultry Science, University of Arkansas*, *Fayetteville.*

12:15 PM 196 **Modeling energy utilization of broiler breeder hens is affected by environmental temperature and dietary energy.**
A. Pishnamazi*, M. J. Zuidhof, R. A. Renema, and D. Paul, *University of Alberta*, *Edmonton, Alberta, Canada*.

Ruminant Nutrition
Beef: By-Product Feeds
Chair: **Aimee Wertz, South Dakota State University**
Korbel Ballroom 2b

9:30 AM 198 **Use of dried distillers grains throughout a beef production system: I. Stocker phase.**
E. K. Buttrey*[1,2], F. T. McCollum III[1], J. C. MacDonald[2,3], and K. H. Jenkins[3], [1]*Texas AgriLife Extension Service*, *Amarillo*, [2]*West Texas A&M University*, *Canyon*, [3]*Texas AgriLife Research*, *Amarillo*.

9:45 AM 197 **Use of dried distillers grains throughout a beef production system: II. Finishing phase.**
E. K. Buttrey*[1,2], F. T. McCollum III[1], J. C. MacDonald[2,3], and K. H. Jenkins[3], [1]*Texas AgriLife Extension Service*, *Amarillo*, [2]*West Texas A&M University*, *Canyon*, [3]*Texas AgriLife Research*, *Amarillo*.

10:00 AM 199 **Comparison of wheat or corn dried distillers grains with solubles on rumen fermentation and nutrient digestibility in feedlot heifers.**
L. J. Walter*[1], T. A. McAllister[2], W. Yang[2], K. Beauchemin[2], and J. J. McKinnon[1], [1]*University of Saskatchewan*, *Saskatoon, SK*, [2]*Agriculture and Agri-Food Canada Research Centre*, *Lethbridge, AB, Canada.*

10:15 AM 200 **Effects of wet distillers grains plus solubles concentration in steam-flaked corn-based finishing diets on nutrient digestibility.**
M. K. Luebbe*[1], K. H. Jenkins[1], J. Patterson[1], E. K. Buttrey[2], and J. C. MacDonald[1,3], [1]*Texas AgriLife Research*, *Amarillo*, [2]*Texas AgriLife Extension*, *Amarillo*, [3]*West Texas A&M University*, *Canyon*.

10:30 AM 201 **Effects of wet distillers grains plus solubles concentration in steam-flaked corn-based finishing diets on performance and carcass characteristics of beef steers.**
M. K. Luebbe*[1], T. C. Davis[1], K. H. Jenkins[1], F. T. McCollum III[2], N. A. Cole[3], and J. C. MacDonald[1,4], [1]*Texas AgriLife Research*, *Amarillo*, [2]*Texas AgriLife Extension*, *Amarillo*, [3]*USDA-ARS*, *Bushland, TX*, [4]*West Texas A&M University*, *Canyon*.

10:45 AM 202 **Supplementing modified wet distillers grains with solubles to long yearling steers grazing native range.**
K. M. Rolfe*, W. A. Griffin, T. J. Klopfenstein, and G. E. Erickson, *University of Nebraska, Lincoln.*

11:00 AM 203 **Influence of feeding dried distillers grains plus solubles in potato byproduct-based finishing diets.**
J. I. Szasz*[1,4], D. S. Secrist[2], K. K. Karges[3], C. W. Hunt[1], K. A. Johnson[4], and T. N. Bodine[5], [1]*University of Idaho*, *Moscow,* [2]*Agri Beef Co., Moses Lake, WA*, [3]*Poet Nutrition*, *Sioux Falls, SD*, [4]*Washington State University*, *Pullman,* [5]*Performix Nutrition Systems*, *Nampa, ID*.

11:15 AM 204 **Effect of feeding modified distillers grains and wet corn gluten feed compared to forage on ruminal pH, intake and digestibility when adapting cattle to finishing diets.**
M. G. Dib*[1], G. E. Erickson[1], T. J. Klopfenstein[1], J. O. Sarturi[1], R. Lindquist[2], K. M. Rolfe[1], C. D. Buckner[1], and V. R. Bremer[1], [1]*University of Nebraska*, *Lincoln,* [2]*Archer Daniels Midland*, *Columbus, NE*.

11:30 AM 205 **Effects of wet distillers grain and a direct-fed microbial on finishing performance and carcass characteristics of beef steers fed a sorghum-based finishing diet.**
J. R. Jaeger*[1], J. W. Waggoner[1], K. C. Olson[2], J. W. Bolte[1], and S. R. Goodall[3], [1]*Western Kansas Agricultural Research Centers, Kansas State University*, *Hays*, [2]*Kansas State University*, *Manhattan*, [3]*Nova Microbial Technologies*, *Omaha, NE*.

11:45 AM 206 **Feeding *Lactobacillus acidophilus* combined with *Propionibacterium freudenreichii* to determine performance and carcass characteristics in feedlot heifers fed with or without wet distiller's grains plus solubles.**
B. K. Wilson*[1], B. P. Holland[1], T. G. Nagaraja[2], and C. R. Krehbiel[1], [1]*Oklahoma State University*, *Stillwater,* [2]*Kansas State University*, *Manhattan*.

12:00 PM 207 **Growth performance of finishing steers fed dry or wet distillers grains plus solubles differing in sulfur content.**
J. O. Sarturi*, G. E. Erickson, T. J. Klopfenstein, J. T. Vasconcelos, W. A. Griffin, and J. R. Benton, *University of Nebraska*, *Lincoln.*

12:15 PM 208 **Comparing dry, wet, or modified distillers grains plus solubles on feedlot cattle performance.**
B. L. Nuttelman*, W. A. Griffin, J. R. Benton, G. E. Erickson, and T. J. Klopfenstein, *University of Nebraska, Lincoln*.

Ruminant Nutrition
Dairy: Protein and Fat
Chair: **Alex Bach, IRTA, Spain**
Korbel Ballroom 2a

9:30 AM 209 **Dietary saturated fatty acid source and parity influence lactational performance of early lactation Holstein dairy cows.**
M. Hollmann* and D. K. Beede, *Michigan State University*, *East Lansing*.

9:45 AM 210 **Adaptations in the transcriptome of adipose tissue in transition dairy cattle.**
S. Rocco[1], G. Duncan[1], J. Loor[2], J. Vierck[1], and J. P. McNamara*[1], [1]*Washington State University*, *Pullman,* [2]*University of Illinois*, *Urbana.*

10:00 AM 211 **Use of omega-3 fatty acid rich algae and their oil as a feed supplement for dairy cattle.**
J. A. Stamey*[1], D. M. Shepherd[1], M. J. de Veth[2], and B. A. Corl[1], [1]*Virginia Polytechnic Institute and State University*, *Blacksburg,* [2]*Balchem Corp., New Hampton, NY.*

10:15 AM 212 **Additive effects of propionate, *trans*-10,*cis*-12-CLA and acetate on milk fat production and composition in dairy cows.**
G. Maxin*[1], H. Rulquin[1], J. L. Peyraud[1], and F. Glasser[2], [1]*INRA-Agrocampus Ouest*, *Rennes, France*, [2]*INRA*, *Theix, Saint-Genes-Champanelle, France*.

10:30 AM 213 **Regulation of adipose tissue metabolism by coordinated changes in gene transcription during the transition period.**
S. Rocco*, G. Duncan, J. Kay, R. Bose, J. Vierck, and J. McNamara, *Washington State University*, *Pullman.*

10:45 AM 214 **Effects of dietary protein concentration and coconut oil supplementation on nitrogen utilization and production in dairy cows.**
C. Lee*, A. N. Hristov, K. S. Hyler, T. W. Cassidy, and M. Long, *Pennsylvania State University*, *University Park.*

11:00 AM 215 **The effect of feeding ruminally protected lysine (RPL) on production performance and plasma amino acid profile of early lactation dairy cattle.**
J. E. Nocek*[1] and I. Shinzato[2], [1]*Spruce Haven Farm and Research Center*, *Auburn, NY*, [2]*Ajinomoto Co., Inc., Tokyo, Japan*.

11:15 AM 216 **Effect of Protein Edge on ruminal microbial protein production and performance of lactating dairy cows.**
S. E. Boucher*[1], H. M. Dann[1], K. W. Cotanch[1], C. S. Ballard[1], R. J. Grant[1], and K. Yagi[2], [1]*William H. Miner Agricultural Research Institute*, *Chazy, NY,* [2]*ZEN-NOH National Federation of Agricultural Co-operative Associations*, *Tokyo, Japan*.

11:30 AM 217 **Use of plasma concentrations to estimate bioavailability of methionine in rumen-protected products fed to dairy cows.**
G. A. Broderick*[1], S. M. Reynal[2], R. A. Patton[3], W. Heimbeck[4], and P. Lodi[5], [1]*US Dairy Forage Research Center*, *Madison, WI*, [2]*University of Wisconsin*, *Madison*, [3]*Nittany Dairy Nutrition, Inc., Mifflinburg, PA*, [4]*Evonik Degussa GmbH*, *Hanau, Germany*, [5]*Universidad Nacional de Rosario, Argentina*, *Rosario, Argentina*.

11:45 AM 218 **Evaluation of a ruminally protected lysine product to increase milk protein production and plasma lysine concentration.**
S. E. Boucher*[1], H. M. Dann[1], K. W. Cotanch[1], C. S. Ballard[1], R. J. Grant[1], and I. Shinzato[2], [1]*W. H. Miner Agricultural Research Institute*, *Chazy, NY*, [2]*Ajinomoto Co., Inc., Tokyo, Japan*.

12:00 PM 219 **Effect of rumen-protected lysine and methionine on lactating performance in lactating water buffalo.**
C. X. Zou*[1], Q. F. Tang[2], G. S. Qin[1], B. Z. Yang[1], S. L. Li[1], S. J. Wei[1], K. Liang[1], L. L. Li[1], X. W. Liang[1], and Z. S. Xia[2], [1]*Buffalo Research Institute*, *Nanning, China*, [2]*College of Animal Science, Guangxi University*, *Nanning, China*.

12:15 PM 220 **Effect of rumen protected γ-aminobutyric acid on performance and health status of early lactating dairy cows.**
D. M. Wang, Z. Liu, F. Yang, H. Y. Liu, C. Wang*, Y. M. Wang, and J. X. Liu, *Institute of Dairy Science, Zhejiang University*, *Hangzhou, China*.

ADSA-SAD (Student Affiliate Division) Undergraduate Competition
Dairy Foods
Chair: **Sylvia Kehoe, University of Wisconsin-River Falls**
705

11:00 AM 221 **Chocolate milk as a sports recovery drink.**
H. L. Weeks*, D. R. Winston, and R. E. James, *Virginia Polytechnic Institute and State University*, *Blacksburg*.

11:15 AM 222 **Dairy foods and the prevention of childhood obesity.**
J. E. Anderson* and C. C. Williams, *Louisiana State University*, *Baton Rouge*.

11:30 AM 223 **Understanding the ropy milk test.**
R. A. Russell* and C. D. Thompson, *University of Kentucky*, *Lexington.*

11:45 AM 224 **Conjugated linoleic acid in milk is related to the diet of lactating dairy cows.**
H. L. M. Tucker* and E. L. Karcher, *Department of Animal Science, Michigan State University*, *East Lansing*.

12:00 PM 225 **Using microfiltration to extend milk shelf life.**
E. W. Cloninger*, *Pennsylvania State University*, *University Park.*

12:15 PM 226 **Reducing milk price volatility through innovative programs at the local and global level.**
W. Robinson*, *Clemson University*, *Clemson, SC.*

Teaching/Undergraduate and Graduate Education
Graduate and Undergraduate Teaching I
Chair: **Mike Orth, Michigan State University**
303

11:00 AM 227 **The Missouri Pathways Partnership—Inroads in distance education.**
E. L. Walker*[1], S. P. Webb[1], J. D. Ulmer[2], and A. Evert[3], [1]*Missouri State University*, *Springfield,* [2]*Texas Tech University*, *Lubbock,* [3]*Redlands Community College*, *El Reno, OK*.

11:15 AM 228 **The effect of supplemental online resources in distance education format on undergraduate animal science laboratory instruction.**
J. Q. Bing*, S. E. Pratt-Phillips, and C. E. Farin, *North Carolina State University*, *Raleigh*.

11:30 AM 229 **APPLAUSE—A tool for improving student presentations.**
M. M. Beck* and R. Johnson, *Clemson University*, *Clemson, SC.*

11:45 AM 230 **Student performance is enhanced by pedagogical shift to lecture podcasts.**
J. J. Parrish* and R. L. Monson, *University of Wisconsin*, *Madison*.

ADSA Southern Section Symposium
Dairy Cattle Grazing in the Southern United States
Chair: **Albert De Vries, University of Florida**
Korbel Ballroom 3a

2:00 PM 231 **Why dairy producers are choosing to graze (again) in southeastern United States.**
M. E. Sowerby*, *University of Florida*, *Gainesville*.

2:30 PM 232 **Nutritional and management strategies for lactating dairy cows housed on pasture-based systems in the southeastern U. nited States.**
C. R. Staples*[1], L. E. Sollenberger[1], J. H. Fike[2], B. Macoon[3], and R. S. Fontaneli[4], [1]*University of Florida*, *Gainesville*, [2]*Virginia Tech University*, *Blacksburg*, [3]*Mississippi State University*, *Raymond*, [4]*Embrasa Brasileira de Pesquisa Agropecuaria*, *Brazil*.

3:00 PM 233 **Nutrient management considerations for grazing dairies.**
S. R. Hill*, *Department of Animal and Dairy Science*, *Mississippi State University, Mississippi State*.

3:30 PM		**Break**
3:45 PM	234	**Reproduction and genetic programs for seasonal pasture-based dairy production systems.** S. P. Washburn*, *North Carolina State University*, *Raleigh*.
4:15 PM	235	**Comparisons of the economics and costs of producing milk on conventional versus grass-based "New Zealand style" dairies in Mississippi.** C. W. Herndon*, *Mississippi State University*, *Mississippi State*.
4:45 PM		**ADSA Southern Section Business Meeting**

ADSA-SAD (Student Affiliate Division) Undergraduate Competition
Dairy Production
Chair: **Sylvia Kehoe, University of Wisconsin-River Falls**
705

2:00 PM	236	**Precision feeding for improved sustainability efforts.** V. J. Eubanks*, *Clemson University*, *Clemson, SC.*
2:15 PM	237	**The benefits of anaerobic digestion as a waste management procedure on dairy farms.** C. M. Munz*, A. C. Wilkie, and M. E. Sowerby, *The University of Florida*, *Gainesville*.
2:30 PM	238	**Changing the attitude towards tail docking dairy cattle.** B. A. Wenner* and E. L. Karcher, *Department of Animal Science, Michigan State University*, *East Lansing*.
2:45 PM	239	**Improving freestall housing to address animal welfare and cow comfort.** R. M. Smith*, D. R. Winston, and C. S. Petersson-Wolfe, *Virginia Polytechnic Institute and State University*, *Blacksburg*.
3:00 PM	240	**Off to a good start.** J. C. Landry* and C. C. Williams, *Louisiana State University*, *Baton Rouge*.
3:15 PM	241	**Hemorrhagic bowel syndrome: The mysterious killer.** B. P. Cashell*, *Pennsylvania State University*, *University Park.*
3:30 PM	242	**Compost bedded pack barns: Opportunities, challenges, and management considerations.** C. M. Sheaffer* and J. M. Bewley, *University of Kentucky*, *Lexington*.

ADSA-SAD (Student Affiliate Division) Undergraduate Competition
Undergraduate Original Research
Chair: **Sylvia Kehoe, University of Wisconsin-River Falls**
707

2:00 PM	243	**The effects of metaphylaxis antibiotics on health and development of neonatal bull calves.** K. G. DeHaan*, G. A. Holub, and M. A. Tomaszewski, *Texas A&M University*, *College Station*.
2:15 PM	244	**Effects of Purina Cornerstone 20 Ampl-Calf DX30 on calf growth.** A. A. Blasi*[1], C. C. Stanley[2], C. R. Krehbiel[1], D. A. Jones[2], and W. Hurst[1], [1]*Oklahoma State University*, *Stillwater*, [2]*Land O'Lakes Purina Mills LLC*.
2:30 PM	245	**Use of omega-3 fatty acid rich algae and their oil as a feed supplement for dairy cattle.** D. M. Shepherd*[1], J. A. Stamey[1], B. A. Corl[1], M. J. de Veth[2], and D. R. Winston[1], [1]*Virginia Polytechnic Institute and State University*, *Blacksburg,* [2]*Balchem Corp., New Hampton, NY*.
2:45 PM	246	**Effect of rumen sampling on time budget of lactating Holstein dairy cows.** J. Deming*, P. D. Krawczel, and S. E. Boucher, *W. H. Miner Agricultural Research Institute*, *Chazy, NY.*
3:00 PM	247	**Effect of coliform mastitis on osteopontin expression in mammary tissues of Holstein dairy cows.** K. M. Jackson*[1], J. C. Gandy[2], L. M. Sordillo[2], and E. L. Karcher[1], [1]*Department of Animal Science, Michigan State University*, *East Lansing*, [2]*Department of Large Animal Clinical Sciences, Michigan State University*, *East Lansing*.

3:15 PM 248 **Evaluation of dairy cattle lying behavior in commercial freestall barns.**
C. Gravatte*, C. Coombs, and J. Bewley, *University of Kentucky*, *Lexington.*

3:30 PM 249 **Associations of DNA marker profiles for dry matter intake and efficiency with DNA marker profiles for fat-corrected milk yield and body weight.**
D. E. Brown*[1], C. D. Dechow[1], J. M. Daubert[1], W. Liu[1], and S. Bauck[2], [1]*Pennsylvania State University*, *University Park,* [2]*IGENITY Livestock Production Unit*, *Duluth, GA.*

3:45 PM 250 **Evaluating the effectiveness of "cow-side" tests to identify animals with a dominant follicle at the time of insemination in a TAI protocol.**
T. L. Crouch* and J. L. Fain, *Clemson University*, *Clemson, SC.*

4:00 PM 251 **Effects of temperature on X chromosome carrying compared to Y chromosome carrying bovine sperm cells: Preliminary results.**
L. A. Krueger*[1], J. L. Herring[1], and R. Wilborn[2], [1]*Alabama A&M University*, *Normal,* [2]*Auburn University*, *Auburn, AL*.

4:15 PM 252 **Corn grain and liquid feed as non-fiber carbohydrate sources in diets for lactating dairy cows: Digestibility trial.**
E. M. Eilenfeld*, M. L. Eastridge, and J. L. Firkins, *The Ohio State University*, *Columbus*.

Animal Behavior and Well-Being
Poultry 1: Ducks, Layers, and Turkeys
Chair: **Anna Johnston, Iowa State University**
405

2:00 PM 253 **Who did it and why: Floor laying by Pekin ducks.**
M. M. Makagon* and J. A. Mench, *University of California, Davis*.

2:15 PM 254 **Nest choices of Pekin ducks.**
M. M. Makagon*, C. B. Tucker, and J. A. Mench, *University of California, Davis*.

2:30 PM 255 **The effect of human induced stressors on the vocalizations of commercial brown and white egg laying hens.**
E. Otu-Nyarko*[1], J. An[3], P. M. Scheifele[2], D. B. Miller[1], M. T. Johnson[3], and M. J. Darre[1], [1]*University of Connecticut*, *Storrs,* [2]*University of Cincinnati*, *OH,* [3]*Marquette University*, *Milwaukee, WI.*

2:45 PM 256 **Influence of environmental management methods on the expression of glucocorticoid receptors in the laying hen's ovary.**
D. V. Arbona*, L. A. Bola, and J. B. Hoffman, *North Carolina State University*, *Raleigh.*

3:00 PM 257 **The influence of cage housing system and laying hen strain on bone quality pre and post slaughter.**
A. McMillan[1], K. Juurlink[1], B. Rathgeber[2], and M. Jendral*[1], [1]*Nova Scotia Agricultural College*, *Truro, Nova Scotia, Canada*, [2]*Agriculture Agri-Food Canada*, *Truro, Nova Scotia, Canada*.

3:15 PM **Break**

3:30 PM 258 **Astroturf as a dustbathing substrate for laying hens.**
G. Alvino*, G. Archer, and J. Mench, *University of California*, *Davis*.

3:45 PM 259 **The behaviour of laying hens in commercial aviary systems.**
M. Perez de Villareal*[1] and I. Estevez[1,2], [1]*Neiker-Tecnalia*, *Vitoria-Gasteiz, Spain*, [2]*IKERBASQUE*, *Bilbao, Spain*.

4:00 PM 260 **On-farm survey of beak characteristics in White Leghorns as a result of hot blade or infrared beak trimming.**
T. Gabrush[1], C. Carruthers*[1], K. Schwean-Lardner[1], T. Knezacek[1], C. Bennett[2], and H. L. Classen[1], [1]*University of Saskatchewan*, *Saskatoon, SK Canada*, [2]*Manitoba Agriculture, Food & Rural Initiatives*, *Winnipeg, MB Canada*.

4:15 PM 261 **Effects of different infrared beak treatment protocols on chicken welfare and physiology.**
R. L. Dennis* and H. W. Cheng, *LBRU, USDA-ARS*, *West Lafayette, IN.*

4:30 PM 262 **Brain and skull lesions in turkeys resulting from non-penetrating captive bolt, cervical dislocation, cervical crushing, and blunt trauma.**
M. A. Erasmus*, P. V. Turner, S. G. Nykamp, and T. M. Widowski, *University of Guelph*, *Guelph, Ontario, Canada*.

Animal Health
Immunity, Probiotics and Health Status
Chair: **Tanya Gressley, University of Delaware**
Sponsors: Elanco Animal Health, Pfizer Animal Health
401/402

2:00 PM 263 **An experiment in transmission of *Mycoplasma bovis* in sand bedding to naive dairy calves.**
D. J. Wilson*[1], A. Justice-Allen[1], T. J. Baldwin[1], R. T. Skirpstunas[1], K. B. Cavender[1], and G. Goodell[2], [1]*Utah State University*, *Logan*, [2]*The Dairy Authority*, *Greeley, CO*.

2:15 PM 264 **Effect of supplementing fatty acids to prepartum Holstein cows on transfer of passive immunity to calves.**
M. Garcia*, L. F. Greco, M. G. Favoreto, R. S. Marsola, L. T. Martins, D. Wang, W. W. Thatcher, J. E. P. Santos, and C. R. Staples, *University of Florida*, *Gainesville*.

2:30 PM 265 **Effect of a yeast autolysate combined with probiotics on performance and gut health of broilers.**
A. Ganner*[1], S. Masching[2], N. Reisinger[1], G. Schatzmayr[1], and T. Applegate[3], [1]*Biomin Research Center*, *Tulln, Austria*, [2]*Biomin Holding GmbH*, *Herzogenburg, Austria*, [3]*Purdue University*, *West Lafayette, IN.*

2:45 PM 266 **Effect of NuPro supplementation on intestinal *Clostridium perfringens* levels in broiler chickens.**
R. Thanissery*[1], J. L. McReynolds[2], D. E. Conner[1], K. S. Macklin[1], P. A. Curtis[1], and Y. O. Fasina[1], [1]*Auburn University*, *Auburn, AL*, [2]*SPARC-USDA-ARS*, *College Station, TX*.

3:00 PM 267 **A modified in vitro larvae migration inhibition assay using rumen fluid to evaluate *H. contortus* viability.**
T. R. Whitney*[1], D. R. Klein[2], A. E. Lee[1], C. B. Scott[2], and T. M. Craig[3], [1]*Texas AgriLife Research*, *San Angelo*, [2]*Angelo State Univ., San Angelo, TX*, [3]*Texas A&M Univ., College Station*.

3:15 PM 268 **Effect of feeding nitarsone medicated ration on the acquisition and development of nematode parasites in the chicken.**
F. D. Clark*[1], C. A. Tucker[1], J. Reynolds[1], T. A. Yazwinski[1], S. Clark[2], V. Smith[2], and K. Dobson[2], [1]*University of Arkansas*, *Fayetteville,* [2]*Alpharma, Inc*, *Bridgewater, NJ.*

3:30 PM 269 **Effect of a *Lactobacillus* probiotic and nitrate in feed on *Salmonella* colonization in broiler chicks.**
A. D. Wolfenden*, N. R. Pumford, M. J. Morgan, S. L. Layton, C. Kremer, G. Tellez, and B. M. Hargis, *University of Arkansas*, *Fayetteville*.

3:45 PM 270 **Effect of food additives on intestinal microflora in caeca of broilers challenged with *Eimeria* species analyzed using 16S rDNA pyrosequencing.**
A. Nalian*[1], M. Manoharan[1], J. Bray[1], S. Dowd[2], and A. Martynova-Van Kley[1], [1]*Stephen F. Austin State University*, *Nacogdoches, TX,* [2]*Research and Testing Laboratory*, *Lubbock, TX.*

4:00 PM 271 **Genetic line and dietary immunomodulator effects on expression of CXCLi2 in chicken heterophils responding to *Salmonella enteritidis*.**
S. B. Redmond*, P. Chuammitri, D. Palic, C. B. Andreasen, and S. J. Lamont, *Iowa State University*, *Ames*.

4:15 PM 272 **Nitric oxide synthesis by chicken macrophages results in coordinated changes in the mRNA abundance of multiple arginine transporters.**
M. Moulds* and B. D. Humphrey, *California Polytechnic State University*, *San Luis Obispo.*

4:30 PM 273 **Dietary cinnamaldehyde enhances intestinal protective immunity against *Eimeria acervulina*, *E. maxima*, and *E. tenella* in broiler chickens.**
S.-H. Lee*[1], H. Lillehoj[1], S.-I. Jang[1], K.-W. Lee[1], M.-S. Park[1], and D. Bravo[2], [1]*Animal and Natural Resources Institute*, *Agricultural Research Service-US Department of Agriculture*, *Beltsville, MD,* [2]*Pancosma S. A., Grand Saconnex, Geneva, Switzerland*.

4:45 PM 274 **Immune system stimulation and sulfur amino acid intake alter the pathways of glutathione metabolism at transcriptional level in pigs.**
A. Rakhshandeh*[1], A. Holliss[2], N. A. Karrow[1], and C. F. M. de Lange[1], [1]*University of Guelph, Department of Animal and Poultry Science*, [2]*University of Guelph, Advance Analysis Centre*, *Guelph, Ontario, Canada*.

Animal Health-Johne's Disease (JDIP) Epidemiology and Transmission

Chair: **Amin Ahmadzadeh, University of Idaho**

503/504

2:00 PM 275 **Cost-effectiveness of diagnostic strategies to identify *Mycobacterium avium* ssp. *paratuberculosis* super-shedder cows in a large dairy herd.**
S. S. Aly*[1], R. J. Anderson[2], R. H. Whitlock[3], T. L. Fyock[3], S. McAdams[3], T. M. Byrem[4], J. Jiang[5], J. M. Adaska[6], and I. A. Gardner[1], [1]*Department of Medicine and Epidemiology, School of Veterinary Medicine, University of California, Davis,* [2]*California Department of Food and Agriculture, Animal Health Branch, Sacramento,* [3]*Johne's Research Laboratory, New Bolton Center, School of Veterinary Medicine, University of Pennsylvania, Kennett Square,* [4]*Antel BioSystems, Inc, Lansing, MI,* [5]*Department of Statistics, University of California, Davis,* [6]*California Animal Health and Food Safety Laboratory, Tulare Branch, Tulare.*

2:15 PM 276 **Correlation between culture and quantitative real-time PCR results for *Mycobacterium avium* subspecies *paratuberculosis* in pooled fecal and environmental samples.**
S. S. Aly*[1], B. L. Mangold[2], R. H. Whitlock[3], R. W. Sweeney[3], R. J. Anderson[4], J. Jiang[5], Y. H. Shukken[6], E. P. Hovingh[7], D. R. Wolfgang[7], J. S. Van Kessel[8], J. S. Karns[8], J. E. Lombard[9], J. M. Smith[10], and I. A. Gardner[1], [1]*Department of Medicine and Epidemiology, School of Veterinary Medicine, University of California, Davis,* [2]*Tetracore, Inc., Rockville MD,* [3]*Department of Clinical Studies-New Bolton Center, School of Veterinary Medicine, University of Pennsylvania, Kennett Square,* [4]*California Department of Food and Agriculture, Animal Health Branch, Sacramento,* [5]*Department of Statistics, University of California, Davis,*[6]*Section of Epidemiology and Quality Milk Production Services, Department of Population Medicine and Diagnostic Sciences, College of Veterinary Medicine, Cornell University, Ithaca, NY,* [7]*Department of Veterinary and Biomedical Sciences, Pennsylvania State University, University Park,* [8]*Environmental Microbial and Food Safety Laboratory, ANRI, USDA-ARS, Beltsville, MD,* [9]*Centers for Epidemiology and Animal Health, Animal and Plant Health Inspection Service, USDA, Fort Collins, CO,* [10]*Department of Animal Science, University of Vermont, Burlington.*

2:30 PM 277 **Fecal culture and direct PCR in determining Mycobacterium avium subsp. paratuberculosis infectivity.**
C. C. Wu*[1], J. E. Williams[2], T. L. Lin[1], and G. R. G. Monif[3], [1]*Purdue University, West Lafayette, IN,* [2]*University of Florida, Gainesville,* [3]*Infectious Diseases Incorporated, Bellevue, NE.*

2:45 PM 278 **Estimation of test parameters for fecal culture and serum ELISA for detection of *Mycobacterium avium* ssp. *paratuberculosis* fecal shedding.**
L. A. Espejo*[1], F. J. Zagmutt[2], H. Groenendaal[2], and S. J. Wells[1], [1]*University of Minnesota, St. Paul,* [2]*Vose Consulting, Boulder, CO.*

3:00 PM 279 **Effect of delaying exposure to Johne's disease until adulthood on development of new infections in adult dairy cows.**
S. J. Wells*, N. Kubat, L. A. Espejo, and S. M. Godden, *University of Minnesota, St. Paul.*

3:15 PM 280 **Importance of latent infected animals in MAP infection dynamics in dairy herds.**
Y. H. Schukken*[1], A. K. Pradhan[1], R. M. Mitchell[1], Z. Lu[1], R. Smith[1], Y. T. Grohn[1], R. H. Whitlock[2], E. Hovingh[3], J. Smith[4], J. A. VanKessel[5], J. Karns[5], and D. Wolfgang[3], [1]*Cornell University, Ithaca, NY,* [2]*University of Pennsylvania, Kennett Square,* [3]*Pennsylvania State University, State College,* [4]*University of Vermont, Burlington,* [5]*ARS-USDA, Beltsville, MD.*

3:30 PM 281 **Impact of Johne's disease vaccines on a dairy herd: A mathematical modeling approach.**
Z. Lu*, Y. H. Schukken, R. L. Smith, and Y. T. Gröhn, *Cornell University, Ithaca, NY.*

3:45 PM 282 **Estimating the efficacy of imperfect paratuberculosis vaccines in dairy cattle from longitudinal field data with Markov chain Monte Carlo models.**
R. L. Smith*, Y. H. Schukken, Z. Lu, and Y. T. Grohn, *Cornell University, Ithaca, NY.*

4:00 PM 283 **Molecular epidemiology of *Mycobacterium avium* ssp. *paratuberculosis* in three dairy herds in the northeastern United States.**
A. K. Pradhan*[1], R. M. Mitchell[1], A. J. Kramer[2], J. Dieguez[3], R. H. Whitlock[4], J. M. Smith[5], E. Hovingh[6], J. S. Van Kessel[7], J. S. Karns[7], and Y. H. Schukken[1], [1]*Cornell University, Ithaca, NY,*[2]*Utrecht University, Utrecht, the Netherlands,* [3]*University of Santiago de Compostela, Santiago de Compostela, Spain,* [4]*University of Pennsylvania, Kennett Square,,*[5]*University of Vermont, Burlington,* [6]*Pennsylvania State University, University Park,* [7]*Environmental Microbial and Food Safety Laboratory, ANRI, USDA-ARS, Beltsville, MD.*

4:15 PM 284 **Field evaluation of TG marker IS1311 PCR-REA for rapid differentiation of Indian Bison type *Mycobacterium avium* subspecies *paratuberculosis*.**
J. S. Sohal, S. V. Singh*, P. K. Singh, and A. V. Singh, *Central Institute for Research on Goats, Makhdoom, Farah, Mathura (UP), India.*

4:30 PM 285 **Rising incidence of *Mycobacterium avium* ssp. *paratuberculosis* in the North Indian population of animal keepers suspected for IBD/CD.**
S. V. Singh*, A. Shishodiya, A. Panwar, B. Singh, and A. Kumar, *Central Institute for Research on Goats, Makhdoom, Farah, Mathura (UP), India.*

4:45 PM 286 **Herd-level prevalence of Johne's disease on dairy farms in Utah and the surrounding intermountain west.**
D. J. Wilson*[1], K. A. Rood[1], and J. D. Trujillo[2], [1]*Utah State University*, *Logan*, [2]*Iowa State University*, *Ames*.

Breeding & Genetics and Physiology & Endocrinology Joint Symposium
Bridging the Gap Between Physiology and Genomics
Chair: **Milt Thomas, New Mexico State University**
Korbel Ballroom 4def

2:00 PM 287 **Spanning research from QTL to functional unit of a gene.**
J. M. Reecy*, *Iowa State University*, *Ames.*

2:45 PM 288 **Advancing toward functional genomics.**
H. L. Neibergs*, *Washington State University*, *Pullman*.

3:30 PM 289 **Genomic analysis of data from physiological studies.**
D. J. Garrick*, *Iowa State University*, *Ames.*

4:15 PM 290 **Genomic information for physiologists.**
M. G. Thomas*, K. L. DeAtley, S. O. Peters, G. A. Silver, and A. M. Clayshulte, *New Mexico State University*, *Las Cruces.*

Companion Animals Symposium
Microbes and Health
Chair: **Kelly S. Swanson, University of Illinois**
Sponsors: Hill's Science Diet, P&G
Korbel Ballroom 1e

2:00 PM 291 **Introduction: Microbes and health.**
K. S. Swanson*, *University of Illinois*, *Urbana.*

2:05 PM 292 **Bacterial influences on mammalian gut development.**
R. K. Buddington*, *University of Memphis*, *Memphis, TN*.

2:50 PM 293 **Microbes and gastrointestinal health of dogs and cats.**
J. S. Suchodolski*, *GI Laboratory, Texas A&M University*, *College Station*.

3:35 PM 294 **The oral microflora and periodontal health in dogs.**
Z. Marshall-Jones*, *Waltham Centre for Pet Nutrition, Waltham-on-the-Wolds*, *Melton Mowbray, Leicestershire, UK*.

4:20 PM 295 **Using "humanized" mice to study the effect of diet on the human gut microbiome.**
P. Turnbaugh*, *Harvard University*, *Cambridge, MA*.

Dairy Foods Symposium
Microbiology and Flavor of Cheese: Impact of Lower Salt-in-Moisture Content of Low Fat and Reduced Sodium Cheeses
Chair: **Don McMahon, Utah State University**
Sponsor: Dairy Management Inc.
Korbel Ballroom 2a

2:00 PM **Introduction.**
D. J. McMahon., *Utah State University, Logan.*

2:10 PM 296 **How model cheese composition, texture, and structure influence aroma and salt mobility, release, and perception?**
A. Saint-Eve*, M. Panouille, I. Deleris, C. Trelea, and I. Souchon, *UMR 782 Genie et Microbiologie des Procedes Alimentaires, INRA, AgroParisTech*, *78850 Thiverval-Grignon, France*.

2:40 PM 297 **Flavor development in low fat cheese.**
M. A. Drake*, *Southeast Dairy Foods Research Center, North Carolina State University*, *Raleigh*.

3:10 PM **Break**

3:25 PM 298 **Influence of salt-in-moisture on starter and nonstarter lactic acid bacteria.**
J. L. Steele*[1] and J. R. Broadbent[2], [1]*University of Wisconsin-Madison*, *Madison,* [2]*Utah State University*, *Logan.*

3:55 PM 299 **Cheesemaking processes and strategies for manufacture of low fat and reduced sodium cheeses.**
T. P. Guinee* and K. N. Kilcawley, *Moorepark Food Research Centre, Teagasc*, *Fermoy, Co. Cork, Ireland.*

4:25 PM 300 **The effect of intrinsic and extrinsic factors on the fate of pathogens in specialty and lower fat/reduced sodium cheese.**
J. B. Luchansky*, P. M. Tomasula, D. L. Van Hekken, and A. C. S. Porto-Fett, *USDA/ARS Eastern Regional Research Center*, *Wyndmoor, PA*.

Dairy Foods
Processing
Chair: **Rafael Jimenez-Flores, California Polytechnic State University**
501/502

2:00 PM 301 **Temperature and vacuum conditions for removal of added carbon dioxide from milk.**
D. M. Barbano* and J. H. Hotchkiss, *Cornell University*, *Ithaca, NY*.

2:15 PM 302 **Processing factors that influence casein (CN) and serum protein (SP) separation by microfiltration (MF).**
E. E. Hurt* and D. M. Barbano, *Cornell University*, *Ithaca, NY*.

2:30 PM 303 **Multistage process with ceramic graded permeability (GP) microfiltration (MF) membranes to produce high casein content micellar casein concentrate (MCC) with low lactose.**
J. Zulewska*[2], M. W. Newbold[1], and D. M. Barbano[1], [1]*Cornell University*, *Ithaca, NY,* [2]*University of Warmia and Mazury*, *Olsztyn, Poland*.

2:45 PM 304 **Functional modification of whey protein concentrate by mircofiltration.**
H. Somni* and V. V. Mistry, *Midwest Dairy Foods Research Center, South Dakota State University*, *Brookings*.

3:00 PM 305 **Ultrafiltration of milk at high temperature.**
M. Lewis*, A. Grandison, N. On-Nom, and D. Wang, *University of Reading*, *Reading, Berkshire, UK*.

3:15 PM 306 **A method for Spirulina production using cheese whey.**
K. M. Miranda[1,2] and L. M. Fonseca*[1], [1]*Federal University of Minas Gerais*, *Belo Horizonte, MG, Brazil*, [2]*Fundação Centro Tecnológico de Minas Gerais*, *Belo Horizonte, MG, Brazil*.

3:30 PM 307 **Investigation on coagulant properties of *Calotropis procera* and stabilization of its proteolytic enzymes.**
G. Belvedere[1], F. La Terra[1], M. Manenti[1], S. Lortal[2], J. C. Codjia[3], S. Doko[4], and G. Licitra*[1,5], [1]*CoRFiLaC, Regione Siciliana*, *Ragusa, Italy*, [2]*UMR Science et Technologie du Lait et de L'Oeuf*, *Rennes Cedex, France*, [3]*University of Abomey-Calavi*, *Benin*, [4]*University of Parakou*, *Benin*, [5]*DACPA, Catania University*, *Catania, Italy*.

3:45 PM 308 **Pioneer Speaker: Quality of raw and pasteurized milk.**
C. H. White*[1,2], [1]*Mississippi State University*, *Mississippi State,* [2]*Randolph Associates, Inc., Birmingham, AL*.

Growth and Development Symposium
Intestinal Development and Growth
Chairs: **Sylvia Poulos, Coca Cola Company; Erin Connor, USDA ARS**
Korbel Ballroom 1ab

2:00 PM **Introduction**

2:10 PM 309 **Strategies to alter intestinal development, health and function of poultry to improve growth performance.**
T. J. Applegate*, *Purdue University*, *W Lafayette, IN.*

2:35 PM 310 **Nutritional support of intestinal health: insights from a piglet model.**
J. Odle*, S. K. Jacobi, A. J. Moeser, and A. T. Blikslager, *North Carolina State University*, *Raleigh*.

3:00 PM 311 **Integral role of the gut in growth signal transduction between the environment and host.**
D. G. Burrin*, *USDA Children's Nutrition Research Center, Department of Pediatrics, Baylor College of Medicine, Houston, TX.*

3:25 PM **Break**

3:40 PM 312 **Nutrient transporters in support of ruminant growth and development: Novel and updated findings.**
J. C. Matthews*, *University of Kentucky*, *Lexington.*

4:05 PM 313 **Out of the black box and back to the future: New frontiers and challenges for rumen microbiology to advance animal growth and development.**
M. Morrison*[1,2], [1]*CSIRO*, *St. Lucia, Queensland, Australia*, [2]*The Ohio State University*, *Columbus*.

4:30 PM 314 **The human intestinal microbiome—Applications to animal agriculture.**
D. N. Frank*, *University of Colorado*, *Boulder*.

4:55 PM **Concluding remarks**

Lactation Biology Symposium
Novel Mechanisms Regulating Milk Secretion and Mammary Involution
Chairs: **Wendie Cohick, Rutgers University; Darryl Hadsell, Baylor College of Medicine**
304

2:00 PM **Introduction.**
Wendie Cohick, *Rutgers University, New Brunswick, NJ.*

2:05 PM 315 **High fat diet suppresses de novo fatty acid synthesis in mammary epithelial cells independent of SREBP regulated gene expression.**
S. M. Anderson*, M. C. Rudolph, E. A. Wellberg, and M. C. Neville, *University of Colorado School of Medicine*, *Aurora*.

2:45 PM 316 **Serotonin: A homeostatic regulator of bovine lactation.**
N. Horseman*, *University of Cincinnati*, *Cincinnati, OH*.

3:25 PM 317 **Stanniocalcin-1 and local control of mammary involution.**
P. Lacasse*, *AAFC-Dairy and Swine R&D Centre*, *Sherbrooke, QC, Canada*.

4:05 PM 318 **The role of Ca^{2+}-ATPases in milk secretion and involution.**
T. A. Reinhardt*, *National Animal Disease Center, ARS/USDA, Ames, IA*.

Meat Science and Muscle Biology
Fresh Meat Quality and Muscle Biology
Chair: **Kasey Carlin, North Dakota State University**
303

2:00 PM 319 **Effect of vitamins E and C on collagen turnover by bovine intramuscular fibroblasts.**
A. C. Archile*[2,1], I. B. Mandell[1], S. P. Miller[1], M. C. Cha[1], and P. P. Purslow[1], [1]*University of Guelph*, *Ontario, Canada*, [2]*University of Zulia*, *Maracaibo, Venezuela*.

2:15 PM 320 **Fatty acid composition of Jersey beef was affected by finishing diet and tissue type.**
T. Jiang*[1], C. J. Mueller[2], J. R. Busboom[1], M. L. Nelson[1], J. O'Fallon[1], and G. Tishida[2], [1]*Washington State University*, *Pullman,* [2]*Oregon State University*, *Corvallis.*

2:30 PM 321 **Effects of frame size and animal age on beef carcass quality and tenderness.**
S. K. Duckett*[1], J. P. S. Neel[2], R. M. Lewis[3], W. Swecker[3], M. L. Wahlberg[3], J. P. Fontenot[3], and W. Clapham[2], [1]*Clemson University*, *Clemson, SC,* [2]*USDA-ARS*, *Beaver, WV,* [3]*Virginia Tech University*, *Blacksburg.*

2:45 PM	322	**Effect of skeletal separation and moisture enhancement on eating quality of cull cow beef.** P. Streiter*, C. Campbell, and I. Mandell, *University of Guelph*, *Guelph, Ontario, Canada*.
3:00 PM	323	**Accuracy of real-time ultrasound for body composition traits for evaluating carcass traits in medium wool crossbred lambs.** F. R. B. Ribeiro*[1], J. A. Carter[1], C. A. Hughes[1], W. S. Ramsey[2], J. W. Savell[2], R. R. Riley[2], C. Sharpton[2], and R. G. Tait Jr.[3], [1]*Texas A&M University-Commerce*, *Commerce,* [2]*Texas A&M University*, *College Station,* [3]*Iowa State University*, *Ames*.
3:15 PM	324	**Farming system changes fatty acids profile and lipid oxidation in meat of Sarda-breed suckling lambs.** A. Nudda*, G. Battacone, M. G. Manca, R. Boe, A. Fenu, G. Spanu, and G. Pulina, *Dipartimento di Scienze Zootecniche, University of Sassari*, *Sassari, Italy*.
3:30 PM	325	**Comparisons of different muscles metabolic enzymes and muscle fiber types in Jinhua and Landrace pigs.** J. Guo*, T. Z. Shan, T. Wu, Y. F. Zhang, and Y. Z. Wang, *Institute of Feed Science*, *Hangzhou, Zhejiang, China*.
3:45 PM	326	**Effects of cage versus floor litter environments on blood parameters and meat quality in broilers.** J. Yuan*, C. H. Huang, B. Wang, S. H. Zhou, and Y. Guo, *State Key Laboratory of Animal Nutrition, China Agricultural University*, *Beijing, China*.
4:00 PM	327	**Effect of dietary selenium yeast (Sel-Plex) and vitamin E supplementation to broilers on meat quality characteristics of raw and marinated breast fillets.** A. D. Quant*[1], A. J. Pescatore[1], J. L. Pierce[1], K. M. McClelland[2], G. R. Rentfrow[2], A. H. Cantor[1], M. J. Ford[1], and W. D. King[1], [1]*Alltech-University of Kentucky Nutrition Research Alliance*, *Lexington,* [2]*Department of Animal and Food Sciences, University of Kentucky*, *Lexington*.
4:15 PM	328	**Effect of three different postmortem electrical stimulation methods on quality of early-deboned broiler breast meat.** H. Zhuang*, E. M. Savage, and K. C. Lawrence, *USDA-ARS*, *Athens, GA.*
4:30 PM	329	**Optimization of the time of marination for early deboned broiler breast fillets.** V. A. Kuttappan*, V. B. Brewer, J. F. Meullenet, and C. M. Owens, *University of Arkansas*, *Fayetteville*.
4:45 PM	330	**Consumer acceptance of visual appearance of broiler breast meat with varying degrees of white striping.** V. A. Kuttappan*, J. F. Meullenet, and C. M. Owens, *University of Arkansas*, *Fayetteville*.

Nonruminant Nutrition
Enzymes 1
Chair: **Brooke Humphrey, Cal Poly**
Sponsor: Novus International Inc.
301/302

2:00 PM	331	**Efficacy of a thermally processed exogenous enzyme cocktail on broiler performance.** K. R. Beaman*, K. G. S. Lilly, L. K. Shires, S. A. Loop, and J. S. Moritz, *West Virginia University*, *Morgantown.*
2:15 PM	332	**Growth performance and nutrient utilization of broiler chickens fed diets supplemented with phytase alone or in combination with citric acid and multi-carbohydrase enzyme.** T. A. Woyengo*[1], B. A. Slominski[1], and R. O. Jones[2], [1]*Department of Animal Science, University of Manitoba*, *Winnipeg, Canada*, [2]*Canadian Bio-Systems Inc., Calgary, Canada*.
2:30 PM	333	**Intestinal histology and amino acid digestibility of broilers fed increasing dietary phytic acid during a live coccidia vaccination.** R. N. Lehman*[1], A. J. Cowieson[2], C. L. Walk[1], and A. P. McElroy[1], [1]*Virginia Tech*, *Blacksburg,* [2]*AB Vista*, *Wiltshire, Marlborough, UK*.
2:45 PM	334	**Effects of NSP-enzymes on in vitro digestibility and intestinal microbiota activity in broilers fed two different wheat cultivars.** B. Bouza, C. Clavaud, P. A. Geraert, and E. Devillard*, *Adisseo SAS*, *03600 Commentry, France*.
3:00 PM	335	**Assessment of phytase in broilers undergoing a coccidiosis challenge.** A. L. Shaw*, J. P. Blake, and K. S. Macklin, *Auburn University*, *Auburn, AL.*
3:15 PM	336	**Dietary supplementation of *Peniophora lycii* phytase improves mineral bioavailability in broiler chickens.** A. Kollanoor Johny*[1], K. Syam-Mohan[1], T. V. Viswanathan[1], and A. Jalaludeen[2], [1]*Department of Animal Nutrition, College of Veterinary and Animal Sciences, Kerala Agricultural University*, *Mannuthy, Kerala, India*, [2]*Centre for Advanced Studies in Poultry Science, College of Veterinary and Animal Sciences, Kerala Agricultural University*, *Mannuthy, Kerala, India*.

3:30 PM 337 **Mineral excretion and bone mineral content as affected by phytase and feed additives in broilers.**
M. R. Dalmagro*[1], E. O. Oviedo-Rondón[1], A. Mitchell[2], A. B. Leytem[3], N. A. Barbosa[4], N. K. Sakomura[4], J. W. Wilson[5], and C. Paulus[5], [1]*North Carolina State University*, *Raleigh,* [2]*USDA-ARS, BARC, Beltsville, MD*, [3]*USDA-ARS, Kimberly, ID*, [4]*Universidade Estadual Paulista, UNESP*, *Jaboticabal, SP, Brazil*, [5]*DSM Nutritional Products Inc., Parsippany, NJ*.

3:45 PM 338 **Use of the precision-fed rooster assay and a chick AME trial to determine the best method for enzyme efficacy.**
J. Brandon* and A. B. Batal, *The University of Georgia*, *Athens*.

4:00 PM 339 **The effects of the addition of phytase and an enzyme cocktail to high and low nutrient density diets with DDGS or MBM in laying hens during phase II.**
D. Hahn*[1], S. Scheideler[1], E. E. M. Pierson[2], and C. L. Novak[3], [1]*University of Nebraska-Lincoln*, *Lincoln,* [2]*Danisco Animal Nutrition*, *St. Louis, MO,* [3]*Land O' Lakes Purina Feed, LLC*, *Kansas City, MO*.

4:15 PM 340 **Justifying phytogenic feed additive matrix values in conjunction with exogenous feed enzymes.**
L. K. Shires*, S. A. Loop, C. K. Gehring, K. R. Beaman, and J. S. Moritz, *West Virginia University*, *Morgantown*.

4:30 PM 341 **The effect of phytase and energy enzyme inclusion on growth and bone ash in low phosphorus diets.**
J. R. Coppedge*[1], J. Klein[1], K. Jessen[1], A. Jordan[1], B. Brown[2], F. Ruch[2], and J. T. Lee[1], [1]*Texas A&M University*, *College Station,* [2]*Enzyvia LLC*, *Sheridan, IN*.

Nonruminant Nutrition
Health 1
Chair: **Paul Ebner, Purdue University**
Korbel Ballroom 3c

2:00 PM 342 **Transforming coccidiosis mediated lesion score effects into estimates of performance and calorific costs in the form of ADG, FCR, malabsorption and effective caloric value throughout the broiler growth curve to 48 days of age.**
R. G. Teeter*[1], A. Beker[1], C. Brown[1], C. Broussard[2], F. Fitz-Coy[2], J. Radu[2], and L. Newman[2], [1]*Oklahoma State University*, *Stillwater,* [2]*Schering-Plough Animal Health*, *Summit, NJ*.

2:15 PM 343 **Mintrex-Zn improves tibia Zn deposition and antioxidant status of broilers under stress with coccidiosis challenge.**
S. D. Bun* and Y. M. Guo, *China Agricultural University*, *Beijing, China*.

2:30 PM 344 **Effects of type and level of dietary fiber on digestive traits and nutrients digestibility in broilers.**
E. Jiménez-Moreno*[1], J. M. González-Alvarado[2], S. Chamorro[3], C. Romero[1], R. Lázaro[1], and G. G. Mateos[1], [1]*Universidad Politecnica de Madrid*, *Madrid, Spain*, [2]*Universidad de Tlaxcala*, *México*, [3]*Consejo Superior de Investigaciones Científicas*, *Madrid, Spain*.

2:45 PM 345 **The effects of 1. 2 ppm T-2 toxin on performance, lesions, and general health of male broilers and the efficiency of an organoaluminosilicate (mycotoxin binder).**
J. C. Medina. [1], J. A. Fierro. *[1], J. Lara. [1], V. Brito[2], and M. Forat[2], [1]*NUTEK S. A de C. V., Tehuacan, Puebla, Mexico*, [2]*EURO-NUTEK Premix S. A. de C. V., El Marques, Queretaro, Mexico*.

3:00 PM 346 **Strategies to reduce preharvest *Salmonella* in organic broilers.**
K. G. S. Lilly*, K. R. Beaman, B. N. West, L. K. Shires, S. A. Loop, P. J. Turk, G. K. Bissonnette, and J. S. Moritz, *West Virginia University*, *Morgantown.*

3:15 PM 347 **Cecal microbial populations of young chicks fed several prebiotic-type compounds as determined by DGGE and quantitative PCR.**
C. M. Jacobs*, P. L. Utterback, and C. M. Parsons, *University of Illinois*, *Urbana*.

3:30 PM 348 **Turkey response to the inclusion of a *Saccharomyces cerevisiae* fermentation product, Original XPC, in antibiotic free diets following a coccidia vaccination.**
D. M. Paiva*[1], C. L. Walk[1], R. Lehman[1], J. R. Sottosanti[1], C. F. Honaker[1], D. T. Moore[2], and A. P. McElroy[1], [1]*Virginia Polytechnic Institute and State University*, *Blacksburg,* [2]*Diamond V Mills, Inc., Cedar Rapids, IA*.

3:45 PM 349 **Effect of diet on equine gut microbiota.**
K. Daly*[1], C. J. Proudman[1], H. J. Flint[2], and S. P. Shirazi-Beechey[1], [1]*University of Liverpool*, *Liverpool, UK*, [2]*Rowett Institute of Nutrition and Health*, *Aberdeen, UK*.

4:00 PM 350 **Spatial alternative splicing of mucin 2 (*Muc2*) mRNA in chicken intestine.**
Z. Jiang*, C. Troche, A. C. Lossie, and T. J. Applegate, *Purdue University*, *West Lafayette, IN*.

4:15 PM 351 **Differences in carbohydrate composition of barley varieties influence Salmonella transmission among pen mate weaned piglets.**
J. Bindelle[1], R. Pieper[2], J. K. Marshall[3], G. Malik*[3], B. R. Rossnagel[3], P. Leterme[4], and A. G. Van Kessel[3], [1]*University of Liege, Gembloux Agro-Bio Tech, Liege, Wallonia, Belgium*, [2]*Freie Universitat, Berlin, Germany*, [3]*University of Saskatchewan, Saskatoon, SK, Canada*, [4]*Prairie SwineCentre Inc., Saskatoon, SK, Canada*.

4:30 PM 352 **Histomorphology and small intestinal sodium-dependent glucose transporter 1 gene expression in piglets fed phytic acid and phytase-supplemented diets.**
T. A. Woyengo*[1], J. C. Rodriguez-Lecompte[1], O. Adeola[2], and C. M. Nyachoti[1], [1]*University of Manitoba, Winnipeg, Manitoba, Canada*, [2]*Purdue University, West Lafayette, IN.*

4:45 PM 353 **Effects of essential oils on *Clostridium perfringens* infections in broilers.**
T. Steiner*[1], F. van Immerseel[2], and R. Ducatelle[2], [1]*Biomin Holding GmbH, Herzogenburg, Austria*, [2]*Department of Pathology, Bacteriology and Avian Diseases, Ghent University, Merelbeke, Belgium*.

Nonruminant Nutrition Symposium
Rethinking Equine Nutrition
Chair: **Scott Radcliffe, Purdue University**
Sponsors: Alltech, EAAP
Korbel Ballroom 1cd

2:00 PM **Introduction**

2:05 PM 354 **Defining amino acid requirements in horses: Application of the indicator amino acid oxidation technique.**
K. L. Urschel*[1], R. J. Geor[2], and P. A. Harris[3], [1]*University of Kentucky, Lexington,* [2]*Michigan State University, East Lansing,* [3]*Waltham Centre for Pet Nutrition, Melton Mowbray, United Kingdom*.

2:40 PM 355 **Current knowledge on the relative role of the equine small and large intestine in amino acid absorption.**
N. L. Trottier* and A. D. Woodward, *Michigan State University, East Lansing*.

3:15 PM **Break**

3:30 PM 356 **Importance of volatile fatty acid metabolism for horses.**
J. K. Suagee*, B. A. Corl, and R. J. Geor, *Virginia Polytechnic Institute and State University, Blacksburg.*

4:05 PM 357 **Glucose sensing and regulation of equine intestinal glucose transport.**
S. Shirazi-Beechey*, D. Arora, J. Dyer, and K. Daly, *University of Liverpool, Liverpool, UK*.

4:40 PM **Discussion**

Physiology and Endocrinology
Poultry Physiology
Chair: **Shelly Druyan, Agricultural Research Organization, Volcani Center, Israel**
505/506

2:00 PM 358 **Blue-and-gold macaw (*Ara ararauna*) postmortem semen collection.**
J. M. Silva[1], S. K. Cunha[1], C. D. Corcini[1], A. S. Varela Junior[2], A. P. N. Albano[1], A. L. S. Valente[1], and D. C. Bongalhardo*[1], [1]*Universidade Federal de Pelotas, Pelotas, RS, Brazil*, [2]*Universidade Federal de Rio Grande, Rio Grande, RS, Brazil*.

2:15 PM 359 **To move or not to move? Gait analysis of the modern broiler and its implications.**
H. Paxton*, M. A. Daley, S. A. Corr, and J. R. Hutchinson, *Royal Veterinary College, Hatfield, Hertfordshire, UK*.

2:30 PM 360 **Effects of commercial in ovo injection of carbohydrates on broiler embryogenesis.**
W. Zhai*, R. Pulikanti, S. Womack, D. E. Rowe, and E. D. Peebles, *Mississippi State University, Mississippi State*.

2:45 PM 361 **The effect of egg weight loss on embryonic development in Chinese painted quail (*Coturnix chinensis*) exhibiting parthenogenesis.**
J. B. Wells, H. M. Parker*, A. S. Kiess, and C. D. McDaniel, *Mississippi State University, Mississippi State.*

3:00 PM	362	**Relationships of Ross × 708 broiler post-hatch development to embryonic temperature, incubation length, and eggshell water vapor conductance.** R. Pulikanti, E. D. Peebles*, W. Zhai, A. Bello, C. N. Obi, and A. O. Sokale, *Mississippi State University*, *Mississippi State.*
3:15 PM	363	**NADH Oxidase generated superoxide reduces nitric oxide availability in lungs of hypoxic broilers chickens.** J. Bautista-Ortega*, E. A. Ellis, and C. A. Ruiz–Feria, *Texas A&M University*, *College Station*.
3:30 PM	364	**Genistein effects on fatty liver syndrome induced by estrogen.** L. M. Stevenson*, S. S. Oates, J. B. Hess, and W. D. Berry, *Auburn University*, *Auburn, AL*.
3:45 PM	365	**Gene expression of thyroid hormone regulating elements in reproductively photosensitive and photorefractory turkey hens.** S. W. Kang*, S. Kosonsiriluk, and M. E. El Halawani, *University of Minnesota*, *St. Paul.*
4:00 PM	366	**Identification of a nonclassical glucocorticoid responsive region of the growth hormone gene during chick embryonic development.** K. A. Heuck-Knubel* and T. E. Porter, *Department of Animal & Avian Sciences University of Maryland*, *College Park.*
4:15 PM	367	**Detection and expression of the glucocorticoid receptor in the laying hen's oviduct.** L. A. Bola*, D. V. Arbona, and J. B. Hoffman, *North Carolina State University*, *Raleigh.*
4:30 PM	368	**Detection and expression of glucocorticoid receptors in the germinal disc (GD) and non-germinal disc (NGD) regions of the laying hen's hierarchical ovarian follicles.** J. B. Hoffman*, D. V. Arbona, and L. A. Bola, *North Carolina State University*, *Raleigh.*
4:45 PM	369	**Molecular cloning and characterization of chicken and zebrafish prostaglandin receptors.** A. H. Y. Kwok*, Y. Wang, and F. C. Leung, *The University of Hong Kong*.
5:00 PM	370	**Effect of seminal plasma progesterone on sperm hole penetration in White Leghorns.** E. M. Anderson* and K. J. Navara, *University of Georgia*, *Athens.*

Processing and Products
Chair: **Aaron S. Kiess, Mississippi State University**
507

2:00 PM	371	***Salmonella* recovery following air chilling for matched neck-skin and whole carcass sampling methodologies.** R. J. Buhr*, N. A. Cox, J. A. Cason, L. L. Rigsby, and D. V. Bourassa, *USDA-ARS Russell Research Center*, *Athens, GA.*
2:15 PM	372	**Effect of ultrasonication and phosphate level during marination on numbers of *Salmonella* and *Escherichia coli* on broiler breast meat.** D. P. Smith*, *Poultry Science Dept., North Carolina State University*, *Raleigh.*
2:30 PM	373	**The enrichment of breast and thigh meat in broilers for DHA using supplemental DHA.** M. K. Manangi*, B. Wuelling, J. Hux, S. Carter, and M. Vazquez-Anon, *Novus International, Inc., St. Charles, MO*.
2:45 PM	374	**Effect of feeding hatchery waste meal processed by different techniques on egg quality and productive performance of laying hens.** A. Mahmud*[1], Saima[1], M. A. Jabbar[1], A. W. Sahoota[1], Z. Ali[2], and M. Z. U. Khan[1], [1]*University of Veterinary & Animal Sciences*, *Lahore, Pakistan*, [2]*Big Feeds (Pvt) Ltd., Lahore, Pakistan*.
3:00 PM	375	**Effect of feeding flaxseed and two types of antioxidants on quality parameters of omega-3 enriched eggs during storage.** Z. Hayat*[1,2], G. Cherian[3], T. N. Pasha[2], F. M. Khattak[2], and M. A. Jabbar[2], [1]*University College of Agriculture*, *University of Sargodha, Sargodha-40100, Pakistan*, [2]*University of Veterinary and Animal Sciences*, *Lahore-54000, Pakistan*, [3]*Department of Animal Sciences*, *Oregon State University, Corvallis.*
3:15 PM	376	**Quality of shell eggs stored under modified atmosphere packaging.** T. Yalamanchili*, C. Z. Alvarado, L. D. Thompson, and C. J. Brooks, *Texas Tech University*, *Lubbock.*
3:30 PM	377	**Evaluation of fatty acids and proteins in eggs from cage and range laying hens.** L. K. Kerth*[1], P. A. Curtis[1], K. R. Willian[2], C. R. Kerth[1], and K. E. Anderson[3], [1]*Auburn University*, *Auburn, AL,* [2]*Tuskegee University*, *Tuskegee, AL,* [3]*North Carolina State University*, *Raleigh*.

Ruminant Nutrition
Beef: Additives
Chair: **John Wagner, Colorado State University**
Korbel Ballroom 2b

2:00 PM 378 **Intermittent feeding strategies of ractopamine hydrochloride on growth performance and carcass characteristics of feedlot steers.**
M. G. Dib*[1], G. E. Erickson[1], T. J. Klopfenstein[1], J. R. Benton[1], W. A. Griffin[1], J. J. Sindt[2], and W. T. Choat[2], [1]*University of Nebraska, Lincoln,* [2]*Elanco Animal Health, Greenfield, IN.*

2:15 PM 379 **Effectiveness of ractopamine when fed as a top dress in beef steers.**
K. L. Neuhold*[1], P. T. Grubb[1], J. J. Wagner[1], T. E. Engle[1], R. K. Peel[1], and A. L. Schroeder[2], [1]*Colorado State University, Fort Collins,* [2]*Elanco Animal Health, Greenfield, IN.*

2:30 PM 380 **Effects of prepartum rumen-protected choline supplementation on performance of beef cows and calves.**
L. A. Pacheco*[1], J. R. Jaeger[2], L. R. Hibbard[1], M. J. Macek[1], N. A. Sproul[1], G. J. Eckerle[1], E. A. Bailey[1], J. W. Bolte[2], and K. C. Olson[1], [1]*Kansas State University, Manhattan,* [2]*Western Kansas Agricultural Research Center, Hays.*

2:45 PM 381 **Evaluation of ractopamine fed in a top dress feed on growth and standard carcass characteristics of crossbred cattle.**
A. L. Schroeder*[1], T. H. TerHune[2], M. Edmonds[3], R. P. Lemenager[4], S. L. Lake[4], F. K. Mckeith[5], and J. J. Wagner[6], [1]*Elanco Animal Health, Greenfield, IN,* [2]*HMS Veterinary Development, Tulare, CA,* [3]*Johnson Research, Parma, ID,* [4]*Purdue University, West Lafayette,* [5]*University of Illinois, Urbana,* [6]*SECRC-Colorado State University, Lamar.*

3:00 PM 382 **Ractopamine hydrochloride did not affect growth or fermentation of ruminal bacteria in pure culture.**
C. E. Walker*, J. M. Heidenreich, and J. S. Drouillard, *Kansas State University, Manhattan.*

3:15 PM 383 **Accelerated step-up regimen with 44 mg/kg Monensin.**
C. E. Walker*, G. L. Parsons, K. A. Miller, L. K. Thompson, J. J. Higgins, and J. S. Drouillard, *Kansas State University, Manhattan.*

3:30 PM 384 **Effects of Zilmax on blood metabolites in finishing cattle.**
C. L. Van Bibber*, G. L. Parsans, K. A. Miller, L. K. Thompson, and J. S. Drouillard, *Kansas State University, Manhattan.*

3:45 PM 385 **Intake and digestion of cotton co-product and distillers grain blocks fed as a cattle hay replacement.**
G. M. Hill* and D. J. Renney, *University of Georgia, Tifton.*

4:00 PM 386 **Late gestation supplementation of beef cows: Effects on cow and calf performance.**
D. W. Bohnert*[1], R. Mills[1], L. A. Stalker[3], A. Nyman[1], and S. J. Falck[2], [1]*Oregon State University, Burns,* [2]*ARS-USDA, Burns, OR,* [3]*University of Nebraska, North Platte.*

4:15 PM 387 **Effect of forage energy intake and supplementation on gene expression of adipose tissue in growing beef cattle.**
P. A. Lancaster*, E. D. Sharman, G. W. Horn, C. R. Krehbiel, and U. DeSilva, *Oklahoma Agricultural Experiment Station, Stillwater.*

4:30 PM 388 **Angus and Simmental calves exhibit differential trace mineral metabolism.**
S. L. Hansen*, E. L. Richter, and M. E. Drewnoski, *Iowa State University, Ames.*

4:45 PM 389 **Effects of polyunsaturated fatty acid (PUFA) supplementation on performance and acute-phase response of transported beef steers.**
R. F. Cooke*[1], A. B. Scarpa[1], F. M. Nery[1], F. N. T. Cooke[1], P. Moriel[2], B. W. Hess[2], R. R. Mills[3], and D. W. Bohnert[1], [1]*Oregon State University, Burns,* [2]*University of Wyoming, Laramie,* [3]*Oregon State University, Pendleton.*

Ruminant Nutrition
Dairy: Calves
Chair: **Allen Young, Utah State University**
Sponsor: West Central
Korbel Ballroom 3b

2:00 PM 390 **Effect of feeding polyphenols from pomegranate extract on health, growth, nutrient digestion, and immunocompetence of calves.**
M. C. Perdomo*[1], R. A. Oliveira[1], C. D. Narciso[1], R. S. Bisinotto[1], M. A. Ballou[2], M. Dreher[3], and J. E. P. Santos[1], [1]*University of Florida, Gainesville,* [2]*Texas Tech University, Lubbock,* [3]*POM Wondersull, Los Angeles, CA*.

2:15 PM 391 **Effect of high-protein milk replacer followed by high-protein starter on transcript profiles in ruminal tissue of Holstein bull calves.**
A. Naeem*, J. K. Drackley, J. Stamey, S. L. Rodriguez-Zas, R. E. Everts, H. A. Lewin, and J. J. Loor, *University of Illinois, Urbana.*

2:30 PM 392 **Field evaluation of the effects of free-access feeding of acidified milk replacer on the growth performance of dairy replacement heifers and veal calves.**
C. G. Todd*[1], K. E. Leslie[1], S. T. Millman[2], T. J. DeVries[3], N. G. Anderson[4], and J. M. Sargeant[1], [1]*Department of Population Medicine, University of Guelph, Guelph, Ontario, Canada,* [2]*Veterinary Diagnostic and Production Animal Medicine, Biomedical Sciences, Iowa State University, Ames,* [3]*Department of Animal and Poultry Science, University of Guelph, Kemptville Campus, Kemptville, Ontario, Canada,* [4]*Ontario Ministry of Agriculture, Food and Rural Affairs, Elora, Ontario, Canada*.

2:45 PM 393 **Comparison of raw colostrum, colostrum replacer, and pasteurized colostrum on IgG, growth, and health of dairy calves.**
C. L. Wilson* and L. E. Davis Rincker, *Eastern Kentucky University, Richmond*.

3:00 PM 394 **Effect of the ingredients on acid binding capacity and pH of calves starter ration.**
Y. Tu*[1], Q. Y. Diao[1], S. S. Feng[2], Y. Zhou[1], and Q. Yun[1], [1]*Feed Research Institute of Chinese Academy of Agricultural Sciences, Beijing, China,* [2]*Beijing University of Agriculture, Beijing, China*.

3:15 PM 395 **Study on in vitro evaluation of acidifier and its effect on growth in calves fed milk replacer.**
Y. Tu*, Y. Zhou, Q. Yun, Y. Q. Fu, and Q. Y. Diao, *Feed Research Institute of Chinese Academy of Agricultural Sciences, Beijing,China*.

3:30 PM 396 **Simulated straw bedding intake and effect of high and low cereal grain starters on rumen development of neonatal Holstein calves.**
W. B. Fokkink*[1], T. M. Hill[1], H. G. Bateman II[1], J. M. Aldrich[1], R. L. Schlotterbeck[1], and A. F. Kertz[2], [1]*Nurture Calf Research, Provimi North America, Lewisburg, OH,*[2]*ANDHIL, LLC, St. Louis, MO.*

3:45 PM 397 **Growth and health of calves pre- and post-weaning fed milk replacers with differing levels of neomycin sulfate and oxytetracycline.**
N. B. Litherland*[1], B. Ziegler[2], D. Schimek[2], D. Carlson[3], D. Ziegler[4], M. L. Raeth-Knight[1], G. G. Golombeski[1], H. Chester-Jones[4], and J. G. Linn[1], [1]*University of Minnesota, St Paul,* [2]*Hubbard Feeds Inc., Mankato, MN,* [3]*Milk Products Inc., Chilton, WI,* [4]*University of Minnesota Southern Research and Outreach Center, Waseca.*

4:00 PM 398 **Meta-analysis for designing an empirical model to predict growth of neonatal Holstein calves through eight weeks of age.**
H. G. Bateman II*[1], T. M. Hill[1], J. M. Aldrich[1], R. L. Schlotterbeck[1], and J. L. Firkins[2], [1]*Nurture Research Center, Provimi North America, Lewisburg, OH,* [2]*The Ohio State University, Columbus*.

4:15 PM 399 **Effect of different fiber sources on performance and feed intake of Holstein calves.**
L. Castells*[1], A. Bach[1,2], and M. Terré[1], [1]*Department of Ruminant Production, IRTA, Caldes de Montbui, Spain,* [2]*ICREA, Barcelona, Spain*.

4:30 PM 400 **Effect of housing and management on dairy calves less than two month of age.**
T. M. Hill*, H. G. Bateman II, J. M. Aldrich, R. L. Schlotterbeck, D. L. Carr, and A. B. Chestnut, *Nurture Research Center, Provimi North America, Lewisburg, OH.*

4:45 PM 401 **The effect of oral supplementation of selenium on passive transfer of immunoglobulins in dairy calves.**
B. Nelson*[1], S. M. Godden[2], B. W. McBride[1], T. F. Duffield[1], and K. E. Leslie[1], [1]*Department of Population Medicine, University of Guelph, Guelph, ON, Canada,* [2]*Department of Veterinary Population Medicine, University of Minnesota, St. Paul*.

Small Ruminant
Sheep and Goat Production 1
Chair: **K. M. Andries, Kentucky State University**
403/404

2:00 PM 402 **Effects of endophyte-infected fescue seed on physiological parameters of mature female meat goats.**
A. R. Boyer*[1], T. L. Mays[1], G. W. Webb[1], M. A. Brown[2], and E. L. Walker[1], [1]*Missouri State University*, *Springfield,* [2]*USDA Grazinglands Research Center*, *El Reno, OK*.

2:15 PM 403 **The effects of protein supplement on leptin concentrations in lambs and meat goat kids grazing bermudagrass pastures in central Oklahoma.**
E. L. Walker*[1], S. A. Nusz[2], D. H. Keisler[3], and M. A. Brown[4], [1]*Missouri State University*, *Springfield,* [2]*Redlands Community College*, *El Reno, OK,* [3]*University of Missouri*, *Columbia,* [4]*USDA Grazinglangs Research Center*, *El Reno, OK.*

2:30 PM 404 **Factors affecting birth, 60-day, and weaning body weights of commercial meat goat kids born in two different seasons.**
K. Andries* and E. Sherrow, *Kentucky State University*, *Frankfort*.

2:45 PM 405 **Relationship between body measurements and milk yield and a method to predict the milk production of Saanen goats.**
S. Dikmen*, A. Orman, H. Üstüner, and M. M. Ogan, *University of Uludag*, *Bursa, Turkey*.

3:00 PM 406 **Effects of prepubertal growth rate of dairy ewe lambs on their subsequent lamb and milk production.**
D. L. Thomas* and Y. M. Berger, *University of Wisconsin-Madison*.

3:15 PM 407 **Milk production and lamb growth of hair sheep weaned at 63 or 90 d of age in an accelerated lambing system in the tropics.**
R. W. Godfrey* and K. Facison, *University of the Virgin Islands*, *St Croix*.

3:30 PM 408 **Economic impacts of ram mating behavior.**
L. K. Gardiner*, B. S. Rashford, J. P. Hewlett, and B. M. Alexander, *University of Wyoming*, *Laramie.*

OTHER EVENTS

Presentation by Dr. Roger Beachy, NIFA
403/404
5:00 – 6:00 PM

Tuesday, July 13

POSTER PRESENTATIONS

Animal Behavior and Well-Being
Swine and Poultry

T1 **Recognition of maternal amniotic fluid by pre-weaning piglets.**
J. Figueroa*, D. Solà-Oriol, R. Davín, J. F. Pérez, and X. Manteca, *Universitat Autònoma de Barcelona*, *Bellaterra, Barcelona, Spain.*

T2 **The effect of colostrum supplementation on piglets' body temperature recovery and lactation performance.**
R. Muns*, J. L. Ruiz de la Torre, P. S. Agostini, X. Manteca, and J. Gasa, *SNiBA, Departament Ciència Animal i dels Aliments, Universitat Autònoma de Barcelona*, *Barcelona, Spain*.

T3 **Comparison of pig restraint and sampling methods on blood lactate concentration.**
B. Buzzard*[1], L. N. Edwards[1], R. D. Goodband[1], D. B. Anderson[2], T. E. Engle[2], and T. Grandin[2], [1]*Kansas State University*, *Manhattan,* [2]*Colorado State University*, *Fort Collins*.

T4 **The effect of alleyway width on gestating sow welfare in a free-access stall system.**
L. A. Mack*[1], M. F. Elischer[1], S. D. Eicher[2], A. K. Johnson[3], D. C. Lay Jr. [2], B. T. Richert[1], and E. A. Pajor[4], [1]*Purdue University*, *West Lafayette, IN*, [2]*LBRU, USDA-ARS*, *West Lafayette, IN*, [3]*Iowa State University*, *Ames*, [4]*University of Calgary*, *Calgary, AB, Canada*.

T5 **A comparison of two farrowing environments on piglet performance.**
A. R. Hanson*, P. M. Walker, and J. P. Holt, *Illinois State University*, *Normal.*

T6 **Behavior of Duroc pigs on sudangrass (*Sorghum bicolor*) pastures.**
S. Pietrosemoli*[1,2], J. C. Guevara[2], A. Lobo[3], J. Cardona[3], W. Maradiaga[3], and J. T. Green[4,2], [1]*Animal Science Department. North Carolina State University*, *Raleigh,* [2]*Alternative Swine Research and Extension Project*, *Raleigh, NC,*[3]*Universidad Nacional de Agricultura*, *Catacamas, Olancho, Honduras.,* [4]*Crop Science Department. North Carolina State University*, *Raleigh.*

T7 **Effects of postnatal serotonin agonism on fear response and memory.**
R. L. Dennis* and H. W. Cheng, *Livestock Behavior Research Unit, USDA-ARS*, *West Lafayette, IN*.

T8 **Influence of increasing-dim and bright, and split-dark-bright lighting on broiler mobility and stress.**
R. J. Lien*, J. B. Hess, and S. F. Bilgili, *Auburn University*, *Auburn, AL*.

T9 **The use of lidocaine as an analgesic to study immediate pain associated with hot blade beak trimming in 1- and 10-day-old White Leghorn chicks.**
M. Cho*[1], K. Schwean-Lardner[1], A. Livingston[2], and H. L. Classen[1], [1]*Department of Animal and Poultry Science, University of Saskatchewan*, *Saskatoon, Saskatchewan, Canada*, [2]*Department of Veterinary Biomedical Sciences, University of Saskatchewan*, *Saskatoon, Saskatchewan, Canada*.

T10 **Comparison of an enriched and barren environment on welfare related fear behaviors of commercial laying hens.**
C. J. Davis*, H. Taira, M. M. Beck, and P. A. Skewes, *Clemson University*, *Clemson, SC.*

T11 **The behavior of Japanese quail fed diets supplemented with passionflower.**
J. D. T. Silva, F. H. Hada, R. H. Marques, R. A. Gravena, V. K. Silva, S. A. Queiroz, and V. M. B. Moraes*, *São Paulo State University*, *Jaboticabal, SP, Brazil*.

T12 **Strain differences among six varieties of fowl in two fear tests.**
G. S. Archer* and J. A. Mench, *University of California, Davis.*

T13 **Behavior expression of testosterone treated cockerels in response to social grouping.**
S. S. Askari Rankouhi*, M. A. Karimi Torshizi, R. Vaez Torshizi, A. Niknam, and A. Maghsoudi, *Tarbiat Modares University*, *Tehran, Iran*.

Animal Health
Viruses, Infections, and Immunity

T14 **Results from the Washington State bovine viral diarrhea virus voluntary control project.**
J. R. Wenz*, D. A. Moore, H. L. Neibergs, and J. S. Neibergs, *Washington State University*, *Pullman.*

T15 **Effects of source and level of energy on the immune competence and response to an infectious bovine rhinotracheitis virus (IBRV) challenge in cattle.**
L. R. Schwertner*[1], L. E. Hulbert[1,2], J. A. Carroll[2], M. L. Galyean[1], and M. A. Ballou[1], [1]*Department of Animal and Food Sciences, Texas Tech University*, *Lubbock,* [2]*Livestock Issues Research Unit, USDA–ARS*, *Lubbock, TX.*

T16 **The effects of dam parity and antibiotics on immune parameters and gastrointestinal bacterial diversity in weanling pigs.**
E. E. Hinkle*, H. Tran, J. W. Bundy, R. Moreno, P. S. Miller, J. Walter, and T. E. Burkey, *University of Nebraska*, *Lincoln*.

T17 **Serum IgG concentrations and performance, incidence of diseases, and risk of death in preweaned Holstein calves.**
M. C. Perdomo* and J. E. P. Santos, *University of Florida*, *Gainesville.*

T18 **Effects of live and killed *Mycoplasma gallisepticum* vaccines prior to an F-strain *Mycoplasma gallisepticum* overlay on the reproductive and digestive organ characteristics of commercial layers.**
R. Jacob*[1], E. D. Peebles[1], J. D. Purswell[2], and S. L. Branton[2], [1]*Mississippi State University*, *Mississippi State,* [2]*USDA-ARS, Poultry Research Unit*, *Mississippi State.*

T19 **Discovery of differentially expressed microRNAs in Porcine reproductive and respiratory syndrome (PRRS) virus infected alveolar macrophages.**
J. A. Hicks, N. Trakooljul, and H. C. Liu*, *North Carolina State University*, *Raleigh*.

T20 **Development of mouse monoclonal antibodies specific for chicken interleukin-18 (IL-18).**
Y. H. Hong*[1], H. S. Lillehoj[2], S. H. Lee[2], M. -S. Park[2], J. LaBresh[3], D. Tompkins[4], and C. Baldwin[4], [1]*Department of Animal Science and Technology, Chung-Ang University*, *Anseong, Gyeonggi-do Republic of Korea*, [2]*Animal and Natural Resources Institute, Agricultural Research Service-U. S. Department of Agriculture*, *Beltsville, MD*, [3]*Kingfisher Biotech, Inc., St. Paul, MN*, [4]*Department of Veterinary and Animal Sciences, Paige Laboratory, University of Massachusetts*, *Amherst*.

T21 **Influence of two different doses of infectious bovine rhinotracheitis virus (IBRV) on immune and physiological parameters in steers.**
S. M. Falkenberg*[1], T. B Schmidt[1], T. Elsasser[4], J. L. Sartin[3], J. O. Buntyn[1], and J. A. Carroll[2], [1]*Mississippi State University*, *Mississippi State*, [2]*Livestock Issues Research Unit, USDA-ARS*, *Lubbock, TX*, [3]*Auburn University College of Veterinary Medicine*, *Auburn, AL*, [4]*Bovine Functional Genomics, USDA-ARS*, *Beltsville, MD*.

T22 **The effect of thymol on reactive oxygen species production by bovine neutrophils.**
L. M. Nemec*, C. Wu, S. Cordova, K. Davison, and T. F. Gressley, *University of Delaware*, *Newark*.

T23 **Bovine hepatic and adipose retinol binding protein gene expression.**
P. Rezamand*, K. M. Hunt, R. D. Schramm, and M. A. McGuire, *University of Idaho*, *Moscow.*

Beef Species

T24 **Yeast supplementation alters the health status of receiving cattle.**
J. A. Carroll*[1], C. T. Collier[1], L. E. Hulbert[1,3], J. R. Corley[2], A. G. Estefan[2], D. N. Finck[3], and B. J. Johnson[3], [1]*USDA-ARS, Livestock Issues Research Unit*, *Lubbock, TX,* [2]*Lesaffre Feed Additives*, *Milwaukee, WI,* [3]*Texas Tech University, Dept. of Animal and Food Sciences*, *Lubbock.*

T25 **Impact of mature cow weights on farm profitability and economic weights of beef cattle traits.**
F. Szabó*[1], K. Keller[1], J. Wolf[2], and M. Wolfová[2], [1]*University of Pannonia Georgikon Faculty*, *Keszthely, Hungary*, [2]*Institute of Animal Science*, *Uhrinéves, Prague, Czech Republic*.

T26 **Carcass characteristics and chemical composition of *Longissimus* muscle of different genetic groups finished at tropical condition.**
R. H. de Tonissi Buschinelli de Goes*[1], D. M. Lambertucci[3], K. C. da Silva Brabes[1], A. B. Mancio[2], C. Mistura[4], and D. D. Alves[5], [1]*Universidade Federal da Grande Dourados*, *Dourados, MS, Brazil*, [2]*Universidade Federal de Viçosa*, *Viçosa, MG, Brazil*, [3]*Faculdade de Ciências Biomédicas de Cacoal*, *Cacoal, RO, Brazil*, [4]*Universidade do Estado da Bahia*, *Juazeiro, BA, Brazil*, [5]*Universidade Estadual de Montes Claros*, *Janaúba, MG, Brazil*.

T27 **Efficacy of day 23 GnRH for CIDR-Select estrus synchronization for beef heifers bred 12 hours after estrus or by fixed-time AI.**
J. L. Seabrook*, R. K. Peel, G. E. Seidel, and J. C. Whittier, *Colorado State University*, *Fort Collins.*

T28 **Fatty acid profile of feedlot Brangus bullocks fed with monensin or polyclonal antibodies.**
R. S. Barducci*[1,2], L. M. N. Sarti[1], M. D. B Arrigoni[1], R. D. L. Pacheco[1], D. D. Millen[1], C. L. Martins[1], S. R. Baldin[1], F. S. Parra[1], J. R. Ronchesel[1], T. M. Mariani[1], J. P. S. T. Bastos[1], T. C. Putarov[1], D. Tomazella[1], and H. D. Rosa[1], [1]*FMVZ/UNESP, Botucatu, São Paulo, Brazil*, [2]*Apoio FAPESP, São Paulo, Brazil*.

T29 **Shelf-life characteristics of longissimus muscle of feedlot bullocks supplemented with vitamin D and E.**
R. D. L. Pacheco*[1,5], S. R. Baldin[1,2], F. S. Parra[1], J. R. Ronchesel[1], N. R. B. Consolo[3], M. D. B. Arrigoni[1], D. D. Millen[1], C. L. Martins[1], R. S. Barducci[1], L. M. N. Sarti[1], D. Tomazella[1], A. L. Campanini[1], J. M. P. Silva[1], A. S. C. Pereira[1], D. P. D. Lanna[4], [1]*FMVZ/UNESP, Botucatu, São Paulo, Brazil*, [2]*Apoio FAPESP, São Paulo, Brazil*, [3]*USP, Pirassununga, São Paulo, Brazil*, [4]*ESALQ, Piracicaba, Sã Paulo, Brazil*, [5]*Aluno do doutorado do programa de pós-graduaçao em zootecnia da FMVZ/UNESP, Botucatu, Brazil*.

T30 **Effect of vitamin D and E supplementation on attributes of meat tenderness of feedlot bullocks.**
S. R. Baldin*[1,2], F. S. Parra[1], J. R. Ronchesel[1], N. R. B. Consolo[3], M. D. B. Arrigoni[1], D. D. Millen[1], C. L. Martins[1], R. D. L. Pacheco[1], R. S. Barducci[1], L. M. N. Sarti[1], D. Tomazella[1], A. L. Campanini[1], F. A. S. Miquilin[1], A. S. C. Pereira[3], D. P. D. Lanna[4], [1]*FMVZ/UNESP, Botucatu, São Paulo, Brazil*, [2]*Apoio FAPESP, São Paulo, Brazil*, [3]*USP, Pirassununga, São Paulo, Brazil*, [4]*ESALQ, Piracicaba, Sã Paulo, Brazil*.

T31 **Influence of weaning strategy on growth and immunity in beef calves.**
L. B. Krebs*, A. Loyd, and E. G. Brown, *Stephen F. Austin State University, Nacogdoches, TX*.

T32 **Effects of origin, breed, sex and season on productive performance of cattle arriving to feedlots located in Northern Mexico (Mexicali, B. C.).**
L. C. Muñoz-Salas[1], C. F. Arechiga*[1], J. I. Aguilera-Soto[1], M. A. Lopez-Carlos[1], S. Mendez de Lara[1], F. Mendez-Llorente[1], M. Rincon[1], F. J. Gutierrez[1], C. A. Medina-Flores[1], L. Avendaño-Reyes[2], and A. Correa-Calderon[2], [1]*Universidad Autonoma de Zacatecas, Zacatecas, Mexico.*, [2]*Universidad Autonoma de Baja California, Mexicali, BC, Mexico*.

T33 **Number of days to accurately measure individual feed intake in lactating females.**
K. A. Gray*, B. L. Winslow, M. H. Poore, and J. P. Cassady, *North Carolina State University, Raleigh.*

T34 **Effect of cutting time and maceration on nitrogen utilization of trefoil-grass hay by growing steers.**
A. F. Brito*[1], C. Lafrenière[2], and R. Berthiaume[2], [1]*University of New Hampshire, Durham,* [2]*Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada*.

T35 **Temperature during summer transport of Canadian feeder cattle at high and low loading densities.**
C. Goldhawk*[1,2], E. Janzen[1], L. González[4], T. Crowe[3], J. Kastelic[2], E. Pajor[1], and K. Schwartzkopf-Genswein[2], [1]*University of Calgary, Calgary, Alberta, Canada*, [2]*Agriculture and AgriFood Canada, Lethbridge, Alberta, Canada*, [3]*University of Saskatchewan, Saskatoon, Saskatchewan, Canada*, [4]*University of Manitoba, Winnipeg, Manitoba, Canada*.

Breeding and Genetics
Poultry and Small Ruminants

T36 **Comparative genomics: The guinea fowl satiety center.**
N. Bonner*, J. Tyus, and S. Nahashon, *Tennessee State University, Nashville.*

T37 **Divergent selection for 4-week body weight in Japanese quail: Relationship between blood parameters and carcass characteristics.**
H. Beiki*, A. Pakdel, and M. Moradi Shahre Babak, *University of Tehran, Iran*.

T38 **Genetic variation in physiological responses following heat stress in laying hens.**
J. N. Felver-Gant*[1], L. A. Mack[1], R. L. Dennis[2], and H. W. Cheng[2], [1]*Purdue University, West Lafayette, IN,* [2]*Livestock Behavior Research Unit, USA-ARS, West Lafayette, IN.*

T39 **Genome-wide copy number variation and temporal gene expression analysis in Marek's disease-resistant and -susceptible inbred chickens.**
Y. Yu[1], A. Mitra[1], H. Zhang[2], F. Tian[1], G. Liu*[3], and J. Song[1], [1]*University of Maryland, College Park,* [2]*USDA-ARS-ADOL, East Lansing, MI,*[3]*USDA-ARS, Beltsville, MD*.

T40 **Broiler breeders with an efficient innate immune response are more resistant to coccidial infections.**
C. L. Swaggerty*[1], K. J. Genovese[1], H. He[1], J. R. Nerren[1], I. Y. Pevzner[2], and M. H. Kogut[1], [1]*United States Department of Agriculture, College Station, TX,* [2]*Cobb-Vantress, Inc., Siloam Springs, AR.*

T41 **Expression of the peptide transporter, PepT1, in chickens from high and low weight-selected lines and their F1 and F2 crosses.**
B. Zwarycz*, E. A. Wong, P. B. Seigel, and C. R. Mott, *Virginia Polytechnic Institute & State University, Blacksburg*.

T42 **Genetic properties of feed utilization efficiency parameters.**
S. E. Aggrey*[1], A. B. Karnuah[1], and N. B. Anthony[2], [1]*University of Georgia*, *Athens,* [2]*University of Arkansas*, *Fayetteville*.

T43 **Analysis of ascites susceptibility using genetic markers in commercial broilers.**
S. Krishnamoorthy*, N. Anthony, D. Rhoads, R. Wideman, and G. Erf, *University of Arkansas*, *Fayetteville.*

T44 **Using quantitative PCR to investigate three candidate genes related to pulmonary hypertension in the chicken.**
A. A. Al-Rubaye*, N. B. Anthony, G. F. Erf, R. F. Wideman, and D. D. Rhoads, *University of Arkansas*, *Fayetteville*.

T45 **Selection of the best model for estimation of genetic parameters for growth traits in Iranian Moghani sheep.**
N. Ghavi Hossein-Zadeh*[1] and M. Ardalan[2], [1]*Department of Animal Science, Faculty of Agriculture, University of Guilan*, *Rasht, Iran*, [2]*Department of Animal Science, University College of Agriculture and Natural Resources, University of Tehran*, *Karaj, Iran*.

T46 **Estimates of genetic trends for body weight traits of Moghani sheep obtained by a multivariate animal model analysis.**
N. Ghavi Hossein-Zadeh*, *Department of Animal Science, Faculty of Agriculture, University of Guilan*, *Guilan, Rasht, Iran*.

T47 **Association of polymorphisms in the FecB gene with litter size in Wadi sheep.**
Y. Ren*[1,2], Z. Shen[1,2], M. Li[3], N. Xiao[3], W. Dong[3], and S. Fu[1], [1]*Binzhou Animal Science & Veterinary Medicine Institute*, *Binzhou Shandong, China*, [2]*Research and Development Center of Wadi Sheep Breeding Technology*, *Binzhou Shandong, China*, [3]*Shandong Lvdu Biotechnology Co., Ltd.*, *Binzhou Shandong, China*.

T48 **Inbreeding effects on different weights and population structure of Santa Inês sheep.**
M. L. Santana Júnior*, V. B. Pedrosa, P. S. Oliveira, J. P. Eler, and J. B. S. Ferraz, *Animal Breeding and Biotechnology Group, Department of Basic Sciences, College of Animal Science and Food Engineering, University of São Paulo, C. Postal 23, 13635-970, Pirassununga, SP, Brazil*.

T49 **Estimates of variances due to direct and maternal effects on birth weight in Moghani sheep.**
M. Bayeri Yar*[1], S. Alijani[1], T. Farahvash[2], and A. rafat[1], [1]*University of Tabriz*, *Tabriz, East Azerbijan, Iran*, [2]*Islamik Azad University, Shabestar Branch*, *Tabriz, East Azerbijan, Iran*.

T50 **Estimation of additive and nonadditive genetic parameters for growth traits of Moghani sheep.**
M. Bayeri Yar*[1], S. Alijani[1], and T. Farahvash[2], [1]*University of Tabriz*, *Tabriz, East Azerbijan, Iran*, [2]*Islamic Azade University, Shabestar Branch*, *Tabriz, East Azerbijan, Iran*.

T51 **Estimation of variance components for reproductive traits of Moghani sheep.**
M. Bayeri Yar*[1], s. Alijani[1], and T. Farahvash[2], [1]*Univeraity of Tabriz*, *Tabriz, East Azerbijan, Iran*, [2]*Islamic Azade University, Shabestar Branch*, *Tabriz, East Azerbijan, Iran*.

T52 **Determination of intrinsic tolerance for high dietary nitrate in ewes using hepatic gene expression.**
R. R. Cockrum*, K. J. Austin, and K. M. Cammack, *University of Wyoming*, *Laramie.*

T53 **Genetic parameters for growth traits in the progeny of Nubian, French Alpine Saaen, Toggenburgh, and Spanish goats mated naturally to Boer sires.**
A. Pérez*, J. S. Saucedo, L. Avendaño, J. F. Ponce, and M. F. Montaño, *Universidad Autónoma de Baja California, México, Instituto de Ciencias Agrícolas*, *Mexicali, Baja California, México*.

Companion Animals
Companion Animal Biology

T54 **Student organization sponsored dog training classes provide experiential learning opportunity for students and community participants.**
L. K. Karr-Lilienthal*[1] and J. S. Morstad[3,2], [1]*University of Nebraska - Lincoln,* [2]*Union College*, *Lincoln, NE,* [3]*Prairie Skies Inc.*, *Lincoln, NE.*

T55 **Tail deflection as a measure of emotional state in canines.**
C. L. Terrill*, T. H. Friend, and J. E. Sawyer, *Texas A&M University*, *College Station.*

T56 **Galactoglucomannan oligosaccharide (GGMO) supplementation affects nutrient digestibility, fermentation end-product production, and large bowel microbiota of the dog.**
T. A. Faber*[1], A. C. Hopkins[2], I. S. Middelbos[1], N. P. Price[3], and G. C. Fahey Jr.[1], [1]*University of Illinois*, *Urbana,* [2]*Temple-Inland*, *Diboll, TX,* [3]*National Center for Agricultural Utilization Research, USDA*, *Peoria, IL*.

T57 **Evaluation of cellulose and beet pulp as dietary fibers for use in raw meat-based diets fed to captive exotic felids.**
K. R. Kerr*[1], C. Morris[2], S. Burke[2], and K. S. Swanson[1,3], [1]*Division of Nutritional Sciences, University of Illinois*, *Urbana,* [2]*Henry Doorly Zoo*, *Omaha, NE,* [3]*Department of Animal Sciences, University of Illinois*, *Urbana*.

T58 **The influence of fish versus mammalian and avian protein sources on satiety hormone response in dogs.**
B. M. Vester Boler*[1], T. A. Faber[1], L. L. Bauer[1], K. S. Swanson[1], S. Smiley[2], P. J. Bechtel[2,3], and G. C. Fahey Jr.[1], [1]*University of Illinois, Urbana,* [2]*University of Alaska, Fairbanks,* [3]*USDA/ARS, Fairbanks, AK.*

T59 **Dietary magnesium alters urinary histamine excretion in domestic felines.**
S. K. Martin*[1], C. E. Conway[1], M. R. C. de Godoy[1], D. L. Harmon[1], E. S. Vanzant[1], S. Zicker[2], R. M. Yamka[2], and K. R. McLeod[1], [1]*University of Kentucky, Lexington,* [2]*Hill's Pet Nutrition, Inc., Topeka, KS.*

T60 **Dietary effects of dietary cation anion balance on histamine metabolism and urine acidity in domestic felines.**
S. K. Martin*[1], C. E. Conway[1], M. R. C. de Godoy[1], D. L. Harmon[1], E. S. Vanzant[1], S. Zicker[2], R. M. Yamka[2], and K. R. McLeod[1], [1]*University of Kentucky, Lexington,* [2]*Hill's Pet Nutrition, Inc., Topeka, KS.*

T61 **The effects of graded arginine levels on nitrogen metabolism in the lean adult dog.**
C. E. Conway*[1], M. R. C. de Godoy[1], S. K. Martin[1], K. R. McLeod[1], N. Z. Frantz[2], R. M. Yamka[2], and D. L. Harmon[1], [1]*University of Kentucky, Lexington,* [2]*Hill's Pet Nutrition, Inc., Topeka, KS.*

T62 **The effects of carob (*Ceratonia siluqua*) on some reproductive parameters of male New Zealand White rabbits.**
A. Ata, M. S. Gulay*, O. Yildiz-Gulay, and S. Gungor, *Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Burdur, Turkey.*

T63 **The effects of carob (*Ceratonia siluqua*) on some hematological parameters and organs of male New Zealand White rabbits.**
M. S. Gulay*[1], O. Yildiz-Gulay[1], A. Ata[1], A. Balic[2], and A. Demirtas[1], [1]*Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Burdur, Turkey,* [2]*Sakarya Toyota Hospital, Sakarya, Turkey.*

T64 **The effects of feeding *Pinus pinea* seeds on some blood values in male New Zealand White rabbits.**
O. Yildiz-Gulay*[1], M. S. Gulay[1], A. Ata[1], A. Balic[2], and A. Demirtas[1], [1]*Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Burdur, Turkey,* [2]*Sakarya Toyota Hospital, Sakarya, Turkey.*

T65 **Spermatological parameters of male New Zealand White rabbits supplemented with *Pinus pinea* seeds.**
A. Ata, M. S. Gulay*, O. Yildiz-Gulay, S. Avki, and S. Gungor, *Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Burdur, Turkey.*

Dairy Foods
Cheese

T66 **An x-ray system to assess Ragusano PDO quality.**
G. Impoco[1], C. Pasta[1], G. Portelli[1], G. Marino[1], M. Caccamo*[1], S. Carpino[1], and G. Licitra[1,2], [1]*CoRFiLaC, Regione Siciliana, Ragusa, Italy,* [2]*D. A. C. P. A., University of Catania, Catania, Italy.*

T67 **Effects of rapid visco analyzer on the functional properties of imitation mozzarella cheese.**
S. He[1,2], X. Li*[1,2], Y. Ma[3], C. Yao[2], and B. Wu[1,2], [1]*Key Laboratory of Dairy Science, Northeast Agricultural University, Ministry of Education, Harbin, Heilongjiang, China,* [2]*College of Food Science, Northeast Agricultural University, Harbin, Heilongjiang, China,* [3]*School of Food Science and Engineering, Harbin Institute of Technology, Harbin, Heilongjiang, china.*

T68 **A sensor technology for monitoring and controlling syneresis in the cheese vat.**
T. G. Ferreira*[1], M. Castillo[1,2], F. A. Payne[1], C. O'Donnell[3], and D. O'Callaghan[4], [1]*University of Kentucky, Lexington,* [2]*Universitat Autònoma de Barcelona, Spain,* [3]*University College Dublin, Ireland,* [4]*Moorepark Food Research Center, Teagasc, Fermoy,Co, Cork, Ireland.*

T69 **Method to quantify retention of lipid soluble substances in a cheese curd model system.**
M. Tippetts* and S. Martini, *Utah State University, Logan.*

T70 **Effect of storage at ambient temperature on calcium lactate crystallization in Cheddar cheese.**
F. Su, P. Rajbhandari, and P. Kindstedt*, *University of Vermont, Burlington.*

T71 **Effect of addition of calcium chloride and sodium chloride on aflatoxin M1 content during Egyptian Domiati cheese processing.**
M. M. Motawee*[1], K. Genedy[1], and T. A. Nassib[2], [1]*National Organization For Drug Control and Research. Egypt, Giza, Cairo, Egypt,* [2]*Faculty of Agriculture, Mansoura University, Mansoura, Egypt.*

T72 **Effect of milk fat content on goat cheese proteolysis elaborated with the traditional method.**
D. Sánchez-Macías*, I. Moreno-Indias, L. E. Hernández-Castellano, A. Morales-delaNuez, A. Torres, M. D. Ruiz-Díaz, A. Argüello, and N. Castro, *Department of Animal Science, Las Palmas de Gran Canaria University, Arucas, Las Palmas, España.*

T73 **Impact of salt substitutes on the sensory characteristics of reduced sodium process cheese.**
A. Kommineni*, J. Amamcharla, and L. E. Metzger, *Midwest Dairy Foods Research Center, South Dakota State University, Brookings.*

T74 **Comparison of identified flavor compounds, texture and sensory properties in regular cream cheese and cream cheese made from whole milk powder.**
S. S. Jeon*, C. H. Chung, and H. S. Kwak, *Sejong University*, *Seoul, South Korea*.

T75 **Identification of neutral volatile compounds, texture and sensory properties in cholesterol-removed cream cheese.**
S. S. Jeon*, S. J. Lee, and H. S. Kwak, *Sejong University*, *Seoul, South Korea*.

T76 **Changes of Ragusano cheese aroma due to different levels of pasture intake.**
S. Carpino*[1], T. Rapisarda[1], I. Schadt[1], C. Pasta[1], G. Belvedere[1], and G. Licitra[1,2], [1]*CoRFiLaC, Regione Siciliana*, *Ragusa, Italy*, [2]*DACPA, Catania University*, *Catania, Italy*.

T77 **Enzyme accelerated ripening of Turkish Mihalic hard cheese: Proteolysis and lipolysis.**
T. Ozcan* and E. Kurdal, *Uludag University, Department of Food Engineering*, *Bursa, Turkey*.

T78 **Seasonal variation in milk composition affects textural properties of low-moisture part-skim Mozzarella cheese.**
V. Jai*, U. Lund, and N. Farkye, *California Polytechnic State University*, *San Luis Obispo*.

T79 **A study of bioactive peptides in US Cheddar cheeses of different ages.**
Y. Lu*, S. Govindasamy-Lucey, and J. A. Lucey, *University of Wisconsin-Madison*, *Madison*.

T80 **Effect of curd milling on the characteristics of Queso Fresco during storage.**
D. L. Van Hekken*[1], M. H. Tunick[1], N. Y. Farkye[2], J. B. Luchanski[1], S. Mukhopadhyay[1], and P. M. Tomasula[1], [1]*USDA, Agricultural Research Service*, *Wyndmoor, PA,* [2]*California Polytechnic State University*, *San Luis Obispo.*

T81 **Pigments from nonthermal browning formed in Gouda and Parmesan cheeses.**
A. Lopez-Hernandez*[1], L. E. Rodriguez-Saona[2], M. M. Giusti[2], M. E. Johnson[3], D. A. Sommer[3], and S. A. Rankin[1], [1]*University of Wisconsin-Madison*, *Madison,* [2]*The Ohio State University*, *Columbus,* [3]*Wisconsin Center for Dairy Research*, *Madison.*

T82 **Whey ricotta: A scientific reevaluation.**
J. W. -M. Heick*, R. Jimenez-Flores, and H. Khalil, *California Polytechnic State University*, *San Luis Obispo.*

Dairy Foods
Chemistry

T83 **Evaluation of the addition of urea to refrigerated raw milk on the crude protein, milk fat, lactose, and total solids contents determined by mid-infrared spectrometry.**
E. G. Esteves[1], M. M. O. P. Cerqueira*[2], L. M. Fonseca[2], M. O. Leite[2], M. R. Souza[2], C. F. A. M. Penna[2], R. Rodrigues[2], and L. R. Abreu[3], [1]*Ministry of Agriculture*, *Brasília, Distrito Federal,Brasil*, [2]*Federal University of Minas Gerais*, *Belo Horizonte, Minas Gerais, Brasil*, [3]*Federal University of Lavras*, *Lavras, Minas Gerais, Brasil*.

T84 **Cheese whey compositional analysis using infrared spectroscopy.**
F. A. Pinto[1], L. A. Clementino[1], D. L. S. Oliveira[1], L. R. Abreu[2], L. M. Fonseca*[1,3], R. Rodrigues[1,3], M. O. Leite[1,3], and M. M. O. P. Cerqueira[1,3], [1]*Federal University of Minas Gerais/Escola de Veterinária/DTIPOA*, *Belo Horizonte, MG, Brazil*, [2]*Universidade Federal de Lavras/DCA*, *Lavras, MG, Brazil*, [3]*Laboratory for Milk Quality Analysis*, *Belo Horizonte, MG, Brazil*.

T85 **Comparison of Mojonnier and Gerber methods for analyzing the fat content of fermented milk beverages.**
E. H. P. Andrade, M. O. Leite, C. F. A. M. Penna, M. R. Souza, L. M. Fonseca*, and M. M. O. P. Cerqueira, *Federal University of Minas Gerais*, *Belo Horizonte, Brazil*.

T86 **Quantitative analysis of the distribution of fat globules in milk.**
G. Impoco[1], N. Fucà[2], and G. Licitra*[1,2], [1]*CoRFiLaC, Regione Siciliana*, *Ragusa, Italy*, [2]*DACPA, University of Catania*, *Catania, Italy*.

T87 **Evaluation of Sprint Rapid Protein Analyzer for total protein analysis of Cheddar cheese.**
H. M. Zhang*, P. Salunke, J. K. Amamcharla, and L. M. Metzger, *Midwest Dairy Foods Research Center, South Dakota State University*, *Brookings.*

T88 **Determination of true proteins in dairy products: A comparative study between Kjeldahl and Sprint-Protein Analyzer.**
D. Zhao*, V. Jai, and N. Y. Farkye, *California Polytechnic State University*, *San Luis Obispo*.

T89 **Application of FTIR spectra for early detection of spore contamination in fluid milk.**
J. C. Huber-Rockow* and R. Jimènez-Flores, *California Polytechnic State University*, *San Luis Obispo.*

Dairy Foods
Foods and Products

T90 **Oxidation stability of milk rich in α-linolenic acid produced through duodenum infusion of high-linolenic perilla fatty acid into dairy cows.**
Q. S. Liu, J. Q. Wang*, D. P. Bu, E. Khas, G. Yang, L. Y. Zhou, P. Sun, and K. L. Liu, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*.

T91 **Activity and viability of lactic acid bacteria in yogurts fortified with predigested nongerminated or germinated whole soy powder.**
U. Nsofor*[1,2] and Z. Ustunol[1], [1]*Michigan State University*, *East Lansing,* [2]*Food and Drug Administration*, *College Park, MD.*

T92 **Sensory attributes of yogurt fortified with predigested, nongerminated or germinated whole soy powder.**
U. Nsofor*[1,2] and Z. Ustunol[1], [1]*Michigan State University*, *East Lansing,* [2]*Food and Drug Administration*, *College Park, MD.*

T93 **Effect of lactose content on the post-acidification of yogurt.**
V. Sikand*, P. S. Tong, and S. Roy, *California Polytechnic State University*, *San Luis Obispo.*

T94 **Effect of a satiety ingredient on the properties of resulting yogurts during storage.**
D. Olson*[1], K. Aryana[1,2], D. Alexander[3], and T. Emmick[3], [1]*Louisiana State University Agricultural Center*, *Baton Rouge,* [2]*Louisiana State University*, *Baton Rouge,* [3]*Kemin Health*, *Des Moines, IA.*

T95 **Chemical and sensory characteristics of set-type yoghurts made from sheep, goat, and their mixed milks during refrigerated storage.**
A. C. Gürsoy-Balci[1], Z. Güler[1], and Y. W. Park*[2], [1]*Mustafa Kemal University*, *Antakya, Hatay, Turkey*, [2]*Fort Valley State University*, *Fort Valley, GA*.

T96 **Oxidative stability of yogurt from bovine and caprine milks enriched with different levels of n-3 fatty acids.**
D. Dlders*, A. Mora-Gutierrez, R. Attaie, and G. L. Goodie, *Prairie View A&M University*, *Prairie View, TX.*

T97 **Evaluation of nonessential and heavy minerals in three species milks, Torba yoghurts and whey.**
H. Sanal[1], Z. Guler[1], and Y. W. Park*[2], [1]*Mustafa Kemal University*, *Antakya, Hatay, Turkey*, [2]*Fort Valley State University*, *Fort Valley, Georgia.*

T98 **Impact of acidulant addition on yogurt fermentation times and physiochemical properties.**
T. A. Boomgaarden* and K. A. Schmidt, *Kansas State University*, *Manhattan*.

T99 **Antioxidative peptides isolated from fermented whey proteins by *lactobacilli* and their effects on aged mice.**
Y. Bao*[1], X. Liang[1], L. Qin[1], R. Li[1], and M. Guo[2], [1]*Northeast Forestry University*, *Harbin, China*, [2]*University of Vermont*, *Burlington.*

T100 **Zinc-binding activity of yak casein hydrolysate and the structural characteristics of hydrolysate-Zn complex.**
X. Y. Mao*[1], X. Wang[1], J. Zhou[1], and P. S. Tong[2], [1]*College of Food Science & Nutritional Engineering, Key Laboratory of Functional Dairy of Chinese Ministry of Education, China Agricultural University*, *Beijing,China*, [2]*California Polytechnic State University*, *San Luis Obispo*.

T101 **Functional and volatile properties of milk serum protein concentrates.**
L. E. Coppola*[1], S. A. Rankin[1], M. S. Molitor[2], and J. A. Lucey[1], [1]*University of Wisconsin-Madison*, [2]*Wisconsin Center for Dairy Research*, *Madison*.

T102 **Volatile profiles of commercial starter distillates and diacetyl levels in selected dairy food.**
M. I. Rincon*, A. Lopez-Hernandez, M. S. Surianto, A. R. Rankin, and S. A. Rankin, *University of Wisconsin-Madison.*

T103 **Sensory properties of chocolate flavored, protein fortified, fluid milk based recovery beverages produced using indirect and direct thermal processing.**
A. Lammert*[1], A. Olabi[2], K. Brooks[1], S. Vink[1], and P. Tong[1], [1]*California Polytechnic State University*, *San Luis Obispo,* [2]*American University of Beirut*, *Beirut, Lebanon*.

T104 **Physicochemical properties of pomegranate-flavored carbonated symbiotic beverage.**
H. Walsh*, J. Cheng, and M. Guo, *University of Vermont*, *Burlington*.

T105 **Development of symbiotic milk candy.**
J. McCarthy*, Z. Zhang, and M. Guo, *University of Vermont*, *Burlington.*

T106 **Physicochemical properties of whey protein-based safe paper glue.**
J. Wang, J. Cheng*, and M. Guo, *University of Vermont*, *Burlington*.

Forages and Pastures
Forage Quality

T107 **Forage yield and quality assessment of tall fescue varieties.**
D. J. R. Cherney*[1], J. H. Cherney[1], and D. Parsons[2], [1]*Cornell University*, *Ithaca, NY,* [2]*University of Tasmania*, *Hobart, Tasmania, Australia*.

T108 **Yield and chemical composition of forage soybeans relative to seeding rate and stage of harvest.**
B. G. Buller*, W. A. Storer, D. D. Kee, M. M. Fennel, M. A. Idlett, W. B. Brumbaugh, and F. M. LeMieux, *McNeese State University*, *Lake Charles, LA*.

T109 **Chemical constituents of *Cynodon* spp. varieties.**
C. L. Gordin, E. R. de Oliveira*, L. L. Freitas, F. W. Pedroso, R. H. de Tonissi e Buschinelli de Goes, B. Lempp, S. F. Luna, W. S. Prado, L. H. X. da Silva, C. W. S. Gavilan, and A. M. de Araújo Gabriel, *Universidade Federal da Grande Dourados*, *Dourados, MS, Brazil*.

T110 **Chemical composition evaluation of different *Cynodon dactylon*.**
F. W. Pedroso, E. R. de Oliveira*, L. L. Freitas, C. L. Gordin, R. H. de Tonissi e Buschinelli de Goes, B. Lempp, S. F. Luna, W. S. Prado, L. V. Moura, F. P. Monção, A. M. de Araújo Gabriel, and C. W. S. Gavilan, *Universidade Federal da Grande Dourados*, *Dourados, MS, Brazil*.

T111 **Chemical composition of three grasses of *Cynodon dactylon*.**
L. L. Freitas, E. R. de Oliveira*, F. W. Pedroso, C. L. Gordin, R. H. de Tonissi e Buschinelli de Goes, B. Lempp, S. F. Luna, W. S. Prado, F. P. Monção, L. V. Moura, and A. M. de Araújo Gabriel, *Universidade Federal da Grande Dourados*, *Dourados, MS, Brazil*.

T112 **Nutrient composition of tropical forages collected from intensively managed rotational grazing systems.**
J. C. Lopes*[1], R. B. Reis[2], A. L. Miller[1], and D. K. Combs[1], [1]*University of Wisconsin*, *Madison*, [2]*Universidade Federal de Minas Gerais*, *Belo Horizonte, Brazil*.

T113 **In vitro nutritional evaluation of spiny and spineless *Opuntia* cladodes.**
J. A Santos-Haliscak[1], E. Gutiérrez-Ornelas*[1,4], M. A. Cerrillo-Soto[2,4], H. Bernal-Barragán[2,4], and O. La-O[3,4], [1]*Universidad Autónoma de Nuevo León*, *San Nicolás de los Garza, Nuevo León, México*, [2]*Universidad Juárez del Estado de Durango*, *Durango, Dgo., México*, [3]*Instituto de Ciencia Animal*, *La Habana, Cuba*, [4]*Red Internacional de Nutrición y Alimentación en Rumiantes*, *San Nicolás de los Garza, Nuevo León, México*.

T114 **Simple sequence repeats markers on the characterization of *Lolium* and *Dactylis* accessions.**
C. J. Aguirre-Robert[1], B. Alarcón-Zúñiga*[1], M. R. Venegas-Ordóñez[1], O. Hernández-Mendo[2], S. S. González-Muñoz[2], and J. Burgueño-Ferreira[2], [1]*Colegio de Postgraduados*, *Montecillo, Edo. de México, México*, [2]*Universidad Autónoma Chapingo*, *Chapingo, Edo. de México, México*.

T115 **Correlations among shearing force and chemical compositions of wheat stems.**
Z. Yang, Z. Wang*, W. Yang, S. Jiang, and G. Zhang, *Shandong Agricultural University*, *Tai-an, Shandong, China.*

T116 **Adaptation of *Brassica* spp. and fodder radishes as late season forages in the high desert region of Oregon.**
C. L. Engel*, B. A. Charlton, R. J. Roseberg, and R. A. Bentley, *Oregon State University, Klamath Basin Research and Extension Center*, *Klamath Falls.*

T117 **Effects of age of regrowth and geographical location on forage protein and carbohydrate fractions, silicon content, and their impact on IVOMD of four tropical grasses.**
K. A. K. Lee*[1], J. R. Carpenter[1], B. W. Mathews[2], M. S. Thorne[1], and L. E. Sollenberger[3], [1]*CTAHR, University of Hawaii at Manoa*, *Honolulu,* [2]*CAFNRM, University of Hawaii at Hilo*, *Hilo,* [3]*University of Florida*, *Gainesville.*

T118 **Effect of time from rumen fluid collection to sample inoculation on estimates of in vitro NDF digestibility.**
J. C. Lopes*[1], R. B. Reis[2], and D. K. Combs[1], [1]*University of Wisconsin*, *Madison*, [2]*Universidade Federal de Minas Gerais*, *Belo Horizonte, Brazil*.

T119 **Time course evaluation of NDF digestibility of hay crop silage and lignin as a predictor of indigestible fiber.**
R. Ward[1] and R. A. Patton*[2], [1]*Cumberland Valley Analytical Services*, *Maugansville, MD*, [2]*Nittany Dairy Nutrition*, *Mifflinburg, PA*.

T120 **Effect of a nutrient solution on the chemical composition and in vitro fermentation parameters of wheat hydroponic forage.**
H. Bernal-Barragán[2,5], R. Luevano-Escobedo[1], A. Elias-Iglesias[4,5], E. Gutiérrez-Ornelas[2,5], A. Estrada-Angulo[3,5], M. Guerrero-Cervantes[1,5], M. A. Cerrillo-Soto[1,5], and A. S. Juárez-Reyes*[1,5], [1]*Universidad Juárez del Estado de Durango*, *Durango, Durango, México*, [2]*Universidad Autónoma de Nuevo León*, *Monterrey, Nuevo León, México*, [3]*Universidad Autónoma de Sinaloa*, *Culicán, Sinaloa, México*, [4]*Instituto de Ciencia Animal*, *La Habana, Cuba*, [5]*Red Internacional de Nutrición y Alimentación en Rumiantes*, *Durango, Durango, México*.

T121 **Assessing digestibility of shredded juniperus monosperma treated with 5% alkylation or 3% ammoniation.**
C. A. Roof*, S. H. Cox, and S. L. Lodge-Ivey, *New Mexico State University*, *Las Cruces.*

T122 **Yield and quality of grasses in three different dairy regions of El Salvador.**
E. E. Corea Guillén*[1], J. M. Flores Tensos[1], L. B. Leyton Barrientos[1], J. F. Alvarado Parameño[1], G. O. Castillo Benedetto[1], J. M. Castro Montoya[1], and J. A. Elizondo-Salazar[2], [1]*Departamento de Zootecnia. Facultad de Ciencias Agronómicas*, *Universidad de El Salvador, El Salvador*, [2]*Estación Experimental Alfredo Volio Mata., Facultad de Ciencias Agroalimentarias*, *Universidad de Costa Rica, Costa Rica*.

T123 **Effect of fertilization with swine wastewater on fermentative characteristics and losses of corn silage.**
M. T. Cangani, R. A. Oliveira, A. C Ruggieri*, E. Urbinati, and F. C. Basso, *Unesp/FCAV*, *Jaboticabal, São Paulo, Brazil*.

T124 **Tannery sludge as a nutrient source for the tropical grass *Brachiaria brizantha*.**
C. H. B. Miranda*[1,2], [1]*Embrapa Labex USA*, *Lincoln, NE*, [2]*Embrapa Beef Cattle*, *Campo Grande, MS, Brazil*.

T125 **Absorption and utilization of Nnitrogen by *Panicum maximum* cv. Massai.**
C. H. B. Miranda*[1,2], [1]*Embrapa Labex USA*, *Lincoln, NE*, [2]*Embrapa Beef Cattle*, *Campo Grande, MS, Brazil*.

T126 **Comparisons among predictive equations and NIR for determination of in vitro indigestible NDF of corn silages.**
R. Ward*[1], S. Weaver[1], and R. A. Patton[2], [1]*Cumberland Valley Analytical Services*, *Maugansville, MD*, [2]*Nittany Dairy Nutrition*, *Mifflinburg, PA*.

T127 **Nitrogen lixiviation and uptake by forage maize with different fertilization and previous soil use.**
R. D. Améndola-Massiotti*[1], I. Cach-Gómez[1], M. E. Álvarez-Sánchez[1], J. A. Burgueño-Ferreira[2], and I. López-Cruz[1], [1]*Universidad Autónoma Chapingo*, *Chapingo, México*, [2]*Colegio de Postgraduados*, *Montecillo, México*.

T128 **Biological nitrogen fixation in the tropical forage legume Stylo.**
C. H. B. Miranda*[1,2], J. R. Verzignassi[2], and C. D. Fernandes[2], [1]*Embrapa Labex USA*, *Lincoln, NE*, [2]*Embrapa Beef Cattle*, *Campo Grande, MS, Brazil*.

T129 **Yield and quality of two tropical leguminous trees in the establishment year.**
E. Cortes-Diaz*, F. Amador-Solano, G. T. Gonzalez-Bonilla, J. L. Zaragoza-Ramirez, and P. Martinez-Hernandez, *Animal Science Department, University of Chapingo*, *Texcoco, Mexico, Mexico*.

T130 **Sequence similarities of genes from the lignin biosynthesis pathway in tropical grasses, maize and rice.**
D. M. Gerônimo, N. S. Oliveira, A. B. S. Machado, and L. F. P. Silva*, *Universidade de São Paulo*, *Pirassununga, SP, Brazil*.

T131 **Ovine and caprine in vitro digestibility of *Peganum harmala*.**
L. N. Tracey*, L. B. Abbott, J. Browne-Silva, and S. L. Lodge-Ivey, *New Mexico State University*, *Las Cruces*.

T132 **Chemical composition and in vitro ruminal fermentation activity of three Mexican browse species during dry season.**
D. López, R. Rojo*, A. Z. M. Salem, J. L. Tinoco, J. F. Vázquez, B. Albarrán, F. González, and D. Cardoso, *Centro Universitario UAEM-Temascaltepec*, *Temascaltepec, Estado de México, México*.

T133 **Effect of forage species on ruminal fermentation in continuous culture.**
K. J. Soder*[1], M. A. Sanderson[1], and G. E. Brink[2], [1]*USDA-ARS, University Park, PA*, [2]*US Dairy Forage Research Center, Madison, WI*.

T134 **Yield, chemical composition and ruminal degradability of winter wheat grown under organic and conventional management.**
I. Mateos[1], M. J. Ranilla[1,2], A. Diaz[1], C. Palacios[1], C. Saro[1,2], M. L. Tejido[1,2], and M. D. Carro*[1,2], [1]*Dept. Producción Animal, Universidad de León*, *24007 León, Spain*, [2]*Instituto de Ganadería de Montaña (CSIC-ULE)*, *Finca Marzanas, 24346 Grulleros, León, Spain*.

Growth and Development 1

T135 **Comparison of nonlinear functions for describing the growth curve of Nile tilapia *Oreochromis niloticus* var. *chitralada* in a commercial production cycle.**
D. Rodriguez[1], C. Ariza-Nieto[2], A. Munoz[1], and G. Afanador*[1,2], [1]*Universidad Nacional de Colombia*, *Bogota, Colombia*, [2]*CORPOICA*, *Bogota, Colombia*.

T136 **In vivo measurement of body composition of chickens using quantitative magnetic resonance (QMR).**
A. D. Mitchell*[1], R. W. Rosebrough[1], G. Taicher[2], and I. Kovner[2], [1]*USDA-ARS*, *Beltsville, MD*, [2]*Echo Medical Systems*, *Houston, TX*.

T137 **Estimation of direct and maternal heritability of body weights in Iranian native chickens using a multivariate animal model.**
H. Farhangfar*[1], M. E. Navidizadeh[2], and S. M. Hosseini[1], [1]*Birjand University*, *Birjand, Iran*, [2]*Agricultural Jihad Organisation*, *Mashhad, Iran*.

T138 **Maniçoba hay effects on the gastrointestinal tract of free-range birds.**
P. E. N. Givisiez*, G. S. G. Bach, J. H. V. Silva, F. G. P. Costa, C. J. B. Oliveira, and R. C. Lima Neto, *Universidade Federal da Paraiba*, *Areia, PB, Brazil*.

T139 **Study on probiotic characteristics of three isolates of lactic acid bacteria in in vitro and in vivo condition in broilers.**
S. Ghyamyipour[1], S. Rahimi*[1], M. A. Karimi Torshizi[1], and N. Mojgani[2], [1]*Tarbiat Modares University*, *Tehran, Tehran, Iran*, [2]*Razi Vaccin and Serum Production Research Institute*, *Karaj, Tehran, Iran*.

T140 **Utilization of yeast extract and bacitracin for early intestinal maturation by broiler chicks obtained from breeder hens of different ages.**
Y. O. Fasina*, R. Thanissery, and S. J. Thomas, *Auburn University*, *Auburn, AL*.

T141 **Growth and organogenesis of progeny chicks from dams fed different sources of trace minerals.**
Q. J. Sun*, S. Y. An, and Y. M. Guo, *State Key Lab of Animal Nutrition, College of Animal Science & Technology, China Agricultural University*, *Beijing ,China*.

T142 **Effect of dietary probiotic and prebiotic on bone characteristic of Ross broiler chickens.**
H. Ziaie[1], G. H. Hadarbadi*[1], A. Zeinali[2], M. A. Karimi Torshizi[4], M. Bashtani[3], and H. Farhangfar[3], [1]*Agriculture and Natural Resources Research Center*, *Birjand, South Khorasan, Iran*, [2]*Ferdowsi University*, *Mashhad, Iran*, [3]*Birjand University*, *Birjand,South Khorasan, Iran*, [4]*Tarbiat Moddares University*, *Tehran, Iran*.

T143 **Improved hatchability and post-hatch performance in turkey poults receiving iodinated casein in ovo. .**
W. G. Bottje*[1], A. Wolfenden[1], L. Ding[2], M. Morgan[1], N. Pumford[1], R. Wolfenden[1], G. Duncan[3], T. Smith[3], T. Slagel[3], K. Lassiter[1], and B. Hargis[1], [1]*Dept. of Poultry Science, Center of Excellence for Poultry Science, Univ. of Arkansas*, *Fayetteville,* [2]*Dept. of Animal Nutrition, College of Animal Science and Technology, China Agriculture University*, *Beijing, China,* [3]*Cargill Turkey Division*, *Springdale, AR*.

T144 **Effect of daily lithium chloride (LiCl) administration on bone quality and strength in growing broiler chickens.**
B. M. Harvey*[1], M. Eschbach[2], E. Ackell[1], S. Kotha[2], M. Darre[1], N. Francis[1], D. J. Adams[3], R. Ramanathan[1], R. Mancini[1], and K. E. Govoni[1], [1]*Department of Animal Science, University of Connecticut*, *Storrs, ,*[2]*Department of Mechanical Engineering, University of Connecticut*, *Storrs, ,*[3]*Orthopaedic Surgery, University of Connecticut Health Center*, *Farmington.*

T145 **The bi-allelic expression of *delta-like 1 homolog* (*Dlk1*) in avian species.**
S. Shin* and K. Lee, *The Ohio State University*, *Columbus*.

T146 **Expression of myosin heavy chain isoforms during muscle development in Leghorns and broilers.**
A. Lee*, Y. Suh, and K. Lee, *The Ohio State University*, *Columbus*.

T147 **Growth of internal organs in quail embryo (*Coturnix japonica*) as a function of age.**
K. L. Arora*, *Fort Valley State University*, *Fort Valley, GA*.

T148 **Growth after an innate immune challenge is different between broiler strains.**
L. Xu*[1], M. deBeer[2], M. Einstein[1], A. Schinckel[1], and T. J. Applegate[1], [1]*Purdue University*, *W Lafayette, IN,* [2]*Aviagen, Inc., Huntsville, AL.*

T149 **Influence of gender and initial body weight uniformity on growth performance and carcass quality of pigs slaughtered at 130 kg BW.**
L. Cámara*[1], M. P. Serrano[1], D. G. Valencia[2], A. Fuentetaja[3], and G. G. Mateos[1], [1]*Universidad Politécnica de Madrid*, *Madrid, Spain*, [2]*Nutral S. A., Madrid, Spain*, [3]*Copese S. A., Segovia, Spain*.

T150 **Sow and litter productivity as affected by sow age.**
L. Cámara[1], M. P. Serrano*[1], D. G. Valencia[2], A. Fuentetaja[3], and G. G. Mateos[1], [1]*Universidad Politécnica de Madrid*, *Madrid, Spain*, [2]*Nutral S. A., Madrid, Spain*, [3]*Copese S. A., Segovia, Spain*.

T151 **Effects of L-arginine supplementation to suckling piglets on plasma metabolites and skeletal muscle properties at weaning.**
D. Loesel*, S. Goers, and C. Rehfeldt, *Leibniz Institute for Farm Animal Biology (FBN)*, *Dummerstorf, Germany*.

T152 **Finishing growth and carcass characteristics following reciprocal embryo transfer between Meishan and White crossbred pigs.**
J. R. Miles*, J. L. Vallet, B. F. Freking, J. J. Ford, S. D. Shackelford, and T. L. Wheeler, *USDA-ARS, U. S. Meat Animal Research Center*, *Clay Center, NE.*

Immunology and Pathology

T153 **Cytokine gene expression patterns of milk from healthy bovine mammary glands in late and early lactation.**
D. F. R. Bruno*[1], R. G. S Bruno[3], P. V. Rossitto[2], J. S. Cullor[2], and J. L. Stott[2], [1]*Texas Veterinary Medical Diagnostic Laboratory, Amarillo,* [2]*University of California Davis,* [3]*Texas AgriLife Reseacrh and Extension, Amarillo.*

T154 **Intra- and interdairy heifer variation of cellular neutrophil functions.**
L. E. Hulbert*[1,2], L. R. Schwertner[1], J. A. Carroll[2], and M. A. Ballou[1], [1]*Department of Animal and Food Sciences, Texas Tech University, Lubbock,* [2]*Livestock Issues Research Unit, USDA-ARS, Lubbock, TX.*

T155 **Comparison of the proliferative response of CD8 memory T cells from experimentally and naturally infected cattle shows the response to live *Mycobacterium avium* ssp. *paratuberculosis* stronger than the response to Johnin purified protein derivative (JPPD).**
H. M. Rihan*[1], G. S. Abdellrazeq[2], M. J. Hamilton[3], A. J. Allen[3], K. T. Park[3], and W. C. Davis[3], [1]*Mansoura University, Egypt,* [2]*Alexandria University, Egypt,* [3]*Washington State University, Pullman.*

T156 **Tumor necrosis factor-α concentrations from whole blood cultures correlate with isolated peripheral blood mononuclear cell cultures.**
L. E. Hulbert*[1,2], J. A. Carroll[2], and M. A. Ballou[1], [1]*Department of Animal and Food Sciences, Texas Tech University, Lubbock,* [2]*Livestock Issues Research Unit, USDA-ARS, Lubbock, TX.*

T157 **Effect of a *Bacillus*-based direct-fed microbial on cytokine gene expression in the IEC-6 rat intestinal epithelial cell line.**
C. A. Wehnes*, K. N. Novak, M. Duersteler, E. Davis, and A. H. Smith, *Danisco USA, Inc., Waukesha, WI.*

T158 **Postweaning intestinal mucin dynamics is influenced by cereal grain type and commensal microbiota.**
G. Malik*, M. D. Drew, and A. G. Van Kessel, *University of Saskatchewan, Saskatoon, SK, Canada.*

T159 **Mannan oligosaccharide (MOS) modulates ileal gene expression in pigs experimentally infected with porcine reproductive and respiratory syndrome virus (PRRSV).**
T. M. Che*[1], R. W. Johnson[1], K. W. Kelley[1], W. G. Van Alstine[2], K. A. Dawson[3], C. A. Moran[3], and J. E. Pettigrew[1], [1]*University of Illinois, Urbana,* [2]*Purdue University, West Lafayette, IN,* [3]*Alltech Biotechnology Center, Nicholasville, KY.*

T160 **Differential gene expression in subcutaneous and visceral adipose depots in response to lipopolysaccharide in the Sinclair minipig.**
S. L. Booker*, C. J. Kojima, J. S. Gouffon, and N. Moustaid-Moussa, *The University of Tennessee, Knoxville.*

T161 **A comparative analysis of galectin-11 gene expression in ruminants.**
N. Mikiashvili, M. Worku*, and H. Muktar, *North Carolina Agricultural and Technical State University, Greensboro.*

T162 **Analysis of a transient receptor potential channel 3 *(Trpc3)* gene in myotonic goats: A potential model for human cerebellar ataxia.**
M. M. Corley and J. E. Caviness*, *Virginia State University, Petersburg.*

T163 **Simultaneous detection and quantitation of anthelmintic resistance and *Haemonchus contortus* infection in grazing goats.**
M. M. Corley and A. A. Saeed*, *Virginia State University, Petersburg.*

Meat Science and Muscle Biology
Fresh Meat Quality of Ruminants, Nonruminants, and Poultry

T164 **Brazilian commercial cuts yield of crossbred beef bulls slaughtered at different body masses.**
R. Mello*[1], A. C. de Queiroz[2], F. D. de Resende[3], M. H. de Faria[3], P. V. R. Paulino[2], and G. R. Siqueira[3], [1]*Universidade Federal de Santa Maria, Santa Maria, RS, Brazil,* [2]*Universidade Federal de Viçosa, Viçosa, MG, Brazil,* [3]*Agência Paulista de Tecnologia dos Agronegócios, Colina, SP, Brazil.*

T165 **Brazilian primal cuts yield of crossbreed beef cattle slaughtered at different end points.**
R. Mello*[1], F. D. de Resende[2], A. C. de Queiroz[3], M. H. de Faria[2], F. Maldonado[2], and G. R. Siqueira[2], [1]*Universidade Federal de Santa Maria, Santa Maria, RS, Brazil,* [2]*Agência Paulista de Tecnologia dos Agronegócios, Colina, SP, Brazil,* [3]*Universidade Federal de Viçosa, Viçosa, MG, Brazil.*

T166 **Portions of high value cuts in carcasses of different beef cattle in the Czech Republic.**
J. Riha*[1], J. Bezdicek[1], M. Homola[2], E. Vacatko[2], and J. Subrt[3], [1]*Agrovyzkum Rapotin Ltd., Vikyrovice, Czech Republic,* [2]*Research Institute for Cattle Breeding, Ltd., Vikyrovice, Czech Republic,* [3]*Mendel University in Brno, Brno, Czech Republic.*

T167 **Predicting retail product yield of Nellore bulls using live animal measurements.**
S. L. Silva*[1,3], R. C. Gomes[1], J. U. Tarouco[2], M. N. Bonin[1], P. R. Leme[1], and J. B. S. Ferraz[1], [1]*Universidade de Sao Paulo (FZEA), Pirassununga, SP, Brazil*, [2]*Universidade Federal do Rio Grande do Sul*, *Porto Alegre, RS, Brazil*, [3]*FAPESP*, *Sao Paulo, SP, Brazil*.

T168 **Mixed model analysis of non-linearity between cooking loss and aging time plus other effects.**
A. Dufek*[1], J. Subrt[2], J. Simeonovova[2], and M. Homola[3], [1]*Research Institute for Cattle Breeding, Ltd., Vikyrovice, Czech Republic*, [2]*Mendel University in Brno*, *Brno, Czech Republic*, [3]*Agriresearch Rapotin Ltd., Vikyrovice, Czech Republic*.

T169 **Epinephrine-induced MMP expression in muscle cells is uncorrelated with AMPK signalling.**
M. C. Cha and P. P. Purslow*, *University of Guelph*, *Guelph, Ontario, Canada*.

T170 **Measurement of purge protein composition as an indicator of beef tenderness.**
B. C. Bowker*, J. S. Eastridge, and E. W. Paroczay, *USDA-ARS*, *Beltsville, MD.*

T171 **Effect of oxidative stress on collagen turnover by bovine intramuscular fibroblasts.**
A. C. Archile*[2,1], S. P. Miller[1], I. B. Mandell[1], M. C. Cha[1], and P. P. Purslow[1], [1]*University of Guelph*, *Ontario, Canada*, [2]*University of Zulia*, *Maracaibo, Venezuela*.

T172 **Phenotypic differences in MMP activity between fibroblasts from three beef muscles.**
A. C. Archile*[2,1], M. C. Cha[1], and P. P. Purslow[1], [1]*University of Guelph*, *Ontario, Canada*, [2]*University of Zulia*, *Maracaibo, Venezuela*.

T173 **Myofibril fragmentation index of the longissimus muscle of Senepol and Charolais crossbred bulls.**
L. del Valle-Mercado*, A. Casas, D. Cianzio, M. Pagan, and G. Ortiz-Colón, *University of Puerto Rico*, *Mayaguez, Puerto Rico, United States*.

T174 **Effect of brine enhancement and mechanical tenderization on consumer sensory characteristics of cow semimembranosus steaks.**
J. M. Popowski*, R. B. Cox, T. J. McNamara, and P. Nelson, *University of Minnesota, Twin Cities*, *St. Paul.*

T175 **Fatty acid composition including *cis*-9, *trans*-11 CLA of cooked ground lamb.**
G. Davila-El Rassi*[1], V. Banskalieva[1], and M. Brown[2], [1]*R. M. Kerr Food and Agricultural Products Center, Oklahoma State University*, *Stillwater,* [2]*USDA-ARS, Grazinglands Research Laboratory*, *El Reno, OK*.

T176 **Effects of maternal metabolizable protein supplementation during late gestation on ovine fetal muscle calpain and calpastatin activities.**
J. D. Magolski*[1], W. L. Keller[1], T. M. Jeske[1], C. A. Schwartz[1], L. A. Lekatz[1], J. D. Kirsch[1], C. S. Schauer[2], K. A. Vonnahme[1], and K. R. Maddock-Carlin[1], [1]*North Dakota State University*, *Fargo*, [2]*Hettinger Research Experiment Center*, *Hettinger, ND*.

T177 **Hyperplastic muscle growth occurs from birth to weaning in pigs.**
J. M. R. López[1], C. Pardo[2], and G. Bee*[2], [1]*Unidad de nutrición animal, Estación Experimental del Zaidín (CSIC)*, *Granada, Spain*, [2]*Agroscope Liebefeld Posieux, Research Station ALP*, *Posieux, Switzerland*.

T178 **Relationship between average litter weight and intralitter weight variability on myogenesis in newborn piglets.**
C. Pardo[1,2], M. Kreuzer[2], and G. Bee*[1], [1]*Agroscope Liebefeld Posieux*, *Posieux, Switzerland*, [2]*ETH Zurich, Institute of Plant, Animal and Agroecosystem Sciences (IPAS)*, *Zurich, Switzerland*.

T179 **Influence of genotype and slaughter weight on carcass and meat quality of Iberian pigs.**
M. Sánchez*[1], J. Viguera[1], M. I. Gracia[1], J. Peinado[1], A. Robina[2], and J. Ruiz[2], [1]*Imasde Agroalimentaria S. L., Madrid, Spain*, [2]*Universidad de Extremadura*, *Cáceres, Spain*.

T180 **Effect of birth parity and sex on carcass traits and meat quality characteristics in crossbred pigs.**
G. D. Kim*[1], J. Y. Jeong[2], K. Y. Seo[1], E. Y. Jung[1], H. S. Yang[1], and S. T. Joo[1], [1]*Division of Applied Life Science (BK21 Program), Graduate School of Gyeongsang National University, Jinju, Gyeongnam, Republic of Korea*, [2]*Swine Scientic Technique Center, Jinju National University, Jinju, Republic of Korea*.

T181 **Carcass quality of pigs vaccinated against gonadotropin releasing factor compared to surgically castrated males and gilts from two different sire lines.**
J. I. Morales[1], M. P. Serrano*[2], L. Cámara[2], J. D. Berrocoso[2], J. P. López[1], and G. G. Mateos[1], [1]*Copiso S. A., Soria, Spain*, [2]*Universidad Politécnica de Madrid*, *Madrid, Spain*.

T182 **The influence of cage housing system and laying hen strain on breast meat quality traits.**
K. Juurlink*[1], A. McMillan[1], R. Ofori[1], B. Rathgeber[2], and M. Jendral[1], [1]*Nova Scotia Agricultural College*, *Truro, Nova Scotia, Canada*, [2]*Agriculture Agri-food Canada*, *Truro, Nova Scotia, Canada*.

T183 **Effect of ultimate pH on the chemical properties of proteins in turkey breast meat.**
J. Chan*, D. A. Omana, and M. Betti, *University of Alberta*, *Edmonton, AB, Canada*.

T184 **The effect of turkey breast meat pH on fatty acid profile of polar lipids and susceptibility to oxidation.**
P. K. Hong*, J. Chan, D. A. Omana, and M. Betti, *University of Alberta*, *Edmonton, AB, Canada*.

T185 **Exploring the biochemical basis of DFD in broiler breast and thigh meat.**
S. Dadgar*[1], H. L. Classen[2], T. G. Crowe[3], and P. J. Shand[1], [1]*Department of Food and Bioproduct Sciences*, [2]*Department of Animal and Poultry Sciences*, [3]*Department of Agricultural and Bioresource Engineering*, *Saskatoon, SK, Canada*.

T186 **Comparison of four methods that measure hydroxyproline.**
H. L. Bruce* and A. Chan, *University of Alberta*, *Edmonton, Alberta, Canada*.

Nonruminant Nutrition
DDGS

T187 **Effect of the inclusion levels of DDGS to the feeds of broilers and glucanase, xylanase and phytase addition to low-energy DDGS-added diets.**
M. L. Angeles*[1] and S. Gómez[1,2], [1]*INIFAP*, *Ajuchitlán, Colón, Qro, México*, [2]*FESC-UNAM*, *Ajuchitlán, Colón, Qro. México*.

T188 **High dietary inclusion of dried distillers grains with solubles in broiler rations: Production effects and yields.**
M. K. Masa'deh* and S. E. Scheideler, *University of Nebraska-Lincoln*, *Lincoln, NE.*

T189 **Effect of pellet quality on utilization of distillers dried grains with solubles (DDGS) in broiler diets.**
C. A. Coto*[1], C. Lu[1], Y. Min[1], A. J. Karimi[2], F. Yan[1], and P. W. Waldroup[1], [1]*University of Arkansas*, *Fayetteville,* [2]*University of Kurdistan*, *Kurdistan, Iran*.

T190 **Effect of distillers dried grains with solubles and an enzyme supplement on performance and egg quality of brown egg layers.**
A. J. Pescatore*, P. Rossi, A. H. Cantor, J. L. Pierce, T. Ao, L. M. Macalintal, M. J. Ford, W. D. King, and H. D. Gillespie, *Alltech-University of Kentucky Nutrition Research Alliance*, *Lexington*.

T191 **Feeding value of DDGS for pigs: Correlating in vitro dry matter digestibility and crude protein digestibility to its nutrient content and colour.**
M. Rudar*, C. F. M. de Lange, I. B. Mandell, C. L. Zhu, and P. McEwen, *University of Guelph*, *Guelph, Ontario, Canada*.

T192 **Substitution of sorghum and soybean meal by distillers dried grains with solubles in diets for fattening rabbits.**
H. Bernal-Barragán*[1,4], Y. Vázquez-Pedroso[2], M. Valdivie-Navarro[2], C. A. Hernández-Martínez[1], M. A. Cerrillo-Soto[3,4], A. S. Juárez-Reyes[3,4], and E. Gutiérrez-Ornelas[1,4], [1]*Universidad Autónoma de Nuevo León*, *Monterrey, Nuevo León, México*, [2]*Instituto de Ciencia Animal*, *La Habana, Cuba*, [3]*Universidad Juárez del Estado de Durango*, *Durango, Durango, México*, [4]*Red Internacional de Nutrición y Alimentación en Rumiantes*, *Monterrey, Nuevo León, México*.

T193 **Evaluation of in vitro procedures to measure digestibility of fiber in distillers dried grains with solubles.**
P. E. Urriola* and H. H. Stein, *University of Illinois*, *Urbana*.

T194 **Effects of distillers dried grains with solubles and lactose on fecal *Lactobacillus* biota of nursery pigs.**
H. Tran*, R. Moreno, J. W. Bundy, E. Hinkle, J. Walter, T. E. Burkey, and P. S. Miller, *University of Nebraska*, *Lincoln*.

T195 **Bone breaking strength of laying chickens fed increasing levels of omega-3 PUFA DHA (22:6) using algae as vehicle of diet enrichment.**
N. P. Johnston*, C. B. Evans, and R. T. Davidson, *Brigham Young University*, *Provo, UT*.

Nonruminant Nutrition
Energy

T196 **Energy requirement of broiler breeder hens: Egg weight, egg composition and progeny.**
C. Salas*, R. D. Ekmay, J. England, S. Cerrate, and C. N. Coon, *University of Arkansas*, *Fayetteville.*

T197 **Determination of metabolizable energy content of meat and bone meal for broilers using regression method.**
O. A. Bolarinwa*[1], O. A. Olukosi[1], R. A. Hamzat[2], and O. Adeola[1], [1]*Purdue University*, *West Lafayette, IN,* [2]*South Suburban College*, *Chicago, IL*.

T198 **Determination of the chemical composition and true metabolizable energy of high oil poultry by-product meal.**
M. G. Olyayee*, H. Janmohammadi, A. Taghizadeh, A. Rafat, and S. Ostan, *University of Tabriz*, *Tabriz, Iran*.

T199 **Metabolizable energy and nutrient digestibility coefficient determination of ingredients with nutritional adjustment.**
A. G. Bertechini*, V. A. Costa, S. F. Castro, J. C. C. Carvalho, and C. Meneghetti, *Universidade Federal de Lavras*, *Lavras,MG, Brazil*.

T200 **True and apparent metabolisable energy values of various wheat screening samples.**
M. Mazhari[1,2] and A. Golian*[1,2], [1]*Ferdowsi University of Mashhad*, *Mashhad, Khorasan Razavi, Iran*, [2]*Ferdowsi University of Mashhad*, *Mashhad, Khorasan Razavi, Iran*.

T201 **Effect of various levels of energy and protein on Humoral immune response in broiler chicks.**
M. Pilevar, A. Golian*, and M. Aami azghadi, *Ferdowsi University of Mashhad*, *Khorasan Razavi, Iran*.

T202 **Effect of xylanase supplementation in a pig diet on ileal and postileal energy and fiber fraction digestibility.**
L. Babinszky*[1], J. Tossenberger[1], D. Ottó[1], and I. Kühn[2], [1]*Kaposvár University*, *Kaposvár, Hungary*, [2]*AB Vista*, *Darmstadt, Germany*.

Nonruminant Nutrition
Enzyme

T203 **Influences of four kinds of exogenous enzymes on performance, jejunal digesta viscosity and litter moisture of broilers fed wheat-based diet.**
H. Shirzadi*, H. Moravej, and M. Shivazad, *University of Tehran*, *Karaj, Tehran, Iran*.

T204 **Cloning, expression and characterization of a thermostable beta-propeller phytase from Bacillus licheniformis.**
S. J. Fu*[1,3], J. Y. Sun[1], X. Y. Weng[2], L. C. Qian[1], and Z. Q. Shen[4], [1]*Microbiology Division, Institute of Feed Science, College of Animal Science, Zhejiang University*, *Hangzhou Zhejiang, China*, [2]*College of Life Science, Zhejiang University*, *Hangzhou Zhejiang, China*, [3]*Key Laboratory of Preventive Veterinary Medicine and Animal Biotechnology, Binzhou Animal Husbandry and Veterinary Research Institute*, *Binzhou Shandong, China*, [4]*Shandong Lvdu Biological Technology Co., Ltd*, *Binzhou Shandong, China*.

T205 **Body weight and feed conversion responses in broilers after feeding a lysophospholipid bio-surfactant and β mannanase based feed enzyme.**
G. Mathis[1], B. Lumpkins[1], H. Stomp[2], A. Lamptey[2], and A. G. Yersin*[2], [1]*Southern Poultry Research*, *Athens, GA,* [2]*Kemin AgriFoods*, *Des Moines, IA.*

T206 **Impact of a new phytase on apparent phosphorus and calcium availability, bone mineralization and performance of broilers.**
R. Angel*[1], W. Saylor[2], and N. Ward[3], [1]*University of Maryland*, *College Park, ,*[2]*University of Delaware*, *Newark,* [3]*DSM Nutritional Products*, *Parsippany, NY.*

T207 **Effects of co-administration of phytase and energy enzymes on broiler performance, tibia strength, bone ash, and processing parameters.**
J. R. Coppedge*[1], J. Klein[1], A. Jordan[1], K. Jessen[1], S. Pohl[1], B. Brown[2], F. Ruch[2], and J. T. Lee[1], [1]*Texas A&M University*, *College Station,* [2]*Enzyvia LLC*, *Sheridan, IN*.

T208 **Effect of CTCZyme β-mannanase on broiler nutrient digestibility in corn-soybean meal diets.**
F. Mussini*[1], C. A. Coto[1], S. Goodgame[1], C. Lu[1], A. J. Karimi[2], J. Lee[3], and P. W. Waldroup[1], [1]*University of Arkansas*, *Fayetteville,* [2]*University of Kurdistan*, *Kurdistan, Iran*, [3]*CTC Bio Inc., Seoul, Korea*.

T209 **Effect of phytase supplementation on the digestibility of crude protein and amino acids of cowpea (*Vignia unguiculata*) in broilers.**
E. A. Iyayi*, *University of Ibadan*, *Ibadan, Oyo, Nigeria*.

T210 **Effect of phytase supplementation on the digestibility of phosphorus of cowpea (*Vignia unguiculata*) in broilers.**
E. A. Iyayi*, *University of Ibadan*, *Ibadan, Oyo, Nigeria*.

T211 **Effect of Ronozyme ProAct supplementation on growth and meat yield responses of broilers during a forty-two day production period.**
W. A. Dozier III*[1], N. E. Ward[2], and S. L. Vieira[3], [1]*Auburn University*, *Auburn, AL*, [2]*DSM Nutritional Products, Inc.*, *Parsippany, NJ*, [3]*Universidade Federal do Rio Grande do Sul*, *Porto Alegre, RS, Brazil*.

T212 **Influences of several enzyme containing β-glucanase and xylanase on meat yield of broilers fed barley-based diet.**
H. Shirzadi*, H. Moravej, M. Shivazad, and F. Fatehi, *Department of Animal Science, Faculty of Agriculture and Natural Resources, University of Tehran*, *Karaj, Tehran, Iran*.

T213 **Effect of high levels of phytase for broilers.**
C. Meneghetti, A. G. Bertechini*, J. A. G. Brito, and S. F. Castro, *Universidade Federal de Lavras*, *Lavras, MG, Brazil*.

T214 **Effect of enzymes in the diet of hens on egg quality.**
F. G. P. Costa*[1], M. L. Ceccantini[2], C. S. Santos[1], C. C. Goulart[1], C. F. S. Oliveira[1], G. B. V. Lobato[1], J. M. Freire[1], V. P. Rodrigues[1], R. C. Lima[1], I. S. Nobre[1], and R. C. L. Neto[1], [1]*Federal University of Paraiba*, *Areia, PB, Brazil*, [2]*Adisseo Brazil Animal Nutrition*, *Sao Paulo, SP, Brazil*.

T215 **Use of enzyme complex on the performance of layer hens.**
F. G. P. Costa*[1], M. L. Ceccantini[2], C. S. Santos[1], C. C. Goulart[1], C. F. S. Oliveira[1], G. B. V. Lobato[1], and J. M. Freire[1], [1]*Federal University of Paraiba, Areia, PB, Brazil*, [2]*Adisseo Brazil Animal Nutrition, Sao Paulo, SP, Brazil*.

T216 **Dietary supplementation with two types of enzyme preparations improves nutrient digestibility in growing pigs.**
X. Ao*[1], S. M. Hong[1], H. Y. Park[2], K. H. Son[3], B. H. Ku[3], D. H. Shin[3], and I. H. Kim[1], [1]*Department of Animal Resource and Science, Dankook University, Cheonan, Choongnam, Korea*, [2]*Korea Research Institute of Bioscience and Biotechnology, Daejeon, Korea*, [3]*Insect Biotech Co. Ltd., Daejeon, Korea*.

T217 **Effects of dietary Tylan inclusion level on the growth performance and carcass characteristics of growing–finishing pigs.**
C. L. Puls*[1], M. Mercedes[1], M. Ellis[1], A. M. Gaines[2], B. A. Peterson[2], B. F. Wolter[2], and M. Kocher[2], [1]*University of Illinois, Urbana*, [2]*The Maschhoffs, Carlyle, IL*.

T218 **Effect of a protease enzyme on performance of weanling piglets fed corn-soybean diets with different protein levels.**
D. Wang[1], X. Piao[1], F. C. Guo[2], H. Cao[2], J. Zhao[2], and R. J. Harrell*[2], [1]*China Agricultural University, Beijing, China*, [2]*Novus International Inc., St Charles MO*.

T219 **Effects of supplementing different enzymes on performance, nutrient digestibility and blood metabolites in growing pigs.**
J. K. Jo[1], P. L. Shinde[1], J. S. Kim[1], Y. W. Kim[1], K. H. Kim[1], J. D. Lohakare[1], C. S. Ra[1], J. H. Lee[2], and B. J. Chae*[1], [1]*Kangwon National University, Kangwon National University, Chuncheon, Rep. of Korea*, [2]*CTC Bio. Inc., CTC Bio. Inc., Seoul, Rep. of Korea*.

T220 **Evaluation of the effects of dietary enzyme on growth performance, nutrient digestibility, blood characteristics and ileal digestibility in growing pigs.**
L. Yan*, H. D. Jang, T. X. Zhou, X. Ao, J. H. Jung, and I. H. Kim, *Department of Animal Resource and Science, Dankook University, Cheonan, Choongnam, Korea*.

T221 **Protease increased in vitro digestibility of various feed ingredients.**
F. Yan*, P. Disbennett, M. Schulz, M. Vazquez-Anon, N. Odetallah, S. Carter, and D. Dowell, *Novus International Inc., St. Charles, MO*.

T222 **Effects of graded levels of phytase on the apparent and standardized total tract digestibility of phosphorus in corn and corn co-products.**
F. N Almeida* and H. H. Stein, *University of Illinois, Urbana.*

T223 **Effects of multi-enzyme on nutrients digestibility and metabolizable energy values of pure corn and wheat diets.**
G. G. Zhang*, Z. B. Yang, Q. Q. Zhang, W. R. Yang, and S. Z. Jiang, *Shandong Agricultural University, Taian, China*.

T224 **Effect of Rovabio Max on energy and nitrogen utilization in diets high in distillers dried grains with solubles.**
A. J. Karimi*[2], Y. Min[1], J. H. Park[1], C. A. Coto[1], C. Lu[1], F. Yan[1], and P. W. Waldroup[1], [1]*University of Arkansas, Fayetteville,* [2]*University of Kurdistan, Kurdistan, Iran*.

T225 **Effect feed processing method and enzyme supplementation of wheat-based diets on performance, gastrointestinal and carcass characteristics in broiler chicks.**
Z. Qobadi and A. Karimi*, *University of Kurdistan, Sanandaj, Kurdistan, Iran*.

T226 **Calcium chloride reduces the negative impact of feeding high potassium and co-product containing diets to finishing pigs.**
J. Guimaraes*, C. L. Zhu, D. Wey, and C. F. M. de Lange, *University of Guelph, Guelph, Ontario, Canada*.

T227 **Production and characterization of a thermostable beta-propeller phytase from *Bacillus licheniformis*.**
S. J. Fu*[1,3], J. Y. Sun[1], X. Y. Weng[2], L. C. Qian[1], and Z. Q. Shen[4], [1]*Microbiology Division, Institute of Feed Science, College of Animal Science, Zhejiang University, Hangzhou zhejiang, China*, [2]*College of Life Science, Zhejiang University, Hangzhou zhejiang, China*, [3]*Binzhou Animal Husbandry and Veterinary Research Institute, Binzhou shandong, China*, [4]*Shandong Lvdu Biological Technology Co., Ltd, Binzhou shandong, China*.

T228 **A lysozyme supplement for piglets: Weaned pigs responses to *Escherichia coli* K88$^+$ (ETEC) oral challenge.**
E. Kiarie*[1], S. Bhandari[1], D. O. Krause[1], G. Zhang[2], and C. M. Nyachoti[1], [1]*University of Manitoba, Winnipeg, MB, Canada*, [2]*Neova Technologies Inc., Abbotsford, BC., Canada*.

T229 **Effect of microbial phytase on growth performance, plasma phosphorus concentration and tibia mineralization of broilers according to dietary calcium and phosphorus concentrations.**
M. P. Letourneau Montminy*[1], N. Meme[2], M. Magnin[3], and A. Narcy[2], [1]*Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada*, [2]*INRA UR83, Nouzilly, France*, [3]*BNA Nutrition Animale, Chateau-Gontier, France*.

T230 **Effect of phytase application on the calcium and phosphorus retention and balance of layers in the last third of the laying cycle.**
J. Tossenberger[1], L. Babinszky*[1], and I. Kühn[2], [1]*Kaposvár University, Kaposvár, Hungary*, [2]*AB Vista, Darmstadt, Germany*.

T231 **Effect of enzyme preparation on nutrient digestibility, digestive enzyme activities and pancreatic enzyme mRNA expression of hens during late laying period.**
C. Wen*[1], L. Wang[1], T. Wang[1], Y. Zhou[1], G. Hou[2], and Z. Zhou[2], [1]*Nanjing Agricultural University, Nanjing, Jiangsu, China*, [2]*Guangdong VTR Bio-Tech Co., Ltd, Zhuhai, Guangdong, China*.

T232 **Effects of multi-enzyme and *Bacillus subtilis* on sow reproductivity.**
T. X. Zhou*, J. S. Yoo, H. J. Kim, Q. W. Meng, J. H. Jung, and I. H. Kim, *Department of Animal Resource and Science, Dankook University, Cheonan, Choongnam, Korea.*

T233 **EconomasE decreases sterol carrier protein-2 (SCP2) gene expression levels in breast muscle from 6-week old chickens.**
K. M. Brennan*, T. Ao, J. L. Pierce, R. F. Power, and K. A. Dawson, *Center for Animal Nutrigenomics and Applied Animal Nutrition, Alltech Inc., Nicholasville, KY.*

Nonruminant Nutrition
Fat

T234 **Effects of different dietary sources of n-3 PUFA on reproductive performance of laying hens.**
M. Pilevar[1], J. Arshami[1], A. Heravi Moussavi[1], A. Golian*[1], M. R. Basami[1], and A. R. Rezaee[2], [1]*Ferdowsi University of Mashhad, Khorasan Razavi, Iran*, [2]*Mashhad University of Medical Sciences, Khorasan Razavi, Iran.*

T235 **Docosahexaenoic acid does not increase insulin sensitivity in gilts.**
J. H. Eisemann*, S. Whisnant, and J. Odle, *North Carolina State University, Raleigh.*

T236 **Conjugated linoleic acid (CLA) modifies carcass traits and fatty acid composition in finishing pigs fed with high linoleic acid diets.**
G. Cordero[1,2], B. Isabel[2], J. G. Vicente[2], J. Morales[1], C. Piñeiro*[1], and C. J. López-Bote[2], [1]*PigCHAMP Pro Europa, Segovia, Spain*, [2]*Universidad Complutense de Madrid, Spain.*

T237 **Effects of high oil poultry by-product meal in laying hen performance, egg quality, egg components and blood parameters.**
G. O. Majid*, J. Hossein, T. Akbar, and R. Abass, *University of Tabriz, Tabriz, Iran.*

Nonruminant Nutrition
Feed Additive

T238 **Viability of *Lactobacillus plantarum* in different protective agents and its effects on growth performance and immunity of weaned pigs.**
J. Wang, H. F. Ji*, R. L. Ge, S. X. Wang, D. Y. Zhang, and Y. M. Wang, *Institute of Animal Husbandry and Veterinary Medicine, Beijing Academy of Agriculture and Forestry Sciences, Beijing, China.*

T239 **Effect of dietary delivery controlled antioxidant on the performances of cold stressed broiler.**
V. Noirot*, *Phodé Laboratories, Albi-Terssac, France.*

T240 **Effects of feeding oregano essential oil to broilers on ileal digestibility and performance under high altitude conditions.**
L. Betancourt*[1,3], C. Ariza-Nieto[2], and G. Afanador-Téllez[3], [1]*Universidad de La Salle, Bogotá, Colombia*, [2]*CORPOICA, Bogotá, Colombia*, [3]*Universidad Nacional de Colombia, Bogotá, Colombia.*

T241 **Utilization of glandless and standard cottonseed meal in broiler diets.**
C. Salas*, R. D. Ekmay, J. England, S. Cerrate, and C. N. Coon, *University of Arkansas, Fayetteville.*

T242 **TMEn and amino acid digestibility of glandless and commercial cottonseed meal for broilers.**
C. Salas*, D. R. Ekmay, J. England, S. Cerrate, and C. N. Coon, *University of Arkansas, Fayetteville.*

T243 **Effects of coated sodium butyrate on the performance and gut morphology of broiler chickens.**
Y. Zou[1], Z. B. Yang*[1], W. R. Yang[1], S. Z. Jiang[1], G. G. Zhang[1], and R. Yu[2], [1]*Shandong Agricultural University, Tai-an, Shandong, PRC*, [2]*Kangdequan Feed Co., Ltd, Hangzhou, Zhejiang, PRC.*

T244 **Study on the utilization of oregano essentials oils (OEO) by tilapia *Oreochromis niloticus* var. *chitralada* in a commercial production cycle.**
D. Rodriguez*[1,2], C. Ariza-Nieto[2], A. Munoz[1], and G. Afanador[1,2], [1]*Universidad Nacional de Colombia, Bogota, Colombia*, [2]*CORPOICA, Bogota, Colombia.*

T245 **Dietary supplementation effects of oregano essential oils and two sources of fat on the performance of brown laying hens under high altitude conditions.**
D. Botero[1], F. Silva[1], L. Betancourt*[1,3], C. Ariza-Nieto[2], and G. Afanador-Téllez[3], [1]*Universidad de La Salle, Bogotá, Colombia*, [2]*CORPOICA, Bogotá, Colombia*, [3]*Universidad Nacional de Colombia, Bogotá, Colombia.*

T246 **Effect of supplementing the diet of sows with a source of yeast-derived proteins during lactation on performances of sows and piglets.**
P.-A. Plante*[1,2], J.-P. Laforest[2], and C. Farmer[1], [1]*Agriculture and Agri-Food Canada, Dairy and Swine R&D Centre*, *Sherbrooke, QC, Canada*, [2]*Animal Science Dept., Laval University*, *Québec, QC, Canada*.

T247 **Microencapsulation of *Lactobacillus plantarum* and its effects on growth performance of weaned pigs.**
J. Wang, H. F. Ji*, L. J. Lv, S. X. Wang, D. Y. Zhang, and Y. M. Wang, *Institute of Animal Husbandry and Veterinary Medicine, Beijing Academy of Agriculture and Forestry Sciences*, *Beijing, China*.

T248 **Effect of Xylo-oligosaccharides on growth performance, enzyme activity and volatile fatty acid production of post-weanling pigs.**
H. S. Huang[1], S. Zhou[1], Z. B. Yang*[2], W. R. Yang[2], and L. Xiao[3], [1]*Qinghai University*, *Xining, PRC*, [2]*Shandong Agricultural University*, *Taian, Shandong, PRC*, [3]*Shandong Longlive Bio-technology Co., Ltd*, *Dezhou, Shandong, PRC*.

T249 **Effect of short-term benzoic acid and chlortetracycline treatment of feed on splanchnic metabolism of valine in growing pigs.**
N. B. Kristensen*[1], R. G. Engberg[1], B. B. Jensen[1], J. V. Nørgaard[1], H. D. Poulsen[1], H. D. Zacho[2], and N. M. Sloth[3], [1]*Aarhus University*, *Tjele, Denmark*, [2]*Viborg Hospital*, *Viborg, Denmark*, [3]*Danish Agriculture and Food Council*, *Aarhus, Denmark*.

T250 **Characterization of the gastrointestinal microbiota in neonatal piglets from sows supplemented a *Bacillus*-based direct fed microbial.**
A. Baker*, E. Davis, and T. Rehberger, *Danisco*, *Waukesha, WI*.

T251 **Cloning of a porcine trypsinogen gene and over-production of the protein as a feed additive.**
F. Wang[1], H. Zhao[1], X. J. Xia[1], and X. G. Lei*[1,2], [1]*Int. Ctr. of Future Agriculture for Human Health, Sichuan Agri. Univ.*, *Chengdu, China*, [2]*Cornell University*, *Ithaca, NY*.

T252 **Effects of various cereals on nursery pigs: specific bacteria identified from the gastrointestinal tract.**
Y. Liu*, M. Rossoni, J. Barnes, and J. E. Pettigrew, *University of Illinois*, *Urbana*.

T253 **Effects of dietary benzoic acid supplementation on net portal absorption and hepatic uptake of amino acids in growing pigs.**
N. B. Kristensen*[1], H. D. Zacho[2], J. V. Nørgaard[1], and H. D. Poulsen[1], [1]*Aarhus University*, *Tjele, Denmark*, [2]*Viborg Hospital*, *Viborg, Denmark*.

T254 **Effects of dietary Stafac inclusion level on the growth performance and carcass characteristics of growing–finishing pigs.**
C. L. Puls*[1], M. Mercedes[1], M. Ellis[1], A. M. Gaines[2], B. A. Peterson[2], B. F. Wolter[2], and M. Kocher[2], [1]*University of Illinois*, *Urbana*, [2]*The Maschhoffs*, *Carlyle, IL*.

Physiology and Endocrinology
Adipose and Leptin

T255 **Expression of interleukins, neuropeptides, and growth hormone receptor (GHR) and leptin receptor (LPR) genes in adipose tissue from growing broiler chickens.**
G. J. Hausman*[1], C. R. Barb[1], B. D. Fairchild[2], A. Jr. Hinton[1], and J. A. Cason[1], [1]*USDA-ARS*, *Athens, GA,* [2]*University of Georgia*, *Athens.*

T256 **Apoptosis in different fat depots of cows treated with conjugated linoleic acids (CLA).**
S. Haeussler*[1], D. Germeroth[1], D. von Soosten[2], S. Dänicke[2], and H. Sauerwein[1], [1]*University of Bonn*, *Bonn, Germany*, [2]*Federal Research Institute of Animal Health*, *Braunschweig, Germany*.

T257 **Differences in the mRNA abundance of the adiponectin system and GPR109A in adipose tissue and liver of the F2 cows of Charolais × German Holstein crosses.**
M. Mielenz*[1], B. Kuhla[2], H. Sauerwein[1], and H. Hammon[2], [1]*University of Bonn*, *Bonn, NRW, Germany*, [2]*FBN Dummerstorf*, *Dummerstorf, MV, Germany*.

T258 **Changes in plasma concentrations of leptin in ewes during pregnancy.**
J. A. Daniel*[1], A. B. Milam[1], M. E. Gafnea[1], B. K. Whitlock[2], and D. H. Keisler[3], [1]*Berry College*, *Mount Berry, GA*, [2]*University of Tennessee*, *Knoxville,* [3]*University of Missouri*, *Columbia*.

T259 **Nutritional regulation of body condition score at the initiation of the transition period in dairy cows on grazing conditions: hepatic expression of fatty acid metabolism genes.**
M. Carriquiry*[1], M. L. Adrien[2], V. V. Artegoitia[2], D. Mattiauda[1], and A. Meikle[2], [1]*School of Agronomy, UDELAR*, *Uruguay*, [2]*School of Veterinary Medicine, UDELAR*, *Uruguay*.

T260 **Gluconeogenic enzymes are differentially regulated by fatty acid cocktails in Madin-Darby Bovine Kidney cells.**
H. M. White*, S. L. Koser, and S. S. Donkin, *Purdue University*, *West Lafayette, IN*.

T261 **The effects of leptin on phosphorylation of mTOR and rpS6 to signal protein synthesis in bovine mammary epithelial cells.**
E. K. Evans*, J. A. D. R. N. Appuhamy, and M. D. Hanigan, *Department of Dairy Science, Virginia Polytechnic Institute and State University*, *Blacksburg*.

T262 **Glucocorticoid regulation of chicken adipose triglyceride lipase in adipose tissue.**
J. Serr*, S. Shin, Y. Suh, M. Kim, D. Latshaw, and K. Lee, *The Ohio State University, Department of Animal Sciences*, *Columbus.*

T263 **Bovine acute-phase response following corticotrophin-releasing hormone (CRH) infusion.**
R. F. Cooke*, A. B. Scarpa, F. M. Nery, F. N. T. Cooke, and D. W. Bohnert, *Oregon State University - EOARC*, *Burns*.

Physiology and Endocrinology
Hormonal Regulation of the Estrous Cycle in Beef Cattle

T264 **Effects of 72-h temporary calf removal prior to fixed-time AI on pregnancy rates and subsequent calf performance in suckled beef cows.**
G. H. L. Marquezini*[1], V. R. G. Mercadante[1], S. L. Bird[2], B. J. Funnell[2], and G. C. Lamb[1], [1]*University of Florida*, *Marianna,* [2]*University of Minnesota*, *Grand Rapids*.

T265 **Timed AI pregnancy rates in suckled beef cows in response to equine chorionic gonadotropin (eCG).**
L. D. Wallace[1], S. L. Pulley*[1], KC Olson[1], J. R. Jaeger[1], J. W. Bolte[1], S. K. Johnson[1], L. A. Pacheco[1], K. Bischoff[2], T. Loyd[2], G. C. Lamb[2], and J. S. Stevenson[1], [1]*Kansas State University*, *Manhattan,* [2]*University of Florida*, *Marianna.*

T266 **Effect of post-insemination GnRH on the pregnancy rate of beef cattle.**
W. A. Greene* and C. L. Pickworth, *The Ohio State University*, *Wooster.*

T267 **Reproductive performance of prepubertal *Bos indicus* heifers after progesterone-based treatments.**
I. Claro Júnior*[1], O. Sá Filho[1], R. Peres[1], F. Aono[1], M. Day[2], and J. L. Vasconcelos[1], [1]*FMVZ - UNESP*, *Botucatu, SP, Brazil*, [2]*Ohio State University*, *Columbus.*

T268 **Comparison of three doses of prostaglandin $F_{2\alpha}$ in a 5-day CIDR-based synchronization protocol in beef cows.**
T. Robison*, K. Y. Perry, K. G. Carnahan, T. L. Davis, and A. Ahmadzadeh, *University of Idaho*, *Moscow.*

T269 **Pregnancy per AI (P/AI) of dairy cows following presynchronization and splitting the prostaglandin (PGF) injection in the 5d-Cosynch protocol.**
E. S. Ribeiro*, R. S. Bisinotto, M. Favoreto, L. T. Martins, R. L. A. Cerri, F. T. Silvestre, L. F. Greco, W. W. Thatcher, and J. E. P. Santos, *University of Florida*, *Gainesville.*

T270 **Luteal function following a normal versus synchronized estrus in beef heifers.**
M. F. Smith*[1], D. H. Keisler[1], and F. Stormshak[2], [1]*University of Missouri*, *Columbia*, [2]*Oregon State University*, *Corvallis*.

T271 **Evaluation of 5-day versus 7-day CIDR treatment on reproductive outcomes of beef heifers using a modified timed-AI protocol.**
A. Ahmadzadeh*[1], D. Gunn[2], J. B. Hall[3], and J. B. Glaze Jr. [4], [1]*Univ. of Idaho*, *Moscow*, [2]*Univ. of Idaho*, *Fort Hall*, [3]*Univ. of Idaho R & E*, *Salmon,* [4]*Univ. of Idaho R & E*, *Twin Falls*.

T272 **Rumen temperature during the estrous cycle of beef cows.**
B. H. Boehmer*, T. A. Pye, and R. P. Wettemann, *Oklahoma Agricultural Experiment Station*, *Stillwater*.

T273 **Effects of feed supplementation and method of weaning on the physiology and performance of beef calves.**
C. Campistol*[1], H. G. Kattesh[1], J. C. Waller[1], E. L. Rawls[1], G. M. Pighetti[1], and J. A. Carroll[2], [1]*University of Tennessee*, *Knoxville,* [2]*Livestock Issues Research Unit, USDA-ARS*, *Lubbock, TX.*

T274 **Effect of serum progesterone levels on conception rate in Creole Rodeo multiparous cows and heifers .**
J. A. Ramirez-Godinez*[1], L. V. Beltran-Prieto[1], J. Dominguez-Viveros[1], A. Flores-Mariñelareña[1], and A. Quezada-Casasola[2], [1]*Universidad Autonoma de Chihuahua*, *Chihuahua, Mexico*, [2]*Universidad Autonoma de Ciudad Juarez*, *Chihuahua, Mexico*.

Physiology and Endocrinology
Male Reproduction, Gamete Cryopreservation, and Embryos

T275 **Validity of sperm penetration assay in boar fertility testing.**
S. A. Oh*, Y. J. Park, S. J. Yoon, W. S. Kwon, Y. H. Kim, E. A. Mohamed, Y. A. You, and M. G. Pang, *Department of Animal Science & Technology and BET Research Institute, Chung-Ang University*, *Ansung, Gyeonggi-Do, Korea*.

T276 **Comprehensive proteomic analysis to defining sperm fertility in bovine.**
Y. J. Park*, S. A. Oh, W. S. Kwon, S. J. Yoon, Y. H. Kim, E. A. Mohamed, Y. A. You, and M. G. Pang, *Department of Animal Science & Technology and BET Research Institute, Chung-Ang University*, *Ansung, Gyeonggi-Do, Korea*.

T277 **Effects of two egg yolk-free commercial extenders and centrifugation on freezing ability of semen in Mahabadi goat.**
M. Ansari*[1], A. Towhidi[1], M. Moradi Shahre Babak[1], and M. Bahreini[2], [1]*University of Tehran, Department of Animal Science*, *Karaj, Tehran, Iran*, [2]*Animal Breeding Center of Iran*, *Karaj, Tehran, Iran*.

T278 **The effect of ethanol supplemented extender on freezing ability of goat semen.**
M. Ansari*[1], A. Towhidi[1], M. Moradi Shahre Babak[1], and M. Bahreini[2], [1]*University of Tehran, Department of Animal Science*, *Karaj, Tehran, Iran*, [2]*Animal Breeding Center of Iran*, *Karaj, Tehran, Iran*.

T279 **Natural non-synonymous mutations in the ovine *leptin* gene affect leptin binding affinity and biological activity.**
S. Reicher*[1,2], A. Gertler[2], E. Seroussi[1], and E. Gootwine[1], [1]*Institute of Animal Science, ARO, The Volcani Center*, *Bet Dagan, Israel*, [2]*The Robert H. Smith Faculty of Agriculture, Food and Environment, The Hebrew University of Jerusalem*, *Rehovot, Israel*.

T280 **Effect of different aspiration pressure on the number and quality of ovine oocyte.**
A. Abedini*, H. Kohram, and R. Salehi, *Tehran University, Tehran, Iran.*

T281 **The effect of poly-L-lysine as a new cryoprotectant for ovine oocyte vitrification.**
N. Li*[1], T. Wuliji[1], A. Qi[1], S. H. Hyon[2], K. Matsumura[2], L. Shi[1], and W. Chen[1], [1]*University of Nevada, Reno*, [2]*Kyoto University*, *Kyoto, Japan*.

T282 **Administration of human chorionic gonadotropin (hCG) to embryo transfer (ET) recipients increased ovulation, progesterone, and transfer pregnancy rates.**
L. D. Wallace*[1], C. A. Breiner[2], R. M. Breiner[1], and J. S. Stevenson[1], [1]*Kansas State University*, *Manhattan*, [2]*Cross Country Genetics North Inc., Westmoreland, KS*.

T283 **Effect of addition of cAMP regulators to bovine in vitro oocyte maturation medium.**
C. Burroughs* and G. Seidel, *Colorado State University*.

T284 **Testicular abnormalities in *Gallus gallus* var. *domesticus* males.**
J. R. Moyle*, S. M. Whipple, F. D. Clark, and R. K. Bramwell, *University of Arkansas*, *Fayetteville.*

T285 **Effects of hypothermic storage of striped bass (*Morone saxatilis*) sperm on intracellular calcium, reactive oxygen species formation, mitochondrial function, motility, and viability.**
H. D. Guthrie*[1], L. C. Woods III[2], and G. R. Welch[1], [1]*Animal Biosciences and Biotechnology Laboratory, Agricultural Research Service, USDA*, *Beltsville, MD,* [2]*Department of Animal and Avian Sciences, University of Maryland*, *College Park*.

T286 **Renin message is up-regulated in spermatogonia and testes of male mice in response to treatment with aflatoxin B1.**
K. J. Austin*, K. L. Speiser, A. M. Kaiser, R. R. Cockrum, and K. M. Cammack, *University of Wyoming*, *Laramie.*

T287 **Testicular development of breeder males reared on an accelerated growth schedule.**
W. D. Berry*, S. H. Oates, L. M. Stevenson, and J. B. Hess, *Auburn University Department of Poultry Science*, *Auburn, AL.*

T288 **Hypoxic conditions during the CAM development (E5-E12) effect on embryos' development.**
S. Druyan*, *Institute of Animal Science, ARO The Volcani Center*, *PO Box 6, Bet Dagan, Israel*.

Physiology and Endocrinology
Nutritional Physiology

T289 **Rumen fluid inhibits proliferation and stimulates expression of cyclin-dependent kinase inhibitors 1A and 2A in bovine rumen epithelial cells.**
A. Wang* and H. Jiang, *Virginia Polytechnic Institute and State University*, *Blacksburg*.

T290 **Short-term postpartum supplementation on hepatic gene expression in primiparous spring-calved beef cows on grazing conditions. 1. Whole rice middlings.**
A. L. Astessiano*, C. López-Mazz, A. C. Espasandín, P. Soca, R. Pérez-Clariget, and M. Carriquiry, *School of Agronomy, UdelaR*, *Uruguay*.

T291 **Short-term postpartum supplementation on hepatic gene expression in primiparous spring-calved beef cows on grazing conditions. 2. *Lotus subbliflorus* cv. Rincon.**
A. L. Astessiano*[1], R. Perez-Clariget[1], G. Quintans[2], P. Soca[1], and M. Carriquiry[1], [1]*School of Agronomy, UdelaR*, *Uruguay*, [2]*Instituto Nacional de Investigación Agropecuaria*, *Treinta y Tres, Uruguay*.

T292 **Effects of glucose on suckling aggressiveness in newborn Holstein and Brown Swiss calves.**
M. D. DenBeste* and H. D. Tyler, *Iowa State University*, *Ames.*

T293 **Butyrate stimulates the cAMP/protein kinase A signaling pathway.**
A. Wang*, H. Si, D. Liu, and H. Jiang, *Virginia Polytechnic Institute and State University*, *Blacksburg*.

T294 **The effect of forage availability on the somatotropic axis in free-ranging alaskan moose (*Alces alces*).**
A. A. Parillo*[1], J. P. Richmond[1], K. S. White[2], J. Crouse[3], B. W. Dale[4], and S. A. Zinn[1], [1]*University of Connecticut*, *Storrs*, [2]*Alaska Department of Fish and Game*, *Juneau*, [3]*Alaska Department of Fish and Game*, *Soldotna*, [4]*Alaska Department of Fish and Game*, *Palmer*.

T295 **Effects of dietary probiotic supplementation and posthatching holding time on intestinal pH and microflora of male broilers.**
H. Unsal[1], A. G. Onol[1], M. Daskiran[2], O. Cengiz*[1], O. Tatli[1], and O. Sevim[1], [1]*Adnan Menderes University*, *Aydin, Turkey*, [2]*Johnson & Johnson Corporate Science and Technology*, *New Brunswick, NJ*.

T296 **Maintenance energy requirements of gestating beef cows, rumen temperature, and plasma concentration of thyroxine and triiodothyronine.**
T. A. Pye*, B. H. Boehmer, and R. P. Wettemann, *Oklahoma Agricultural Experiment Station*, *Stillwater*.

T297 **Effects of cobalt supplementation and vitamin B_{12} injections on energy metabolism of dairy cows.**
M. S. Akins*[1], S. J. Bertics[1], M. T. Socha[2], and R. D. Shaver[1], [1]*University of Wisconsin*, *Madison*, [2]*Zinpro Corporation*, *Eden Prairie, MN*.

T298 **The relationship of tissue copper concentrations and genes involved in copper homeostasis in the cow, pig, and goat.**
H. So, E. Domby*, T. Engle, and H. Han, *Colorado State University*, *Fort Collins*.

T299 **Modification and validation of a bovine TNFα enzyme-linked immunosorbent assay with improved sensitivity.**
J. K. Farney*, L. K. Mamedova, and B. J. Bradford, *Kansas State University*, *Manhattan*.

T300 **Plasma cortisol, corticosteroid-binding globulin and free cortisol index in pre-and post-weaned pigs supplemented with omega-3 polyunsaturated fatty acid.**
H. G. Kattesh*, C. J. Kojima, M. P. Roberts, and G. M. Pighetti, *University of Tennessee*, *Knoxville.*

Processing and Products

T301 **Characterization of omega-3 PUFA enrichment in laying hens.**
S. Nain* and R. A. Renema, *University of Alberta*, *Edmonton, AB, Canada*.

Production, Management and the Environment
Dairy

T302 **Effects of increased milking frequency on productivity of Holstein dairy cows.**
M. Dehghan-Banadaky*, M. Eslamizad, K. Rezayazdi, M. Moradi-Shahrbabak, and H. Bahrami, *Department of Animal Science, Campus of Agriculture and Natural Resources, University of Tehran*, *Karaj, Tehran, Iran*.

T303 **Effects of increasing milking frequency on blood metabolites of Holstein cows.**
M. Eslamizad, K. Rezayazdi, M. Dehghan-Banadaky*, H. Kohram, and R. Heydari, *Department of Animal Science, Campus of Agriculture and Natural Resources, University of Tehran*, *Karaj, Tehran, Iran*.

T304 **Effect of temperature-humidity index on test day milk yield of Iranian primiparous Holsteins.**
H. Farhangfar*[1], A. Arab[1], S. R. Miraee Ashtiani[2], A. Riasi[3], H. Rashid[4], and M. K. Akbari[4], [1]*Birjand University*, *Birjand, Iran*, [2]*Karaj University of Agriculture and Natural Resources*, *Karaj, Iran*, [3]*Esfahan Industrial University*, *Esfahan, Iran*, [4]*Agricultural Jihad Organisation*, *Mashhad, Iran*.

T305 **Application of mixed linear model to evaluate effects of temperature and relative humidity on lactation milk yield of Iranian primiparous Holsteins.**
H. Farhangfar*[1], H. Roshan[1], N. Emam Jomeh Kashan[2], and M. H. Fathi Nasri[1], [1]*Birjand University*, *Birjand, Iran*, [2]*Aboureyhan University*, *Tehran, Iran*.

T306 **The association between days in milk, somatic cell counts, milk urea nitrogen, and percentage of milk fat and protein in dairy cows.**
S. R. Heidari Khormizi*[1], M. Dehghan Banadaki[2], and F. Farhang[3], [1]*University of Tehran*, *Tehran, Karaj, Iran*, [2]*University of Tehran*, *Tehran, Karaj, Iran*, [3]*University of Tehran*, *Tehran, Karaj, Iran*.

T307 **The association between milk urea nitrogen, milk yield, somatic cell counts and parity in Holstein dairy herds.**
S. R. Heidari Khormizi*[1], M. Dehghan Banadaki[2], Sh. Hasanlou[3], and F. Fatehi[4], [1]*University of Tehran*, *Karaj, Tehran, Iran*, [2]*University of Tehran*, *Karaj, Tehran, Iran*, [3]*University of Tehran*, *Karaj, Tehran, Iran*, [4]*University of Tehran*, *Karaj, Tehran, Iran*.

T308 **Control of acute postpartum metritis in lactating dairy cows at high risk of developing metritis following dystocia, stillbirth, twinning and/or retained placenta/fetal membranes with ceftiofur crystalline free acid sterile suspension (CCFA-SS).**
C. McLaughlin*, C. LaGrow, C. Daugherty, E. Stanisiewski, and M. Lucas, *Pfizer Animal Health*, *Kalamazoo, MI.*

T309 **Evaluation of ceftiofur crystalline free acid sterile suspension (CCFA-SS) administered to dairy cows exhibiting risk factors for acute postpartum metritis.**
E. Stanisiewski, C. Daugherty*, J. Hallberg, and M. Lucas, *Pfizer Animal Health*, *Kalamazoo, MI.*

T310 **Evaluating reproductive outcomes in United States Holstein dairies.**
L. M. Moeller*[1], N. A. Michael[1], J. C. Dalton[2], and G. C. Lamb[3], [1]*ABS Global, Inc., DeForest, WI*, [2]*University of Idaho*, *Caldwell*, [3]*University of Florida*, *Marianna*.

T311 **The effect of soy isolate source in milk replacer on growth and health of calves fed milk replacer.**
R. C. Musser*, B. L. Miller, T. J. Earleywine, and T. E. Johnson, *Land O'Lakes, Inc., Webster City, IA*.

T312 **Non-dietary risk factors for lameness and their consequences in dairy cows.**
I. Guasch[1] and A. Bach*[1,2], [1]*Deparment of Ruminant Production, IRTA*, *Caldes de Montbui, Spain*, [2]*ICREA*, *Barcelona, Spain*.

T313 **Associations between several aspects of heifer development and dairy cow longevity.**
A. Bach*[1,2], [1]*ICREA*, *Barcelona, Spain*, [2]*Deparment of Ruminant Production, IRTA*, *Caldes de Montbui, Spain*.

T314 **Effects of heat stress and Niashure (NI) supplementation on winter acclimated lactating cattle.**
S. Rungruang*[1], R. P. Rhoads[1], L. H. Baumgard[1], M. DeVeth[2], J. L. Collier[1], and R. J. Collier[1], [1]*University of Arizona*, *Tucson*, [2]*Balchem Corp*, *New Hampton, NY.*

T315 **A preliminary investigation of individual variation in N excretion by lactating dairy cows.**
P. Gregorini*, P. Beukes, A. Romera, C. Clark, and D. Clark, *DairyNZ*, *Hamilton, Waikato, New Zealand*.

T316 **Repeatability coefficients for dry matter intake and efficiency of nitrogen utilization for milk production in lactating Holstein cows challenged with low N diets.**
N. B. Kristensen*, T. Hvelplund, M. R. Weisbjerg, P. Lund, and P. Løvendahl, *Aarhus University*, *Tjele, Denmark*.

T317 **Metabolic profile and postpartum health in early lactating Holstein cows in southern Brazil.**
T. A. Frigotto[1], S. O. Juchem[2], R. D. Ollhoff[3], I. R. Barros Filho[1], P. Schmidt[1], and R. Almeida*[1], [1]*Universidade Federal do Paraná*, *Curitiba, PR, Brazil*, [2]*University of California*, *Davis*, [3]*Pontifícia Universidade Católica do Paraná*, *Curitiba, PR, Brazil*.

T318 **Factors affecting the bulk tank milk quality collected by a dairy industry of Minas Gerais state, Brazil from 2002 to 2008.**
C. A. V. Paiva, A. F. Cunha, M. O. Leite, R. Rodrigues, C. F. A. M. Pena, A. M. Q. Lana, M. Houri Neto, L. M. Fonseca, M. R. Souza, and M. M. O. P. Cerqueira*, *Federal University of Minas Gerais state*, *Belo Horizonte, Minas Gerais, Brazil*.

T319 **Evolution of milk production and premium payment for total bacterial count, somatic cell count, fat and protein contents in a dairy industry of Minas Gerais state, Brazil.**
C. A. V. Paiva, A. F. Cunha, M. O. Leite, R. Rodrigues, C. F. A. M. Pena, L. M. Fonseca, A. M. Q. Lana, M. Houri Neto, M. R. Souza, and M. M . O. P. Cerqueira*, *Federal University of Minas Gerais state*, *Belo Horizonte, Minas Gerais, Brazil*.

T320 **Comparison of different methods of rearing management in Holstein dairy calves.**
F. Niazi, H. Amanlou, E. Qashqayi*, and E. Mahjoubi, *Zanjan University*, *Zanjan, Iran*.

T321 **Differences between expanding and non-expanding Wisconsin dairy farms.**
J. M. Janowski and V. E. Cabrera*, *University of Wisconsin*, *Madison*.

T322 **Effect of heat stress on pregnancy rate of dairy cows cows using artificial insemination or embryo transfer in commercial dairy farms of central Mexico (Aguascalientes).**
R. Lozano[1], E. Gonzalez-Padilla[2], C. Vazquez[2], C. F. Arechiga*[3], and J. M. Silva[3], [1]*Instituto Nacional de Investigaciones Forestales, Agricolas y Pecuarias*, *Pabellon, AGS, Mexico.*, [2]*Universidad Nacional Autonoma de Mexico*, *Mexico, D. F.*, [3]*Universidad Autonoma de Zacatecas*, *Zacatecas, Mexico.*

T323 **Calculating field nutrient removal rates to comply with General Order for Existing Milk Cow Dairies from California's Central Valley Regional Water Quality Control Board.**
J. M. Heguy*, B. M. Karle, P. L. Price, and D. Meyer, *University of California, Davis.*

T324 **Association of production level and calving season with reproductive function of Holstein cows from an intensive dairy production system of central Mexico (Aguascalientes, Mexico).**
P. Hernandez-Briano[1], C. F. Arechiga*[1], J. I. Aguilera-Soto[1], M. A. Lopez-Carlos[1], M. Rincon[1], J. M. Silva[1], C. A. Medina-Flores[1], and R. Lozano[2], [1]*Universidad Autonoma de Zacatecas*, *Zacatecas, Mexico.*, [2]*Instituto Nacional de Investigaciones Forestales, Agricolas y Pecuarias*, *Pabellon, Ags, Mexico.*

T325 **Bacterial survival rate in sanitizing teat dips for dairy cows.**
S. Retz and S. I. Kehoe*, *University of Wisconsin-River Falls*, *River Falls*.

T326 **Stage of lactation alters production responses of cows subjected to feed restriction.**
V. Bjerre-Harpøth, N. C. Friggens, V. M. Thorup, K. L. Ingvartsen, and K. M. Moyes*, *Aarhus University*, *Tjele, Denmark*.

T327 **The effects of dietary ThermalCare-R (TCR) on body temperature indices, production and metabolism in heat-stressed lactating cows.**
R. P. Rhoads*[1], M. V. Skrzypek[1], S. S. Block[2], and L. H. Baumgard[3], [1]*University of Arizona*, *Tucson,* [2]*Archer Daniels Midland*, *Decatur, IL,* [3]*Iowa State University*, *Ames.*

T328 **Effect of increased omega-3 fatty acids on production and reproduction in high producing lactating cows during cool season and hot season conditions.**
T. Colburn*[1], K. D. Murphy[1], C. Walhof[2], and A. V. Grove[3], [1]*Virtus Nutrition, LLC*, *Corcoran, CA*, [2]*Valley Veterinarians, Inc.*, *Tulare, CA*, [3]*AG Research, LLC*, *White Sulphur Springs, MT*.

T329 **Effect of thermal stress, cistern size, and milking frequency on plasma mineral concentrations in Holstein dairy cows.**
R. Ben Younes[1], M. Caccamo*[2], I. Schadt[2], M. Ayadi[3], T. Najar[1], M. Ben M'Rad[1], and G. Caja[4], [1]*Institut National Agronomique de Tunisie*, *Tunisia*, [2]*CoRFiLaC, Regione Siciliana*, *Ragusa, Italy*, [3]*Institut Superieur de Biologie appliqué de Médenine*, *Tunisia*, [4]*Universitat Autònoma de Barcelona*, *Bellaterra, Spain*.

T330 **Body growth of pregnant Holstein heifers reared on pasture or conventional diet.**
R. R. Peters*[1], S. W. Fultz[2], J. W. Semler[3], and R. A. Erdman[1], [1]*University of Maryland*, *College Park*, [2]*University of Maryland Extension*, *Frederick*, [3]*University of Maryland Extension*, *Boonsboro*.

T331 **Postpartum reproduction and NEFA changes during early lactation in Holsteins, Jerseys, and their crosses.**
K. L. Brown*, B. G. Cassell, M. L. McGilliard, M. D. Hanigan, and F. C. Gwazdauskas, *Virginia Polytechnic Institute & State University*, *Blacksburg*.

T332 **The effect of feed sorting on intakes of fiber and phosphorus in dairy cows.**
A. C. Huisman, R. L. Kincaid*, J. J. Michal, K. A. Johnson, and C. T. Gaskins, *Washington State University*, *Pullman.*

T333 **Effect of Tasco on core body temperature of dairy cows exposed to heat stress.**
L. B. Pompeu[1], J. E. Williams*[1], D. E. Spiers[1], R. L. Weaber[1], M. R. Ellersieck[1], K. M. Sargent[1], N. P. Feyerabend[1], H. L. Vellios[1], and F. Evans[2], [1]*University of Missouri*, *Columbia*, [2]*Acadian Seaplants*, *Darmouth, Nova Scotia, Canada*.

T334 **An update of bulk tank milk quality in California.**
N. Silva-del-Río*[1] and C. Collar[2], [1]*University of California Cooperative Extension*, *Tulare County,* [2]*University of California Cooperative Extension*, *Kings County*.

T335 **Determination of variation in dairy cows response to heat stress using radiotelemetry.**
L. B. Pompeu, J. E. Williams, D. E. Spiers*, R. L. Weaber, and M. R. Ellersieck, *University of Missouri*, *Columbia*.

T336 **Corn silage management practices on California dairies.**
N. Silva-del-Río*[1], J. M. Heguy[2], and A. Lago[3], [1]*University of California Cooperative Extension*, *Tulare County,* [2]*University of California Cooperative Extension*, *Stanislaus and San Joaquin Counties,* [3]*APC, Inc.*, *Ankeny, IA*.

Ruminant Nutrition
Calves and Heifers

T337 **Interaction of breed and quantity of milk replacer on the performance of dairy calves.**
C. J. Cobb* and M. A. Ballou, *Department of Animal and Food Sciences, Texas Tech University*, *Lubbock.*

T338 **Evaluation of mannanoligosaccharides route of administration for dairy calves: Performance and rumen development.**
J. T. Silva[1,2], L. S. Ferreira[1,2], and C. M. M. Bittar*[1,2], [1]*University of Sao Paulo/ESALQ*, *Piracicaba, SP, Brazil*, [2]*CNPq*, *Brasília, DF, Brazil*.

T339 **Impact of solids level of colostrum replacer formulations on immunoglobulin absorption in calves.**
J. M. Campbell*[1], J. C. Gawthrop[2], A. W. Riad[2], L. E. Russell[1], J. D. Crenshaw[1], and J. Q. Quigley[1], [1]*APC, Inc., Ankeny, IA*, [2]*CalfCare*, *North Manchester, IN*.

T340 **Effect of yeast β-glucan and antibiotics on growth and intestinal microflora in early-weaning calves.**
Y. Zhou, Q. Diao*, Y. Tu, and Q. Yun, *Feed Research Institute, Chinese Academy of Agricultural Sciences*, *Beijing, China*.

T341 **Effects of forage quality traits and access to calf starter on selection between forages in milk-fed calves.**
N. B. Kristensen*, M. R. Weisbjerg, and M. Vestergaard, *Aarhus University*, *Tjele, Denmark*.

T342 **Performance of calves fed an all-milk or enzymatically modified plant protein containing milk replacer with and without a specific amino acid profile.**
F. Soberon*, A. M. Severy, and M. E. Van Amburgh, *Cornell University*, *Ithaca, NY*.

T343 **Measurement of adaptive and innate immune function in calves raised under traditional and accelerated growth regimens.**
B. A. Hengst*[1], L. M. Nemec[1], R. R. Rastani[2], and T. F. Gressley[1], [1]*University of Delaware*, *Newark*, [2]*Milk Specialties Global Animal Nutrition*, *Carpentersville, IL*.

T344 **Effects of hay intake on calves fed high volumes of milk.**
M. A. Khan*[1], D. M. Weary[1], D. M. Veira[2], and M. A. G. von Keyserlingk[1], [1]*University of British Columbia*, *Vancouver, BC, Canada*, [2]*Agriculture and Agri-Food Canada*, *Agassiz BC, Canada*.

T345 **Influence of milk replacer feeding program on pre- and post-weaning performance and health of dairy calves.**
D. Carlson*[1], B. Ziegler[2], D. Schimek[2], M. Raeth-Knight[3], G. Golombeski[3], J. Linn[3], D. Ziegler[4], and H. Chester-Jones[4], [1]*Milk Products LLC*, *Chilton, WI*, [2]*Hubbard Feeds, Inc., Mankato, MN*, [3]*University of Minnesota*, *St. Paul*, [4]*University of Minnesota, Southern Research and Outreach Center*, *Waseca*.

T346 **The effect of feeding dairy heifers diets with and without supplemental phosphorus for 18 months on growth, reproductive efficiency and lactation performance.**
D. W. Bjelland*[1], N. M. Esser[1], K. A. Weigel[1], P. C. Hoffman[1], and W. K. Coblentz[2], [1]*University of Wisconsin*, *Madison,* [2]*USDA-ARS Dairy Forage Research Center*, *Marshfield, WI*.

T347 **The effect of *Megasphaera elsdenii* NCIMB 41125 (Me) on performance of pre-weaned dairy calves.**
F. M. Hagg*[1], C. M. Muya[2], and P. H. Henning[1], [1]*MS Biotech*, *Centurion, South Africa*, [2]*ARC-Irene*, *Centurion, South Africa*.

T348 **Influence of nonmedicated additives as alternatives to antibiotics on calf health, growth, and intestinal development.**
S. I. Kehoe*[1], D. B. Carlson[2], and E. O. Hardwick[1], [1]*University of Wisconsin-River Falls*, *River Falls,* [2]*Milk Products, Inc., Chilton, WI*.

T349 **Pre- and post weaning performance and health of calves fed milk replacers and calf starters with or without yeast supplementation (Nupro) and growth performance from 9 to 25 weeks of age.**
H. Chester-Jones*[1], J. Tricarico[2], D. Ziegler[1], K. Dawson[2], P. Groenewegen[2], M. Raeth-Knight[3], and G. Golombeski[3], [1]*University of Minnesota Southern Research and Outreach Center*, *Waseca,* [2]*Alltech Inc., Nicholasville, KY,* [3]*University of Minnesota Southern Research and Outreach Center*, *St. Paul.*

T350 **Pre- and post weaning performance and health of calves fed milk replacers and calf starters with or without essential oils.**
H. Chester-Jones*[1], T. Steiner[2], M. Watkins[3], D. Taylor[3], D. Ziegler[1], M. Raeth-Knight[4], and G. Golombeski[4], [1]*University of Minnesota, Southern Research and Outreach Center*, *Waseca*, [2]*Biomin Holding GmbH*, *Herzogenburg, Austria*, [3]*Biomin America Inc., San Antonio, TX*, [4]*University of Minnesota*, *St. Paul*.

T351 **Pre- and post weaning performance and health of calves fed texturized calf starters with different levels of monensin and affect on growth from 9 to 25 weeks of age.**
H. Chester-Jones*[1], B. Ziegler[2], D. Schimek[2], D. Ziegler[1], M. Raeth-Knight[3], G. Golombeski[3], and J. Linn[3], [1]*University of Minnesota Southern Research and Outreach Center*, *Waseca*, [2]*Hubbard Feeds Inc., Mankato, MN*, [3]*University of Minnesota Southern Research and Outreach Center*, *St. Paul*.

T352 **Effect on feed sorting of adding plain or flavored water to a TMR for heifers.**
A. Mereu[1], A. Puddu[2], I. R. Ipharraguerre*[1], and A. Bach[2,3], [1]*Lucta SA*, *Barcelona, Spain*, [2]*IRTA-Ruminant Production*, *Caldes de Montbui, Spain*, [3]*ICREA*, *Barcelona, Spain*.

T353 **Effect of including corn distillers dried grains in calf feeds.**
F. X. Suarez-Mena*[1], A. J. Heinrichs[1], T. M. Hill[2], H. G. Bateman II[2], J. M. Aldrich[2], and R. L. Schlotterbeck[2], [1]*The Pennsylvania State University*, *University Park*, [2]*Nurture Calf Research, Provimi North America*, *Lewisburg, OH*.

T354 **Determination of oro-sensorial preferences of protein ingredients in weaned calves.**
C. Montoro*[1], I. Ipharraguerre[2], and A. Bach[1,3], [1]*Ruminant Production, IRTA*, *Caldes de Montbui, Barcelona, Spain*, [2]*LUCTA S. A.*, *Barcelona, Spain*, [3]*ICREA*, *Barcelona, Spain*.

T355 **Effect of dietary supplementation of exogenous polysaccharide-degrading enzymes on blood metabolites and rumen fermentation and nutrient digestibility for Holstein heifers.**
C. Y. Guo*, Q. Y. Diao, N. F. Zhang, and Y. Tu, *Chinese Academy of Agricultural Sciences*, *Beijing, China*.

T356 **Relationships between chewing behavior, digestibility and digesta kinetics parameters in calves fed restricted and ad libitum levels of oat hay.**
R. S. Dias[1], H. O. Patino[2], S. López[3], E. Prates[2], K. Swanson*[1], and J. France[1], [1]*University of Guelph*, *Guelph, Ontario, Canada*, [2]*Universidade Federal do Rio Grande do Sul*, *Porto Alegre, Rio Grande do Sul, Brazil*, [3]*IGM, CSIC-Universidad de León*, *León, León, Spain*.

T357 **Effect of different feeding regimens on growth performance and health of Sahiwal calves during pre-weaning period.**
S. A. Bhatti*[1], M. F. Ahmed[1], D. McGill[2], M. Sarwar[1], M. Afzal[3], EhsanUllah[1], M. A. Khan[4], M. S. Khan[1], R. Bush[5], and H. M. Warriach[2], [1]*University of Agriculture*, *Faisalabad, Pakistan*, [2]*EH Graham Centre (NSW Industry and Investment and Charles Sturt University)*, *Wagga Wagga, Australia*, [3]*Pakistan Agricultural Research Council*, *Islamabad, Pakistan*, [4]*Livestock Production Research Institute*, *Bahadurnagar, Okara, Pakistan*, [5]*University of Sydney*, *Camden, Australia*.

T358 **The effect of feeding different dilution levels of milk replacer to calves once or twice daily, with or without yeast culture.**
M. F. Ortega*, H. M. Rodriguez, and M. Vélez, *Zamorano University*, *El Zamorano, Honduras*.

T359 **Utilization of yeast (*Saccharomyces cerevisiae*) in dairy calves diet.**
J. A De Freitas*[1], M. S Schoten[1], D. R Fronchetti[1], A. F Garcez Neto[1], and J. C De Souza[2], [1]*University Federal of Parana*, *Palotina, Parana, Brazil*, [2]*University Federal of South Mato Grosso*, *Aquidauana, Mato Grosso do Sul, Brazil*.

T360 **The effects of feeding fermented soybean meal in calf starter on growth and performance of dairy calves.**
T. L. Wolfswinkel*[1], H. D. Tyler[1], J. E. Cunnick[1], T. Waugh[2], J. Sewell[2], and A. Chestnut[3], [1]*Iowa State University*, *Ames,* [2]*Nutra-Flo Protein and Biotech Products*, *Sioux City, IA,* [3]*Vigortone Ag Products*, *Brookville, OH*.

Ruminant Nutrition
Dairy: Rumen Metabolism

T361 **In vitro methane production from increasing levels of corn- or wheat-based dried distillers grains with solubles.**
M. Hünerberg*[1], L. Holtshausen[2], T. A. McAllister[2], K. A. Beauchemin[2], and E. Okine[1], [1]*University of Alberta*, *Edmonton, AB, Canada*, [2]*Agriculture and Agri-Food Canada*, *Lethbridge, AB, Canada*.

T362 **The impact of DDGS on presence of ruminal bacteria, ruminal protozoa and yeast during in vitro fermentation.**
E. Castillo-Lopez*, J. L. Miner, and P. J. Kononoff, *University of Nebraska-Lincoln*, *Lincoln*.

T363 **Effects of low dose of *Saccharomyces cerevisiae* on metabolism by ruminal microbes in dual flow continuous culture fermenters.**
M. Ruiz-Moreno*[1], M. D. Stern[1], and J. Sullivan[2], [1]*University of Minnesota*, *St Paul, MN,* [2]*Lallemand Animal Nutrition - North America*, *Milwaukee, WI.*

T364 **Effects of copper and zinc on *in vitro* ruminal fermentation of total mixed ration using goat inoculum.**
J. F. Vázquez-Armijo[1], R. Rojo*[1], D. López[1], A. Z. M. Salem[1], and J. M. González-Alvarado[2], [1]*Universidad Autónoma del Estado de México, Centro Universitario UAEM Temascaltepec*, *Temascaltepec, México, México*, [2]*Universidad Autónoma de Tlaxcala, Facultad de Agrobiología*, *Ixtacuixtla, Tlaxcala, México*.

T365 **Effects of high rates of extruded flaxseed fed to dairy cows on n-3 fatty acids enrichment in milk-fat and the interaction with milk fat content and yield.**
U. Moallem*[1], M. Zachut[1,2], H. Lehrer[1], L. Livshitz[1], and A. Arieli[2], [1]*Agriculture Research Organization*, *Bet Dagan, Israel*, [2]*Faculty of Agriculture, Hebrew University*, *Rehovot, Israel*.

T366 **Effect of grain source and milling process in ethanol production on nutrient contents and in vitro digestibility of ethanol by-product.**
W. Z. Yang*[1], T. A. McAllister[1], J. J. Mckinnon[2], K. A. Beauchemin[1], and D. Gibb[1], [1]*Agriculture and Agri-Food Canada, Research Centre*, *Lethbridge, AB, Canada*, [2]*Department of Animal and Poultry Science, University of Saskatchewan*, *Saskatoon, SK, Canada*.

T367 **In vitro digestion and gas production of two varieties of barley grain sown with different seeding and N fertilization rates in seven sites across Canada.**
W. Z. Yang*[1], T. A. McAllister[1], M. Oba[2], and D. Gibb[1], [1]*Agriculture and Agri-Food Canada, Research Centre*, *Lethbridge, AB, Canada*, [2]*Department of Agricultural, Food and Nutritional Science, University of Alberta*, *Edmonton, AB, Canada*.

T368 **Impact of monensin on rumen microbiota and its stochastic succession.**
P. Kongmun*[1,2], M. Wanapat[1], and Z. Yu[2], [1]*Department of Animal Science, Khon Kaen University*, *Khon Kaen, Thailand*, [2]*Department of Animal Science, The Ohio State University*.

T369 **The effect of body condition at calving and supplementation with *Saccharomyces cerevisiae* on energy status and some reproductive parameters in early lactation dairy cows.**
R. M. Al Ibrahim*, M. A. Crowe, P. Duffy, L. O`Grady, M. E. Beltman, and F. J. Mulligan, *University College Dublin*, *Dublin 4, Ireland*.

T370 **Effect of supplemented diets with sucrose and/or starch on ruminal peptide-N concentration of Holstein steers.**
M. Danesh Mesgaran*, F. Rezaii, A. R. Heravi Moussavi, and A. Vakili, *Dept. Animal Science, Ferdowsi University of Mashhad, P O Box 91775-1163*, *Mashhad, Iran*.

T371 **Effect of diets supplemented by sucrose and/or starch on in vivo ruminal *Ruminococcus flavefaciens* populations of Holstein steers determined by real time-PCR.**
M. Danesh Mesgaran*, F. Rezaii, A. R. Moussavi Heravi, M. Nassiri, and A. Vakili, *Dept. Animal Science, Ferdowsi University of Mashhad, P O Box 91775-1163*, *Mashhad, Iran*.

T372 **Exogenous proteolytic enzyme increases degradation of dried distillers grains with solubles during in vitro ruminal fermentation.**
J. M. Vera, J. -S. Eun*, D. R. ZoBell, and A. J. Young, *Utah State University*, *Logan*.

T373 **Effects of eugenol addition on milk fatty acid composition of dairy cows fed high- or low-concentrate diets.**
C. Benchaar*[1], W. Z. Yang[2], H. V. Petit[1], and P. Y. Chouinard[3], [1]*Agriculture and Agri-Food Canada*, *Dairy and Swine R&D Centre, Sherbrooke, QC, Canada*, [2]*Agriculture and Agri-Food Canada*, *Lethridge Research Centre, AB, Canada*, [3]*Université*, *Département des Sciences Animales, Québec, QC, Canada*.

T374 **Effects of sugar beet pulp substituted for ground corn on the performance and health of Chinese Holstein dairy cows.**
M. Wang, J. Y. Zhang, J. Q. Wang*, D. P. Bu, L. Y. Zhou, and P. Sun, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*.

T375 **Garlic botanical reduces methane production in rumen fluid determined in vitro.**
S. Cavini[1], D. Bravo[2], S. Calsamiglia[1], G. F. Schroeder*[3], M. Rodriguez[1], and A. Ferret[1], [1]*Universitat Autonoma de Barcelona*, *Spain*, [2]*Pancosma*, *Geneva, Switzerland*, [3]*Cargill Innovation Campus*, *Elk River, MN*.

T376 **In vitro methane production by ruminal microorganisms is affected by the diet of donor animals.**
M. L. Tejido[1,2], M. J. Ranilla*[1,2], C. Saro[1,2], and M. D. Carro[1,2], [1]*Dpto. Producción Animal, Universidad de León*, *24071, León, Spain*, [2]*Instituto de Ganadería de Montaña (CSIC-ULE), Finca Marzanas s/n*, *24346 Grulleros, León, Spain*.

T377 **Hydrogen sulfide release by ruminal microbes maintained in batch culture.**
M. Ruiz-Moreno*[1], E. Seitz[1], J. Garrett[2], and M. D. Stern[1], [1]*University of Minnesota*, *St. Paul*, [2]*Quali Tech Inc.*, *Chaska, MN*.

T378 **Comparison of bacterial diversity in the rumen of sheep and in Rusitec fermenters as assessed by ARISA-PCR.**
M. J. Ranilla*[1,2], M. L. Tejido[1,2], C. Saro[1,2], and M. D. Carro[1,2], [1]*Dpto. Producción Animal, Universidad de León*, *24071, León, Spain*, [2]*Instituto de Ganadería de Montaña (CSIC-ULE), Finca Marzanas s/n*, *24346 Grulleros, León, Spain*.

T379 **Effect of supplemented diet by sucrose or starch on fungi populations in rumen fluid as determined by real-time polymerase chain reaction in Holstein steers.**
A. Vakili*, M. Danesh Mesgaran, H. Jahani Aziz-Abadi, F. Rezaii, and S. Ghovvati, *Dept. of Animal Science, Ferdowsi University of Mashhad*, *Mashhad, Iran*.

T380 **Sodium acetate/acetic acid as a buffer solution to simulate an acidic in vitro rumen environment.**
R. C. Araujo*[1], A. V. Pires[1], and A. L. Abdalla[2], [1]*ESALQ, Universidade de São Paulo*, *Piracicaba, SP, Brazil*, [2]*CENA, Universidade de São Paulo*, *Piracicaba, SP, Brazil*.

T381 **Milk selenium content and performance of cows supplemented with selenized yeast.**
L. Q. Melo[1], L. L. Bitencourt[1], S. Siécola Júnior[1], G. S. Dias Júnior[1], N. M. Lopes[1], V. A. Silveira[1], I. R. Rios[1], R. A. N. Pereira[2], and M. N. Pereira*[1], [1]*Universidade Federal de Lavras*, *Lavras, Brazil*, [2]*Empresa de Pesquisa Agropecuária de Minas Gerais*, *Lavras, Brazil*.

T382 **Effect of direct-fed microbial (DFM) products on rumen bacterial communities in Holstein cows at 2 and 6 weeks postcalving.**
E. A. Galbraith*[1], A. H. Smith[1], K. J. Mertz[1], Z. Wu[2], and J. D. Ferguson[2], [1]*Danisco*, *Waukesha, WI*, [2]*University of Pennsylvania School of Veterinary Medicine*, *Kennett Square*.

T383 **Effects of a rumen protected B vitamin complex supplemented to multiparous Holstein cows on milk production and reproductive performance.**
S. O. Juchem*[1,2], P. H. Robinson[1], and E. Evans[3], [1]*University of California*, *Davis*, [2]*California State University*, *Fresno*, [3]*Technical Advisory Services*, *Bowmanville, ON, Canada*.

T384 **Effect of feeding live yeast on performance of Holstein cows during summer.**
R. S. Marsola*, M. Favoreto, F. T. Silvestre, J. H. Shin, A. T. Adesogan, C. R. Staples, and J. E. P. Santos, *University of Florida*, *Gainesville.*

T385 **Population dynamics of protozoa in dairy cows fed with Rumensin 200 and tallow during dry and lactating stages.**
H. Castillo, A. Castillo*, D. Dominguez, G. Villalobos, M. Arana, and J. A. Ortega, *Universidad Autonoma de Chihuahua*, *Chihuahua, Chihuahua, Mexico*.

T386 **Construction and analysis of metagenomic fosmid library from rumen microflora of Chinese Holstein dairy cow.**
D. Li, J. Q. Wang*, K. L. Liu, D. P. Bu, and W. Feng, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing , China*.

T387 **Effects of *Saccharomyces cerevisiae* and *Aspergillus niger* (fermentation soluble meal extracted) on productivity of Holstein cows in early lactation.**
R. Heydari, M. Dehghan-Banadaky*, K. Rezayazdi, and A. Zali, *Department of Animal Science,Campus of Agriculture and Natural Resources, University of Tehran*, *Karaj, Tehran, Iran*.

T388 **Diversity of nitrogen-fixing bacteria in Holstein dairy cow rumen.**
S. Zhao, J. Wang*, D. Bu, L. Zhou, and C. Zhang, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*.

T389 **Dietary cation-anion difference: Effects on fluid metabolites and health status of transition cows in Karst area.**
W. X. Wu*, *College of Animal Science, Guizhou University*, *Guiyang, China*.

T390 **Effects of subacute ruminal acidosis challenges on lipopolysaccharide endotoxin (LPS) in the rumen, cecum, and feces of dairy cows.**
S. Li, A. Kroeker, E. Khafipour, J. C. Rodriguez, D. O. Krause, and J. C. Plaizier*, *Department of Animal Science, University of Manitoba*, *Winnipeg, MB, Canada*.

T391 **Supplementing *Megasphaera elsdenii* modulates diurnal rumen fermentation profile in dairy cows.**
Q. Zebeli[1], S. Iqbal[1], A. Mazzolari[1], S. M. Dunn[1], W. Z. Yang[2], and B. N. Ametaj*[1], [1]*University of Alberta*, *Edmonton, AB, Canada*, [2]*Agriculture and Agri-Food Canada*, *Lethbridge, AB, Canada*.

T392 **Effects of supplementing *Megasphaera elsdenii* on preprandial rumen fermentation profile in dairy cows.**
Q. Zebeli[1], S. Iqbal[1], A. Mazzolari[1], S. M. Dunn[1], W. Z. Yang[2], and B. N. Ametaj*[1], [1]*University of Alberta*, *Edmonton, AB, Canada*, [2]*Agriculture and Agri-Food Canada*, *Lethbridge, AB, Canada*.

T393 **Diagnosis of subacute ruminal acidosis (SARA) using the Optium Xceed diabetes monitoring system.**
S. Li[1], A. Kroeker[1], D. O'Gorman[2], D. O. Krause[1], J. C. Rodriguez[1], and J. C. Plaizier*[1], [1]*Department of Animal Science, University of Manitoba*, *Winnipeg, MB, Canada*, [2]*Marigot Ltd., Carrigaline, Co. Cork, Ireland*.

T394 **Simplified procedure for quantifying ruminal microbe populations using real-time PCR.**
C. R. Mullins*, L. K. Mamedova, and B. J. Bradford, *Kansas State University*, *Manhattan.*

T395 **Effects of forage-to-concentrate ratio and rumen fermentation characteristics on apparent ruminal synthesis of niacin and vitamin B6 in lactating dairy cows.**
M. Seck*[1,3], J. A. Voelker Linton[2], M. S. Allen[2], P. Y. Chouinard[3], and C. L. Girard[1], [1]*Agriculture and Agri-Food Canada*, *Sherbrooke, Quebec, Canada*, [2]*Department of Animal Science, Michigan State University*, *East Lansing,* [3]*Departement de sciences animales, Universite Laval*, *Quebec, Quebec, Canada*.

T396 **The effect of high inclusion of monensin on lactation performance in dairy cows.**
L. R. Behling*[1], K. Perfield[2], R. Martin[1], R. Greenfield[1], and S. Onetti[1], [1]*Vita Plus Corporation*, *Madison, WI*, [2]*Elanco Animal Health*, *Greenfield, IN*.

T397 **Effects of a microbial fermentation product on milk production and blood metabolites on commercial dairies in eastern Canada.**
A. M. Gehman*[1], J. D. Johnston[2], and J. M. Tricarico[1], [1]*Alltech*, *Brookings, SD,* [2]*Ritchie Feed and Seed*, *Ottawa, Ontario, Canada*.

T398 **Effect of *Megasphaera elsdenii* NCIMB 41125 (Me) on production of lactating dairy cows.**
P. H. Henning*[1], L. J. Erasmus[2], C. H. Horn[3], and H. H. Meissner[1], [1]*MS Biotech*, *Centurion, South Africa*, [2]*University of Pretoria*, *Pretoria, South Africa*, [3]*Biotherapeutics*, *Centurion, South Africa*.

T399 **Effect of soluble yeast protein extract and dietary fermentable carbohydrate on fermentation, digestion, and N flow in rumen-simulating fermenters.**
G. A. Harrison*, M. D. Meyer, and K. A. Dawson, *Alltech*, *Nicholasville, KY.*

T400 **Effect of soluble yeast protein extract and culture feed rate on fermentation, digestion, and N flow in rumen-simulating fermenters.**
G. A. Harrison*, M. D. Meyer, and K. A. Dawson, *Alltech*, *Nicholasville, KY.*

T401 **Effect of essential oils on rumen fermentation, milk production, and feeding behavior in lactating dairy cows.**
L. R. Tager* and K. M. Krause, *West Virginia University*, *Morgantown.*

T402 **Rumen-protected choline affects methionine methyl group metabolism in lactating dairy cows.**
S. L. A Benoit, B. J. Bequette, and R. A. Erdman*, *University of Maryland*, *College Park.*

T403 **Cloning and identification of novel hydrolase genes from a metagenomic library of dairy cow rumen microflora and characterization of the expressed cellulases.**
X. Gong*, M. Qi, R. J. Forster, T. A. McAllister, and R. M. Teather, *Agriculture and Agri-Food Canada Research Centre*, *Lethbridge, AB, Canada*.

T404 **Development of a diet inoculate with two substrates by submerged solid fermentation.**
D. Díaz-Plascencia*[1], C. Rodríguez-Muela[1], F. Salvador[1], J. Jiménez[1], H. Rubio[2], S. Mena[3], and A. Elías[4], [1]*Universidad Autónoma de Chihuahua*, *Chihuahua, México*, [2]*Instituto Nacional de Investigaciones Agrícolas Forestales y Pecuarias*, *Chihuahua, México*, [3]*Universidad de Guadalajara*, *Jalisco, México*, [4]*Instituro de Ciencia Animal*, *La Habana, Cuba*.

T405 **Glycerol can replace corn grain in diets for transition dairy cows.**
E. R. Carvalho*, N. S. Schmelz, H. White, and S. S. Donkin, *Purdue University*, *West Lafayette, IN.*

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T406 **Evaluation of performance of lactating dairy cows supplemented with branched chain volatile fatty acids (Nutricattle).**
E. R. Val Neto*[1], R. P. Lana[1,2], H. N. Val[3], M. I. Leão[1], and A. B. Mâncio[1], [1]*Universidade Federal de Viçosa*, *Viçosa, MG, Brazil*, [2]*CNPq*, *Brasília, DF, Brazil*, [3]*Faculdades Associadas de Uberaba (FAZU)*, *Uberaba, MG, Brazil*.

T407 **Intake and apparent nutrient digestibility in dairy cows fed with different levels of sunflower cake in the ration.**
E. S. Pereira*[1], P. G. Pimentel[1], M. R. G. F. Costa[1], J. G. L. Regadas Filho[2], and J. E. L. Sousa[1], [1]*Universidade Federal do Ceará*, *Fortaleza, Ceará, Brazil*, [2]*Universidade Federal de Viçosa*, *Viçosa, Minas Gerais, Brazil*.

T408 **Milk production and composition from cows with different levels of sunflower cake in the ration.**
E. S. Pereira*[1], P. G. Pimentel[1], M. R. G. F. Costa[1], J. G. L. Regadas Filho[2], and J. E. L. Sousa[1], [1]*Universidade Federal do Ceará*, *Fortaleza, Ceará, Brazil*, [2]*Universidade Federal de Viçosa*, *Viçosa, Minas Gerais, Brazil*.

T409 **Supplemental metabolizable lysine delivered with Megamine-L improves productive performance of lactating cows.**
E. Block*[1], E Evans[2], and N. Clark[3], [1]*Church and Dwight Co., Inc., Princeton, NJ,* [2]*Evans Technical Consulting Services*, *Bowmanville, ON, Canada*, [3]*Atlantic Dairy and Forage Institute*, *Fredericton Junction, NB, Canada*.

T410 **A model to compare effects of supplemental fat sources on performance and dry matter intake in dairy cows: Effects of fat inclusion level.**
E. Block*[1] and E. Evans[2], [1]*Church and Dwight Co., Inc., Princeton, NJ,* [2]*Evans Technical Consulting Services*, *Bowmanville, ON, Canada*.

T411 **A model to compare the effects of fat sources upon performance and dry matter intake in dairy cows: Effects of trial duration.**
E. Block*[1] and E. Evans[2], [1]*Church & Dwight Co., Inc., Princeton, NJ,* [2]*Evans Technical Consulting Services*, *Bowmanville, ON, Canada*.

T412 **Hourly effective rumen degradation ratio in wheat DDGS, corn DDGS and blend DDGS from bio-ethanol plants: Effect of bio-ethanol plant and DDGS type.**
W. G. Nuez-Ortín* and P. Yu, *Department of Animal and Poultry Science, College of Agriculture and Bioresources, University of Saskatchewan*, *Saskatoon, SK, Canada*.

T413 **Production response of Holstein lactating cows to roasted or electron beam irradiated whole soybean.**
A. Akbarian[1], G. Ghorbani[1], M. Khorvash[1], P. Showrang[3], M. Dehghan-Banadaky*[2], and M. Jafari[1], [1]*Isfahan University of Technology*, *Isfehan, Iran*, [2]*University of Tehran*, *Karaj, Tehran, Iran*, [3]*Nuclear Science and Technology Research Institute, Atomic Energy Organization of Iran*, *Tehran, Iran*.

T414 **The relationship between nitrogen use efficiency and N isotopic fractionation in dairy cows using milk samples collected in the morning or afternoon.**
L. Cheng*[1], R. Dewhurst[2], J. Larkin[2], F. Buckley[3], C. Thackaberry[3], and G. Edwards[1], [1]*Lincoln University*, *Christchurch, Canterbury,New Zealand*, [2]*Teagasc*, *Dunsany, Co. Meath , Ireland*, [3]*Teagasc*, *Fermoy, Co. Cork, Ireland*.

T415 **Effect of replacing blood meal with rumen-protected amino acids on milk production and composition in lactating dairy cows.**
G. E. Aines*[1], G. F. Schroeder[2], M. Messman[2], and M. J. de Veth[1], [1]*Balchem Corporation*, *New Hampton, NY*, [2]*Cargill Animal Nutrition, Innovation Campus*, *Elk River, MN*.

T416 **Fatty acid composition of milk from Holstein cows fed diet supplemented with fish oil and canola oil from transition period to early lactation.**
T. S vafa, A Heravi Moussavi*, A. A Naserian, M Danesh Mesgaran, and R Valizadeh, *Ferdowsi University of Mashhad, Excellence Center for Animal Science, Faculty of Agriculture, PO Box 91775-1163, Mashhad, Khorasan Razavi, Iran*.

T417 **Partial replacement of soybean meal by encapsulated urea in commercial dairy herds.**
V. A. Silveira[1], N. M. Lopes[1], R. C. Oliveira[1], B. Gonzales[1], A. V. Siqueira[1], L. P. P. Bier[2], M. S. Zoni[3], W. Giardini[4], R. Almeida*[2], and M. N. Pereira[1], [1]*Universidade Federal de Lavras, Lavras, MG, Brazil*, [2]*Universidade Federal do Paraná, Curitiba, PR, Brazil*, [3]*Milkonsult, Castro, PR, Brazil*, [4]*Alltech do Brasil, Brazil*.

T418 **The effect of feeding a prototype of ruminally protected lysine (RPL) on production performance and plasma amino acid profile of early lactation dairy cattle.**
J. E. Nocek[1], M. Miura[2], and I. Shinzato*[2], [1]*Spruce Haven Farm and Research Center, Auburn, NY*, [2]*Ajinomoto Co., Inc., Tokyo, Japan*.

T419 **Effect of HMBi supplementation on splanchnic methionine metabolism in postpartum transition cows.**
M. Larsen*, K. F. Dalbach, B. M. L. Raun, and N. B. Kristensen, *Faculty of Agricultural Sciences, Aarhus University, Tjele, Denmark*.

T420 **The effect of abomasal infusion of histidine and proline on milk composition and amino acid utilization in high producing lactating dairy cows.**
M. W. Hofherr*, D. A. Ross, and M. E. Van Amburgh, *Cornell University, Ithaca, NY*.

T421 **Response of dairy cows to the supplementation of fatty acids from calcium salts of soybean oil or heated soybeans.**
G. S. Dias Júnior[1], N. M. Lopes[1], L. L. Bitencourt[1], V. A. Silveira[1], G. G. S. Salvati[1], N. N. Morais Júnior[4], E. O. S. Saliba[3], R. A. N. Pereira[2], and M. N. Pereira*[1], [1]*Universidade Federal de Lavras, Lavras, Brazil*, [2]*Empresa de Pesquisa Agropecuária de Minas Gerais, Lavras, Brazil*, [3]*Universidade Federal de Minas Gerais, Belo Horizonte, Brazil*, [4]*Instituto Federal de Educação Ciência e Tecnologia do Espirito Santo, Colatina, Brazil*.

T422 **Variability of estimated protected proteins of feather meals.**
J. A. Davidson*, K. B. Cunningham, H. C. Puch, and B. L. Miller, *LongView Animal Nutrition Center, Land O'Lakes Purina Feed, Gray Summit, MO*.

T423 **Milk fat responses to dietary short- and medium-chain fatty acids in lactating dairy cows.**
D Vyas*, B. B. Teter, and R. A. Erdman, *University of Maryland, College Park*.

T424 **Effect of feeding varied levels of crude protein and absorbable methionine on milk yield in lactating dairy cows.**
G. A. Broderick*[1], R. A. Patton[2], W. Heimbeck[3], and C. Parys[3], [1]*U. S. Dairy Forage Research Center, Madison, WI*, [2]*Nittany Dairy Nutrition, Inc., Mifflinburg, PA*, [3]*Evonik Degussa GmbH, Hanau, Germany*.

T425 **Methionine supplementation to diets varying in rumen undegradable soy protein.**
N. N. Morais Júnior[3], V. A. Silveira[1], N. M. Lopes[1], G. S. Dias Júnior[1], G. Pessoa Júnior[1], G. G. S. Salvati[1], C. O. Faria[5], R. A. N. Pereira[2], N. D. Luchini[4], and M. N. Pereira*[1], [1]*Universidade Federal de Lavras, Lavras, Brazil*, [2]*Empresa de Pesquisa Agropecuária de Minas Gerais, Lavras, Brazil*, [3]*Instituto Federal de Educação Ciência e Tecnologia do Espirito Santo, Colatina, Brazil*, [4]*Adisseo, Alpharetta, GA*, [5]*Better Nature Research, Ijaci, Brazil*.

T426 **Effects of level of rumen degradable protein and corn distillers grains in corn silage-based diets on milk production and ruminal fermentation in lactating dairy cows.**
G. I. Zanton* and A. J. Heinrichs, *The Pennsylvania State University, University Park.*

T427 **Effect of quebracho-chestnut tannin extracts at two dietary crude protein levels on performance and rumen fermentation of dairy cows.**
M. J. Aguerre*[1], M. A. Wattiaux[1], M. C. Capozzolo[1], P. Lencioni[2], and C. Cabral[2], [1]*University of Wisconsin-Madison, Madison*, [2]*Silvateam, Indunor S. A, Argentina*.

T428 **Effect of quebracho-chestnut tannin extracts at two dietary crude protein levels on nitrogen partitioning in lactating dairy cows.**
M. J. Aguerre*[1], M. A. Wattiaux[1], M. C. Capozzolo[1], P. Lencioni[2], and C. Cabral[2], [1]*University of Wisconsin-Madison, Madison*, [2]*Silvateam, Indunor S. A., Argentina*.

T429 **Digestibility of amino acids in rumen undegraded corn silage determined by the modified three-step procedure.**
S. M. Fredin*[1], S. E. Boucher[2], D. Sapienza[3], N. L. Whitehouse[1], and C. G. Schwab[1], [1]*University of New Hampshire, Durham*, [2]*William H. Miner Agricultural Research Institute, Chazy, NY*, [3]*Sapienza Analytica, LLC, Slater, IA*.

T430 **Evaluation of sampling protocols to estimate ruminal microbial protein production using urinary excretion of purine derivatives.**
S. E. Boucher*, H. M. Dann, P. K. Krawczel, H. M. Gauthier, J. D. Darrah, and R. J. Grant, *William H. Miner Agricultural Research Institute, Chazy, NY*.

T431 **Determining the difference in the supply of metabolizable methionine to dairy cows fed four methionine supplements using concentrations of selenium in milk.**
J. E. Plank*, W. P. Weiss, and N. R. St-Pierre, *The Ohio State University, Columbus*.

T432 **The relationship between milk urea nitrogen concentrations, diet, and milk production on Northeast dairy farms.**
K. M. Kouri*, *Poulin Grain*, *Newport, Vermont.*

T433 **A critique of dose-response plots that relate changes in content and yield of milk protein to predicted concentrations of lysine in metabolizable protein by the NRC (2001), CPM-Dairy (v. 3. 0. 10), and AMTS Cattle (v. 2. 1. 31) models.**
N. Whitehouse*[1], C. Schwab[1], D. Luchini[2], and B. Sloan[2], [1]*University of New Hampshire*, *Durham,* [2]*Adisseo*, *Atlanta, GA.*

T434 **Fatty acid supplementation to periparturient dairy cows fed diets containing low basal concentrations of fatty acids.**
L. F. Greco*, M. Garcia, M. G. Favoretto, R. S. Marsola, L. T. Martins, R. S. Bisinotto, E. S. Ribeiro, F. S. Lima, W. W. Thatcher, C. R. Staples, and J. E. P. Santos, *University of Florida*, *Gainesville.*

T435 **Intake, digestibility and productive performance of dairy cows fed with sunflower meal.**
A. S. de Oliveira*[1], J. M. S. Campos[2], E. P. Viana[2], D. S. Caixeta[2], S. C. Valadares Filho[2], A. M. F. Santiago[2], J. P. do Carmo[2], A. C. S. Souza[2], G. H. Soares[2], J. P. Giordani[2], and L. F. do Lago[2], [1]*Universidade Federal de Mato Grosso*, *Sinop, MT, Brazil*, [2]*Universidade Federal de Viçosa*, *Viçosa, MG, Brazil*.

T436 **Metabolism of nitrogen compounds in dairy cows fed with sunflower meal.**
A. S. Oliveira*[1], J. M. S. Campos[2], D. S. Caixeta[2], E. P. Viana[2], S. C. Valadares Filho[2], L. F. do Lago[2], A. M. F. Santiago[2], J. P. Giordani[2], G. H. Soares[2], J. P. do Carmo[2], and A. C. S. Souza[2], [1]*Universidade Federal de Mato Grosso*, *Sinop, MT, Brazil*, [2]*Universidade Federal de Viçosa*, *Viçosa, MG, Brazil*.

T437 **A critique of dose-response plots that relate changes in content and yield of milk protein to predicted concentrations of methionine in metabolizable protein by the NRC (2001), CPM-Dairy (v. 3. 0. 10), and AMTS Cattle (v. 2. 1. 31) models.**
N. Whitehouse*[1], C. Schwab[1], D. Luchini[2], and B. Sloan[2], [1]*University of New Hampshire*, *Durham,* [2]*Adisseo*, *Atlanta, GA.*

T438 **In situ ruminal degradability of crambe, sunflower and soybean grains, and its by-products.**
R. H. de Tonissi e Buschinelli de Goes*, K. A. de Souza, R. A. Patussi, K. A. Guimarães Nogueira, D. de Faria Pereira, T. da Cunha Cornélio, K. C. da Silva Brabes, and E. Reuter de Oliveira, *Universidade Federal da Grande Dourados*, *Dourados, MS, Brazil*.

T439 **Effects of supplemented high linoleic or linolenic oil in the diet on lipid metabolism by rumen microbes in sheep.**
S. H. Choi*[1], G. W. Jin[2], H. G. Lee[3], C. W. Choi[4], S. S. Chang[4], S. B. Smith[1], and M. K. Song[2], [1]*Department of Animal Science, Texas A&M University*, *College Station,* [2]*Department of Animal Science, ChungBuk National University*, *Cheong Ju, Chungbuk, Korea*, [3]*Department of Animal Science, Pusan National University*, *Miryang, Gyongnam, Korea*, [4]*National Institute of Animal Science, RDA*, *Suwon, Gyunggi, Korea*.

T440 **Effects of increasing amounts of high-linolenic perilla fatty acid infused into the duodenum on blood lipids metabolism and their susceptibility to peroxidation in dairy cows.**
Q. S. Liu[1,2], J. Q. Wang*[1], D. P. Bu[1], E. Khas[1], G. Yang[1], L. Y. Zhou[1], P. Sun[1], and K. L. Liu[1], [1]*State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*, [2]*College of Animal Science and Technology, Yangzhou University*, *Yangzhou, China*.

T441 **Effects of feeding ruminally protected lysine, with or without isoleucine, valine and histidine, to lactating dairy cows on productive performance and plasma amino acid profiles.**
P. H. Robinson[1], S. Juchem[1], N. Swanepoel*[2], and E. Evans[3], [1]*UC Davis*, *Davis,* [2]*Meadow Feeds*, *Roodepoort, South Africa*, [3]*Essi Evans Technical Advisory Services*, *Bowmanville, ON, Canada*.

T442 **Effect of extruded cotton seed and canola seed on the composition of unsaturated fatty acids in plasma, erythrocytes and liver of mehraban male lambs.**
A. Akbarian[1], A. Golian*[1], A. Tahmasbi[1], M. Hoseini Ghafari[1], and M. Mirzaee[2], [1]*Ferdowsi University of Mashhad*, *Mashhad, Khorasan Razavi, Iran*, [2]*Isfahan University of Technology*, *Isfahan, Iran*.

T443 **Effects of roasted and electron beam irradiation on ruminal and intestinal disappearance of whole soybean.**
A. Akbarian[1], M. Khorvash[1], G. Ghorbani[1], M.Dehghan-Banadaky*[2], P. Shawrang[3], and E. Ghasemi[1], [1]*Isfahan University of technology, Department of animal Sci., Isfehan, Iran*, [2]*University of Tehran, Department of Animal Sci., Karaj, Tehran, Iran*, [3]*Nuclear Science and Technology Research Institute, Atomic Energy Organization of Iran*, *Tehran, Iran*.

T444 **Meta-analysis for the prediction of net portal absorption (NPA) of amino acid-N (AAN) and ammonia (NH_3) in ruminants.**
C. Côrtes*[1], R. Martineau[1], D. Sauvant[2], D. R. Ouellet[1], J. Vernet[3], I. Ortigues-Marty[3], and H. Lapierre[1], [1]*Agriculture and Agri-Food Canada*, *Sherbrooke, Quebec, Canada*, [2]*AgroParisTech*, *Paris, France*, [3]*URH INRA*, *Theix, France*.

T445 **Effect of tannins in pistachio by-product and urea infusion into the rumen on rumen fermentation and blood metabolites in Iranian Balochi sheep.**
H. Gholizadeh, A. A. Naserian*, R. Valizadeh, and A. M. Tahmasebi, *Ferdowsi University of Mashhad*, *Mashhad, Iran*.

T446 **The protection of nano-encapsulated conjugated linoleic acid (CLA) from biohydrogenation by rumen bacteria.**
S. D. Cho*[1], H. G. Park[1], H. G. Ji[2], E. G. Kweon[3], and Y. J. Kim[1], [1]*Department of Food and Biotechnology, Korea University*, *Chungnam, Korea*, [2]*Pharmachem*, *Samjung-dong, Ohjung-gu, Bucheon-city, Kyounggi-do, Korea*, [3]*Hanwoo Experimental Station, National Livestock research Institute*, *Gangwon, Korea*.

T447 **Study on the effect of flaxseed and vitamin E supplementation on rumen biohydrogenation by Rumen Simulation Technique (RUSITEC).**
H. Sultana*[1], M. L. He[1], M. E. R. Dugan[2], and T. A. McAllister[1], [1]*Agriculture and Agri-Food Research Centre*, *Lethbridge, AB, Canada*, [2]*Agriculture and Agri-Food Research Centre*, *Lacombe, AB, Canada*.

T448 **Partial replacement of common bean by-products (*Phaseolus vulgaris*) with soybean meal impacts on feed intake and apparent digestibility in growing lambs.**
H. P. Mejia[1], A. Z. M. Salem*[1,2], E. J. D. Coronado[1], J. L. Tinoco[1], and F. Avilés[1], [1]*Universidad Autónoma del Estado de México*, *Centro Universitario UAEM-Temascaltepec, Estado de México, C. P. 51300, México*, [2]*University of Alexandria*, *Department of Animal Production, Faculty of Agriculture (El-Shatby), Egypt*.

T449 **The effect of partial replacement of soya bean meal by *Phaseolus vulgaris* byproducts on growth performance in Pelibuey growing lambs fed finishing diets.**
H. P. Mejia[1], A. Z. M. Salem*[1,2], J. L. Tinoco[1], R. S. Robollar[1], E. J. D. Coronado[1], and F. Avilés[1], [1]*Universidad Autónoma del Estado de México*, *Centro Universitario UAEM-Temascaltepec, Estado de México, C. P. 51300, México*, [2]*University of Alexandria*, *Department of Animal Production, Faculty of Agriculture (El-Shatby), Egypt*.

Small Ruminant
Goat Production

T450 **Effect of supplemental grower/finisher ration protein level on growth rate, chevon production and cost of gain of crossbred meat goats grazing Joy Chicory pasture.**
M. Lema*, S. Murray, and B. Barlow, *Tennessee State University*, *Nashville*.

T451 **Effects of breed and slaughter endpoint on feed intake, growth performance, and carcass traits of purebred Boer and Kiko goat kids.**
S. Solaiman*[1], B. R. Min[1], N. Gurung[1], J. Behrends[2], E. Taha[1], and C. Hill[1], [1]*Tuskegee University*, *Tuskegee, AL,* [2]*Mississippi State University*, *Mississippi State.*

T452 **Effects of feeding varying levels of peanut skins on fatty acid profile of growing Kiko crossbred intact male goats.**
N. K. Gurung*[1], A. R. Stone[1], S. G. Solaiman[1], D. L. Rankins Jr.[2], K. R. Willian[1], and W. H. McElhenney[1], [1]*Tuskegee University*, *Tuskegee, AL*, [2]*Auburn University*, *Auburn, AL*.

T453 **Effect of cull-chickpeas on carcass characteristics and commercial cuts of feedlot hair sheep.**
F. G. Rios*[1,4], H. Bernal-Barragán[2,4], M. A. Cerrillo-Soto[3,4], A. Estrada-Angulo[1,4], E. Gutiérrez- Ornelas[2,4], A. S. Juárez-Reyes[3,4], J. F. Obregon[1,4], and J. J. Portillo-Loera[1,4], [1]*FMVZ-Universidad Autónoma de Sinaloa*, *Culiacán, Sinaloa, México*, [2]*FA-Universidad Autónoma de Nuevo León*, *Monterrey, Nuevo León, Mexico*, [3]*FMVZ-Universidad Juárez del Estado de Durango*, *Durango, Durango, México*, [4]*Red Internacional de Nutrición y Alimentación en Rumiantes*, *Culiacán, Sinaloa, México*.

T454 **Effects of intraduodenally infused soybean small peptides and amino acids on absorption of peptides in the small intestine of dairy goats.**
L. Wang[1,2], S. Li*[1], Z. Cao[1], and H. Liu[1], [1]*China Agricultural University*, *Beijing, China*, [2]*Ningxia University*, *Yinchuan, China*.

T455 **Effects of graded introduodenal soybean small peptide infusion on absorption of small peptides in the small intestine of dairy goats.**
L. Wang[1,2], S. Li*[1], Z. Cao[1], and H. Liu[1], [1]*China Agricultural University*, *Beijing, China*, [2]*Ningxia University*, *Yinchuan, China*.

T456 **Effects of shearing on energy use by growing Angora goats.**
R. Puchala*[1], A. Helal[1,2], A. L. Goetsch[1], and T. Sahlu[1], [1]*American Institute for Goat Research, Langston University*, *Langston, OK,* [2]*Animal and Poultry Nutrition Department, Desert Research Center*, *El Matareya, Cairo, Egypt*.

T457 **Optimum duration of performance testing growing Boer bucks for growth rate, feed intake, and feed efficiency.**
W. Hu*[1], T. A. Gipson[1], S. P. Hart[1], L. J. Dawson[1,2], A. L. Goetsch[1], and T. Sahlu[1], [1]*American Institute for Goat Research, Langston University*, *Langston, OK,* [2]*College of Veterinary Medicine, Oklahoma State University*, *Stillwater.*

T458 **Feeding behavior of intact yearling hair sheep and meat goat males pen-fed in single- and mixed-species groups.**
S. Wildeus* and R. A. Stein, *Virginia State University*, *Petersburg*.

T459 **Feeding glucogenic precursors to dairy goats carrying twins around kidding.**
S. Cavini[1], M. Rodriguez-Prado[1], S. Calsamiglia*[1], A. Foskolos[1], and M. A. Gomez[2], [1]*Universitat Autonoma de Barcelona*, *Bellaterra, Spain*, [2]*NUTEGA*, *Madrid, Spain*.

T460 **Evaluation of milk serum amyloid A 3 (M–SAA3) protein as a potential mammary health indicator in goats.**
A. Domènech*[1], A. Gómez–Martín[2], C. De la Fe[2], J. C. Corrales[2], and A. Serrano[1], [1]*Ruminant Production, IRTA*, *Barcelona, Spain*, [2]*Department of Animal Health, University of Murcia*, *Murcia, Spain*.

T461 **Milk fat synthesis is progressively reduced in dairy goats fed increasing levels of an unprotected conjugated linoleic acid (U-CLA) supplement.**
D. Fernandes[1], J. Souza[1], M. Baldin[1], R. Dresch[1], E. C. Sandri[1], J. H. Bruschi[2], F. C. F. Lopes[2], M. A. S. Gama[2], and D. E. Oliveira*[1], [1]*Santa Catarina State University*, *Chapecó, Brazil*, [2]*National Dairy Cattle Research Center*, *Juiz de Fora, Minas Gerais, Brazil*.

T462 **Requirements of magnesium, potassium and sodium for maintenance and growth of Boer crossbred kids.**
M. H. M. R. Fernandes[1], K. T. Resende[1], L. O. Tedeschi[2], J. S. Fernandes Jr.[1], and I. A. M. A. Teixeira*[1], [1]*Universidade Estadual Paulista/UNESP and INCT-CA members*, *Jaboticabal, SP 14870, Brazil*, [2]*Texas A&M University*, *College Station.*

T463 **Calcium and phosphorous requirements for maintenance and growth of Boer crossbred kids.**
M. H. M. R. Fernandes[1], K. T. Resende[1], L. O. Tedeschi[2], J. S. Fernandes Jr.[1], and I. A. M. A. Teixeira*[1], [1]*Universidade Estadual Paulista/UNESP and INCT-CA members*, *Jaboticabal, SP 14870, Brazil*, [2]*Texas A&M University*, *College Station.*

T464 **Blood mineral concentration of adult goats in a subtropical region of southern Mexico during the rainy and dry season.**
R. Rojo*, A. Z. M. Salem, F. Jiménez, S. Rebollar, J. L. Tinoco, B. Albarrán, J. F. Vázquez, D. Cardoso, J. Hernández, and F. González, *Centro Universitario UAEM-Temascaltepec*, *Temascaltepec, Estado de México, México*.

T465 **Effect of copper and zinc on in vitro ruminal fermentation of total mixed ration in goats.**
J. F. Vazquez[1], R. Rojo*[1], D. Lopez[1], A. Z. M. Salem[1], J. M. Gonzalez[2], D. Colín[1], and J. L. Tinoco[1], [1]*Centro Universitario UAEM-Temascaltepec*, *Temascaltepec, Estado de México, Mexico*, [2]*Facultad de Agrobiología, Universidad Auténoma de Tlaxcala*, *Ixtacuixtla, Tlaxcala, México*.

T466 **Nutritional supplementation does not improve the sexual response of goats managed in Northern Mexico.**
F. G. Véliz*[1], C. A. Meza-Herrera[2], M. A. De Santiago-Miramontes[1], R. Rodríguez-Martínez[1], and M. Mellado[3], [1]*Universidad Autónoma Agraria Antonio Narro*, *Torreón, Coahuila, Mexico*, [2]*Universidad Autónoma Chapingo, Unidad Regional Universitaria de Zonas Áridas*, *Bermejillo, Durango, México*, [3]*Universidad Autónoma Agraria Antonio Narro*, *Buenavista, Saltillo, Coahuila*.

T467 **Seasonal reproductive activity of Nubian, Alpine and Criollo female goats exposed to natural photoperiod in a semiarid region of central-north Mexico.**
M. T. Rivera[1], M. O. Diaz-Gomez[1], M. Rincon[1], F. J. Escobar[1], C. F. Arechiga[2], H. G. Gamez[3], J. Urrutia*[3], and H. Vera-Avila[3], [1]*Universidad Autonoma de Zacatecas*, *Zacatecas, Mexico.*, [2]*Universidad Autonoma de San Luis Potosi*, *San Luis Potosi, Mexico*, [3]*Instituto Nacional de Investigaciones Forestales, Agricolas y Pecuarias*, *San Luis Potosi, Mexico.*

T468 **Conditions to test electric fence modifications of cattle barb wire fence for goat containment.**
A. L. Goetsch*, G. D. Detweiler, R. Puchala, T. Sahlu, and T. A. Gipson, *American Institute for Goat Research, Langston University*, *Langston, OK.*

T469 **Accuracy of calculated distances between consecutive fixes of GPS collars worn by goats.**
T. A. Gipson*, G. D. Detweiler, and A. L. Goetsch, *American Institute for Goat Research, Langston University*, *Langston, OK.*

T470 **Use of biometric measurements to estimate fetal mass in dairy goats.**
C. J. Härter*, I. A. M. Teixeira, L. D. Lima, H. G. O. Silva, A. R. Rivera, and K. T. Resende, *Universidade Estadual Paulista*, *Jaboticabal, SP, Brasil*.

T471 **The relationship of real-time ultrasound body composition measurements, body weight and hip height with body condition score in mature Boer crossbred does.**
A. M. Duff*, J. A. Carter, C. A. Hughes, K. N. Gates, C. S. Ellason, W. S. Stewart, and F. R. B. Ribeiro, *Texas A&M University-Commerce*, *Commerce*.

Teaching/Undergraduate and Graduate Education
Teaching

T472 **Relationship between participation in youth equine organizations and collegiate equine activities.**
M. Nicodemus*, *Mississippi State University*, *Mississippi State*.

T473 **Free Web applications for educational purposes.**
P. A. Curtis* and M. O. Kloepper, *Auburn University*, *Auburn, AL.*

T474 **Applications of functional anatomy in farm animals using collaborative learning.**
H. G. Kattesh*, M. H. Sims, R. B. Reed, and F. M. Hopkins, *University of Tennessee*, *Knoxville.*

T475 **Measuring the impact of varied instructional approaches in an introductory animal science course.**
B. G. Bolt* and K. D. Layfield, *Clemson University*, *Clemson, SC.*

SYMPOSIA AND ORAL SESSIONS

Danisco International Dairy Science Award Lecture
Chair: **Connie Sindelar, Danisco Animal Health**
501/502

9:30 AM **Introduction**

9:40 AM **From Metchnikoff to Microencapsulation: Developments in science and technology on the survivability of probiotic bacteria in dairy foods.**
K. Kailasapathy, *University of Western Sydney, Australia.*

Animal Behavior and Well-Being
Sow Housing, Management, and Stress
Chair: **Jeremy Marchant-Forde, USDA-ARS**
Korbel Ballroom 3c

9:30 AM 409 **Productivity and well being of pregnant sows in loose housing is affected by floor space allowance and dietary fiber content.**
A. R. Hanson*[1], A. E. DeDecker[2], J. L. Salak-Johnson[2], P. M. Walker[1], and J. P. Holt[1], [1]*Illinois State University*, *Normal,* [2]*University of Illinois*, *Urbana.*

9:45 AM 410 **Effects of fiber and floor space allowance on group kept dry sow well-being.**
A. E. DeDecker*[1], A. R. Hanson[2], P. M. Walker[2], and J. L. Salak-Johnson[1], [1]*University of Illinois*, *Urbana,* [2]*Illinois State University*, *Normal.*

10:00 AM 411 **Effect of alternative individual and group housing on dry sow performance and physiology.**
A. E. DeDecker*[1], A. R. Hanson[2], P. M. Walker[2], and J. L. Salak-Johnson[1], [1]*University of Illinois*, *Urbana,* [2]*Illinois State University*, *Normal.*

10:15 AM 412 **Effect of alternative accommodations on sow behavior during gestation.**
A. M. Visconti*[1], A. E. DeDecker[1], A. R. Hanson[2], P. M. Walker[2], and J. L. Salak-Johnson[1], [1]*University of Illinois*, *Urbana*, [2]*Illinois State University*, *Normal*.

10:30 AM 413 **Effects of alternative housing systems on the well-being of gestating sows.**
A. E. DeDecker* and J. L. Salak-Johnson, *University of Illinois*, *Urbana.*

10:45 AM 414 **The effect of a repeated prenatal stressor and low-dose Ketamine on the anxiety and social behavior of pigs.**
B. L. Davis*[1] and M. A. Sutherland[2], [1]*Texas Tech University*, *Lubbock,* [2]*Ruakura Research Centre, AgResearch*, *Hamilton, New Zealand*.

11:00 AM 415 **Heart rate variability—A tool to differentiate positive and negative affective states in pigs?**
R. Poletto*[1], R. M. Marchant-Forde[1], J. N. Marchant-Forde[1], J. L. Rault[1,2], D. F. Hogan[3], and D. C. Lay Jr.[1], [1]*USDA-ARS-Livestock Behavior Research Unit*, *West Lafayette, IN,* [2]*Department of Animal Sciences, Purdue University*, *West Lafayette, IN,* [3]*Veterinary Clinical Sciences, Purdue University*, *West Lafayette, IN.*

11:15 AM 416 **A combination of head/heart electric stunning is more effective than the head-only method in pigs.**
K. D. Vogel*[1], G. Badtram[2,3], J. R. Claus[3], T. Grandin[1], S. Turpin[3], R. E. Weyker[3], and E. Voogd[4], [1]*Department of Animal Sciences, Colorado State University*, *Fort Collins,* [2]*Wisconsin Department of Agriculture, Trade, and Consumer Protection, Division of Food Safety*, *Madison,* [3]*Department of Animal Sciences, University of Wisconsin-Madison*, [4]*Voogd Consulting, Inc., West Chicago, IL.*

11:30 AM 417 **Effects of pen size on the stress response of market weight pigs during loading and unloading.**
L. M. Gesing*[1], A. K. Johnson[1], K. J. Stalder[1], J. T. Selsby[1], M. Faga[2], A. Whiley[2], S. Abrams[2], H. Hill[2], R. Bailey[3], and M. J. Ritter[4], [1]*Iowa State University*, *Ames,* [2]*Iowa Select Farms*, *Iowa Falls,* [3]*JBS Swift and Co., Marshalltown, IA,* [4]*Elanco Animal Health*, *Greenfield, IN.*

11:45 AM 418 **Effects of vehicle design on blood stress indicators and meat quality in pigs of three genotypes for two different travel distances.**
A. Vanelli Weschenfelder*[1,2], S. Torrey[3], N. Devillers[2], L. Saucier[1], and L. Faucitano[2], [1]*Université Laval*, *Sainte-Foy, Québec, Canada*, [2]*Agriculture and Agri-Food Canada*, *Lennoxville, Québec, Canada*, [3]*University of Guelph*, *Guelph, ON, Canada*.

12:00 PM 419 **Effects of pasture versus stall housing on cortisol and DHEA concentrations in young quarter horses.**
S. M. Garey*, T. H. Friend, L. R. Berghman, A. L. Adams, and C. L. Terrill, *Texas A&M University*, *College Station*.

12:15 PM 420 **Use of infrared thermography to measure inflammation associated with castration and anti-inflammatory drugs.**
L. A. González*[1], K. S. Schwartzkopf-Genswein[2], E. Fierheller[3], E. Janzen[3], N. Caulkett[3], and T. A. McAllister[2], [1]*University of Manitoba*, *Winnipeg, Manitoba, Canada*, [2]*Agriculture and Agri-Food Canada*, *Lethbridge, Alberta, Canada*, [3]*University of Calgary*, *Calgary, Alberta, Canada*.

12:30 PM 421 **Influence of cattle temperament on stress hormones and IgG concentrations in Angus-cross calves.**
R. C. Vann*[1], N. C. Burdick[2], J. G. Lyons[2], T. H. Welsh, Jr. [2], and R. D. Randel[3], [1]*MAFES-Brown Loam Research Station*, *Raymond, MS,* [2]*Texas AgriLife Research*, *College Station,* [3]*Texas AgriLife Research*, *Overton.*

Animal Health Symposium
Accounting for Diseased Animals in Research Trials
(Outliers, Treatments, Interactions)/Disease Induction by Treatment?

Chair: **Isis K. Mullarky, Virginia Tech**
Sponsor: Elanco Animal Health
503/504

9:30 AM **Introduction**

9:35 AM 422 **Factors influencing onset of disease and subsequent effects on feedlot performance.**
R. M. Enns*[1], R. L. Weaber[2], H. Van Campen[1], and G. H. Loneragan[3], [1]*Colorado State University*, *Fort Collins*, [2]*University of Missouri*, *Columbia*, [3]*West Texas A&M University*, *Canyon*.

10:05 AM 423 **Reporting standards for randomized controlled trials in cattle: Improving the quality of research.**
I. A. Gardner*[1], A. M. O'Connor[2], J. M. Sargeant[3], J. S. Dickson[4], and M. E. Torrence[5], [1]*University of California , Davis,* [2]*Iowa State University*, *Ames,* [3]*University of Guelph*, *Guelph, Ontario, Canada*, [4]*Iowa State University*, *Ames,* [5]*USDA-ARS*, *Beltsville, MD*.

10:35 AM 424 **Accounting for diseased animals in research trials.**
G. D. Snowder*, *National Center for Foreign Animal and Zoonotic Disease Defense*, *College Station, TX*.

ARPAS-Ruminant Nutrition Joint Symposium
Nutrition Models – Where Are We Going in the Next Decade?

Chair: **Joanne Knapp, Fox Hollow Consulting, LLC**
Sponsor: EAAP
301/302

9:30 AM 425 **The role of models in animal nutrition: Research and field applications.**
J. A. Metcalf* and N. S. Ferguson, *Nutreco Canada Inc.*, *Guelph, Ontario, Canada*.

9:50 AM 426 **Nitrogen recycling and rumen degradable protein requirements: Quantitative updates to describe microbial requirements, sources, and applications in ration formulation.**
M. E. Van Amburgh*, E. B. Recktenwald, D. A. Ross, R. J. Higgs, T. R. Overton, and L. E. Chase, *Cornell University*, *Ithaca, NY.*

10:30 AM 427 **Tackling the variable efficiencies in post-absorptive amino acid utilization.**
M. D. Hanigan*[1] and E. C. Titgemeyer[2], [1]*Virginia Polytechnic Institute and State University*, *Blacksburg,* [2]*Kansas State University*, *Manhattan.*

11:10 AM 428 **VFA production and absorption: modeling the impacts on energy availability.**
A. Bannink*[1], J. France[2], J. L. Ellis[2], and J. Dijkstra[3], [1]*Animal Sciences Group, Wageningen UR*, *Lelystad, the Netherlands*, [2]*Centre for Nutrition Modelling, University of Guelph*, *Guelph, Ontario, Canada*, [3]*Wageningen University*, *Wageningen, the Netherlands*.

11:50 AM 429 **Predicting dry matter intake responses: modeling the influence of cattle management.**
R. J. Grant*[1], T. P. Tylutki[2], and P. D. Krawczel[1], [1]*William H. Miner Agricultural Research Institute*, *Chazy, NY*, [2]*AMTS LLC*, *Cortland, NY*.

Breeding and Genetics
Crossbreeding
Chair: **Katie Olsen, USDA-ARS Animal Improvement Programs Laboratory**
403/404

9:30 AM 430 **Application of a crossbred model reveals additional genetic variation in reproduction traits of commercial females.**
S. Bloemhof*[1,2], E. F. Knol[1], A. Kause[2], and I. Misztal[3], [1]*IPG, Institute for Pig Genetics B. V., Beuningen, the Netherlands*, [2]*Animal Breeding and Genomics Centre, Wageningen University, Wageningen, the Netherlands*, [3]*Department of Animal and Dairy Science, University of Georgia, Athens*.

9:45 AM 431 **Genetics-nutrition interactions influencing wool spinning fineness in Australian crossbred sheep.**
A. E. O. Malau-Aduli* and B. Holman, *School of Agricultural Science/TIAR, University of Tasmania, Hobart, Tasmania 7001, Australia*.

10:00 AM 432 **Effects of index selection and sire breed on crossbred lamb growth and finishing.**
G. C. Márquez*[1], W. Haresign[2], M. H. Davies[3], R. Roehe[4], L. Bünger[4], G. Simm[4], and R. M. Lewis[1,4], [1]*Virginia Polytechnic Institite and State University, Blacksburg,* [2]*Aberystwyth University, Wales, UK*, [3]*ADAS Rosemaund, Preston Wynne, UK*, [4]*Scottish Agricultural College, Edinburgh, UK*.

10:15 AM 433 **Inclusion of the inbreeding coefficient into models for genetic evaluation of dairy cattle.**
C. A. García-Munguía, A. Ruíz-Flores*, R. Núñez-Domínguez, R. Ramírez-Vlaverde, and R. López-Ordaz, *Universidad Autónoma Chapingo, Chapingo, México, México*.

10:30 AM 434 **Jersey-sired and Montbeliarde-sired crossbred heifers compared to pure Holstein heifers for survival and fertility from birth to first parturition.**
A. R. Hazel*, L. B. Hansen, B. J. Heins, A. J. Seykora, D. G. Johnson, and J. G. Linn, *University of Minnesota, St. Paul*.

10:45 AM 435 **Productivity over five lactations of Normande, Montbeliarde, and Scandinavian Red crossbreds compared to pure Holsteins in commercial dairies in California.**
B. J. Heins* and L. B. Hansen, *University of Minnesota, St. Paul*.

11:00 AM 436 **Death rates, survival rates to fifth lactation, and profitability of Normande, Montbeliarde, and Scandinavian Red crossbreds compared to pure Holsteins.**
B. J. Heins* and L. B. Hansen, *University of Minnesota, St. Paul*.

11:15 AM 437 **Production, reproduction, health and growth traits in backcross Holstein × Jersey and their Holstein contemporaries.**
D. W. Bjelland*, N. M. Esser, K. A. Weigel, and P. C. Hoffman, *University of Wisconsin, Madison*.

11:30 AM 438 **Multibreed genomic evaluation of dairy cattle.**
K. M. Olson*[1] and P. M. VanRaden[2], [1]*Virginia Polytechnic Institute and State University, Blacksburg,* [2]*Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD.*

Food Safety
Poultry Aspects
Chair: **Michael Hume, USDA, ARS, SPARC**
Korbel Ballroom 4abc

9:30 AM 439 **Hide and pen floor contamination and transmission of *Escherichia coli* O157:H7 among feedlot steers.**
K. Stanford*[1], T. P. Stephens[1], and T. A. McAllister[2], [1]*Alberta Agriculture and Rural Development, Lethbridge, Alberta Canada*, [2]*Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada*.

9:45 AM 440 **Feed supplementation with caprylic acid reduces *Campylobacter* colonization in market-aged broiler chickens without altering cecal microbial populations.**
I. Reyes-Herrera*[1], F. Solis de los Santos[1], M. Hume[2], K. Venkitanarayanan[3], A. M. Donoghue[4], I. Hanning[1], M. F. Slavik[1], V. F. Aguiar[1], J. H. Metcalf[1], P. J. Blore[1], and D. J. Donoghue[1], [1]*Dept. Poultry Science, University of Arkansas, Fayetteville,* [2]*Food and Feed Safety Research Unit, Southern Plains Agricultural Research Center, USDA-ARS, College Station, TX,* [3]*Dept. Animal Science, University of Connecticut, Storrs,* [4]*Poultry Production and Product Safety Research Unit, USDA-ARS, Fayetteville, AR.*

10:00 AM 441 **Evaluating the prevalence and distribution of *Campylobacter* in newly constructed broiler houses.**
K. N. Eberle*[1], J. L. Purswell[2], J. D. Davis[1], C. D. McDaniel[1], and A. S. Kiess[1], [1]*Mississippi State University, Mississippi State,* [2]*USDA-ARS Poultry Research Unit, Mississippi State*.

10:15 AM 442 **Colonization of marker and field strains of *Salmonella* Enteritidis and Typhimurium in antibiotic pretreated and non-pretreated laying hens.**
J. F. Hannah*[1], J. L. Wilson[1], N. A. Cox[2], L. J. Richardson[2], J. A. Cason[2], and R. J. Buhr[2], [1]*University of Georgia, Department of Poultry Science, Athens*, [2]*USDA, ARS, Richard Russell Research Center, Athens, GA*.

10:30 AM 443 **Evaluation of *Campylobacter* challenge route (in ovo vs. crop) and feed additives to reduce caecal *Campylobacter* in broilers.**
T. A. Scott*, J. E. de Oliveira, and E. Hangoor, *Provimi Feed Solutions, Sint-Stevens-Woluwe, Belgium*.

10:45 AM 444 **The efficacy of the natural plant extracts, thymol and carvacrol, against *Campylobacter* colonization in broiler chickens.**
K. Arsi*[1], J. H. Metcalf[1], I. Reyes-Herrera[1], A. M. Donoghue[2], K. Venkitanarayanan[3], P. J. Blore[1], A. C. Fanatico[1], and D. J. Donoghue[1], [1]*Dept. Poultry Science, University of Arkansas, Fayetteville*, [2]*Poultry Production and Product Safety Research Unit, USDA-ARS, Fayetteville, AR*, [3]*Dept. Animal Science, University of Connecticut, Storrs.*

11:00 AM 445 **Probability of identifying different *Salmonella* serotypes in poultry samples.**
J. A. Cason*, N. A. Cox, R. J. Buhr, D. V. Bourassa, and L. J. Richardson, *Russell Research Center, USDA/ARS, Athens, GA.*

11:15 AM 446 **The effect of electrostatic polarization ultra violet light filters on *Enterobacteriaceae* and *Salmonella* spp. bacteria in a broiler processing plant hang room.**
J. C. Butler*, P. A. Curtis, C. R. Kerth, D. E. Conner, and L. K. Kerth, *Auburn University, Auburn, AL.*

11:30 AM 447 **Role of lauric acid-potassium hydroxide concentration on bacterial contamination of spray washed broiler carcasses.**
A. Hinton Jr.*, J. Cason, R. Buhr, and K. Liljebjelke, *Russell Research Center, Athens, GA.*

11:45 AM 448 **Antimicrobial effect of sodium metasilicate on *Salmonella enterica* serovar Typhimurium and psychrotrophs in ready to cook skin-on chicken breast meat stored at 4 ± 1°C.**
C. S. Sharma*, S. K. Williams, and G. E. Rodrick, *University of Florida, Gainesville*.

12:00 PM 449 **Antimicrobial effect of sodium metasilicate marinade on *Salmonella enterica* serovar Typhimurium and psychrotrophs in ready to cook skinless and boneless chicken breast meat stored at 4 ± 1°C.**
C. S. Sharma*, S. K. Williams, and G. E. Rodrick, *University of Florida, Gainesville*.

12:15 PM 450 **Aviplus treatment improves growth efficiency in broilers and swine but does not affect intestinal populations of experimentally inoculated *Salmonella*.**
T. R. Callaway*[1], E. Grilli[2], T. S. Edrington[1], N. Krueger[1], R. Anderson[1], D. W. Pitta[3], W. E. Pinchak[3], and A. Piva[2], [1]*USDA/ARS, Food and Feed Safety Research Unit, College Station, TX*, [2]*University of Bologna, Bologna, Italy*, [3]*Texas A&M University Agrilife Research Station, Vernon.*

12:30 PM 451 **Aviplus treatment reduces *E. coli* and *Salmonella* populations in pure and mixed ruminal culture fermentations.**
T. R. Callaway*[1], E. Grilli[2], and A. Piva[2], [1]*USDA/ARS, Food and Feed Safety Research Unit, College Station, TX*, [2]*University of Bologna, Bologna, Italy*.

Forages and Pastures
Harvested Forages and Forage Quality
Chair: Limin Kung Jr., University of Delaware
Korbel Ballroom 1cd

9:30 AM 452 **Lamb and cow performance when fed corn silage that has reduced ferulate cross linking.**
H. G. Jung*[1,3], D. R. Mertens[2], and R. L. Phillips[3], [1]*USDA-ARS, St. Paul, MN*, [2]*USDA-ARS, Madison, WI*, [3]*University of Minnesota, St. Paul.*

9:45 AM 453 **Impact of brown midrib trait and seeding rate on chemical composition and in vitro gas production of pearl millet silage.**
F. Hassanat*[1], A. Mustafa[2], P. Seguin[3], and R. Berthiaume[1], [1]*Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada*, [2]*Department of Animal Science, McGill University, Montreal, QC, Canada*, [3]*Department of Plant Science, McGill University, Montreal, QC, Canada*.

10:00 AM 454 **Exogenous fibrolytic enzyme or anhydrous ammonia effects on digestion kinetics of steers fed bermudagrass harvested at two regrowth intervals.**
J. J. Romero*, A. T. Adesogan, M. A. Zarate, O. C M. Queiroz, J. H. Han, J. H. Shin, C. R. Staples, and W. F. Brown, *University of Florida, Gainesville.*

10:15 AM	455	**Effect of chopping or cubing on apparent digestibility of hay when fed to steers.** R. Willcutt*[1], B. J. Rude[1], and J. Davis[2], [1]*Animal & Dairy Sciences, Mississippi State University*, *Starkville,* [2]*Agricultural & Biological Engineering, Mississippi State University*, *Starkville.*
10:30 AM	456	**Effect of cutting time and conditioning method on cattle preference for trefoil–grass hay.** R. Berthiaume*[1], A. F. Brito[2], and C. Lafreniere[1], [1]*Agriculture & Agri-Food Canada*, *Sherbrooke, QC, Canada.,* [2]*University of New Hampshire*, *Durham.*
10:45 AM	457	**Acceptability of Teff hay by horses.** S. McCown*, M. Brummer, J. Earing, S. Hayes, and L. Lawrence, *University of Kentucky*, *Lexington*.
11:00 AM	458	**Nutritive value of North American grasses during establishment.** A. E. Lee*[1,4], J. P. Muir[3], B. D. Lambert[1,3], J. L. Reilley[2], and T. R. Whitney[4], [1]*Tarleton State Univ., Stephenville, TX*, [2]*Kika de La Garza PMC, Kingsville, TX*, [3]*TX AgriLife Research*, *Stephenville*, [4]*TX AgriLife Research*, *San Angelo*.
11:15 AM		**Break**
11:30 AM	459	**Effects of different manure sources and urea on chemical composition of three tropical pasture grasses.** O. M. Arigbede*[1,2], U. Y. Anele[1,2], K. -H. Südekum[2], J. A. Olanite[1], A. O. Oni[1], P. A. Dele[1], and J. O. Bolaji[1], [1]*University of Agriculture*, *Abeokuta, Nigeria*, [2]*University of Bonn*, *Bonn, Germany*.
11:45 AM	460	**In vitro ruminal fermentation characteristics of anthocyanidin accumulating Lc-alfalfa.** A. Jonker*[1,2], M. Gruber[2], Y. Wang[3], and P. Yu[1], [1]*Department of Animal and Poultry Science, College of Agriculture and Bioresources, University of Saskatchewan*, *Saskatoon, SK, Canada*, [2]*Saskatoon Research Centre, Agriculture and Agri-Food Canada*, *Saskatoon, SK, Canada*, [3]*Lethbridge Research Centre, Agriculture and Agri-Food Canada*, *Lethbridge, AB, Canada*.
12:00 PM	461	**Revisiting heat damaged-protein and ruminal degradation kinetics in heated hays.** W. K. Coblentz*[1], P. C. Hoffman[2], and N. P. Martin[3], [1]*US Dairy Forage Research Center*, *Marshfield, WI*, [2]*University of Wisconsin*, *Madison,* [3]*US Dairy Forage Research Center*, *Madison, WI*.
12:15 PM	462	**Effects of spontaneous heating on estimates of energy from alfalfa-orchardgrass hays stored in large-round bales.** W. K. Coblentz*[1] and P. C. Hoffman[2], [1]*US Dairy Forage Research Center*, *Marshfield, WI*, [2]*University of Wisconsin*, *Madison*.

Immunology and Pathology Symposium
Immunity, Nutrition, Genomics, and Gut Microbiota
Chair: **Hyun Lillehoj, USDA**
303

9:30 AM	465	**Antibiotics disrupt the microbiota-host-pathogen interaction.** B. Willing*, *University of British Columbia*, *Vancouver, BC, Canada*.
10:00 AM	464	**Role of antibiotics on gut microbiota and incidence of gangrenous dermatitis in commercial broilers.** G. Ritter*[1], G. Siragusa[2], S. Dunham[2], and A. Neumann[2], [1]*Mountaire Farms Inc., Millsboro, DE,* [2]*Danisco*, *Waukesha, WI.*
10:30 AM	466	**Nutrigenomics: Understanding how nutrients influence host innate immunity and modulate host-pathogen interaction.** H. Lillehoj*[1], S.-H. Lee[1], D.-K. Kim[1], and D. Bravo[2], [1]*Beltsville Agricultural Research Center, USDA-Agricultural Research Service*, *Beltsville, MD,* [2]*Pancosma S. A., Grand Saconnex, Geneva, Switzerland*.
11:00 AM	463	**Direct-fed microbial supplementation alters hosts' immune response and repartitions energy to the immune system.** M. D. Koci* and W. J. Croom, *North Carolina State University*, *Raleigh.*

Lactation Biology 1
Chair: **Darryl Hadsell, Baylor College of Medicine, Houston, TX**
304

9:30 AM 467 **The effect of milk accumulation on gene expression in bovine mammary gland.**
E. H. Wall*[1], J. P. Bond[2], and T. B. McFadden[1], [1]*Department of Animal Science, University of Vermont, Burlington,* [2]*Vermont Genetics Network Bioinformatics Core, University of Vermont, Burlington.*

9:45 AM 468 **Expression of ER stress pathways genes in bovine mammary tissue during the lactation cycle.**
G. Invernizzi*[1,2], M. Bionaz[1], G. Savoini[2], and J. Loor[1], [1]*University of Illinois, Urbana-Champaign,* [2]*University of Milan, Milan, Italy.*

10:00 AM 469 **Effect of dexamethasone and age at induction on milk yields of heifers induced into lactation.**
A. L. Magliaro-Macrina*[1], A. C. W. Kauf[1], D. A. Pape-Zambito[1], and R. S. Kensinger[2], [1]*The Pennsylvania State University, University Park,* [2]*Oklahoma State University, Stillwater.*

10:15 AM 470 **Effect of intramammary infusions of fluoxetine (FLX) and 5-hydroxytryptophan (5-HTP) on milk secretion rate and composition in lactating Holstein cows at dry-off.**
R. J. Collier*[1,3], J. L. Collier[1], L. L. Hernandez[2], and N. D. Horseman[2,3], [1]*University of Arizona, Tucson,* [2]*University of Cincinnati, OH,* [3]*Amelgo, Covington, KY.*

10:30 AM 471 **Acute fluoxetine administration accelerates mouse mammary gland involution.**
L. L. Hernandez*[1], R. J. Collier[2,3], and N. D. Horseman[1,3], [1]*University of Cincinnati, Cincinnati, OH,* [2]*University of Arizona, Tucson,* [3]*Amelgo.*

10:45 AM **Break**

11:00 AM 472 **Effects of early ovariectomy on caprine mammary gland parenchyma during prepuberty.**
L. Finot[1,2], Y. Yart[1,2], and F. Dessauge*[1,2], [1]*INRA UMR 1080 Dairy Production, 35590, Saint Gilles, France,* [2]*Agrocampus UMR 1080 Dairy Production, 35000, Rennes, France.*

11:15 AM 473 **Role of miR-15a in the mammary gland and mammary epithelial cells of dairy cows.**
H. M. Li, C. M. Wang, and Q. Z. Li*, *Key Laboratory of Dairy Science of Education Ministry, Northeast Agricultural University, Harbin, China.*

11:30 AM 474 **Expression of let-7g in development, lactation and involution of the murine mammary gland.**
Y. Li, L. Tian, C. M. Wang, and Q. Z. Li*, *Key Laboratory of Dairy Science of Education Ministry, Northeast Agricultural University, Harbin, China.*

11:45 AM 475 **Effect of heat stress during the dry period on mammary gland development of dairy cattle.**
S. Tao*, J. W. Bubolz, B. C. do Amaral, M. J. Hayen, S. E. Johnson, and G. E. Dahl, *University of Florida, Gainesville.*

12:00 PM 476 **Characterization of bovine glucose transporter 1 kinetics and substrate specificities in *Xenopus laevis* oocytes.**
P. A. Bentley[1], Y. Misra[1], A. D. Morielli[2], and F. -Q. Zhao*[1], [1]*Lactation and Mammary Gland Biology Group, Department of Animal Science, University of Vermont, Burlington,* [2]*Department of Pharmacology, College of Medicine, University of Vermont, Burlington.*

Meat Science and Muscle Biology Symposium
How Does Pre- and Postnatal Muscle Development Affect Meat Composition, Quality, and Value?
Chair: **Giuseppe Bee, Agroscope Liebefeld Posieux**
Sponsors: ASAS Foundation, EAAP
Korbel Ballroom 1ef

9:30 AM 477 **Coordinating myogenesis and angiogenesis: A novel role for the satellite cell in skeletal muscle growth.**
R. P. Rhoads*, K. L. Flann, and R. E. Allen, *University of Arizona, Tucson.*

10:15 AM 478 **The energy metabolism impacts that come along with muscle fiber type and its effect on postmortem metabolism.**
T. M. Scheffler, J. M. Scheffler, S. Park, A. L. Grant, and D. E. Gerrard*, *Department of Animal and Poultry Sciences, Virginia Tech, Blacksburg.*

11:00 AM 479 **How growth and body composition can affect the quality of poultry meat?**
C. Berri*, E. Le Bihan-Duval, and M. J. Duclos, *INRA, UR083 Recherches Avicoles, Nouzilly, France.*

11:45 AM 480 **ASAS Early Career Award Presentation: Pre-natal muscle development affects beef composition and quality.**
M. Du*, *Department of Animal Science, University of Wyoming, Laramie.*

Graduate Student Paper Competition
National ADSA Production MS Oral
Chair: Brian J. Bequette, University of Maryland
507

9:30 AM 481 **Effect of *Origanium vulgare* on ruminal fermentation, nutrient utilization, and production in dairy cows.**
J. A. Tekippe*[1], A. N. Hristov[1], K. S. Heyler[1], T. W. Cassidy[1], V. D. Zheljazkov[2], and G. A. Varga[1], [1]*Pennsylvania State University, University Park,* [2]*Mississippi State University, NMREC, Verona.*

9:45 AM 482 **Effect of prostaglandin$F_{2\alpha}$ on growth of *Staphylococcus aureus* associated with bovine mastitis.**
C. A. Autran*[1], A. Ahmadzadeh[1], B. Shafii[1], M. A. McGuire[1], and J. C. Dalton[2], [1]*University of Idaho, Moscow,* [2]*University of Idaho, Caldwell R & E.*

10:00 AM 483 **Effects of partial replacement of corn grain with high fiber byproducts in calf starter on growth and ruminal pH in dairy calves during weaning transition.**
A. H. Laarman* and M. Oba, *University of Alberta, Edmonton, Alberta, Canada.*

10:15 AM 484 **Effect of a pre-synchronization injection of prostaglandin $F_{2\alpha}$ during the voluntary waiting period on dairy cattle.**
K. D. Baldock*[1], M. E. Wilson[2], and D. L. Smith[1], [1]*Eastern New Mexico University, Portales,* [2]*West Virginia University, Morgantown.*

10:30 AM 485 **Effects of feeding brown midrib corn silage and dried distillers grains with solubles on performance of lactating dairy cows.**
H. A. Ramirez Ramirez*[1], P. J. Kononoff[1], and K. Nestor[2], [1]*University of Nebraska-Lincoln,* [2]*Dow AgroSciences LLC, Wooster, OH.*

10:45 AM 486 **Effects of equine chorionic gonadotropin administration during the synchronization protocol on luteal volume, progesterone concentration and embryo survival in embryo recipient lactating Holstein cows.**
A. G. Kenyon*[1], G. Lopes Jr. [1], L. G. D. Mendonca[2], J. R. Lima[1], R. G. S. Bruno[1], and R. C. Chebel[1,2], [1]*Veterinary Medicine Teaching and Research Center, University of California Davis, Tulare,* [2]*Department of Veterinary Population Medicine, University of Minnesota, St Paul.*

11:00 AM 487 **Adjusting milk replacer intake during heat stress and non-heat stress as a means of improving dairy calf performance.**
T. M. Chavez*, T. A. Wickersham, and G. A. Holub, *Texas A&M University, College Station.*

11:15 AM 488 **Comparison of postpartum health, uterine involution, and resumption of ovarian cycles of Holstein and crossbred dairy cows.**
L. G. D. Mendonca*, C. C. Abade, E. M. da Silva, and R. C. Chebel, *Department of Veterinary Population Medicine, Saint Paul, MN.*

Nonruminant Nutrition
Amino Acids 2
Chair: Rob Payne, Evonik, Degussa Corp.
Sponsor: Evonik, Degussa Corp.
Korbel Ballroom 4def

9:30 AM 489 **Impact of sulfur amino acid intake and immune system stimulation on pathways of sulfur amino acid metabolism at transcriptional level in growing pigs.**
A. Rakhshandeh*[1], A. Holliss[2], N. A. Karrow[1], and C. F. M. de Lange[1], [1]*University of Guelph, Department of Animal and Poultry Science,* [2]*University of Guelph, Advance Analysis Centre, Guelph, Ontario, Canada.*

9:45 AM 490 **The effect of feeding heavy and medium weight nursery pigs increased levels of amino acids on pig performance.**
J. L. Pietig* and C. E. Hostetler, *South Dakota State University, Brookings.*

10:00 AM 491 **Amino acid digestibility in heated soybean meal fed to growing pigs.**
J. C. González*[1,2], B. G. Kim[2], A. Lemme[3], and H. H. Stein[2], [1]*National University of Colombia, Bogota, Condinamarca, Colombia,* [2]*University of Illinois, Urbana,* [3]*Evonik Degussa GmbH, Rodenbacher Chaussee, Hanau, Germany.*

10:15 AM 492 **Effects of balanced protein level on growth performance and carcass composition of growing-finishing pigs.**
N. W. Shelton[1], R. D. Goodband[1], M. D. Tokach[1], S. S. Dritz[1], J. L. Nelssen[1], J. M. DeRouchey[1], M. S. Redshaw[2], and J. K. Htoo*[2], [1]*Kansas State University*, *Manhattan,* [2]*Evonik Degussa GmbH*, *Hanau, Germany*.

10:30 AM 493 **Effect of tryptophan level on growth performance in 10- to 50-kg pigs.**
D. Renaudeau*[1], M. Giorgi[1], C. Anais[1], and Y. Primot[2], [1]*Institut National de la Recherche Agronomique, UR143*, *Petit-Bourg, French West Indies, France*, [2]*Ajinomoto Eurolysine*, *Paris, France*.

10:45 AM 494 **Estimation of optimum tryptophan to lysine ratio in wheat-barley or corn-soybean meal based diets for 15- to 35-kg pigs.**
J. K. Htoo*[1], M. Naatjes[2], K. H. Tölle[3], and A. Susenbeth[2], [1]*Evonik Degussa GmbH*, *Hanau, Germany*, [2]*Christian-Albrechts University*, *Kiel, Germany*, [3]*Training and Research Center Futterkamp*, *Blekendorf, Germany*.

11:00 AM **Break**

11:15 AM 495 **Effect of lysine level and curve feeding on the performance and carcass characteristics of grow-finish pigs.**
K. L. Herkelman*[1], S. Kelley[2], S. Bailey[1], and E. Engle[3], [1]*Wenger's Feed Mill, Inc., Rheems, PA,* [2]*Country View Family Farms*, *Lancaster, PA*, [3]*Hatfield Quality Meats*, *Hatfield, PA*.

11:30 AM 496 **Effects of ileal sample collection strategies on ileal digestibility of CP and the concentration of chromium in ileal digesta.**
B. G. Kim*[1,2] and H. H. Stein[1], [1]*University of Illinois*, *Urbana*, [2]*Konkuk University*, *Seoul, Korea*.

11:45 AM 497 **Ileal amino acids digestibility of raw and heat-processed pea protein concentrates in broilers.**
M. Frikha[1], D. G. Valencia*[2], M. P. Serrano[1], H. M. Safaa[3], R. Lázaro[1], and G. G. Mateos[1], [1]*Universidad Politécnica de Madrid*, *Madrid, Spain*, [2]*Nutral S. A., Madrid, Spain*, [3]*Faculty of Agriculture, Cairo University*, *12613 Giza, Egypt*.

12:00 PM 498 **Identification of lysine transport systems affiliated with differences in chick gain when fed a lysine limiting diet.**
M. A. Raymond* and B. D. Humphrey, *California Polytechnic State University*, *San Luis Obispo.*

12:15 PM 499 **Valine and isoleucine as potential limiting amino acids in broiler diets based on corn, soybean meal, and meat and bone meal.**
L. Mejia*[1], W. A. Dozier III[2], R. E. Loar II[1], M. T. Kidd[3], P. B. Tillman[4], and A. Corzo[1], [1]*Mississippi State University*, *Mississippi State,* [2]*Auburn University*, *Auburn, AL*, [3]*University of Arkansas*, *Fayetteville,* [4]*Ajinomoto Heartland LLC*, *Chicago, IL*.

Nonruminant Nutrition
Feed Ingredients
Chair: **Sung Woo Kim, North Carolina State University**
Korbel Ballroom 3b

9:30 AM 500 **Effect of different sorghum varieties on early chick growth.**
C. M. Rude*[1], M. A. Barrios[1], R. Rierson[1], S. Bean[2], and R. S. Beyer[1], [1]*Kansas State University*, *Manhattan,* [2]*ARS, USDA, Grain Marketing and Product Research Center*, *Manhattan, KS.*

9:45 AM 501 **Dietary hydrolyzed yeast extract enhances early innate immune function in broiler chicks.**
J. L. Saunders-Blades*, K. L. Nadeau, and D. R. Korver, *University of Alberta*, *Edmonton, Canada*.

10:00 AM 502 **Influence of pea hulls inclusion in the diet on digestive traits and nutrient retention in broilers.**
E. Jiménez-Moreno*[1], J. M. González-Alvarado[2], S. Chamorro[3], C. Centeno[3], R. Lázaro[1], and G. G. Mateos[1], [1]*Universidad Politecnica de Madrid*, *Madrid, Spain*, [2]*Universidad de Tlaxcala*, *México*, [3]*Consejo Superior de Investigaciones Científicas*, *Madrid, Spain*.

10:15 AM 503 **Dietary camelina meal for broiler chickens. 2. Thigh meat fatty acid profile and sensory evaluation.**
P. H. Patterson*[1], R. M. Hulet[1], T. L. Cravener[1], A. Y. Pekel[2], and J. E. Hayes[1], [1]*The Pennsylvania State University*, *University Park*, [2]*Istanbul University*, *Turkey*.

10:30 AM 504 **Effect of feeding mexican sunflower leaf *(Tithonia diversifolia*, hemsley A gray) on performance of broiler chicks.**
A. H. Ekeocha*[1], A. A. Mako[2], T. J. Williams[3], and A. Aderiye[1], [1]*Department of Animal Science University of Ibadan, Ibadan, Oyo State, Nigeria,* [2]*Department of Agricultural Production and Management Sciences, Tai Solarin University of Education, Ijagun Ijebu-Ode, Ogun State, Nigeria,* [3]*Department of Animal Physiology, University of Agriculture, Abeokuta, Ogun State, Nigeria.*

TUESDAY ORALS

10:45 AM 505 **Effect of feeding mexican sunflower leaf *(Tithonia diversifolia*, hemsley a gray) on carcass characteristics of broilers.**
A. H. Ekeocha*[1], O. A. Adu[2], K. D Afolabi[1], and E. J Ubah[3], [1]*University of Ibadan, Ibadan, Oyo State - Nigeria*, *Department of Animal Science University of Ibadan, Ibadan, Oyo State, Nigeria*, [2]*Department of Animal Production and Health, Federal University of Technology, Akure, Nigeria*, *Department of Animal Production and Health, Federal University of Technology, Akure, Nigeria*, [3]*Department of Animal Science, Wageningen University, Wageningen, the Netherlands*.

11:00 AM **Break**

11:15 AM 506 **A 42-day floor pen evaluation of broiler chickens fed standard energy and low energy diets supplemented with a blend of carvacrol, cinnamaldehyde and capsicum oleoresin with or without bacitracin.**
M. Sims*[1], D. Bravo[2], and A. Vikari[2], [1]*Virginia Diversified Research Corporation*, *Harrisonburg,* [2]*Pancosma*, *Geneva, Switzerland*.

11:30 AM 507 **Effects of mung bean waste inclusion on mash diet characteristic, growth performance and nutrient digestibility in pigs.**
P. Rungcharoen*, N. Amornthewaphat, Y. Ruangpanit, S. Rattanatabtimthong, and S. Attamangkune, *Kasetsart University*, *Bangkok, Thailand*.

11:45 AM 508 **Short-term feeding of genetically modified Bt maize (MON810) to weanling pigs: Effects on gut microbiota, intestinal morphology and immune status.**
M. C. Walsh*[1], S. G. Buzoianu[1,3], G. E. Gardiner[3], M. C. Rea[2], R. P. Ross[2], and P. G. Lawlor[1], [1]*Teagasc, Pig Production Development Unit, Moorepark Research Centre*, *Fermoy, Co. Cork, Ireland*, [2]*Teagasc, Moorepark Food Research Centre*, *Fermoy, Co. Cork, Ireland*, [3]*Waterford Institute of Technology*, *Waterford, Ireland*.

12:00 PM 509 **Effects of dietary oat hulls and sugar beet pulp on productive performance and nutrient digestibility of broilers from 1 to 42 d of age.**
J. M. Gonzalez-Alvarado[1], E. Jiménez-Moreno[2], F. D. Royón[2], R. Lázaro[2], and G. G. Mateos*[2], [1]*Universidad de Tlaxcala*, *México*, [2]*Universidad Politecnica de Madrid*, *Madrid, Spain*.

12:15 PM 510 **Influence of origin on nutritional and quality parameters of soybean meal.**
G. G. Mateos*[1], M. P. Serrano[1], S. Sueiro[2], M. González[2], M. Hermida[2], P. G. Rebollar[1], and R. Lázaro[1], [1]*Universidad Politécnica de Madrid*, *Madrid, Spain*, [2]*Laboratorio de Mouriscade*, *Pontevedra, Spain*.

12:30 PM 511 **Lactose in diet influences the degradation of mixed linked β(1-3;1-4)-D-glucan in the small intestine of pigs.**
K. E. Bach Knudsen*, *Aarhus University, Faculty of Agricultural Sciences*, *Department of Animal Health and Bioscience, Tjele, Denmark*.

Nonruminant Nutrition
Mineral Nutrition
Chair: **Tom Crenshaw, University of Wisconsin**
Korbel Ballroom 3a

9:30 AM 512 **Effects of dietary calcium formate inclusion on broiler growth performance, bone ash, and tibia breaking strength.**
S. Pohl*, D. Caldwell, J. Lee, J. Coppedge, K. Stringfellow, S. Dunn-Horrocks, K. Jessen, and M. Farnell, *Texas A&M University*, *College Station*.

9:45 AM 513 **Broiler breeder age and dietary Cu, Zn and Mn source affect chick bone development at hatch.**
C. A. Torres* and D. R. Korver, *University of Alberta*, *Edmonton, AB, Canada*.

10:00 AM 514 **Use of the broiler (*Gallus gallus*) as an in vivo screening tool for Fe bioavailability in maize-based diets.**
E. Tako*[1], M. Lung'aho[1], L. V. Kochian[2], O. A. Hoekenga[2], and R. P. Glahn[2], [1]*Cornell University*, *Ithaca, NY,* [2]*Robert W. Holley Center for Agriculture and Health*, *Ithaca, NY.*

10:15 AM 515 **Relationship between expression of sodium-dependent phosphate transporter type II-b gene and phosphorus utilization in broilers.**
O. A. Olukosi*, S. A. Adedokun, K. M. Ajuwon, and O. Adeola, *Purdue University*, *West Lafayette, IN.*

10:30 AM 516 **Effects of HMTBA chelated zinc, manganese and copper on performance, mineral status and immunity of broilers.**
Y. Ruangpanit*, S. Attamangkune, S. Rattanatubtimthong, and C. Khomkamon, *Kasetsart University*, *Nakhon-Pathom, Thailand*.

10:45 AM	517	**Effect of organic zinc supplementation on growth performance and carcass quality of broilers.** H. M. Salim*, H. R. Lee, C. Jo, S. K. Lee, and B. D. Lee, *Chungnam National University*, *Yuseong, Daejeon, South Korea*.
11:00 AM		**Break**
11:15 AM	518	**Effect of dietary copper source and level on GI copper levels and ileal *E. coli* survival in broiler chicks.** K. C. Klasing* and A. Naziripour, *University of California*, *Davis*.
11:30 AM	519	**Effects of dietary iron and age on cellular copper metabolism in liver of weanling pigs.** R. S. Fry*, J. W. Spears, S. L. Hansen, H. C. Liu, and M. S. Ashwell, *North Carolina State University*, *Raleigh.*
11:45 AM	520	**Effect of level and source of dietary copper on copper metabolism in the small intestine of weanling pigs.** R. S. Fry*, M. S. Ashwell, W. L. Flowers, K. R. Stewart, and J. W. Spears, *North Carolina State University*, *Raleigh.*
12:00 PM	521	**Dietary calcium and phosphorous and organic and inorganic trace minerals on nursery pig growth performance.** J. S. Jolliff* and D. C. Mahan, *The Ohio State University*, *Columbus*.
12:15 PM	522	**Effect of organic and inorganic trace mineral source and preslaughter deletion on tissue mineral content of pigs.** Y. L. Ma*, M. D. Lindemann, G. L. Cromwell, and G. Rentfrow, *University of Kentucky*, *Lexington*.

Physiology and Endocrinology
Animal Physiology
Chair: **Ricardo Chebel, University of Minnesota**
505/506

9:30 AM	523	**The "immunocrit," a simple measure of passive transfer, is a useful predictor of nursing ability and preweaning mortality of piglets.** J. L. Vallet*, J. R. Miles, L. A. Rempel, and L. A. Kuehn, *USDA, ARS, US Meat Animal Research Center*, *Clay Center, NE.*
9:45 AM	524	**Influence of temperament on stress hormone and IgG concentrations in Brahman calves.** N. C. Burdick*[1], D. A. Neuendorff[2], R. C. Vann[3], J G. Lyons[1], T. H. Welsh, Jr.[1], and R. D. Randel[2], [1]*Texas AgriLife Research*, *College Station,* [2]*Texas AgriLife Research*, *Overton,* [3]*MAFES, Mississippi State University*, *Raymond.*
10:00 AM	525	**Effect of cytochrome P450 and aldo-keto reductase inhibitors on progesterone decay in primary bovine hepatic cell cultures.** C. O. Lemley* and M. E. Wilson, *West Virginia University*, *Morgantown.*
10:15 AM	526	**Residual feed intake selection and its effects upon pre- and postpartum changes in NEFA concentrations and body weight and condition in Brahman females.** A. K. Poovey*[1,2], A. N. Loyd[1,2], A. W. Lewis[1], D. A. Neuendorff[1], S. L. Morgan[1,2], L. C. Caldwell[2], T. D. A. Forbes[3], T. H. Welsh, Jr. [2], and R. D. Randel[1], [1]*Texas AgriLife Research*, *Overton,* [2]*Texas AgriLife Research*, *College Station,* [3]*Texas AgriLife Research*, *Uvalde.*
10:30 AM	527	**Ruminal degradability and intestinal release of different vitamin A formulations.** D. P. Preveraud* and P. A. Geraert, *Adisseo France SAS*, *Antony, France*.
10:45 AM	528	**Poisson analysis of number of services per conception for Iranian Holstein cows.** H. Farhangfar*[1] and F. Bahri[2], [1]*Birjand University*, *Birjand, Iran*, [2]*Ferdowsi University of Mashhad*, *Mashhad, Iran*.
11:00 AM	529	**Effects of continuous infusion of tumor necrosis factor-alpha (TNFα) into adipose tissue on glucose and fatty acid metabolism in lactating dairy cattle.** C. A. Martel*[1], L. K. Mamedova[1], E. J. Minton[1], M. L. Jones[2], J. A. Carroll[3], and and B. J. Bradford[1], [1]*Department of Animal Sciences & Industry*, *and* [2]*Veterinary Medical Teaching Hospital, Kansas State University*, *Manhattan*, [3]*Livestock Issues Research Unit, ARS-USDA*, *Lubbock, TX*.
11:15 AM	530	**Reproductive rate of semi-free ranging Bison (*Bison bison*) at the National Bison Range.** M. J. Borgreen*[1,2], T. J. Roffe[2], E. M. Berry[1], R. B. McCosh[1], and J. G. Berardinelli[1], [1]*Montana State University*, *Bozeman,* [2]*US Fish and Wildlife Service*, *Bozeman, MT.*

Physiology and Endocrinology Symposium
Sperm-Oviduct Interactions in Livestock and Poultry
Chair: **David Miller, University of Illinois**
Sponsor: EAAP
Korbel Ballroom 2c

9:30 AM 531 **Evidence that oviduct secretions influence sperm function: A retrospective view for livestock.**
G J Killian*, *The Pennsylvania State University*, *University Park*.

10:00 AM 532 **Role of the oviduct in maintaining sustained fertility in hens.**
M. R. Bakst*[1] and J. P. Brillard[2], [1]*ARS, USDA*, *Beltsville, MD*, [2]*INRA*, *Tours, France*.

10:30 AM 533 **Effect of sperm mobility phenotype on fertility, sperm competition, and in vivo sperm storage in the domestic fowl.**
D. P. Froman*, *Oregon State University*, *Corvallis.*

11:00 AM 534 **Bovine oviduct-sperm interactions preceding fertilization.**
S. S. Suarez*, *Cornell University*, *Ithaca, NY*.

11:30 AM 535 **In vivo imaging of in situ motility of fresh and liquid-stored ram spermatozoa in the ewe genital tract.**
X. Druart*[1], J. Cognié[1], G. Baril[1], F. Clément[2], J.-L. Dacheux[1], and J.-L. Gatti[1], [1]*UMR 6175 INRA, CNRS-Université de Tours-Haras Nationaux*, *Nouzilly, France*, [2]*INRIA Paris-Rocquencourt*, *Le Chesnay Cedex, France*.

12:00 PM 536 **Comparison of timed AI pregnancy rates in Santa Gertrudis (SG) and SG crossbred heifers following the 7-d or 5-d CO-Synch + CIDR protocol.**
R. L. Stanko*[1,3], K. D. Arnold[1], J. R. Ramirez[2], S. Moore[2], and R. Silguero[2], [1]*Texas A&M University-Kingsville*, *Kingsville,* [2]*King Ranch, Inc., Kingsville, TX,* [3]*Texas AgriLife Research*, *Beeville.*

12:15 PM 537 **Neither temperament nor residual feed intake affects sexual maturity in Brahman heifers.**
A. N. Loyd*[1], D. A. Neuendorff[1], A. W. Lewis[1], T. D. A. Forbes[2], and R. D. Randel[1], [1]*Texas AgriLife Research*, *Overton*, [2]*Texas AgriLife Research*, *Uvalde*.

Production, Management and the Environment
Environment 1
Chair: **John Comerford, Pennsylvania State University**
Korbel Ballroom 2b

9:30 AM 538 **Evaluation of a reproducible model for necrotic enteritis in broilers and analysis of NetB toxin profiles of different field isolates of *Clostridium perfringens*.**
S Shivaramaiah*[1], J. R. Barta[2], S. L. Layton[1], M. J. Morgan[1], R. E. Wolfenden[1], B. M. Hargis[1], and G Téllez[1], [1]*University of Arkansas*, *Fayetteville, AR*, [2]*University of Guelph*, *Guelph, ON, Canada*.

9:45 AM 539 **Effects of a microbial litter amendment on litter quality and broiler performance.**
M. J. Hinkle*[1], S. M. Gottselig[1], J. L. McReynolds[2], J. T. Lee[1], and C. D. Coufal[1], [1]*Texas A&M University*, *College Station*, [2]*USDA-ARS*, *College Station, TX*.

10:00 AM 540 **Bacterial content following simulated rainfall on poultry waste.**
J. H. Metcalf*[1], P. A. Moore Jr.[2], A. M. Donoghue[2], I. Reyes-Herrera[1], K. Arsi[1], P. J. Blore[1], and D. J. Donoghue[1], [1]*Poultry Science Department, University of Arkansas*, *Fayetteville,* [2]*Poultry Production and Product Safety Research Unit, USDA-ARS*, *Fayetteville, AR.*

10:15 AM 541 **Effect of a low sulfur diet on air emissions, nutrient excretion, and performance of laying hens.**
W. Wu-Haan*[1], W. Powers[1], R. Angel[2], D. Karcher[1], and T. Applegate[3], [1]*Michigan State University*, *East Lansing,* [2]*University of Maryland*, *College Park,* [3]*Purdue University*, *West Lafayette, IN.*

10:30 AM 542 **Comparison of nutrient balance and performance of laying hens, housed in either enriched or conventional cage systems, over an entire production.**
M. Neijat*[1], J. D. House[1], W. Guenter[1], and E. Kebreab[2], [1]*University of Manitoba*, *Winnipeg, Canada*, [2]*University of California*, *Davis*.

10:45 AM 543 **Effects of the removable chicken house on the growth performance of broilers and indoor environment parameters.**
A. G. Chen*, Z. Wang, X. M. Wang, Q. H. Hong, and C. M. Yang, *Zhejiang University*, *Hangzhou,China*.

11:00 AM 544 **Effect of DDGS and mineral sources on air emissions from laying hens.**
W. Li*[1], W. Powers[1], D. Karcher[1], R. Angel[2], and T. J Applegate[3], [1]*Department of Animal Science, Michigan State University*, *East Lansing,* [2]*Department of Animal Sciences, Purdue University*, *West Lafayette, IN,* [3]*Animal and Avian Sciences, University of Maryland*, *College Park.*

11:15 AM 545 **Effect of amino acid formulation and supplementation on nutrient mass balance and air emissions from turkeys.**
Z. Liu[1], W. Powers*[1], D. Karcher[1], R. Angel[2], and T. J. Applegate[3], [1]*Michigan State University*, *East Lansing*, [2]*University of Maryland*, *College Park*, [3]*Purdue University*, *West Lafayette, IN*.

11:30 AM 546 **Magnitude and variability of distillers grains greenhouse gas credits in the corn-ethanol-livestock life cycle.**
V. R. Bremer*, A. J. Liska, H. S. Yang, T. J. Klopfenstein, G. E. Erickson, D. T. Walters, and K. G. Cassman, *University of Nebraska*, *Lincoln*.

11:45 AM 547 **Methane production, fermentation patterns and protozoa numbers in vitro as related to sources of rumen fluid from different cattle feeding systems and animal waste substrate digestion.**
C. L. Ross*, M. A. Froetschel, S. Buaphan, S. Chinnasamy, and K. C. Das, *The University of Georgia*, *Athens*.

Ruminant Nutrition
Beef: Vitamins and Minerals

Chair: **Stacey Gunter, USDA/ARS-SPRRS**
Sponsor: ASAS Foundation
Korbel Ballroom 2a

9:30 AM 548 **ASAS Early Career Award Presentation: Trace mineral metabolism in ruminants.**
T. E. Engle*, *Colorado State University*, *Fort Collins.*

10:15 AM 549 **Effects of copper supplementation on performance and carcass characteristics of cattle fed diets containing 60% DDGS.**
T. L. Felix* and S. C. Loerch, *The Ohio State University.*

10:30 AM 550 **Vitamin A restriction does not improve marbling in Holstein bulls at the same extent as in Holstein steers.**
S. Marti*[1], C. Realini[2], A. Bach[3,1], and M. Devant[1], [1], *Department of Ruminant Production, IRTA*, *Barcelona, Spain*, [2]*Carcass Quality Subprogram, IRTA*, *Girona, Spain*, [3]*ICREA*, *Barcelona, Spain*.

10:45 AM 551 **Effect of added sulfur on in vitro fermentative activity of ruminal contents from steers fed corn-based diet.**
S. Uwituze*, L. C. Hollis, and J. S. Drouillard, *Kansas State University*, *Manhattan.*

11:00 AM 552 **Dietary sulfur negatively affects gain and mineral status in beef steers.**
E. L. Richter*, M. E. Drewnoski, and S. L. Hansen, *Iowa State University*, *Ames*.

11:15 AM 553 **Inclusion of molybdenum and copper with high distillers grain diets as a strategy to mitigate hydrogen sulfide emissions.**
L. D. Cross*, S. R. Rust, and W. J. Powers, *Michigan State University*, *East Lansing*.

11:30 AM 554 **The effect of supplemental molybdenum and copper on the concentrations of hydrogen sulfide in the rumen gas cap and copper in the liver of yearling steers consuming high sulfate water.**
R. K. Peterson*[1], J. J. Wagner[1], T. E. Engle[1], and T. C. Bryant[2], [1]*Colorado State University*, *Fort Collins,* [2]*JBS Five Rivers Cattle Feeding*, *Greeley, CO.*

11:45 AM 555 **Effects of supplemental manganese on ruminal pH and hydrogen sulfide concentration in beef steers fed high-sulfur diets containing distillers grains plus solubles.**
J. M. Kelzer*[1], T. D. Maddock[2], M. Ruiz-Moreno[1], A. DiCostanzo[1], G. I. Crawford[3], and G. C. Lamb[2], [1]*University of Minnesota*, *St. Paul*, [2]*North Florida Research and Education Center, University of Florida Extension Regional Center*, *Marianna*, [3]*Extension Regional Office, University of Minnesota*, *Hutchinson*.

12:00 PM 556 **Effects of supplemental manganese on performance and stress responses in beef cattle fed low- and high-sulfur finishing diets containing distillers grains plus solubles.**
J. M. Kelzer*[1], T. D. Maddock[2], T. N. Holt[3], A. DiCostanzo[1], G. I. Crawford[4], and G. C. Lamb[2], [1]*University of Minnesota*, *St. Paul*, [2]*North Florida Research and Education Center, University of Florida Extension Regional Center*, *Marianna*, [3]*Colorado State University*, *Fort Collins*, [4]*Extension Regional Office, University of Minnesota*, *Hutchinson*.

12:15 PM 557 **Effects of sulfur content of wet or dry distillers grains in beef cattle finishing diets on intake, ruminal pH, and hydrogen sulfide.**
J. O. Sarturi*, G. E. Erickson, T. J. Klopfenstein, J. T. Vasconcelos, K. Rolfe, and M. G. Dib, *University of Nebraska*, *Lincoln.*

12:30 PM 558 **Days on feed and dietary sulfur content affect rumen hydrogen sulfide concentrations in feedlot steers.**
M. E. Drewnoski*, E. L. Richter, and S. L. Hansen, *Iowa State University*, *Ames*.

12:45 PM 559 **Selenium fed in inorganic and organic forms differentially and commonly alters liver gene expression profile of growing beef heifers.**
S. F. Liao*[1], K. R. Brown[1], A. J. Stromberg[2], W. R. Burris[1], J. A. Boling[1], and J. C. Matthews[1], *Departments of [1]Animal Sciences, [2]Food Sciences, and [3]Statistics, University of Kentucky, Lexington.*

Ruminant Nutrition
Dairy: Forages and Heifers
Chair: Pablo Gregorini, DairyNZ, New Zealand
Korbel Ballroom 1ab

9:30 AM 560 **Meta analysis of dairy cow responses to dietary forage NDF.**
D. Sauvant*[1] and D. R. Mertens[2], [1]*Agroparistech-INRA, Paris, France*, [2]*US Dairy Forage Center, Madison, WI*.

9:45 AM 561 **Effect of forage type on passage rate estimated from rumen evacuation studies.**
S. J. Krizsan*[1], S. Ahvenjärvi[2], and P. Huhtanen[1], [1]*Department of Agricultural Research for Northern Sweden, Swedish University of Agricultural Sciences, Umeå, Sweden*, [2]*MTT-Agrifood Research Finland, Animal Production Research, Jokioinen, Finland*.

10:00 AM 562 **Abrupt changes in forage dry matter of one to three days affect intake and milk yield in early lactation dairy cows.**
J. Boyd* and D. R. Mertens, *US Dairy Forage Research Center, Madison, WI*.

10:15 AM 563 **Effects of corn silage harvested with or without ears on rumen fermentation and milk performance of dairy cows.**
M. Boivin*, R. Gervais, and P. Y. Chouinard, *Université Laval, Québec, QC, Canada*.

10:30 AM 564 **Comparison of alfalfa and orchardgrass hay as replacements for grain in lactating dairy cow diets.**
M. L. Raeth-Knight*[1], H. G. Jung[1,2], P. R. Peterson[1], N. B. Litherland[1], and J. G. Linn[1], [1]*University of Minnesota, St. Paul*, [2]*USDA-Agricultural Research Service, St. Paul, MN*.

10:45 AM 565 **The effect of feed sorting on NDF, starch, and particle intake.**
D. D. Maulfair*, G. I. Zanton, and A. J. Heinrichs, *The Pennsylvania State University, University Park*.

11:00 AM 566 **Effects of varying inclusion rates of prairie hay and wet corn gluten feed on productivity of dairy cows.**
D. J. Rezac*[1], K. N. Grigsby[2], and B. J. Bradford[1], [1]*Kansas State University, Manhattan,* [2]*Cargill Incorporated, Blair, NE*.

11:15 AM 567 **Fiber digestion kinetics in muskoxen.**
E. M. Ungerfeld*[2], R. J. Forster[2], P. B. Barboza[1], M. B. Leigh[1], and C. Glover[1], [1]*University of Alaska Fairbanks, Fairbanks,* [2]*Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada*.

11:30 AM 568 **Nutrient utilization of different levels of dietary fiber in dairy heifers limit-fed high and low concentrate diets.**
G. J. Lascano* and A. J. Heinrichs, *The Pennsylvania State University, University Park*.

11:45 AM 569 **Dietary starch level and dose response of *Saccharomyces cerevisiae* for limit fed-dairy heifers.**
G. J. Lascano*[1], J. M. Tricarico[2], and A. J. Heinrichs[1], [1]*The Pennsylvania State University, University Park*, [2]*Alltech Inc., Nicholasville, KY*.

12:00 PM 570 **Effects of limit-feeding on the feeding behavior of dairy heifers.**
B. L. Kitts*, B. W. McBride, I. J. H. Duncan, and T. J. DeVries, *Department of Animal and Poultry Science, University of Guelph, Kemptville Campus, Kemptville, Ontario, Canada*.

12:15 PM 571 **Evaluation of potential carry over effects associated with limit feeding gravid Holstein heifers.**
K. A. Kruse*, N. M. Esser, P. C. Hoffman, and D. K. Combs, *University of Wisconsin, Madison.*

Small Ruminant Symposium
"Going, Going, Gone!" How Curtailment of Livestock Grazing on Federal Lands Could Alter the US Sheep Industry
Chair: **J. B. Taylor, USDA-ARS, US Sheep Experiment Station**
Sponsors: *Journal of Animal Science*, USDA Sheep Experiment Station, Dubois, ID
401/402

9:30 AM 572 **How curtailment of livestock grazing on public lands could alter the US sheep industry.**
J. B. Taylor*, *USDA, Agricultural Research Service*, *Dubois, ID.*

9:35 AM 573 **The future of livestock grazing on federal lands: Opportunities for change.**
J. Kaiser*, *USDA, Forest Service*, *Washington, DC.*

10:05 AM 574 **The future of livestock grazing on federal lands: Real and perceived threats.**
W. G. Myers*, *Holland & Hart LLP*, *Boise, ID.*

10:35 AM 575 **Economic considerations of sheep grazing on federal and public lands.**
N. R. Rimbey*[1] and L. A. Torell[2], [1]*University of Idaho*, *Caldwell,* [2]*New Mexico State University*, *Las Cruces.*

11:05 AM 576 **Impact of reduced federal and public land grazing on viability of the US sheep industry.**
D. P. Anderson*, *Texas A&M University*, *College Station.*

11:35 AM 577 **So what? What is a scientist supposed to do?**
G. S. Lewis*, C. A. Moffet, and J. B. Taylor, *USDA, ARS, US Sheep Experiment Station*, *Dubois, ID.*

12:00 PM **Panel discussion**

Teaching/Undergraduate and Graduate Education Symposium
Teaching Symposium: Surviving Promotion and Tenure with a Teaching Appointment
Chair: **Jodi Sterle, Texas A&M University**
405

9:30 AM **Introduction**

9:40 AM 578 **Going beyond the minimum for promotion: Building a toolbox for documenting teaching effectiveness and a pathway to improving teaching.**
D. R. Mulvaney*[1,2] and J. E. Groccia[3], [1]*Coll. of Ag., Auburn University*, *Auburn, AL,* [2]*Dept. Anim. Sciences*, *Auburn, AL,* [3]*Biggio Teaching Center, Auburn University*, *Auburn, AL.*

10:10 AM 579 **Getting scholarly teaching projects published.**
M. A. Wattiaux*, *University of Wisconsin-Madison*, *Madison.*

10:40 AM **Break**

10:55 AM 580 **In the same boat—Facing the challenges of tenure and promotion.**
O. U. Bolden-Tiller*, *Tuskegee University*, *Tuskegee, AL.*

11:15 AM **Panel discussion**
Maynard Hogberg, *Iowa State University,* Don Boggs, *Kansas State University,* Ken Esbenshade, *North Carolina State University,* and Alan Grant, *Virginia Tech University*.

ADSA Foundation Scholar Lecture – Dairy Foods
Chair: **Tom Overton, Cornell University**
501/502

10:30 AM **Introduction**

10:40 AM **New and nanotechnologies in dairy: Basic understanding for novel applications.**
F. M. Harte, *University of Tennessee, Knoxville.*

ADSA Foundation Scholar Lecture – Production
Chair: **Tom Overton, Cornell University**
301/302

2:00 PM **Introduction**

2:10 PM **Challenges and opportunities of feeding distillers grains and other ethanol co-products in dairy cattle diets.**
K. F. Kalscheur, *South Dakota State University, Brookings.*

Animal Behavior and Well-Being
Poultry 2: Broilers
Chair: **Joy Mench, University of California-Davis**
Korbel Ballroom 3c

2:00 PM 581 **The effect of lighting regime on broiler behavior and health.**
R. A. Blatchford*, G. S. Archer, and J. A. Mench, *University of California*, *Davis*.

2:15 PM 582 **Effect of daylength on physiological and behavioral rhythms in broilers.**
K. Schwean-Lardner*[1], B. I. Fancher[2], and H. L. Classen[1], [1]*University of Saskatchewan*, *Saskatoon, SK, Canada*, [2]*Aviagen*, *Huntsville, AL*.

2:30 PM 583 **The effect of providing lighting during incubation on stress responses of broiler chickens post-hatch.**
G. S. Archer* and J. A. Mench, *University of California, Davis.*

2:45 PM 584 **The effect of providing light during incubation on fear responses of broiler chickens post-hatch.**
G. S. Archer* and J. A. Mench, *University of California, Davis.*

3:00 PM 585 **Impact of light intensity on broiler biological rhythms and welfare.**
A. Deep*[1], K. Schwean-Lardner[1], T. G. Crowe[1], B. I. Fancher[2], and H. L. Classen[1], [1]*University of Saskatchewan*, *Saskatoon, Canada*, [2]*Aviagen*, *Huntsville, AL*.

3:15 PM 586 **Broiler behavior under lighting programs with a sectioned dark period and its welfare considerations.**
C. Raginski*[1], K. V. Schwean-Lardner[1], H. W. Gonyou[1,2], and H. L. Classen[1], [1]*University of Saskatchewan*, *Saskatoon, SK, Canada*, [2]*Prairie Swine Centre*, *Saskatoon, SK, Canada*.

3:30 PM 587 **Heat and moisture production in broilers during simulated winter transport.**
J. M. Watts*, L. J. Graff, M. L. Strawford, T. G. Crowe, N. A. Burlinguette, H. L. Classen, and P. J. Shand, *University of Saskatchewan*, *Saskatoon, Saskatchewan, Canada*.

3:45 PM 588 **Humane slaughter methods for small- and mid-scale poultry operations.**
V. B. Brewer*[1], A. C. Fanatico[2], W. J. Kuenzel[1], C. M. Owens[1], V. A. Kuttappan[1], and A. M. Donoghue[2], [1]*University of Arkansas Department of Poultry Science*, *Fayetteville,* [2]*USDA Agricultural Research Service, Poultry Production and Product Safety Research*, *Fayetteville, AR.*

Animal Health
Management, Disease, and Performance
Chair: **Pedram Rezamand, University of Idaho**
Sponsors: Elanco Animal Health, Pfizer Animal Health
304

2:00 PM 589 **Genetic and non-genetic factors affecting the prevalence of mastitis in dromedary camels.**
S. Ahmad*[1,2], M. Yaqoob[1,2], M. Q. Bilal[1,2], G. Muhammad[1,3], A. Iqbal[1,2], and M. K. Khan[1,3], [1]*University of Agriculture, Faisalabad, Pakistan*, [2]*Department of Livestock Management*, *University of Agriculture, Faisalabad, Pakistan*, [3]*Department of Clinical Medicine and Surgery*, *University of Agriculture, Faisalabad, Pakistan*.

2:15 PM 590 **Use of a lipopolysaccharide (LPS) challenge to evaluate the innate immune response of Angus heifers with genotypic differences in GeneSTAR markers for intramuscular fat deposition.**
J. O. Buntyn*[1], J. A. Carroll[2], T. Smith[1], S. M. Falkenberg[1], J. D. Rivera[3], C. Collier[2], and T. B. Schmidt[1], [1]*Department of Animal, Mississippi State University and Dairy Sciences*, *Mississippi State*, [2]*Livestock Issues Research Unit, USDA-ARS*, *Lubbock, TX*, [3]*South Mississippi Branch Experiment Station*, *Mississippi State*.

2:30 PM	591	**Impact of vaccination on the incidence of liver abscesses in natural-fed finishing cattle.** J. T. Fox*[1], D. U. Thomson[1], N. N. Lindberg[2], and K. Barling[3], [1]*Kansas State University*, *Manhattan,* [2]*Progressive Beef Consulting Service*, *Great Bend, KS,* [3]*Novartis Animal Health*, *College Station, TX.*
2:45 PM	592	**Physiological responses of heat tolerant and sensitive *Bos taurus* breeds of cattle to different levels of heat stress.** D. E. Spiers*, H. L. Vellios, P. A. Eichen, B. Scharf, J. S. Johnson, D. K. Kishore, and E. A. Coate, *University of Missouri*, *Columbia.*
3:00 PM	593	**Early stage diagnosis of mastitis of dairy cows using ^{1}H NMR-based metabolomics.** Y. Lv and Q. Z. Li*, *Key Laboratory of Dairy Science of Education Ministry, Northeast Agricultural University*, *Harbin, China*.
3:15 PM	594	**Clinical trial to evaluate the effect of ceftiofur intramammary treatment on non-severe clinical coliform mastitis.** Y. H. Schukken[1], G. J. Bennett[1], B. J. Rauch[1], H. L. Sharkey[1], and R. L. Saltman*[2], [1]*Cornell University*, *Ithaca, NY*, [2]*Pfizer, Inc., New York, NY*.
3:30 PM	595	**Cytological and clinical endometritis in dairy cows.** J. Dubuc*[1], T. F. Duffield[1], K. E. Leslie[1], J. S. Walton[2], and S. J. LeBlanc[1], [1]*Department of Population Medicine, University of Guelph*, *Guelph, Ontario, Canada*, [2]*Department of Animal and Poultry Science, University of Guelph*, *Guelph, Ontario, Canada*.
3:45 PM	596	**Impact of postpartum uterine diseases on milk production and culling in dairy cows.** J. Dubuc*[1], T. F. Duffield[1], K. E. Leslie[1], J. S. Walton[2], and S. J. LeBlanc[1], [1]*Department of Population Medicine, University of Guelph*, *Guelph, Ontario, Canada*, [2]*Department of Animal and Poultry Science, University of Guelph*, *Guelph, Ontario, Canada*.
4:00 PM	597	**Evaluation of the hand-held Precision Xtra system for diagnosing ketosis in early lactation dairy cows.** G. R. Oetzel*, *University of Wisconsin*, *Madison.*
4:15 PM	598	**Effect of 1 or 2 dose circovirus and mycoplasma vaccines and day of vaccination on growth performance of nursery pigs.** K. L. Saddoris-Clemons*, S. B. Wiliams, N. D. Paton, and D. R. Cook, *Akey*, *Lewisburg, OH.*
4:30 PM	599	**The effect of breeder source flock age on 7- and 14-day turkey poult mortality.** B. J. Wood*, D. R. McIntyre, and G. Norwell, *Hybrid Turkeys*, *Kitchener, ON, Canada*.
4:45 PM	600	**Development of an inflammation model for use in the commercial duck.** P. Cotter*[1], T. Applegate[2], R. Murdoch[3], K. Daugherty[3], and M. Turk[3], [1]*Cotter Laboratory*, *Arlington, MA,* [2]*Purdue University*, *West Lafayette, IN,* [3]*Maple Leaf Farms*, *Milford, IN.*
5:00 PM	601	**Comparison of water based foam and inert gas mass emergency depopulation methods of turkeys.** M. K. Rankin*, E. R. Benson, R. L. Alphin, D. P. Hougentogler, and P. Mohankumar, *University of Delaware*, *Newark.*

TUESDAY ORALS

ASAS-ADSA Cell Biology Symposium
Receptors and Signaling
Chair: **James Sartin, Auburn University**
Sponsors: ASAS, ADSA, National Institute of Food and Agriculture (NIFA)
401/402

2:00 PM		**Introduction**
2:05 PM	602	**The GnRHR:GPCR trafficking in health and disease.** P. M. Conn*[1,2] and J. A. Janovick[1,2], [1]*Oregon Health and Science University*, *Portland,* [2]*Oregon National Primate Research Center*, *Beaverton.*
2:50 PM		**Introduction**
2:55 PM	603	**Function and regulation of the toll-like receptor family.** G. M. Barton*, *University of California, Berkeley*, *Berkeley*.
3:40 PM		**Introduction**
3:45 PM	604	**Insulin signaling is a modulator of muscle growth.** T. A. Davis*, A. Suryawan, R. A. Orellana, and M. L. Fiorotto, *USDA/ARS Children's Nutrition Research Center, Department of Pediatrics, Baylor College of Medicine, Houston, TX.*
4:30 PM		**Introduction**

4:35 PM 605 **Imaging the organization and trafficking of lipolytic proteins in adipocytes.**
James G. Granneman*, *Wayne State University School of Medicine*, *Detroit, MI*.

5:20 PM **Reception**

Bioethics Symposium
Should Animal Welfare Be Law or Market Driven?
Chair: **Halina M. Zaleski, University of Hawaii-Manoa**
Sponsors: AAALAC, Monsanto Corp.
303

2:00 PM 606 **Bioethics symposium introduction: Should animal welfare be law or market driven?**
C. C. Croney*, *The Ohio State University*, *Columbus.*

2:15 PM 607 **Should we legislate farm animal welfare?**
J. C. Swanson*, *Michigan State University*, *East Lansing.*

2:45 PM 608 **Impact of slaughter bans on horse welfare.**
D. L. Gies*, *Animal Assistance Foundation*, *Denver, CO*.

3:15 PM **Break**

3:30 PM 609 **Should animal welfare be law or market based?**
B. Rollin*, *Colorado State University*, *Fort Collins.*

3:50 PM 610 **Should euthanasia and pain management be mandatory? Veterinary viewpoint.**
G. C. Golab*, *American Veterinary Medical Association*, *Schaumburg, IL*.

4:10 PM **Panel discussion**

4:30 PM 611 **Consumer preferences for market and regulatory responses to farm animal welfare concerns.**
F. B. Norwood* and J. L. Lusk, *Oklahoma State University*, *Stillwater*.

Breeding and Genetics
Whole Genome Selection
Chair: **John Cole, USDA-ARS Animal Improvement Programs Laboratory**
Korbel Ballroom 2a

2:00 PM 612 **Utility of genomic relationship matrix to identify genotyping errors.**
R. Simeone*[1], I. Misztal[1], and I. Aguilar[1,2], [1]*University of Georgia*, *Athens*, [2]*INIA*, *Las Brujas, Uruguay*.

2:15 PM 613 **Genetic evaluation including phenotypic, full pedigree, and genomic information: An application in broiler chickens.**
C. Y. Chen*[1], I. Misztal[1], I. Aguilar[1,2], S. Tsuruta[1], T. H. E. Meuwissen[3], S. E. Aggrey[4], and W. M. Muir[5], [1]*Department of Animal and Dairy Science, University of Georgia*, *Athens,* [2]*Instituto Nacional de Investigación Agropecuaria*, *Las Brujas 90200, Uruguay*, [3]*Department of Animal and Aquacultural Sciences, Norwegian University of Life Sciences*, *As, Norway*, [4]*Department of Poultry Science, University of Georgia*, *Athens,* [5]*Department of Animal Science, Purdue University*, *West Lafayette, IN.*

2:30 PM 614 **Scaling the genomic relationship matrix for single-step evaluation using phenotypic, pedigree and genomic information.**
S. Forni*[1,2], I. Aguilar[3,2], I. Misztal[2], and N. Deeb[1], [1]*PIC/Genus Plc*, *Hendersonville, TN,* [2]*University of Georgia*, *Athens,* [3]*INIA*, *Las Brujas, Uruguay*.

2:45 PM 615 **Accuracies of direct genomic breeding values estimated in dairy cattle with a principal component approach.**
N. P. P. Macciotta*[1], M. A. Pintus[1], R. Steri[1], C. Pieramati[2], E. L. Nicolazzi[3], E. Santus[4], D. Vicario[5], J. T. van Kaam[6], A. Nardone[7], A. Valentini[7], and P. Ajmone-Marsan[3], [1]*Università di Sassari, Sassari, Italia*, [2]*Università di Perugia, Perugia, Italia*, [3]*Università di Piacenza, Piacenza, Italia*, [4]*ANARB, Bussolengo, Italia*, [5]*ANAPRI, Udine, Italia*, [6]*ANAFI*, *Cremona, Italia*, [7]*Università della Tuscia*, *Viterbo, Italia*.

3:00 PM 616 **Choice of parameters for single-step genomic evaluation for type.**
I. Misztal*[1], I. Aguilar[1,2], A. Legarra[3], and T. J. Lawlor[4], [1]*University of Georgia*, *Athens,* [2]*INIA*, *Las Brujas, Uruguay*, [3]*INRA*, *Toulouse, France*, [4]*Holstein Association*, *Bratteleboro, VT*.

3:15 PM 617 **Improved reliability approximation for genomic evaluations in the United States.**
G. R. Wiggans* and P. M. VanRaden, *Animal Improvement Programs Labortatory, ARS, USDA*, *Beltsville, MD.*

3:30 PM 618 **Cow adjustments for genomic predictions of Holstein and Jersey bulls.**
G. R. Wiggans, T. A. Cooper*, and P. M. VanRaden, *Animal Improvement Programs Laboratory, ARS, USDA*, *Beltsville, MD*.

3:45 PM 619 **Investigating bull dam bias in national genetic evaluations.**
F. Canavesi* and R. Finocchiaro, *Associazione Nazionale Allevatori Frisona Italiana*, *Cremona, Italy*.

4:00 PM 620 **Gains in reliability from combining subsets of 500, 5,000, 50,000, or 500,000 genetic markers.**
P. M. VanRaden and M. E. Tooker*, *Animal Improvement Programs Laboratory, ARS, USDA*, *Beltsville, MD.*

4:15 PM 621 **Accuracy of direct genomic values derived from imputed single nucleotide polymorphism genotypes in Jersey cattle.**
K. A. Weigel*[1], G. de los Campos[1], A. I. Vazquez[1], G. J. M. Rosa[1], D. Gianola[1], and C. P. Van Tassell[2], [1]*University of Wisconsin*, *Madison,* [2]*USDA-ARS*, *Beltsville, MD.*

4:30 PM 622 **Filling in missing genotypes using haplotypes.**
P. M. VanRaden*[1], J. R. O'Connell[2], G. R. Wiggans[1], and K. A. Weigel[3], [1]*Animal Improvement Programs Laboratory, ARS, USDA*, *Beltsville, MD,* [2]*University of Maryland School of Medicine*, *Baltimore,* [3]*University of Wisconsin*, *Madison.*

4:45 PM 623 **Use of haplotypes to predict selection limits and Mendelian sampling.**
J. B. Cole*, *Animal Improvement Programs Laboratory, ARS, USDA*, *Beltsville, MD.*

Dairy Foods Symposium
Towards a Mechanistic Understanding of Probiotic Function in Man and Animals
Chair: **Jeff Broadbent, Utah State University**
Sponsor: EAAP
501/502

2:00 PM **Introduction**

2:05 PM 624 **Application of "omic" tools to understanding probiotic action.**
T. R. Klaenhammer*[1,2], [1]*North Carolina State University*, *Raleigh,* [2]*Southeast Dairy Foods Reseach Center*, *Raleigh, NC*.

2:45 PM 625 **The gastrointestinal microbiome and probiotics: Effects on intestinal physiology and mucosal inflammation.**
J. Versalovic*, *Baylor College of Medicine*, *Houston, TX*.

3:15 PM 626 **An evolutionary link between bifidobacterial probiotics and milk.**
D. Mills*, *University of California*, *Davis*.

3:45 PM **Break**

4:00 PM 627 **Assessing and maintaining probiotics in food.**
T. Hornbaek*, *Chr. Hansen A/S*, *Hoersholm, Denmark*.

4:30 PM 628 **Translating the science into efficacy claims on probiotic or prebiotic products in the US market.**
M. E. Sanders*, *Dairy & Food Culture Technologies*, *Centennial, CO*.

5:00 PM 629 **Strategic application of direct-fed microbials to livestock for growth efficiency and production.**
E. Davis* and T. Rehberger, *Danisco*, *Waukesha, WI.*

Forages and Pastures Symposium
Environmental Impact of Forage-Based Livestock Production Systems
Chair: **Paul Beck, University of Arkansas; Jim Strickland, USDA-ARS FAPRU**
Korbel Ballroom 2c

2:00 PM **Introduction**

2:05 PM 630 **Compatibility of beef cattle management with multiple use values on western rangelands.**
T. DelCurto* and P. Kennedy, *Eastern Oregon Agricultural Research Center, Union Station, Oregon State University*, *Union*.

2:40 PM	631	**Livestock grazing and endangered species habitat.** G. S. Lewis*, C. A. Moffet, and J. B. Taylor, *USDA, ARS, US Sheep Experiment Station*, *Dubois, ID.*
3:15 PM	632	**Economic and environmental issues associated with confinement and pasture-based dairy systems.** D. A. Clark*[1], S. F. Ledgard[2], P. Gregorini[1], and C. A. Rotz[3], [1]*DairyNZ*, *Hamilton, Waikato, New Zealand*, [2]*AgResearch*, *Hamilton, Waikato, New Zealand*, [3]*United States Department of Agriculture- Agricultural Research Service*, *University Park, PA*.
3:50 PM	633	**Forages and livestock production with declining water resources and a changing agricultural industry.** V. G. Allen*, C. P. Brown, R. L. Kellison, P. N. Johnson, and C. J. Zilverburg, *Texas Tech University, Lubbock.*
4:25 PM	634	**Pasture management strategies to minimize the impacts of grazing on water quality of surface water resources.** J. R. Russell*[1], D. A. Bear[1], K. A. Schwarte[1], and M. M. Haan[2], [1]*Iowa State University*, *Ames,* [2]*Michigan State University*, *Hickory Corners*.

Growth and Development
Early Development and Fetal Programming
Chairs: **Tom Welsh, Texas A&M University; Rodney A. Hill, University of Idaho**
Korbel Ballroom 2b

2:00 PM	635	**Evaluation of the NCAPG I442M locus, a major gene for bovine prenatal growth, for effects on postnatal development compared to a disruptive mutation in the myostatin encoding gene GDF8.** C. Kühn*, P. Widmann, R. Pfuhl, and R. Weikard, *Leibniz Institute for Farm Animal Biology (FBN)*, *Dummerstorf, Germany*.
2:15 PM	636	**Maternal nutrition differentially influenced gene expression responsible for fetal bovine adipocyte development.** T. D. Jennings*, K. R. Underwood, A. E. Wertz-Lutz, and A. D. Weaver, *South Dakota State University*, *Brookings*.
2:30 PM	637	**Lipid accumulation and fibrosis in skeletal muscle of offspring born to obese dams.** X. Yan*[1], Y. Huang[1], M. J. Zhu[1], N. M. Long[1], A. B. Uthlaut[1], R. J. McCormick[1], S. P. Ford[1], P. W. Nathanielsz[2], and M. Du[1], [1]*Department of Animal Science, University of Wyoming*, *Laramie,* [2]*University of Texas Health Science Center*, *San Antonio.*
2:45 PM	638	**Enhanced transforming growth factor β (TGF-β) signaling and fibrogenesis in ovine fetal skeletal muscle of obese dams at late gestation.** Y. Huang*[1], X. Yan[1], M. J. Zhu[1], R. J. McCormick[1], S. P. Ford[1], P. W. Nathanielsz[2], and M. Du[1], [1]*Department of Animal Science, University of Wyoming*, *Laramie,* [2]*University of Texas Health Science Center*, *San Antonio.*
3:00 PM	639	**Up-regulation of nutrient transporters in the placenta of nutrient restricted pregnant ewes.** Y. Ma*[1], M. J. Zhu[1], P. W. Nathanielsz[2], and S. P. Ford[1], [1]*Center for the Study of Fetal Programming, Univ. of Wyoming*, *Laramie,* [2]*Center for Pregnancy and Newborn Research, Univ. of Texas Health Sciences Center*, *San Antonio.*
3:15 PM	640	**Effect of grouping calves post-weaning according to pre-grouping feed intake on animal performance.** C. M. Matuk*[1], M. Chahine[1], A. Bach[2,3], B. Ozer[1], M. E. de Haro Martí[3], J. B. Glaze Jr. [1], T. Fife[1], and M. Nelson[1], [1]*University of Idaho*, *Twin Falls*, [2]*IRTA*, *Caldes de Montbui, Spain*, [3]*ICREA*, *Barcelona, Spain*, [4]*University of Idaho*, *Gooding*.
3:30 PM	641	**Evaluation of serum protein-based arrival formula and serum protein (gammulin) on growth, morbidity, and mortality of stressed dairy calves.** A. Pineda*[1], J. K. Drackley[1], and J. M. Campbell[2], [1]*University of Illinois*, *Urbana,* [2]*APC, Inc.*, *Ankeny, IA*.
3:45 PM	642	**The effect of maternal exercise on gestating gilts on neonatal piglet organ weight.** E. K. Harris*, K. A. Vonnahme, J. D. Kirsch, J. D. Magolski, T. L. Neville, and E. P. Berg, *North Dakota State University*, *Fargo.*
4:00 PM	643	**Changes in gene expression during pituitary morphogenesis and organogenesis in embryonic chicks.** M. Proszkowiec-Weglarz*, S. E. Higgins, and T. E. Porter, *University of Maryland, Department of Animal and Avian Sciences*, *College Park.*
4:15 PM	644	**Effects of in ovo feeding of carbohydrates and arginine on the energy metabolism, protein status, and perinatal growth in Pekin ducks.** M. Tangara*, W. Chen, F. R. Huang, and P. Jian, *Laboratory of Animal Molecular Nutrition, Department of Animal Nutrition and Feed Science, Huazhong Agricultural University*, *Wuhan, Hubei, China*.
4:30 PM	645	**The effect of induced moisture loss on embryonic development of Pekin ducks.** C. Noonan* and M. S. Lilburn, *Ohio State University/OARDC*, *Wooster*.

4:45 PM 646 **Bone development of three breed crosses of broilers is affected by incubation profiles.**
E. O. Oviedo-Rondón*, M. J. Wineland, C. M. Ashwell, and P. R. Ferket, *North Carolina State University*, *Raleigh*.

5:00 PM 647 **Effect of in ovo selenium injection on chick embryo viability and tissue selenium levels.**
L. M. Macalintal*, A. H. Cantor, A. J. Pescatore, M. J. Ford, H. D. Gillespie, J. L. Pierce, K. A. Dawson, and R. F. Power, *Alltech-University of Kentucky Nutrition Research Alliance*, *Lexington.*

Immunology and Pathology
Poultry Immunology and Diseases
Chair: **Rami A. Dalloul, Virginia Tech**
503/504

2:00 PM 648 **Testosterone exposure alters embryonic bursal gene expression in chicken lines selected for differential antibody response.**
R. L. Taylor Jr. *[1], T. Burks[1], C. Timmerman[2], P. B. Siegel[3], and C. M. Ashwell[2], [1]*University of New Hampshire*, *Durham,* [2]*North Carolina State University*, *Raleigh,* [3]*Virginia Tech*, *Blacksburg*.

2:15 PM 649 **Limiting dilution studies to detect avian influenza viruses from questionable allantoic fluid samples.**
T. V. Dormitorio* and J. J. Giambrone, *Auburn University*, *Auburn, AL.*

2:30 PM 650 **Development and characterization of mouse monoclonal antibodies reactive with chicken CD80.**
S.-H. Lee*[1], H. Lillehoj[1], M.-S. Park[1], K.-W. Lee[1], C. Baldwin[2], D. Tompkins[2], B. Wagner[3], U. Babu[4], and E. Del Cacho[5], [1]*Animal and Natural Resources Institute, ARS-USDA*, *Beltsville, MD,* [2]*University of Massachusetts*, *Amherst,* [3]*Cornell University*, *Ithaca, NY,* [4]*Food and Drug Administration*, *Laurel, MD,* [5]*University of Zaragoza*, *Zaragoza, Spain*.

2:45 PM 651 **Suppressive properties of chicken CD25^{+} cells during lipopolysaccharide injection.**
R. Shanmugasundaram[1,2] and R. K. Selvaraj*[1,2], [1]*Ohio Agricultural Research and Development Center*, *Wooster,* [2]*The Ohio State University*, *Wooster.*

3:00 PM 652 **Expression profile of cytokines in cecal tonsils of broiler chicks challenged with *Clostridium perfringens*.**
Y. O. Fasina*[1], H. S. Lillehoj[2], M. S. Park[2], and D. E. Conner[1], [1]*Auburn University*, *Auburn, AL*, [2]*USDA-ARS-ANRI-APDL*, *Beltsville, MD*.

3:15 PM 653 **Gel spray as a viable method to apply a coccidia vaccine to chickens.**
G. F. Mathis*[1], E. H. Lee[2], T. Cosstick[2], and B. Lumpkins[1], [1]*Southern Poultry Research, Inc.*, *Athens, GA,* [2]*Vetech Laboratories, Inc.*, *Guelph, Ontario, Canada*.

3:30 PM **Break**

3:45 PM 654 **A mixture of capsicum and turmeric oleoresins improve performance of vaccinated broilers challenged or not with coccidiosis.**
V. Brito*[1], C. Moynat[2], A. Casarin[3], M. Forat[3], and D. Bravo[2], [1]*Euronutec*, *Querétaro, Mexico*, [2]*Pancosma*, *Geneva, Switzerland*, [3]*Instituto Internacional de Investigacion Animal*, *Mexico*.

TUESDAY ORALS

4:00 PM 655 **Cinnamaldehyde and a blend of capsicum and turmeric oleoresins improve performance of vaccinated broilers subject to coccidiosis.**
C. Moynat*[1], V. Brito[2], A. Casarin[3], M. Forat[3], and D. Bravo[1], [1]*Pancosma*, *Geneva, Switzerland*, [2]*Euronutec*, *Queretaro, Mexico*, [3]*Instituto Internacional de Investigacion Animal*, *Mexico*.

4:15 PM 656 **Ileal and cecal microbial populations and coccidia infection in broilers given probiotics and essential oil blends.**
M. E. Hume*[1], E. O. Oviedo-Rondón[2], N. A. Barbosa[2,3], N. K. Sakomura[3], M. C. Jenkins[4], and S. E. Dowd[5], [1]*USDA, ARS, FFSRU*, *College Station, TX*, [2]*Department of Poultry Science, North Carolina State University*, *Raleigh*, [3]*Universidade Estadual Paulista*, *UNESP-Jaboticabal, Brazil*, [4]*Animal Parasitic Diseases Laboratory, USDA, ARS*, *Beltsville, MD*, [5]*Research and Testing Laboratories, Medical Biofilm Research Institute*, *Lubbock, TX*.

4:30 PM 657 **Effect of microbial-nutrition interaction on chicken immune system after the early administration of probiotic with organic acids in young chicks.**
J. C. Rodriguez-Lecompte*[1], J. Brady[1], G. Camelo-Jaimes[2], S. Sharif[3], G. Crow[1], G. O. Ramirez-Yañez[1], W. Guenter[1], and J. D. House[1], [1]*University of Manitoba*, *Winnipeg, Manitoba, Canada*, [2]*Adyzyme*, *Bogota, Cundinamarca, Colombia*, [3]*University of Guelph*, *Guelph, Ontario, Canada*.

4:45 PM 658 **Probiotic, prebiotic and yeast supplementation in broiler diets from 1 to 42 days of age: 2. Immune response and slaughter traits.**
H. M. Safaa*[1], S. A. Riad[1], F. R. Mohamed[1], S. S. Siam[2], and H. A. El-Minshawy[3], [1]*Animal Production Department, Faculty of Agriculture, Cairo University*, *Giza 12613, Giza, Egypt*, [2]*Breeding Department, Animal Production Research Institute*, *Dokki, Giza, Egypt*, [3]*Ministry of Agriculture*, *Dokki, Giza, Egypt*.

Graduate Student Paper Competition
National ADSA Production PhD Oral
Chair: **Brian J. Bequette, University of Maryland**
507

2:00 PM 659 **Forage concentration and dried distillers grains with solubles in diets for lactating dairy cows.**
S. D. Ranathunga*, K. F. Kalscheur, A. R. Hippen, and D. J. Schingoethe, *South Dakota State University*, *Brookings.*

2:15 PM 660 **In vitro effects of *Escherichia coli* lipopolysaccharide on the function and gene expression of neutrophils isolated from the blood of dairy cows.**
X. S. Revelo* and M. R. Waldron, *University of Missouri*, *Columbia*.

2:30 PM 661 **Expression analysis of genes of sialic acid metabolism in transition and late lactation Holstein cows using microarrays and RNA sequencing.**
S. Wickramasinghe*, S. Hua, G. Rincon, A. Islas-Trejo, C. B. Lebrilla, and J. F. Medrano, *University of California Davis*.

2:45 PM 662 **Incidence and risk factors of bovine respiratory disease in dairy heifer calves in Ontario and Minnesota.**
C. Windeyer*[1], S. J. LeBlanc[1], K. D. Lissemore[1], D. C. Hodgins[1], S. M. Godden[2], and K. E. Leslie[1], [1]*University of Guelph*, *Guelph, ON, Canada*, [2]*University of Minnesota*, *St Paul.*

3:00 PM 663 **Effect of antibiotic treatment at post-weaning movement and BRD on growth at multiple time points in commercial dairy calves.**
A. L. Stanton*[1], S. J. LeBlanc[1], D. Kelton[1], S. T. Millman[2], J. Wormuth[3], and K. E. Leslie[1], [1]*University of Guelph*, *Guelph, Ontario, Canada*, [2]*Iowa State University*, *Ames,* [3]*CY Heifer Farm*, *Elba, NY.*

3:15 PM 664 **Effects of glucose and essential amino acids on phosphorylation of signaling proteins for protein synthesis in bovine mammary epithelial cells.**
J. A. D. R. N. Appuhamy*[1], J. Escobar[2], and M. D. Hanigan[1], [1]*1Department of Dairy Science, Virginia Polytechnic Institute and State University*, *Blacksburg,* [2]*Department of Animal and Poultry Sciences, Virginia Polytechnic Institute and State University*, *Blacksburg*.

3:30 PM 665 **Prevention of *Mycobacterium avium* ssp. *paratuberculosis* (MAP) infection in Balb/c mice by feeding probiotic *Lactobacillus acidophilus* NP-51.**
M. A. Osman*[1], J. R. Stabel[2], J. M. Hostetter[3], D. S Nettleton[4], and D. C. Beitz[1,5], [1]*Department of Animal Science, Iowa State University*, *Ames,* [2]*US Department of Agriculture, ARS, National Animal Disease Center*, *Ames, IA,* [3]*Department of Veterinary Pathology, Iowa State University*, *Ames,* [4]*Department of Statistics, Iowa State University*, *Ames,* [5]*Department of Biochemistry, Biophysics, and Molecular Biology, Iowa State University*, *Ames.*

3:45 PM 666 **Effects of varying DCAD and Na:K on production, rumen and urine parameters in lactating dairy cows.**
K. E. Cowles* and M. R. Murphy, *University of Illinois*, *Urbana*.

Nonruminant Nutrition
DDGS
Chair: **Brian Richert, Purdue University**
Korbel Ballroom 1cd

2:00 PM 667 **Increased AME and growth performance in broiler chicks fed a high DDGS diet supplemented with a mixture of NSPase.**
H. B. Lee*, K. L. Price, M. D. Utt, and J. Escobar, *Virginia Polytechnic Institute and State University*, *Blacksburg.*

2:15 PM 668 **Effects of heat treating soybean meal and DDGS on ileal amino acid digestibility in broilers.**
A. Helmbrecht*[1], H. Kluth[2], A. Lemme[1], M. S. Redshaw[1], and M. Rodehutscord[3], [1]*Evonik Degussa GmbH*, *Hanau, Germany*, [2]*University Halle-Wittenberg*, *Halle-Wittenberg, Germany*, [3]*University Hohenheim*, *Stuttgart, Germany*.

2:30 PM 669 **High dietary inclusion of dried distillers grains with solubles in broiler chick rations in combination with Allzyme SSF enzyme—Effects on yield & endogenous enzyme levels.**
M. K. Masa'deh*[1], C. A. Fassbinder-Orth[2], and S. E. Scheideler[1], [1]*University of Nebraska-Lincoln*, *Lincoln,* [2]*Creighton University*, *Omaha, NE.*

2:45 PM 670 **Effect of exogenous enzyme supplementation on performance and carcass characteristics of broilers fed distillers dried grains with solubles (DDGS).**
B. Jung*[1], A. B. Batal[1], and R. Mitchell[2], [1]*University of Georgia*, *Athens,* [2]*Perdue Farms, Inc., Salisbury, MD.*

3:00 PM	671	**Effects of varying levels of DDGS on broiler growth and intestinal content characteristics at 28 days post-hatch.** R. E. Loar II*, J. R. Donaldson, and A. Corzo, *Mississippi State University*, *MS.*
3:15 PM	672	**Effect of distillers dried grains with solubles and enzyme supplementation on production performance and egg quality of laying hens through 36 weeks of egg production.** P. Rossi*, A. J. Pescatore, A. H. Cantor, J. L. Pierce, T. Ao, L. M. Macalintal, M. J. Ford, W. D. King, and H. D. Gillespie, *Alltech-University of Kentucky Nutrition Research Alliance*, *Lexington.*
3:30 PM	673	**Effects of high concentrations of distillers dried grains with solubles on long-term laying hen performance.** J. Green*, D. U. Ahn, and M. E. Persia, *Iowa State University*, *Ames*.
3:45 PM	674	**Effects of high concentrations of dried distillers grains with solubles on intestinal structure and nutrient and endotoxin transport of laying hens.** K. Gudenkauf*, M. Jeffrey, N. K. Gabler, D. U. Ahn, and M. E Persia, *Iowa State University*, *Ames*.
4:00 PM	675	**Effects of extruding DDGS at high and low temperatures on nutritional value of diets for nursery pigs.** S. M. Williams*, J. D. Hancock, S. Issa, C. B. Paulk, and T. L. Gugle, *Kansas State University*, *Manhattan.*
4:15 PM	676	**Belly firmness and bacon quality from finishing pigs fed DDGS with various withdrawal times and with added tallow.** M. C. Ulery*[1], G. L. Cromwell[1], G. Rentfrow[1], M. D. Lindemann[1], and M. J. Azain[2], [1]*University of Kentucky*, *Lexington,* [2]*University of Georgia*, *Athens.*
4:30 PM	677	**Effects of co-products inclusion on growth performance and carcass characteristics of grower-finisher pigs.** R. Jha*[1], J. K. Htoo[2], M. G. Young[3], E. Beltranena[1,4], and R. T. Zijlstra[1], [1]*University of Alberta*, *Edmonton, AB, Canada*, [2]*Evonik Degussa GmbH*, *Hanau, Germany*, [3]*Gowans Feed Consulting*, *Wainwright, AB, Canada*, [4]*Alberta Agriculture and Rural Development*, *Edmonton, AB, Canada*.
4:45 PM	678	**Effects of dietary crude protein and inclusion of co-products on growth performance and carcass characteristics of grower-finisher pigs.** R. T. Zijlstra*[1], R. Jha[1], M. G. Young[2], J. F. Patience[3], E. Beltranena[1,4], and J. K. Htoo[5], [1]*University of Alberta*, *Edmonton, AB, Canada*, [2]*Gowans Feed Consulting*, *Wainwright, AB, Canada*, [3]*Iowa State University*, *Ames,* [4]*Alberta Agriculture and Rural Development*, *Edmonton, AB, Canada*, [5]*Evonik Degussa GmbH*, *Hanau, Germany*.

Nonruminant Nutrition
Energy and Dietary Fat
Chair: **Maria Walsh, Teagasc, Fermoy, Ireland**
Korbel Ballroom 3b

2:00 PM	679	**Effects of dbcAMP on the proliferation, differentiation and adipogenesis-related genes of porcine adipocytes.** L. Wang*[1,2], Z. Y. Jiang[1], Y. C. Lin[1], X. Y. Ma[1], and X. G. Lei[2], [1]*Institute of Animal Science, Guangdong Academy of Agricultural Sciences*, *Guangzhou, Guangdong, China*, [2]*Department of Animal Science, Cornell University*, *Ithaca, NY.*
2:15 PM	680	**DbcAMP increased lean percentage and protein deposition in finishing pigs.** Z. Y. Jiang, L. Wang*, Y. C. Lin, C. T. Zheng, and X. Y. Ma, *Institute of Animal Science, Guangdong Academy of Agricultural Sciences*, *Guangzhou, Guangdong, China*.
2:30 PM	681	**The impact of dietary long chain fatty acids on bone and cartilage in swine.** C. I. O'Connor-Robison*[1], J. D. Spencer[2], and M. W. Orth[1], [1]*Michigan State University*, *East Lansing,* [2]*JBS United, Inc.*, *Sheridan, IN*.
2:45 PM	682	**Cannabinoid receptor type 1 (CB1) antagonist, SR141716 suppresses hepatic carnitine palmitoyltransferase 1 (CPT1) gene expression in rat.** T. Wu*, Z. Yuan, and Y. Wang, *Institution of Feed Science*, *Hangzhou, Zhejiang province, China*.
3:00 PM	683	**Is the effect of dietary energy levels on feed intake of broiler chickens affected by bird age?** M. Cho*[1], R. L. Payne[2], and H. L. Classen[1], [1]*Department of Animal and Poultry Science, University of Saskatchewan*, *Saskatoon, Saskatchewan, Canada*, [2]*Evonik-Degussa Corporation*, *Kennesaw, GA.*
3:15 PM	684	**Estimation of net energy values of feedstuffs by simulation of biochemical reactions in broiler chicks.** S. Cerrate* and C. Coon, *University of Arkansas*, *Fayetteville*.
3:30 PM	685	**Energy determination of corn co-products fed to broiler chicks from fifteen to twenty-four days of age and use of composition analysis to predict AME_n.** S. J. Rochell*[1], B. J. Kerr[2], and W. A. Dozier, III[1], [1]*Auburn University*, *Auburn, AL*, [2]*USDA-ARS Agroecosystems Research Unit*, *Ames, IA*.

3:45 PM 686 **Apparent metabolizable energy (AME_n) content and standardized ileal amino acids digestibility of wheat, wheat-corn and corn distillers dried grains with solubles (DDGS) for broilers.**
A. Rogiewicz*, B. A. Slominski, W. Jia, C. M. Nyachoti, and K. M. Wittenberg, *University of Manitoba*, *Winnipeg, MB, Canada*.

4:00 PM 687 **Use of the precision-fed rooster TME assay and chick AME assay to quantify the energy value of Nutridense corn.**
T. Loeffler*, D. A. Neves, and A. B. Batal, *University of Georgia*, *Athens.*

4:15 PM 688 **Evaluation of energy digestibility among and within feedstuffs for swine using an in vitro digestibility technique.**
L. F. Wang*[1], P. R. Regmi[1], N. S. Ferguson[2], A. Pharazyn[2], and R. T. Zijlstra[1], [1]*University of Alberta*, *Edmonton, AB, Canada*, [2]*Nutreco Canada*, *Guelph, ON, Canada*.

4:30 PM 689 **The ontogeny of intestinal carbohydrate digestive, absorptive and nutrient sensing proteins in pigs.**
M. Al-Rammahi*[1], A. Moran[1], D. Batchelor[1], P. Sangild[2], C. Ionescu[3], D. Bravo[3], and S. Shirazi-Beechey[1], [1]*University of Liverpool*, *Liverpool, UK*, [2]*University of Copenhagen*, *Frederiksberg, Denmark*, [3]*Pancosma*, *Geneva, Switzerland*.

4:45 PM 690 **Quality characteristics and fatty acid composition of eggs from hens fed *Camelina sativa* (camelina meal).**
R. Kakani*[1], A. Haq[1], J. Fowler[1], E. Murphy[2,3], T. Rosenberger[3], M. Berhow[4], and C. A. Bailey[1], [1]*Texas A&M University*, *College Station*, [2]*University of North Dakota*, *Grandforks*, [3]*Agragen, LLC*, *Cincinnati, OH*, [4]*National Center for Agricultural Utilization Research, USDA*, *Peoria, IL*.

Nonruminant Nutrition Symposium
Models for Disease × Nutrition Evaluation and the Impact of Nutrition on Health, Disease, and/or Recovery
Chair: **Mike Rincker, DPI Global**
Korbel Ballroom 1ef

2:00 PM **Introduction**

2:05 PM 691 **Possible nutritional interventions to improve intestinal health.**
J. Escobar*, M. A. Ponder, K. L. Price, and H. B. Lee, *Virginia Polytechnic Institute and State University*, *Blacksburg*.

2:40 PM 692 **Challenge models to study foodborne pathogen transmission and test intervention strategies.**
P. Ebner*, *Purdue University*, *West Lafayette, IN*.

3:15 PM **Break**

3:30 PM 693 **Nutritional modulation of the gastrointestinal barrier and its role in gut health and disease.**
A. J. Moeser*, *North Carolina State University*, *Raleigh*.

4:05 PM 694 **Is immunomodulation good?**
K. C. Klasing*, *University of California*, *Davis*.

4:40 PM **Discussion**

Nonruminant Nutrition
Vitamins and Management
Chair: **Ondulla Foye-Jackson, Center for Food Safety and Applied Nutrition, FDA**
Korbel Ballroom 3a

2:00 PM 695 **Functional characterization of folic acid transport in the intestine of the laying hen.**
G. B. Tactacan*, W. Guenter, and J. D. House, *University of Manitoba*, *Winnipeg, Manitoba, Canada*.

2:15 PM 696 **Effect of choline, folacin and vitamin B_{12} on egg components and egg phospholipid composition in laying hens.**
P. Krishnan* and S. E. Scheideler, *University of Nebraska Lincoln*, *Lincoln*.

2:30 PM 697 **Effects of canthaxanthin and 25-hydroxycholecalciferol on reproductive aspects of roosters.**
A. P. Rosa*[1], P. Ferreira[1], A. Scher[1], R. P. Ribeiro[1], G. Farina[1], and J. O. B. Sorbara[2], [1]*Universidade Federal de Santa Maria, Animal Science Department, Poultry Laboratory*, *Santa Maria, RS, Brazil*, [2]*DSM Nutritional Products*, *São Paulo, SP, Brazil*.

2:45 PM 698 **Supplementation of canthaxanthin and 25-OH-D_3 to broiler breeders diet on broiler chick hatchery parameters and egg yolk TBARS.**
A. P. Rosa*[1], A. Scher[1], L. Boemo[1], T. N. N. Vieira[1], J. A. G. Ferreira Jr. [1], and J. O. B. Sorbara[2], [1]*Universidade Federal de Santa Maria, Animal Science Department, Poultry Laboratory*, *Santa Maria, RS, Brazil*, [2]*DSM Nutritional Products*, *São Paulo, SP, Brazil*.

3:00 PM 699 **Sparing vitamin E effects of a synthetic antioxidant blend in broilers.**
J. Zhao*, M. Vazquez-Anon, R. J. Harrell, J. D. Richards, F. Yan, T. Wineman, and S. Carter, *Novus International Inc.*

3:15 PM 700 **Effect of percentage pellet fines and house-walking schedule on broiler growth performance.**
W. J. Pacheco*, R. D. Malheiros, C. R. Stark, P. R. Ferket, and J. Brake, *North Carolina State University, Raleigh.*

3:30 PM 701 **The effects of feeder-trough space and gap setting on growth performance of finishing pigs.**
A. J. Myers*, R. D. Goodband, M. D. Tokach, S. S. Dritz, J. R. Bergstrom, J. M. DeRouchey, and J. L. Nelssen, *Kansas State University*, *Manhattan*.

3:45 PM 702 **Modeling the response of growing turkeys to nutrition: from experimental to commercial data.**
V Rivera-Torres*[1,2], P Ferket[3], and D Sauvant[4], [1]*Techna*, *Couëron,France*, [2]*AgroParisTech*, *Paris, France*, [3]*NC State University*, *Raleigh, NC,* [4]*INRA-AgroParisTech*, *Paris, France*.

4:00 PM 703 **Maximum profit feed formulation. 3. Interaction between energy content and temperature.**
S. Cerrate* and P. W. Waldroup, *University of Arkansas*, *Fayetteville*.

Physiology and Endocrinology
Neuroendocrinology and Hormone Receptors
Chair: **Fred Stormshak, Oregon State University**
505/506

2:00 PM 704 **Chicken Pit-1 isoforms: Expression, nuclear localization, and involvement in growth hormone promoter activation.**
M. Mukherjee* and T. E. Porter, *University of Maryland*, *College Park*.

2:15 PM 705 **Ras-dva is a novel Pit-1 and glucocorticoid regulated gene in the developing avian pituitary gland.**
L. E. Ellestad* and T. E. Porter, *Department of Animal and Avian Sciences and Molecular and Cell Biology Program, University of Maryland*, *College Park*.

2:30 PM 706 **Hypothalamic galanin-like peptide and kisspeptin may regulate the hypothalamo-pituitary-gonadal axis in the Mallard duck (*Anas platyrhyncos*).**
G. S. Fraley*, *Hope College*, *Holland, MI*.

2:45 PM 707 **Gene expression profiling of dopamine-melatonin neurons in the avian premammillary nucleus.**
S. Kosonsiriluk*, S. W. Kang, L. J. Mauro, J. R. Garbe, S. C. Fahrenkrug, and M. E. El Halawani, *University of Minnesota*, *St. Paul*.

3:00 PM 708 **Septal and hypothalamic structures activated following sexual and agonistic encounters in male broiler breeders.**
W. J. Kuenzel*, J. Xie, and A. Jurkevich, *University of Arkansas*, *Fayetteville*.

3:15 PM 709 **Various social behaviors induce differential activation of aromatase neurons in the brain of male broilers.**
J. Xie*, W. J. Kuenzel, and A. Jurkevich, *University of Arkansas*, *Fayetteville*.

3:30 PM 710 **Fos protein induction in vasotocinergic neurons of male broilers following different social contexts.**
A. Jurkevich*, J. Xie, and W. J. Kuenzel, *University of Arkansas*, *Fayetteville*.

3:45 PM 711 **Effects of RFamide-related peptide-3 (RFRP-3) on secretion of LH in ovariectomized prepubertal gilts.**
N. L. Heidorn[1], C. R. Barb[2], C. J. Rogers[1], G. J. Hausman[2], and C. A. Lents*[1], [1]*University of Georgia*, *Athens,* [2]*USDA-ARS Richard B. Russell Agriculture Research Center*, *Athens, GA.*

4:00 PM 712 **The effects of fluoxetine on lactation and lamb growth in sheep.**
P. L. Black*[1], R. A. Halalsheh[1], L. M. Lankford[1], M. M. Marricle[1], M. M. Christiansen[1], M. M. Scroppo[1], L. L. Hernandez[2], and T. T. Ross[1], [1]*New Mexico State University*, *Las Cruces*, [2]*University of Cincinnati*, *Cincinnati, OH*.

713 **Withdrawn by author**

4:15 PM 714 **Cloning and characterization of chicken galanin and galanin receptors.**
J. C. W. Ho*[1], Y Wang[2], and F. C. Leung[1], [1]*The University of Hong Kong*, *Hong Kong, HKSAR, China*, [2]*Sichuan University*, *Chengdu, Sichuan, China*.

Production, Management and the Environment
Dairy 1
Chair: **John Comerford, Pennsylvania State University**
Korbel Ballroom 4def

2:00 PM 715 **Influence of dairy herd longevity and productivity on lifetime N use efficiency.**
J. M. Moorby*, *Institute of Biological, Environmental and Rural Sciences*, *Aberystwyth, UK*.

2:15 PM 716 **Optimal dry period length and management to maximize production and health.**
D. E. Santschi*[1], C. L. Girard[2], R. I. Cue[3], D. Pellerin[4], and D. M. Lefebvre[1], [1]*Valacta*, *Ste-Anne-de-Bellevue, QC, Canada*, [2]*Agriculture and Agri-Food Canada*, *Sherbrooke, QC, Canada*, [3]*McGill University*, *Ste-Anne-de-Bellevue, QC, Canada*, [4]*Université Laval*, *Québec, QC, Canada*.

2:30 PM 717 **Effect of dietary phosphorus amount on milk production of dairy cows in China.**
Z. Liu[1], C. Wang*[1], J. X. Liu[1], D. M. Wang[1], and Z. Wu[2], [1]*Institute of Dairy Science, Zhejiang University*, *Hangzhou, China*, [2]*University of Pennsylvania, School of Veterinary Medicine*, *Kennett Square.*

2:45 PM 718 **Voluntary use of showers: Effects on behavior and physiology of dairy cattle in summer.**
A. L. Legrand[1,3], K. E. Schütz[2], and C. B. Tucker*[1], [1]*Department of Animal Science, University of California*, *Davis*, [2]*AgResearch Ltd*, *Hamilton, NZ*, [3]*Division of Animal Health & Welfare, University of Edinburgh*, *Roslin, UK*.

3:00 PM 719 **The influence of technological and biological factors on productivity in dairy farms.**
A. H. Herlin*[1] and K. Bäckman[2], [1]*Dept. Rural Buildings, Swedish University of Agricultural Sciences*, *Alnarp, Sweden*, [2]*Estate Office, Swedish University of Agricultural Sciences*, *Uppsala, Sweden*.

3:15 PM 720 **Management-driven heterogeneity in the relationship between milk production and reproductive performance of dairy cows.**
N. M. Bello*, J. P. Steibel, R. J. Erskine, and R. J. Tempelman, *Michigan State University*, *East Lansing*.

3:30 PM 721 **Milking frequency and milk production in pasture-based lactating dairy cows.**
A. G. Rius*, J. K. Kay, C. V. C. Phyn, S. R. Morgan, and J. R. Roche, *DairyNZ*, *Hamilton, New Zealand*.

3:45 PM 722 **Water use and effectiveness of a low-pressure mister system for cooling lactating dairy cows during chronic heat stress.**
J. K. Bernard*[1], D. R. Bray[2], N. A. Mullis[1], and C. P. Rowe[1], [1]*University of Georgia*, *Tifton,* [2]*University of Florida*, *Gainesville.*

4:00 PM 723 **A point-in-time comparison of the environmental impact of Jersey versus Holstein milk production.**
J. L. Capper*[1] and R. A. Cady[2], [1]*Department of Animal Sciences, Washington State University*, *Pullman,* [2]*Elanco Animal Health*, *Greenfield, IN.*

4:15 PM 724 **Bio-economic value of extended lactations in Italian Holstein farms.**
A. S. Atzori*, R. Steri, C Dimauro, A. Cannas, and G. Pulina, *Dipartimento di Scienze Zootecniche, University of Sassari*, *Sassari, Sardinia, Italy*.

4:30 PM 725 **Physiological and nutritional changes of dairy goats for maintaining milk yield during extreme heat stress conditions at late lactation.**
S. Hamzaoui, A. A. K. Salama*, G. Caja, E. Albanell, C. Flores, and X. Such, *Universitat Autònoma de Barcelona*, *Bellaterra, Barcelona, Spain*.

4:45 PM 726 **Impact of evaporative pads and cross ventilation on core body temperature and resting time of lactating cows.**
J. F. Smith[1], B. J. Bradford*[1], J. P. Harner[1], K. Ito[2], M. vonKeyserlingk[2], C. R. Mullins[1], J. C. Potts[1], and M. W. Overton[3], [1]*Kansas State University*, *Manhattan*, [2]*University of British Columbia*, *Vancouver, Canada*, [3]*University of Georgia*, *Athens*.

Ruminant Nutrition
Beef: Proteins and Carbohydrates
Chair: **Masahito Oba, University of Alberta**
Korbel Ballroom 4abc

2:00 PM 727 **Evaluation of triticale dried distillers grain as a barley silage substitute in feedlot finishing diets.**
K. T. Wierenga*[1], T. A. McAllister[2], D. J. Gibb[2], A. V. Chaves[2], E. K. Okine[1], K. A. Beauchemin[2], and M. Oba[1], [1]*University of Alberta*, *Edmonton, AB, Canada*, [2]*Agriculture and Agri-Food Canada*, *Lethbridge, AB, Canada*.

2:15 PM 728 **Examination of rumen bacterial community changes in feedlot cattle.**
R. M. Beliveau*[1,2], W. Z. Yang[2], R. J. Forster[2], J. J. McKinnon[1], and T A McAllister[2], [1]*Department of Animal and Poultry Science, University of Saskatchewan*, *Saskatoon, Saskatchewan, Canada*, [2]*Agriculture and Agri-Food Canada Research Center*, *Lethbridge, Alberta, Canada*.

2:30 PM 729 **Longitudinal gene network and pathway analysis in skeletal muscle from early-weaned Angus steers fed high-starch or low-starch diets during the growing phase.**
S. J. Moisa*, D. E. Graugnard, L. L. Berger, D. B. Faulkner, S. L. Rodriguez-Zas, R. E. Everts, H. A. Lewin, and J. J. Loor, *Department of Animal Sciences, University of Illinois*, *Urbana*.

2:45 PM 730 **Carbohydrate-responsive element binding protein (MLXIPL) and PPARγ gene network expression in longissimus lumborum of early-weaned and normal-weaned Angus steers fed a high-starch diet during the growing phase.**
S. J. Moisa*, D. W. Shike, D. B. Faulkner, and J. J. Loor, *University of Illinois*, *Urbana.*

3:00 PM 731 **Effects of fructose-based block supplement on ruminal concentration of lactate and growth of lactate-utilizing bacteria in forage-fed cattle.**
K. A. Miller*, G. L. Parsons, M. J. Quinn, and J. S. Drouillard, *Kansas State University*, *Manhattan*.

3:15 PM 732 **Effects of corn steep liquor in low-moisture blocks processed under vacuum or at atmospheric pressure on performance of growing heifers fed forage-based diets.**
K. A. Miller*, G. L. Parsons, L. K. Thompson, and J. S. Drouillard, *Kansas State University*, *Manhattan*.

3:30 PM 733 **Relationship between eating pattern and performance of Holstein bulls and steers fed high-concentrate rations using a computerized concentrate feeder.**
M. Devant*[1], S. Marti[1], and A. Bach[2,1], [1]*Department of Ruminant Production, IRTA*, *Barcelona, Spain*, [2]*ICREA*, *Barcelona, Spain*.

3:45 PM 734 **Effect of supplemental protein source during the winter on pre- and postpartum glucose metabolism.**
F. W. Harrelson*[1], S. L. Ivey[1], S. H. Cox[1], R. L. Dunlap II[1], J. T. Mulliniks[1], B. H. Carter[1], C. A. Löest[1], and M. K. Petersen[2], [1]*New Mexico State University*, *Las Cruces,* [2]*USDA-ARS Fort Keogh Livestock and Range Research Laboratory*, *Miles City, MT.*

4:00 PM 735 **Ruminal and rectal temperatures during acidosis challenge in beef cattle.**
J. L. Wahrmund*, J. R. Ronchesel, C. R. Krehbiel, and C. J. Richards, *Oklahoma State University, Department of Animal Science*, *Stillwater.*

4:15 PM 736 **The influence of dietary protein regimens on crude protein and dry matter apparent digestibility in steers fed a steam-flaked corn based diet.**
E. C. Westover*[1], J. J. Wagner[1], T. E. Engle[1], T. C. Bryant[2], S. L. Archibeque[1], and J. Ham[1], [1]*Colorado State University*, *Fort Collins,* [2]*JBS Five Rivers Cattle Feeding, Greeley, CO.*

4:30 PM 737 **Effects of rumen-protected methionine on performance and health of growing feedlot heifers.**
M. R. McDaniel*, D. A. Walker, K. M. Taylor, and C. A. Loest, *New Mexico State University*, *Las Cruces.*

4:45 PM 738 **Influence of feeding increasing levels of dry or modified wet corn distillers grains plus solubles in whole corn grain-based finishing diets on pancreatic mass, and α–amylase and trypsin activity in feedlot cattle.**
H. Salim*[1], K. M. Wood[1], P. L. McEwen[2], I. B. Mandell[1], S. P. Miller[1], and K. C. Swanson[1], [1]*University of Guelph*, *Guelph, Ontario, Canada*, [2]*Ridgetown Campus*, *Guelph, Ontario, Canada*.

Ruminant Nutrition
Dairy: Rumen Metabolism
Chair: **Jong-Su Eun, Utah State University**
Korbel Ballroom 1ab

2:00 PM	739	**Effects of lauric and myristic acids on ruminal fermentation, production, and milk fatty acid composition in lactating dairy cows.** A. N. Hristov*[1], C. Lee[1], T. Cassidy[1], M. Long[1], K. Heyler[1], and B. Corl[2], [1]*Pennsylvania State University*, *University Park*, [2]*Virginia Tech*, *Blacksburg*.
2:15 PM	740	**Time course of recovery from diet induced milk fat depression in dairy cows.** D. E. Rico* and K. J. Harvatine, *The Pennsylvania State University*, *University Park.*
2:30 PM	741	**Meta-analysis to calculate volatile fatty acid production in the rumen of cattle.** D. Sauvant*[1] and P. Noziere[2], [1]*Agroparistech-INRA MoSAR*, *16 rue Claude Bernard, Paris, France*, [2]*INRA-URH*, *63122 St Genes Champanelle, France*.
2:45 PM	742	**Forage physically effective fiber source alters ruminal pH and site of digestion.** M. B. Hall*, *US Dairy Forage Research Center, USDA-ARS*, *Madison, WI.*
3:00 PM	743	**Evaluation of 2-hydroxy-4-(methylthio) butanoic acid isopropyl ester (HMBi) and methionine (Met) supplementation on digestibility and efficiency of bacterial growth in continuous culture.** C. M. Fowler[1], S. K. R. Karnati[1], B. J. Bequette[2], Z. Yu[1], and J. L. Firkins*[1], [1]*The Ohio State University*, *Columbus*, [2]*University of Maryland*, *College Park*.
3:15 PM	744	**Ruminal degradability of forages and diets in lactating dairy cows fed a hemicellulose extract.** K. J. Herrick*[1], M. Abdullah[2], A. R. Hippen[1], D. S. Schingoethe[1], K. F. Kalscheur[1], and R. S. Patton[3], [1]*South Dakota State University*, *Brookings*, [2]*University of Veterinary and Animal Sciences*, *Lahore, Pakistan*, [3]*Temple Inland, Inc.*
3:30 PM	745	**Effect of replacing canola meal with wheat–based dried distillers grains with solubles on ruminal fermentation, microbial nitrogen supply and milk production in dairy cows.** G. E. Chibisa*, D. A. Christensen, and T. Mutsvangwa, *University of Saskatchewan*, *Saskatoon, Canada*.
3:45 PM	746	**Shifts in fermentation and intermediates of biohydrogenation induced by potassium supplementation into continuous cultures of mixed ruminal microorganisms.** T. C. Jenkins*[1], E. Block[2], and J. H. Harrison[3], [1]*Clemson University*, *Clemson, SC,* [2]*Arm and Hammer Animal Nutrition*, *Princeton, NJ,* [3]*Washington State University*, *Puyallup.*
4:00 PM	747	**Methane production, fermentation patterns and protozoa numbers in vitro as related to source of rumen fluid and feed as substrate from different cattle feeding systems.** M. A. Froetschel*, C. L. Ross, S. Buaphan, S. Chinnasamy, and K. C. Das, *The University of Georgia*, *Athens*.
4:15 PM	748	**Time course of changes in ruminal chemistry and bacterial community composition following exchange of ruminal contents between lactating Holstein cows.** P. J. Weimer*[1,2], D. M. Stevenson[1], H. C. Mantovani[3], and S. Man[2], [1]*USDA-ARS*, *Madison, WI,* [2]*University of Wisconsin*, *Madison,* [3]*Universidade Federale de Viçosa*, *Viçosa, MG, Brazil*.
4:30 PM	749	**Acute phase protein response during acute bovine ruminal acidosis.** A. M. Danscher*[1], M. B. Thoefner[1], P. M. H. Heegaard[2], C. T. Ekstroem[1], P. H. Andersen[1], and S. Jacobsen[1], [1]*University of Copenhagen*, *Denmark*, [2]*Technical University of Denmark*, *Copenhagen, Denmark*.
4:45 PM	750	**Redox potential measurement: A new way to explore ruminal metabolism.** C. Julien*[1], J. P. Marden[2], R. Moncoulon[1], and C. Bayourthe[1], [1]*Université de Toulouse, INRA, UMR 1289 INRA/INPT/ENVT TANDEM*, *31326 Toulouse, France*, [2]*Lesaffre Feed Additives*, *59520 Marquette-Lez-Lille, France*.

Small Ruminant
Sheep and Goat Production 2
Chair: **S. Solaiman, Tuskegee University**
405

2:00 PM 751 **Live and carcass leg characteristics in terminally-sired lambs.**
M. R. Mousel*[1], T. D. Leeds[2], D. R. Notter[3], H. N. Zerby[4], S. J. Moeller[4], and G. S. Lewis[1], [1]*USDA, ARS, U. S. Sheep Experiment Station*, *Dubois, ID,* [2]*USDA, ARS, National Center for Cool and Cold Water Aquaculture*, *Leetown, WV,* [3]*Virginia Polytechnic Institute and State University*, *Blacksburg,* [4]*The Ohio State University*, *Columbus.*

2:15 PM 752 **The relationship of real-time ultrasound body composition measurements, body weight and hip height with body condition score in mature Suffolk × Hampshire ewes.**
J. A. Carter*, C. A. Hughes, K. N. Gates, and F. R. B. Ribeiro, *Texas A&M University-Commerce*, *Commerce*.

2:30 PM 753 **Redberry juniper as a roughage source in lamb finishing rations: Wool and carcass characteristics, meat fatty acid profiles, and sensory panel traits.**
T. R. Whitney* and C. J. Lupton, *Texas AgriLife Research*, *San Angelo*.

2:45 PM 754 **Evaluating roughage level in lamb finishing diets containing 40% distillers dried grains: Carcass characteristics, meat fatty acid profiles, and sensory panel traits.**
T. R. Whitney*, M. G. Williamson, and J. K. Mceachern, *Texas AgriLife Research Center*, *San Angelo*.

3:00 PM 755 **Accuracy of the FAMACHA system for estimating degree of *Haemonchus contortus* induced anemia in Hampshire, Polypay and percentage White Dorper ewes.**
D. K. Aaron*, M. M. Simpson, D. G. Ely, E. Fink, B. T. Burden, M. E. Hoar, and J. Farris, *University of Kentucky*, *Lexington.*

3:15 PM 756 **Using FAMACHA and alternative dewormers to manage gastrointestinal nematodes in a dairy goat herd.**
S. P. Hart*[1] and L. J. Dawson[2,1], [1]*E (Kika) de la Garza American Institute for Goat Research, Langston University*, *Langston, O,* [2]*Oklahoma State University CVM*, *Stillwater.*

3:30 PM 757 **Effects of garlic supplementation on nematode parasite infection in grazing goats.**
Z. Wang*, A. L. Goetsch, G. D. Detweiler, S. P. Hart, and T. Sahlu, *American Institute for Goat Research, Langston University*, *Langston, OK.*

3:45 PM 758 **Efficacy of ginger and pumpkin seeds in controlling internal parasites in meat goat kids.**
D. J. O'Brien[1], M. C. Gooden[2], J. C. Warren*[1], E. K. Crook[1], J. E. Miller[3], N. C. Whitley[4], and J. M. Burke[5], [1]*Delaware State University*, *Dover,* [2]*University of Maryland Eastern Shore*, *Princess Anne,* [3]*Louisiana State University*, *Baton Rouge,* [4]*North Carolina A&T State University*, *Greensboro,* [5]*USDA, ARS, Dale Bumpers Small Farms Research Center*, *Booneville, AR.*

Swine Species
Chair: **Brad Lawrence, Novus International Inc.**
403/404

2:00 PM 759 **Casein glycomacropeptide (CGMP) in the diet of early weaned piglets reduces the *Escherichia coli* attachment to the intestinal mucosa and increases lactobacillar numbers in digesta.**
R. G. Hermes*, F. Molist, J. F. Pérez, A. G. de Segura, M. Ywazaki, and S. M. Martín-Orúe, *Universitat Autonoma de Barcelona.*, *Barcelona, Spain*.

2:15 PM 760 **Early- vs. late-gestation dietary lysine requirement of young sows.**
R. S. Samuel*[1], S. Moehn[1], P. B. Pencharz[1,2], and R. O. Ball[1,2], [1]*Department of AFNS, University of Alberta*, *Edmonton, Alberta, Canada*, [2]*Research Institute, Hospital for Sick Children*, *Toronto, Ontario, Canada*.

2:30 PM 761 **A wheat bran extract shows a high attachment to K88 *Escherichia coli in-vitro*.**
F. Molist, R. G. Hermes*, J. F. Pérez, and S M Martín-Orúe, *Universitat Autonoma de Barcelona*, *Barcelona, Spain*.

2:45 PM 762 **Effect of a softer surface in the farrowing crate on feed intake of lactating sows.**
A. Da Silva*, S. S. Anil, J. Deen, and S. K. Baidoo, *University of Minnesota*, *St Paul.*

3:00 PM 763 **Effect of P. G. 600 on estrous cycles in gilts.**
M. J. Estienne* and R. J. Crawford, *Virginia Polytechnic Institute and State University*, *Blacksburg*.

3:15 PM 764 **Analysis of the association between lameness and claw lesions in stall-housed gestating sows.**
A. Da Silva*, S. S. Anil, J. Deen, and S. K. Baidoo, *University of Minnesota*, *St Paul.*

3:30 PM 765 **Design of porcine lactoferricin-based antimicrobial peptides with improved activity.**
F. F. Han*, Y. F. Liu, Y. G. Xie, Y. H. Gao, and Y. Z. Wang, *Feed Science Institute of Zhejiang University*, *Hangzhou, Zhejiang, China*.

ADSA Production Division Symposium
Dairy Products and Human Health: The Facts
Chair: **Sergio Calsamiglia, Universidad Autonoma de Barcelona**
Sponsor: EAAP
301/302

3:30 PM **Introduction**

3:35 PM 766 **Dairy products and human health: The facts.**
D. I. Givens*, *University of Reading*, *Reading, Berkshire, United Kingdom*.

4:30 PM **Reception**

Wednesday, July 14

POSTER PRESENTATIONS

Animal Health
Probiotics and Diet

W1 **Improved health status of newborn calves from dairy cows treated intravaginally with probiotic bacteria.**
Q. Zebeli*, S. Iqbal, S. M. Dunn, and B. N. Ametaj, *University of Alberta*, *Edmonton, AB, Canada*.

W2 **Infusion of commensal bacteria intravaginally improved overall health status of transition dairy cows.**
Q. Zebeli*, S. Iqbal, S. M. Dunn, and B. N. Ametaj, *University of Alberta*, *Edmonton, AB, Canada*.

W3 **Intravaginal administration of commensal lactobacilli modulated plasma metabolites and innate immunity in periparturient dairy cows.**
S. Iqbal, Q. Zebeli, S. M. Dunn, and B. N. Ametaj*, *University of Alberta*, *Edmonton, AB, Canada*.

W4 **Intravaginal treatment with probiotics decreased the incidence of subclinical mastitis in dairy cows.**
S. Iqbal, Q. Zebeli, S. M. Dunn, and B. N. Ametaj*, *University of Alberta*, *Edmonton, AB, Canada*.

W5 **Improved feed intake and milk production in transition dairy cows treated intravaginally with probiotic bacteria.**
S. Iqbal, Q. Zebeli, S. M. Dunn, and B. N. Ametaj*, *University of Alberta*, *Edmonton, AB, Canada*.

W6 **Effect of medicinal plants on immune system of broilers.**
A. Naghizadeh, S. Rahimi*, S. Askari Rankouhi, K. Gharib Naseri, M. Lotfi, and M. Rezaei, *Tarbiat Modares University*, *Tehran, Tehran, Iran*.

W7 **In vitro effects of plant and mushroom extracts on immunological function of chicken lymphocytes and macrophages.**
S.-H. Lee*[1], H. Lillehoj[1], Y.-H. Hong[1], S.-I. Jang[1], E. Lillehoj[2], and D. Bravo[3], [1]*Animal and Natural Resources Institute, Agricultural Research Service, US Department of Agriculture*, *Beltsville, MD,* [2]*Department of Pediatrics, School of Medicine, University of Maryland*, *Baltimore,* [3]*Pancosma S. A., Grand Saconnex, Geneva, Switzerland*.

W8 **Yeast autolysate combined with probiotic strains: Investigation of health effects in vitro and ex vivo.**
A. Ganner*[1], S. Masching[2], N. Reisinger[1], G. Schatzmayr[1], and T. Applegate[3], [1]*Biomin Research Center*, *Tulln, Austria*, [2]*Biomin Holding GmbH*, *Herzogenburg, Austria*, [3]*Purdue University*, *West Lafayette, IN.*

W9 **Effects of a feed additive on neutrophil expression of immunomodulatory genes and production performance in periparturient dairy cows.**
R. D. Schramm, S. L. Shields*, D. L. Sevier, M. A. McGuire, and P. Rezamand, *University of Idaho*, *Moscow.*

W10 **Potential of *Metharrizium anisopliae* as biological means to control *Boophilus microplus* in tropical dairy farms.**
E. Maldonado-Siman*[1], P. Martinez-Hernandez[1], E. Galindo-Velasco[2], M. Alonso-Diaz[3], and R. Rodriguez-DeLara[1], [1]*Animal Science Department, University of Chapingo*, *Texcoco, Mexico, Mexico*, [2]*University of Colima*, *Tecoman, Colima,Mexico*, [3]*Autonomous National University of Mexico*, *Martinez de la Torre, Veracruz, Mexico*.

W11 **Effects of Globigen egg protein on calf health and performance.**
D. Wood*, R. Blome, and J. Sowinski, *Animix*, *Juneau, WI*.

W12 **The effect of three commercial herbal extracts on broilers performance.**
Z. Teymourizadeh, S. Rahimi*, and M. A. Karimi Torshizi, *Tarbiat Modares University*, *Tehran, Tehran, Iran*.

W13 **Omega-3 fatty acid enrichment of chicken meat by using fish oil.**
H. Saleh[1], S. Rahimi*[1], M. A. Karimi Torshizi[1], and A. Rahimi[2], [1]*Tarbiat Modares University*, *Tehran, Tehran, Iran*, [2]*Islamic Azad University*, *Tehran, Tehran, Iran*.

W14 **Comparison the effect of commercial probiotics on performance and morphology of small intestine in broiler chicks.**
M. Soleimani[1], S. Rahimi*[1], M. A. Karimi Torshizi[1], and F. Niknafs[2], [1]*Tarbiat Modares University*, *Tehran, Iran*, [2]*Zarbal Breeding Company*, *Amol, Mazandaran, Iran*.

W15 **Subjective assessment versus objective measurement of FAMACHA and hematocrits in sheep and goats fed herbs and ivermectin as dewormers under natural grazing conditions.**
H. A. Swartz*[1], C. Clifford-Rathert[1], A. N. Stewart[1], D. K. Sommerer[1], F. P. Wulff[1], K. Schmidt[1], and M. R. Ellersieck[2], [1]*Lincoln University*, *Jefferson City, MO*, [2]*University of Missouri*, *Columbia*.

W16 **Effects of short-term tocopherol (T) feeding on nitric oxide production and protein nitration following endotoxin (LPS) challenge in beef calves.**
S. Kahl*[1], T. Elsasser[1], J. Shaffer[1], C. Li[1], K. Lebold[2], M. Traber[2], and S. Block[3], [1]*USDA, Agricultural Research Service*, *Beltsville, MD*, [2]*Oregon State University*, *Corvallis*,[3]*Archer Daniels Midland (ADM), Inc.*, *Decatur, IL*.

W17 **Interactive effects of active *Saccharomyces cerevisiae* and its cell wall material on intestinal microbial ecology during the receiving period of stressed beef cattle.**
C. T. Collier[1], J. A. Carroll*[1], J. R. Corley[2], A. G. Estefan[2], D. N. Finck[3], and B. J. Johnson[3], [1]*ARS-USDA*, *Lubbock, TX*, [2]*Lesaffre Feed Additives*, *Milwaukee, WI*, [3]*Texas Tech University*, *Lubbock*.

W18 **Effects of ochratoxin A on performance of broilers and the efficacy of a mycotoxin detoxifying product.**
U. Hofstetter*[1], R. Borutova[1], V. Starkl[1], I. Rodrigues[1], and C. W. Kang[2], [1]*Biomin Holding GmbH*, *Herzogenburg, Austria*, [2]*Animal Resources Research Center, College of Animal Bioscience and Technology, Konkuk University*, *Seoul, Korea*.

W19 **Effects of short-term tocopherol (T) feeding on structure-localized protein tyrosine nitration (pTN) patterns of mitochondrial ATPase following endotoxin (LPS) challenge in beef calves.**
T. Elsasser*[1], S. Kahl[1], J. Shaffer[1], R. Castellano-Perez[1], C. Li[1], and S. Block[2], [1]*USDA, Agricultural Research Service*, *Beltsville, MD*, [2]*Archer Daniels Midland (ADM), Inc.*, *Decatur, IL*.

W20 **Reserpine-induced changes of the small intestinal histology and the expression of genes relative to mucosal immunity in rat.**
X.-Y.Zhu*[1], K.-J. Guo[2], F.-H. Liu[2,3], J. Yu[2], A. Lu[2], N.-W. Zhang[1], G. Cheng[2,3], P. Yin[1], N. Wang[2], and J.-Q. Xu[1], [1]*TCVM Laboratory, CAU-BUA TCVM Teaching & Research Team, College of Veterinary Medicine, China Agricultural University*, *Beijing, China*, [2]*Department of Animal Science and Technology, Beijing University of Agriculture*, *Beijing, China*, [3]*Beijing Key Laboratory of TCVM, CAU-BUA TCVM Teaching & Research Team*, *Beijing, China*.

W21 **Gastrointestinal motility and gastrointestinal hormones VIP and GAS expression in reserpine-induced FGID rats.**
G. Jingyi[1], Z. Xiaoyu[1], C. Fei[1], C. Guilin[2,3], L. Fenghua[2,3], and X. Jianqin*[1], [1]*China Agricultural University China Agricultural University*, *Beijing, China*, [2]*Beijing University of Agriculture*, *Beijing, China*, [3]*CAU-BUA TCVM Teaching & Research Team*, *Beijing, China*.

W22 **Effects of medicinal plants on broilers performance, organs weight, small intestine morphology and GIT microflora.**
A. Niknam, S. Rahimi*, J. Azimi, M. Hoseinzadeh, M. Moradi Nejad, and K. Seifi, *Tarbiat Modares University*, *Tehran, Iran*.

Breeding and Genetics
Dairy Cattle

W23 **Identification of small heat shock proteins in the bovine genome.**
S. Schepis and M. Worku*, *North Carolina Agricultural & Technical State University*, *Greensboro*.

W24 **Use of partial least-square regression to predict SNP when some animals are genotyped with low density marker panels.**
C. Dimauro*, G. Gaspa, R. Steri, S. Sorbolini, E. Pintus, and N. P. P. Macciotta, *University of Sassari*, *Sassari, Italy*.

W25 **Multiple trait genetic evaluation of linear type traits using genomic and phenotypic information in US Holsteins.**
S. Tsuruta*[1], I. Aguilar[1,2], I. Misztal[1], A. Legarra[3], and T. J. Lawlor[4], [1]*University of Georgia*, *Athens*, [2]*INIA*, *Las Brujas, Uruguay*, [3]*INRA*, *Castanet-Tolosan, France*, [4]*Holstein Association USA Inc., Brattleboro, VT*.

W26 **Genotype by environment interaction: Effects of nutritional management on production traits.**
M. W. Dekleva*[1], C. D. Dechow[1], J. M. Daubert[1], S. Bauck[2], J. W. Blum[3], and G. A. Varga[1], [1]*The Pennsylvania State University*, *State College*, [2]*IGENITY Livestock Production Business Unit*, *Duluth, Georgia*, [3]*University of Bern*, *Switzerland*.

W27 **Evaluation of the effect of inbreeding on age at first calving in Holstein cattle.**
J. Bezdicek* and J. Riha, *Agrovyzkum Rapotin s. r. o., Rapotin, Czech Republic*.

W28 **Age at first calving in Holstein cattle in the United States.**
J. Cole and D. Null*, *Animal Improvement Programs Laboratory, ARS, USDA*, *Beltsville, MD.*

W29 **Relationship of reason for lactation termination with genetic merit of Holsteins in the United States.**
H. D. Norman, J. R. Wright, and S. M. Hubbard*, *Animal Improvement Programs Laboratory, ARS, USDA*, *Beltsville, MD*.

W30 **Comparison of Holstein service-sire fertility for heifer and cow breedings with conventional and sexed semen.**
H. D. Norman*, J. L. Hutchison, and P. M. VanRaden, *Animal Improvement Programs Laboratory, ARS, USDA*, *Beltsville, MD*.

W31 **Derivation of factors to estimate daily, fat, protein, and somatic cell score from one milking of cows milked three times daily.**
M. M. Schutz*[1] and H. D. Norman[2], [1]*Purdue University*, *West Lafayette, IN,* [2]*USDA-ARS Animal Improvement Programs Laboratory*, *Beltsville, MD.*

W32 **Derivation of factors to estimate daily milk yield from one milking of cows milked three times daily.**
M. M. Schutz*[1], J. M. Bewley[2], and H. D. Norman[3], [1]*Purdue University*, *West Lafayette, IN,* [2]*University of Kentucky*, *Lexington,* [3]*USDA-ARS Animal Improvement Programs Laboratory*, *Beltsville, MD.*

W33 **Genetic relationship between milk urea nitrogen and milk constituents in Holstein dairy cows.**
N. Ghavi Hossein-Zadeh*[1] and M. Ardalan[2], [1]*Department of Animal Science, Faculty of Agriculture, University of Guilan*, *Rasht, Iran*, [2]*Department of Animal Science, University College of Agriculture and Natural Resources, University of Tehran*, *Karaj, Iran*.

W34 **Genetic relationship between milk urea nitrogen and reproductive performance in Iranian Holsteins.**
N. Ghavi Hossein-Zadeh*[1] and M. Ardalan[2], [1]*Department of Animal Science, Faculty of Agriculture, University of Guilan*, *Rasht, Iran*, [2]*Department of Animal Science, University College of Agriculture and Natural Resources, University of Tehran*, *Karaj, Iran*.

W35 **Adjusted phenotypic trend estimation for peak milk yield of Iranian Holsteins milked three times daily.**
H. Farhangfar*[1], M. Bashtani[1], and J. Modarresi[2], [1]*University of Birjand*, *Birjand, Iran*, [2]*Agricultural Jihad Organisation*, *Birjand, Iran*.

W36 **REML estimates of heritability and repeatability for monthly test-day milk yield of primiparous Iranian Holsteins.**
A. Seyed Dokht*[1], H. Farhangfar[2], A. A. Aslami Nezhad[1], and M. Tahmorespour[1], [1]*Ferdowsi University of Mashhad*, *Mashhad, Iran*, [2]*Birjand University*, *Birjand, Iran*.

W37 **Correlation between milk components with regard to the season in Iranian dairy herds.**
A. Laki*, S. Babaei, N. Hedayat-Evrigh, M. Dehghan-Banadaky, and K. Rezayazdi, *Department of Animal Science, Campus of Agriculture, University of Tehran*, *Karaj, Tehran, Iran*.

W38 **Comparison of fixed and random regression test-day models in genetic evaluation of Iranian Holsteins for protein yield.**
M. Bashtani*, H. Farhangfar, H. Naeemipour, M. R. Asghari, A. Arab, and M. Jafari Tarbaghan, *Birjand University*, *Birjand, Iran*.

W39 **Estimation of udder composite in the Holstein population of Iran.**
M. R. Bakhtiarizadeh*, M. Moradi Shahr Babak, and A. Pakdel, *University of Tehran*, *Karaj, Tehran*.

W40 **Bayesian estimates of genetic parameters for cystic ovarian disease, displaced abomasum and foot and leg diseases in Iranian Holsteins via Gibbs sampling.**
N. Ghavi Hossein-Zadeh*[1] and M. Ardalan[2], [1]*Department of Animal Science, Faculty of Agriculture, University of Guilan*, [2]*Department of Animal Science, University College of Agriculture and Natural Resources, University of Tehran*.

W41 **Bayesian estimates of genetic parameters for metritis, retained placenta, milk fever, and clinical mastitis in Holstein dairy cows via Gibbs sampling.**
N. Ghavi Hossein-Zadeh*[1] and M. Ardalan[2], [1]*Department of Animal Science, Faculty of Agriculture, University of Guilan*, [2]*Department of Animal Science, University College of Agriculture and Natural Resources, University of Tehran*.

W42 **Genetic relationships between somatic cell count, milk production and udder conformation traits in Iranian Holsteins.**
M. R Sanjabi*[1], A. Gholibaigi Fard[2], R. Vaez Torshizi[2], A. Lavaf[2], and A. H. Ahadi[1], [1]*Iranian Research Organization for Science and Technology, Tehran,Iran*, [2]*Azad University, Karaj, Iran*.

Dairy Foods
Microbiology

W43 **Microbiological quality of pasteurized milk from Minas Gerais state, Brazil.**
E. H. P. Andrade, M. O. Leite*, M. R. A. Moura, T. Roza, C. F. A. M. Penna, M. M. O. P. Cerqueira, L. M. Fonseca, and M. R. Souza, *Federal University of Minas Gerais*, *Belo Horizonte, Minas Gerais, Brasil*.

W44 **The relationships between somatic cell count and bacteriology on milk quality and production in dairy goats.**
K. N. Baker*, S. D. Horner, D. K. Rucker, L. C. Nuti, and G. R. Newton, *Prairie View A&M University*, *Prairie View, TX*.

W45 **Biodiversity of Enterococci in Egyptian dairy products.**
S. Awad*[1], C. Snauwaert[2,3], P. Vandamme[3], A. El Attar[1], and M. El Soda[1], [1]*1Department of Dairy Science and Technology, Faculty of Agriculture, Alexandria University*, *Egypt*, [2]*BCCM/LMG Bacteria Collection, Ghent University, Ghent, Belgium*, [3]*Laboratory of Microbiology, Ghent University*, *Ghent, Belgium*.

W46 **Identification, characterization, and differentiation of bifidobacteria obtained from Ukraine.**
L. Tmanova*, A. Onyenwoke, and R. F. Roberts, *The Pennsylvania State University*, *University Park*.

W47 **Buffering capacity affects starter bacteria in nonfat probiotic yogurt.**
M. Michael, R. K. Phebus, and K. A. Schmidt*, *Kansas State University*, *Manhattan.*

W48 **Identification of lactic acid bacteria in taiwanese ropy fermented milk and evaluation of their microbial ecology in different milk.**
K. N. Chen[1], S. Y. Wang[2], and M. J. Chen*[2], [1]*Tungnan University*, *Taipei, Taiwan*, [2]*National Taiwan University*, *Taipei, Taiwan*.

W49 **Summary of a 2-year study involving screening, characterization, and environmental scanning of bacteria with the potential to produce ropy milk in a farm.**
A. Laubscher*[1], H. Guo[1], K. White[1], B. Rossi Paneto[1], A. Cano[1], R. Cano[2], and R. Jiménez-Flores[1], [1]*Dairy Products Technology Center, California Polytechnic State University*, *San Luis Obispo,* [2]*Biological Sciences Department, California Polytechnic State University*, *San Luis Obispo*.

W50 **Screening of *Lactobacillus casei* strains for the application of yogurt starter and probiotics.**
J. K. Choi*, J. H. Im, and G. B. Kim, *Department of Animal Science & Technology, Chung-Ang University*, *Anseong 456-756 , South Korea*.

W51 **Effect of yogurt consumption on the human intestinal microbiota.**
H. J. Kim*[1], S. J. Eom[1], Y. T. Ahn[2], J. H. Lee[2], C. S. Huh[2], and G. B. Kim[1], [1]*Department of Animal Science and Technology, Chung-Ang University*, *Anseong 456-756, South Korea*, [2]*Research and Development Center, Korea Yakult Co., LTD., Yongin 449-901, South Korea*.

W52 **The effect of fermented yogurt on the prevention and treatment of diarrhea in animal models.**
J. H. Im*[1], J. K. Choi[1], M. H. Lee[2], J. H. Sim[2], C. S. Huh[2], and G. B. Kim[1], [1]*Department of Animal Science & Technology Chung-Ang University*, *Anseong 456-756, South Korea*, [2]*Research and Development Center, Korea Yakult Co., LTD., Yongin 449-901, South Korea*.

W53 **Effect of milk fermented by *Lactobacillus rhamnosus* on an experimental infection with *Salmonella enterica* ssp. *enterica* serovar Typhimurium in gnotobiotic and conventional mice.**
A. H. Mendonça[1], M. M. O. P. Cerqueira*[2], J. R. Nicoli[2], M. O. Leite[2], M. R. Souza[2], L. M. Fonseca[2], R. M. N. Drummond[2], R. M. E. Arante[2], and C. F. A. M. Penna[2], [1]*Ministry of Agriculture*, *Brasília, Distrito Federal, Brazil*, [2]*Federal University of Minas Gerais*, *Belo Horizonte, Minas Gerais, Brazil*.

W54 **Influence of bovine and caprine caseinomacropeptide on the viability of *E. coli* and *L. rhamnosus* in acidic conditions.**
G. Robitaille*, C. Lapointe, D. Leclerc, and M. Britten, *Food Research and Development Centre, Agriculture and Agri-Food Canada*, *St-Hyacinthe, QC, Canada*.

W55 **Screening of β-galactosidase-containing probiotic for the production of galacto-oligosaccharides and its optimal preparation conditions.**
Y Gao, X Mi, L Feng, R Zhong, B Qian, and S Zhang*, *Department of Food Science and Technology, School of Agriculture and Biology, Shanghai Jiao Tong University*, *Shanghai, China*.

W56 **Characterization and partial purification of antimutagenic peptide produced by *Lactobacillus plantarum* CNU 2116.**
J. W. Jeong*[1], B. H. Yoon[1], D. J. Park[3], Y.-S. Son[2], and S. Oh[1], [1]*Division of Animal Science, Chonnam Natiional University*, *Gwangju, South Korea*, [2]*Division of Bioscience & Technology, Korea University*, *Seoul, South Korea*, [3]*Korea Food Research Institute*, *Gyeonggi-do, South Korea*.

W57 **Characterization of microorganisms isolated from biofilms formed on whey reverse osmosis membranes.**
A. C. Biswas*, M. Avadhanula, S. Anand, and A. Hassan, *Midwest Dairy Foods Research Center, Dairy Science Department, South Dakota State University*, *Brookings.*

W58 **Transcriptional analysis of a very broad spectrum lantibiotic produced by *Bifidobacterium longum* DJO10A.**
J. H. Lee*, X. Li, and D. J. O'Sullivan, *University of Minnesota*, *St Paul.*

W59 **Comparison of the Baird-Parker agar, Baird-Parker-RPF and Petrifilm Staph Express in the detection and enumeration of *Staphylococcus* coagulase positive in raw milk.**
A. K. R. Santos, M. O. Leite*, L. M. Fonseca, M. O. P. Cerqueira, M. R. Souza, C. F. A. M. Penna, and M. R. A. Moura, *Federal University of Minas Gerais*, *Belo Horizonte, Minas Gerais, Brazil*.

W60 **Influence of low-pressure homogenization on growth of *Streptococcus thermophilus*.**
T. Muramalla[1] and K. Aryana*[1,2], [1]*Louisiana State University*, *Baton Rouge,* [2]*Louisiana State University Agricultural Center*, *Baton Rouge.*

W61 **Influence of mild pulsed electric field conditions on the growth of *Streptococcus thermophilus* .**
N. Najim[1] and K. Aryana*[1,2], [1]*Louisiana State University Agricultural Center*, *Baton Rouge,* [2]*Louisiana State University*, *Baton Rouge.*

W62 **Effect of mild sonication on the growth of *Streptococcus thermophilus*.**
M. Moncada*[1,2] and K. Aryana[1,2], [1]*Louisiana State University Agricultural Center*, *Baton Rouge,* [2]*Louisiana State University*, *Baton Rouge.*

W63 **Low-pressure homogenization effects on bile tolerance of *Streptococcus thermophilus*.**
T. Muramalla*[1] and K. Aryana[1,2], [1]*Louisiana State University*, *Baton Rouge,* [2]*Louisiana State University Agricultural Center*, *Baton Rouge.*

W64 **Acoustical emissions generated by bacteriophages sk1 and ml3 using *Lactococcus lactis* ssp. *lactis* C2 host.**
A. K. Wardani[1], C. L. Hicks*[2], and J. M. Stencel[3], [1]*University of Brawijaya*, *Malang, Indonesia*, [2]*University of Kentucky*, *Lexington,* [3]*Tribo Flo Separations*, *Lexington, KY.*

W65 **Viability of bifidobacteria and lactobacilli in skim milk with shiitake mushroom extract during refrigerated storage.**
O. Hassan*[1], O. S. Isikhuemhen[1], S. A. Ibrahim[1], A. AbuGhazaleh[2], and D. Song[1], [1]*North Carolina A &T State University*, *Greensboro,* [2]*Southern Illinois University*, *Carbondale*.

W66 **Microbiological quality of dairy protein supplements sold in Saudi Arabia markets.**
S. O. Aljaloud*[1], D. Song[2], A. M. Fraser[1], and S. A. Ibrahim[2], [1]*Clemson University*, *Clemson, SC,* [2]*North Carolina Agricultural and Technical State University*, *Greensboro*.

W67 **Antimicrobial activity and composition of oregano essential oils from different climate zones of Colombia.**
L Betancourt*[1,3], R Patiño[2], V Phandanauvong[2], C Ariza-Nieto[2], and G Afanador-Téllez[3], [1]*Universidad de La Salle*, *Bogotá, Colombia*, [2]*CORPOICA*, *Bogotá, Colombia*, [3]*Universidad Nacional de Colombia*, *Bogotá, Colombia*.

Dairy Foods
Processing

W68 **Effect of processing on the milk fat globule membrane constituents.**
X. Elías-Argote* and R. Jiménez-Flores, *California Polytechnic State University San Luis Obispo*.

W69 **Evaluation of vacuum packaging on particle size, particle density and solubility of dry dairy powders.**
H. Eshpari* and P. S. Tong, *California Polytechnic State University*, *San Luis Obispo*.

W70 **A new cold gelation method for producing calcium-fortified whey protein gels.**
Y. C. Tseng and C. L. Hicks*, *University of Kentucky*, *Lexington.*

W71 **Use of caseinomacropeptide quantification by high performance liquid chromatography to estimate cheese whey addition in fermented milk beverages.**
E. H. P. Andrade, M. O. Leite, M. R. Souza, L. M. Fonseca*, M. M. O. P. Cerqueira, C. F. A. M. Penna, T. Roza, and N. M. A. Silva, *Federal University of Minas Gerais*, *Belo Horizonte, Brazil*.

W72 **Comparison of solubility with methods for determining denaturation in whey protein.**
M. D. Allen* and P. S. Tong, *California Polytechnic State University*, *San Luis Obispo*.

W73 **Whey protein fractionation with supercritical CO_2: Process optimization.**
L. M. Bonnaillie* and P. M. Tomasula, *US Department of Agriculture, Agricultural Research Services, Eastern Regional Research Center*, *Wyndmoor, PA.*

W74 **Effect of applying power ultrasounds during the thermal denaturation of whey proteins in the presence of buttermilk.**
M. Saffon*[1], M. Britten[2], and Y. Pouliot[1], [1]*STELA Dairy Research Center, Institute of Nutraceuticals and Functional Food (INAF), Université Laval, Québec, QC, Canada*, [2]*Food Research and Development Center (FRDC), Agriculture and Agri-Food Canada, St-Hyacinthe, Québec, Canada*.

W75 **Partitioning of minerals and protein using dialysis at different temperatures.**
N. On-Nom*, A. Grandison, and M. Lewis, *University of Reading, Reading, Berkshire, UK*.

W76 **Measurement of pH and ionic calcium at high temperatures and their effect on the heat stability of milk supplemented with calcium chloride.**
N. On-Nom*, M. Lewis, and A. Grandison, *University of Reading, Reading, Berkshire, UK*.

W77 **Production of single cell oil during growth of *Aspergillus* species on whey.**
A. Akpinar-Bayizit*, L. Yilmaz-Ersan, and T. Ozcan, *Uludag University, Department of Food Engineering, Bursa, Turkey*.

Dairy Foods
Protein

W78 **The effect of lysine and methionine on milk protein mRNA expression of bovine mammary epithelial cells in vitro.**
X. Y. Li, J. Q. Wang*, D. P. Bu, H. Y. Wei, H. Hu, and L. Y. Zhou, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*.

W79 **Identification of bovine casein phosphorylation using TiO_2 enrichment in combination with nano-ESI-MS/MS.**
S. S Li, Y. X Yang, J. Q Wang*, D. P Bu, H. Y Wei, L. Y Zhang, and L. Y Zhou, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*.

W80 **Developmental changes in the bovine whey proteome during the transition from colostrum to milk.**
L. Y. Zhang[1,2], J. Q. Wang*[1], Y. X. Yang[1], S. S. Li[1], D. P. Bu[1], and L. Y. Zhou[1], [1]*State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agriculture Science, Beijing, China*, [2]*Department of Animal Science, College of Agriculture, Hebei University of Engineering, Handan, China*.

W81 **Formation of nanofibers and hydrogels from a milk-derived peptide.**
M.-M. Guy[1], N. Voyer[2], S. F. Gauthier[1], and Y. Pouliot*[1], [1]*STELA Dairy Research Center, Institute of Nutraceuticals and Functional Foods (INAF), Université Laval, Québec, Canada*, [2]*Department of chemistry and PROTEO Protein Structure, Function and Engineering Research Network, Université Laval, Québec, Canada*.

Extension Education

W82 **Assessing learning outcomes: A comprehensive dairy cattle nutrition curriculum for practicing veterinarians.**
G. M. Schuenemann*, M. L. Eastridge, W. P. Weiss, J. D. Workman, S. Bas, and P. Rajala-Schultz, *The Ohio State University, Columbus.*

W83 **A self-powered smart wireless identification and tracking sensor prototype for production agriculture applications.**
K. Dhakal*[1], J. F. Keown[1], and H. Sharif[2], [1]*Department of Animal Science, University of Nebraska-Lincoln,* [2]*Department of Computer and Electronics Engineering, University of Nebraska-Lincoln*.

W84 **Impact of the 2009 economic crisis on Idaho dairies.**
M. Chahine*[1], G. E. Shewmaker[1], R. J. Norell[2], and C. W. Gray[1], [1]*University of Idaho, Twin Falls*, [2]*University of Idaho, Idaho Falls*.

W85 **Nuisance fly production capacity of three types of manure handling systems.**
G. E. Higginbotham*[1], A. C. Gerry[2], C. C. Collar[3], and L. D. Reed[4], [1]*University of California Cooperative Extension, Fresno,* [2]*University of California, Riverside,* [3]*University of California Cooperative Extension, Hanford,* [4]*513 Fortuna Ave., Modesto, CA.*

W86 **Examining the dairy workforce in order to improve labor efficiency.**
L. A. Holden*, R. E. Bechtel, and G. A. Varga, *Penn State University, University Park*.

W87 **Effect of bedding material on flies, and behavior and innate immunity of calves reared in hutches.**
K. D. Gay*[1], S. D. Eicher[2], C. S. Wilcox[1,2], J. A. Bridges[1], M. H. Rostagno[2], S. E. Charley[1], M. J. Grott[1], R. E. Williams[1], and M. M. Schutz[1], [1]*Purdue University, West Lafayette, IN,* [2]*USDA-ARS Livestock Behavior Research Unit, West Lafayette, IN*.

W88 **Management practices utilized by high-producing Kentucky dairy herds.**
C. O. Coombs and J. M. Bewley*, *University of Kentucky*, *Lexington*.

W89 **Organic milk production in Maine: Attributes, costs, and returns.**
P. S. Heacock*, A. L. Cook, G. K. Criner, and L. A. Bragg, *University of Maine*, *Orono.*

W90 **Effectiveness of genetic evaluations in predicting daughter performance in individual herds.**
H. D. Norman[1], J. R. Wright*[1], C. D. Dechow[2], and R. C. Goodling Jr. [2], [1]*Animal Improvement Programs Laboratory, ARS, USDA*, *Beltsville, MD*, [2]*Pennsylvania State University*, *University Park*.

W91 **Winter feeding strategies for lactating organic dairy cows.**
P. S. Heacock*, D. P. Marcinkowski, G. W. Anderson, M. R. Stokes, and R. Kersbergen, *University of Maine*, *Orono.*

W92 **A milker's school for international refugees resettled in Idaho.**
J. C. Dalton*[1], K. S. Jensen[2], R. Manzo[3], and L. Whiteford[3], [1]*University of Idaho*, *Caldwell*, [2]*University of Idaho*, *Owyhee County*, [3]*International Rescue Committee*, *Boise, ID*.

W93 **Limitations and opportunities of beef and dairy operations for the use of ethanol co-products.**
J. I. Navarro*[1], L. J. Snyder[1], R. P. Lemenager[1], and S. L. Lake[2], [1]*Purdue University*, *West Lafayette, IN*, [2]*University of Wyoming*, *Laramie*.

W94 **Farm animal welfare: Assessing public concern and attitudes.**
D. R. Deemer[1], J. A. Pempek*[1], L. M. Lobao[1], G. J. Coleman[2], and M. L. Eastridge[1], [1]*The Ohio State University*, *Columbus,* [2]*Monash University*, *Clayton, Victoria, Australia*.

W95 **Reproductive indicators in dairy cattle enterprises with different technological level.**
A. Pacheco Cervantes, D. V. Mariscal Aguayo*, H. Estrella Quintero, M. Huerta Bravo, R. Rangel Santos, and R. Núñez Domínguez, *Universidad Autónoma Chapingo*, *Jalisco, México*.

W96 **Case study: Characterization of lying behavior in dairy cows transitioning from a freestall barn to a compost bedded pack barn.**
C Gravatte*, C Coombs, and J Bewley, *University of Kentucky*, *Lexington.*

W97 **Composting school: An educational tool to bring together dairy producers and other community members.**
M. E. de Haro Martí*[1] and J. A. Robbins[2], [1]*University of Idaho, Gooding*, [2]*University of Idaho*, *Jerome*.

Food Safety 2

W98 **Efficacy of ultraviolet light systems for control of microorganisms in poultry and beef brine and marinade solutions.**
K. L. Beers*, P. E. Cook, C. W. Coleman, and A. L. Waldroup, *MCA Services*, *Rogers, AR.*

W99 **Antimicrobial susceptibility profile of enterotoxigenic *Staphylococcus* sp. recovered from foodborne outbreaks in Minas Gerais state, Brazil, from 1998 to 2002.**
J. F. Veras, C. F. A. M. Penna, M. R. Souza, M. O. Leite, L. M. Fonseca, L. S. Carmo, and M. M. O. P. Cerqueira*, *Federal University of Minas Gerais state*, *Belo Horizonte, Minas Gerais, Brazil*.

W100 **Occurrence and antimicrobial resistance of *Campylobacter jejuni* isolated from poultry carcasses commercialized at the Federal District area in Brazil.**
A. P. Santana*[1], D. C. Ruy[1], H. M. Moura[1], and S. Perecmanis[1], [1]*Universidade de Brasília*, *Brasilia, DF, Brazil*, [2]*Universidade de Brasília*, *Brasília, DF, Brazil*, [3]*Universidade de Brasília*, *Brasília, DF, Brazil*, [4]*Universidade de Brasília*, *Brasília, DF, Brazil*.

W101 **Antibacterial activity of trans-cinnamaldehyde, eugenol, carvacrol, and thymol on *Salmonella* Enteritidis and *Campylobacter jejuni* in chicken cecal contents *in vitro*.**
A. Kollanoor Johny*[1], M. J. Darre[1], M. I. Khan[2], A. M. Donoghue[3], D. J. Donoghue[4], and K. Venkitanarayanan[1], [1]*Department of Animal Science, University of Connecticut*, *Storrs,* [2]*Department of Pathobiology and Veterinary Science, University of Connecticut*, *Storrs,* [3]*Poultry Production and Product Safety Research Unit, ARS, USDA*, *Fayetteville, AR,* [4]*Center for Excellence in Poultry Science, University of Arkansas*, *Fayetteville.*

W102 **Effects of dietary antimicrobials on fecal shedding of *Campylobacter, Salmonella*, and Shiga-toxin producing *Escherichia coli* in production swine.**
J. E. Wells*, N. Kalchayanand, E. D. Berry, and W. T. Oliver, *USDA, ARS, US Meat Animal Research Center*, *Clay Center, NE.*

W103 **Persistent effect of thymol and diphenyliodonium chloride against *Campylobacter coli* in vitro.**
N. A. Krueger*, R. C. Anderson, T. R. Callaway, T. S. Edrington, and D. J. Nisbet, *USDA-ARS Southern Plains Agriculture Research Center, Food and Feed Safety Research Unit*, *College Station, TX.*

W104 **Evaluating different gas delivery methods that create a microaerophilic environment for culturing *Campylobacter jejuni*.**
M. D. Haines*, K. N. Eberle, C. D. McDaniel, and A. S. Kiess, *Mississippi State University*, *Mississippi State*.

W105 **Aflatoxicosis in Haiti: Detection and detoxification strategies.**
M. E. Filbert* and D. L. Brown, *Cornell University*, *Ithaca, NY.*

W106 **Conjugated linoleic acid does not modify liver histology and hepatic triglyceride content in young pigs.**
I. Fernandez-Figares*[1], A. Martin[2], M. Lachica[1], R. M. Nieto[1], and J. F. Aguilera[1], [1]*CSIC, Spanish Research Council*, *Granada, Spain*, [2]*Servicio de Anatomia Patologica, HU Virgen de las Nieves*, *Granada, Spain*.

Forages and Pastures
Harvested Forages

W107 **Use of *Pleurotus oestreatus* to change the nutritional quality of maize stover.**
O. D. Montañez-Valdez*[1], J. M., Tapía-Gonzalez[1], G. Rocha-Chavez[1], J. A Martínez-Ibarra[1], C. E. Guerra-Medina[2], E. O. Flores-García[2], and J. H. Avellaneda-Cevallos[3], [1]*Centro Universitario del Sur de la Universidad de Guadalajara*, *Ciudad Guzmán, Jalisco, México*, [2]*Universitario de la Costa Sur de la Universidad de Guadalajara*, *Autlán, Jalisco, México*, [3]*Universidad Técnica Estatal de Quevedo*, *Santo Domingo. Quevedo, Los Ríos, Ecuador*.

W108 **Effect of the fermented apple pomace (Manzarina) on the rumen epithelia growth with lamb feedlot diets.**
C. Rodríguez-Muela*[1], H. E. Rodríguez-Ramírez[1], A. Grado[1], A. Corral[1], O. Ruiz-Barrera[1], A. Arzola[1], and R. Bocourt[2], [1]*Universidad Autónoma de Chihuahua*, *Chihuahua, México*, [2]*Instituto de Ciencia Animal*, *La Habana, Cuba*.

W109 **Effects of ensiling king grass with *Albizia lebbeck* on fermentation and nitrogenous compounds of silage mixtures.**
T. Clavero* and R. Razz, *Centro de Transferencia de Tecnologia en Pastos y Forrajes, Universidad del Zulia.*, *Maracaibo, Estado Zulia, Venezuela*.

W110 **Detection of mycophenolic acid and roquefortine C mycotoxins in Canadian corn silage.**
H. V. L. N. Swamy*[1] and N. A. Karrow[2], [1]*Alltech Canada*, *Guelph, ON, Canada*, [2]*University of Guelph*, *Guelph, ON, Canada*.

W111 **Fermentation profile over nine months of storage of brown midrib and non-brown midrib hybrid corn silage.**
K. E. Nestor Jr.*, P. Krueger, J. Anderson, J. Brouillette, and K. Emery, *Mycogen Seeds, Inc.*, *Indianapolis, IN.*

W112 **Herbage mass, botanical and chemical composition of forage sorghum and annual legumes in monoculture and intercropped.**
R. W. Colbert, E. Valencia*, and J. Beaver, *University of Puerto Rico, Mayaguez*, *Mayaguez, PR.*

W113 **Comparisons among predictive equations and NIR for determination of in vitro indigestible NDF of hay crop silages.**
R. Ward*[1], S. Weaver[1], and R. A. Patton[2], [1]*Cumberland Valley Analytical Services*, *Maugansville, MD*, [2]*Nittany Dairy Nutrition*, *Mifflinburg, PA*.

W114 **Relating dry matter density to dry matter loss within corn silage bunker silos.**
K. E. Griswold*[1], P. H. Craig[2], J. S. Graybill[1], and S. K. Dinh[1], [1]*Penn State Cooperative Extension*, *Lancaster,* [2]*Penn State Cooperative Extension*, *Dauphin*.

W115 **Silo-King improves dry matter (DM) recovery and lowers the yeast, mold, and clostridia populations in high quality alfalfa balage.**
D. H. Kleinschmit*, D. P. Casper, D. J. Schauff, G. P. Gengelbach, K. E. Lanka, D. F. Jones, G. Ayangbile, and D. A. Spangler, *Agri-King, Inc.*, *Fulton, IL.*

W116 **Nutritional value of corn silage associated with additives.**
R. H. de Tonissi e Buschinelli Goes*[1], E. S.Myagi[2], K. A. de Souza[1], K. A. Guimarães Nogueira[1], R. A. Patussi[1], M. G. de Menezes Gressler[1], C. E. Dambros[2], and E. R. de Oliveira[1], [1]*Universidade Federal da Grande Dourados*, *Dourados, MS, Brazil*, [2]*Universidade Federal de Goiás*, *Goiânia, GO, Brazil*.

W117 **Nutritive value and fermentation parameters of warm-season grass silage.**
J. M. B. Vendramini*[1], A. T. Adesogan[2], M. L. A. Silveira[1], L. E. Sollenberger[2], O. C. M. Queiroz[2], and W. F. Anderson[3], [1]*University of Florida*, *Ona,* [2]*University of Florida*, *Gainesville,* [3]*USDA ARS*, *Tifton, GA.*

W118 **Chemical composition and nutritive value of some cowpea (*Vigna unguiculata* L. Walp) haulm varieties.**
U. Y. Anele*, J. Hummel, O. M. Arigbede, C. Böttger, and K.-H. Südekum, *University of Bonn*, *Bonn, Germany*.

W119 **Silage characteristics, and nutritive value of sugar beet tops and crown harvested by two different methods.**
M. Raisianzadeh*[1], M. Danesh[2], H. Fazaeli[3], and M. Nourozi[1], [1]*Khorasan Agriculture and Natural Resources Research Center, Iran*, [2]*Ferdosi university of mashhad*, *Iran*, [3]*Animal Science Research Institute*, *Karaj, Iran*.

W120 **Dry matter of corn at harvest alters whole plant chemical composition and predicted milk yields.**
P. M. Walker[1], J. M. Carmack*[1], L. H. Brown[2], and F. N. Owens[2], [1]*Department of Agriculture, Illinois State University*, *Normal,* [2]*Pioneer Hi-Bred International, A DuPont Business*, *Johnston, IA.*

W121 **Effect of bunker silo sidewall plastic on fermentation, nutrient content and digestibility of corn silage.**
K. E. Griswold*[1], E. E. McDonell[2], L. Kung Jr. [2], and P. H. Craig[3], [1]*Penn State Cooperative Extension*, *Lancaster,* [2]*University of Delaware*, *Newark,* [3]*Penn State Cooperative Extension*, *Dauphin.*

W122 **Quality traits of the stem from corn hybrids for silage production according to the maturity stage.**
M. Zopollatto*[1], L. G. Nussio[1], J. O. Sarturi[2], C. M. M. Bittar[1], P. Schmidt[3], and G. B. Mourao[1], [1]*University of Sao Paulo*, *Piracicaba, Brazil*, [2]*University of Nebraska*, *Lincoln*, [3]*Federal University of Parana*, *Curitiba, Brazil*.

W123 **Butyric acid in commercially analyzed legume silage samples.**
L. R. Jones*[1] and R. T. Ward[2], [1]*American Farm Products, Inc., Ypsilanti, MI,* [2]*Cumberland Valley Analytical Services, Inc., Maugansville, MD.*

W124 **Environmental factors affecting changes in dry matter content of corn planted for summer or fall silage harvest in a subtropical climate.**
J. K. Bernard*[1], B. T. Scully[2], and J. S. Barlow[1], [1]*University of Georgia*, *Tifton,* [2]*USDA-ARS*, *Tifton, GA.*

W125 **Relationship of vomitoxin levels in corn silage to in vitro dry matter digestibility.**
R. Ward[1] and R. A. Patton*[2], [1]*Cumberland Valley Analytical*, *Maugansville, MD*, [2]*Nittany Dairy Nutrition*, *Mifflinburg, PA*.

W126 **Fermentation and ruminal degradability of corn silage inoculated with *Lactobacillus buchneri*.**
F. C. Basso[1], R. A. Reis*[1], D. M. Figueiredo[1], D. A. Mota[2], K. A. Magalhães[1], T. F. Bernardes[3], and J. F. H. Rodrigues[1], [1]*UNESP/FCAV*, *Jaboticabal, São Paulo, Brazil*, [2]*UFAM*, *Parintins, Amazonas, Brazil*, [3]*UFRA*, *Pará, Belém, Brazil*.

W127 **Dispersion of an inert marker in water on freshly chopped whole plant corn by two methods to simulate addition of an inoculant.**
J. M. Lim*, M. C. Santos, J. P. Rigueira, M. C. Der Bedrosian, and L. Kung Jr., *University of Delaware*, *Newark.*

W128 **Treating first-cutting alfalfa in Michigan with Silo-King reduces heating during the ensiling process.**
D. P. Casper, G. P. Gengelbach*, M. E. Donaldson, D. F. Jones, D. H. Kleinschmit, K. E. Lanka, and D. J. Schauff, *Agri-King, Inc.*, *Fulton, IL*.

W129 **Effect of harvest moisture, bale wrapping, and an organic acid on forage quality in grass.**
E. Allen*, K. Martinson, and C. Sheaffer, *University of Minnesota-Twin Cities*, *St. Paul*.

W130 **Effects of sulfite-based preservatives on preservation and aerobic stability of alfalfa haylage and corn silage.**
C. J. Fu*, T. W. Clark, and D. V. Dhuyvetter, *Ridley Nutrition Solutions, Ridley Inc., Mankato, MN.*

W131 **Effect of alfalfa entries selected to tolerate agricultural machinery traffic on forage yield and regrowth.**
J. Santillano-Cázares*[1] and J. L. Caddel[2], [1]*Universidad Autónoma de Baja California*, *Mexicali, Baja California, México*, [2]*Oklahoma State University*, *Stillwater.*

W132 **Influence of maturity on leaf fiber and protein fractions of different alfalfa varieties.**
A. Palmonari*, M. Fustini, G. Canestrari, G. Biagi, and A. Formigoni, *Università di Bologna*, *Bologna, Italy*.

W133 **Effect of a bacterial inoculant on the quality of and nutrient losses from corn silage produced in farm-scale silos.**
O. C. M. Queiroz*[1], A. T. Adesogan[1], K. G. Arriola[1], and M. F. Queiroz[2], [1]*Department of Animal Sciences, University of Florida*, *Gainesville,* [2]*Department of Animal Sciences, UNESP*, *Jaboticabal, SP, Brazil*.

W134 **Changes in cell wall fractions and in vitro dry matter digestibility of corn silage associated with additives.**
R. H. de Tonissi e Buschinelli Goes*, K. A. de Souza, K. A. Guimarães Nogueira, D. de Faria Pereira, T. da Cunha Cornélio, M. G. de Menezes Gressler, E. R. de Oliveira, and K. C. da Silva Brabes, *Universidade Federal da Grande Dourados*, *Dourados, MS, Brazil*.

W135 **Effect of oxygen barrier film on the storage temperature and top losses of corn silage in stack silo.**
F. C. Basso[1], R. A. Reis*[1], T. F. Bernardes[2], E. C. Lara[1], F. B. Assis[1], M. Nogueira[1], and A. P. T. P. Roth[1], [1]*UNESP/FCAV*, *Jaboticabal, São Paulo, Brazil*, [2]*UFRA*, *Bélem, Pára, Brazil*.

W136 **Effects of microbial inoculant on fermentation, microbial dynamics and aerobic stability of corn silage.**
F. C. Basso[1], R. A. Reis*[1], E. C. Lara[1], F. B. Assis[1], M. Nogueira[1], A. P. T. P. Roth[1], and T. F. Bernardes[2], [1]*UNESP/FCAV*, *Jaboticabal, São Paulo, Brazil*, [2]*UFRA*, *Bélem, Pára, Brazil*.

W137 **In vitro gas production and microbial protein synthesis in alfalfa-timothy mixtures.**
F. Hassanat*[1], G. Tremblay[2], G. Allard[3], G. Bélanger[2], A. Bertrand[2], Y. Castonguay[2], R. Michaud[2], and R. Berthiaume[1], [1]*Agriculture and Agri-Food Canada*, *Sherbrooke, QC, Canada*, [2]*Agriculture and Agri-Food Canada*, *Quebec, QC, Canada*, [3]*Faculté des sciences de l'agriculture et de l'alimentation, Université Laval*, *Quebec, QC, Canada*.

W138 **Prediction of Tanzânia grass dry mass production using agrometereological parameters.**
L. C. Araujo*[1], P. M. Santos[2], J. R. Pezzopane[2], and P. G. da Cruz[1], [1]*"Luiz de Queiroz" College of Agriculture/USP*, *Piracicaba, São Paulo, Brazil*, [2]*Embrapa Southeast Cattle*, *São Carlos, São Paulo, Brazil*.

W139 **Effects of chemical additives on the ensilage of sugarcane.**
A. F. Pedroso*, W. Barioni Jr., G. B. Souza, and V. R. Del Santo, *Brazilian Agricultural Research Corporation - Embrapa*, *São Carlos, SP, Brazil*.

W140 **Effect of cutting management (PM vs. AM) and maceration on forage total nonstructural carbohydrates concentration and cattle preference.**
G. Raggio*[1], A. L. Tucker[1], M. Mongeon[2], R. Bergeron[1], and R. Berthiaume[3], [1]*Campus Alfred Université de Guelph*, *Alfred, Ontario, Canada*, [2]*Ministry of Agriculture, Food and Rural Affairs, Alfred, Ontario, Canada*, [3]*Dairy and Swine Research & Development Centre, Agriculture and Agri-Food Canada*, *Lenoxville, Canada*.

Growth and Development 2

W141 **Effect of leukemia inhibitory factor on feed intake and body temperature in sheep.**
J. L. Sartin*[1], D. L. Marks[2], B. K. Whitlock[3], J. A. Daniel[4], and B. P. Steele[1], [1]*Auburn University*, *Auburn, AL,* [2]*Oregon Health Sciences University*, *Portland,* [3]*University of Tennessee*, *Knoxville,* [4]*Berry College*, *Mt Berry, GA*.

W142 **Effects of late gestation metabolizable protein (MP) supplementation on ewe organ and blood parameters.**
T. J. Swanson*[1], L. A. Lekatz[1], T. L. Neville[1], M. L. Van Enom[2], C. S. Schauer[2], K. R. Maddock Carlin[1], C. J. Hammer[1], and K. A. Vonnahme[1], [1]*North Dakota State University*, *Fargo*, [2]*Hettinger Research Extension Center*, *Hettinger, ND*.

W143 **Effect of PFKM and TFDP2 gene expression on muscle growth in sheep.**
J. W. Buchanan*[1], M. L. Thonney[2], and R. G. Mateescu[1], [1]*Oklahoma State University*, *Stillwater*, [2]*Cornell University*, *Ithaca, NY.*

W144 **Excessive maternal selenium intake induces inflammatory response in the ovine fetal gut.**
H. Wang*[1], J. Zhao[1], Y. Huang[1], X. Yan[1], A. Meyer[2], M. Du[1], K. Vonnahme[2], L. Reynolds[2], J. Caton[2], and M. J. Zhu[1], [1]*Department of Animal Science, University of Wyoming*, *Laramie,* [2]*Department of Animal Science, North Dakota State University*, *Fargo.*

WEDNESDAY POSTERS

W145 **Serum concentrations of ghrelin, IGF-I, and prolactin in Rambouillet lambs during the preweaning period.**
C. D. Felker*, M. J. Hendricks, K. A. Jurado, A. D. Stapp, L. E. Camacho, and D. M. Hallford, *New Mexico State University*, *Las Cruces*.

W146 **Patterns of fat growth in the primal cuts of beef composites.**
L. A. Goonewardene*[1], Z. Wang[2], R. W. Seneviratne[1], J. A. Basarab[1], J. Stewart-Smith[3], J. L. Aalhus[4], M . A. Price[2], and E. K. Okine[2], [1]*Alberta Agriculture and Rural Development*, *Edmonton, AB, Canada*, [2]*University of Alberta*, *Edmonton, AB, Canada*, [3]*Beefbooster Inc.*, *Calgary, AB, Canada*, [4]*Agriculture and Agri-Food Canada*, *Lacombe, AB, Canada*.

W147 **Prepartum supplementation in primiparous beef cows affected hepatic IGF-I mRNA expression in female calves.**
J. Laporta*[1], A. L. Astessiano[1], A. Scarsi[1], R. Pérez-Clariget[1], G. Quintans[2], and M. Carriquiry[1], [1]*School of Agronomy, UdelaR*, *Uruguay*, [2]*Instituto Nacional de Investigación Agropecuaria*, *Treinta y Tres, Uruguay*.

W148 **Glucagon-like peptide 2 may mediate growth and development of the bovine gastrointestinal tract.**
E. E. Connor*[1], R. L. Baldwin[1], A. V. Capuco[1], C. M. Evock-Clover[1], S. E. Ellis[2], and K. S. Sciabica[3], [1]*USDA-ARS, BARC*, *Beltsville, MD*, [2]*Clemson University*, *Clemson, SC*, [3]*Beckman Coulter, Inc.*, *Brea, CA*.

W149 **Effects of maternal metabolizable protein supply on fetal organ weights.**
T. L. Neville*[1], L. A. Lekatz[1], T. J. Swanson[1], M. L. Van Emon[2], C. S. Schauer[2], K. R. Maddock Carlin[1], C. J. Hammer[1], and K. A. Vonnahme[1], [1]*Center for Nutrition and Pregnancy, Department of Animal Sciences, North Dakota State University*, *Fargo,* [2]*Hettinger Research Extension Center, North Dakota State University*, *Hettinger.*

W150 **Nutrient restriction from early to mid-gestation in the cow increases offspring adipocyte size at slaughter.**
C. B. Tousley[1], N. M. Long*[1,2], S. P. Ford[1,2], W. J. Means[2], B. W. Hess[2], and M. Du[2], [1]*Center for the Study of Fetal Programming, University of Wyoming*, *Laramie,* [2]*Depertment of Animal Science, University of Wyoming*, *Laramie.*

W151 **Two messenger RNA targets, programmed cell death protein 4 and phosphatase and tensin homolog, of microRNA-21 are expressed in cultured bovine adipocytes.**
S. L. Pratt*, T. A. Burns, and S. K. Duckett, *Clemson University*, *Clemson, SC*.

W152 **MicroRNA-21 and its messenger RNA targets programmed cell death protein 4 and phosphatase and tensin homolog are expressed in bovine adipose tissue.**
S. L. Pratt*, E. Curry, T. A. Burns, and S. K. Duckett, *Clemson University*, *Clemson, SC*.

W153 **Both growth hormone and signal transducer and activator of transcription 5b inhibit glycerol-3-phosphate dehydrogenase activity and CCAAT/enhancer binding protein α mRNA expression in differentiating bovine preadipocytes.**
L. Zhao*, B. A. Corl, and H. Jiang, *Virginia Polytechnic Institute and State University*, *Blacksburg*.

W154 **Primary preadipocytes can be isolated, propagated, and differentiated from bovine intermuscular fat harvested 48 h postmortem.**
T. A. Burns*, S. K. Duckett, and S. L. Pratt, *Clemson University*, *Clemson, SC*.

W155 ***Trans*-10, *cis*-12 conjugated linoleic acid induces adipogenic gene expression in single and co-cultures of bovine preadipocytes and myoblasts.**
S. H. Choi*[1], K. Y. Chung[2], G. Go[1], C. W. Choi[3], B. J. Johnson[2], and S. B. Smith[1], [1]*Department of Animal Science, Texas A&M University*, *College Station,* [2]*Department of Animal and Food Science, Texas Tech University*, *Lubbock,* [3]*National Institute of Animal Science*, *Suwon, Gyunggi, Korea*.

W156 **Growth hormone stimulates liver expression of fibroblast growth factor 21 mRNA in Cattle.**
J. Yu*[1,2], A. Wang[2], S. Eleswarapu[2], and H. Jiang[2], [1]*Sichuan Agricultural University*, *Yaan, Sichuan, China*, [2]*Virginia Polytechnic Institute and State University*, *Blacksburg.*

W157 **Abundance of growth hormone secreteagogue receptor and PPARγ2 in longissimus dorsi of beef cattle.**
C. L. Delvaux*, J. S. Jennings, and A. E. Wertz-Lutz, *South Dakota State University*, *Brookings*.

W158 **Effect of estradiol-17β on protein synthesis and degradation rates in fused bovine satellite cell cultures.**
E Kamanga-Sollo, M. E. White*, M. R. Hathaway, W. J. Weber, and W. R. Dayton, *University of Minnesota*, *St. Paul*.

W159 **Effect of trenbolone acetate on protein synthesis and degradation rates in fused bovine satellite cell cultures.**
E. Kamanga-Sollo, M. E. White*, M. R. Hathaway, W. J. Weber, and W. R. Dayton, *University of Minnesota*, *St. Paul*.

W160 **Zilpaterol HCl enhances adenosine monophosphate-activated protein kinase α (AMPKα) expression in bovine skeletal muscle.**
R. J. Tokach*, K. Y. Chung, and B. J. Johnson, *Texas Tech University*, *Lubbock.*

W161 **Steroidal implants and zilpaterol HCl alter serum urea-N and NEFA responses in finishing beef steers.**
S. L. Parr*[1], M. L. Galyean[1], K. Y. Chung[1], J. P. Hutcheson[2], and B. J. Johnson[1], [1]*Texas Tech University*, *Lubbock,* [2]*Intervet / Schering-Plough Animal Health*, *De Soto, KS*.

W162 **Canonical relationships of body shape of grazing bulls under tropical conditions.**
H. J. Fernandes*[1], L. O. Tedeschi[3], M. F. Paulino[2], M. O. Porto[2], and L. M. Paiva[1], [1]*State University of Mato Grosso do Sul*, *Aquidauana, Brazil*, [2]*Federal University of Viçosa*, *Viçosa, MG, Brazil*, [3]*Texas A&M University*, *College Station*.

W163 **Comparison of mathematical functions to describe the growth of grazing bulls in tropical conditions.**
H. J. Fernandes*[1], L. O. Tedeschi[2], M. F. Paulino[3], A. G. Silva[3], and L. M. Paiva[1], [1]*State University of Mato Grosso do Sul*, *Aquidauana, Brazil*, [2]*Texas A&M University*, *College Station*, [3]*Federal University of Viçosa*, *Viçosa, MG, Brazil*.

W164 **Expression of specific genes regulating mammary growth in pre-pubertal Holstein heifers.**
F. Soberon*, M. J. Meyer, and M. E. Van Amburgh, *Cornell University*, *Ithaca, NY*.

W165 **Effects of meal timing on anabolic hormone status and energy metabolism in neonatal Holstein calves.**
K. C. Simon, C. C. Williams*, L. R. Gentry, B. F. Jenny, R. M. Doescher, and A. H. Dolejsiova, *LSU AgCenter*, *Baton Rouge*.

W166 **Effect of supplementing fatty acids to prepartum Holstein cows and milk replacer enriched with linoleic acid on calf performance.**
M. Garcia*, L. F. Greco, M. G. Favoreto, R. S. Marsola, L. T. Martins, D. Wang, W. W. Thatcher, J. E. P. Santos, and C. R. Staples, *University of Florida*, *Gainesville*.

W167 **The effect of automated feeder system feeding curves (dilution/weaning age) on growth and health of calves fed milk replacer.**
T. J. Earleywine*, B. L. Miller, and T. E. Johnson, *Land O'Lakes, Inc., Webster City, IA*.

W168 **The effect of automated feeder system feeding curves (weaning age) on growth and health of calves fed milk replacer.**
T. J. Earleywine*, B. L. Miller, and T. E. Johnson, *Land O'Lakes, Inc., Webster City, IA*.

W169 **Strategies for feeding full potential rates of calf milk replacer: Two feedings daily and weaned at 7 weeks vs. three feedings daily and weaned at 6 weeks.**
B. L. Miller*, T. J. Earleywine, and T. E. Johnson, *Land O'Lakes, Inc., Webster City, IA*.

Horse Species

W170 **Factors affecting pregnancy rate of recipient mares to embryo transfer.**
L. D. Wallace*, K. J. Stutts, and D. W. Ricks, *Sam Houston State University*, *Huntsville, TX*.

W171 **Growth models for horses differ based on date of birth.**
A. L. Graeff* and W. B. Staniar, *The Pennsylvania State University*, *University Park*.

W172 **The impact of molasses-based blocks versus sweet feed on blood glucose in horses.**
C. D. Gunkel*, J. S. Drouillard, L. W Murray, and T. L Slough, *Kansas State University*, *Manhattan.*

W173 **Short term selenium depletion and oxidative stress in the horse.**
M. Brummer*, S. H. Hayes, J. E. Earing, S. M. McCown, and L. M. Lawrence, *University of Kentucky*, *Lexington*.

W174 **In vivo digestibility and mean retention time estimates of young and mature horses receiving the same diet.**
J. E. Earing*, S. H. Hayes, M. Brummer, S. M. McCown, A. G. Parks, and L. M. Lawrence, *University of Kentucky*, *Lexington*.

W175 **Effect of grazing fall pasture on indicators of hindgut pH and fermentation characteristics in horses.**
A. C. Pearson, P. D. Siciliano*, S. J. McLeod, and V. Fellner, *North Carolina State University*, *Raleigh*.

W176 **Summary of equine pastures utilizing a line point transect to measure vegetative cover to reducae sediment and nutrient losses, enhancing pasture quality.**
A. Swinker*[1], D. Foulk[1], J. Malot[2], S. Truax[2], J. Weld[1], and M. Harper[1], [1]*Pennsylvania State University*, [2]*USDA Natural Resources Conservation Service, Harrisburg, PA*.

W177 **Segregation of AB_098561: c. 1470G>A snp of the serotonin transporter gene (*SLC6A4*) in Mangalarga Brazilian horses.**
Lidia Arneiro*[1,2], Marcílio Mota[1,2], and Rogério Curi[2], [1]*Universida Estadual Paulista*, *Jaboticabal, São Paulo, Brasil*, [2]*Universidade Estadual Paulista*, *Botucatu, São Paulo, Brasil*.

W178 **The use of equine blood parameters to identfy chronic exposure to feed-borne *Fusarium* mycotoxins: A field study.**
M. Mortson*, C. K. Girish, and T. K. Smith, *University of Guelph*, *Guelph, Ontario, Canada*.

W179 **Influence of velocity on stride variables of the Wilbur-Cruce Mission Horse intermediate gait.**
M. Nicodemus*[1] and J. Beranger[2], [1]*Mississippi State University*, *Mississippi State,* [2]*American Livestock Breeds Conservancy*, *Pittsboro, NC*.

W180 **Nutraceutical extracts affect oxidative stress and antioxidant status in intensely exercising horses.**
D. Smarsh*, N. Liburt, J. Streltsova, K. McKeever, and C. Williams, *Rutgers, The State University of New Jersey*, *New Brunswick.*

W181 **Whole farm balance of nitrogen and phosphorus on horse farms in the Chesapeake Bay watershed.**
M. T. Harper*, A. Swinker, and K. B. Kephart, *Pennsylvania State University*, *University Park.*

W182 **Effect of dietary energy manipulation on mares and their foals: Foaling parameters.**
K. N. Winsco[1], J. L. Lucia*[1], C. J. Hammer[2,3], and J. A. Coverdale[1], [1]*Department of Animal Science, Texas A&M University*, *College Station,* [2]*Department of Animal Sciences, North Dakota State University*, *Fargo,* [3]*Center for Nutrition and Pregnancy*, *Fargo, ND.*

W183 **Comparison of a commercially available glucometer to a standardized laboratory method for glucose analysis in healthy horses.**
K. O'Diam*[1], J. Sylvester[2], and K. Cole[1], [1]*The Ohio State University*, *Columbus*, [2]*MARS Horsecare US, Inc., Dalton, OH*.

International Animal Agriculture 1

W184 **Effects on lactation performance when slick hair gene is simulated in dairy cattle in the tropics.**
R. M. Mejía*[1,2], J. A. Ortuño[1], G. J. Lascano[2], and M. Vélez[1], [1]*Zamorano University*, *El Zamorano, Honduras*, [2]*The Pennsylvania State University*, *University Park*.

W185 **Effects of a direct-fed microbial product on milk production by crossbred dairy cows in the Brazilian Cerrado.**
R. D. Sainz*[1], C. U. Magnabosco[2,3], R. A. Carnevalli[3], R. Guimamães Jr. [2], M. M. S. Mamede[4,3], J. R. Costa Jr. [5,3], and E. A. Filgueiras[6], [1]*University of California*, *Davis,* [2]*Embrapa Cerrados*, *Planaltina, DF, Brazil*, [3]*Embrapa Arroz e Feijão*, *Santo Antonio de Goiás, GO, Brazil*, [4]*Associação Goiana de Criadores de Zebu*, *Goiânia, GO, Brazil*, [5]*Universidade Estadual de Goiás*, *Goiânia, GO, Brazil*, [6]*Bioformula*, *Goiânia, GO, Brazil*.

W186 **Digestibility of fresh sugarcane-based diets with slow-release non protein nitrogen addition for limit-fed dairy heifers in the tropics.**
G. J. Lascano*[1], M. Velez[2], J. M. Tricarico[3], and A. J. Heinrichs[1], [1]*The Pennsylvania State University, University Park*, [2]*Zamorano University, El Zamorano, Honduras*, [3]*Alltech Inc., Nicholasville, KY*.

W187 **System dynamics *ex ante* decision support for caprine initiatives in southern Mexico.**
K. C. McRoberts*[1], C. F. Nicholson[4], R. W. Blake[3,1], T. W. Tucker[1], and G. Díaz Padilla[2], [1]*Cornell University, Ithaca, NY*, [2]*Instituto Nacional de Investigaciones Forestales, Agrícolas y Pecuarias, Xalapa, Veracruz, México*, [3]*Center for Latin American and Caribbean Studies, Michigan State University, East Lansing*, [4]*California Polytechnic State University, San Luis Obispo*.

W188 **Biomass production and nutritional value of wheat and oat hydroponic forages sowed at three densities.**
J. A. Rivera-Ahumada[1], A. S. Juárez-Reyes[1,4], H. Bernal-Barragán[2,4], M. A. Cerrillo-Soto*[1,4], F. G. Ríos-Rincón[3,4], A. Estrada-Angulo[3,4], and M. Guerrero-Cervantes[1,4], [1]*Universidad Juárez del Estado de Durango, Durango, Dgo., México*, [2]*Universidad Autónoma de Nuevo León, Monterrey, Nuevo León, México*, [3]*Universidad Autónoma de Sinaloa, Culiacán, Sinaloa, México*, [4]*Red Internacional de Nutrición y Alimentación en Rumiantes, Durango, Dgo, México*.

W189 **Growth potential of village chicken in Nigeria.**
J. A. Olupona*, O. O. Adejinmi, and A. M. Raji, *Federal College of Animal Health and Production Technology, Institute of Agricultural Research and Training, Ibadan, Oyo, Nigeria*.

W190 **Effects of demographic characteristics and attitudes of consumers on table egg consumption.**
M. Bejaei* and K. M. Cheng, *The University of British Columbia, Vancouver, BC, Canada*.

W191 **Effect of dry ammoniation on the chemical composition and digestibility in vitro in the mesocarp of the fruit and empty bunches of african oil palm.**
N. Castro-Ucross[1], J. Vergara-Lopez[2], and O.Araujo-Febres*[1], [1]*Universidad del Zulia. Facultad de Agronomía. Departamento de Zootecnia, Maracaibo, ZU, Venezuela*, [2]*Instituto Nacional de Investigaciones Agricolas, Maracaibo, ZU, Venezuela*, [3]*Universidad del Zulia. Facultad de Agronomía. Departamento de Zootecnia, Maracaibo, ZU, Venezuela*.

W192 **Nutritive value of Henequen (*Agave fourcroydes* Lem.) pulp as ruminant feed.**
E. González–García*[1,2], O. Cáceres[2], F. Ojeda[2], and R. Delgado[2], [1]*INRA, UMR 868, Élevage des Ruminants Regions Chaudes, Montpellier 34090, France*, [2]*Estación Experimental de Pastos y Forrajes "Indio Hatuey", Matanzas 44280, Cuba*.

W193 **Economic weight of some production and functional traits of dairy cattle.**
F. Szabó*[1], Z. Fekete[1], J. Wolf[2], and M. Wolfová[2], [1]*University of Pannonia Georgikon Faculty, Keszthely, Hungary*, [2]*Institute of Animal Science, Uhrinéves, Prague, Czech Republic*.

Lactation Biology 2

W194 **Effect of feeding level and milking frequency in early lactation on milk production in dairy cattle.**
A. G. Rius*, J. K. Kay, C. V. C. Phyn, S. R. Morgan, and J. R. Roche, *DairyNZ, Hamilton, New Zealand*.

W195 **Expression of key metabolic indicators of energy metabolism across mammary gland development and lactation in dairy cows.**
L. J. Ren, H. L. Tong, Q. Z. Li, and X. J. Gao*, *Key Laboratory of Dairy Science of Education Ministry, Northeast Agricultural University, Harbin, China*.

W196 **Insulin stimulates glucose uptake by regulating cell viability and expression of glucose transporter 8 gene in bovine mammary epithelial cells.**
K. Zhao, H. Y. Liu*, and J. X. Liu, *Institute of Dairy Science, MOE Key Laboratory of Molecular Animal Nutrition, Zhejiang University, Hangzhou, China*.

W197 **Pathogen-specific and dose-dependent response of the bovine mammary gland to lipopolysaccharide from *E. coli* and lipoteichoic acid from *S. aureus*.**
R. M. Bruckmaier*, E. T. Arnold, and O. Wellnitz, *Veterinary Physiology, Vetsuisse Faculty, University of Bern, Bremgartenstr. 109a, 3001 Bern, Switzerland*.

W198 **Greater milk yield is related to increased DNA and RNA content but not to mRNA abundance of selected genes in sow mammary tissue.**
C. Farmer*[1], M. F. Palin[1], J. F. Trott[2], and R. C. Hovey[2], [1]*Agriculture and Agri-Food Canada, Dairy and Swine R & D Centre, Sherbrooke, QC, Canada*, [2]*Dept. of Animal Science, University of California, Davis.*

W199 **5'-Untranslated region haplotypes of beta-2-microglobulin exon IV in Chinese Holstein dairy cows and its association with IgG1 concentration and mass in milk.**
C. Zhang*[1,2], G. Liu[1], J. Wang[1], D. Bu[1], L. Zhou[1], S. Zhao[1], and Y. Yang[1], [1]*State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*, [2]*College of Animal Science and Technology, Yangzhou University*, *Yangzhou, China*.

W200 **How does increased milking frequency stimulate milk production?**
M. Dehghan-Banadaky*, M. Eslamizad, K. Rezayazdi, H. Kohram, and R. Heydari, *University of Tehran*, *Karaj, Tehran, Iran*.

W201 **Impact of duration of milk storage in the mammary gland on milk composition throughout milking.**
M. Dutreuil[1,2], C. Cébo[3], J. Guinard-Flament[2,1], and C. Hurtaud*[1,2], [1]*INRA UMR1080 Production du lait*, *Saint-Gilles, France*, [2]*Agrocampus Ouest UMR1080 Production du lait*, *Rennes, France*, [3]*Unité GABI*, *Jouy-en-Josas, France*.

Nonruminant Nutrition
Gastrointestinal Physiology

W202 **Effects of Actigen supplementation on mRNA levels of mucin and markers of gut health in the jejunum of broiler chicks.**
K. M. Brennan*, T. Ao, J. L. Pierce, and K. A. Dawson, *Center for Animal Nutrigenomics and Applied Animal Nutrition, Alltech Inc., Nicholasville, KY.*

W203 **Age changes in gastrointestinal pH in broilers.**
R. Angel*[1], B. Humphrey[2], and W. Saylor[3], [1]*University of Maryland*, *College Park,* [2]*California Polytechnic State University*, *San Luis Obispo,* [3]*University of Delaware*, *Newark.*

W204 **Adaptive response in intestinal function in species with different dietary habits.**
D. J. Batchelor*[1], J. Brand[2], and S. P. Shirazi-Beechey[1], [1]*University of Liverpool*, *Liverpool, UK*, [2]*Monell Chemical Senses Center*, *Philadelphia, PA.*

Nonruminant Nutrition
Health

W205 **Performance, nutrient utilization and gizzard development of broiler starters fed diets containing ground or whole corn.**
Y Singh, T. J Wester, G Ravindran, and V Ravindran*, *Massey University*, *Palmerston North, New Zealand*.

W206 **The effect of dietary vitamin C on growth performance ,meat quality, immune function and antioxidant capacity of broilers.**
F. Z. Liu*, Z. Y. Niu, X. H. Wang, Y. N. Min, and H. Y. Wang, *College of Animal Science and Technology, Northwest A&F University, Yangling, Shaanxi, China*.

W207 **Quality and oxidative stability of vitamin E inriched-chicken meat.**
Z. Y. Niu[1], X. H. Wang[1], Y. N. Min[1], F. Z. Liu*[1], and H. Y. Wang[2], [1]*College of Animal Science and Technology, Northwest A &F University, Yangling, Shaanxi, China*, [2]*Yulin Municipal Animal Husbandry Bureau, Yulin, Shaanxi, China*.

W208 **Dietary preferences of acids and salts in piglets.**
J. A. Suárez*[1], E. Roura[2], and D. Torrallardona[1], [1]*IRTA-Centre Mas de Bover*, *Constantí, Spain*, [2]*Lucta S. A., Barcelona, Spain*.

W209 **Impact of different nutrients on the development of hyperhomocysteinemia in neonatal piglets.**
M. E. Côté-Robitaille*[1,2], C. L. Girard[1], F. Guay[2], and J. J. Matte[1], [1]*Dairy & Swine R & D Centre, Agriculture and Agri-Food Canada*, *Sherbrooke (STN-Lennoxville), QC, Canada*, [2]*Department of Animal Sciences, Laval University*, *Quebec City, QC, Canada*.

W210 **Effects of fermented soybean meal on growth performance, nutrient digestibility, blood profiles and fecal microorganisms in weanling pigs.**
J. H. Lee*, J. S. Yoo, H. J. Kim, Q. W. Meng, S. M. Hong, and I. H. Kim, *Department of Animal Resource and Science, Dankook University*, *Cheonan, Choongnam, Korea*.

W211 **Effects of probiotics (Agarie) supplementation on growth performance, nutrient digestibility, fecal microbial, fecal noxious gas emission and blood characteristics of finishing pigs.**
J. H. Jung*, J. H. Lee, J. P. Wang, X. Ao, S. M. Hong, and I. H. Kim, *Department of Animal Resource and Science, Dankook University*, *Cheonan, Choongnam, Korea*.

W212 **Effect of type of grinding of barley and alfalfa hay on jejunal histology and crude mucin excretion of growing rabbits.**
C. Romero[1], N. Nicodemus[1], J. D. Rodriguez[1], A. I. Garcia[2], G. G. Mateos*[1], and C. de Blas[1], [1]*Universidad Politecnica de Madrid*, *Madrid, Spain*, [2]*Nutreco Poultry and Rabbit Research Center*, *Casarrubios del Monte, Spain*.

W213 **Effects of freeze-dried *Lactobacillus reuteri* M8 on growth performance and intestinal microflora in broiler chickens.**
D. Y. Zhang, H. F. Ji*, S. X. Wang, J. Wang, and Y. M. Wang, *Institute of Animal Husbandry and Veterinary Medicine, Beijing Academy of Agriculture and Forestry Sciences*, *Beijing, China*.

W214 **Weaned piglet responses to *Escherichia coli* K88+(ETEC) oral challenge when fed diets containing a *Saccharomyces cerevisiae* fermentation product with or without in-feed antibiotics.**
E. Kiarie*[1], S. Bhandari[1], D. O. Krause[1], M. Scott[2], and C. M. Nyachoti[1], [1]*University of Manitoba*, *Winnipeg, MB, Canada*, [2]*Diamond V Mills*, *Cedar Rapids, IA*.

W215 **Developing an efficient *E. coli* expression system for producing a recombinant antimicrobial peptide plectasin.**
M. Y. Xie[1], L. H. Sun[1], Z. Zhao[1], X. J. Xia[1], and X. G. Lei*[1,2], [1]*Int. Ctr. of Future Agriculture for Human Health, Sichuan Agri. Univ.*, *Chengdu, China*, [2]*Cornell University*, *Ithaca, NY*.

W216 **In vivo evaluation of charcoal to prevent post-weaning pig diarrhea in an *Escherichia coli* K88 challenge experiment.**
C. Ionescu*[1], S. Meshkibaf[2], S. Bhandari[2], F. Zhu[2], E. Khafipoor[2], M. C. Nyachoti[2], D. Bravo[1], and D. O. Krause[2,3], [1]*Pancosma*, *Geneva, Switzerland*, [2]*1Department of Medical Microbiology and Infectious Diseases, University of Manitoba*, *Winnipeg, MB, Canada*, [3]*Department of Animal Science, University of Manitoba*, *Winnipeg, MB, Canada*.

W217 **Effects of feed-borne *Fusarium* mycotoxins and an organic mycotoxin adsorbent on immune cell dynamics in the jejunum of broiler breeder pullets infected with *Eimeria maxima*.**
G. N. Girgis*, J. R. Barta, N. A. Karrow, H. J. Boermans, C. K. Girish, and T. K. Smith, *University of Guelph*, *Guelph, Ontario, Canada*.

W218 **The granulated barley provided during growing or finishing period improves the carcass quality and increases the intramuscular fat content in muscle of heavy pigs.**
A. Daza[1], M. A. Latorre*[2], and C. J. López-Bote[3], [1]*Universidad Politécnica de Madrid*, *Spain*, [2]*Universidad de Zaragoza*, *Spain*, [3]*Universidad Complutense de Madrid*, *Spain*.

Nonruminant Nutrition Management

W219 **Broiler energy choice feeding with same protein levels and ambient housing temperatures.**
S. Cerrate*, R. Ekmay, C. Salas, and C. Coon, *University of Arkansas*, *Fayetteville*.

W220 **Effects of dietary creep feeding on performance, blood characteristics and behavior in sows and piglets.**
H. D. Jang*, J. H. Lee, T. X. Zhou, L. Yan, S. M. Hong, and I. H. Kim, *Department of Animal Resource and Science, Dankook University*, *Cheonan, Choongnam, Korea*.

W221 **Crude glycerin in market turkey diets.**
S. L. Noll*[1], K. Koch[2], and J. Brannon[1], [1]*University of Minnesota*, *St. Paul,* [2]*North Dakota State University*, *Fargo.*

W222 **The effect of vetch heat treatment on free amino acids profile in plasma, muscle and liver of growing chickens.**
I. Fernandez-Figares*, M. Lachica, R. M. Nieto, and J. F. Aguilera, *CSIC, Spanish National Reseach Council*, *Granada, Spain*.

W223 **Use of near infrared spectroscopy and colour for identification of soybean meals by origin.**
P. García-Rebollar, N. Núñez-Romero, S. Santos-Rosell, R. Lázaro, and G. G. Mateos*, *Universidad Politécnica de Madrid*, *Madrid, Spain*.

Nonruminant Nutrition Mineral

W224 **Bioavailability of copper sources to broiler chicks when fed below the copper requirement.**
K. C. Klasing* and A. Naziripour, *University of California*, *Davis*.

W225 **Effects of tribasic copper chloride on intestinal absorption ability and mucosal immunity of broiler chickens.**
Y. Ding[1], R. She*[1], H. Bao[1], D. Han[1], Z. Yue[1], J. Tian[1], P. Yu[1], R. Li[1], J. Yin[1], and C. Liang[2], [1]*China Agricultural University*, *Beijing,China*, [2]*Micronutrients*, *Indianapolis*.

W226 **Productive performance and egg quality of laying hens as a response to dietary copper supplementation.**
M. J. González-A*[1], J. J. Bañuelos-R[1], M. Huerta-B[1], S. Carrillo-D[2], and J. M. Cuca-G[3], [1]*Universidad Autónoma Chapingo, Texcoco,México, México*, [2]*INCMNSZ, México, DF, México*, [3]*Colegio de Posgraduados, Texcoco,México, México*.

W227 **Effect of organic trace mineral sources on production and egg quality of white egg laying hens.**
L. M. Macalintal*, A. H. Cantor, T. Ao, J. L. Pierce, A. J. Pescatore, K. A. Dawson, M. J. Ford, W. D. King, and H. D. Gillespie, *Alltech-University of Kentucky Nutrition Research Alliance, Lexington.*

W228 **Layer excreta mineral content: organic versus inorganic dietary trace mineral sources.**
S. Leeson[1], A. E. Sefton*[2], and K. A. Jacques[2], [1]*University of Guelph, Guelph, ON, Canada*, [2]*Alltech Inc., Nicholasville, KY.*

W229 **The effect of selenium source and supplementation level on vitelline membrane strength and glutathione peroxidase activity in the liver and shell gland of laying hens.**
A. A. Aljamal*[1], C. A. Fassbinder-orth[2], and S. E. Scheideler[1], [1]*University of Nebraska-Lincoln, Lincoln,* [2]*Creighton University, Omaha, NE.*

W230 **Effects of altered calcium and phosphorus intake on growth performance and bone characteristics in growing pigs.**
L. A. Pettey*, K. M. Martorana, T. D. Moore, and J. M. Krumheuer, *California Polytechnic State University, San Luis Obispo*.

W231 **Effect of mineral source and mannan-oligosaccharide supplementation on mineral metabolism on young growing pigs.**
A. Lebel*[1], F. Guay[1], and P. Groenewegen[2], [1]*Universite Laval, Quebec, Qc, Canada*, [2]*Alltech Canada, Guelph, ON, Canada*.

W232 **Enrichment of Japanese quail eggs with organic selenium.**
R. A. Gravena, R. H. Marques, J. D. T. Silva, F. H. Hada, J. Picarelli, J. Roccon, S. A. Queiroz, and V. M. B. Moraes*, *São Paulo State University, SP, Brazil*.

W233 **Improved piglet birth weight by feeding sows an organic trace mineral blend.**
J. Zhao*[1], L. Greiner[2], M. Vazquez-Anon[1], C. D. Knight[1], and R. J. Harrell[1], [1]*Novus International Inc.,* [2]*Innovative Swine Solutions*.

W234 **Dietary calcium affects neonatal bone development and mesenchymal stem cell activity.**
A. Mahajan[1], L. S. Alexander[1], B. S. Seabolt*[1], D. E. Catrambone[2], J. P. McClung[2], J. Odle[1], T. W. Pfeiler[3], E. G. Loboa[3], and C. H. Stahl[1], [1]*Laboratory of Developmental Nutrition, N. C. State University, Raleigh,* [2]*Military Nutrition Division, US Army Research Institute of Environmental Medicine, Natick, MA,* [3]*Joint Department of Biomedical Engineering at University of North Carolina-Chapel Hill and North Carolina State University, Raleigh.*

W235 **Serum from pigs fed a high-Se diet inhibits growth of human lung cancer cells.**
J. G. Li[1], J. Shi[1], K. N. Wang[1], G. Gao[2], X. J. Xia[1], and X. G. Lei*[1,3], [1]*Int. Ctr. of Future Agriculture for Human Health, Sichuan Agri. Univ., Chengdu, China*, [2]*Chengdu Municipal Ctr for Disease Control and Prevention, Chengdu, China*, [3]*Cornell University, Ithaca, NY*.

W236 **Effect of sodium selenite and turmeric powder on Gompertz non-linear function in broilers reared under heat stress.**
A. Zeinali*[1], H. Kermanshahi[1], H. Ziaie[2], H. Farhangfar[3], and A. Riasi[3], [1]*Ferdowsi University, Mashhad, Khorasan, Iran*, [2]*Agriculture and Natural Resources Research Center, Birjand, South Khorasan, Iran*, [3]*Birjand University, Birjand, Khorasan, Iran*.

W237 **Modelling the fate of dietary phosphorus in the digestive tract of growing pigs: A way to optimize phytase efficacy in releasing dietary P.**
M. P. Letourneau-Montminy*[1], A. Narcy[2], M. Magnin[3], and C. Pomar[1], [1]*Agriculture and Agri-Food Canada, Sherbrooke,Qc,Canada*, [2]*INRA UR83, Nouzilly, France*, [3]*BNA Nutrition Animale, Chateau-Gontier, France*.

W238 **Expression of borate transporter (NaBC1) mRNA by growing pigs is sensitive to dietary boron levels.**
S. F. Liao*, J. S. Monegue, M. D. Lindemann, G. L. Cromwell, and J. C. Matthews, *Department of Animal and Food Sciences, University of Kentucky, Lexington.*

W239 **Evaluating trace mineral level and form in diets fed gilts: Effects on ovulation rate, embryonic survival and mineral composition of conceptus products.**
W. L. Pope[1], B. J. Middendorf[1], H. S. Cárdenas[1,2], D. C. Mahan[1], and K. A. Jacques*[3], [1]*OARDC, Department of Animal Sciences, The Ohio State University, Columbus,* [2]*College of Medicine, The Ohio State University, Columbus,* [3]*Alltech Inc., Nicholasville, KY.*

W240 **Cloning of porcine pancreatic α-amylase gene and characterization of the enzyme over-expressed in *Pichia pastoris*.**
T. Qin[1], H. Zhao[1], X. Xia[1], and X. G. Lei*[1,2], [1]*Int. Ctr. of Future Agriculture for Human Health, Sichuan Agri. Univ., Chengdu, China*, [2]*Cornell University, Ithaca, NY*.

W241 **Heterologous expression of a truncated bovine lactoferrin gene in *E. coli* to produce a novel antimicrobial peptide.**
L. H. Sun[1], Y. Liu*[1,2], H. Zhao[1], M. Y. Xie[1], J. Xing[1], X. J. Xia[1], and X. G. Lei[1,2], [1]*Int. Ctr. of Future Agriculture for Human Health, Sichuan Agri. Univ., Chengdu, China*, [2]*Cornell University, Ithaca, NY*.

W242 **Cloning and expression of palustrin–OG1 in *E. coli*.**
Y. G. Xie*, Y. F. Liu, C. Luan, F. F. Han, and Y. Z. Wang, *Institute of Feed Science, Zhejiang University, Hangzhou, Zhejiang, China*.

W243 **Activated carbon does not reduce or prevent the effects of zearalenone in gilts.**
D. Srichana*[1], T. Srichana[2], W. Suttitham[1], P. Panja[1], A. Sumrit[3], and D. R. Ledoux[4], [1]*Department of Agricultural Technology, Faculty of Science & Technology, Thammasat University, Pathumtani, Thailand*, [2]*Faculty of Pharmaceutical Sciences, Prince of Songkla University, Songkla, Thailand*, [3]*Plant Pathology Research Group, Office of Plant Protection Research and Development, Department of Agriculture, Bangkok, Thailand*, [4]*Division of Animal Science, University of Missouri, Columbia.*

W244 **Gender effect on nutrient digestibility and reproductive organs sizes by zearalenone feeding with different levels of Calibrin-Z enterosorbent in young pigs.**
Z. B. Yang*[1], S. Z. Jiang[1], and F. Chi[2], [1]*Shandong Agricultural University, Tai-an, Shandong, PRC*, [2]*Amlan International, Chicago, IL.*

W245 **Effects of dietary *Fusarium* mycotoxins on intestinal lymphocyte subset populations, cell proliferation and histological changes in avian lymphoid organs.**
C. K. Girish*, T. K. Smith, H. J. Boermans, P. Anil Kumar, and G. N. Girgis, *University of Guelph, Guelph, Ontario, Canada*.

W246 **Effects of purified zearalenone on serum metabolites and antioxidant status in young gilts.**
S. Z. Jiang[1], Z. B. Yang*[1], and F. Chi[2], [1]*Shandong Agricultural University, Tai-an, Shandong, China*, [2]*Amlan International, Chicago, IL.*

W247 **A survey of free and conjugated deoxynivalenol in the 2008 Ontario corn crop.**
S.-T. Tran*[1], G. Stewart[2], and T. K. Smith[1], [1]*University of Guelph, Guelph, ON, Canada*, [2]*Ontario Ministry of Agriculture, Food and Rural Affairs, Guelph, ON, Canada*.

W248 **Impact of ochratoxin A (OTA) and zearalenone (ZEA) on growth performance and pig physiology.**
U. Hofsteter* and I. Rodrigues, *Biomin Holding GmbH, Herzogenburg, Austria*.

W249 **Adverse effects of feed-borne *Fusarium* mycotoxins on performance and serum chemistry of rabbits.**
M. A. Hewitt*, G. N. Girgis, C. K. Girish, and T. K. Smith, *University of Guelph, Guelph, Ontario, Canada*.

W250 **Enrichment of eggs of Japanese quail with α-tocopherol.**
R. H. Marques, R. A. Gravena, J. D. T. Silva, F. H. Hada, J. Roccon, J. Picarelli, S. A. Queiroz, and V. M. B. Moraes*, *São Paulo State University, SP, Brazil*.

W251 **Expression of kyphosis in young pigs is altered by carryover effects of sow vitamin D status.**
L. A. Rortvedt*, L. A. Zappitelli, J. L. Reichert, J. R. Booth, and T. D. Crenshaw, *University of Wisconsin, Madison.*

W252 **Incorporating whole grain sorghum in broiler rations.**
C. Marr*, C. M. Rude, M. A. Barrios, R. Rierson, and R. S. Beyer, *Kansas State University, Manhattan.*

W253 **Water consumption and performance of broilers receiving Mate (*Ilex paraguariensis*) infusions.**
A. M. C Racanicci*[1], J. F. M Menten[2], and J. Rabello[1], [1]*University of Brasília (UnB), Brasília, DF, Brazil*, [2]*University of São Paulo (ESALQ), Piracicaba, SP, Brazil*.

W254 **Effect of fiber separation from ground corn flour on nutritional value of poultry diets.**
R. Srinivasan* and A. Corzo, *Mississippi State University, Mississippi State.*

W255 **The effect of using different levels of corn gluten meal in free range chickens diet.**
C. Bôa-Viagem Rabello*, A. Ferreira da Silva, S. B. Pinheiro de Lima, H. Pandorfi, M. B. dos Santos, C. da Costa Lopes, and M. do Carmo Mohaupt Marques Ludke, *Universidade Federal Rural de Pernambuco, Recife, Pernambuco, Brasil*.

W256 **Effects of feeding low-density diets to Hy-Line W-36 laying hens on production performance.**
S. A. dePersio*[1], K. W. Koelkebeck[1], C. M. Parsons[1], P. L. Utterback[1], C. W. Utterback[1], N. O'Sullivan[2], K. Bregendahl[2], and J. Arango[2], [1]*University of Illinois, Urbana*, [2]*Hy-Line International, Dallas Center, IA*.

W257 **Effect of prebiotic on performance and some blood parameters of partridge.**
H. Hashemipour, V. Khaksar, H. Kermanshahi, and A. Golian*, *Ferdowsi University of Mashhad, Khorasan Razavi, Iran*.

W258 **Influence of diet quality on nutrient digestibility and productive performance of weanling pigs.**
J. D. Berrocoso*, C. H. Zúñiga, M. P. Serrano, L. Cámara, and G. G. Mateos, *Universidad Politécnica de Madrid, Madrid, Spain*.

W259 **Effects of different level of fish meal on growth performance, intestinal microbiology, and blood parameters of weaned pigs.**
H. F. Ji*, J. Wang, D. C. Shan, S. X. Wang, D. Y. Zhang, F. M. Wang, L. Hou, and Y. M. Wang, *Institute of Animal Husbandry and Veterinary Medicine, Beijing Academy of Agriculture and Forestry Sciences, Beijing, China*.

W260 **Energy value of cassava products and their use in weaning-growing pigs.**
E. Salcedo[1], L. Mestra[1], T. Rivero*[1], Y. Avellaneda[1], G. Afanador[1,2], and C. Ariza-Nieto[1], [1]*CORPOICA, Bogota, Colombia*, [2]*Universidad Nacional de Colombia, Bogota, Colombia*.

W261 **Effect of three feeding programs on body reserves gain of gestating sows.**
A. García-Rendón[1], J. López[2], A. G. Borbolla*[2], and E. Toledo[2], [1]*Granjas Covadonga, Estado de México, México*, [2]*Departamento de Producción Animal: Cerdos. Facultad de Medicina Veterinaria y Zootecnia. Universidad Nacional Autónoma de México, Coyoacán, D. F. México*.

W262 **Effect of triticale on blood chemistry and performance of commercial growing turkeys.**
H. Zarghi, A. Golian*, and H. Aghel, *Ferdowsi University of Mashhad*, *Mashhad, Khorasan Razavi, Iran*.

W263 **Influence of origin on in vitro protein and dry matter digestibility of soybean meal.**
S. Santos-Rosell, P. García-Rebollar, N. Núñez-Romero, M. P. Serrano, and G. G. Mateos*, *Universidad Politécnica de Madrid*, *Madrid, Spain*.

Nonruminant Nutrition
Mineral and Sow Nutrition

W264 **Cloning of the porcine selenoprotein V gene and its RNA abundance in different tissues of young pigs fed three levels of dietary selenium concentrations.**
Q. S. Zhang[1], H. Zhao[1], J. C. Zhou[1], K. N. Wang[1], J. Y. Tang[1], X. J. Xia[1], and X. G. Lei*[1,2], [1]*Int. Ctr. of Future Agriculture for Human Health, Sichuan Agri. Univ., Chengdu, China*, [2]*Cornell University*, *Ithaca, NY*.

W265 **Phosphate status impacts bone integrity and stem cell proliferation in neonatal pigs.**
L. S. Alexander*, B. S. Seabolt, and C. H. Stahl, *North Carolina State University*, *Raleigh*.

W266 **The effect of calcium and phosphorus supplementation on production traits of laying hens.**
T. D. Knezacek*, J. P. Dahiya, K. V. Schwean-Lardner, and H. L. Classen, *University of Saskatchewan*, *Saskatoon, Canada*.

W267 **The effects of strain and dietary phosphorus level on large tom turkey performance.**
B. N. West*, K. G. S. Lilly, K. R. Beaman, L. K. Shires, S. A. Loop, and J. S. Moritz, *West Virginia University*, *Morgantown*.

W268 **Impact of breeder mineral nutrition on chick development.**
L. F. Araujo*[1], C. S. S. Araujo[3], L. C. G. S. Barbosa[3], L. V. B. Pereira[3,1], S. Hubbard[3], and M. T. Kidd[2], [1]*University of Sao Paulo*, *Pirassununga, SP, Brazil*, [2]*University of Arkansas*, *Fayetteville,* [3]*Mississippi State University*, *Mississippi State*.

W269 **The effect of feeding corn distillers dried grain with solubles to sows in gestation and lactation on sow productivity.**
M. Roux*, S. Kitt, and R. Moser, *JBS United, Inc., Sheridan, IN*.

W270 **The effect of feeding corn distillers dried grain with solubles to sows in gestation and lactation on sow productivity.**
M. Roux*, S. Kitt, and R. Moser, *JBS United, Inc., Sheridan, IN*.

W271 **Amino acid transporter mRNA abundance in porcine mammary tissue during pregnancy and lactation.**
R Manjarin*[1], J. P Steibel[1], V. Zamora[2], N. Am-in[3], R. Kirkwood[1], C. Ernst[1], P. Weber[1], N. P. Taylor[1], and N. L. Trottier[1], [1]*Michigan State University*, *East Lansing, MI,* [2]*Colegio de Postgraduados*, *Montecillo, Estado de Mexico, Mexico*, [3]*Chulalongkorn University*, *Bangkok, Thailand*.

Physiology and Endocrinology
Endocrinology and Metabolism

W272 **Effects of lactation and pregnancy status on concentrations of insulin and IGF-1, and correlations with metabolic indicators in Holstein dairy cattle.**
I. M. Thompson*[1], R. L. A. Cerri[1], I. H. Kim[2], A. D. Ealy[1], P. J. Hansen[1], C. R. Staples[1], and W. W. Thatcher[1], [1]*University of Florida*, *Gainesville,* [2]*Chungbuk National University*, *Cheongju, South Korea*.

W273 **Comparison of body condition score, body weight and milk yield and composition of Holstein and crossbred dairy cows.**
L. G. D. Mendonca*, C. C. Abade, E. M. da Silva, and R. C. Chebel, *Department of Veterinary Population Medicine, University of Minnesota*, *St Paul.*

W274 **Association between peripartum cortisol, haptoglobin, non-esterifed fatty acid and milk yield in Holstein cows.**
J. M. Huzzey*[1], T. R. Overton[1], D. V. Nydam[1], and R. J. Grant[2], [1]*Cornell University*, *Ithaca, NY*, [2]*W. H. Miner Agricultural Research Institute*, *Chazy, NY*.

W275 **Relationship between IGF-I polymorphism and metabolic and endocrine profiles of dairy cows on grazing conditions during the transition period.**
G. Ruprechter*[1], A. Meikle[1], P. Nicolini[1], and M. Carriquiry[2], [1]*School of Veterinary Sciences, UDELAR*, *Montevideo, Uruguay*, [2]*School of Agronomy, UDELAR*, *Montevideo, Uruguay*.

W276 **Effects of intravenous glucose infusion and nutritional balance on serum concentrations of NEFA, glucose, insulin, and progesterone in non-lactating dairy cows.**
F. Vieira*[1], C. Lopes[1], B. Cappellozza[1], A. Scarpa[1], R. Cooke[2], and J. L. Vasconcelos[1], [1]*FMVZ - UNESP*, *Botucatu, SP, Brazil*, [2]*Oregon State University*, *Burns.*

Physiology and Endocrinology
Hormonal Regulation of the Estrous Cycle in Dairy Cattle

W277 **Effects of treatments with hCG or GnRH on serum progesterone (P4) and conception rates (CR) in lactating dairy cows submitted to timed artificial insemination (AI) or embryo transfer (ET).**
P. Justolin*[1], P. Morelli[1], M. Reis[1], O. Sá Filho[1], F. Aragon[2], M. Veras[2], S. Soriano[3], and J. L. Vasconcelos[1], [1]*FMVZ - UNESP*, *Botucatu, SP, Brazil*, [2]*Pioneiros Veterinary Clinic*, *Carambei, PR, Brazil*, [3]*Colorado Dairies*, *Araras, SP, Brazil*.

W278 **Effect of the treatment with GnRH seven days after embryo transfer (ET) on reproductive performance in lactating dairy cows.**
P. Morelli*[1], P. Justolin[1], M. Reis[1], O. Sá Filho[1], F. Aragon[2], M. Veras[2], S. Soriano[3], and J. L. Vasconcelos[1], [1]*FMVZ - UNESP*, *Botucatu, SP, Brazil*, [2]*Pioneiros Veterinary Clinic*, *Carambei, PR, Brazil*, [3]*Colorado Dairies*, *Araras, SP, Brazil*.

W279 **Effect of moment of induced ovulation and progesterone (P4) for resynchronization on fertility of Holstein cows in a 5-d timed AI program.**
R. S. Bisinotto*, E. S. Ribeiro, L. T. Martins, R. S. Marsola, L. F. Greco, C. A. Risco, W. W. Thatcher, and J. E. P. Santos, *University of Florida*, *Gainesville.*

W280 **Evaluation of a mechanistic, dynamic, metabolic model of regulation of reproductive processes in dairy cattle.**
P. Celi[2], I. Lean[2], H. Raadsma[2], A. Rabiee[2], and J. P. McNamara*[1], [1]*Washington State University*, *Pullman,* [2]*University of Sydney*, *Camden, NSW, Australia*.

W281 **Effects of different ovulatory stimulus (GnRH vs. estradiol cypionate) on follicular dynamics of a progesterone-based timed ai protocol in Holstein cows.**
R. M. Ferreira, H. Ayres*, L. U. Gimenes, and P. S. Baruselli, *Department of Animal Reproduction, University of São Paulo*, *São Paulo, SP, Brazil*.

W282 **Dose of equine chorionic gonadotropin necessary to cause multiple ovulation and increase in progesterone concentration following a synchronization protocol in lactating dairy cows.**
A. C. Denicol*[1], F. A. Rivera[1], L. G. D. Mendonca[2], C. D. Narciso[1], G. Lopes Jr.[1], R. G. S. Bruno[1], and R. C. Chebel[1,2], [1]*Veterinary Medicine Teaching and Research Center, University of California*, *Tulare,* [2]*Department of Veterinary Population Medicine, University of Minnesota*, *St Paul.*

W283 **Effect of presynchronization with GnRH or hCG 7 d before resynchronization of ovulation initiated 25 d after a previous timed AI on fertility of lactating dairy cows.**
J. O. Giordano*, J. N. Guenther, G. Lopes Jr., M. M. Herlihy, A. B. Nascimento, M. C. Wiltbank, and P. M. Fricke, *University of Wisconsin*, *Madison*.

W284 **Milk estradiol and pedometer activity during estrus in dairy cows.**
N. Kendall, D. Scholey, and G. Mann*, *University of Nottingham*, *School of Biosciences, Division of Animal Sciences, Sutton Bonington Campus, Loughborough, UK*.

W285 **Effect of treatment with human chorionic gonadotropin (hCG) and/or intravaginal progesterone (CIDR) on day 5 after AI on fertility in lactating dairy cows.**
A. B. Nascimento*, J. N. Guenther, F. P. Dalla Costa, M. M. Herlihy, A. Keskin, G. Lopes Jr., and M. C. Wiltbank, *University of Wisconsin*, *Madison, WI.*

W286 **A comparison of conception rates between new and re-used Eazi-Breed CIDRs.**
R. Giles*[1], G. Seidel[2], C. McConnel[2], and K. McSweeney[1], [1]*Bovine Reproductive Specialists*, *Loveland, CO,* [2]*Colorado State University*, *Fort Collins.*

W287 **Progesterone concentration required for establishment of pregnancy following embryo transfer in lactating Holstein cows.**
A. G. Kenyon*[1], L. G. D. Mendonca[3], G. Lopes Jr. [1], J. R. Lima[1], J. E. P. Santos[2], and R. C. Chebel[1,3], [1]*Veterinary Medicine Teaching and Research Center, University of California Davis*, *Tulare,* [2]*Department of Animal Sciences, University of Florida*, *Gainesville,* [3]*Department of Veterinary Population Medicine, University of Minnesota*, *St Paul.*

W288 **A comparison between sexed and conventional semen and some reproduction items in Iranian Holstein dairy herds.**
A. A Naserian*[1], F. Karavan[2], and A. Razavi[3], [1]*Ferdowsi University of Mashhad*, *Mashhad, Iran*, [2]*Nemoneh dairy farm*, *Gorgan, Iran*, [3]*Karaj Islamic Azad University*, *Karaj, Iran*.

W289 **Dose reduction of fluorogestone acetate through partition of sponges in a program of estrus synchronization.**
J. L. Cordero[1], T. Sánchez[1], P. Molina[1], R. Nieto[1], J. Peralta[2], M. Cárdenas[3], O. Mejía[4], J. Nuñez[4], E. García*[5], and J. L. Figueroa[1], [1]*Programa de Ganaderia, Colegio de Postgraduados, Texcoco, México*, [2]*ICAP, Medicina Veterinaria y Zootecnia, UAEH, Hidalgo, México*, [3]*INNSZ, México City*, [4]*CEIEPO UNAM, Tres Marías, México*, [5]*CUCSUR, UADG, Autlán Jalisco, México*.

Physiology and Endocrinology
Integrative Physiology and Endocrinology

W290 **Neuroendocrine regulation of rearing behavior in the native Thai hen.**
O. Chaiyachet[1], D. Chokchaloemwong[1], N. Prakobsaeng[1], N. Sartsoongnoen[2], S. Kosonsiriluk[3], I. Rozenboim[4], M. E. El Halawani[3], T. E. Porter[5], and Y. Chaiseha*[1], [1]*Suranaree University of Technology, Nakhon Ratchasima, Thailand*, [2]*Nakhon Ratchasima Rajabhat University, Nakhon Ratchasima, Thailand*, [3]*University of Minnesota, St. Paul*, [4]*The Hebrew University of Jerusalem, Rehovot, Israel*, [5]*University of Maryland, College Park*.

W291 **Cloning and characterization of chicken 5-hydroxytryptamine (5-HT) receptors 1A and 1B.**
C. F. Wong*, A. H. Y. Kwok, J. C. W. Ho, Y. Wang, and F. C. Leung, *The University of Hong Kong, Hong Kong, HKSAR, China*.

W292 **Ergovaline and other ergopeptine alkaloids inhibit vesicular glutamate transporter (VGLUT)-mediated activity of bovine synaptic vesicles.**
Y. Xue*[1], J. R. Strickland[2], J. A. Boling[1], and J. C. Matthews[1], [1]*University of Kentucky, Lexington,* [2]*USDA-ARS, Forage-Animal Production Research Unit, Lexington, KY*.

W293 **Comparison of the somatotropic axis of two precocial free-ranging ice seal species: Harp (*Phoca groenlandica*) and hooded (*Cystophora cristata*).**
C. E. Anderson*[1], J. P. Richmond[1], J. M. Burns[2], and S. A. Zinn[1], [1]*University of Connecticut, Storrs,* [2]*University of Alaska-Anchorage, Anchorage*.

W294 **Effects of age and sex on hematologic and serum biochemical values of broiler chickens.**
A. Viveros*[1], A. Brenes[2], I. Arroyo[1], M. Bascuñana[1], A. Angosto[1], and M. L. Fermin[1], [1]*Facultad de Veterinaria, UCM, Madrid, Spain*, [2]*Instituto Del Frio-ICTAN, CSIC, Madrid, Spain*.

W295 **Serum metabolite response of hens submitted to a second molt using soy hulls.**
H. Mazzuco*, L. S. Lopes, A. Coldebella, and V. S. Avila, *EMBRAPA Swine & Poultry, Concordia, SC, Brazil*.

W296 **Pulmonary vascular pressure profiles in broilers selected for susceptibility to pulmonary hypertension syndrome: Age and gender comparisons.**
R. F. Wideman*, M. L. Eanes, K. R. Hamal, R. Klintworth, and N. B. Anthony, *University of Arkansas, Fayetteville.*

Physiology and Endocrinology
Lactational Physiology

W297 **Regulatory effects of individual essential amino acids on casein synthesis rates in bovine mammary tissue slices.**
J. A. D. R. N. Appuhamy*, T. R. Wiles, and M. D. Hanigan, *Department of Dairy Science, Virginia Polytechnic Institute and State University, Blacksburg*.

W298 **In vivo effects of insulin and dietary protein level on signaling proteins for protein synthesis in the mammary glands of lactating dairy cows.**
W. A. D. Nayananjalie*[1], A. G. Rius[1], D. Kirovski[2], J. A. D. R. N. Appuhamy[1], J. Escobar[1], and M. D. Hanigan[1], [1]*Virginia Polytechnic Institute and State University, Blacksburg,* [2]*University of Belgrade, Serbia*.

W299 **A novel multiplex real-time PCR assay for bovine liver pyruvate carboxylase 5' UTR variants during the transition to lactation.**
H. M. White*, S. L. Koser, and S. S. Donkin, *Purdue University, West Lafayette, IN*.

Production, Management and the Environment
Beef

W300 **Embryo quality characteristics from superovulated cows receiving a blend of bioactive peptides and oligosaccharides to support immune function (Grade One).**
G. H. L. Marquezini[1], V. R. G. Mercadante[1], M. M. Ward*[2], A. R. Spell[3], J. A. Carter[3], N. D. Paton[4], and G. C. Lamb[1], [1]*University of Florida*, *Marianna,* [2]*Provimi North America, Inc., Brookville, OH*, [3]*Advanced Reproductive Associates*, *Daphne, AL*, [4]*Provimi Holding, BV*, *Rotterdam, the Netherlands*.

W301 **Evaluation of a distinct white Angus crossbred phenotype in southern Florida.**
P. G. M. A. Martins*[1], R. Cassiolato[1], F. Frigoni[1], M. M. Salin[1], D. B. Araujo[1], M. Meneghetti[1], G. C. Lamb[1], D. G. Riley[2], B. H. Carter[2], T. H. Friend[2], and J. D. Arthington[1], [1]*University of Florida, Range Cattle Research and Education Center*, *Ona,* [2]*Texas A&M University, Department of Animal Science*, *College Station.*

W302 **The relationship of pulmonary arterial pressure with feed efficiency, performance, temperament, and feeding behavior in growing beef cattle.**
T. D. Maddock*, G. H. L. Marquezini, V. R. G. Mercadante, and G. C. Lamb, *University of Florida*, *Marianna.*

W303 **Technical and economic performance of a beef cattle production system: A case study in Bahia State, Brazil.**
F. A. Barbosa*[1], D. S. Graça[2], V. J. Andrade[2], I. M. Cezar[3], and R. C. Souza[2], [1]*University of Brasília (UnB)*, *Brasilia,DF, Brazil*, [2]*School of Veterinary Medicine, Federal University of Minas Gerais (UFMG)*, *Belo Horizonte, MG, Brazil*, [3]*Anhanguera-Uniderp University*, *Campo Grande, MS, Brazil*.

W304 **Economic efficiency and productivity of life-cycle beef cattle production systems in Bahia State, Brazil.**
F. A. Barbosa*[1], D. S. Graça[2], V. J. Andrade[2], I. M. Cezar[3], and R. C. Souza[2], [1]*University of Brasília (UnB)*, *Brasília, DF, Brazil*, [2]*School of Veterinary Medicine, Federal University of Minas Gerais (UFMG)*, *Belo Horizonte, MG, Brazil*, [3]*Anhanguera-Uniderp University*, *Campo Grande, MS, Brazil*.

W305 **Economic viability of breed Nelore and crossbreed F1 Nelore × Brahman produced in feedlot.**
R. A. Mandarino*, F. A. Barbosa, I. S. Silva, J. M. S. Diogo, and L. A. Chaves, *University of Brasília (UnB)*, *Brasília, DF, Brazil*.

W306 **Monitoring diet quality and body condition in beef cows grazing Arizona rangeland.**
D. R. Tolleson* and D. W. Schafer, *The University of Arizona*, *Tucson*.

W307 **Influence of residual feed intake, breed of sire and dam on the performance and carcass characteristics of early weaned steers during the feedlot phase.**
C. O. Trejo*, D. B. Faulkner, J. M. Dahlquist, and T. G. Nash, *University of Illinois*, *Urbana.*

W308 **Supplemental corn dry distillers grains plus soluble on performance of steers grazing native range.**
M. F. Martínez-Pérez, D. Calderón-Mendoza, F. Loya-Holguin, A. Soto-Gaspar de Alba, C. Murdock, A. M. Encinias, and S. A. Soto-Navarro*, *New Mexico State University*, *Las Cruces.*

W309 **Predicted mineral intake utilizing both water and forage analysis varies by source and location of livestock water in Eastern Montana.**
J. T. Mulliniks*[1], J. Muscha[2], S. I. Lodge-Ivey[1], and M. K. Petersen[2], [1]*New Mexico State University*, *Las Cruces,* [2]*USDA-ARS, Fort Keogh Livestock and Range Research Laboratory*, *Miles City, MT*.

W310 **The environmental impact of corn-fed versus grass-fed beef finishing systems.**
J. L. Capper*[1] and R. A. Cady[2], [1]*Department of Animal Sciences, Washington State University*, *Pullman,* [2]*Elanco Animal Health*, *Greenfield, IN.*

W311 **Assessment of thermal signatures of nose-clip weaned calves using digital infrared thermography.**
H. T. Boland*[1,2], S. Bowers[2], and S. T. Willard[2,3], [1]*Mississippi State University, Prairie Research Unit*, *Prairie,* [2]*Mississippi State University, Department of Animal and Dairy Sciences*, *Mississippi State,* [3]*Mississippi State University, Department of Biochemistry and Molecular Biology*, *Mississippi State.*

W312 **Selenium incorporation and depletion in beef heifers grazing pastures with very high selenium levels grown in saline soils.**
S. O. Juchem*[1,2], S. E. Benes[2], P. H. Robinson[1], P. Vasquez[2], M. Brito[2], G. Getachew[1], and P. Chilibroste[3], [1]*University of California*, *Davis*, [2]*California State University*, *Fresno*, [3]*Facultad de Agronomía*, *Paysandú, Uruguay*.

W313 **Influence of shading of feedlot pens on performance of growing bull-calves during winter in northwest Mexico.**
R. Barajas*[1], B. J. Cervantes[1,2], M. Verdugo[1], M. A. Espino[1,3], E. A. Velazquez[1], J. A. Romo[1], and L. R. Flores[1], [1]*FMVZ-Universidad Autonoma de Sinaloa*, *Culiacan, Sinaloa, Mexico*, [2]*Ganadera Los Migueles SA de CV*, *Culiacan, Sinaloa, Mexico*, [3]*Técnología de Máxima Producción, S. A. de C. V.*, *Culiacan, Sinaloa, Mexico*.

W314 **Preliminary evaluation of grandsire marbling potential and ultrasound use on backgrounding and finishing performance, and carcass merit.**
C. J. Mueller*[1,2], T. DelCurto[1,2], R. R. Mills[1], C. P. Sullivan[1,2], and G. L. Tschida[1,2], [1]*Oregon State University*, *Corvallis*, [2]*Eastern Oregon Agricultural Research Center*, *Union*.

W315 **Growth and carcass merit of purebred Jersey steer calves finished on grain-based diets at two different energy levels.**
C. J. Mueller*[1,2], G. L. Tschida[1,2], and V. B. Cannon[1], [1]*Oregon State University*, *Corvallis*, [2]*Eastern Oregon Agricultural Research Center*, *Union*.

Production, Management and the Environment
Environment

W316 **Stocking rate and botanical composition effects on the physical characteristics of the streamside zones of pastures.**
D. A. Bear*[1], J. R. Russell[1], D. G. Morrical[1], M. Tufekcioglu[1], T. M. Isenhart[1], and J. L. Kovar[2], [1]*Iowa State University*, *Ames,* [2]*USDA-ARS National Laboratory for Agriculture and the Environment*, *Ames, IA*.

W317 **Incidence of bovine enterovirus, coronavirus, and group A rotavirus, and concentration of total coliforms in Midwestern pasture streams.**
D. A. Bear*, Y. I. Cho, J. R. Russell, S. M. Ensley, and K. J. Yoon, *Iowa State University*, *Ames*.

W318 **Borax and octabor treatment of stored swine manure: Reduction in hydrogen sulfide emissions and phytotoxicity to agronomic crops.**
M. Yokoyama*[1], S. Hengemuehle[1], D. Penner[1], J. Michael[1], C. Spence[2], T. Whitehead[2], R. von Bernuth[1], D. Rozeboom[1], and M. Cotta[2], [1]*Michigan State University*, *East Lansing,* [2]*United States Department of Agriculture, Agricultural Research Service*, *Peoria, IL.*

W319 **Effect of dietary adipic acid and dried distillers grains plus solubles in combination with post-excretion amendment with sodium bisulfite on nitrogen loss from stored laying hen excreta.**
T. J. Applegate*[1], C. Romero[2], M. E. B. Abdallh[3], R. Angel[4], and W. Powers[5], [1]*Purdue University*, *West Lafayette, IN,* [2]*Universidad Politecnica de Madrid*, *Madrid, Spain*, [3]*University of Khartoum*, *Khartoum, Sudan*, [4]*University of Maryland*, *College Park,* [5]*Michigan State University*, *East Lansing.*

W320 **Evaluation of a silvopastoral system with *Alnus acuminata* on pasture productivity, milk production and economic returns in a high tropical ecosystem.**
A. Conde*[1], R. Hernandez[1], L. L. Betancourt[1], D. A. Castañeda[1], J. A. Umaña[1], T. Carvajal[2], and L. Sanchez[3], [1]*Universidad de La Salle*, *Bogotá, Colombia*, [2]*Universidad UDCA*, *Bogotá, Colombia*, [3]*CORPOICA*, *Bogotá, Colombia*.

W321 **Feeding native laying hens diets containing palm kernel meal with or without enzyme supplementations: 2. Manure nitrogen and microbial counts.**
Adrizal*[1], Yusrizal[1], S. Fakhri[1], Yatno[1], and C. R. Angel[2], [1]*Faculty of Animal Husbandry, University of Jambi*, *Jambi 36361, Jambi, Indonesia*, [2]*Department of Animal and Avian Sciences, University of Maryland*, *College Park.*

W322 **Effect of dietary protein concentration on ammonia emission from dairy manure.**
C. Lee*[1], A. N. Hristov[1], C. Dell[2], G. Feyereisen[3], J. Kaye[1], and D. Beegle[1], [1]*Pennsylvania State University*, [2]*USDA-ARS*, *PA,* [3]*USDA-ARS*, *MN.*

W323 **Origin of ammonia nitrogen volatilized from dairy manure.**
C. Lee* and A. N. Hristov, *Pennsylvania State University.*

W324 **Air velocities in poultry houses raising large broilers.**
D. G. Overhults[1], A. J. Pescatore*[1], I. Lopes[1], G. Morello[1], J. P. Jacob[1], M. Miller[2], J. Earnest, Jr. [1], and R. S. Gates[3], [1]*University of Kentucky*, *Lexington,* [2]*Kentucky Poultry Federation*, *Winchester,* [3]*University of Illniois*, *Champaign*.

W325 **Effect of LED lights on growth performance of broiler chicks.**
R. D. Rierson*, C. M. Rude, M. A. Barrios, and R. S. Beyer, *Kansas State University*, *Manhattan*.

W326 **Comparison of nutrient and microbial profiles in foaming and non-foaming swine manure pits.**
J. Rehberger*, E. Davis, A. Veldkamp, T. Parrott, and T. Rehberger, *Danisco*, *Waukesha, WI.*

W327 **The effect of dietary alfalfa silage to corn silage ratios on cow performance and ammonia nitrogen emission.**
C. Arndt*[1], M. A. Wattiaux[1], and J. M. Powell[2], [1]*University of Wisconsin*, *Madison*, [2]*US Dairy Forage Research Center*, *Madison, WI*.

W328 **Effect of inoculant and molasses on silage fermentation quality, protein fractions, nutritive value and aerobic stability in high dry matter alfalfa.**
M. Khorvash*[1], F. Hashemzadeh Cigari[1], G. -R. Ghorbani[1], and A. Taghizadeh[2], [1]*Isfahan University of Technology*, *Isfahan, Isfahan, Iran*, [2]*Tabriz University*, *Tabriz, East Azarbayjan, Iran*.

W329 **The effect of feed management software on whole farm nutrient balance.**
B. A. Stewart*, B. E. Cox, R. E. James, K. F. Knowlton, M. L. McGilliard, and C. C. Stallings, *Virginia Polytechnic Institute and State University*, *Blacksburg.*

W330 **Determining water usage on dairies.**
J. C. Potts*, B. J. Bradford, J. F. Smith, and M. J. Brouk, *Kansas State*, *Manhattan*.

W331 **Dietary CP and tannin extracts impact ammonia emissions from manure deposited on dairy barn floors.**
J. M. Powell[1], M. J. Aguerre*[2], and M. A. Wattiaux[2], [1]*US Dairy Forage Research Center*, *Madison, WI*, [2]*University of Wisconsin*, *Madison*.

W332 **Emissions from a dairy waste management system in south-central Idaho.**
M. E. de Haro Martí*[1], R. E. Sheffield[2], and M. Chahine[3], [1]*University of Idaho*, *Gooding*, [2]*Louisiana State University*, *Baton Rouge*, [3]*University of Idaho*, *Twin Falls*.

Production, Management and the Environment
Management

W333 **Nutritive value and silage conservation of mango industrial by products as animal feed in ruminants.**
A. Conde*[3,1], A. P. Sandoval[2], M. C. Cueto[1], N. M. Rojas[3], and L. M. Arevalo[4], [1]*Universidad de la Sabana*, *Bogotá,Colombia*, [2]*Corpoica*, *Nataima,Colombia*, [3]*Universidad de La Salle*, *Bogotá, Colombia*, [4]*Universidad UDCA*, *Bogotá, Colombia*.

W334 **The ability of essential oils to inhibit *Salmonella* growth.**
K. S. Macklin*, J. T. Krehling, Z. T. Williams, and M. A. Bailey, *Auburn University*, *Auburn, AL.*

W335 **Prediction of pregnancy by increased physical activity measured prior to timed-insemination.**
A. H. Sanders*, A. De Vries, and J. Block, *University of Florida*, *Gainesville.*

Ruminant Nutrition
Beef 1

W336 **The influence of lipidic sources on the cholestrol plasma levels of beef heifers.**
M. C. A. Santana*[1], T. T. Berchielli[1], R. A. Reis[1], G. M. P. Melo[2], and P. H. M. Dian[2], [1]*São Paulo State University*, *Jaboticabal, São Paulo, Brazil*, [2]*Camilo Castelo Branco University*, *Descalvado, São Paulo, Brazil*.

W337 **Substitution of soybean meal by inactive dry yeast in diets of beef cattle: nutrient intake and productive performance.**
A. F. Campos[1], O. G. Pereira*[1], S. C. Valadares Filho[1], K. G. Ribeiro[2], and L. O. Rosa[1], [1]*Federal University of Vicosa*, *Viçosa, Minas Gerais, Brazil*, [2]*Federal University of Jequitinhonha and Mucuri Valleys*, *Diamantina, Minas Gerais, Brazil*.

W338 **Changes on growth performance and ruminal variables of finishing Dorper × Pelibuey lambs fed a sorghum grain diet plus an exogenous phytase.**
G. Buendía-Rodríguez[1], S. S. González-Muñoz*[2], R. Basurto-Gutiérrez[1], M. M. Crosby-Galván[1], L. A. Adame-López[1], and L. J. Montiel-Olguín[1], [1]*CENIDFyMA INIFAP*, *Ajuchitlán, Querétaro, México*, [2]*Colegio de Postgraduados*, *Montecillo, Edo. de México, México*.

W339 **Thawed semen quality of beef bulls supplemented with calcium soaps of polyunsaturated fatty acid.**
H. O. Patino*, M. M. H. Ramirez, R. M. Gregory, and D. d. Ré, *Universidade Federal de Rio Grande do Sul*, *Porto Alegre, RS, Brazil*.

W340 **Effects of non-protein nitrogen in diets containing 15% wet distiller's grains with solubles and steam-flaked corn on feedlot cattle performance and carcass characteristics.**
C. H. Ponce*[1], M. S. Brown[1], N. A. Cole[2], C. L. Maxwell[1], J. O. Wallace[1], and B. Coufal[1], [1]*Feedlot Research Group, Department of Agricultural Sciences, West Texas A&M University*, *Canyon*, [2]*USDA ARS Conservation and Production Research Laboratory*, *Bushland, TX.*

W341 **Effects of nutrient restriction and ruminally undegradable protein supplementation during early to mid-gestation on beef cow offspring intestinal growth.**
A. M. Meyer*[1], P. Moriel[2], W. J. Means[2], M. Du[2], B. W. Hess[2], and J. S. Caton[1], [1]*Center for Nutrition and Pregnancy, Department of Animal Sciences, North Dakota State University*, *Fargo*, [2]*Department of Animal Science, University of Wyoming*, *Laramie*.

W342 **Time of collection affects starch losses in Nellore and crossbred cattle in commercial feedlots.**
M. Caetano*[1], A. J. C. Nuñez[2], G. B. Mourão[1], and D. P. D. Lanna[1], [1]*University of Sao Paulo, ESALQ*, *Piracicaba, Brazil*, [2]*University of Sao Paulo, FZEA*, *Pirassununga, Brazil*.

W343 **Parenteral supplementation of cross bred Brahman steers with copper and zinc in the western plains of Venezuela.**
R. E. Mora*[1], A. M. Herrera[1], D. L. Sánchez[1], C. F. Chicco[2], and S. Godoy[2], [1]*Universidad Nacional Experimental del Táchira, Venezuela*, [2]*Universidad Central de Venezuela*.

W344 **Effect of wheat distillers dried grains with solubles (DDGS) as a replacement for barley grain and barley silage on ruminal pH and fermentation in finishing beef cattle.**
Y. L. Li*[1,2], W. Z. Yang[1], M. L. He[1], T. A. McAllister[1], and K. A. Beauchemin[1], [1]*Agriculture and Agri-Food Canada, Research Centre, Lethbridge, AB, Canada*, [2]*Feed Research Institute, Chinese Academy of Agricultural Sciences, Beijing, China*.

W345 **Effect of levels of canola meal supplementation on intake and apparent digestibility in wethers.**
F. Hentz*, G. V. Kozloski, T. Orlandi, G. F. E. Pacheco, S. C. de Àvila, and P. S. Castagnino, *Universidade Federal de Santa Maria, Santa Maria, RS, Brazil*.

W346 **Evaluation of including elevated levels of wet distillers grains in diets of beef steers.**
J. M. Carmack*[1], P. M. Walker[1], J. D. Fehr[1], R. L. Atkinson[2], and L. A. Forster[3], [1]*Department of Agriculture, Illinois State University, Normal,* [2]*Animal Science, Food and Nutrition, Southern Illinois University, Carbondale,* [3]*Archer Daniels Midland Co, Decatur, IL.*

W347 **Performance, feed intake, residual feed intake and feed:gain ratio in progeny of Nellore steers housed in individual or group pens.**
M. L. Nascimento*[1], R. R. Tullio[2], M M Alencar[2], J. S. Lima[3], L. D. C. Vieira[4], M. L. P. Silva[4], and D. P. D. Lanna[1], [1]*University of Sao Paulo, Piracicaba, Sao Paulo, Brazil*, [2]*Embrapa Pecuaria Sudeste, Sao Carlos, Sao Paulo, Brazil*, [3]*Rural Federal University of Pernambuco State, Garanhuns, Pernambuco, Brazil*, [4]*State University of Sao Paulo, Jaboticabal, Sao Paulo, Brazil*.

W348 **Residual feed intake in progeny of Nellore bulls.**
M. L. Nascimento*[1], R. R. Tullio[2], M. M. Alencar[2], J. S. Lima[3], L. D. C. Vieira[4], M. L. P. Silva[4], and D. P. D Lanna[1], [1]*University of Sao Paulo, Piracicaba, Sao Paulo, Brazil*, [2]*Embrapa Pecuaria Sudeste, Sao Carlos, Sao Paulo, Brazil*, [3]*Rural Federal University of Pernanbuco State, Garanhuns, Pernambuco, Brazil*, [4]*State University of Sao Paulo, Jaboticabal, Sao Paulo, Brazil*.

W349 **Effects of supplemental vitamin E with different oil sources on growth, health, and carcass parameters of preconditioned beef calves.**
C. J. Mueller*[1,2], C. Sexson[1], and R. R. Mills[1], [1]*Oregon State University, Corvallis,* [2]*Eastern Oregon Agricultural Research Center, Union*.

W350 **Level of ammonia-nitrogen required to maximize ruminal microbial efficiency.**
Y. Liang* and M. S. Kerley, *University of Missouri, Columbia.*

W351 **Effects of polyunsaturated fatty acid supplementation (PUFA) on forage intake and digestibility in beef cows.**
R. F. Cooke*, A. B. Scarpa, F. M. Nery, F. N. T. Cooke, and D. W. Bohnert, *Oregon State University - EOARC, Burns*.

W352 **Use of real-time ultrasound (RTU) measurements and carcass traits to assess internal fat in residual feed intake (RFI)-indexed Brahman bulls under grazing conditions.**
C. A. Hughes*[1], J. A. Carter[1], T. D. A. Forbes[2], F. M. Rouquette, Jr. [3], L. O. Tedeschi[4], R. D. Randel[3], and F. R. B. Ribeiro[1], [1]*Texas A&M University-Commerce*, [2]*Texas AgriLife Research, Uvalde,* [3]*Texas AgriLife Research, Overton,* [4]*Texas A&M University, College Station*.

W353 **Effects of co-ensiling direct-cut grass with corn modified wet distillers grain plus solubles on beef steer diet digestibility.**
R. P. Arias*[1], L. J. Unruh-Snyder[1], E. J. Scholljegerdes[2], A. N. Baird[1], K. D. Johnson[1], D. Buckmaster[1], R. P. Lemenager[1], and S. L. Lake[3], [1]*Purdue University, West Lafayette, IN,* [2]*USDA-ARS Northern Great Plains Research Laboratories, Mandan, ND*, [3]*University of Wyoming, Laramie*.

W354 **Acetate utilization in young crossbred calves is age-dependent.**
K. Pike*, W. A. D. Nayananjalie, T. R. Wiles, M. A. McCann, D. E. Gerrard, and M. D. Hanigan, *Virginia Polytechnic Institute and State University, Blacksburg.*

W355 **Ergot alkaloids induce vasoconstriction of bovine foregut vasculature.**
A. P. Foote*[1], J. L. Klotz[2], D. L. Harmon[1], L. P. Bush[1], and J. R. Strickland[2], [1]*University of Kentucky, Lexington*, [2]*USDA-ARS, FAPRU, Lexington, KY*.

W356 **Comparison of methods to predict carcass composition in grass and grain fed Angus steers.**
G. Acetoze*, G. D. Cruz, and H. A. Rossow, *University of California, Davis.*

W357 **Rumen bacterial population dynamics of steers grazing winter wheat forage and a yeast culture supplement.**
D. W. Pitta*[1], W. E. Pinchak[1], S. E. Dowd[2,4], J. Osterstock[3], V. Gontcharova[2], E. Youn[4,5], K. Dorton[6], I. Yoon[6], B. R. Min[1], J. D. Fulford[1], T. A. Wickersham[7], and D. P. Malinowski[1], [1]*Texas AgriLife Research, Vernon,* [2]*Research and Testing Laboratory, Lubbock, TX,* [3]*Texas AgriLife Research, Amarillo,* [4]*Medical Biofilm Research Institute, Lubbock, TX,* [5]*Texas Tech University, Lubbock,* [6]*Diamond V Mills, Cedar Rapids, IA,* [7]*Texas A&M University, College Station.*

W358 **Expression of phosphate transporter in small intestine, kidney, and parotid salivary gland of cattle fed differing levels of phosphorus from wet distillers grains.**
A. P. Foote*[1], B. D. Lambert[1,2], J. A. Brady[2], M. S. Brown[3,4], J. B. Osterstock[4], J. C. MacDonald[3,4], and N. A. Cole[5], [1]*Tarleton State University, Stephenville, TX*, [2]*Texas AgriLife Research, Stephenville*, [3]*West Texas A&M University, Canyon*, [4]*Texas AgriLife Research, Amarillo*, [5]*USDA-ARS, CPRL, Bushland, TX.*

W359 **Supplemental vitamin E concentration in beef finishing diets containing wet distillers grains with solubles: Feedlot performance and carcass characteristics.**
D. B. Burken*[1], K. G. Hanger[1], R. B. Hicks[1], D. L. VanOverbeke[1], J. L. Wahrmund[1], B. P. Holland[2], J. J. Martin[3], P. K. Camfield[3], and C. J. Richards[1], [1]*Oklahoma State University*, *Stillwater*, [2]*South Dakota State University*, *Brookings*, [3]*Oklahoma Panhandle State University*, *Goodwell*.

W360 **Abomasal direct infusion of L-arginine and *trans*-10, *cis*-12 conjugated linoleic acid affect to lipogenic gene expression and enzymes activities in Angus steers.**
S. H. Choi*[1], G. Go[1], D. T. Silvey[1], L. A. Gilmore[1], K. Y. Chung[2], B. J. Johnson[2], G. Wu[1], and S. B. Smith[1], [1]*Department of Animal Science, Texas A&M University*, *College Station,* [2]*Department of Animal and Food Science, Texas Tech University*, *Lubbock.*

W361 **Effects of different casein supplements on concentration of soluble non-ammonia nitrogen in the liquid phase of ruminal and omasal digesta in Korean native steers.**
C. W. Choi*[1], H. G. Lee[2], Y. K. Oh[1], S. C. Lee[1], M. K. Song[3], S. H. Choi[4], and S. B. Smith[4], [1]*National Institute of Animal Science, RDA*, *Suwon, Korea*, [2]*Department of Animal Science, Pusan National University*, *Mirang, Korea*, [3]*Chungbuk National Univesity*, *Cheongju, Korea*, [4]*Texas A&M University*, *College Station.*

W362 **Similar performance and carcass quality of beef bulls weaned at 3 or 6 months of age when slaughtered at a fixed body weight.**
M. Vestergaard*[1], A. M. Graumann[2], F. Strudsholm[2], and C. F. Børsting[3], [1]*Aarhus University*, *Tjele, Denmark*, [2]*Agrotech A/S*, *Skejby, Denmark*, [3]*Danish Cattle Research Centre*, *Tjele, Denmark*.

W363 **Development of a fescue toxicosis model using a fescue seed extract.**
A. F. Koontz*[1], L. P. Bush[2], J. L. Klotz[3], K. R. McLeod[1], F. N. Schrick[4], and D. H. Harmon[1], [1]*Department of Animal and Food Sciences, University of Kentucky*, *Lexington,* [2]*Department of Plant and Soil Sciences, University of Kentucky*, *Lexington,* [3]*Forage-Animal Production Research Unit, USDA-ARS*, *Lexington, KY,* [4]*Department of Animal Science, University of Tennessee*, *Knoxville.*

W364 **Flint corn grain processing and protein adequacy in rations for feedlot finished Nellore bulls.**
A. M. Pedroso*, M. S. Peres, F. A. P. Santos, G. B. Mourao, and T. G. Neri, *ESALQ/USP*, *Piracicaba, SP, Brazil*.

W365 **Effects of ruminal energy–protein synchronization on intake, nutrient digestibility, performance, carcass traits and composition of carcass gain in beef heifers.**
M. S. Duarte, P. V. R. Paulino*, G. S. Viana, E. A. Fonseca, L. H. P. Silva, J. P. I. S. Monnerat, R. Mezzomo, J. Cavali, J. F. Lage, I. M. Oliveira, S. C. Valadares Filho, and M. F. Paulino, *Universidade Federal de Viçosa*, *Viçosa, MG, Brazil*.

W366 **The effects of restrictive feeding over the winter on the performance of prepartum crossbred beef cows.**
K. M. Wood*, I. B. Mandell, and K. C. Swanson, *University of Guelph*, *Guelph, Ontario, Canada*.

W367 **Comparison of wheat dried distillers grains with solubles, alone or in combination with barley grain, as protein and energy sources for beef stocker calves grazing fall pasture and winter field bale grazing.**
L. P. Clark*[1] and H. A. Lardner[1,2], [1]*University of Saskatchewan*, *Saskatoon, Saskatchewan, Canada*, [2]*Western Beef Development Centre*, *Humboldt, Saskatchewan, Canada*.

W368 **Carcass characteristics of Nellore heifers finished on pasture system with partial substitution of soybean meal for sunflower crushed seeds.**
S. L. N. Cerilo*, R. H. de Tonissi e Buschinelli de Goes, H. L. Lima, A. R. M. Fernandes, K. A. de Souza, K. C. da Silva Brabes, A. F. Marquez, and E. R. de Oliveira, *Universidade Federal da Grande Dourados*, *Dourados, MS, Brazil*.

W369 **Changes in ruminal parameters, of steers supplemented with sunflower crushed seeds in parcial substitution of soybean meal.**
H. L. Lima*, R. H. de Tonissi e Buschinelli de Goes, S. L. N. Cerilo, A. L. Teodoro, K. A. de Souza, L. da Silva Fernandes, M. G. de Menezes Gressler, and E. R. de Oliveira, *Universidade Federal da Grande Dourados*, *Dourados, MS, Brazil*.

W370 **Effect of supplemental fat sources on rumen fermentation of a high-concentrate diet using a dual-flow continuous culture system.**
R. C. Araujo*[1], S. Calsamiglia[2], M. Rodríguez-Prado[2], S. Cavini[2], and A. Ferret[2], [1]*ESALQ, Universidade de São Paulo*, *Piracicaba, SP, Brazil*, [2]*Universitat Autònoma de Barcelona*, *Bellaterra, Spain*.

W371 **Dried distillers grains as a protein supplement to cattle consuming Bermudagrass hay.**
Z. J. Rambo*, J. E. Sawyer, C. L. Skaggs, and T. A. Wickersham, *Texas A&M University*, *College Station.*

W372 **Effect of residual feed intake, gender, and breed composition on blood urea nitrogen concentration in an Angus-Brahman multibreed herd.**
R. O. Myer*[1] and M. A. Elzo[2], [1]*University of Florida*, *NFREC, Marianna*, [2]*University of Florida*, *Gainesville*.

W373 **Body composition and tissue deposition in Nellore, F1 Simmental × Nellore and F1 Angus × Nellore steers fed at maintenance or ad libitum with two levels of concentrate in the diet.**
I. M. Oliveira*, P. V. R. Paulino, M. I. Marcondes, C. A. Neves, S. C. Valadares Filho, E. Detmann, J. Cavali, V. R. M. Couto, and N. K. P. Souza, *Universidade Federal de Viçosa*, *Viçosa, MG, Brazil*.

W374 **Effect of supplementing a combination of lysine and methionine on growing cattle performance and carcass composition.**
N. D. Luchini*[1] and M. J. de Veth[2], [1]*Adisseo*, *Alpharetta, GA*, [2]*Balchem Corporation*, *New Hampton, NY*.

W375 **Effect of protein and energy supplementation on voluntary intake and ruminal parameters in steers.**
F. P. Portilho* and L. F. Barros, *University of Brasilia*, *Brasília, DF, Brazil*.

W376 **Energy requirements adjusted by milk yield of beef cows in Uruguay.**
V. G. Castro*, M. C. Fossemale, and A. C. E. Mederos, *Facultad de Agronomía, UdelaR*, *Montevideo, Uruguay*.

W377 **Productive performance during fattening phases of Nellore and F1 Nellore × Brahman fed with three different diets.**
I. S. Silva*, F. A. Barbosa, J. M. S. Diogo, R. A. Mandarino, and F. C. E. Botelho, *Faculty of Agronomy and Veterinary Medicine, University of Brasília - UnB*, *Brasília/DF, Brazil.*

Ruminant Nutrition
Beef: Feedlot

W378 **Effects of feeding monensin or polyclonal antibody preparation against lactate-producing rumen bacteria on blood lipoprotein concentrations of feedlot cattle.**
J. R. Rochesel*[1,2], F. S.Parra[1], M. De Beni Arrigoni[1], C. L. Martins[1], S. R. Baldin[1], L. M. N. Sarti[1], R. S. Barducci[1], N. R. B. Consolo[3], D. D. Millen[1], R. D. L. Pacheco[1], D. Tomazella[1], A. L. Campanini[1], F. A. S. Miquilin[1], and A. M. Lopes[1], [1]*São Paulo State University (UNESP)*, *Botucatu, São Paulo, Brazil*, [2]*Supported by FAPESP*, *São Paulo, São Paulo, Brazil*, [3]*University of São Paulo (USP)*, *Pirassununga, São Paulo, Brazil*.

W379 **Effects of feeding polyclonal antibody preparations against lactate-producing rumen bacteria or monensin on feeding behavior of feedlot cattle.**
T. M. Mariani[1,2], R. D. L. Pacheco[1], M. De Beni Arrigoni[1], C. L. Martins[1], S. R. Baldin[1], L. M. N. Sarti[1], R. S. Barducci[1], T. M. Mariani[1], J. R. Ronchesel[1], F. S. Parra[1], D. Tomazella[1], J. P. S. T. Bastos[1], E. S. Ogawa[1], and D. D. Millen*[1], [1]*São Paulo State University (UNESP)*, *Botucatu, São Paulo, Brazil*, [2]*Supported by FAPESP*, *São Paulo, São Paulo, Brazil*, [3]*University of São Paulo (USP)*, *Piracicaba, São Paulo, Brazil*.

W380 **Effects of feeding polyclonal antibodies preparations against lactate-producing rumen bacteria or monensin on blood gas profile, DMI fluctuations and rumenitis incidence of feedlot cattle.**
R. D. L. Pacheco*[1,2,4], D. D. Millen[1], M. De Beni Arrigoni[1], C. L. Martins[1], S. R. Baldin[1], L. M. N. Sarti[1], R. S. Barducci[1], T. M. Mariani[1], J. R. Ronchesel[1], F. S. Parra[1], D. P. D. Lanna[3], J. P. S. T. Bastos[1], and G. B. Mourão[3], [1]*São Paulo State University (UNESP)*, *Botucatu, São Paulo, Brazil*, [2]*Supported by FAPESP*, *São Paulo, São Paulo, Brazil*, [3]*University of São Paulo (USP)*, *Piracicaba, São Paulo, Brazil,* [4]*Aluno de doutorado do programa de pós-graduaçao em zootecnica da FMVZ/UNESP/BOTUCATU*.

W381 **Effects of feeding polyclonal antibodies preparations against lactate-producing rumen bacteria or monensin on blood lipoproteins concentrations and fatty acid profile of feedlot cattle.**
D. D. Millen*[1,2], R. D. L. Pacheco[1], M. De Beni Arrigoni[1], C. L. Martins[1], S. R. Baldin[1], L. M. N. Sarti[1], R. S.Barducci[1], T. M. Mariani[1], J. R. Ronchesel[1], F. S. Parra[1], D. P. D. Lanna[3], J. P. S. T. Bastos[1], G. B. Mourão[3], and A. M. Lopes[1], [1]*São Paulo State University (UNESP)*, *Botucatu, São Paulo, Brazil*, [2]*Supported by FAPESP*, *São Paulo, São Paulo, Brazil*, [3]*University of São Paulo (USP)*, *Piracicaba, São Paulo, Brazil*.

W382 **Economic analysis of beef steer finishing diets containing elevated levels of wet distillers grains with solubles.**
J. M. Carmack*[1], P. M. Walker[1], J. D. Fehr[1], R. L. Atkinson[2], and L. A. Forster[3], [1]*Department of Agriculture, Illinois State University*, *Normal, IL,* [2]*Animal Science, Food and Nutrition, Southern Illinois University*, *Carbondale, IL,* [3]*Archer Daniels Midland Co*, *Decatur, IL.*

W383 **Interactive effects of yeast and yeast cell wall material on feedlot performance during the receiving period of stressed beef cattle.**
D. N. Finck*[1], S. L. Parr[1], T. R. Young[1], J. A. Carroll[2], J. R. Corley[3], A. G. Estefan[3], and B. J. Johnson[1], [1]*Texas Tech University, Dept. of Animal and Food Sciences*, *Lubbock,* [2]*USDA-ARS, Livestock Issues Research Unit*, *Lubbock, TX,* [3]*Lesaffre Feed Additives*, *Milwaukee, WI.*

W384 **Condensed tannins supplementation on feedlot performance of growing bulls.**
R. Barajas*[1], B. J. Cervantes[1,2], A. Camacho[1], E. A. Velazquez[1], M. A. Espino[1,3], F. Juarez[1], L. R. Flores[1], and M. Verdugo[1], [1]*FMVZ-Universidad Autonoma de Sinaloa*, *Culiacan, Sinaloa, Mexico*, [2]*Ganadera Los Migueles SA de CV*, *Culiacan, Sinaloa, Mexico*, [3]*Técnología de Máxima Producción, S. A. de C. V.*, *Culiacan, Sinaloa, Mexico*.

W385 **Factors influencing intake: Diet composition and carcass characteristics in finishing yearling steers.**
M. G. Dib*[1], G. E. Erickson[1], T. J. Klopfenstein[1], and M. L. Spangler[1], [1]*University of Nebraska*, *Lincoln,* [2]*Archer Daniels Midland*, *Columbus, NE*.

W386 **Effect of increased Rumensin dosage level and timing on performance of steers fed in confinement to harvest.**
G. J. Vogel*, *Elanco Animal Health*, *Greenfield, IN*.

W387 **Blood gas profile, rumenites and liver abscesses incidences of feedlot bullocks fed high-concentrate diets containing monensin or polyclonal antibodies preparations against lactate-producing rumen bacteria.**
L. M. N. Sarti*[1,2], R. S. Barducci[1], M. De Beni Arrigoni[1], C. L. Martins[1], S. R. Baldin[1], D. D. Millen[1], R. D. L. Pacheco[1], T. M. Mariani[1], J. R. Ronchesel[1], F. S. Parra[1], A. L. Campanini[1], J. P. S. T. Bastos[1], D. Tomazella[1], and F. A. Simão Miquilin[1], [1]*São Paulo State University (UNESP)*, *Botucatu, São Paulo, Brazil*, [2]*Supported by FAPESP*, *São Paulo, São Paulo, Brazil*.

W388 **Effect of intermittent roughage delivery and roughage type on intake and digestibility by beef steers fed concentrate diets.**
A. Lopez[1], J. I. Arroquy*[1,2], M. Avila[2], H. Coria[3], and O. Hernandez[3], [1]*CONICET*, *Santiago del Estero, Argentina*, [2]*INTA EEA Santiago del Estero*, *Santiago del Estero, Argentina*, [3]*FAyA - Univ. Nac. Santiago del Estero*, *Santiago del Estero, Argentina*.

W389 **Effect of wheat straw level and processing method on site and extent of digestion by cattle consuming finishing feedlot diets.**
J. A. Valdez*[1], J. O. Chirino[1], M. F. Montaño[1], N. G. Torrentera[1], E. G. Alvarez[1], J. F. Calderón[1], O. M. Manriquez[1], M. A. Lopez[1], V. M. Gonzalez[1], A. Perez[1], J. Salinas[2], and S. A. Soto-Navarro[3], [1]*Universidad Autónoma de Baja California*, *Mexicali, BC, MX*, [2]*Universidad Autónoma de Tamaulipas*, *Victoria, TAM, MX*, [3]*New Mexico State University*, *Las Cruces.*

Ruminant Nutrition
Dairy 1

W390 **Milk production response to incremental levels of crude glycerol on diets of grazing dairy cows.**
R. Echeverria, A. Mackinnon, J. Rotulo, and P. Chilibroste*, *Universidad de la Republica, EEMAC*, *Paysandu, Uruguay*.

W391 **Nutrient balances in California dairy farms. 2. Factors associated with feed conversion and nitrogen utilization efficiencies.**
A. R. Castillo*[1], N. Silva del Rio[2], and N. St-Pierre[3], [1]*University of California Cooperative Extension*, *Merced,* [2]*University of California Cooperative Extension*, *Tulare,* [3]*The Ohio State University, Department of Animal Sciences*, *Columbus.*

W392 **Effects of glucose, propionate, insulin and gut peptides on neuropeptide mRNA concentrations in the ovine hypothalamus.**
A. E. Relling*[1,3], K. Lee[1], S. C. Loerch[1], and C. K. Reynolds[2], [1]*The Ohio State University*, [2]*University of Reading*, *UK*, [3]*Universidad Nacional de La Plata*, *Argentina*.

W393 **Relationship between prolamin content and in situ starch digestibility of barley grain.**
M. Oba*[1], D. Gibb[2], and T. McAllister[2], [1]*University of Alberta*, *Edmonton, AB, Canada*, [2]*Agriculture and Agri-Food Canada*, *Lethbridge, AB, Canada*.

W394 **Effect of crude glycerin supplementation on the performance of dairy cows under high altitude tropical conditions.**
L. Mestra[1], Y. Avellaneda*[1], P. Medina[1], G. Garcia[1], C. Ariza-Nieto[1], D. Cifuentes[1], D. Galindo[1], J. Palomino[1], and G. Afanador[1,2], [1]*CORPOICA*, *Bogota, Colombia*, [2]*Universidad Nacional de Colombia*, *Bogota, Colombia*.

W395 **Effect of the germinated corn on feed intake, milk production, milk quality and blood metabolites of lactating cows.**
B. W. Kim*[1], J. W. Ju[1], J. K. Choi[2], and J. S. Shin[1], [1]*Kangwon National University*, *Chuncheon, Kangwon-Do, South Korea*, [2]*Dae Han Feed Company*, *Incheon, South Korea*.

W396 **Influence of hypocalcemia on plasma biochemical parameters, lipid mobilization, and liver lipid infiltration in cows.**
W. G. Chamberlin*, J. R. Middleton, J. N. Spain, G. C. Johnson, and M. R. Ellersieck, *University of Missouri*, *Columbia.*

W397 **Effects of a low energy diet prepartum on subclinical ketosis in dairy cows.**
L. A. Vickers*[1], D. M. Weary[1], D. M. Veira[2], and M. A. G. von Keyserlingk[1], [1]*Animal Welfare Program, University of British Columbia*, *Vancouver, British Columbia, Canada*, [2]*Agriculture and Agri-Food Canada*, *Agassiz, British Columbia, Canada*.

W398 **Impacts of maternal selenium supply and nutritional plane on offspring intestinal vascularity.**
R. D. Yunusova*, A. M. Meyer, T. L. Neville, K. A. Vonnahme, C. J. Hammer, J. J. Reed, D. A. Redmer, L. P. Reynolds, and J. S. Caton, *Center for Nutrition and Pregnancy, Department of Animal Sciences, North Dakota State University*, *Fargo.*

W399 **Performance of high-yielding dairy cows supplemented with fat or concentrate under hot and humid climates.**
U. Moallem*[1], G. Altmark[2], H. Lehrer[1], and A. Arieli[2], [1]*Agriculture Research Organization*, *Bet Dagan, Israel*, [2]*Faculty of Agriculture, Hebrew University*, *Rehovot, Israel*.

W400 **Concentrations of plasma metabolites and hormones in periparturient Holstein cows fed two sources of fat.**
C. Caldari-Torres[2], E. D'Agosto[1], M. C. Perdomo[1], C. R. Staples[1], and L. Badinga*[1], [1]*University of Florida*, *Gainesville,* [2]*Virginia Tech*, *Blacksburg.*

W401 **Weaning dairy cows to a new diet: The effectiveness of a gradual dry-off procedure.**
K. L. Proudfoot*, D. M. Weary, and M. A. G. von Keyserlingk, *University of British Columbia*, *Vancouver, British Columbia, Canada*.

W402 **Effects of feeding different levels of guar meal on performance of Holstein dairy cows.**
A. Vatandoust[1], A. A. Naserian*[2], F. Boldaje[1], and S. Zerhdaran[1], [1]*University of Gorgan, Gorgan, Iran*, [2]*University of Mashhad, Mashhad, Iran*.

W403 **Feed sorting and feeding behavior of transition dairy cows fed glycerol as a replacement for corn.**
E. R. Carvalho*, N. S. Schmelz, H. White, and S. S. Donkin, *Purdue University, West Lafayette, IN.*

W404 **Impact of climate on chemical composition and in vitro organic matter digestibility of semi-arid barley grain varieties determined by gas production technique.**
E. Abdi Ghezeljeh[1,2], M. Danesh Mesgaran*[1], H. Nasiri Moghaddam[1], H. Fazeli[3], and A. R. Vakili[1], [1]*Ferdowsi University of Mashhad, Iran*, [2]*East Azarbaijan Research Center for Agriculture and Natural Resources, Tabriz, Iran*, [3]*Animal Science Research Institute, Karaj, Iran*.

W405 **Effect of flax oil and flax hulls on mRNA abundance of antioxidant enzymes and lipogenic-related genes in the mammary gland of dairy cows.**
M. F. Palin*, H. V. Petit, D. Beaudry, C. Côrtes, N. Gagnon, P. Lacasse, and C. Benchaar, *Dairy and Swine Research and Development Centre, Agriculture and Agri-Food Canada, Sherbrooke, Quebec, Canada*.

W406 **An effective method for total RNA isolation from ruminal contents.**
P. Wang*[1,2], M. Qi[2], L. B. Selinger[1], T. A. McAllister[2], and R. J. Forster[2], [1]*University of Lethbridge, Lethbridge, AB, Canada*, [2]*Agriculture and Agri-Food Canada, Lethbridge Research Centre, Lethbridge, AB, Canada*.

W407 **Supplementation of embryo recipients heifers with rumen bypass fat.**
H. O. Patino*, J. C. C. Angel, M. M. H. Ramirez, R. M. Gregory, and D. d. Ré, *Universidade Federal de Rio Grande do Sul, Porto Alegre, RS, Brazil*.

W408 **Effects of infusing different doses of free α-linolenic acid to the duodenum on the immune function of lactating dairy cows.**
P. Sun, J. Q. Wang*, G. Yang, and Khas-Erdene, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*.

W409 **Supplementation of methionine hydroxy analog, trace mineral chelates and dietary antioxidants in the diet of dairy cows for milk production, milk composition, and hoof status.**
G. Conti[1], G. Castillo*[3], M. Gallardo[2], S. Toffano[3], and M. Vazquez-Anon[3], [1]*University of Veterinary Medicine - Universidad del Litoral, Santa Fe, Argentina*, [2]*CICV National Institute for Agricultural and Livestock Technology (INTA), Buenos Aires, Argentina*, [3]*Novus International, St. Louis, MO*.

W410 **Effects of Bacillus subitilis natto on the immune function of weaned calves.**
P. Sun, J. Q. Wang*, and H. T. Zhang, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*.

W411 **Nutrient balances in California dairy farms. 1. Effects of salt content in drinking water and milk yield per cow on nutrient utilization efficiency.**
A. R. Castillo*[1], N. Silva del Rio[2], and N. St-Pierre[3], [1]*University of California Cooperative Extension, Merced,* [2]*University of California Cooperative Extension, Tulare,* [3]*The Ohio State University, Department of Animal Sciences, Columbus.*

W412 **Evaluation of estimated diet energy intake and impact on energy use of the lactating dairy cow.**
K. J. Clark*[1], P. J. Kononoff[1], and L. O. Tedeschi[2], [1]*University of Nebraska-Lincoln, Lincoln,* [2]*Texas A&M University, College Station.*

W413 **Regulation of hepatic gluconeogenic enzymes by dietary glycerol in transition dairy cows.**
H. M. White*, E. R. Carvalho, and S. S. Donkin, *Purdue University, West Lafayette, IN*.

W414 **Effects of dietary betaine on milk yield and milk composition of mid-lactating dairy cows.**
S. E. Peterson*[1], J. K. Kinch[1], J. E. Williams[1], M. A. McGuire[1], M. Chahine[2], and P. Rezamand[1], [1]*University of Idaho, Moscow,* [2]*University of Idaho, Twin Falls*.

W415 **The effect of forage level and lipid supplement on selected strains of rumen bacteria in continuous culture fermenters.**
P. Gudla*[1], A. Ishlak[1], A. A. AbuGhazaleh[1], D. Hastings[1], K. Jones[1], E. Gastal[1], J. Trushenski[1], and S. Ibrahim[2], [1]*Southern Illinois University, Carbondale,* [2]*North Carolina A&T University, Greensboro*.

W416 **Changes in the parameter estimates for the linear relationships of milk and milk component yields with dry matter intake of dairy cows during the last decade.**
J. S. Lee*[1], S. Y. Lee[1,2], K. S. Ki[3], H. S. Kim[3], and S. Seo[1], [1]*Department of Animal Biosystem Sciences, Chungnam National University, Daejeon, South Korea*, [2]*Institute of Agricultural Science, Chungnam National University, Daejeon, South Korea*, [3]*Dairy Science Division, National Institute of Animal Science, RDA, Cheonan, South Korea*.

W417 **Effects of chemical treatment of whole barely grain with sodium hydroxide on nutrient intake and digestibility in midlactation of Holstein dairy cows.**
M. Khorashadizadeh*, A. A. Naserian, and R. Valizadeh, *Ferdowsi University of Mashhad, Excellence Center for Animal Science, Faculty of Agriculture, Mashhad, Khorasan Razavi, Iran*.

W418 **Effect of glucogenic and ketogenic feeding strategies on metabolic status in postpartum transition cows.**
M. Larsen* and N. B. Kristensen, *Faculty of Agricultural Sciences, Aarhus University*, *Tjele, Denmark*.

W419 **Ruminal degradation dynamics of barley protein meal, corn distiller grains and soybean meal.**
S. Arriola*, C. Blatcher, M. McGilliard, and M. D. Hanigan, *Virginia Polytechnic Institute and State University*, *Blacksburg*.

W420 **Effects of storage temperature and pre-mixing on yeast cell viability.**
M. L. Sullivan*[1], W. K. Sanchez[2], I. Yoon[2], and B. J. Bradford[1], [1]*Kansas State University*, *Manhattan,* [2]*Diamond V Mills, Inc*, *Cedar Rapids, IA*.

W421 **Replacement of high moisture corn or soy hulls by soy molasses in dairy cow diets.**
L. L. Bitencourt[1], N. M. Lopes[1], V. A. Silveira[1], G. Pessoa Júnior[1], O. F. Zacaroni[1], G. S. Dias Júnior[1], C. O. Faria[4], J. R. M. Silva[3], R. A. N. Pereira[2], and M. N. Pereira*[1], [1]*Universidade Federal de Lavras*, *Lavras, Brazil*, [2]*Empresa de Pesquisa Agropecuária de Minas Gerais*, *Lavras, Brazil*, [3]*Instituto Federal de Educação Ciência e Tecnologia do Norte de Minas Gerais*, *Januária, Brazil*, [4]*Better Nature Research*, *Ijaci, Brazil*.

W422 **Abomasal oligofructose infusion induced hindgut acidosis in Holstein steers.**
S. R. Mainardi*, B. A. Hengst, S. J. Nebzydoski, L. M. Nemec, and T. F. Gressley, *University of Delaware*, *Newark*.

W423 **Effect of processing of corn grain on mean particle size, particle distribution and ruminal starch degradability.**
S. Emanuele*[1], L. Carver[1], L. Davis[1], D. Lundquist[1], and J. Firkins[2], [1]*Quality Liquid Feed*, *Dodgeville, WI,* [2]*Ohio State University*, *Columbus.*

W424 **Comparison of the effects of several nutrients on dairy cow milk fat content.**
G. Maxin*[1], F. Glasser[2], and H. Rulquin[1], [1]*INRA-Agrocampus Ouest*, *Rennes, France*, [2]*INRA*, *Theix, Saint-Genes-Champanelle, France*.

W425 **Phosphorus feeding for primiparous cows.**
V. R. Moreira*[1], L. K. Zeringue[1], C. Leonardi[2], and M. E. McCormick[1], [1]*Louisiana State University Agricultural Center*, *Franklinton,* [2]*Louisiana State University*, *Baton Rouge*.

W426 **Milk production and components of Holstein dairy cows fed diet supplemented with whole barley grain treated with sodium hydroxide.**
M. Khorashadizadeh*, A. A. Naserian, and R. Valizadeh, *Ferdowsi University of Mashhad, Excellence Center for Animal Science, Faculty of Agriculture, Mashhad, Khorasan Razavi, Iran*.

W427 **Effects of dietary cobalt supplementation and vitamin B_{12} injection on lactation performance by dairy cows.**
M. S. Akins*[1], S. J. Bertics[1], M. T. Socha[2], and R. D. Shaver[1], [1]*University of Wisconsin*, *Madison*, [2]*Zinpro Corporation*, *Eden Prairie, MN*.

W428 **Carry-over effects reveal that late lactation dairy cows require longer than 30 d to respond to Diamond V Original XP.**
W. K. Sanchez*[1], C. S. Dei[1], J. Miller[1], G. Poppy[1], and N. St-Pierre[2], [1]*Diamond V*, *Cedar Rapids, IA*, [2]*The Ohio State University*, *Columbus*.

W429 **Effect of dietary OmniGen-AF on milk somatic cell count and the ability of isolated blood neutrophils to kill pathogens.**
C. R. Rill*[1], T. Lu[1], J. E. Williams[1], B. Hatch[1], B. Shafii[1], P. Rezamand[1], J. Chapman[2], and M. A. McGuire[1], [1]*The University of Idaho*, *Moscow,* [2]*Prince Agri. Products Inc., Quincy, IL*.

W430 **Effects of two processed grain sources in preparturient diets on health and performance of Holstein dairy cows during transition period.**
E. Qashqayi*, H. Amanlou, D. Zahmatkesh, F. Niazi, and N. Aghaziarati, *Zanjan University*, *Zanjan, Iran*.

W431 **Influence of inoculation and storage time on in vitro gas production of high moisture corn.**
P. C. Hoffman[1], N. M. Esser*[1], R. D. Shaver[1], W. K. Coblentz[2], M. P. Scott[3], A. L. Bodnar[3], R. Schmidt[4], and B. Charley[4], [1]*University of Wisconsin*, *Madison,* [2]*US Dairy Forage Research Center*, *Marshfield, WI*, [3]*Iowa State University*, *Ames,* [4]*Lallemand Inc.*, *Milwaukee,WI*.

W432 **Comparing a 60-d dry period with far-off and close-up diets with a 40-d dry period with a single diet on milk production and body condition score.**
J. C. Plaizier*, L. Lippins, M. L. Connor, and D. O. Krause, *Department of Animal Science, University of Manitoba*, *Winnipeg, MB, Canada*.

W433 **Influence of inoculation and storage time on alteration of the starch-protein matrix in high moisture corn.**
P. C. Hoffman*[1], N. M. Esser[1], R. D. Shaver[1], W. K. Coblentz[2], M. P. Scott[3], A. L. Bodnar[3], R. Schmidt[4], and B. Charley[4], [1]*University of Wisconsin*, *Madison,* [2]*US Dairy Forage Research Center*, *Marshfield, WI*, [3]*Iowa State University*, *Ames,* [4]*Lallemand, Inc*, *Milwaukee, WI*.

W434 **Amylopectin to amylose ratio in hulless barley in relation to intestinally absorbed protein supply to dairy cattle: A preliminary study.**
P. Yu*, Z. Niu, and D. Damiran, *Department of Animal and Poultry Science, College of Agriculture and Bioresources, University of Saskatchewan*, *Saskatoon, SK, Canada*.

W435 **Effect of flax hulls in the diet and infusion of flax oil in the abomasum on absorption of the mammalian lignan enterolactone in dairy cows.**
H. V. Petit*[1], C. Côrtes[1], R. Kazama[2], D. da Silva-Kazama[2], G. T. D. Santos[2], L. M. Zeoula[2], N. Gagnon[1], and C. Benchaar[1], [1]*Dairy and Swine R & D Centre, Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada*, [2]*Departamento de Zootecnia, Universidade Estadual de Maringa, Maringa, Brazil*.

W436 **Evaluating various meal criteria methods for analyzing chewing data.**
D. D. Maulfair*, G. I. Zanton, and A. J. Heinrichs, *The Pennsylvania State University, University Park*.

W437 **The effect of rumen-protected methionine and choline on reproductive performance of Holstein dairy cows.**
M. Ardalan*, K. Rezayazdi, and M. Dehghan-Banadaky, *Department of Animal Science, University College of Agriculture and Natural Resources, University of Tehran, Karaj, Iran*.

W438 **Effects of the source and amount of sulfur in prepartum diets on performance of periparturient Holstein cows.**
E. Manidari, H. Amanlou, M. Frozanmehr, H. R. Mirzaei Alamouti*, and E. Mahjoubi, *University of Zanjan, Zanjan, Iran*.

Small Ruminant
Sheep Production 2

W439 **The effects of high dietary protein levels in Afshari ewes during late gestation.**
H. Amanlou, A. Karimi, and E. Mahjoubi*, *Zanjan University, Zanjan, Iran*.

W440 **Fertility and prolificity of primiparous Suffolk ewes bred by fixed-timed artificial insemination or artificial insemination at detected estrus.**
G. Jasso-Diaz[1], O. Mejia[2], J. I. Aguilera-Soto*[1], F. Mendez[1], M. A. Lopez-Carlos[1], R. Rincon[1], and C. F. Arechiga[1], [1]*Universidad Autonoma de Zacatecas, Zacatecas, Mexico.*, [2]*Universidad Nacional Autonoma de Mexico, Mexico.*

W441 **Intake and performance of sheep supplemented with brewer waste (ensiled and dried) grazing under the rainy season of tropical.**
F. P. Portilho*, S. L. S. Cabral Filho, H. Louvandini, and B. A. O. Macedo, *University of Brasilia, Brasilia, DF, Brazil*.

W442 **Intake and performance of sheep supplemented with dried brewer grains, cottonseed meal and soybean meal grazing under tropic rainy season.**
F. P. Portilho* and S. L. S. Cabral Filho, *University of Brasilia, Brasilia, DF, Brazil*.

W443 **Evaluation of rhizoma peanut hay (*Arachis glabrata*) in sheep diets: Chemical composition, in vitro degradability, intake, and digestibility.**
A. A. Rodríguez*, G. Emmanuelli, W. González, and P. Randel, *University of Puerto Rico, Mayaguez*.

W444 **Metabolic profile in pregnant ewes fed oat straw-based diets supplemented with wheat hydroponic forage.**
E. Herrera-Torres[1], M. Cerrillo-Soto*[1,4], A. Juárez-Reyes[1,4], H. Bernal-Barragan[2,4], F. Ríos-Rincón[3,4], O. Reyes-Estrada[1], M. Murillo-Ortiz[1,4], G. Névarez-Carrasco[1,4], and M. Guerrero-Cervantes[1,4], [1]*Universidad Juárez del Estado de Durango, Durango, Dgo., México*, [2]*Universidad Autónoma de Nuevo León, Monterrey, Nuevo León, México*, [3]*Universidad Autónoma de Sinaloa, Culiacán, Sinaloa, México*, [4]*Red Internacional de Nutrición y Alimentación en Rumiantes*.

W445 **Performance and voluntary intake of ewe lambs in integrated crop livestock systems in the dry season.**
Sergio Lucio Salomon Cabral Filho*[1], Brummel Assumção Oliver Macedo[1], Fernando Pimenta Portilho[2], Helder Lovandini[1], and Concepta McMannus Pimentel[1], [1]*University of Brasilia, Brasília, Distrito Federal, Brazil*, [2]*EMBRAPA CERRADO, Brasília, Distrito Federal, Brazil*.

W446 **The effect of persimmon (*Diospros kaki* L.) vinegar supplement on feed intake, digestibility, and ruminal fermentation indices in sheep.**
J. H. Shin[1,2], Y. D. Ko[1], and S. C. Kim*[1,3], [1]*Department of Animal Science, Gyeongsang National University, Jinju, South Korea*, [2]*Department of Animal Sciences, University of Florida, Gainesville,* [3]*Institute of Agriculture and Life Science, Gyeongsang National University, Jinju, South Korea*.

W447 **Prediction of rumen pH and digestibility of diets containing soybean hulls fed to ram lambs by the Small Ruminant Nutrition System.**
R. S. Gentil*[1], I. Susin[1], A. Cannas[2], A. V. Pires[1], C. Q. Mendes[1], E. M. Ferreira[1], G. H. Rodrigues[1], A. S. Atzori[2], and L. O. Tedeschi[3], [1]*Escola Superior de Agricultura Luiz de Queiroz (ESALQ)/University of São Paulo, Piracicaba, São Paulo, Brazil*, [2]*University of Sassari, Sassari, Sardinia, Italy*, [3]*Texas A&M University, College Station*.

W448 **Okara as a protein supplement for early lactating ewes.**
L. B. Harthan* and D. J. C. Cherney, *Cornell University, Ithaca, NY*.

W449 **Use of pinto bean waste on finishing hair-type lambs.**
G. Villalobos, F. Castillo*, D. Dominguez, H. Castillo, and J. A. Ortega, *Universidad Autonoma de Chihuahua*, *Chihuahua, Chihuahua, Mexico*.

W450 **Effect of cull-chickpeas on apparent digestibility and energy concentration of feed in growing Pelibuey sheep.**
A. Estrada-Angulo*[1,4], H. Bernal-Barragán[2,4], M. A. Cerrillo-Soto[3,4], E. Gutiérrez- Ornelas[2,4], A. S. Juárez-Reyes[3,4], J. F. Obregon[1,4], J. J. Portillo-Loera[1,4], and F. G. Rios[1,4], [1]*FMVZ-Universidad Autonoma de Sinaloa*, *Culiacan, Sinaloa, Mexico*, [2]*FA-Universidad Autonoma de Nuevo Leon*, *Monterrey, Nuevo Leon, Mexico*, [3]*FMVZ-Universidad Juárez del Estado de Durango*, *Durango, Durango, Mexico*, [4]*Red Internacional de Nutrición y Alimentación en Rumiantes*, *Culiacán, Sinaloa, Mexico*.

W451 **Fiber digestibility of a finishing lamb diet supplemented with Fibrozyme.**
D. Domínguez, J. E. Cruz*, G. Villalobos, H. Castillo, L. Durán, E. Santellano, and L. Carlos, *Universidad Autónoma de Chihuahua*, *Chihuahua, Chihuahua, México*.

W452 **Effect of variety and maturity state of oat hay on performance of ewe lambs.**
D. Domínguez[1], S. Ramírez*[1], J. J. Salmerón[2], R. González[2], G. Villalobos[1], J. A. Ortega[1], and L. Carlos[1], [1]*Universidad Autónoma de Chihuahua*, *Chihuahua, Chihuahua, México*, [2]*INIFAP*, *Cuauhtémoc, Chihuahua, México*.

W453 **Influence of substitution of alfalfa hay for dried grape pomace on performance and carcass characteristics of growing sheep.**
Y. Petriz-Celaya*, J. F. Calderon-Cortes, C. Perez, M. F. Montaño, and A. Plascencia, *Instituto de Investigaciones en Ciencias Veterinarias. Universidad Autónoma de Baja California*, *Mexicali 21100, Baja California, México*.

Swine Species

W454 **Effect of a basal creep feed diet modification on the preferences in pre-weaning piglets.**
J. Figueroa*[1], D. Solà-Oriol[1], X. Manteca[1], C. Chetrit[2], and J. F. Pérez[1], [1]*Universitat Autònoma de Barcelona*, *Bellaterra, Barcelona, Spain*, [2]*Bioibérica SA*, *Barcelona, Spain*.

W455 **Nutritional value of Brazilian crude glycerol and semi-purified glycerol on starting pigs diets.**
I. Moreira*, P. L. de Oliveira Carvalho, L. M. Piano, J. B. Toledo, A. C. Furlan, C. de Lima Costa Filho, and T. M. P. da Cruz, *Universidade Estadual de Maringá*, *Maringa, Paraná, Brazil*.

W456 **Prediction of carcass composition in crossbred pigs using the real-time ultrasound: Comparison of the interpreting results.**
L. L. Lo*, M. E. Tai, and C. C. Tsai, *Chinese Culture University*, *Taipei, 111 Taiwan, ROC*.

W457 **The effect of type of housing during gestation on gilt farrowing and piglet performance.**
R. Muns*, J. L. Ruiz de la Torre, E. G. Manzanilla, X. Manteca, and J. Gasa, *SNiBA, Departament Ciència Animal i dels Aliments, Universitat Autònoma de Barcelona*, *Barcelona, Spain*.

W458 **Performance of starting pigs fed on crude glycerol in Brazil.**
I. Moreira*[1], P. L. de Oliveira Carvalho[1], L. M. Piano[1], J. B. Toledo[1], A. G. Gallego[2], and G. Moresco[1], [1]*Universidade Estadual de Maringá*, *Maringa, Paraná, Brazil*, [2]*Universidad Del Tolima*, *Ibagué, Tolima, Colombia*.

W459 **Fatty acid profile in different tissues of newborn piglets.**
M. Sini, M. G. Manca, A. Nudda, and G. Battacone*, *Dipartimento di Scienze Zootecniche, University of Sassari*, *Sassari, Italy*.

W460 **Effect of terminal sire genotype and gender on growth performance and carcass traits of European-Chinese pigs.**
J. Viguera[1], M. Sánchez*[1], S. Garrido[1], J. Peinado[1], F. Flamarique[2], and L. Alfonso[3], [1]*Imasde Agroalimentaria S. L., Madrid, Spain*, [2]*Grupo AN, Navarra, Spain*, [3]*Universidad Pública de Navarra*, *Navarra, Spain*.

W461 **The effect of aeration on the slurry quality and microbial communities in liquid swine manure during the digestion.**
M. Heo*[1,2], K. H. Park[2], D. Y. Choi[2], H. S. Kang[2], and S. Oh[1], [1]*Division of Animal Science, Chonnam National University*, *Gwangju, South Korea*, [2]*Animal Environment & Systems Division, National Institute of Animal Science R. D. A., Suwon, South Korea*.

W462 **Growth performance of pigs finished on brewers-grade rice.**
O. J. Gekara* and T. V. Dunbar, *University of Arkansas at Pine Bluff*, *Pine Bluff.*

W463 **Differential expression of porcine sperm microRNAs and their association with sperm morphology and motility.**
E. Curry*[1], T. J. Safranski[2], and S. L. Pratt[1], [1]*Clemson University*, *Clemson, SC*, [2]*University of Missouri*, *Columbia.*

W464 **Prediction of carcass composition in crossbred pigs using the real-time ultrasound: Choices of probing and measuring sites.**
L. L. Lo*[1], C. C. Tsai[1], M. E. Tai[1], R. S. Lin[2], and T. H. Huang[3], [1]*Chinese Culture University*, *55 Hwa-Kang Road, Taipei, Taiwan, ROC*, [2]*National ILan University*, *ILan, Taiwan, 260 ROC*, [3]*Taiwan Farm Industry Co., Ltd., Pingtung, 900 Taiwan, ROC*.

W465 **Association between lactation feed intake and wean to service interval of sows.**
L. Anil*[1], S. S. Anil[2], and S. K. Baidoo[1], [1]*Southern Research and Outreach Center, University of Minnesota*, *Waseca*, [2]*Veterinary Population Medicine, University of Minnesota*, *St Paul*.

W466 **Effect of terminal sire genotype and gender on growth performance and carcass traits of European-Chinese pigs destined to the dry-cured industry.**
M. Sánchez*[1], J. Viguera[1], C. Carrasco[1], J. Peinado[1], F. Flamarique[2], and L. Alfonso[3], [1]*Imasde Agroalimentaria S. L., Madrid, Spain*, [2]*Grupo AN*, *Navarra, Spain*, [3]*Universidad Pública de Navarra*, *Navarra, Spain*.

W467 **Effect of hyperprolific Chinese sow genetic on sow performance.**
J. Viguera[1], M. Sánchez*[1], J. Sánchez[1], P. Medel[1], F. Flamarique[2], and L. Alfonso[3], [1]*Imasde Agroalimentaria S. L., Madrid, Spain*, [2]*Grupo AN*, *Navarra, Spain*, [3]*Universidad Pública de Navarra*, *Navarra, Spain*.

W468 **Influence of crowding stress during the nursery period on growth performance of gilts and barrows.**
J. H. Cho*, H. J. Monegue, M. D. Lindemann, and G. L. Cromwell, *University of Kentucky*, *Lexington*.

W469 **Feed intake of gilts following intracerebroventicular injection of the novel hypothalamic RFamide (RFa) neuropeptide, 26RFa.**
C. J. Rogers*[1], N. L. Heidorn[1], C. R. Barb[2], G. J. Hausman[2], M. J. Azain[1], R. Rekaya[1], and C. A. Lents[1], [1]*University of Georgia*, *Athens*, [2]*USDA-ARS Richard B. Russell Agriculture Research Center*, *Athens, GA*.

W470 **Increasing productivity and disease control on swine farms trough management tools: A field study.**
G. Rocha-Chavez*[1], J. Castañeda[2], A. Sepulveda[1], J. G. Michel-Parra[1], M. A. Pinto[2], O. Montañez[1], A. Martínez[1], and J. M. Tapia-Gonzalez[1], [1]*Universidad de Guadalajara*, *Cd Guzman Jalisco Mexico*, [2]*Private Practice*, *Tamazula Jalisco Mexico*.

SYMPOSIA AND ORAL SESSIONS

World's Poultry Science Association (WPSA) Lecture

Chair: **Billy Hargis, University of Arkansas**

Korbel Ballroom 1cd

9:30 AM **Poultry production: Current and future challenges and opportunities.**
H. M. Hafez, *Institute of Poultry Diseases, Free University of Berlin, Germany.*

Animal Health

Respiratory Health, Viruses

Chair: **Ty B. Schmidt, Mississippi State University**

Sponsors: Elanco Animal Health, Pfizer Animal Health

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10:30 AM 767 **Newly received feedlot heifers managed with three respiratory disease protocols.**
J. L. Wahrmund*[1], D. B. Burken[1], B. K. Wilson[1], S. J. Terrill[1], D. L. Step[2], C. R. Krehbiel[1], C. L. Goad[3], and C. J. Richards[1], [1]*Oklahoma State University, Departement of Animal Science, Stillwater*, [2]*Oklahoma State University, Department of Veterinary Clinical Sciences*, *Stillwater*, [3]*Oklahoma State University, Department of Statistics*, *Stillwater*.

10:45 AM 768 **Muscle gene expression in an acute model of bovine respiratory disease.**
R. L. Mills*, L. Carlos-Valdez, L. O. Burciaga-Robles, D. Stein, D. L. Step, R. W. Fulton, U. DeSilva, and C. R. Krehbiel, *Oklahoma State University*, *Stillwater*.

11:00 AM 769 **Bovine respiratory disease related metabolic fingerprints in beef steers.**
S. J. Terrill*, R. D. Madden, J. W. Dillwith, L. O. Burciaga-Robles, D. L. Step, R. W. Fulton, A. W. Confer, M. Montelongo, and C. R. Krehbiel, *Oklahoma State University*, *Stillwater*.

11:15 AM 770 **Evaluating timing of weaning stress on response to BVD2 vaccinations in Angus calves.**
E. D. Downey*[1], E. C. Conrad[1], J. F. Ridpath[2], R. G. Tait, Jr. [1], and J. M. Reecy[1], [1]*Iowa State University*, *Ames*, [2]*National Animal Disease Center/ARS/USDA*, *Ames, IA*.

11:30 AM 771 **Alterations in the somatotrophic axis during an infectious bovine rhinotracheitis viral (IBRV) challenge in beef steers.**
S. M. Falkenberg*[1], T. B Schmidt[1], D. H. Keisler[2], J. L. Sartin[4], J. O. Buntyn[1], and J. A. Carroll[3], [1]*Mississippi State University*, *Mississippi State*, [2]*University of Missouri*, *Columbia*, [3]*Livestock Issues Research Unit, USDA-ARS, Lubbock, TX*, [4]*Auburn University College of Veterinary Medicine*, *Auburn, AL*.

11:45 AM 772 **Identification of genetic regions associated with bovine viral diarrhea-persistently infected cattle.**
R. Zanella*[1], J. Wenz[1], E. Casas[2], J. S. Neibergs[1], D. Moore[1], and H. L. Neibergs[1], [1]*Washington State University*, *Pullman*, [2]*United States Meat Animal Research Center*, *Clay Center, NE*.

12:00 PM 773 **Economic analysis of persistently infected bovine viral diarrhea disease prevalence in Washington beef herds.**
J. S. Neibergs*, H. L. Neibergs, J. Wenz, and D. Moore, *Washington State University*, *Pullman*.

12:15 PM 774 **Pre-arrival management of newly received beef calves with or without exposure to a persistently infected bovine viral diarrhea virus type I calf affects health, performance, bovine viral diarrhea virus type I titers, and circulating leukocytes.**
J. T. Richeson* and E. B. Kegley, *University of Arkansas*, *Fayetteville*.

ASAS Western Section Symposium
Perinatal Programming of Offspring Quality 1: Basic Concepts and Experimental Evidence

Chair: **Larry Reynolds, North Dakota State University**

Sponsor: ASAS Western Section

Korbel Ballroom 1ab

10:30 AM 775 **Key principles of developmental programming of later life events: Observations in primate development.**
P. W. Nathanielsz*[1], L. Cox[1], T. McDonald[1], S. Ford[2], K. Mitsuya[1], and M. Nijland[1], [1]*Center for Pregnancy and Newborn Research, The University of Texas Health Science Center*, *San Antonio*, [2]*University of Wyoming*, *Laramie*.

11:10 AM 776 **Epigenetic transgenerational actions of environmental factors on reproduction and disease: The ghosts in your genome.**
M. K. Skinner*, *Washington State University*, *Pullman.*

11:50 AM 777 **Even her uterus can't protect you. Stress in life: A multi-species review.**
D. C. Lay Jr. *, *USDA-Agricultural Research Service, Livestock Behavior Research Unit*, *West Lafayette, IN.*

Beef Species
Beef Management

Chair: **Matt Hersom, University of Florida**

303

10:30 AM 778 **Fixed-time AI conception rates in beef cows resulting from reduced 2-shot prostaglandin intervals on day 5 of a 5-d CIDR-Co-synch estrus synchronization.**
J. L. Seabrook*, R. K. Peel, G. E. Seidel, and J. C. Whittier, *Colorado State University*, *Fort Collins.*

10:45 AM 779 **Effect of castration technique on beef calf performance and residual feed intake.**
T. M. Warnock*[1], T. A. Thrift[1], M. Irsik[1], M. J. Hersom[1], T. D. Maddock[2], and G. C. Lamb[2], [1]*University of Florida*, *Gainesville,* [2]*University of Florida*, *Marianna.*

11:00 AM 780 **Effect of preconditioning average daily gain on feedlot performance and carcass characteristics of beef cattle.**
J. D. Savell*, T. A. Thrift, and M. J. Hersom, *University of Florida*, *Gainesville.*

11:15 AM 781 **Effect of estimated brahman percentage on preconditioning performance, feedlot performance and carcass characteristics of beef cattle.**
J. D. Savell, T. A. Thrift, and M. J. Hersom*, *University of Florida*, *Gainesville.*

11:30 AM 782 **Breed and winter nutrition effects on body weight, condition, and blood metabolite patterns of cows grazing bahiagrass pastures.**
S. W. Coleman*, M. J. Williams, C. C. Chase, and D. G. Riley, *USDA ARS Subtropical Agricultural Research Station*, *Brooksville, FL*.

11:45 AM 783 **Genetic mechanism underlying the effect of breed on fatty acid composition in Angus and Charolais finishing steers.**
A. K. Sexten*, J. W. Dillwith, D. R. Stein, C. R. Krehbiel, and R. G. Mateescu, *Oklahoma State University*, *Stillwater.*

Breeding and Genetics
Milk and Carcass Composition
Chair: **Alison Van Eenennaam, University of California-Davis**
403/404

10:30 AM 784 **Feasibility of a genetic evaluation for milk fatty acids in dairy cattle.**
H. Soyeurt*[1,2], V. M.-R. Arnould[1], S. Vanderick[1], and N. Gengler[1,2], [1]*University of Liege, Gembloux Agro-Bio Tech, Animal Science Unit*, *Gembloux, Namur, Belgium*, [2]*National Fund for Scientific Research*, *Brussels, Brussels, Belgium*.

10:45 AM 785 **Heterogeneity of residuals variances of milk fatty acids in dairy cattle.**
V. M. -R. Arnould*[1], H. Soyeurt[1,2], S. Vanderick[1], and N. Gengler[1,2], [1]*University of Liège, Gembloux Agro-Bio Tech*, *Gembloux, Belgium*, [2]*National Fund for Scientific Research*, *Brussels, Belgium*.

11:00 AM 786 **Relationships between feedlot growth and carcass traits in Angus: Tri-County Steer Carcass Futurity.**
L. D. Leachman*, D. R. Notter, S. P. Greiner, and R. M. Lewis, *Virginia Tech*, *Blacksburg.*

11:15 AM 787 **Heritabilities, genetic and phenotypic correlations among Warner-Bratzler shear force and repeated objective measurements of temperament in fed cattle.**
R. L. Weaber[1], T. M. Taxis*[1], W. R. Shafer[2], L. L. Berger[3], D. B. Faulkner[4], M. M. Rolf[1], D. L. Dow[1], J. F. Taylor[1], and C. L. Lorenzen[1], [1]*University of Missouri*, *Columbia*, [2]*American Simmental Association*, *Bozeman, MT*, [3]*University of Nebraska*, *Lincoln*, [4]*University of Illinois*, *Urbana*.

11:30 AM 788 **Development and validation of an Angus-specific IGENITY profile for marbling, backfat thickness, hot carcass weight, ribeye area, yearling weight, and heifer pregnancy rate based on a whole genome scan.**
B. W. Woodward*[1], D. J. Garrick[2], R. L. Fernando[2], S. Northcutt[3], B. Bowman[3], S. W. Bauck[1], R. D. Schnabel[4], and J. F. Taylor[4], [1]*Merial Limited*, *Duluth, GA*, [2]*Iowa State University*, *Ames*, [3]*American Angus Association*, *St. Joseph, MO*, [4]*University of Missouri*, *Columbia*.

11:45 AM 789 **The economics of using DNA markers for beef bull selection in the seedstock sector.**
A. L. Van Eenennaam*[1], J. H. van der Werf[2], and M. E. Goddard[3,4], [1]*University of California*, *Davis,* [2]*University of New England*, *Armidale, NSW, Australia*, [3]*Victorian Department of Primary Industries*, *Bundoora, VIC, Australia*, [4]*University of Melbourne*, *Parkville, VIC, Australia*.

WEDNESDAY ORALS

Dairy Foods
Cheese
Chair: **Brandon Nelson, Daisy Brand**
501/502

10:30 AM 790 **Studies on the application of dielectric spectroscopy for the measurement of process cheese functionality.**
J. Amamcharla*[1], L. E. Metzger[1], O. Grace[2], and C. Jones[2], [1]*Midwest Dairy Foods Research Center, Dairy Science Department, South Dakota State University*, *Brookings,* [2]*Biosystems and Agricultural Engineering, Oklahoma State University*, *Stillwater.*

10:45 AM 791 **The effect of NaCl/KCl substitution on Halloumi cheese during storage: Chemical composition, proteolysis, texture profile, and microstructure.**
M. M. Ayyash* and N. P. Shah, *Victoria University*, *Melbourne, VIC, Australia*.

11:00 AM 792 **Influence of NaCl reduction on the properties of Cheddar cheese.**
K. V. Grant*[1], S. Govindasamy-Lucey[2], J. A. Lucey[1], J. J. Jaeggi[2], M. E. Johnson[2], and S. A. Rankin[1], [1]*University of Wisconsin*, *Madison*, [2]*Wisconsin Center for Dairy Research*, *Madison*.

11:15 AM 793 **Influence of sodium gluconate on flavor and microbiology of low-fat Cheddar cheese.**
D. J. McMahon*[1], C. J. Oberg[2], L. Moyes[2], R. E. Miracle[3], and M. A. Drake[3], [1]*Western Dairy Center, Utah State University*, *Logan,* [2]*Microbiology Department, Weber State University*, *Ogden, UT,* [3]*Southeast Dairy Foods Research Center, North Carolina State University*, *Raleigh.*

11:30 AM 794 **Optimization of the manufacture of a no-fat-added reduced-sodium processed cheese (Requeijão cremoso).**
L. M. Spadoti, A. G. F. Van Dender, P. B. Zacarchenco*, F. K. H. S. Trento, A. T. S. Alves, T. Q. Mendes, R. C. S. C. Ormenese, M. A. Morgano, and K. Yotsuyanagi, *Instituto de Tecnologia de Alimentos-ITAL*, *Brazil*.

11:45 AM 795 **Consumer flavor preferences and level of aged Cheddar cheese flavor.**
D. J. McMahon* and R. Wadhwani, *Western Dairy Center, Utah State University*, *Logan.*

12:00 PM 796 **Nutritional and organoleptic quality of Cheddar cheese prepared from goat and buffalo milk blends.**
M. Nasir*, H. Jabeen, M. Abdullah, M. A. Jabbar, and M. A. Ali, *University of Veterinary and Animal Sciences*, *Lahore, Punjab, Pakistan*.

Dairy Foods
Chemistry-Protein
Chair: **Kerry Kaylegian, Pennsylvania State University**
503/504

10:30 AM 797 **Ability of Smart Nose to discriminate *tina* biofilms contributing to produce unique volatile compounds in inoculated milk.**
S. Carpino*[1], I. Stampelou[2], G. Belvedere[1], C. Pediliggieri[1], and G. Licitra[3,1], [1]*CoRFiLaC, Regione Siciliana*, *Ragusa, Italy*, [2]*Wageningen University*, *the Netherlands*, [3]*DACPA, University of Catania*, *Catania, Italy*.

10:45 AM 798 **Segmentation of scanning electron microscopy images using incremental learning.**
G. Impoco[1], L. Tuminello[1], M. Caccamo*[1], and G. Licitra[1,2], [1]*CoRFiLaC, Regione Siciliana*, *Ragusa, Italy*, [2]*DACPA, University of Catania*, *Catania, Italy*.

11:00 AM 799 **Improvements and validation of mid-infrared predictions of milk fatty acid.**
H. Soyeurt*[1,2], S. McParland[3], D. Berry[3], E. Wall[4], N. Gengler[1,2], F. Dehareng[5], and P. Dardenne[5], [1]*University of Liege, Gembloux Agro-Bio Tech, Animal Science Unit*, *Gembloux, Namur, Belgium*, [2]*National Fund for Scientific Research*, *Brussels, Brussels,Belgium*, [3]*Teagasc Moorepark Dairy Production Research Centre*, *Fermoy, Cork, Ireland*, [4]*Sustainable Livestock Systems Group, Scottish Agricultural College*, *Penicuik, Midlothian, UK*, [5]*Agricultural Walloon Research Centre, Quality Department*, *Gembloux, Namur, Belgium*.

11:15 AM 800 **Evaluation of a faster extraction and purification procedure for the analysis of vitamin D in fortified milk.**
T. C. Schoenfuss*[1] and O. Shimelis[2], [1]*University of Minnesota*, *St. Paul,* [2]*Sigma-Aldrich*, *Bellfonte, PA.*

11:30 AM 801 **Structural comparison of bovine and camel chymosin in relation to cheesemaking properties.**
K. B. Qvist*[1], J. L. Jensen[2], J.-C. N. Poulsen[2], M. Harboe[1], H. van den Brink[1], A. Mølgaard[2], and S. Larsen[2], [1]*Chr. Hansen*, *Hørsholm, Denmark*, [2]*Department of Chemistry, University of Copenhagen*, *Copenhagen, Denmark*.

11:45 AM 802 **Detection of proteolysis in milk.**
A. S. Grandison*[1], L. M. Chove[2], and M. J. Lewis[1], [1]*University of Reading*, *Reading, Berkshire, UK*, [2]*Sokoine University*, *Morogoro, Tanzania*.

12:00 PM 803 **Genotyping of κ-casein and β-lactoglobulin genes in Chinese Holstein dairy cows, Jersey, and water buffalo.**
D. X. Ren*[1], S. Y Miao[1], Y. L. Chen[1], C. X. Zou[2], X. W. Liang[2], and J. X. Liu[1], [1]*Institute of Dairy Science, Zhejiang University*, *Hangzhou, China*, [2]*Water Buffalo Institute, Chinese Academy of Agricultural Science*, *Nanning, China*.

12:15 PM 804 **Impact of plasmin hydrolysis of caseins on the minimum coagulation temperature observed for milk during renneting.**
B. Coude*, Y. Lu, and J. Lucey, *University of Wisconsin*, *Madison*.

Extension Education 2
Chair: **Tamilee Nennich, Purdue University**
507

10:30 AM 805 **Bilingual audiovisual technology improves dairy animal care and quality assurance.**
B. Butler*, S. Torres, J. Valles, C. D. Reinhardt, and D. U. Thomson, *Kansas State University*, *Manhattan.*

10:45 AM 806 **Impact of a practical dairy farm management training workshop on the knowledge level of participants.**
E. Ashraf*[1], Z. Hayat[1], M. Z. U. Khan[2], S. U. Ansari[1], I. Hussain[1], F. A. Atif[1], M. Arif[1], and M. Luqman[1], [1]*University College of Agriculture*, *University of Sargodha, Sargodha-40100, Pakistan*, [2]*University of Veterinary & Animal Sciences*, *Lahore, Pakistan*.

11:00 AM 807 **A stochastic evaluation of reproductive management programs for dairy herds.**
J. O. Giordano*, P. M. Fricke, M. C. Wiltbank, and V. E. Cabrera, *University of Wisconsin*, *Madison*.

11:15 AM 808 **Optimization of insemination and replacement decisions under herd constraints.**
A. De Vries*, *University of Florida*, *Gainesville*.

11:30 AM 809 **Animals and food security: Blending land-grant missions through international engagement in Romania.**
P. D. Ebner* and M. A. Russell, *Purdue University*, *West Lafayette, IN.*

11:45 AM 810 **Avian embryology posters as a teaching aid.**
T. A. Hess*[1], J. P. Blake[2], W. D. Berry[2], and R. A. Voitle[2], [1]*School of Forestry and Wildlife Sciences*, *Auburn, AL*, [2]*Auburn University, Poultry Science Department*, *Auburn, AL*.

12:00 PM 811 **Alternative fuel demonstrations on Pennsylvania turkey, broiler and duck farms burning poultry litter, wood pellets and wood chips versus propane.**
P. H. Patterson*, R. M. Hulet, and D. E. Buffington, *The Pennsylvania State University*, *University Park*.

12:15 PM 812 **Equine rotational grazing demonstration: field observations and extension program impact.**
A. O. Burk*, N. M. Fiorellino, K. M. Wilson, T. A. Shellem, and M. E. Dwyer, *University of Maryland*, *College Park*.

Forages and Pastures
Dairy Forages
Chair: **Marie Krause, West Virginia University**
Korbel Ballroom 2c

10:30 AM 813 **Milk production and feed efficiency in dairy cows fed corn silage hybrids varying in fiber digestibility.**
L. E. Chase*, *Cornell University*, *Ithaca, NY*.

10:45 AM 814 **Performance of dairy cows fed high water soluble carbohydrate sorghum silage.**
S. Amer* and A. F. Mustafa, *McGill University, Ste-Anne-de-Bellevue, QC, Canada*.

11:00 AM 815 **Effects of water soluble carbohydrate content of ensiling characteristics, chemical composition and in vitro digestibility of sorghum silage.**
S. Amer*[1], P. Seguin[1], F. Hassanat[2], R. Berthiaume[2], and A. Mustafa[1], [1]*McGill University*, *Ste-Anne-de-Bellevue, QC, Canada*, [2]*Dairy and Swine Research and Development Centre*, *Lennoxville, QC, Canada*.

11:15 AM 816 **A meta-analysis approach to model the effect of increased organic matter digestibility on milk solids production from dairy cows fed fresh ryegrass.**
D Pacheco*[1], R. E. Vibart[1], and B. A. Barrett[2], [1]*Food, Metabolism & Microbiology*, *AgResearch Grasslands, Palmerston North, New Zealand*, [2]*Forage Improvement*, *AgResearch Grasslands, Palmerston North, New Zealand*.

11:30 AM 817 **Effects of microbial corn silage inoculants on silage fermentation, microbial contents, aerobic stability, and milk production under field conditions.**
N. B. Kristensen*[1], K. H. Sloth[2], O. Højberg[1], N. H. Spliid[1], C. Jensen[3], and R. Thøgersen[3], [1]*Aarhus University*, *Tjele, Denmark*, [2]*Agro Tech A/S, Aarhus, Denmark*, [3]*Danish Agricultural Advisory Service*, *Aarhus, Denmark*.

11:45 AM 818 **Some factors with influence on the silage acidity and the aerobic stability.**
Y. Acosta Aragón*[1], K. Schoendorfer[2], S. Pasteiner[1], A. Schatzmayr[2], and G. Boeck[2], [1]*Biomin Holding GmbH, Herzogenburg, Lower Austria, Austria*, [2]*Biomin Research Center*, *Tulln, Lower Austria, Austria*.

12:00 PM	819	**Effect of herbage mass and pasture allowance on perennial ryegrass sward structure and milk yield during the grazing season.** A. I. Roca-Fernández*[1], M. O´Donovan[2], J. Curran[2], and A. González-Rodríguez[1], [1]*Agrarian Research Centre of Mabegondo*, *La Coruña, Galicia, Spain,* [2]*Moorepark Dairy Production Research Centre*, *Fermoy, Co. Cork, Ireland*.
12:15 PM	820	**High reliance on grass for an improved milk fatty acids composition.** A. I. Roca-Fernández*[1], A. González-Rodríguez[1], O. P. Vázquez-Yáñez[1], and J. A. Fernández-Casado[2], [1]*Agrarian Research Centre of Mabegondo*, *La Coruña, Galicia, Spain,* [2]*Agrarian and Fitopathologic Laboratory of Galicia*, *La Coruña, Galicia, Spain*.
12:30 PM	821	**Effect of stocking rate on sward characteristics and milk performance in sustainable dairy farms from humid areas.** A. I. Roca-Fernández*, A. González-Rodríguez, and O. P. Vázquez-Yáñez, *Agrarian Research Centre of Mabegondo*, *La Coruña, Galicia, Spain*.

Growth and Development
Regulation of Adipogenesis and Adipose Tissue Development
Chair: **Rodney A Hill, University of Idaho**
Korbel Ballroom 3a

10:30 AM	822	**Adipogenic differentiation state-specific gene expression as related to bovine carcass adiposity.** C. L. Pickworth*[1], S. C. Loerch[1], F. L. Fluharty[1], D. H. Poole[2], S. G. Velleman[1], and J. L. Pate[2], [1]*The Ohio State University*, *Wooster,* [2]*The Pennsylvania State University*, *State College.*
10:45 AM	823	**Palmitoleic acid (C16:1) changes fatty acid profiles and alters gene expression in bovine adipocyte cultures.** T. A. Burns*, S. K. Duckett, and S. L. Pratt, *Clemson University*, *Clemson, SC*.
11:00 AM	824	**Effect of fatty acids on adipocyte differentiation specific genes expression.** P. Cheguru*, M. E. Doumit, G. Murdoch, and R. A. Hill, *University of Idaho*, *Moscow*.
11:15 AM	825	**Expression of genes associated with adipocyte differentiation differs with age and adipose tissue depot during growth.** G. Go*, D. T. Silvey, S. H. Choi, L. A. Gilmore, G. Ghahramany, and S. B. Smith, *Texas A&M University*, *College Station*.
11:30 AM	826	**Hedgehog signaling mediates adipogenesis in C3H10T1/2 cells via down-regulation of COUP-TFII.** W. F. Yue*, J. X. Zhao, M. J. Zhu, and M. Du, *Department of Animal Science, University of Wyoming*, *Laramie*.
11:45 AM	827	**Characterization of fat mass and obesity associated gene (FTO) expression in the broiler chicken.** A. Tiwari*, S. M. Krzysik-Walker, G. L. Hendricks III, and R. Ramachandran, *The Pennsylvania State University*, *University Park*.
12:00 PM	828	**Effect of nutrition and chronic infusion of leptin on intake and body composition of *Bos indicus* heifers at puberty.** M. V. Carvalho, J. D. Magalhães, L. U. Gimenes, G. P. Rodrigues, and L. F. P. Silva*, *Universidade de São Paulo*, *Pirassununga, SP, Brazil*.

Horse Species 2
Chair: **Betsy Greene, University of Vermont**
Korbel Ballroom 3b

10:30 AM	829	**Assessing heat load and dissipation using digital infrared thermography and serum cortisol profiles in horses during the summer months.** Y. Dupre[1], A. Strohm[2], E. Keis[2], J. Harney[2], K. Moulton*[2], and P. L. Ryan[2], [1]*Tuskegee University*, [2]*Mississippi State University*.
10:45 AM	830	**Effects of selenium supplementation and prolonged exercise on antioxidant gene expression in equine skeletal muscle.** S. White*, L. K. Warren, S. E. Johnson, and J. Bobel, *University of Florida*, *Gainesville*.
11:00 AM	831	**Fatty acid composition of synovial fluid in horses fed long-chain polyunsaturated fatty acids: A pilot study.** T. N. Ross*, T. M Hess, J. D. Kisiday, C. W. McIlwraith, T Engle, D. K. Hansen, J. Rexford, N. Schauermann, and C .Mulligan, *Colorado State University*, *Fort Collins.*

11:15 AM		**Break**
11:30 AM	832	**Cushing's syndrome down-regulates glucose transporter mRNA abundance in the distal jejunum in the horse.** A. Buckley, N. Taylor, R. Manjarin*, H. C. Schott, A. D. Woodward, and N. L. Trottier, *Michigan State University*, *East Lansing.*
11:45 AM	833	**Proteomic analysis of synovial fluid and plasma from horses fed a high or low starch diet.** E. A. Nowelsky*[1], J. K. Morrissey[1], D. S. Gibson[2], P. A. Harris[3], and W. B. Staniar[1], [1]*The Pennsylvania State University*, *University Park,* [2]*University of Colorado Denver*, *Aurora,* [3]*Equine Studies Group, Waltham Centre for Pet Nutrition*, *Melton Mowbray, UK*.
12:00 PM	834	**Effects of a 24 h feed withdrawal on SGLT1, GLUT5 and PepT1 gene expression in the small intesine and right ventral colon of the horse.** B. E. Aldridge*, T. B. Lescun, and J. S. Radcliffe, *Purdue University*, *West Lafayette, IN*.
12:15 PM	835	**Effects of omega-3 fatty acid supplementation on plasma, red blood cell and muscle cell fatty acid compositions in horses.** J. K. Rexford*, T. M. Hess, N. L. Schauermann, T. E. Engle, D. K. Hansen, K. D. Allen, and C. M. Mulligan, *Colorado State University*, *Fort Collins*.

Immunology and Pathology
Chair: **Isis K. Mullarky, Virginia Tech**
401/402

10:30 AM	836	**Effects of an experimental feed additive on neutrophil-mediated killing of *Streptococcus equi* and on markers of innate immune function in horses.** A. Rowson*[1], D. Sherwood[2], Y. Wang[1], S. Puntenney[1], and N. E. Forsberg[1], [1]*OmniGen Research LLC*, *Corvallis, OR*, [2]*Oregon State University*, *Corvallis*.
10:45 AM	837	**Effects of OmniGen-AF on development of humoral immune responses in beef cattle and in rats following a vaccination program.** S. B. Puntenney *, Y. Wang, A. Rowson, and N. E. Forsberg, *OmniGen Research LLC*, *Corvallis, OR*.
11:00 AM	838	**Passive immunity to a commercial *E. coli*-SRP vaccine in beef cattle colostrum from cows grazing native range.** B. W. Wileman*[1], D. U. Thomson[1], K. C. Olson[2], and L. A. Pacheco[2], [1]*College of Veterinary Medicine, Kansas State University*, *Manhattan,* [2]*College of Animal Sciences and Industry, Kansas State University*, *Manhattan.*
11:15 AM	839	**Effect of colostrum supplementation on health and performance of pre-weaned and post-weaned dairy calves.** B. Ozer*[1], M. Chahine[1], C. M. Matuk[1], M. E. de Haro Martí[2], and M. Nelson[1], [1]*University of Idaho*, *Twin Falls*, [2]*University of Idaho*, *Gooding*.
11:30 AM	840	**Evaluation of immunological status of newborn dairy calves when respective dams were fed a stepwise moderate energy diet or a controlled energy diet during the dry period.** J. S. Osorio*[1], P. Ji[1], G. Invernizzi[1,2], J. K. Drackley[1], and J. J. Loor[1], [1]*University of Illinois*, *Urbana,* [2]*University of Milan*, *Milan, Italy*.
11:45 AM	841	**Characterization of immune and metabolic responses in the blood of dry cows induced with sub-acute ruminal acidosis (SARA).** A. D. Kroeker*[1], S. Li[1], S. Shekhar[1], A. Ceballos[2], E. Khafipour[1], D. O. Krause[1], J. C. Plaizier[1], and J. C. Rodriguez-Lecompte[1], [1]*University of Manitoba*, *Winnipeg, Manitoba, Canada*, [2]*Cornell University*, *Geneseo, NY.*

Physiology and Endocrinology
Hormonal Control of Estrus in Beef Cattle
Chair: **Bob Cushman, USDA Meat Animal Research Center**
505/506

10:30 AM	842	**Comparison of long-term progestin-based protocols to synchronize estrus in postpartum beef cows.** J. M. Nash*, D. A. Mallory, C. C. Selby, K. G. Pohler, M. R. Ellersieck, M. F. Smith, and D. J. Patterson, *University of Missouri*, *Columbia.*

10:45 AM 843 **Comparison of long-term progestin-based protocols to synchronize estrus prior to fixed-time AI in beef heifers.**
D. A. Mallory*, J. M. Nash, M. R. Ellersieck, M. F. Smith, and D. J. Patterson, *University of Missouri*, *Columbia.*

11:00 AM 844 **Comparison of long- versus short-term progestin-based protocols to synchronize estrus and ovulation prior to fixed-time AI in postpartum beef cows.**
D. A. Mallory*, J. M. Nash, M. R. Ellersieck, M. F. Smith, and D. J. Patterson, *University of Missouri*, *Columbia.*

11:15 AM 845 **Effect of $PGF_{2\alpha}$ administration at CIDR insertion on AI pregnancy rates in beef heifers.**
B. L. Sparks*[1], S. L. Lake[2], J. Berry[2], K. Heaton[3], R. P. Lemenager[1], L. A. Horstman[1], K. S. Fisher[1], P. J. Gunn[1], and G. A. Bridges[1], [1]*Purdue University*, *West Lafayette, IN,* [2]*University of Wyoming*, *Laramie,* [3]*Utah State University*, *Logan.*

11:30 AM 846 **Influence of inducing luteal regression prior to a fixed-time AI CIDR protocol in postpartum beef cows on pregnancy success.**
G. A. Perry*, B. L. Perry, and J. H. Krantz, *Department of Animal & Range Sciences*, *Brookings, SD.*

11:45 AM 847 **Influence of luteal regression prior to GnRH on LH pulse frequency and synchrony of follicular growth.**
J. K. Grant*[1], F. M. Abreu[2], and G. A. Perry[1], [1]*Department of Animal & Range Sciences*, *Brookings, SD,* [2]*USDA-ARS Ft. Keogh*, *Miles City, MT.*

12:00 PM 848 **The influence of two doses of PGF2α given at 2 or 12 hour intervals on luteolysis and pregnancy rate to timed AI with the 5-d CO-Synch + CIDR program.**
L. H. Cruppe*[1], M. Maquivar[1], E. M. Jinks[1], G. E. Fogle[1], M. L. Mussard[1], A. V. Pires[2], and M. L. Day[1], [1]*The Ohio State University*, *Columbus*, [2]*University of São Paulo*, *Piracicaba, SP, Brazil*.

12:15 PM 849 **Use of two coincident doses of PGF2α with the 5-d CO-Synch + CIDR estrous synchronization program.**
L. H. Cruppe*[1], L. A. Souto[1], M. Maquivar[1], P. Gunn[3], M. L. Mussard[1], D. Wolfenson[4], A. V. Pires[2], G. A. Bridges[3], and M. L. Day[1], [1]*The Ohio State University*, *Columbus*, [2]*University of São Paulo*, *Piracicaba, SP, Brazil*, [3]*Purdue University*, *West Lafayette, IN*, [4]*The Hebrew University*, *Rehovot, Israel*.

Production, Management and the Environment
Beef 1
Chair: **John Comerford, Pennsylvania State University**
Korbel Ballroom 4def

10:30 AM 850 **Evaluation of beef cow and calf separation systems to improve reproductive performance of first-calf cows.**
P. G. M. A. Martins*, D. B. Araujo, and J. D. Arthington, *University of Florida, Range Cattle Research and Education Center*, *Ona.*

10:45 AM 851 **Comparison of RFI evaluated as heifers with RFI reevaluated again as mature cows.**
S. L. Morgan*[1,2], D. A. Neuendorff[1], A. W. Lewis[1], J. P. Banta[1], T. D. A. Forbes[3], A. L. Loyd[2], and R. D. Randel[1], [1]*Texas AgriLife Research*, *Overton,* [2]*Texas AgriLife Research*, *College Station,* [3]*Texas AgriLife Research*, *Uvalde*.

11:00 AM 852 **Level of maternal winter supplement and feed restriction during postweaning development influences circulating concentrations of IGF-I in heifers during the peripartum and rebreeding period.**
A. J. Roberts*, R. C. Waterman, T. W. Geary, L. J. Alexander, and M. D. MacNeil, *USDA-ARS, Fort Keogh Livestock and Range Research Laboratory, Miles City, MT.*

11:15 AM 853 **Winter grazing system and supplementation of beef cows during late gestation influence heifer progeny.**
R. N. Funston*, D. M. Larson, A. F. Summers, J. L. Martin, and D. C. Adams, *University of Nebraska West Central Research and Extension Center*, *North Platte.*

11:30 AM 854 **Gastrointestinal nematode egg shedding rates in temperate adapted Angus and tropically-adapted Brahman and Romosinuano calves at weaning.**
C. C. Chase Jr. *[1], L. C. Gasbarre[2], S. W. Coleman[1], D. G. Riley[1], and E. E. Connor[2], [1]*USDA-ARS-STARS*, *Brooksville, FL,* [2]*USDA-ARS-BFGL*, *Beltsville, MD.*

11:45 AM 855 **Effect of calving season on net returns and risk of cow-calf production in western Canada.**
T. K. Sirski[1], D. G. Brewin[1], S. L. Scott*[2], A. D. Iwaasa[3], H. A. Lardner[4], and H. C. Block[2], [1]*University of Manitoba, Winnipeg, Canada*, [2]*Agriculture and Agri-Food Canada, Brandon Research Centre, Brandon, Canada*, [3]*Agriculture and Agri-Food Canada, Semiarid Prairie Agricultural Research Centre, Swift Current, Canada*, [4]*Western Beef Development Centre, Lanigan, Canada*.

12:00 PM 856 **Estrous response and pregnancy rates of beef heifers exposed to bulls during an estrus synchronization protocol that included a 14-d CIDR, PGF2α, and, timed AI and GnRH.**
J. G. Berardinelli*[1], S. Tauck[1], J. Wilkinson[1], J. Olsen[1], T. Gibbs[1], K. C. Davis[1], J. Dafoe[2], and D. Boss[2], [1]*Montana State University*, *Bozeman,* [2]*Northern Agricultural Research Center*, *Havre, MT.*

12:15 PM 857 **The relationship of cow size to calf weaning weight in a commercial cow/calf operation in the Southern Great Plains.**
G. L. Mourer*, C. P. McMurphy, E. Devuyst, and D. L. Lalman, *Oklahoma State University*, *Stillwater*.

Production, Management and the Environment
Dairy 2
Chair: **Marcia Endres, University of Minnesota**
Korbel Ballroom 4abc

10:30 AM 858 **Infrared thermography for detection of hoof lesions in dairy cattle.**
A. Orman[1] and M. I. Endres*[2], [1]*University of Uludag*, *Bursa, Turkey*, [2]*University of Minnesota*, *St. Paul.*

10:45 AM 859 **Relationship between udder and leg hygiene score and somatic cell count.**
M. Q. Shahid*, E. M. Shane, and M. I. Endres, *University of Minnesota*, *St. Paul.*

11:00 AM 861 **Association between stall surface and various welfare measurements on dairy herds utilizing recycled manure solids for bedding freestalls.**
A. W. Husfeldt* and M. I. Endres, *University of Minnesota*, *St. Paul.*

11:15 AM 862 **Shade utilization and distribution of dairy cows in response to environmental conditions.**
A. L. Adams*, T. H. Friend, G. A. Holub, S. M. Garey, and C. L. Terrill, *Texas A&M University*, *College Station.*

11:30 AM 863 **Associations between housing systems and animal welfare measurements assessed by survival analysis.**
K. M. Lobeck*, M. I. Endres, S. M. Godden, and J. Fetrow, *University of Minnesota*, *St. Paul.*

11:45 AM 864 **Feed management practices on California dairies.**
N. Silva-del-Río*[1], J. M. Heguy[2], and A. Lago[3], [1]*University of California Cooperative Extension*, *Tulare County,* [2]*University of California Cooperative Extension*, *Stanislaus and San Joaquin Counties,* [3]*APC, Inc.*, *Ankeny, IA*.

12:00 PM 860 **Relationship between environmental climate and physiologic response under stress conditions of dairy cows measured using thermal imaging in southeastern Sicily.**
G. Azzaro[1], R. Petriglieri[1], R. Ben Younes[2], M. Caccamo*[1], S. Carpino[1], G. Cascone[3], A. D'Emilio[3], R. Mazzarella[3], and G. Licitra[1,4], [1]*CoRFiLaC, Regione Siciliana*, *Ragusa, Italy*, [2]*Production Animale, Institut National Agronomique de Tunisie*, *Tunisia*, [3]*DIA, Catania University*, *Catania, Italy*, [4]*DACPA, Catania University*, *Catania, Italy*.

Production, Management and the Environment
Environment 2
Chair: **Carl Dahlen, North Dakota State University**
Korbel Ballroom 2a

10:30 AM 865 **Effects of heating broiler hatching eggs during 6 or 11 days of storage on hatchability.**
J. T. Brake*[1], M. Güçbilmez[2], S. Özlü[2], R. Shiranjang[2], and O. Elibol[2], [1]*North Carolina State University, Department of Poultry Science,Raleigh,* [2]*Department of Animal Science, Faculty of Agriculture, University of Ankara, Ankara, Turkey*.

10:45 AM 866 **Assessment of microbial communities involved in decomposition of specified risk material using a passively aerated laboratory-scale composter.**
S. Xu*[1,2], T. A. McAllister[2], J. J. Leonard[1], and O. G. Clark[3], [1]*University of Alberta*, *Edmonton, AB, Canada*, [2]*Agriculture and Agri-Food Canada, Lethbridge Research Centre*, *Lethbridge, AB, Canada*, [3]*McGill University*, *Ste-Anne-de-Bellevue, QC, Canada*.

11:00 AM 867 **Effect of improved production efficiency on pork's carbon footprint: Derived environmental benefits of ractopamine in the US swine herd.**
G Boyd*[1], D Anderson[2], A Sutton[3], C Hogan[1], and A Marks-Callahan[4], [1]*Camco*, *Broomfield, CO,* [2]*Colorado State University*, *Fort Collins, CO,* [3]*Purdue University*, *West Lafayette, IN,* [4]*Elanco Animal Health*, *Greenfield, IN.*

11:15 AM 868 **Analysis of the association of number of piglets born alive with sow level and management factors.**
S. S. Anil*[1], L. Anil[2], J. Deen[1], S. K. Baidoo[2], M. E. Wilson[3], and T. L. Ward[3], [1]*Veterinary Population Medicine, University of Minnesota*, *St Paul,* [2]*Southern Research and Outreach Center, University of Minnesota*, *Waseca,* [3]*Zinpro Corporation*, *Eden Prairie, MN*.

11:30 AM 869 **Nutritional evaluation of kernel meal from non-toxic genotype and of detoxified kernel meal from toxic genotype of *Jatropha curcas* in rat.**
Y. Chen[1], J. X. Liu[1], H. Y. Liu*[1], H. P. S. Makkar[2], and K. Becker[2], [1]*Institute of Dairy Science, Zhejiang University*, *Hangzhou, China*, [2]*Institute for Animal Production in the Tropics and Subtropics (480b), University of Hohenheim*, *Stuttgart, Germany*.

Ruminant Nutrition
Dairy: Fats and Carbohydrates
Chair: **Aimee Wertz, South Dakota State University**
Korbel Ballroom 2b

10:30 AM 870 **Insulin signal transduction in adipose tissue of peripartal dairy cows fed two levels of dietary energy prepartum.**
P. Ji*, J. S. Osorio, J. K. Drackley, and J. J. Loor, *University of Illinois*, *Urbana.*

10:45 AM 871 **Duodenal infusion of α-linolenic acid affect fatty acids metabolism in mammary gland of lactating dairy cows.**
G. Yang, J. Q. Wang*, D. P. Bu, E. Khas-Erdene, Q. S. Liu, L. Y. Zhou, P. Sun, and K. L. Liu, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*.

11:00 AM 872 **Effects of different rumen inert fatty acids on fermentation, anti-oxidative status, and microbiota in the rumen, in the absence or presence of dietary antioxidant.**
Y. M. Wang[1], J. H. Wang[1], C. Wang*[1], J. X. Liu[1], H. Cao[2], F. C. Guo[2], and M. Vázquez-Añón[3], [1]*Institute of Dairy Science, Zhejiang University*, *Hangzhou, China*, [2]*Novus International Research Center*, *Beijing, China*, [3]*Novus International, Inc., St. Louis, MO.*

11:15 AM 873 **Incorporation of essential and non-essential fatty acid into distinct lipid classes in cultured bovine and porcine liver slices.**
C. Caldari-Torres*, A. J. Lengi, M. L. McGilliard, D. M. Shepherd, J. A. Stamey, and B. A. Corl, *Virginia Polytechnic Institute and State University*, *Blacksburg.*

11:30 AM 874 **Effects of feeding increasing levels of concentrate on milk fatty acid composition in grazing dairy cows.**
L. Antonacci[1], G. A. Gagliostro*[1], V. I. Cejas[2], and M. A. Rodriguez[2], [1]*Instituto Nacional de Tecnología Agropecuaria (INTA)*, *Balcarce, Provincia de Buenos Aires, Argentina*, [2]*Instituto Nacional de Tecnología Industrial (INTI)*, *San Martín, Buenos Aires, Argentina*.

11:45 AM 875 **Effects of dietary fat supplements and forage:concentrate on feed intake, feeding and chewing behavior of holstein dairy cows.**
S. Kargar, M. Khorvash, M. Alikhani, and G. R. Ghorbani*, *Isfahan University of Technology*, *Isfahan, Isfahan, Iran*.

12:00 PM 876 **Effects of rapidly rumen fermentable source of starch in prepartum diet on metabolism and performance of multiparous Holstein cows during the periparturient period.**
H. R. Mirzaei Alamouti*[1], H. Amanlou[1], and K. Rezayazdi[2], [1]*University of Zanjan*, *Zanjan, Zanjan, Iran*, [2]*University of Tehran*, *Karaj, Tehran, Iran*.

12:15 PM 877 **Effects of cereal grain level in early lactating diets on metabolism and performance of Holstein cows.**
H. Amanlou[1], N. Fazli[1], S. S. Mosavi[1], H. R. Mirzaei Alamouti*[1], and M. Moeini[2], [1]*University of Zanjan*, *Zanjan, Iran*, [2]*Abhar Islamic Azad University*, *Zanjan, Abhar, Iran*.

Ruminant Nutrition
Dairy: Minerals, Vitamins and Misc.
Chair: **Alex Bach, IRTA, Spain**
Korbel Ballroom 1ef

10:30 AM 878 **Effects of dietary chromium propionate on glucose metabolism and insulin sensitivity in growing cattle.**
J. W. Spears*[1], C. S. Whisnant[1], G. B. Huntington[1], K. E. Lloyd[1], K. Krafka[2], and A. Lamptey[2], [1]*North Carolina State University*, *Raleigh,* [2]*Kemin AgriFoods North America, Inc., Des Moines, IA.*

10:45 AM 879 **The effect of rumen-protected choline on milk yield and composition of Holstein dairy cows.**
M. Ardalan*, M. Dehghan-Banadaky, and K. Rezayazdi, *Department of Animal Science, University College of Agriculture and Natural Resources, University of Tehran*, *Karaj, Iran*.

11:00 AM 880 **Impact of biotin on production performance of lactating dairy cows: A meta-analysis.**
B. Chen* and J. X. Liu, *Institute of Dairy Science, Zhejiang University*, *Hangzhou, China*.

11:15 AM 881 **Effects of acidified by-products and pre-partum DCAD on serum calcium, post-partum health and performance when fed to prepartum transition dairy cows.**
D. J. Rezac*[1], E. Block[2], D. Weber[2], M. J. Brouk[1], and B. J. Bradford[1], [1]*Kansas State University*, *Manhattan,* [2]*Arm & Hammer Animal Nutrition*, *Princeton, NJ*.

882 **Withdrawn by author**

11:30 AM **Break**

11:45 AM 883 **Effect of feeding potassium carbonate on milk fatty acids in early lactation cows.**
J. H. Harrison*[1], R. L. Kincaid[1], E. Block[3], and T. Jenkins[2], [1]*Washington State Universsity*, *Puyallup,* [2]*Clemson University*, *Clemson, SC,* [3]*Arm & Hammer Animal Nutrition*, *Princeton, NJ.*

12:00 PM 884 **Effects of rumen-protected choline on performance and hepatic fat metabolism in periparturient dairy cattle.**
R. Zom[1], J. van Baal[1], M. J. de Veth[2], R. M. A. Goselink[1], H. C. A. Widjaja-Greefkes[1], J. A. Bakker[1], and A. M. van Vuuren*[1], [1]*Wageningen UR Livestock Research*, *Lelystad, the Netherlands*, [2]*Balchem Corporation*, *New Hampton, NY.*

12:15 PM 885 **Dietary cation-anion difference for lactating dairy ewes.**
A. Schlageter, G. Caja*, M. Ben Khedim, A. A. K. Salama, S. Carné, and E. Albanell, *Universitat Autònoma de Barcelona*, *Bellaterra, Barcelona, Spain*.

12:30 PM 886 **Effects of feeding organic minerals (Availa-4 and 4-Plex) on milk production and reproductive performance in lactating dairy cows: A meta-analysis.**
A. R. Rabiee[1], I. J. Lean*[1], M. A. Stevenon[2], and M. T. Socha[3], [1]*SBSibus*, *Camden, NSW, Australia*, [2]*EpiCentre, Massey University*, *Palmerston North, New Zealand*, [3]*Zinpro Performance Minerals*, *Eden Prairie, MN.*

Sexed Semen Symposium
Applying Sexed Semen in Cattle
Chair: **George Seidel, Colorado State University**
Sponsor: XY Inc.
301/302

10:30 AM 887 **Current status of sexed semen technology.**
G. Seidel*, *Colorado State University*, *Fort Collins.*

11:00 AM 888 **The evolution of sex-sorted semen in the US dairy industry.**
J. M. DeJarnette*, *Select Sires, Inc., Plain City, OH*.

11:30 AM 889 **Implications of sex-sorted dairy semen for genetic change.**
B. G. Cassell*, *Virginia Polytechnic Institute and State University, Blacksburg.*

12:00 PM 890 **Economic aspects of the use of sexed semen in dairy heifers and cows considering herd constraints.**
A. De Vries*, *University of Florida*, *Gainesville*.

Small Ruminant
Sheep Production
Chair: **R. R. Cockrum, University of Wyoming**
Korbel Ballroom 3c

10:30 AM 891 **Use of n-alkanes to estimate intake and digestibility of vegetative crops by young sheep.**
H. Dove* and W. M. Kelman, *CSIRO Plant Industry*, *Canberra, ACT, Australia*.

10:45 AM 892 **Effect of level of intake on digestibility of NDF of soybean hull diets in sheep.**
D. C. Hein, M. L. Thonney*, D. A. Ross, and D. E. Hogue, *Cornell University*, *Ithaca, NY.*

11:00 AM 893 **Evaluation of feeding value of corn distillers dried grains with solubles for sheep.**
G. Abdelrahim*[1], J. Khatiwada[1], N. Gurung[1], J. Vizcarra[1], and C. Kerth[1], [1]*Alabama A&M University*, *Normal,* [2]*Tuskegee University*, *Tuskegee, AL*, [3]*Auburn University*, *Auburn, AL*.

11:15 AM 894 **The effect of processing type of feedstuff on the fattening performance of Awassi ram lambs.**
H. Ustuner*, S. Dikmen, and I. I. Turkmen, *University of Uludag*, *Bursa, Turkey*.

11:30 AM 895 **Effect of anaerobic enzyme matrix on fiber digestibility.**
H. M. Gado*[1] and B. E. Borhami[2], [1]*Ain Shams University*, *Department of Animal Production,Faculty of Agriculture,Cairo,Egypt*, [2]*Alexandria University*, *Department ofAnimal Production, Faculty of Agriculture (El-Shatby),Alexandria,Egypt*.

Teaching/Undergraduate and Graduate Education Symposium
Beyond PowerPoint: Use of Technology in the Classroom
Chair: **Jacquelyn Hoffman, North Carolina State University**
405

10:30 AM 896 **AG*IDEA: A national consortium of universities for offering distance education program in agriculture.**
K. L. Esbenshade*[1] and D. L. Boggs[2], [1]*North Carolina State University*, *Raleigh*, [2]*Kansas State University*, *Manhattan*.

10:45 AM 897 **Using cell phones to engage your audience.**
P. A. Curtis* and M. O. Kloepper, *Auburn University*, *Auburn, AL.*

11:00 AM 898 **Use of e-portfolios for outcomes assessment in the animal sciences.**
C. M. Wood*, J. W. Knight, and E. A. Dunnington, *Virginia Tech*, *Blacksburg.*

11:15 AM 899 **Use of Soft Chalk to create professional appearing content that will creatively engage students.**
M. O. Kloepper*[3,4], P. A. Curtis[3], and D. R. Mulvaney[1,2], [1]*Coll. of Agr., Auburn University*, *Auburn, AL,* [2]*Anim. Sci., Auburn, AL,* [3]*Poult. Sci., Auburn, AL,* [4]*IT Specialist*, *Auburn, AL*.

11:30 AM 900 **Using Second Life for poultry science.**
M. O. Kloepper* and P. A. Curtis, *Auburn University*, *Auburn, AL.*

11:45 AM 901 **On-line text, a new technology use in animal science courses.**
G. M. Hill* and J. E. Link, *Michigan State University*, *East Lansing*.

12:00 PM 902 **Asynchronous distance education in feed science.**
C. R. Stark and P. R. Ferket*, *North Carolina State University*, *Raleigh.*

Animal Behavior and Well-Being
Dairy, Sheep, and Beef
Chair: **Rick Grant, William H. Miner Agricultural Research Institute**
403/404

2:00 PM 903 **Behavioural changes of dairy cows during drying-off using abrupt cessation of milking.**
K. A. Painter, K. E. Leslie*, and E. H. Tatone, *University of Guelph*, *Guelph, ON, Canada*.

2:15 PM 904 **Short-term overcrowding affects the lying and social behavior of lactating Holstein dairy cows.**
P. D. Krawczel*[1,2], L. B. Klaiber[1], R. E. Butzler[1], L. M. Klaiber[1], H. M. Dann[1], C. S. Mooney[1], and R. J. Grant[1], [1]*William H. Miner Agricultural Research Institute*, *Chazy, NY,* [2]*The University of Vermont, Department of Animal Science*, *Burlington.*

2:30 PM 905 **Early detection of lameness through pedometric activity and lying behaviour of dairy cattle.**
J. H. Higginson*[1], S. T. Millman[2], G. Cramer[1,3], K. E. Leslie[1], A. M. B. de Passille[4], T. F. Duffield[1], and D. F. Kelton[1], [1]*University of Guelph*, *Guelph, ON, Canada*, [2]*Iowa State University*, *Ames,* [3]*Cramer Mobile Bovine Veterinary Services*, *Stratford, ON, Canada*, [4]*Agriculture and Agri-Food Canada*, *Agassiz, BC, Canada*.

2:45 PM 906 **Behavioral responses to feeding regimens, housing and heat stress in dairy calves.**
A. L. Adams*, T. H. Friend, G. A. Holub, S. M. Garey, and C. L. Terrill, *Texas A&M University*, *College Station.*

3:00 PM 907 **Behavior of two cow genotypes (Holstein vs. Jersey) in two milk production systems (grazing vs. confinement).**
A. I. Roca-Fernández*[1], C. P. Ferris[2], E. R. Vance[2], and A. González-Rodríguez[1], [1]*Agrarian Research Centre of Mabegondo, La Coruña, Galicia, Spain,* [2]*Agri-Food and Biosciences Institute, Hillsborough, Co. Down, UK.*

3:15 PM **Break**

3:30 PM 908 **Diet palatability influences the feeding behavior of sheep.**
I. R. Ipharraguerre*[1] and J. J. Villalba[2], [1]*Lucta SA, Barcelona, Spain,* [2]*Utah State University, Logan.*

3:45 PM 909 **Early experience to flavor diversity influences food selection and intake by sheep.**
J. J. Villalba*[1] and I. R. Ipharraguerre[2], [1]*Utah State University, Logan,* [2]*Lucta SA, Barcelona, Spain.*

4:00 PM 910 **Preference in cattle offered a ground switchgrass and alfalfa hay blend flavored with sucrose or citric acid.**
S. J. Chavez*, S. Freeman, and G. B. Huntington, *North Carolina State University, Raleigh.*

4:15 PM 911 **Characterization of feeding behavior traits and associations with feed efficiency in beef heifers fed a high-grain diet.**
E. Mendes*, G. Carstens, and L. Tedeschi, *Texas A&M University, College Station.*

4:30 PM 912 **Approaches for assessing temperament in calves post-weaning.**
K. L. Barkley*[1], L. D. Pullen[1], A. M. Kopanko[1], A. E. Tanner[1], S. R. Blevins[1], M. L. Wahlberg[1], C. W. Swecker Jr.[1], J. P. S. Neel[2], W. M. Clapham[2], and R. M. Lewis[1], [1]*Virginia Tech, Blacksburg,* [2]*USDA-ARS, Beaver, WV.*

4:45 PM 913 **Relationship of temperament at calving and distribution of beef cows grazing foothill rangeland.**
D. W. Bailey*[1], H. C. VanWagoner[2], D. Jensen[2], D. L. Boss[2], and M. G. Thomas[1], [1]*New Mexico State University, Las Cruces,* [2]*Montana State University, Havre.*

ASAS Western Section Symposium
Perinatal Programming of Offspring Quality 2: Evidence for Impacts of Maternal Nutrition on Livestock Production
Chair: **Rick Funston, University of Nebraska**
Korbel Ballroom 1ab

2:00 PM 914 **Maternal malnutrition induces metabolic reprogramming in offspring.**
S. P. Ford*[1], L. Zhang[1], L. A. George[1], Y. Ma[1], N. M. Long[1], A. B. Uthlaut[1], and P. W. Nathanielsz[2], [1]*1Center for the Study of Fetal Programming, Department of Animal Science, University of Wyoming, Laramie,* [2]*2Center for Pregnancy and Newborn Research, University of Texas Health Sciences Center, San Antonio.*

2:40 PM 915 **Impacts of maternal nutrition in farm animal species on growth characteristics of their offspring.**
M. Du*, M. J. Zhu, and S. P. Ford, *Department of Animal Science, University of Wyoming, Laramie.*

3:20 PM **Break**

3:40 PM 916 **Maternal nutrition and developmental programming: Impacts on development and function of the gastrointestinal system in offspring.**
J. S. Caton*, A. M. Meyer, D. A. Redmer, K. A. Vonnahme, and L. P. Reynolds, *Center for Nutrition and Pregnancy, Department of Animal Sciences, North Dakota State University, Fargo.*

4:20 PM 917 **Programming reproductive tract development.**
F. F. Bartol*[1] and C. A. Bagnell[2], [1]*Auburn University, Auburn, AL,* [2]*Rutgers, The State University of New Jersey, New Brunswick.*

Beef Species Symposium
Upcoming Environmental Policies and Their Effects on Beef Production
Chair: **Jason Rowntree, Michigan State University**
Korbel Ballroom 2a

2:00 PM **Introduction**

2:05 PM 918 **Environmental issues: What every beef producer needs to know.**
T. McCann Thies*, *National Cattlemen's Beef Association, Washington, DC.*

3:05 PM 919 **Alberta's experiences with green house gases: The beef protocols.**
J. Basarab*, *Department of Agricultural, Food and Nutritional Science, University of Alberta, LaCombe, AB, Canada.*

4:05 PM 920 **Integration of environmental mandates into ranching and farming operations.**
P. Genho*, *FMC, Salt Lake City, UT.*

Breeding and Genetics
Functional Traits and Fitness
Chair: **Selma Forni, Pig Improvement Company/Genus plc**
405

2:00 PM 921 **Telomere maintenance mechanisms in normal, immortalized, and transformed chicken cells.**
T. H. O'Hare* and M. E. Delany, *Department of Animal Science, University of California, Davis.*

2:15 PM 922 **Genetic analysis of walking ability and mortality in the turkey.**
C. D. Quinton[1], B. J. Wood*[1,2], and S. P. Miller[1], [1]*Centre for Genetic Improvement of Livestock, University of Guelph, Guelph, Canada*, [2]*Hybrid Turkeys, Kitchener, Canada.*

2:30 PM 923 **Factors affecting spermatozoa morphology in beef bulls.**
C. A. Roberts*, T. W. Geary, M. D. MacNeil, R. C. Waterman, A. J. Roberts, and L. J. Alexander, *USDA-ARS, Fort Keogh Livestock and Range Research Laboratory, Miles City, MT.*

2:45 PM 924 **Bayesian QTL inference and gene identification for first-service conception rate in Brangus heifers.**
S. O. Peters*[1,5], K. Kizilkaya[2,4], D. J. Garrick[2], R. L. Fernando[2], J. M. Reecy[2], Z. -L. Hu[2], R. L. Weaber[3], G. A. Silver[1], and M. G. Thomas[1], [1]*New Mexico State University, Las Cruces,* [2]*Iowa State University, Ames,* [3]*University of Missouri, Columbia,* [4]*Adnan Menderes University, Turkey,* [5]*University of Agriculture, Abeokuta, Abeokuta, NGR.*

3:00 PM 925 **Impact of sire birth weight potential on birth and weaning traits when mated to virgin heifers.**
G. K. Mantz* and P. Nyren, *North Dakota State University Central Grasslands Research Extension Center, Streeter.*

3:15 PM 926 **Use of random regression models for the genetic analysis of farrowing survival in pigs.**
C. Y. Chen*[1], I. Misztal[1], S. Tsuruta[1], W. O. Herring[2], J. Holl[2], and M. Culbertson[2], [1]*Department of Animal and Dairy Science, University of Georgia, Athens,* [2]*Smithfield Premium Genetics Group, Rose Hill, NC.*

3:30 PM 927 **Effectiveness of genetic predictions of Holstein gestation length and relationship to lactation yield for the subsequent lactation.**
H. D. Norman*, J. R. Wright, and R. H. Miller, *Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD.*

3:45 PM 928 **Estimation of genetic parameters for measures of calf survival and health in a population of Holstein dairy calves in New York state.**
L. Henderson*[1], F. Miglior[2,3], A. Sewalem[2,3], D. Kelton[1], A. Robinson[4], and K. E. Leslie[1], [1]*Department of Population Medicine, University of Guelph, Guelph, Ontario, Canada,* [2]*Guelph Food Research Centre, Agriculture and Agri-Food Canada, Guelph, Ontario, Canada,* [3]*Canadian Dairy Network, Guelph, Ontario, Canada,* [4]*Department of Animal and Poultry Science, University of Guelph, Guelph, Ontario, Canada.*

4:00 PM 929 **Estimation of genetic parameters for workability traits.**
A. Sewalem*[1,2], F. Miglior[1,2], and G. Kistemaker[2], [1]*Agriculture and Agri-Food Canada, Guelph Food Research Center, Guelph, ON, Canada*, [2]*Canadian Dairy Network, Guelph, ON, Canada.*

4:15 PM 930 **Health treatment rates of Holstein cows selected for large versus small body size.**
J. C. Becker*, B. J. Heins, G. D. Marx, and L. B. Hansen, *University of Minnesota, St. Paul.*

4:30 PM 931 **Sequential evaluation of longitudinal conformation data in dairy cows.**
N. Gengler*[1,2], S. Vanderick[1], and C. Bastin[1], [1]*University of Liège - Gembloux Agro-Bio Tech*, *Gembloux, Belgium*, [2]*National Fund for Scientific Research*, *Brussels, Belgium*.

4:45 PM 932 **Fitness of Boer, Kiko, and Spanish does managed on humid, subtropical pasture in central Tennessee.**
R. Browning Jr. *[1] and M. L. Leite-Browning[2], [1]*Tennessee State University*, *Nashville*, [2]*Alabama A&M University*, *Huntsville*.

Companion Animals Symposium
Comparative Enrichment: Implications for Health and Behavior
Chair: **Cheryl L. Morris, Omaha's Henry Doorly Zoo**
Sponsors: Hill's Science Diet, P&G
401/402

2:00 PM 933 **The role of training and enrichment.**
C. Dikeman*, *Omaha's Henry Doorly Zoo*, *Omaha, NE.*

2:05 PM 934 **Animals make us human: A look at the emotional lives of animals.**
T. Grandin*, *Colorado State University*, *Fort Collins.*

2:40 PM 935 **Bringing out their wild side—Enriching the lives of captive exotic animals.**
M. S. Edwards*, *California Polytechnic State University*, *San Luis Obispo*.

3:15 PM 936 **Improving the lives of laboratory dogs and cats through enrichment and training.**
B. M. Vester Boler*, *University of Illinois*, *Urbana.*

3:50 PM 937 **Do our pets live enriched lives?**
C. Dikeman*, *Omaha's Henry Doorly Zoo*, *Omaha, NE.*

4:25 PM 938 **Bird enrichment—Above and beyond.**
E. Insalaco*, *Denver Zoo*, *Denver, CO*.

4:50 PM 939 **Training and enrichment: Stepping into the future.**
N Irlbeck*[1,2], [1]*Colorado State University*, *Fort Collins,* [2]*Denver Zoological Gardens*, *Denver, CO*.

5:15 PM **Reception**

CSAS Symposium
Issues in North American Livestock Transport
Chair: **Luigi Faucitano, Agriculture & Agri-Food Canada**
Sponsors: Animal Transportation Association, Alberta Farm Animal Care, CSAS
303

2:00 PM 940 **Effects of vehicle design on the welfare and meat quality of pigs under Canadian transport conditions.**
L. Faucitano*[1], S. Torrey[1], R. Bergeron[2], T. Widowski[2], T. Crowe[4], J. A. Correa[3], J. P. Laforest[3], E. Tamminga[2], and H. W. Gonyou[5], [1]*Agriculture & Agri-Food Canada*, *Sherbrooke, QC, Canada*, [2]*University of Guelph*, *Guelph, ON, Canada*, [3]*Laval University*, *Quebec City, QC, Canada*, [4]*University of Saskatchewan*, *Saskatoon, SK, Canada*, [5]*Prairie Swine Centre*, *Saskatoon, SK, Canada*.

2:30 PM 941 **Contributions of research to the practical aspects concerning long-term road transport of horses.**
C. L. Stull*, *University of California, Davis*.

3:00 PM 942 **Cattle transport in North America—Current welfare research and future directions.**
K. S. Schwartzkopf-Genswein*[1], L. A. González[2], and T. Crowe[3], [1]*Agriculture and Agri-Food Canada*, *Lethbridge, Alberta, Canada*, [2]*University of Manitoba*, *Winnipeg, Manitoba, Canada*, [3]*University of Saskatchewan*, *Saskatoon, Saskatchewan, Canada*.

3:30 PM 943 **Conditions within B-train trailers transporting broiler chickens in Western Canada.**
N. A. Burlinguette, J. M. Watts, L. J. Graff, M. L. Strawford, K. P. C. Hui, T. G. Crowe*, H. L. Classen, and P. J. Shand, *University of Saskatchewan*, *Saskatoon, Saskatchewan, Canada*.

4:00 PM 944 **Fatigue: A major cause of commercial livestock truck accidents.**
J. A. Woods*, *J. Woods Livestock Services, Blackie, Alberta, Canada*.

Dairy Foods
Foods and Products
Chair: Kerry Kaylegian, Pennsylvania State University
503/504

2:00 PM 945 **Renneting properties of milk containing high molecular weight oat β-glucan.**
N. Sharafbafi*[1], S. M. Tosh[2], M. Alexander[1], and M. Corredig[1], [1]*University of Guelph, Guelph, Ontario, Canada*, [2]*Agri Culture Agri Food Canada, Guelph, Ontario, Canada*.

2:15 PM 946 **Interactions of milk proteins with tea polyphenols.**
S. Haratifar*, G. Paliyath, and M. Corredig, *University of Guelph, Ontario, Canada*.

2:30 PM 947 **Anticarcinogenic properties of milk fat globule membrane.**
R. Zanabria*[1], A. M. Tellez[1,2], M. Griffiths[2,1], and M. Corredig[1], [1]*University of Guelph, Guelph, ON, Canada*, [2]*Canadian Research Institute for Food Safety (CRIFS), Guelph, ON, Canada*.

2:45 PM 948 **Gelation properties of casein micelles during combined renneting and mesophilic bacterial fermentation: Effect of concentration by ultrafiltration.**
E. Salvatore*[1,2], M. Alexander[2], A. Pirisi[1], and M. Corredig[2], [1]*Agris Sardegna, Dipartimento per la Ricerca nelle Produzioni Animali, Olmedo, Italy*, [2]*Department of Food Science, University of Guelph, Guelph, Ontario, Canada*.

3:00 PM 949 **Production of α-lactalbumin enriched concentrate from serum whey.**
C. Marella*, P. Salunke, L. E. Metzger, and K. Muthukumarappan, *Midwest Dairy Foods Research Center, South Dakota State University, Brookings.*

3:15 PM 950 **Evaluation of correlations between chemical compositions and sensory properties in Turkish set-type yoghurts.**
Z. Guler[1] and Y. W. Park*[2], [1]*Mustafa Kemal University, 31034 Antakya, Hatay, Turkey*, [2]*Fort Valley State University, Fort Valley, GA.*

Dairy Foods
Microbiology
Chair: Stephanie Clark, Iowa State University
501/502

2:00 PM 951 **Wooden vat to produce PDO Ragusano cheese is a living system.**
G. Licitra*[1,2], L. Tuminello[2], N. Fucà[2], P. Campo[2], S. Lortal[3], and S. Carpino[2], [1]*DACPA, University of Catania, Catania, Italy*, [2]*CoRFiLaC, Regione Siciliana, Ragusa, Italy*, [3]*UMR Science et Technologie du Lait et de l'Oeuf, Rennes Cedex, France*.

2:15 PM 952 **Survival of *Lactobacillus acidophilus* in Boursin-like cheese after gastric and enteric conditions in vitro.**
A. M. Liserre*[1], P. B. Zacarchenco[1], K. M. O. dos Santos[2], F. C. A. Buriti[2], L. S. Gonçalves[1], and L. R. Monteiro[1], [1]*Instituto Tecnologia Alimentos. Av. Brasil, Campinas, SP, Brazil*, [2]*EMRAPA, Centro Nacional de Pesquisa de Caprinos e Ovinos, Sobral, Ceará, Brazil*.

2:30 PM 953 **Addition of probiotic bacteria modifies the biodiversity of other lactic acid bacteria in Cheddar cheese.**
B. Ganesan*[4,3], B. C. Weimer[1], G. Rompato[2], J. Pinzon[1], P. Desai[2,3], C. Brothersen[4,3], and D. J. McMahon[4,3], [1]*University of California, Davis,* [2]*Center for Integrated BioSystems, Utah State University, Logan,* [3]*Department of Nutrition, Dietetics, and Food Sciences, Utah State University, Logan,* [4]*Western Dairy Center, Utah State University, Logan*.

2:45 PM 954 **Production of microcapsules of *Lactobacillus acidophilus* to add in dairy products.**
A. M. Liserre*[1], P. B. Zacarchenco[1], C. R. Meneze[3], A. E. C. Antunes[2], G. M. B. Q. Cardozo[1], and I. Moreno[1], [1]*Tecnolat/ Instituto de Tecnologia de Alimentos, Campinas, São Paulo, Brazil*, [2]*UNICAMP; Universidade Estadual de Campinas - Limeira, Limeira, São Paulo, Brazil*, [3]*Universidade de Santa Maria, Rio Grande do Sul, Brazil*.

3:00 PM	955	**Novel immunostimulatory activities of CpG oligodeoxynucleotides from *Streptococcus thermophilus*.** T. Shimosato*[1], M. Fujimoto[1], M. Tohno[2], T. Sato[3], H. Otani[1], and H. Kitazawa[4], [1]*Shinshu University, Kamiina, Nagano, Japan*, [2]*National Institute of Livestock and Grassland Science, Nasushiobara, Tochigi, Japan*, [3]*Yokohama City University, Yokohama, Kanagawa, Japan*, [4]*Tohoku University, Sendai, Miyagi, Japan*.
3:15 PM	956	**Toll-like receptor 2 participates in the intestinal epithelial regulating activity of *Lactobacillus kefiranofaciens* M1 isolated from fermented milk product kefir.** Y. P. Chen*, W. S. Hong, T. Y. Dai, I. N. Huang, and M. J. Chen, *National Taiwan University, Taipei, Taiwan, Republic of China.*
3:30 PM	957	**Inhibitory effect of Taiwanese ropy fermented milk in an ovalbumin-induced allergy mouse model.** I. N. Huang*[1], T. Y. Dai[1], S. Y. Wang[2], and M. J. Chen[1], [1]*Department of Animal Science and Technology, National Taiwan University, Taipei, Taiwan*, [2]*Experimental Farm, National Taiwan University, Taipei, Taiwan*.

Lactation Biology 2
Chair: Wendie Cohick, Rutgers University
Korbel Ballroom 3b

2:00 PM	958	**Regulation of mammary epithelial cell proliferation and gene expression by *Semen vaccariae* active monomer.** Z. Y. Wan, H. L. Tong, Q. Z. Li, and X. J. Gao*, *Key Laboratory of Dairy Science of Education Ministry, Northeast Agricultural University, Harbin, China*.
2:15 PM	959	**Deletion of thyroid hormone responsive spot 14 exacerbates the anti-lipogenic affect of *trans*-10, *cis*-12 conjugated linoleic acid (CLA) in the mammary gland.** K. J. Harvatine*[1], Y. R. Boisclair[2], and D. E. Bauman[2], [1]*Penn State University, University Park,* [2]*Cornell University, Ithaca, NY*.
2:30 PM	960	**The role of SREBP-1 in lipogenesis in bovine mammary epithelial cells.** L. Ma* and B. A. Corl, *Virginia Polytechnic Institute and State University, Blacksburg*.
2:45 PM	961	**Effects of t10,c12 CLA dose on mammary gland development, adiposity, and inflammation in mice.** M. R. Foote*, S. L. Giesy, G. Bernal-Santos, D. E. Bauman, and Y. R. Boisclair, *Cornell University, Ithaca, NY.*
3:00 PM	962	**Impact of time of milk storage in the udder on fat.** M. Dutreuil[1,2], C. Cébo[3], J. Guinard-Flament[2,1], and C. Hurtaud*[1,2], [1]*INRA UMR1080 Production du lait, Saint-Gilles, France*, [2]*Agrocampus Ouest UMR1080 Production du lait, Rennes, France*, [3]*INRA Unité GABI, Jouy-en-Josas, France*.
3:15 PM	963	**IGF-I regulates the expression of GLUT12 in bovine mammary epithelial cells.** Y. Shao* and F -Q. Zhao, *Department of Animal Science, University of Vermont, Burlington*.
3:30 PM	964	**Mammary mitochondrial function is associated with lactation performance in inbred mice.** J. Wei*, S. Kiser, J. George, D. Anderson, and D. Hadsell, *Baylor College of Medicine, Houston, TX.*
3:45 PM	965	**Temporal changes in the mammary mitochondrial proteome of the mouse suggest that increases in a limited number of proteins is necessary to support increased ATP synthesis during early lactation.** D. Hadsell*[1], W. Olea[1], R. Matsunami[2], and D Engler[2], [1]*Baylor College of Medicine, Houston, TX,* [2]*The Methodist Hospital Research Institute, Houston, TX.*

WEDNESDAY ORALS

Meat Science and Muscle Biology Symposium
Impact of Pre- and Post-Slaughter Handling on Meat Quality
Chair: Giuseppe Bee, Agroscope Liebefeld Posieux
304

2:00 PM	966	**Handling of pigs and the effect on muscle metabolism prior to harvest.** M. J. Ritter* and S. N. Carr, *Elanco Animal Health, Greenfield, IN.*
2:45 PM	967	**Pre-slaughter stress in ruminants and its relationship to meat quality.** D. M. Ferguson*[1] and R. D. Warner[2], [1]*CSIRO Livestock Industries, Armidale, NSW, Australia*, [2]*Victorian Department of Primary Industries, Werribee, VIC, Australia*.

3:30 PM 968 **Impact of early pre and post-mortem processing on poultry meat quality.**
S. Barbut*, *University of Guelph*, *Guelph, ON, Canada*.

4:15 PM 969 **Processing practices and perceived pork quality.**
T. Ngapo*, *Agriculture and Agri-Food Canada*, *St Hyacinthe, Quebec, Canada*.

Nonruminant Nutrition
Feed Additives
Chair: **Scott Radcliffe, Purdue University**
Korbel Ballroom 3c

2:00 PM 970 **Benefits of a synthetic antioxidant on improving growth performance in broiler chicks.**
J. Zhao*, F. Yan, C. Atwell, D. Macaraeg, M. Vazquez-Anon, J. D. Richards, R. J. Harrell, S. Carter, and T. Hampton, *Novus International Inc.*

2:15 PM 971 **Probiotic, prebiotic and yeast supplementation in broiler diets from 1 to 42 days of age: 1. Productive performance and economic efficiency.**
S. A. Riad[1], H. M. Safaa*[1], F. R. Mohamed[1], S. S. Siam[2], and H. A. El-Minshawy[3], [1]*Animal Production Department, Faculty of Agriculture, Cairo University*, *Giza 12613, Giza, Egypt*, [2]*Poultry Breeding Department, Animal Production Research Institute*, *Dokki, Giza, Egypt*, [3]*Ministry of Agriculture*, *Dokki, Giza, Egypt*.

2:30 PM 972 **Starter feed supplementation level effects of coated sodium butyrate (Adimix) on growth performance of broilers.**
R. D. Malheiros* and P. R. Ferket, *North Carolina State University*, *Raleigh.*

2:45 PM 973 **Investigation on the effects of antibiotic growth promoters alternatives on broiler performance.**
M. Shivazad*[1,2], N. Ghazvini[2], and S. N. Mousavi[2], [1]*University of Tehran, Tehran, Iran*, [2]*Varamin-Pishva branch, Islamic Azad University*, *Varamin, Iran*.

3:00 PM 974 **Dietary supplementation of *Spirulina platensis* in Austra-White chicken improves proximate composition of meat.**
A. Kollanoor Johny*[1], K. P. Sreekumar[2], S. C. Nair[2], and P. Kuttinarayanan[3], [1]*Department of Animal Nutrition, College of Veterinary and Animal Sciences, Kerala Agricultural University*, *Mannuthy, Kerala, India*, [2]*Department of Animal Physiology, College of Veterinary and Animal Sciences, Kerala Agricultural University*, *Mannuthy, Kerala, India*, [3]*Center of Excellence in Meat Science and Technology, College of Veterinary and Animal Sciences, Kerala Agricultural University*, *Mannuthy, Kerala, India*.

3:15 PM **Break**

3:30 PM 975 **Increased fiber digestion and decreased fecal output in pigs fed fibrolytic bacteria.**
C. Ziemer*[1], S. Arcidiacano[2], A. Ragauskas[3], and M. Morrison[4,5], [1]*National Laboratory for Agriculture and the Environment, ARS, USDA*, *Ames, IA*, [2]*US Army Natick Soldier Center*, *Natick, MA*, [3]*Institute of Paper Science and Technology, Georgia Institute of Technology*, *Atlanta*, [4]*Department of Animal Science, Ohio State University*, *Columbus*, [5]*CSIRO Livestock Industries*, *St. Lucia. QLD, Australia*.

3:45 PM 976 **Effects of dietary resveratrol supplementation on egg production and egg yolk lipid peroxidation.**
K. Sahin*[1], F. Akdemir[2], C. Orhan[1], M. Tuzcu[3], A. Hayirli[4], and N. Sahin[1], [1]*Department of Animal Nutrition & Nutritional Disorders, Faculty of Veterinary Medicine, Firat University*, *Elazig, Turkey*, [2]*Department of Animal Nutrition & Nutritional Disorders, Faculty of Veterinary Medicine, Dicle University*, *Diyarbakir, Turkey*, [3]*Department of Biology, Faculty of Science, Firat University*, *Elazig, Turkey*, [4]*Department of Animal Nutrition & Nutritional Disorders, Faculty of Veterinary Medicine, Atatürk University*, *Erzurum, Turkey*.

4:00 PM 977 **The effect of feeding Original XPC to turkey breeder hens and progeny on starter poult performance and early breast muscle development.**
P. R. Ferket*[1], R. D. Malheiros[1], M. J. Wineland[1], J. L. Grimes[1], and D. T. Moore[2], [1]*North Carolina State University*, *Raleigh*, [2]*Diamond V Inc., Cedar Rapids, IA.*

4:15 PM 978 **Use of a *Bacillus amyloliquefaciens* probiotic in broiler farms.**
J. J. Mallo*[1], M. I. Gracia[2], P. Honrubia[1], and G. Sedano[3], [1]*Norel SA*, *Madrid, Spain*, [2]*Imasde Agroalimentaria SL*, *Madrid, Spain*, [3]*Nutyser SL*, *Burgos, Spain*.

4:30 PM 979 **Chemical and nutritive composition of low-fiber canola: The effects of seed coat color and enzyme supplementation.**
W. Jia*[1], M. Mogielnicka[1], A. Rogiewicz[1], G. Rakow[2], D. Hickling[3], and B. A. Slominski[1], [1]*University of Manitoba*, *Winnipeg, Manitoba, Canada*, [2]*Agriculture and Agri-Food Canada*, *Saskatoon, Saskatchewan, Canada*, [3]*Canola Council of Canada*, *Winnipeg, Manitoba, Canada*.

Nonruminant Nutrition
Health 2
Chair: **Marcos Rostagno, Virginia Tech**
301/302

2:00 PM 980 **Pre-hatch colonization of the chick gut with probiotic bacteria.**
J. E. de Oliveira*[1], J. M. B. M. van der Vossen[2], A. M. T. Ouwens[2], E. Hangoor[1], and T. A. Scott[1], [1]*Provimi, Velddriel, the Netherlands*, [2]*TNO, Zeist, the Netherlands*.

2:15 PM 981 **Methionine hydroxy-analogue as antioxidant defence enhancer.**
Q. Swenen[1,3], J. Buyse[1], P.-A. Geraert[2], Y. Mercier*[2], N. Everaert[1], A. Stinckens[1], H. Willemsen[1], L. Yue[1], and E. Decuypere[1], [1]*K. U. Leuven, Laboratory for Livestock Physiology, Immunology and Genetics, Department of Biosystems. Kasteelpark Arenberg 30, 3001 Leuven, Belgium*, [2]*Adisseo France S. A. S, F-92160 Antony, France*, [3]*University of Hasselt, Center for Environmental Sciences, Agoralaan building C, 3590 Diepenbeek, Belgium.*

2:30 PM 982 **Comparative in vitro antimicrobial activity and mechanism of bovine lactoferricin-derived synthetic peptides.**
Y. Liu*, Y. Xie, F. Han, Y. Gao, C. Luan, and Y. Wang, *Zhejiang University, Hangzhou, Zhejiang, China*.

2:45 PM 983 **Microbial programming in the gut of neonatal pigs.**
D. Petri* and A. G. Van Kessel, *University of Saskatchewan, Saskatoon, Canada*.

3:00 PM 984 **Efficacy of water-soluble antioxidants on chicken embryos challenged by hypoxia.**
J. E. de Oliveira*[1], Y. Li[2], H. Willemsen[2], E. Decuypere[2], and T. A. Scott[1], [1]*Provimi, Velddriel, the Netherlands*, [2]*Department of Biosystems, K. U. Leuven, Belgium*.

3:15 PM 985 **Growth response, carcass evaluation and haematology of broilers fed graded levels of enzyme treated cocoa bean shell based diets.**
M. D. Olumide, O. A. Ogunwole*, and O. A Adebiyi, *Department of Animal Science, University of Ibadan, Ibadan, Nigeria*.

3:30 PM 986 **Evaluation of the efficacy of Myco-Ad in preventing aflatoxin toxicity in broiler chicks.**
C. A. Mallmann[1], P. Dilkin[1], L. Giacomini[1], R. H. Rauber[1], and D. Zaviezo*[2], [1]*Universidade Federal de Santa Maria, Laboratorio de Analises Micotoxicologicas (LAMIC), Santa Maria, RS, Brazil*, [2]*Special Nutrients, Miami, FL*.

3:45 PM 987 **Efficiency of feed additives to reduce the effects of chronic exposure to aflatoxin and deoxynivalenol on growth and immune status of pigs.**
A. C. Chaytor*[1], M. T. See[1], J. A. Hansen[2], A. L. P. de Souza[2], D. C. Kendall[2], T. F. Middleton[3], and S. W. Kim[1], [1]*North Carolina State University, Raleigh*, [2]*Murphy-Brown LLC, Rose Hill, NC*, [3]*AgProvision LLC, Kenansville, NC*.

4:00 PM 988 **Discrepancies between in vitro and in vivo fumonisin binding with organoclays.**
J. N. Broomhead*, *Amlan International, Chicago, IL.*

Physiology and Endocrinology
Sperm Fertility, Embryos and Development
Chair: **David Miller, University of Illinois**
505/506

2:00 PM 989 **Comparison study of alternative cryoprotectants for cryopreserving bull spermatozoa.**
M. M. Awad*, *Animal Production Dept. Faculty of Agriculture, Suez Canal University, Ismailia, Egypt*.

2:15 PM 990 **Effects of anti-lipid peroxidation supplements on frozen-thawed boar spermatozoa.**
B. D. Whitaker*, R. Taupier, and S. J. Casey, *Ferrum College, Ferrum, VA.*

2:30 PM 991 **Reproductive performance of sows inseminated with various doses of frozen-thawed semen.**
K. S. Fisher*[1], T. S. Stewart[1], P. H. Purdy[2], H. D. Blackburn[2], W. L. Singleton[1], B. L. Sparks[1], P. J. Gunn[1], and G. A. Bridges[1], [1]*Purdue University, West Lafayette, IN*, [2]*National Animal Germplasm Program, NCGRP, ARS, USDA, Fort Collins, CO.*

2:45 PM 992 **Analysis of proteomic changes during sperm capacitation associated with sperm fertility.**
Y. J. Park*, S. A. Oh, W. S. Kwon, S. J. Yoon, Y. H. Kim, E. A. Mohamed, Y. A. You, and M. G. Pang, *Department of Animal Science & Technology and BET Research Institute, Chung-Ang University, Ansung, Gyeonggi-Do, Korea*.

3:00 PM 993 **Prognosis of bull fertility using sperm penetration assay.**
Y. J. Park*, S. A. Oh, S. J. Yoon, W. S. Kwon, Y. H. Kim, E. A. Mohamed, Y. A. You, and M. G. Pang, *Department of Animal Science & Technology and BET Research Institute, Chung-Ang University*, *Ansung, Gyeonggi-Do, Korea*.

3:15 PM 994 **Semen quality index of broiler breeder cockerels subjected to different collection techniques.**
A. Ijaz*, M. U. Sohail, H. Rehman, M. Aleem, A. Riaz, and M. S. Yousaf, *University of Veterinary and Animal Sciences*, *Lahore, Pakistan*.

3:30 PM 995 **Effect of supplemental sialic acid on the fertility of in vitro stored turkey semen.**
J. A. Long* and T. Conn, *Beltsville Agricultural Research Center*, *Beltsville, MD.*

3:45 PM 996 **Vitrification of bovine blastocysts: Effects of cooling with an aluminum block submerged in liquid nitrogen versus liquid nitrogen cooled air and lowering sodium and calcium concentrations in vitrification media.**
S. G. Kruse* and G. E. Seidel, *Colorado State University*, *Fort Collins.*

4:00 PM 997 **Efficacy of embryo transfer in lactating dairy cows during summer using fresh or vitrified embryos produced in-vitro with sex-sorted semen.**
B. M. Stewart[1], J. Block[2,4], P. Morelli[1], A. E. Navarrette[1,3], M. Amstalden[3], L. Bonilla[4], P. J. Hansen[4], and T. R. Bilby*[1,3], [1]*Texas AgriLife Research and Extension, Texas A&M System*, *Stephenville*, [2]*OvaTech, LLC, Gainesville, FL*, [3]*Texas A&M University*, *College Station*, [4]*University of Florida*, *Gainesville*.

4:15 PM 998 **The importance of fibroblast growth factors on bovine embryo development in vitro.**
S. D. Fields*, P. J. Hansen, and A. D. Ealy, *University of Florida*, *Gainesville*.

4:30 PM 999 **Changes in cotyledonary vascular architecture with advancement of placentomal (PLAC) type during gestation in the ewe.**
S. Hein*[1], A. Uthlaut[1], P. W. Nathanielsz[1,2], and S. P. Ford[1], [1]*Center for the Study of Fetal Programming, Dept. of Anim. Sci., University of Wyoming*, *Laramie,* [2]*Center for Pregnancy and Newborn Research, Dept. of OB/GYN, University of Texas Health Sciences Center*, *San Antonio*.

Production, Management and the Environment
Beef 2
Chair: **Carl Dahlen, North Dakota State University**
Korbel Ballroom 4def

2:00 PM 1000 **Effects of anabolic implants on growth and carcass traits of feedlot steers and heifers: A meta-analysis.**
C. D. Reinhardt*[1] and L. R. Corah[2], [1]*Kansas State University*, *Manhattan,* [2]*Certified Angus Beef*, *Manhattan, KS.*

2:15 PM 1001 **Factors affecting Certified Angus Beef acceptance in spring-born, black-hided beef calves.**
G. D. Fike*[1], M. E. King[1], L. R. Corah[1], and W. D. Busby[2], [1]*Certified Angus Beef LLC*, *Wooster, OH*, [2]*Iowa Tri-County Steer Carcass Futurity*, *Lewis*.

2:30 PM 1002 **Effect of time of birth within the spring calving season on performance and carcass traits of beef calves fed in the Iowa Tri-County Steer Carcass Futurity.**
G. D. Fike*[1], M. E. King[1], L. R. Corah[1], and W. D. Busby[2], [1]*Certified Angus Beef LLC*, *Wooster, OH*, [2]*Iowa Tri-County Steer Carcass Futurity*, *Lewis*.

2:45 PM 1003 **Effects of roughage source and dried corn distillers grains concentration on feedlot performance and carcass characteristics.**
C. L. Maxwell*[1], M. S. Brown[1], N. A. Cole[2], B. Coufal[1], J. O. Wallace[1], J. Simroth-Rodriguez[1], and S. Pratt[1], [1]*West Texas A&M University*, *Canyon,* [2]*USDA ARS Conservation and Production Research Laboratory*, *Bushland, TX.*

3:00 PM 1004 **The relative importance of weaning management and vaccination history on finishing performance and carcass characteristics of beef calves.**
M. J. Macek*[1], K. C. Olson[1], J. R. Jaeger[2], T. B. Schmidt[3], D. U. Thomson[1], J. W. Iliff[1], and L. A. Pacheco[1], [1]*Kansas State University*, *Manhattan,* [2]*Western Kansas Agricultural Research Center*, *Hays,* [3]*Mississippi State University*, *Starkville.*

3:15 PM 1005 **Effects of degree of respiratory disease vaccination on health and growth performance of ranch-direct beef calves during weaning and receiving.**
M. J. Macek*[1], J. R. Jaeger[2], T. B. Schmidt[3], D. U. Thomson[1], J. W. Bolte[2], L. A. Pacheco[1], N. A. Sproul[1], L. R. Hibbard[1], G. J. Eckerle[1], and K. C. Olson[1], [1]*Kansas State University*, *Manhattan,* [2]*Western Kansas Agricultural Research Center*, *Hays,* [3]*Mississippi State University*, *Starkville.*

3:30 PM 1006 **Influencing steer performance through maternal nutrition.**
A. F. Summers*[1], K. H. Ramsay[2], and R. N. Funston[1], [1]*University of Nebraska West Central Research and Extension Center*, *North Platte*, [2]*Rex Ranch*, *Ashby, NE*.

1007 **Withdrawn by author**

3:45 PM 1008 **Incidence of quality defects in market beef and dairy cows and bulls sold through livestock auction markets in the western United States.**
J. K. Ahola*[1], H. A. Foster[3], D. L. VanOverbeke[4], K. S. Jensen[2], R. L. Wilson[2], J. B. Glaze[2], T. E. Fife[2], C. W. Gray[2], S. A. Nash[2], R. R. Panting[2], and N. R. Rimbey[2], [1]*Colorado State University*, *Fort Collins,* [2]*University of Idaho*, *Moscow,* [3]*Independent Contractor, California Beef Council*, *Sacramento,* [4]*Oklahoma State University*, *Stillwater.*

4:00 PM 1009 **Effects of quality defects in market beef and dairy cows and bulls on selling price at auction in the western United States.**
J. K. Ahola*[1], H. A. Foster[3], D. L. VanOverbeke[4], K. S. Jensen[2], R. L. Wilson[2], J. B. Glaze[2], T. E. Fife[2], C. W. Gray[2], S. A. Nash[2], R. R. Panting[2], and N. R. Rimbey[2], [1]*Colorado State University*, *Fort Collins,* [2]*University of Idaho*, *Moscow,* [3]*Independent Contractor, California Beef Council*, *Sacramento,* [4]*Oklahoma State University*, *Stillwater.*

4:15 PM 1010 **Performance of medium and small frame steers under pasture and pasture-feedlot finishing.**
G. K. Mantz* and P. Nyren, *North Dakota State University Central Grasslands Research Extension Center*, *Streeter*.

4:30 PM 1011 **Comparing the environmental impact of the US beef industry in 1977 to 2007.**
J. L. Capper*, *Department of Animal Sciences, Washington State University*, *Pullman.*

Production, Management and the Environment
General
Chair: **David Bravo, Pancosma, Switzerland**
507

2:00 PM 1012 **A mobile modified atmosphere killing unit for small flock depopulation.**
A. B. Webster* and S. R. Collett, *University of Georgia*, *Athens.*

2:15 PM 1013 **Overview of lighting in Kentucky broiler houses.**
D. G. Overhults[1], A. J. Pescatore[1], I. Lopes[1], G. Morello[1], J. P. Jacob*[1], J. Earnest Jr. [1], M. Miller[2], and R. S. Gates[3], [1]*University of Kentucky*, *Lexington,* [2]*Kentucky Poultry Federation*, *Winchester,* [3]*University of Illinois*, *Champaign.*

2:30 PM 1014 **Evaluation of the effect of supplementing complex trace minerals on the development of claw lesions in stall-housed sows.**
S. S. Anil*[1], L. Anil[2], J. Deen[1], S. K. Baidoo[2], M. E. Wilson[3], and T. L. Ward[3], [1]*Veterinary Population Medicine, University of Minnesota*, *St Paul,* [2]*Southern Research and Outreach Center, University of Minnesota*, *Waseca,* [3]*Zinpro Corporation*, *Eden Prairie, MN*.

2:45 PM 1015 **Correlation between production traits and sexual behavior in white-faced yearling rams.**
V. A. Uthlaut*, G. E. Moss, R. H. Stobart, B. A. Larson, and B. M. Alexander, *University of Wyoming*, *Laramie*.

3:00 PM 1016 **Optimal livestock gross margin for dairy insurance contract design.**
M. Valvekar, V. E. Cabrera*, and B. W. Gould, *University of Wisconsin*, *Madison*.

3:15 PM 1017 **Do hyphenated techniques permit the speciation of metal glycinate complexes?**
C. Ionescu*[1], V. Vacchina[2], R. Lobinski[3], S. Oguey[1], and D. Bravo[1], [1]*Pancosma, Geneva, Switzerland*, [2]*UT2A*, *Pau, France*, [3]*CNRS*, *Pau, France*.

3:30 PM 1018 **Determination of metal glycinate in premixes using capillary electrophoresis coupled with an inductively coupled plasma mass spectrometry detector (CE-ICP-MS).**
C. Ionescu*[1], V. Vacchina[2], S. Oguey[2], R. Lobinski[3], and D. Bravo[1], [1]*Pancosma, Geneva, Switzerland*, [2]*UT2A*, *Pau, France*, [3]*CNRS*, *Pau, France*.

3:45 PM 1019 **Determining the optimal age for recording the retinal vascular pattern image of lambs.**
M. A. Rojas-Olivares[1], G. Caja*[1], S. Carné[1], A. A. K. Salama[1], N. Adell[2], and P. Puig[1], [1]*Universitat Autònoma de Barcelona*, *Bellaterra, Barcelona, Spain*, [2]*Universitat de Girona*, *Girona, Spain*.

4:00 PM 1020 **Predicting probability of pregnancy using all activity signals prior to pregnancy diagnosis.**
A. H. Sanders*, A. De Vries, and J. Block, *University of Florida*, *Gainesville.*

4:15 PM 1021 **Development of a model for heat stress response in primiparous sows during critical stages of reproduction.**
E. A. Coate*, M. C. Lucy, P. A. Eichen, and D. E. Spiers, *University of Missouri-Columbia.*

PSA Emerging Issues Symposium
Social Sustainability of Egg Production
Chair: **Joy Mench, UC-Davis**
Korbel Ballroom 1cd

2:00 PM 1022 **The egg industry—Market context and sustainability issues.**
J. A. Mench*, D. A. Sumner, and J. T. Rosen-Molina, *University of California*, *Davis*.

2:30 PM 1023 **Economic and market issues on the sustainability of egg production in the United States: Analysis of alternative production systems.**
D. A. Sumner*[1], H. R. Gow[2], D. R. Hayes[3], W. A. Matthews[1], F. B. Norwood[4], J. T. Rosen-Molina[1], and W. N. Thurman[5], [1]*University of California*, *Davis,* [2]*Michigan State University*, *East Lansing,* [3]*Iowa State University*, *Ames,* [4]*Oklahoma State University*, *Stillwater,* [5]*North Carolina State University*, *Raleigh*.

3:00 PM 1024 **The impact of different housing systems on egg safety and quality.**
P. S. Holt*[1], R. H. Davies[2], J. Dewulf[3], R. K. Gast[1], J. K. Huwe[4], D. R. Jones[1], D. Waltman[5], and K. R. Willian[6], [1]*USDA/ARS Egg Safety and Quality Research Unit*, *Athens, GA,* [2]*Veterinary Laboratory Agencies*, *Weybridge, UK*, [3]*Veterinary Epidemiology, Ghent University*, *Ghent, Belgium*, [4]*USDA/ARS Animal Metabolism Research Unit*, *Fargo, ND,* [5]*Georgia Poultry Laboratory*, *Oakwood,* [6]*Chemistry Deparment, Tuskegee University*, *Tuskegee, AL*.

3:30 PM 1025 **Environmental impacts and sustainability of egg production systems.**
H Xin*[1], R. S. Gates[2], A. R. Green[2], F. M. Mitloehner[3], P. A. Moore, Jr. [4], and C. M. Wathes[5], [1]*Iowa State University*, *Ames*, [2]*University of Illinois*, *Urbana-Champaign*, [3]*University of California*, *Davis*, [4]*USDA-ARS*, *Fayetteville, AR*, [5]*University of London*, *UK*.

4:00 PM 1026 **Values and public acceptability dimensions of sustainable egg production.**
P. B. Thompson*[1], M. Appleby[5], L. Busch[1,2], L. Kalof[1], M. Miele[3], B. Norwood[6], and E. Pajor[4], [1]*Michigan State University*, *East Lansing,* [2]*Lancaster University*, *Lancaster, UK*, [3]*Cardiff University*, *Cardiff, Wales, UK*, [4]*Calgary University*, *Calgary, AL, Canada*, [5]*World Society for the Protection of Animals*, *London, UK*, [6]*Oklahoma State University*, *Stillwater*.

4:30 PM 1027 **Hen welfare in different housing systems.**
D. C. Lay Jr. *[1], R. M. Fulton[2], P. Y. Hester[3], D. M. Karcher[2], J. B. Kjaer[4], J. A. Mench[5], B. A. Mullens[6], R. C. Newberry[7], C. J. Nicol[8], N. P. O'Sullivan[9], and R. E. Porter[10], [1]*USDA-Agricultural Research Service, Livestock Behavior Research Unit*, *West Lafayette, IN*, [2]*Michigan State University*, *East Lansing*, [3]*Purdue University*, *West Lafayette, IN*, [4]*Fed. Agri. Res. Centre, Celle, Germany*, [5]*University of California*, *Davis*, [6]*University of California*, *Riverside*, [7]*Washington State University*, *Pullman*, [8]*University of Bristol*, *UK*, [9]*Hy-Line International*, *Des Moines, IA*, [10]*University of Minnesota*, *St. Paul*.

5:00 PM 1028 **Valuing stakeholder input in setting research priorities for sustainable egg production.**
J. C. Swanson*, *Michigan State University*, *East Lansing.*

Ruminant Nutrition
Beef 2
Chair: **John Wagner, Colorado State University**
Korbel Ballroom 2b

2:00 PM 1029 **Characterization of physical factors affecting ruminal lipolytic activity in vitro.**
H. D. Edwards*[1], M. D. Hardin[1], R. K. Miller[1], N. A. Krueger[2], R. C. Anderson[2], and D. J. Nisbet[2], [1]*Texas A&M University*, *College Station,* [2]*USDA/ARS, Southern Plains Agriculture Research Center, Food and Feed Safety Research Unit*, *College Station, TX.*

2:15 PM 1030 **Potential for water intake to predict dry matter intake in finishing beef steers.**
M. H. Ramos*[1], M. S. Kerley[1], M. Brankovic[2], J. Gillespie[2], and C. Huisma[2], [1]*University of Missouri*, *Columbia,* [2]*GrowSafe*, *Airdrie, CA*.

2:30 PM 1031 **Effect of calving season and finishing system on performance of beef steers in western Canada.**
H. C. Block[1], A. D. Iwaasa[2], L. C. Thompson[3], H. A. Lardner*[3], and S. L. Scott[1], [1]*Agriculture and Agri-Food Canada, Brandon Research Centre*, *Brandon, MB, Canada*, [2]*Agriculture and Agri-Food Canada, Semiarid Prairie Agricultural Research Centre*, *Swift Current, SK, Canada*, [3]*Western Beef Development Centre*, *Lanigan, SK, Canada*.

2:45 PM	1032	**Effects of a bacterial inoculant on fermentation of barley or corn silage and on the growth performance of steers fed the ensiled crop.** W. Addah*[1,2], J. Baah[2], P. Groenewegen[3], E. K. Okine[1], and T. A. McAllister[2], [1]*University of Alberta*, *Edmonton, AB, Canada*, [2]*Agriculture and Agri-Food Canada Research Centre*, *Lethbridge, AB, Canada*, [3]*Alltech Canada, Inc., Calgary, AB, Canada*.
3:00 PM	1033	**Interactions between animal age and media fatty acids on subcutaneous and intramuscular adipose tissue explants from Angus steers.** D. T. Silvey*[1], G Go[1], L. A. Gilmore[1], S. B. Smith[1], B. J. Johnson[3], and M Doumit[2], [1]*Intercollegiate Faculty of Nutrition, Texas A&M University*, *College Station,* [2]*University of Idaho*, *Moscow,* [3]*Department of Food and Animal Science, Texas Tech University*, *Lubbock.*
3:15 PM	1034	**Characterization of feed efficiency traits and relationships with serum metabolites, cortisol and IGF-I in growing Brangus heifers.** R. R. Gomez*, G. E. Carstens, T. H. Welsh, Jr., P. A. Lancaster, L. J. Slay, and W. K. Krueger, *Texas A&M University*, *College Station*.
3:30 PM	1035	**Effects of source and level of dietary roughage and ractopamine (Optaflexx) supplementation on growth performance, carcass traits, and beef quality.** D. Glanc*, K. Swanson, C. Campbell, and I. Mandell, *University of Guelph*, *Guelph, Ontario, Canada*.
3:45 PM	1036	**Natural and conventional diet and management effects on steer feedlot performance, carcass traits and economics.** M. M. Thompson*[1], C. S. Schauer[1], V. L. Anderson[2], B. R. Ilse[2], R. J. Maddock[3], and K. K. Karges[4], [1]*Hettinger Research Extension Center*, *North Dakota State University, Hettinger,* [2]*Carrington Research Extension Center; North Dakota State University*, *Carrington,* [3]*Department of Animal Sciences*, *North Dakota State University, Fargo,* [4]*Poet Nutrition, Inc., Sioux Falls, SD*.
4:00 PM	1037	**Effect of calving season and wintering system on cow performance.** W. A. Griffin*[1], T. J. Klopfenstein[1], D. C. Adams[2], G. E. Erickson[1], L. A. Stalker[2], J. A. Musgrave[2], and R. N. Funston[2], [1]*University of Nebraska*, *Lincoln,* [2]*University of Nebraska West Central Research and Extension Center*, *North Platte.*
4:15 PM	1038	**Eating pattern of Holstein bulls and steers fed high-concentrate rations using a computerized concentrate feeder.** M. Devant*[1], S. Marti[1], and A. Bach[2,1], [1]*Department of Ruminant Production, IRTA*, *Barcelona, Spain*, [2]*ICREA*, *Barcelona, Spain*.
4:30 PM	1039	**Formation of *trans*-18:1 and CLA isomers in rumen and digesta of bulls fed different polyunsaturated fatty acid diets.** D. Dannenberger*[1], K. Nuernberg[1], X. Shen[2], G. Nuernberg[1], and R. Zhao[2], [1]*Leibniz Institute for Farm Animal Biology*, *Dummerstorf, Germany*, [2]*Nanjing Agricultural University*, *Nanjing, China*.

WEDNESDAY ORALS

Ruminant Nutrition
Beef: Forages and Grazing
Chair: **Pablo Gregorini, Dairy-NZ, New Zealand**
Korbel Ballroom 2c

2:00 PM	1040	**Effects of self-fed byproducts on animal performance, carcass traits and fatty acid profiles of pasture reared finishing cattle.** D. D. Kiesling*, D. G. Morrical, D. R. Strohbehn, M. S. Honeyman, D. W. Busby, D. Maxwell, and J. S. Sellers, *Iowa State University*, *Ames*.
2:15 PM	1041	**Diets containing thirty percent wheat straw or orchard grass hay fed at either ad libitum or restricted intake prepartum have modest effects on postpartum performance.** N. B. Litherland*, M. L. Raeth-Knight, and J. G. Linn, *University of Minnesota*, *St Paul.*
2:30 PM	1042	**In situ digestibility of grass hay after heifer diets were abruptly switched from 35 or 70% concentrate to 100% forage.** L. A. Voigt*[1], R. L. Endecott[1], R. C. Waterman[2], and J. A. Paterson[1], [1]*Montana State University*, *Bozeman,* [2]*USDA-ARS*, *Miles City, MT.*
2:45 PM	1043	**Evaluation of annual ryegrass (*Lolium multiflorum*) in two fall grazing systems on forage quality and beef heifer performance.** J. M. Kelzer*[1], R. S. Walker[2], S. L. Bird[3], and R. D. Mathison[3], [1]*University of Minnesota*, *St. Paul*, [2]*Extension Regional Center, University of Minnesota*, *Andover*, [3]*North Central Research and Outreach Center, University of Minnesota*, *Grand Rapids*.

3:00 PM 1044 **Effects of pen cleaning frequency and feeding high distillers grains and wheat straw on nutrient mass balance and performance of feedlot steers.**
A. R. Rich*, G. E. Erickson, T. J. Klopfenstein, M. K. Luebbe, and W. A. Griffin, *University of Nebraska*, *Lincoln*.

3:15 PM 1045 **Restricting intake of replacement heifers by limiting hay access time.**
W. J. Sexten* and D. K. Davis, *University of Missouri*, *Columbia*.

3:30 PM 1046 **Effect of stocking rate on nutrient quality of cornstalk residue.**
J. A. Gigax*, C. D. Buckner, L. A. Stalker, T. J. Klopfenstein, and S. J. van Donk, *University of Nebraska*, *Lincoln*.

3:45 PM 1047 **Ruminal pressure and pH dynamics of bloated steers grazing winter wheat forage.**
W. E. Pinchak*[1], D. W. Pitta[1], D. P. Malinowski[1], J. D. Fulford[1], T. A. Wickersham[2], and J. Coverdale[2], [1]*Texas AgriLife Research*, *Vernon,* [2]*Texas A&M University*, *College Station.*

4:00 PM 1048 **Rumen bacterial diversity dynamics associated with changing from bermudagrass hay to grazed winter wheat diets.**
D. W. Pitta*[1], W. E. Pinchak[1], S. E. Dowd[2,4], J. Osterstock[3], V. Gontcharova[2], E. Youn[4,5], K. Dorton[6], I. Yoon[6], B. R. Min[1], J. D. Fulford[1], T. A. Wickersham[7], and D. P. Malinowski[1], [1]*Texas AgriLife Research*, *Vernon,* [2]*Research and Testing Laboratory*, *Lubbock, TX,* [3]*Texas AgriLife Research*, *Amarillo,* [4]*Medical Biofilm Research Institute*, *Lubbock, TX,* [5]*Texas Tech University*, *Lubbock,* [6]*Diamond V Mills*, *Cedar Rapids, IA,* [7]*Texas A&M University*, *College Station.*

4:15 PM 1049 **Fermentable fiber levels in diets for natural beef cattle markets.**
M. J. Baker*, D. E. Hogue, M. L. Thonney, and D. J. Ketchen, *Cornell University*, *Ithaca, NY.*

4:30 PM 1050 **Chemical composition and in situ digestion kinetics of fodder tree leaves.**
J. I. Sultan*[1], U. B. Cheema[1], A. Javaid[1], and M. Yaqoob[2], [1]*Institute of Animal Nutrition and Feed Technology, University of Agriculture*, *Faisalabad, Pakistan*, [2]*Department of Livestock Management, University of Agriculture*, *Faisalabad, Pakistan*.

Ruminant Nutrition
Dairy 2
Chair: **Allen Young, Utah State University**
Sponsor: West Central
Korbel Ballroom 1ef

2:00 PM 1051 **Productivity of lactating dairy cows as impacted by feeding lysine in a ruminally protected form.**
P. H. Robinson*[1], S. Juchem[1], and I. Shinzato[2], [1]*University of California*, *Davis,* [2]*Ajinomoto Co. Inc., Tokyo, Japan*.

2:15 PM 1052 **The application of reliable wireless sensor provides better understanding of the rumen environment.**
J. Laporte-Uribe*, F. Brooks, M. Steer, P. Fernley, and M. Eivers, *Kahne Limited*, *Auckland, New Zealand.*

2:30 PM 1053 **Top-dressing soybean meal in fresh cow, an end to the risks of dry matter intake decreases: Dry matter intake, milk production and nitrogen metabolism.**
M. Ghelich Khan*, H. Amanlou, and E. Mahjoubi, *Zanjan University*, *Zanjan, Iran*.

2:45 PM 1054 **Leucine had the highest regulatory effects on protein synthesis in bovine mammary epithelial cells when added to media deprived of other essential amino acids.**
N. A. Knoebel*[1], J. A. D. R. N. Appuhamy[1], J. Escobar[2], and M. D. Hanigan[1], [1]*Department of Dairy Science, Virginia Polytechnic Institute and State University*, *Blacksburg,* [2]*Department of Animal and Poultry Sciences, Virginia Polytechnic Institute and State University*, *Blacksburg*

3:00 PM 1055 **Hypophagic effects of propionate relative to acetate decrease as days in milk increase and plasma NEFA concentration decreases.**
S. E. Stebulis* and M. S. Allen, *Michigan State University*, *East Lansing.*

3:15 PM 1056 **Effects of genetic improvements on efficiency of energy utilization in dairy cows.**
A. B. Strathe*[1], J. Dijkstra[2], J. France[3], and E. Kebreab[1], [1]*University of California*, *Davis*, [2]*Wageningen University*, *Wageningen, the Netherlands*, [3]*University of Guelph*, *Guelph, Ontario, Canada*.

3:30 PM 1057 **Carbon dioxide, a greenhouse gas, is sequestered by dairy cattle.**
D. P. Casper*[1] and D. R. Mertens[2], [1]*Agri-King, Inc., Fulton, IL,* [2]*USDA-ARS Dairy Forage Research Center*, *Madison, WI.*

3:45 PM 1058 **The variation in milk production by lactating dairy cows in a whole herd compared to groups within that herd.**
D. P. Casper*, K. E. Lanka, D. F. Jones, G. P. Gengelbach, D. H. Kleinschmit, and D. J. Schauff, *Agri-King, Inc., Fulton, IL.*

4:00 PM 1059 **Reduced protein responses to sugar feeding may be due to microbial glycogen production.**
M. B. Hall*, *US Dairy Forage Research Center, USDA-ARS, Madison, WI.*

4:15 PM 1060 **Liver transcriptomics in Holstein cows fed lipid supplements during the peripartal period.**
M. J. Khan*[1], E. Schmitt[1], M. A. Ballou[2], E. J. DePeters[3], S. L. Rodriguez-Zas[1], R. E. Everts[1], H. A. Lewin[1], J. K. Drackley[1], and J. J. Loor[1], [1]*University of Illinois, Urbana,* [2]*Texas Tech University, Lubbock,* [3]*University of California, Davis.*

4:30 PM 1061 **Cattle differ in ability to adapt to small intestinal digestion of starch.**
H. A. Bissell[1] and M. B. Hall*[2], [1]*University of Wisconsin, Madison,* [2]*US Dairy Forage Research Center, USDA-ARS, Madison, WI.*

4:45 PM 1062 **Physiological effects of season and parity on production and nutritional quality of milk in camel (*Camelus dromedarius*) under pastoral environment of Pakistan.**
S. Ahmad*[1], M. Yaqoob[1], M. Qamar Biilal[1], G. Muhammad[1,2], M. Younas[1], and J. I. Sultan[1,3], [1]*Department of livestock management, University of Agriculture, Faisalabad, Pakistan,* [2]*Department of Clinical and Medicine, University of Agriculture, Faisalabad, Pakistan,* [3]*Instiitute of Animal Nutrition and Feed Technology, University of Agriculture, Faisalabad, Pakistan.*

Swine Species Symposium
Optimizing Swine Production for Lactating Sows and Young Pigs
Chair: Vern Pearson, Land O'Lakes/Purina, Shoreview, MN
Korbel Ballroom 3a

2:00 PM 1063 **Nutritional management of sows during the perinatal period.**
S. W. Kim*, A. Saraiva, and Y. Zhao, *North Carolina State University, Raleigh.*

2:45 PM 1064 **Proper nutrition to optimize performance for lactating sows and young pigs.**
V. J. Pearson*, *Land O'Lakes Purina Feed LLC, Shoreview, MN.*

3:30 PM 1065 **Gene × environment interactions affecting litter phenotype in commercial sows.**
G. R. Foxcroft*, *University of Alberta, Edmonton, Alberta, Canada.*

4:15 PM 1066 **Decision-making using swine records.**
J. Deen* and S. S. Anil, *University of Minnesota, St Paul.*

Teaching/Undergraduate and Graduate Education
Graduate and Undergraduate Teaching 2
Chair: Michel Wattiaux, University of Wisconsin
503/504

3:30 PM 1067 **Engaging agriculture students in the publication process through popular press magazines.**
E. L. Walker*, *Missouri State University, Springfield.*

3:45 PM 1068 **Teaching and experiencing entrepreneurialism in animal sciences.**
M. E. Benson*[1], A. B. Culham[2], and G. M. Hill[2], [1]*Washington State University, Pullman,* [2]*Michigan State University, East Lansing.*

4:00 PM 1069 **The role of animals in societies of the world: When culture and roles clash.**
M. Russell*[1], H. Frigola[1], K. Kanne[2], and S. Damron[3], [1]*Purdue University, West Lafayette, IN,* [2]*Northwestern University, Evanston, IL,* [3]*Oklahoma State University, Stillwater.*

4:15 PM 1070 **Enhanced learning of lactation physiology by undergraduates conducting a class-based research project.**
R. L. Wrenn*, S. J. P. Lee, and R. C. Hovey, *University of California, Davis.*

4:30 PM 1071 **Frameworks for learning: A case study of approaches for building capacity for distance education.**
D. R. Mulvaney*[1,2], P. A. Curtis[3], and M. O. Kloepper[3,4], [1]*Coll. of Agr., Auburn Univ., Auburn, AL,* [2]*Dept. Anim. Sci., Auburn Univ., Auburn, AL,* [3]*Dept. Poult. Sci., Auburn Univ., Auburn, AL,* [4]*IT Specialist, Auburn Univ., Auburn, AL.*

4:45 PM 1072 **Trends in distance education and technologies in higher education: A call for adaptive leadership.**
D. R. Mulvaney*[1,2], P. A. Curtis[3], and M. O. Kloepper[3,4], [1]*Coll. Agr., Auburn Univ., Auburn, AL,* [2]*Dept. Anim. Sci., Auburn, AL,* [3]*Dept. Poult. Sci., Auburn, AL,* [4]*IT Specialist, Auburn, AL.*

Thursday, July 15

SYMPOSIA AND ORAL SESSIONS

Animal Health
Probiotics, Performance and Antioxidants
Chair: **Jeffery Escobar, Virginia Polytechnic Institute and State University**
Sponsors: Elanco Animal Health, Pfizer Animal Health
507

8:30 AM 1073 **Thiamine status of feedlot cattle fed high concentrate diet.**
T. Karapinar*, M. Dabak, and O. Kizil, *University of Firat, Faculty of Veterinary Medicine, Elazig, Turkey*.

8:45 AM 1074 **The effect of five herbal extracts on performance, carcass characteristics and immune system in broilers.**
M. Alempour[1], S. Rahimi*[1], M. A. Karimi Torshizi[1], and A. Rahimi[2], [1]*Tarbiat Modares University, Tehran, Tehran, Iran*, [2]*Islamic Azad University, Tehran, Tehran, Iran*.

9:00 AM 1075 **Comparison the effect of five herbal extracts and virginiamycin on serum lipids and immune system in broilers.**
M. Alempour[1], S. Rahimi[1], M. A. Karimi Torshizi[1], and A. Rahimi*[2], [1]*Tarbiat Modares University, Tehran, Tehran, Iran*, [2]*Islamic Azad University, Tehran, Tehran, Iran*.

9:15 AM 1076 **Characterization of a yeast autolysate in vitro and effect on piglet performance *in vivo*.**
A. Ganner*[1], S. Masching[2], M. Pelz[1], and G. Schatzmayr[1], [1]*Biomin Research Center, Tulln, Austria*, [2]*Biomin Holding GmbH, Herzogenburg, Austria*.

9:30 AM 1077 **Effect of several feed additives on growth performance and microbial load in Escherichia coli challenged broilers.**
A. R. Valipouri[1], S. Rahimi*[1], T. Zahraei Salehi[2], and A. Rahimi[3], [1]*Tarbiat Modares University, Tehran, Tehran, Iran*, [2]*Tarbiat Modares University, Tehran, Tehran, Iran*, [3]*University of Tehran, Tehran, Tehran, Iran*, [4]*Islamic Azad University, Tehran, Tehran, Iran*.

9:45 AM 1078 **Improvement of microbial flora of broilers digestive system by medicinal plants supplementation.**
A. Niknam[1], S. Rahimi*[1], J. Azimi[1], K. Seifi[1], M. Hoseinzade[1], and M. Moradi Nejad[1], [1]*Tarbiat Modares University, Tehran, Tehran, Iran*, [2]*Tarbiat Modares University, Tehran, Tehran, Iran*, [3]*Tarbiat Modares University, Tehran, Tehran, Iran*, [4]*Tarbiat Modares University, Tehran, Tehran, Iran*, [5]*Tarbiat Modares University, Tehran, Tehran, Iran*.

10:00 AM 1079 **Peripartal intravaginal probiotics lowered uterine infections and improved reproductive performance of Holstein dairy cows.**
B. N. Ametaj*[1], Q. Zebeli[1], S. Iqbal[1], M. Gänzle[1], Y. Wang[1], D. J. Ambrose[2], and S. M. Dunn[1], [1]*University of Alberta, Edmonton, Alberta, Canada*, [2]*Alberta Agriculture and Rural Development, Edmonton, Alberta, Canada*.

10:15 AM 1080 **Changes in ruminal-rectal temperature relationship associated with consumption of endophyte infected tall fescue.**
B. Scharf*, J. S. Johnson, H. L. Vellios, R. L. Weaber, and D. E. Spiers, *University of Missouri, Columbia*.

10:30 AM 1081 **Effect of dietary antioxidants and prepartum cooling on oxidative status and neutrophil function of periparturient Holstein cows during summer in Florida.**
D. Wang*, J. H. Shin, M. Garcia, J. E. P. Santos, and C. R. Staples, *University of Florida, Gainesville*.

10:45 AM 1082 **Isolation, characterization, and antioxidant activity of an exopolysaccharide produced by *Enterobacter cloacae* Z0206.**
M. L. Jin*[1], Y. M. Wang[1], Z. Q. Lu[1], M. Huang[1], C. L. Xu[2], and Y. Z. Wang[1], [1]*Zhejiang University, Hangzhou, China*, [2]*Northwestern Polytechnical University, Xi'An, China*.

11:00 AM 1083 **Chinese medical plants and extracts moderating effects on antioxidant status of small intestinal mucous and IEC-6 cells under heat stress.**
K. J. Guo[1,3], X. Z. Song[2], G. L. Cheng[1,3], W. L. Luan[1], F. H. Liu*[1,3], and J. Q. Xu[4], [1]*Department of Animal Science and Technology, Beijing University of Agriculture, Beijing, China*, [2]*College of Animal Science and Technology, Jiangxi Agricultural University, Nanchang, China*, [3]*Beijing Key Laboratory of TCVM, CAU-BUA TCVM Teaching & Research Team, Beijing, China*, [4]*TCVM Laboratory, CAU-BUA TCVM Teaching & Research Team, College of Veterinary Medicine, China Agricultural University, Beiing, China*.

11:15 AM 1084 **Immune responses and gene expression in red swamp crayfish (*Procambarus clarkii*), induced by selenium-enriched exopolysaccharide (Se-ECZ-EPS) from *Enterobacter cloacae* Z0206.**
X. X. Wang*, Z. Q. Lu, Y. F. Zhang, L. N. Zhu, Y. Ren, and Y. Z. Wang, *Feed Science Institute of Zhejiang University, Hangzhou city, Zhejiang province, China*.

Food Safety
General Aspects
Chair: **Todd R. Callaway, USDA/Agricultural Research Service**
505/506

8:30 AM 1085 **C-di-GMP signaling pathways are critical for acid resistance of *E. coli* O157:H7.**
M. J. Zhu*[1], B. L. Wang[1], W. Yue[1], V. K. Koseoglu[1], H. Wang[1], X. Fang[2], W. J. Means[1], R. J. McCormick[1], and M. Gomelsky[2], [1]*Department of Animal Science*, *University of Wyoming*, *Laramie,* [2]*Department of Molecular Biology, University of Wyoming*, *Laramie.*

8:45 AM 1086 **Monensin level, supplemental urea, and administration of ractopamine on fecal shedding of *Escherichia coli* O157:H7 in feedlot cattle.**
Z. D. Paddock*, C. E. Walker, J. S. Drouillard, D. G. Renter, and T. G. Nagaraja, *Kansas State University*, *Manhattan*.

9:00 AM 1087 **Alternatives to antibiotic treatment for necrotic enteritis.**
C. L. Hofacre*[1], M. Lee[1], and G. Mathis[2], [1]*The University of Georgia*, *Athens*, [2]*Southern Poultry Research*, *Athens, GA*.

9:15 AM 1088 **Effect of feeding rumen undegradable intake protein on gut *Campylobacter* concentrations in fed cattle.**
R. C. Anderson*[1], T. A. Wickersham[2], W. E. Pinchak[3], N. A. Krueger[1], T. R. Callaway[1], T. S. Edrington[1], R. B. Harvey[1], and D. J. Nisbet[1], [1]*USDA/ARS, Southern Plains Agricultural Research Center, Food and Feed Safety Research Unit*, *College Station, TX,* [2]*Texas A&M University*, *College Station,* [3]*Texas AgriLife Research*, *Vernon.*

9:30 AM 1089 **Development of a broader spectrum phage cocktail to decrease *Salmonella* shedding in livestock.**
J. Zhang[1], B. L. Kraft[1], Y. Pan[2], S. K. Wall[1], A. C. Saez*[1], and P. D. Ebner[1], [1]*Purdue University*, *West Lafayette, IN*, [2]*Zhejiang University*, *Hangzhou, China*.

9:45 AM 1090 **Use of a biophotonic *E. coli* XEN-14 to determine time of contamination in the life cycle of the house fly, *Musca domestica* L. (Diptera: Muscidae).**
G. Schuster*[3], K. E. Moulton[1], P. R. Broadway[4], S. Willard[2], J. Behrends[4], and T. B. Schmidt[1], [1]*Department of Animal, Mississippi State University and Dairy Sciences*, *Mississippi State*, [2]*Department of Biochemistry, Mississippi State University*, *Mississippi State*, [3]*Agronomy, Texas A&M University-Kingsville*, *Kingsville*, [4]*Food Science, Nutrition, and Health Promotion, Mississippi State University*, *Mississippi State*.

10:00 AM 1091 **Effect of crust freezing on the survival of *Escherichia coli* and *Salmonella* Typhimurium in raw poultry products.**
B. D. Chaves*, I. Y. Han, and P. L. Dawson, *Clemson University*, *Clemson, SC*.

10:15 AM 1092 **Heating wash water for shell eggs. . . Is it necessary?**
S. L. Christian*[1], P. A. Curtis[1], L. K. Kerth[1], M. T. Musgrove[2], and K. E. Anderson[3], [1]*Auburn University*, *Auburn, AL*, [2]*UDSA-ARS*, *Athens, GA*, [3]*North Carolina State University*, *Raleigh*.

10:30 AM 1093 **Multiplication of *Salmonella* Enteritidis in egg yolks after inoculation outside, on, and inside vitelline membranes and storage at different temperatures.**
R. K. Gast*, R. Guraya, J. Guard, and P. S. Holt, *Egg Safety and Quality Research Unit, USDA-ARS*, *Athens, GA.*

10:45 AM 91 **Genome-wide analysis of cecal gene expression in *Salmonella*-challenged and probiotic-treated neonatal chicks.**
S. E. Higgins*[1], A. D. Wolfenden[2], G. I. Tellez[2], B. M. Hargis[2], and T. E. Porter[1], [1]*University of Maryland*, *College Park*, [2]*University of Arkansas*, *Fayetteville*.

11:00 AM 1094 **Microbiological difference of eggs from traditional cage and free range production.**
D. R. Jones*[1], K. E. Anderson[2], and M. T. Musgrove[1], [1]*Egg Safety and Quality Research Unit, USDA-ARS*, *Athens, GA,*[2]*Department of Poultry Science, North Carolina State University*, *Raleigh.*

Horse Species Symposium
Pathogenic and Reproductive Dysfunction in Horses
Chair: **Peter Ryan, Mississippi State University**
Sponsor: EAAP
401/402

8:30 AM **Introduction**
Peter Ryan.

8:40 AM 1095 **Monitoring pathogen progression during uterine infection in the mare using biophotonic imaging technology and *lux*-modified bacteria.**
P. L. Ryan*, D. L. Christiansen, R. M. Hopper, F. K. Walters, K. Moulton, J. Curbelo, and S. T. Willard, *Mississippi State University, Mississippi State.*

9:10 AM		**Discussion**
9:20 AM	1096	**Contagious equine metritis: An insidious threat to the US horse breeding industry.** P. J. Timoney*, *Maxwell H. Gluck Equine Research Center*, *Lexington, KY*.
9:50 AM		**Discussion**
10:00 AM		**Break**
10:10 AM	1097	**Use of fluorescent in situ hybridization (FISH) to identify endometritis pathogens in the mare.** M. R. Petersen*, H. Lehn-Jensen, and A. M. Bojesen, *Faculty of Life Sciences*, *Copenhagen, Denmark*.
10:40 AM		**Discussion**
10:50 AM	1098	**Chronic equine endometritis: What is missed with traditional diagnostics.** M. M. LeBlanc*, *Rood and Riddle Equine Hospital*, *Lexington, KY*.
11:20 AM		**Discussion**

International Animal Agriculture 1
Chair: **Alex Bach, IRTA**
405

8:30 AM	1099	**Challenges for the Mexican animal industry.** M. Huerta-Bravo*, R. Núñez-Domínguez, and R. Ramírez-Valverde, *Universidad Autónoma Chapingo*, *Chapingo, México*.
9:00 AM	1100	**Effect of varying dietary energy levels during last trimester of pregnancy on the performance of Sahiwal heifers.** M. Abdullah*, M. Fiaz, M. E. Babar, J. A. Bhatti, T. N. Pasha, and M. A. Jabbar, *University of Veterinary and Animal Sciences*, *Lahore, Pakistan*.
9:15 AM	1101	**Development of the organic beef foodchain in the Mexican tropics—Eight years of experience.** P. Fajersson*[1] and P. Parada[2], [1]*Colegio de Postgraduados, Campus Veracruz*, *Veracruz, Veracruz, Mexico*, [2]*Carnes La Rumorosa*, *Poza Rica, Veracruz, Mexico*.
9:30 AM	1102	**Wool comfort factor variation in Australian crossbred sheep.** A. E. O. Malau-Aduli* and D. J. Deng Akuoch, *School of Agricultural Science/TIAR, University of Tasmania*, *Hobart, Tasmania 7001, Australia*.
9:45 AM	1103	**Supplementation of Starbio probiotic and yeast on milk production and nutrient digestibility of lactating Holstein cows fed a ration containing cassava meal.** E. Sulistyowati*, I. Badarina, and E. Soetrisno, *Animal Science Dept., College of Agriculture, University of Bengkulu (UNIB)*, *Bengkulu, Indonesia*.

Nonruminant Nutrition
Enzymes 2
Chair: **Ryan Dilger, University of Illinois**
301/302

8:30 AM	1104	**Effects of protease supplementation on growth performance of broilers fed corn-soy-DDGS based diets.** F. Yan*[1], L. Garibay[2], J. Arce[2], C. Lopez-Coello[2], D. Camacho[1], M. Vazquez-Anon[1], M. Manangi[1], N. Odetallah[1], and S. Carter[1], [1]*Novus International Inc., St. Charles, MO*, [2]*Universidad Michoacana de San Nicolas de Hidalgo*, *Morelia, Mich, Mexico*.
8:45 AM	1105	**Effects of a novel phytase on phosphorus digestibility in corn-soybean meal diets fed to weanling and growing pigs.** F. N. Almeida* and H. H. Stein, *University of Illinois*, *Urbana.*

9:00 AM 1106 **Enzyme complex containing NSP-enzymes and phytase improves the growth performance and bone mineralisation of piglets fed wheat and barley-based diet.**
A. Preynat*[1], J. M. Gomez[2], and G. Uzu[1], [1]*Adisseo France SAS, 92160 Antony, France*, [2]*Primex SAS, La Gare de Baud, BP21, F-56440 Languilic, France*.

9:15 AM 1107 **Effect of dietary calcium concentration and microbial phytase addition on P utilisation and growth performance in weaned pigs.**
A. Narcy[1], M. P. Letourneau Montminy*[2], E. Bouzouagh[1,4], N. Meme[1], M. Magnin[3], and J. Y. Dourmad[4], [1]*INRA UR83, Nouzilly, France*, [2]*Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada*, [3]*BNA Nutrition Animale, Chateau-Gontier, France*, [4]*INRA UMR1079 Agrocampus, St-Gilles, France*.

9:30 AM 1108 **The role of sodium in the physiological response of growing broilers to phytate and phytase.**
A. J. Cowieson*[1], M. R. Bedford[1], P. H. Selle[3], and V. Ravindran[2], [1]*AB Vista, Marlborough, Wiltshire, UK*, [2]*Massey University, Palmerston North, New Zealand*, [3]*University of Sydney, Sydney, New South Wales, Australia*.

9:45 AM **Break**

10:00 AM 1109 **Effect of a thermo-tolerant xylanase on performance in broilers fed diets with different energy and amino acid densities.**
C. L. Wyatt*[1], T. J. Walsh[1], M. R. Bedford[1], A. J. Cowieson[1], and S. Davis[2], [1]*AB Vista, Chapel Hill, NC*, [2]*Colorado Quality Research Inc., Wellington, CO*.

10:15 AM 1110 **Additions of glucanase, xylanase, and phytase to low-energy low-lysine diets for broilers including canola meal and DDGS as alternative ingredients.**
S. Gómez*[1,2] and M. L. Angeles[1], [1]*INIFAP, Ajuchitlán, Colón, Qro, México*, [2]*FESC-UNAM, Ajuchitlán, Colón, Qro. México*.

10:30 AM 1111 **Allzyme SSF increased AME_n of the corn-soy diet and improved performance of boilers.**
T. Ao*, J. L. Pierce, B. Hoskins, M. Paul, A. J. Pescatore, A. H. Cantor, M. J. Ford, and W. D. King, *Alltech-University of Kentucky Nutrition Research Alliance, Lexington*.

10:45 AM 1112 **Effects of multiple dietary manipulations on the mass balance of N and P during the swine finishing phase.**
T. Walraven*, S. Carter, J. Jarret, M. Bible, and H. Kim, *Oklahoma State University, Stillwater*.

11:00 AM 1113 **Predicting variations in total and phytic phosphorus in raw materials of plant origin.**
C. Gady*[1], S. Virden[2], and P. A. Geraert[1], [1]*Adisseo SAS, Antony, France*, [2]*Adisseo USA Inc, Alpharetta, GA.*

11:15 AM 1114 **A heat-tolerant β-mannanase: Its biochemical properties and effect on broiler growth performance.**
H. Y. Hsiao*, D. M. Anderson, L. Liu, and M. E. Jackson, *ChemGen Corp., 211 Perry Parkway, Gaithersburg, MD*.

Nonruminant Nutrition Symposium
Nutrient and Non-Nutrient Sensing and Signaling in the Gastrointestinal Tract

Chair: **Soraya Shirazi-Beechey, University of Liverpool**
Sponsors: EAAP, Pancosma
503/504

8:30 AM **Introduction**

8:35 AM 1115 **Bitter taste receptors and gastrointestinal chemosensing.**
C. Sternini*[1], H. E. Raybould[2], L. M. Rinaman[3], and E. Rozegurt[1], [1]*UCLA, School of Medicine, Los Angeles*, [2]*UC Davis, School of Veterinary Medicine, Davis,* [3]*University of Pittsburgh, Pittsburgh, PA.*

9:05 AM 1116 **T1R-mediated taste transduction mechanisms.**
S. C. Kinnamon*, *University of Colorado Denver, Aurora.*

9:35 AM 1117 **Gut sensors for spices and odorants.**
T. Braun[1], P. Voland[2], L. Kunz[1], C. Prinz[2], and M. Gratzl*[1], [1]*Institute of Anatomy, Ludwig Maximilian University Munich, Munich, Germany*, [2]*. Med. Dept., Technical University Munich, Munich, Germany*.

10:05 AM **Break**

10:15 AM 1118 **Amino acid sensing in the gut epithelium.**
D. G. Burrin* and B. Stoll, *USDA Children's Nutrition Research Center, Department of Pediatrics, Baylor College of Medicine, Houston, TX.*

10:45 AM 1119 **Nutrient sensors expressed in gut enteroendocrine cells regulate nutrient-responsive secretion of satiety hormones.**
S. Shirazi-Beechey*, K. Daly, A. Moran, and J. Dyer, *University of Liverpool*, *Liverpool, UK*.

11:15 AM 1120 **Effect of artificial sweeteners on the expression of swine intestinal Na^+/glucose co-transporter 1, SGLT1.**
A. Moran*[1], D. Batchelor[1], C. Ionescu[2], D. Bravo[2], and S. Shirazi-Beechey[1], [1]*University of Liverpool*, *Liverpool, UK*, [2]*Pancosma*, *Geneva, Switzerland*.

Physiology and Endocrinology
Feed Intake, Metabolism and Maternal Nutrition
Chair: **Brian Crooker, University of Minnesota**
304

8:30 AM 1121 **Expression of neuropeptide Y and its receptors as affected by nutrition and leptin infusion in Zebu heifers.**
J. Diniz-Magalhães, M. V. Carvalho, A. B. S. Machado, R. A. Ribeiro, and L. F. P. Silva*, *Universidade de São Paulo*, *Pirassununga, SP, Brazil*.

8:45 AM 1122 **Blocking μ-opioid receptors alters short-term feed intake and oro-sensorial preferences of weaned calves.**
C. Montoro*[1], I. Ipharraguerre[2], and A. Bach[1,3], [1]*Ruminant Production, IRTA*, *Caldes de Montbui, Barcelona, Spain*, [2]*Lucta S. A., Barcelona, Spain*, [3]*ICREA*, *Barcelona, Spain*.

9:00 AM 1123 **Evidence that nesfatin-1 is a satiety factor in the pig and that the hypothalamus controls its expression in adipose tissue.**
C. A. Lents*[1], C. R. Barb[2], G. J. Hausman[2], L. Lee-Rutherford[2], C. J. Rogers[1], N. L. Heidorn[1], R. S. Cisse[1], and M. J. Azain[1], [1]*University of Georgia*, *Athens,* [2]*USDA-ARS Richard B. Russell Agriculture Research Center*, *Athens, GA.*

9:15 AM 1124 **Endocannabinoid and PPARα signaling gene network expression in liver of peripartal cows fed two levels of dietary energy prepartum.**
M. J. Khan*, D. E. Graugnard, and J. J. Loor, *University of Illinois*, *Urbana.*

9:30 AM 1125 **Endoplasmic reticulum (ER) stress gene network expression in liver of peripartal cows fed two levels of dietary energy prepartum.**
M. J. Khan*, D. E. Graugnard, and J. J. Loor, *University of Illinois*, *Urbana.*

9:45 AM 1126 **Effects of a hyperinsulemic euglycemic clamp administered during heat stress or pair feeding on plasma ghrelin concentrations of lactating dairy cattle.**
S. E. Cossel*, M. E. Field, M. V. Skrzypek, S. R. Sanders, L. H. Baumgard, R. P. Rhoads, and M. L. Rhoads, *University of Arizona*, *Tucson.*

10:00 AM 1127 **Effects of heat stress on insulin action in lactating Holstein cows.**
M. V. Skrzypek*[1], R. P. Rhoads[1], S. R. Sanders[1], K. Flann[1], L. Cole[1], J. W. Perfield[2], M. R. Waldron[2], and L. H. Baumgard[3], [1]*University of Arizona*, *Tucson,* [2]*University of Missouri*, *Columbia,* [3]*Iowa State University*, *Ames.*

10:15 AM 1128 **The effect of insulin glargine on the metabolism of lactating Holstein cows.**
L. A. Winkelman*, D. M. Barbano, M. E. Van Amburgh, and T. R. Overton, *Cornell University*, *Ithaca, NY.*

10:30 AM 1129 **The effects of maternal obesity and overnutrition on ovine fetal adipose tissue lipid composition.**
N. M. Long*[1,2], D. C. Rule[2], P. W. Nathanielsz[3], and S. P. Ford[1,2], [1]*Center for the Study of Fetal Programming*, *University of Wyoming, Laramie,* [2]*Department of Animal Science*, *University of Wyoming, Laramie,* [3]*Department of Obstetrics and Gynecology*, *University of Texas Health Sciences Center, San Antonio*.

10:45 AM 1130 **Influence of metabolizable protein supplementation during late gestation on vasoreactivity of maternal and fetal placental arteries in sheep.**
L. A. Lekatz*[1], M. L. Van Emon[2], P. K. Shukla[3], S. T. O'Rourke[3], C. S. Schauer[2], K. M. Carlin[1], and K. A. Vonnahme[1], [1]*Center for Nutrition and Pregnancy, Department of Animal Sciences, North Dakota State University*, *Fargo,* [2]*Hettinger Research Extension Center, North Dakota State University*, *Hettinger,* [3]*Department of Pharmaceutical Sciences, North Dakota State University*, *Fargo.*

11:00 AM 1131 **Maternal nutrient restriction (NR) upregulates phosphoenolpyruvate carboxykinase (PEPCK) expression in the livers of aged female offspring.**
L. Zhang*[1], Y. Ma[1], N. Tuersunjiang[1], L. A. George[1], S. P. Ford[1], and P. W. Nathanielsz[2], [1]*Center for the Study of Fetal Programming, Univ. of Wyoming, Laramie,* [2]*Center for Pregnancy and Newborn Research, Univ. of Texas Health Sciences Center, San Antonio.*

11:15 AM 1132 **Maternal nutrient restriction (NR) from early to mid-gestation increases pancreatic β-cell number at mid-gestation but pancreatic weight and β-cell numbers are reduced by late-gestation.**
L. Zhang*[1], L. A. George[1], S. P. Ford[1], and P. W. Nathanielsz[2], [1]*Center for the Study of Fetal Programming, Univ. of Wyoming, Laramie,* [2]*Center for Pregnancy and Newborn Research, Univ. of Texas Health Sciences Center, San Antonio.*

Ruminant Nutrition
By-Products and Supplements
Chair: **Stacey Gunter, USDA/ARS-SPRRS**
Sponsor: West Central
403/404

8:30 AM 1133 **Effects of supplementing transition cow diets with different levels of dietary glycerol on performance, efficiency, and blood metabolites.**
J. Boyd*[2], J. Bernard[1], and J. West[1], [1]*The University of Georgia, Tifton,* [2]*US Dairy Forage Research Center, Madison, WI.*

8:45 AM 1134 **The influence of *Bacillus pumilus* 8G-134 on milk production of dairy cows in early lactation.**
J. D. Ferguson*[1], Z. Wu[1], D. W. Remsburg[1], and K. Mertz[2], [1]*University of Pennsylvania, School of Veterinary Medicine, Kennett Square,* [2]*Danisco Animal Nutrition, Waukesha, WI.*

9:00 AM 1135 **Utilization of wet brewers grains as a replacement for corn silage in lactating dairy cow diets.**
C. L. Mahnken*, B. J. Bradford, T. G. Rozell, and M. J. Brouk, *Kansas State University, Manhattan.*

9:15 AM 1136 **Methane suppressing effect of flaxseed in diets containing hay or silage.**
Y. -H. Chung*, M. L. He, S. M. McGinn, T. A. McAllister, and K. A. Beauchemin, *Agriculture and Agri-Food Canada, Research Centre, Lethbridge, AB, Canada.*

9:30 AM 1137 **Effects of live yeast culture supplementation (*Saccharomyces cerevisiae*) and nutritional management on ruminal pH and fermentation in early lactation dairy cows.**
R. M. Al Ibrahim*, V. P. Gath, C. McCarney, P. Duffy, and F. J. Mulligan, *University College Dublin, Dublin, Ireland.*

9:45 AM 1138 **Effect of supplemental corn dry distiller grains plus solubles on digestibility of steers grazing native range during summer growing season.**
M. F. Martínez-Pérez[1], D. Calderón-Mendoza[2], N. J. Dupass[1], A. Islas[1], J. Armendariz[1], A. M. Encinias[1], F. Loya-Olguin[2], and S. A. Soto-Navarro*[1], [1]*New Mexico State University, Las Cruces,* [2]*Universidad Autónoma de Baja California, Mexicali, BC, Mexico.*

10:00 AM 1139 **Effect of replacing grain and silage with wheat distiller grain on intake, digestibility, and urine purine derivatives in finishing beef cattle.**
Y. L. Li*[1,2], W. Z. Yang[1], T. A. McAllister[1], and K. A. Beauchemin[1], [1]*Agriculture and Agri-Food Canada, Research Centre, Lethbridge, AB, Canada,* [2]*Feed Research Institute, Chinese Academy of Agricultural Sciences, Beijing, China.*

10:15 AM 1140 **Feeding wheat distillers grains compared with corn distillers grains in diets for lactating dairy cows: Effect on milk production and rumen fermentation.**
M. M. Abdelqader* and M. Oba, *University of Alberta, Edmonton, AB, Canada.*

10:30 AM 1141 ***Megasphaera elsdenii* effects on adaptation to concentrate diets.**
L. K. Thompson*[1], P. H. Henning[2], and J. S. Drouillard[1], [1]*Kansas State University, Manhattan,* [2]*MS-Biotech, Centurion, South Africa.*

10:45 AM 1142 **Effects of adding a mycotoxin-sequestering agent on milk aflatoxin M1 concentration and the performance and immune response of dairy cattle fed an aflatoxin B1 - contaminated diet.**
O. C. M. Queiroz*, A. T. Adesogan, C. R. Staples, J. Hun, M. Garcia, L. F. Greco, and L. J. Oliveira, *Department of Animal Sciences, University of Florida, Gainesville.*

11:00 AM 1143 **The effect of rumen-protected methionine and choline on productive performance of Holstein dairy cows.**
M. Ardalan*, M. Dehghan-Banadaky, and K. Rezayazdi, *Department of Animal Science, University College of Agriculture and Natural Resources, University of Tehran, Karaj, Iran.*

Ruminant Nutrition Symposium
Acidosis: New Insights Into the Persistent Problem
Chair: **Masahito Oba, University of Alberta**
Sponsor: West Central
501/502

8:30 AM **Introduction.**
Masahito Oba, *University of Alberta.*

8:35 AM 1144 **Role of fermentation acid absorption in the regulation of ruminal pH.**
J. R Aschenbach*[1], G. B. Penner[2], F. Stumpff[3], and G. Gäbel[4], [1]*University of Veterinary Medicine Vienna, Vienna, Austria*, [2]*University of Saskatchewan, Saskatoon, Canada*, [3]*Free University of Berlin, Berlin, Germany*, [4]*University of Leipzig, Leipzig, Germany.*

9:15 AM 1145 **Molecular adaptation of ruminal epithelia to highly fermentable diets.**
G. B. Penner*[1], M. A. Steele[2], and B. W. McBride[2], [1]*University of Saskatchewan, Saskatoon, Canada*, [2]*University of Guelph, Guelph, Ontario, Canada.*

9:55 AM 1146 **Animal productivity and health responses to hind-gut acidosis.**
T. F. Gressley*[1], M. B. Hall[2], and L. E. Armentano[3], [1]*University of Delaware, Newark*, [2]*US Dairy Forage Research Center, Madison, WI*, [3]*University of Wisconsin, Madison.*

10:35 AM 1147 **Bovine endotoxicosis: Does acidosis cause inflammatory responses?**
P. H. Andersen*, *Copenhagen University, Copenhagen, Denmark.*

Author Index

Numbers following names refer to abstract numbers: a number alone indicates an oral presentation, an M prior to the number indicates a Monday poster, a T indicates a Tuesday poster, and a W indicates a Weednesday poster.

The author index is created directly and automatically from the submitted abstracts. If an author's name is typed differently on multiple abstracts, the entries in the author index will reflect these discrepancies. Efforts have been made to make this index consistent; however, error from author entry contributes to inaccuracies.

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Sunday, July 11

Room	8:00 am -12:00 pm	12:00 pm - 1:00 pm	1:00 pm - 5:00 pm	Evening
Exhibit Hall F	Poster/Exhibit Open			
Wells Fargo Theatre				(7:00-8:00 pm) Opening Session
Korbel Ballroom 2-4				(8:00-10:00 pm) Opening Reception
Korbel Ballroom 1abc			Informal Nutrition Symposium: Connecting Nutrition, Biochemistry, Genetics, Physiology and Microbiology to Enhance Our Knowledge in Improving Animal Agriculture	
303	Triennial Growth Symposium: Dietary Regulation of Growth and Development			
304	National Extension Workshop: The Impact of Major Food Policy Shifts on the US Food Supply and its Producers: Animal Welfare Issues		(3:00-5:00 pm) Late-Breaking Abstracts	
401/402	ASAS Western Section Graduate Paper Competition			
405			(1:00-3:00 pm) 2010 and 2011 Program Committee Meeting	
406	Pre-Load Open 7:00 am - 5:00 pm			
407	Speaker Ready Open 7:00 am - 5:00 pm			
501			(2:00-3:00 pm) ADSA Production Division Council Meeting / (3:00-4:00 pm) ADSA Production Division Nominating Committee	
702			(1:00-4:00 pm) FASS Science Policy Committee Meeting	
703			(1:00-4:00 pm) FASS Animal Care Committee Meeting	
704/706		SAD Midday Mixer and Pizza Party		
705	(10:00-11:00 am) SAD Officers and Advisors Meeting / (11:00 am-12:00 pm) SAD Quiz Bowl Officials Meeting		SAD Quiz Bowl #1	SAD Quiz Bowl Final
707	(11:30 am-12:00 pm) SAD Quiz Bowl Seating Test		SAD Quiz Bowl #2	
709		Hospitality Room Open		
712	(7:00-8:00 am) ASAS Membership Committee / (8:30 am-12:30 pm) ASAS Board of Directors		(5:00-6:00 pm) ADSA Dairy Foods Division Council Meeting	

Monday, July 12

Room	7:30 am - 9:30 am	9:30 am - 12:30 pm	12:30 pm - 2:00 pm	2:00 pm - 5:00 pm	Evening
Exhibit Hall F	Poster Presentations	Poster/Exhibit Open			Exhibitor Reception
Korbel Ballroom 1ab		Growth and Development: Regulatory Mechanisms in Growth and Development		Growth and Development: Symposium: Intestinal Development and Growth	
Korbel Ballroom 1cd		Nonruminant Nutrition: Nutrigenomics		Nonruminant Nutrition: Rethinking Equine Nutrition	
Korbel Ballroom 1e		Horse Species 1		Companion Animals: Microbes and Health	
Korbel Ballroom 1f		Production, Management and the Environment: Poultry 1			(5:30-7:00 pm) ASAS Photo Session (1F)
Korbel Ballroom 2a		Ruminant Nutrition-Dairy: Protein and Fat		Dairy Foods: Microbiology and Flavor of Cheese: Impact of Lower Salt-in-Moisture Content of Low Fat and Reduced Sodium Cheeses	
Korbel Ballroom 2b		Ruminant Nutrition-Beef: By-Product Feeds		Ruminant Nutrition-Beef: Additives	
Korbel Ballroom 2c		Nonruminant Nutrition: Amino Acids 1	ASAS Graduate Student Open Forum		(5:30-7:00 pm) ASAS Awards Dinner
Korbel Ballroom 3a		Alpharma Beef Cattle Nutrition Symposium: "Parameterizing" Health and Performance Expectations of Feedlot Cattle		ADSA Southern Section Symposium: Dairy Cattle Grazing in the Southern USA	
Korbel Ballroom 3b		Contemporary and Emerging Issues and International Animal Agriculture Joint Symposium: Global Livestock Production to 2050: Challenges and opportunities		Ruminant Nutrition-Dairy: Calves	
Korbel Ballroom 3c		Production, Management and the Environment: Poultry 2		Nonruminant Nutrition: Health 1	
Korbel Ballroom 4abc		Graduate Student Symposium: Transitions: Preparing for Your Future			(7:00-8:30 pm) ASAS Awards Program

Monday, July 12

Korbel Ballroom 4def		Breeding and Genetics: Feed Intake and Utilization		Breeding and Genetics: Bridging the Gap Between Physiology and Genomics	
301/302		Nonruminant Nutrition: Dietary Fat		Nonruminant Nutrition: Enzymes 1	
303		(9:30-10:15 am) ADSA Southern Section: Graduate Student Paper Competition / (11:00 am-12:00 pm) Teaching/ Undergraduate and Graduate Education 1		Meat Science and Muscle Biology: Fresh Meat Quality and Muscle Biology	
304		Forages and Pastures: Grazing and Forage Management		Lactation Biology: Novel Mechanisms Regulating Milk Secretion and Mammary Involution	
401/402		Food Safety: Probiotics		Animal Health: Immunity, Probiotics, and Health Status	
403/404		Animal Behavior and Well-Being: Animal Welfare Assurance: Science and Application		Small Ruminant: Sheep and Goat Production 1	Presentation by Dr. Roger Beachy, NIFA
405		(9:30 am-12:00 pm) ADSA-ASAS Northeast Section: Graduate Student Paper Competition		Animal Behavior and Well-Being: Poultry 1: Ducks, Layers, and Turkeys	
406	Pre-Load				
407	Speaker Ready				
501/502		National ADSA Dairy Foods Oral: Dairy Foods Oral Student Competition		Dairy Foods: Processing	
503/504		Animal Health-Johne's Disease (JDIP): Basic Biology/Immunology/Vaccine Development		Animal Health-Johne's Disease (JDIP): Epidemiology and Transmission	
505/506		Physiology and Endocrinology: Dairy Cow Synchronization and Fertility		Physiology and Endocrinology: Poultry Physiology	
507		Extension Education 1		Processing and Products	USDA-ARS Staff Update Session

Monday, July 12

701		(10:30 am-12:30 pm) ARPAS Exam	ACAS Annual Meeting	(2:00-4:00 pm) ARPAS Exam	
702					(5:00-7:00 pm) Companion Animal Reception
704		(9:30-10:30 am) ADSA-SAD Judging of Yearbooks, Scrapbooks, Annual Reports			
705		(8:30-9:30 am) SAD Business Meeting / (9:30-10:45 am) Activities Symposium / (11:00 am-12:30 pm) ADSA-SAD Undergraduate Competition: Dairy Foods		(2:00-3:45 pm) ADSA-SAD Undergraduate Competition: Dairy Production	
706		(9:30-10:30 am) ADSA-SAD Interviews for Outstanding Student and Advisor Awards			
707				(2:00-4:30 pm) ADSA-SAD Undergraduate Competition: Original Research	
709		Hospitality Room			
711	(7:30-11:00 am) WSASAS Executive Board Pre-Conference Meeting			(2:00-3:30 pm) Discover Steering Committee	

Tuesday, July 13

Room	7:30 am - 9:30 am	9:30 am - 12:30 pm	12:30 pm - 2:00 pm	2:00 pm - 5:00 pm	Evening
Exhibit Hall F	Poster Presentations	Poster/Exhibit Open			
Korbel Ballroom 1ab		Ruminant Nutrition-Dairy: Forages and Heifers		Ruminant Nutrition-Dairy: Rumen Metabolism	
Korbel Ballroom 1cd		Forages and Pastures: Harvested Forages and Forage Quality		Nonruminant Nutrition: DDGS	
Korbel Ballroom 1ef		Meat Science and Muscle Biology: How does pre- and postnatal muscle development affect meat composition, quality and value?		Nonruminant Nutrition: Models for disease x nutrition evaluation and the impact of nutrition on health, disease, and/or recovery	
Korbel Ballroom 2a		Ruminant Nutrition-Beef: Vitamins and Minerals		Breeding and Genetics: Whole Genome Selection	
Korbel Ballroom 2b		Production, Management and the Environment: Environment 1		Growth and Development: Early Development and Fetal Programming	
Korbel Ballroom 2c		Physiology and Endocrinology: Sperm-Oviduct Interactions in Livestock and Poultry		Forages and Pastures: Environmental impact of forage based livestock production systems	
Korbel Ballroom 3a		Nonruminant Nutrition: Mineral Nutrition		Nonruminant Nutrition: Vitamins and Management	
Korbel Ballroom 3b		Nonruminant Nutrition: Feed Ingredients		Nonruminant Nutrition: Energy and Dietary Fat	
Korbel Ballroom 3c		Animal Behavior and Well-Being: Sow housing, management, and stress		Animal Behavior and Well-Being: Poultry 2: Broilers	
Korbel Ballroom 4abc		Food Safety: Poultry Aspects		Ruminant Nutrition-Beef: Proteins and Carbohydrates	
Korbel Ballroom 4def		Nonruminant Nutrition: Amino Acids 2		Production, Management and the Environment: Dairy 1	
301/302		ARPAS-Ruminant Nutrition Joint Symposium: Nutrition Models -- Where Are We Going in the Next Decade?	ARPAS Business Meeting	(2:00-3:00 pm) ADSA Foundation Awards Presentation: Production / (3:30-5:30 pm) ADSA Production Division Symposium: Dairy products and human health: The Facts	

* Hospitality Room will be closed from 11:30 am to 3:00 pm today to accommodate a scheduled lunch.

Tuesday, July 13

* Hospitality Room will be closed from 11:30 am to 3:00 pm today to accommodate a scheduled lunch.

Room	7:30 am - 9:30 am	9:30 am - 12:30 pm	12:30 pm - 2:00 pm	2:00 pm - 5:00 pm	Evening
303		Immunology and Pathology: Immunity, nutrition, genomics, and gut microbiota		Bioethics: Should Animal Welfare be Law or Market Driven?	
304		Lactation Biology 1		Animal Health: Management, Disease, and Performance	
401/402		Small Ruminant Symposium: "Going, going, gone!" How curtailment of livestock grazing on federal lands could alter the US Sheep Industry		ASAS Cell Biology Symposium: Receptors and Signaling	
403/404		Breeding and Genetics: Crossbreeding		Swine Species	
405		Teaching/Undergraduate and Graduate Education: Teaching Symposium: Surviving Promotion and Tenure with a Teaching Appointment		(2:00-4:00 pm) Small Ruminant: Sheep and Goat Production Session 2 / (4:30-5:00 pm) The ASAS Open Forum	
406	Pre-Load				
407	Speaker Ready				
501/502		(9:30-10:30 am) Danisco International Dairy Science Award Lecture / (10:30-11:30 am) ADSA Foundation Awards Presentation: Foods / (11:30 am -12:30 pm) ADSA Dairy Foods Division Business Meeting		Dairy Foods: Towards a mechanistic understanding of probiotic function in man and animals	
503/504		(9:30-11:05 am) Animal Health Symposium: Accounting for diseased animals in research trials (outliers, treatments, interactions)/ disease induction by treatment? / (11:30 am-12:30 pm) ADSA Production Division Business Meeting		Immunology and Pathology: Poultry Immunology and Diseases	
505/506		Physiology and Endocrinology: Animal Physiology		Physiology and Endocrinology: Neuroendocrinology and Hormone Receptors	

Tuesday, July 13

Room	7:30 am - 9:30 am	9:30 am - 12:30 pm	12:30 pm - 2:00 pm	2:00 pm - 5:00 pm	Evening
507		National ADSA Production MS Oral: Graduate Student Paper Competition - MS Students		National ADSA Production PhD Oral: Graduate Student Paper Competition - PhD Students	(5:00-6:00 pm) FASS Update
705		(8:30-9:30 am) ADSA-SAD Student Business Meeting-Election of Officers / (9:30-11:00 am) Career Roundtable	ADSA Dairy Foods Division Milk Protein & Enzymes Committee	(3:30-4:30 pm) ASAS JAS Forum (Division/Associate Editors and Authors)	
707				(2:30-3:30 pm) ADSA-SAD Committee Meeting - Old and New Officers and Advisors	
704			ADSA-SAD Awards Luncheon	(2:00-3:00 pm) SAD Award and Club Photos	
706					
701			ADSA DF Division Program Planning Lunch	(2:00-4:00 pm) ARPAS Exam	
702			ASAS Foundation Emeritus/Retiree Lunch		
703			ASAS GS Lunch & Learn		
708/710/712			WSASAS Awards Luncheon		
709		Hospitality Room*	Michigan State University Lunch	Hospitality Room*	
711			NE ASAS/ADSA Business Meeting & Awards Lunch		

* Hospitality Room will be closed from 11:30 am to 3:00 pm today to accommodate a scheduled lunch.

Wednesday, July 14

Room	7:30 am - 9:30 am	9:30 am - 10:30 am	10:30 am - 12:30 pm	12:30 pm - 2:00 pm	2:00 pm - 5:00 pm	Evening
Exhibit Hall F	Poster Presentations		Poster/Exhibit Open		Poster/Exhibit Teardown	
Four Seasons Ballroom (1&2)						PSA Awards Banquet
Korbel Ballroom 1ab			ASAS Western Section Symposium: Perinatal Programming of Offspring Quality I: Basic Concepts and Experimental Evidence		ASAS Western Section Symposium: Perinatal Programming of Offspring Quality II: Evidence for impacts of maternal nutrition on livestock production	
Korbel Ballroom 1cd		WPSA Lecture	PSA Business Meeting		PSA Emerging Issues Symposium: Social Sustainability of Egg Production	
Korbel Ballroom 1ef			Ruminant Nutrition-Dairy: Minerals, Vitamins and Misc.		Ruminant Nutrition-Dairy: Dairy 1	
Korbel Ballroom 2a			Production, Management and the Environment: Environment 2		Beef Species Symposium: Upcoming environmental policies and their effects on beef production	
Korbel Ballroom 2b			Ruminant Nutrition-Dairy: Fats and Carbohydrates		Ruminant Nutrition: Beef 1	
Korbel Ballroom 2c			Forages and Pastures: Dairy Forages		Ruminant Nutrition-Beef: Forages and Grazing	
Korbel Ballroom 3a			Growth and Development: Regulation of Adipogenesis and Adipose Tissue Development		Swine Species: Optimizing Swine Production for Lactating Sows and Young Pigs	
Korbel Ballroom 3b			Horse Species 2		Lactation Biology 2	
Korbel Ballroom 3c			Small Ruminant: Sheep Production		Nonruminant Nutrition: Feed Additives	
Korbel Ballroom 4abc			Production, Management and the Environment: Dairy 2		2010 Global Networking Reception	
Korbel Ballroom 4def			Production, Management and the Environment: Beef 1		Production, Management and the Environment: Beef 2	

Wednesday, July 14

Room	7:30 am - 9:30 am	9:30 am - 10:30 am	10:30 am - 12:30 pm	12:30 pm - 2:00 pm	2:00 pm - 5:00 pm	Evening
301/302			Sexed Semen Symposium: Applying Sexed Semen in Cattle		Nonruminant Nutrition: Health 2	
303			Beef Species: Beef Management		CSAS Symposium: Issues in North American Livestock Transport	
304	WSASAS Annual Business Meeting		Animal Health: Respiratory Health, Viruses		Meat Science and Muscle Biology: Impact of pre- and post-slaughter handling on meat quality	
401/402		ASAS Business Meeting	Immunology and Pathology		Companion Animals: Comparative Enrichment: Implications for Health and Behavior	
403/404		ADSA Business Meeting & Open Forum	Breeding and Genetics: Milk and Carcass Composition		Animal Behavior and Well-Being: Dairy, Sheep, and Beef	
406	Pre-Load					
407	Speaker Ready					
405			Teaching/Undergraduate and Graduate Education: Beyond PowerPoint: Use of Technology in the Classroom		Breeding and Genetics: Functional Traits and Fitness	
501/502			Dairy Foods: Cheese		Dairy Foods: Microbiology	
503/504			Dairy Foods: Chemistry-Protein		(2:00-3:30 pm) Dairy Foods: Foods & Products / (3:30-5:00 pm) Teaching/ Undergraduate and Graduate Education 2	
505/506			Physiology and Endocrinology: Hormonal Control of Estrus in Beef Cattle		Physiology and Endocrinology: Sperm Fertility, Embryos and Development	
507			Extension Education 2		Production, Management and the Environment: General	

Wednesday, July 14

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<tr><td>705</td><td></td><td></td><td></td><td>FeedAC Business Meeting</td><td>(4:00-5:00 pm) AMPA Business Meeting</td><td></td></tr>
<tr><td>707</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
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<tr><td>701</td><td></td><td></td><td></td><td></td><td>(2:00-4:00 pm) ARPAS Exam</td><td></td></tr>
<tr><td>702</td><td></td><td></td><td></td><td>WSASAS Executive Committee Post Conference Meeting</td><td></td><td></td></tr>
<tr><td>703</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>708/710/712</td><td></td><td></td><td></td><td></td><td></td><td>AMPA Awards Dinner</td></tr>
<tr><td>709</td><td colspan="5">Hospitality Room</td><td></td></tr>
<tr><td>711</td><td>(6:30-7:30 pm) ASAS-PSA Joint Executive Committee Meeting</td><td></td><td>(11:20 am-12:30 pm) ADSA-ASAS Joint Executive Committee Meeting</td><td></td><td>(4:30-6:00 pm) Johne's Disease Interest Group</td><td></td></tr>
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Thursday, July 15

Room	8:30 am - 11:30 am
301/302	Nonruminant Nutrition: Enzymes 2
304	Physiology and Endocrinology: Feed Intake, Metabolism and Maternal Nutrition
401/402	Horse Species: Pathogenic and Reproductive Dysfunction in Horses Symposium
403/404	Ruminant Nutrition: By-products and supplements
405	International Animal Agriculture: Session 2
406	Pre-Load Open 7:00 am-12:00 pm
407	Speaker Ready Open 7:00 am-12:00 pm
501/502	Ruminant Nutrition: Symposium: Acidosis: New insights into the persistent problem
503/504	Nonruminant Nutrition: Nutrient and Non-Nutrient Sensing and Signaling in the Gastrointestinal Tract
505/506	Food Safety: General Aspects
507	Animal Health: Probiotics, Performance, and Antioxidants

NOTES

Future Meeting Dates

2011
New Orleans, Louisiana
ADSA®-ASAS
July 11–14

2011
St. Louis, Missouri
PSA - AAAP - AVMA
July 16–19

2012
Phoenix, Arizona
ADSA®-ASAS
July 15–19

2012
University of Georgia, Athens
PSA
July 9–12