Sunday, July 15

SYMPOSIA AND ORAL SESSIONS

ASN-ADSA-ASAS Preconference
Regulation of Nutritional Intake and Metabolism
Chairs: James L. Sartin, President Elect, ASAS, and Teresa A. Davis, President Elect, ASN
222AB

8:00 AM		**Opening and Welcome.** J. L. Sartin[1] and T. A. Davis[2], [1]*American Society of Animal Science*, [2]*American Society for Nutrition*.
8:10 AM	1	**Role of the central melanocortin system in appetite regulation and nutrient homeostasis.** B. L. Panaro and R. D. Cone*, *Department of Molecular Physiology and Biophysics, Vanderbilt University School of Medicine, Nashville, TN*.
9:00 AM	2	**The regulation of hepatic glucose uptake in vivo.** A. Cherrington*, *Vanderbilt University School of Medicine, Nashville, TN.*
9:50 AM	3	**Active and reactive amino acid homeostasis during feeding, lactation, and disease.** G. E. Lobley*, *Obesity and Metabolic Health Division, Rowett Institute of Nutrition and Health, University of Aberdeen, Aberdeen, UK*.
10:40 AM		**Break**
11:00 AM	4	**Adipose and endocrine integration of metabolism.** P. E. Scherer*, *UT Southwestern Medical Center, Dallas, TX*.
11:50 AM		**Lunch and Graduate Student Poster Competition.**
1:20 PM	5	**Heat stress and post-absorptive metabolic perturbations.** L. H. Baumgard*[1] and R. P. Rhoads[2], [1]*Iowa State University, Ames*, [2]*Virginia Polytechnic Institute and State University, Blacksburg*.
2:10 PM	6	**Linoleic acid and inflammation: Evidence-based research from human clinical studies.** K. L. Fritsche*[1] and G. H. Johnson[2], [1]*University of Missouri, Columbia*, [2]*Johnson Nutrition Solutions, Kalamazoo, MI*.
3:00 PM		**Break**
3:20 PM	7	**Microbial hydrogen metabolism in colonic health and disease.** H. R. Gaskins*, *University of Illinois, Urbana-Champaign*.
4:10 PM	8	**Characterizing the cellular mechanisms of postprandial thermogenesis in skeletal muscle.** B. A. Henry* and I. J. Clarke, *Department of Physiology, Monash University, Victoria, Australia*.
5:00 PM		**Closing Comments.** J. L. Sartin[1] and T. A. Davis[2], [1]*American Society of Animal Science*, [2]*American Society for Nutrition*.

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Triennial Reproduction Symposium
Impediments to Fertility in Domestic Animals
Chair: Gregory Lewis, USDA-ARS
121AB

8:00 AM		**Introduction**
8:10 AM	9	**The obstacle course to successful establishment of pregnancy in domestic livestock species.** M. D. Utt and M. L. Day*, *Department of Animal Sciences, The Ohio State University, Columbus*.
8:55 AM	10	**Sperm characteristics that limit success of fertilization.** W. L. Flowers*, *North Carolina State University, Raleigh*.
9:40 AM		**Break**

10:00 AM	11	**The ovarian follicular reserve in ruminants: What regulates its formation and size?** J. E. Fortune*, M. Y. Yang, and J. J. Allen, *Cornell University, Ithaca, NY*.
10:45 AM	12	**Influence of follicle characteristics at ovulation on early embryo survival.** T. W. Geary*[1], M. F. Smith[2], M. D. MacNeil[1], M. L. Day[3], G. A. Bridges[4], G. A. Perry[5], F. M. Abreu[3], J. A. Atkins[2], K. G. Pohler[2], E. M. Jinks[3], and C. A. Roberts[1], [1]*USDA-ARS, Fort Keogh, Miles City, MT*, [2]*Division of Animal Sciences, University of Missouri, Columbia*, [3]*Department of Animal Science, Ohio State University, Columbus*, [4]*Department of Animal Science, University of Minnesota, Grand Rapids*, [5]*Department of Animal and Range Sciences, South Dakota State University, Brookings*.
11:30 AM		**L. E. Casida Award Presentation**
12:00 PM		**Lunch**
1:30 PM	13	**Deficiencies in the uterine environment and failure to support embryo development.** G. A. Bridges*, *University of Minnesota, Grand Rapids*.
2:15 PM	14	**Interactions of the embryo, uterus and corpus luteum for sustenance of embryos.** T. R. Hansen*, A. Q. Antoniazzi, J. J. Romero, R. L. Ashley, and R. C. Bott, *Animal Reproduction and Biotechnology Laboratory, Department of Biomedical Sciences, Colorado State University, Fort Collins*.
3:00 PM		**Break**
3:20 PM	15	**Limitations in uterine and conceptus physiology that lead to fetal losses.** J. L. Vallet*, *USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE*.
4:05 PM	16	**The spectrum of factors that impede pregnancy in dairy cows.** R. L. A. Cerri*[1], J. E. P. Santos[2], W. W. Thatcher[2], and J. L. M. Vasconcelos[3], [1]*University of British Columbia, Vancouver, BC, Canada*, [2]*University of Florida, Gainesville*, [3]*Sao Paulo State University, Botucatu, SP, Brazil*.
4:50 PM		**General Discussion**

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Monday, July 16

POSTER PRESENTATIONS

Animal Health I

M1 **Immunological and metabolic responses of Holstein and Jersey cows according to body condition score change prepartum.**
R. C. Chebel, L. G. D. Mendonça, P. R. B. Silva, and J. G. N. Moraes*, *Department of Veterinary Population Medicine, University of Minnesota, St. Paul*.

M2 **Treatment outcomes for clinical mastitis caused by *E. coli* in a Wisconsin dairy herd.**
M. J. Fuenzalida*[1], W. Oliveira[1], J. Gaska[2], and P. L. Ruegg[1], [1]*Department of Dairy Science, University of Wisconsin, Madison*, [2]*Gaska Dairy Health Services, Columbus, WI*.

M3 **Differential expression of the hepatic and adipose transcriptome in peripartal Friesian cows with endometritis.**
H. Akbar*[1], J. M. Khan[1], S. Meier[2], C. Burke[2], S. McDougall[3], M. Mitchell[4,5], S. L. Rodriguez-Zas[1], R. E. Everts[1], H. A. Lewin[1], J. R. Roche[2], and J. J. Loor[1], [1]*University of Illinois, Urbana*, [2]*DairyNZ Limited, Hamilton, New Zealand*, [3]*Cognosco, Animal Health, Morrinsville, New Zealand*, [4]*Liggins Institute, University of Auckland, Auckland, New Zealand*, [5]*University of Queensland Centre for Clinical Research, Brisbane, St. Lucia, Australia*.

M4 **A comparison of two antibiotics on growth performance in beef cattle treated for bovine respiratory disease (BRD).**
N. O. Minton*[1], L. L. Hawkins[2], and M. S. Kerley[1], [1]*University of Missouri, Columbia*, [2]*Bayer HealthCare, Animal Health, Shawnee Mission, KS*.

M5 **Feedback on data entry errors effect on the maintenance of accurate and consistent dairy health records.**
S. K. Giebel*[1], J. R. Wenz[1], S. A. Poisson[1], C. S. Schneider[2], and D. A. Moore[1], [1]*Department of Veterinary Clinical Sciences, Washington State University, Pullman*, [2]*College of Agricultural and Life Sciences, University of Idaho, Moscow*.

M6 **Impact of water and feed deprivation on physiological parameters in steers.**
J. A. Daniel*[1], P. H. Walz[2], J. A. Carroll[3], T. H. Elsasser[4], and B. K. Whitlock[5], [1]*Berry College, Mount Berry, GA*, [2]*Auburn University, Auburn, AL*, [3]*USDA-ARS Livestock Issues Research Unit, Lubbock, TX*, [4]*USDA-ARS Bovine Functional Genomics Laboratory, Beltsville, MD*, [5]*University of Tennessee, Knoxville*.

M7 **Implementation of health data entry protocols effect on time for data management.**
S. K. Giebel*[1], J. R. Wenz[1], S. A. Poisson[1], C. S. Schneider[2], and D. A. Moore[1], [1]*Department of Veterinary Clinical Sciences, Washington State University, Pullman*, [2]*College of Agricultural and Life Sciences, University of Idaho, Moscow*.

M8 **Transcriptome analysis of liver tissue from calves infected with bovine viral diarrhea virus and *Mannheimia haemolytica*.**
R. L. Mills*[1,2], L. Carlos-Valdez[2], L. O. Burciaga-Robles[2], D. Stein[2], D. L. Step[2], R. W. Fulton[2], U. DeSilva[2], and C. R. Krehbiel[2], [1]*Austin Peay State University, Clarksville, TN*, [2]*Oklahoma State University, Stillwater*.

M9 **Incidence of common health disorders in Ontario Holstein cows.**
M. Al-Abri*[1,2], R. Cue[2], S. O. Peters[1], M. De Donato[1], T. Hussain[1], and I. G. Imumorin[1], [1]*Cornell University, Ithaca, NY*, [2]*McGill University, Ste-Anne-de-Bellevue, Canada*.

M10 **Changes in biomarkers of the nitrooxidative stress response and prolactin signal transduction elements to *E. coli* infection in the mammary gland.**
T. H. Elsasser*[1], A. V. Capuco[1], M. Rinaldi[2], and S. Kahl[1], [1]*USDA-ARS, Beltsville, MD*, [2]*Ghent University, Ghent, Belgium*.

M11 **Associations among subclinical hypocalcemia, neutrophil function, and incidence of uterine disease in dairy cows of low or high risk of developing metritis.**
N. Martinez*[1], F. S. Lima[1], R. S. Bisinotto[1], L. F. Greco[1], E. S. Ribeiro[1], F. Maunsell[2], K. N. Galvão[2], C. A. Risco[2], and J. E. P. Santos[1], [1]*Department of Animal Sciences, University of Florida, Gainesville*, [2]*Department of Large Animal Clinical Sciences, University of Florida, Gainesville*.

M12 **Hepatic and peripheral interferon responses to bovine respiratory disease in feedlot steers.**
J. O. Baggerman*, C. A. Gifford, and C. R. Krehbiel, *Oklahoma State University, Stillwater*.

M13 **Meta-analysis of *Trypanosoma* prevalence in livestock in the Americas.**
Z. J. Simoni[1], H. E. Rodulfo[1], M. De Donato*[1,2], M. I. Takeet[3], S. O. Peters[2,4], and I. G. Imumorin[2], [1]*IIBCA, Universidad de Oriente, Cumana, Venezuela*, [2]*Dept. Animal Science, Cornell University, Ithaca, NY*, [3]*Dept. Veterinary Microbiology & Parasitology, Federal University of Agriculture, Abeokuta, Nigeria*, [4]*Dept. Animal Breeding and Genetics, University of Agriculture, Abeokuta, Nigeria*.

M14 **Cytokine production of isolated CD4+ T-cells from high and low immune responder dairy cows during the peripartum period.**
M. A. Paibomesai* and B. Mallard, *University of Guelph, Guelph, Ontario, Canada*.

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M15 **Space allowance influences Holstein bull calf innate immunity after castration.**
L. E. Hulbert[1], M. S. Calvo*[1], M. A. Ballou[2], K. C. Klasing[1], and F. M. Mitloehner[1], [1]*Department of Animal Science, University of California, Davis*, [2]*Animal and Food Sciences, Texas Tech University, Lubbock*.

M16 **Effects of *Bacillus cereus* var. *toyoi* (Toyocerin) on the immune system of calves.**
A. Aris*[1], A. Serrano[1], M. Terré[1], G. Jiménez[3], M. Castillo[3], and A. Bach[1,2], [1]*Department of Ruminant Production, IRTA, Caldes de Montbui, Spain*, [2]*Institució Catalana de Recerca i Estudis Avançats (ICREA), Barcelona, Spain*, [3]*Rubinum SA, Rubí, Spain*.

M17 **Space allowance influences the innate immune responses of Holstein calves during weaning.**
L. E. Hulbert*[1], M. S. Calvo[1], M. A. Ballou[2], K. C. Klasing[1], and F. M. Mitloehner[1], [1]*Department of Animal Science, University of California, Davis*, [2]*Animal and Food Sciences, Texas Tech University, Lubbock*.

M18 **Group-housed Holstein bull calves have decreased innate immune responses compared to individually housed calves after surgical castration.**
L. E. Hulbert[1], M. S. Calvo[1], R. A. Kurzbard*[1], M. A. Ballou[1], K. C. Klasing[1], and F. M. Mitloehner[1], [1]*Department of Animal Science, University of California, Davis*, [2]*Animal and Food Sciences, Texas Tech University, Lubbock*.

M19 **A transient receptor potential channel 4 (TRPC4) gene to study response to gastrointestinal nematode infection in parasite-resistant goats.**
M. M. Corley* and J. Ward, *Virginia State University, Petersburg*.

M20 **Use of selected blood parameters to identify markers of heat-sensitivity in Angus and Romosinuano heifers.**
R. Chaffin*, B. A. Scharf, J. S. Johnson, J. Bryant, D. Kishore, P. A. Eichen, and D. E. Spiers, *University of Missouri, Columbia*.

M21 **Variation in innate immune parameters in Holstein calves is influenced by housing environment and physiological period.**
M. D. Sellers*, D. L. Hanson, A. R. Pepper-Yowell, C. J. Cobb, and M. A. Ballou, *Department of Animal and Food Sciences, Texas Tech University, Lubbock*.

M22 **Intravaginal administration of lactic acid bacteria modulated innate immune responses of periparturient dairy cows.**
Q. Deng, J. F. Odhiambo, T. Lam, S. M. Dunn, and B. N. Ametaj*, *Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada*.

M23 **Intravaginal administration of a mixture of lactic acid bacteria lowered the incidence of clinical diseases in transition dairy cows.**
Q. Deng, J. F. Odhiambo, T. Lam, S. M. Dunn, and B. N. Ametaj*, *Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada*.

M24 **Acute phase response intensity is related to the metabolic and immunologic statuses of early postpartum dairy cattle.**
C. R. Nightingale*, M. D. Sellers, A. R. Pepper-Yowell, D. L. Hanson, C. J. Cobb, B. S. Obeidat, and M. A. Ballou, *Department of Animal and Food Sciences, Texas Tech University, Lubbock*.

M25 **Isolation and analysis of transient receptor potential channel (TRPC) genes in goats: Implications for study of gastrointestinal nematode infection.**
M. M. Corley and J. Ward*, *Virginia State University, Petersburg*.

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Breeding and Genetics
Fertility and Early-Life Traits

M26 **The relationship of herd-average conception rates and calving interval with sire predicted transmitting ability for three fertility traits.**
E. S. Benner and C. D. Dechow*, *Penn State University, University Park*.

M27 **Effect of body condition score at open period on reproductive traits of dairy cows in Hokkaido.**
J. Hirose*, Y. Masuda, and M. Suzuki, *Obihiro University of Agriculture and Veterinary Medicine, Obihiro, Hokkaido, Japan*.

M28 **Cyclicity and fertility of Holstein, Jersey, and crossbred cows in a fall-calving, pasture-based dairy.**
K. Glosson* and S. Washburn, *North Carolina State University, Raleigh*.

M29 **Genomic differences between highly fertile and sub-fertile Holstein dairy heifers.**
A. E. Navarrette*[1], C. A. Gill[1], T. E. Spencer[2], and T. R. Bilby[1,3], [1]*Department of Animal Science, Texas A&M University, College Station*, [2]*Department of Animal Sciences, Washington State University, Pullman*, [3]*Texas Agrilife Research and Extension, Stephenville*.

M30 **The quality and yield of embryos from Holstein dairy cows in relation to inbreeding.**
J. Bezdicek*[1], A. Makarevich[2], R. Holasek[2], E. Kubovicova[2], Z. Hegedusova[2], and F. Louda[2], [1]*Agroresearch Rapotin, Ltd., Vikyrovice, Czech Republic*, [2]*Research Institute for Cattle Breeding, Ltd., Vikyrovice, Czech Republic*.

M31 **Antioxidants in bovine semen cryopreservation.**
M. F. Duarte-Junior, L. K. Hatamoto-Zervoudakis*, J. T. Zervoudakis, P. P. Tsuneda, P. H. D. Gomes, F. M. Wingert, F. A. P. B. Arguello, and W. A. S. Marinho, *Federal University of Mato Grosso, Cuiabá, Mato Grosso, Brazil*.

M32 **Extender supplementation with vitamin E and cryopreservation of bull sperm.**
P. P. Tsuneda, L. K. Hatamoto-Zervoudakis*, J. T. Zervoudakis, L. C. M. Soares, M. F. Duarte-Junior, P. H. D. Gomes, and F. M. Wingert, *Federal University of Mato Grosso, Cuiabá, Mato Grosso, Brazil*.

M33 **Multibreed genetic evaluation of calving ease and birth weight using a threshold-linear model in Brangus.**
S. Tsuruta*, A. H. Nelson, J. K. Bertrand, and I. Misztal, *University of Georgia, Athens*.

M34 **Expression profiling of testicular sense and antisense RNA transcripts of Brahman bulls.**
K. K. Adams*[1], L. R. Chenault[1], J. Valenta[1], R. N. Vaughn[1], A. K. Torres[1], K. J. Kochan[1], T. H. Welsh[1], R. D. Randel[2], F. M. Rouquette[2], A. D. Herring[1], and P. K. Riggs[1], [1]*Texas A&M University, College Station*, [2]*Texas AgriLife Research, Overton*.

M35 **Model comparison for genetic parameter estimation of birth and weaning weight traits in beef cattle.**
S. O. Peters*[1,5], K. Kizilkaya[2,3], D. J. Garrick[2], R. L. Fernando[2], E. J. Pollak[4], M. De Donato[1,6], E. Chaffee[1], T. Hussain[7], and I. G. Imumorin[1], [1]*Cornell University, Ithaca, NY*, [2]*Iowa State University, Ames*, [3]*Adnan Menderes University, Aydin, Turkey*, [4]*US Meat Animal Research Center, Clay Center, NE*, [5]*Federal University of Agriculture, Abeokuta, Nigeria*, [6]*Universidad de Oriente, Cumana, Venezuela*, [7]*University of Veterinary and Animal Sciences, Lahore, Pakistan*.

M36 **Genetic parameters of the reproductive traits in Nelore beef cattle.**
C. C. P. Paz*[1,2], H. L. Moreira[2], M. E. Buzanskas[3], L. El Faro[1], R. B. Lôbo[2,4], and D. P. Munari[3], [1]*SAA/APTA, Ribeirão Preto, SP, Brazil*, [2]*USP/FMRP, Ribeirão Preto, SP, Brazil*, [3]*UNESP/FCAV, Jaboticabal, SP Brazil*, [4]*ANCP, Ribeirão Preto, SP, Brazil*.

M37 **Genetic trends for growth-related traits and calving ease of Simmental beef cattle.**
H. M. Saad*[1], W. Shafer[2], and R. M. Enns[1], [1]*Department of Animal Sciences, Colorado State University, Fort Collins*, [2]*American Simmental Association, Bozeman, MT*.

M38 **Estimates of genetic parameters for female fertility traits of Canadian Simmentals.**
J. Jamrozik*[1], S. McGrath[2], R. A. Kemp[2], B. Holmquist[3], and S. P. Miller[1], [1]*CGIL, Dept. of Animal and Poultry Science, University of Guelph, Guelph, ON, Canada*, [2]*RAK Genetic Consulting Ltd., Lethbridge, AB, Canada*, [3]*Canadian Simmental Association, Calgary, AB, Canada*.

M39 **Polymorphisms in FSH-β ESR and BF genes and their relationship with reproductive traits in Yorkshire pigs.**
C. Liu[1], J. Shen[1], S. Zhu[1], W. Shi[2], and Y. Yu*[1], [1]*China Agricultural University, Beijing, China*, [2]*Animal Husbandry and Veterinary Station of Beijing, Beijing, China*.

M40 **Genetic parameters for lifetime number of piglets born alive and length of productive life using a linear censored model.**
C. Y. Chen*[1], A. C. Clutter[2], and S. Tsuruta[3], [1]*Newsham Choice Genetics, Chesterfield, MO*, [2]*Agricultural Research Division, University of Nebraska, Lincoln*, [3]*Department of Animal and Dairy Science, University of Georgia, Athens*.

M41 **Genome-wide association study of age at puberty in swine.**
J. F. Schneider*, D. J. Nonneman, R. T. Wiedmann, and G. A. Rohrer, *USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE*.

M42 **Survival in crossbred lambs: Individual, maternal, heterosis, and breed effects.**
V. C. Ferreira*[1,2], D. L. Thomas[1], and G. J. M. Rosa[1], [1]*University of Wisconsin-Madison, Madison*, [2]*Universidade Federal de Minas Gerais, Belo Horizonte, Minas Gerais, Brazil*.

M43 **Efficiency of breeding Pantaneiro bulls by libido test.**
J. R. B. Sereno*[1], V. G. Ueno[2], C. H. Bucher[3], U. G. P. Abreu[4], R. S. Juliano[4], and J. V. Malaquias[1], [1]*Embrapa Cerrados, Planaltina, DF, Brazil*, [2]*Centro Paula Souza, Adamantina, SP, Brazil*, [3]*Med. Vet. Autônomo, Campo de Goytacazes, RJ, Brazil*, [4]*Embrapa Pantanal, Corumbá, MS, Brazil*.

Companion Animals

M44 **Vitamin E and seminal quality in Rottweiler dogs.**
L. K. Hatamoto-Zervoudakis*[1], C. A. Baptista-Sobrinho[3], M. Nichi[2], A. K. S. Cavalcante[4], V. H. Barnabé[2], R. C. Barnabé[2], and C. N. M. Cortada[5], [1]*Federal University of Mato Grosso, Cuiabá, Brazil*, [2]*University of São Paulo, São Paulo, Brazil*, [3]*Brazilian Army, Osasco, São Paulo, Brazil*, [4]*Federal University of Bahia Reconcavo, Cruz das Almas, Brazil*, [5]*Tecpar, Curitiba, Brazil*.

M45 **Proximate analysis of commercially available whole prey for small captive exotic cats.**
K. R. Kerr*[1], L. M. Garner[2], and K. S. Swanson[1,2], [1]*Division of Nutritional Sciences, University of Illinois, Urbana*, [2]*Department of Animal Sciences, University of Illinois, Urbana*.

Draft

M46 **In vitro digestion characteristics of expanded porkskin- and rawhide-based chews.**
S. Hooda*[1], L. G. Ferreira[1], L. L. Bauer[1], G. C. Fahey[1], M. A. Latour[2], and K. S. Swanson[1], [1]*Department of Animal Sciences, University of Illinois, Urbana*, [2]*Department of Animal Science, Purdue University, West Lafayette, IN*.

Dairy Foods

M47 **Use of caseinomacropeptide index as indicator of adulteration of milk powder in Brazil.**
M. O. Leite, M. C. P. P. Oliveira*, L. M. Fonseca, M. M. O. P. Cerqueira, M. R. Souza, C. F. A. M. Penna, and T. Rosa, *Department of Food Technology and Inspection, Veterinary School, Universidade Federal de Minas Gerais (UFMG), Belo Horizonte, Minas Gerais, Brazil*.

M48 **Effects of vacuum-deaeration on reconstituted milk flavor made from whole milk powder.**
H. J. Kang*, Y. K. Shin, and S. C. Baick, *Institute of Dairy Food Research, Seoul Dairy Cooperative, Ansansi, Kyunggi, South Korea*.

M49 **Evaluating the efficacy of a typical CIP protocol for cleaning membrane biofilms under in vitro conditions.**
D. Singh* and S. Anand, *Dairy Science Department, Midwest Dairy Foods Research Center, South Dakota State University, Brookings*.

M50 **Effect of transglutaminase treatment on the functionality of MPC and MCC: Process cheese product slice formulations.**
P. Salunke*, C. Marella, and L. E. Metzger, *Dairy Science Department, Midwest Dairy Foods Research Center, South Dakota State University, Brookings*.

M51 **Radio frequency dielectric heating treatment of NDM affects whey protein nitrogen index and solubility.**
M. Michael[1], C. Chen[1], R. Phebus[1], K. Schmidt*[1], H. Thippareddi[2], and J. Subbiah[2], [1]*Kansas State University, Manhattan*, [2]*University of Nebraska, Lincoln*.

M52 **Effect of transglutaminase treatment on the functionality of MPC and MCC. III. Imitation mozzarella cheese formulations.**
P. Salunke*, C. Marella, and L. E. Metzger, *Dairy Science Department, Midwest Dairy Foods Research Center, South Dakota State University, Brookings*.

M53 **Effect of transglutaminase treatment on the functionality of MPC and MCC: Process cheese product loaf formulations.**
P. Salunke*, C. Marella, and L. E. Metzger, *Dairy Science Department, Midwest Dairy Foods Research Center, South Dakota State University, Brookings*.

M54 **Influence of fat replacement by inulin on rheological properties and kinetics of milk coagulation and syneresis of milk gels.**
O. Arango, H. M. Taterka*, A. J. Trujillo, B. Guamis, and M. Castillo, *Centre Especial de Recerca Planta de Tecnologia dels Aliments (CERPTA), Departament de Ciència Animal i dels Aliments, Facultat de Veterinària, Universitat Autònoma de Barcelona, Bellaterra, Barcelona, Spain*.

M55 **Effects of season and locality on amino acid composition of raw milk in dairy cows.**
J. X. Zhang[1,2], J. Q. Wang*[1], Y. X. Yang[1], D. P. Bu[1], P. Sun[1], L. Y. Zhou[1], Q. J. Luo[2], and J. H. Yang[1], [1]*Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*, [2]*Xinjiang Agricultural University, Urumqi, China*.

M56 **Qualitative analysis of fatty acids variation in milk of different farms in China.**
J. H. Yang, J. Q. Wang*, Y. X. Yang, D. P. Bu, P. Sun, L. Y. Zhou, T. J. Yuan, and J. X. Zhang, *Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*.

M57 **Qualitative identification of cow, buffalo, and yak milks using near infrared spectroscopy (NIRS).**
J. H. Yang, J. Q. Wang*, Y. X. Yang, D. P. Bu, P. Sun, L. Y. Zhou, T. J. Yuan, and J. X. Zhang, *Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*.

M58 **Transfer of conjugated linoleic acid from milk to ice cream.**
G. A. Gagliostro*[1], L. E. Antonacci[1], G. Genero[1], M. R. Williner[2], and C. A. Bernal[2], [1]*INTA, Balcarce, Buenos Aires, Argentina*, [2]*UNL, Sante Fé, Argentina*.

M59 **Assessment of adulteration by urea addition to milk by Fourier transform infrared methodology (FTIR).**
M. C. P. P. Oliveira*, R. S. Conrrado, L. M. Fonseca, M. M. O. P. Cerqueira, and M. O. Leite, *Department of Food Technology and Inspection, School of Veterinary Medicine, Universidade Federal de Minas Gerais (UFMG), Belo Horizonte, Brazil*.

M60 **Freezing point of raw milk by Fourier transform infrared methodology (FTIR).**
R. S. Conrrado, M. C. P. P. Oliveira*, L. M. Fonseca, L. R. Borges, M. M. O. P. Cerqueira, M. O. Leite, R. Rodrigues, M. R. Souza, and C. F. A. M. Penna, *Department of Food Technology and Inspection, School of Veterinary Medicine, Universidade Federal de Minas Gerais (UFMG), Belo Horizonte, Brazil*.

Draft

M61 **Identification of a high γ-aminobutyric acid-producing *Lactobacillus plantarum* from traditional dairy products in Inner Mongolia of China.**
Y. Guo[2], Y. Shan[1], C. Man[1], S. Yang[2], Y. Xue[2], Y. Liu[2], X. Dong[2], J. Wang[2], M. Guo*[3], and Y. Jiang[1,2], [1]*National Dairy Engineering and Technology Research Center, Northeast Agricultural University, Harbin, Heilongjiang, China*, [2]*Department of Food Science, Northeast Agricultural University, Harbin, Heilongjiang, China*, [3]*Department of Nutrition and Food Sciences, The University of Vermont, Burlington*.

M62 **Whey protein isolate affects cysteine content and gel quality of yogurt.**
S. Bala and K. Schmidt*, *Kansas State University, Manhattan*.

Forages and Pastures I

M63 **Body growth and first-lactation milk production of pregnant Holstein heifers reared on pasture or conventional diets.**
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, Boonesboro*.

M64 **Antioxidant activity and blood parameters in early weaned calves fed yeasts and fermented apple pomace.**
C. Rodríguez-Muela*, P. Mancillas-Flores, C. Arzola, D. Díaz-Plascencia, O. Viramontes, G. Corral, A. Grado-Ahuir, and A. Ramírez-Godínez, *Universidad Autonoma de Chihuahua, Chihuahua, México*.

M65 **Use of yeasts and fermented apple pomace in the diet of early weaned calves.**
P. Mancillas-Flores*, C. Rodríguez-Muela, C. Arzola, D. Díaz-Plascencia, A. Grado-Ahuir, O. Viramontes, A. Flores, and A. Ramírez-Godínez, *Universidad Autonoma de Chihuahua, Chihuahua, México*.

M66 **Performance and carcass traits of steers grazing annual ryegrass supplemented with increasing levels of flaxseed.**
N. Fanego[1,2], L. B. Pouzo[2,4], F. J. Santini[1], J. Killefer[5], and E. Pavan*[1], [1]*Unidad Integrada Balcarce (INTA, EEA Balcarce-UNMdP, FCA), Balcarce, Bs. As., Argentina*, [2]*Comisión Investigaciones Científicas, Buenos Aires, Argentina*, [3]*Universidad Nacional de La Plata, La Plata, Buenos Aires, Argentina*, [4]*Consejo Nacional de Investigaciones Científicas y Tecnologícas, Argentina*, [5]*Oregon State University, Corvallis*.

M67 **Evaluating grazing performance and forage quality differences between AC-Saltlander green wheatgrass (*Elymus hoffmannii*) and smooth bromegrass (*Bromus inermis*).**
A. D. Iwaasa*, H. Steppuhn, and E. Birkedal, *Semiarid Prairie Agricultural Research Centre, Agriculture and Agri-Food Canada, Swift Current, Saskatchewan, Canada*.

M68 **Continuous versus rotational stocking of rye and ryegrass pastures at different stocking rates and forage allowance.**
F. Rouquette*, J. Kerby, G. Nimr, and K. Norman, *Texas AgriLife Research and Extension Center, Overton*.

M69 **Improving calf performance by extending the grazing season with warm season grasses and brassica forages.**
S. J. Filley* and J. Hunter, *Oregon State University, Corvallis*.

M70 **beef steer performance when grazing native warm season grasses.**
H. T. Boland[1,2], B. J. Rude*[2], J. A. Martin[3], S. K. Riffell[3], and L. W. Burger[3], [1]*Prairie Research Unit, Mississippi Agricultural and Forestry Experiment Station, Prairie*, [2]*Department of Animal and Dairy Sciences, Mississippi State University, Mississippi State*, [3]*Department of Wildlife, Fisheries and Aquaculture, Mississippi State University, Mississippi State*.

M71 **Animal performance on pastures managed at two forage heights to produce grass finished beef.**
M. J. Baker*[1], M. L. Thonney[1], L. O. Tedeschi[2], G. Jacimovski[1], and L. M. Furman[1], [1]*Cornell University, Ithaca, NY*, [2]*Texas A&M University, College Station*.

M72 **Nutritive value of plants and milk production from crossbreed cows grazing Tanzania guinea grass subjected to rotational stocking managements.**
M. L. P. Lima*[1], F. F. Simili[1], A. Giacomini[2], C. C. P. Paz[1], L. C. Roma[1], and E. G. Ribeiro[2], [1]*SAA Agencia Paulista de Tecnologia dos Agronegocios APTA, Ribeirao Preto, Sao Paulo, Brazil*, [2]*Instituto de Zootecnia, Nova Odessa, Sao Paulo, Brazil*.

M73 **Sward structural characteristics, herbage accumulation of Tanzania guinea grass subjected to rotational stocking managements.**
M. L. P. Lima*[1], F. F. Simili[1], A. Giacomini[2], C. C. P. Paz[1], L. C. Roma[1], and E. G. Ribeiro[2], [1]*SAA Agencia Paulista de Tecnologia dos Agronegocios APTA, Ribeirao Preto, Sao Paulo Brazil*, [2]*Instituto de Zootecnia, Nova Odessa, Sao Paulo, Brazil*.

M74 **Simulation of the effect of stocking rate on forage harvest efficiency under New Zealand intensive grazing systems.**
P. Gregorini*[1], A. J. Romera[1], J. R. Galli[2], P. C. Beukes[1], and H. H. Fernandez[3], [1]*DairyNZ, Hamilton, New Zealand*, [2]*Facultad de Ciencias Agrarias, Universidad Nacional de Rosario, Rosario, Santa Fe, Argentina*, [3]*Instituto Nacional de Tecnología Agropecuaria, Balcarce, Buenos Aires, Argentina*.

Draft

M75 **Nitrogen fertilizer management to improve forage production in south-central Vietnam.**
K. C. McRoberts[1], D. Parsons[2], J. H. Cherney[1], Q. M. Ketterings[1], and D. J. R. Cherney*[1], [1]*Cornell University, Ithaca, NY*, [2]*University of Tasmania, Hobart, Tasmania, Australia*.

M76 **Anatomy and histochemistry of lignin in *Festulolium* and its progenitors.**
J. M. Vargas-Romero[1], H. A. Zavaleta-Mancera[2], S. S. González-Muñoz*[2], J. Burgueño-Ferreira[3], M. Meneses-Mayo[2], and B. Alarcón-Zúñiga[4], [1]*Universidad Autónoma Metropolitana-Iztapalapa, México D. F., México*, [2]*Colegio de Postgraduados, Montecillo, Estado de México, México*, [3]*CIMMYT, Estado de México, México*, [4]*Universidad Autónoma Chapingo, Chapingo, Estado de México, México*.

M77 **The n-alkane technique provides a reliable estimate of fescue and clover composition in mixed forages.**
N. Vargas Jurado*, A. E. Tanner, S. R. Blevins, H. M. McNair, and R. M. Lewis, *Virginia Polytechnic Institute and State University, Blacksburg*.

M78 **Assessment of stockpiling methods to increase late summer and early fall forage biomass.**
A. L. Hickman*, A. O. Abaye, B. F. Tracy, C. D. Teutsch, and D. A. Fiske, *Virginia Polytechnic Institute and State University, Blacksburg*.

M79 **Soil nutrients in tall fescue (*Festuca arundinacea* L.) paddocks managed under different outdoor hog systems.**
S. Pietrosemoli*[1] and J. T. Green[2], [1]*Animal Science Department, North Carolina State University, Raleigh*, [2]*Crop Science Department, North Carolina State University, Raleigh*.

M80 **Effect of outdoor swine management systems on tall fescue (*Festuca arundinacea* L.) ground cover and animal performance.**
S. Pietrosemoli*[1] and J. T. Green[2], [1]*Animal Science Department, North Carolina State University, Raleigh*, [2]*Crop Science Department, North Carolina State University, Raleigh*.

M81 **Effect of outdoor swine management systems on the botanical composition of tall fescue (*Festuca arundinacea*) paddocks.**
S. Pietrosemoli*[1], J.-M. Luginbuhl[2], and J. T. Green[2], [1]*Animal Science Department, North Carolina State University, Raleigh*, [2]*Crop Science Department, North Carolina State University, Raleigh*.

M82 **Endophyte-infected fescue seed causes constriction of the palmar and uterine arteries in pregnant mares.**
K. J. McDowell*, M. A. Stickney, E. Delaney, and D. A. Hestad, *University of Kentucky, Lexington*.

M83 **Consumption of endophyte-infected tall fescue seed causes constriction of the palmar artery and vein but does not alter estradiol, progesterone, or estrous cycle length in nonpregnant mares.**
D. A. Hestad* and K. J. McDowell, *University of Kentucky, Lexington*.

M84 **Changes in bovine vascular contraction and constriction relative to time off endophyte-infected tall fescue.**
J. R. Bussard*[1], G. E. Aiken[3], J. R. Strickland[3], K. R. Brown[3], B. M. Goff[1], A. P. Foote[2], and J. L. Klotz[3], [1]*Department of Plant and Soil Sciences, University of Kentucky, Lexington*, [2]*Department of Animal and Food Sciences, University of Kentucky, Lexington*, [3]*USDA-ARS, FAPRU, Lexington, KY*.

M85 **Lateral saphenous vein responses to serotonergic and α-adrenergic receptor agonists increase with time off endophyte-infected tall fescue.**
J. L. Klotz*[1], J. R. Bussard[2], G. E. Aiken[1], A. P. Foote[3], D. L. Harmon[3], K. R. Brown[1], B. M. Goff[2], and J. R. Strickland[1], [1]*USDA-ARS, Forage-Animal Production Research Unit, Lexington, KY*, [2]*Department of Plant and Soil Sciences, University of Kentucky, Lexington*, [3]*Department of Animal and Food Sciences, University of Kentucky, Lexington*.

M86 **Validation of a housekeeping gene for use in bovine vascular gene expression studies.**
J. L. Klotz*[1], K. R. Brown[1], J. C. Matthews[2], J. A. Boling[2], and J. R. Strickland[1], [1]*USDA-ARS, Forage-Animal Production Research Unit, Lexington, KY*, [2]*Department of Animal and Food Sciences, University of Kentucky, Lexington*.

M87 **Tiller appearance in pastures of Guinea grass 'Tanzania' managed with different frequencies and defoliation severities.**
D. Nascimento Júnior*[1], A. M. Zanine[2], B. M. L. Sousa[1], and W. L. Silva[3], [1]*Univsersidade Federal de Viçosa, Viçosa, MG, Brazil*, [2]*Universidade Federal do Mato Grosso, Rondonópolis, MT, Brazil*, [3]*Universidade Estadual Paulista, Jaboticabal, SP, Brazil*.

M88 **Aerial tiller density in pastures *Pennisetum purpureum* submitted to different post-grazing heights.**
B. M. L. Sousa, D. Nascimento Júnior*, H. C. F. Monteiro, F. C. Gomes, C. Z. Assis, and C. S. Almeida, *Universidade Federal de Viçosa, Viçosa, MG, Brazil*.

M89 **Tiller density stability of Piatâ palisadegrass swards deferred with different initial heights.**
B. M. L. Sousa[1], D. Nascimento Júnior*[1], M. E. R. Santos[2], H. H. Vilela[1], M. C. T. Silveira[3], G. O. Rocha[1], B. D. Faria[1], and C. A. S. Freitas[1], [1]*Univsersidade Federal de Viçosa, Viçosa, MG, Brazil*, [2]*Faculdade de Medicina Veterinaria e Zootecnia, Uberlândia, MG, Brazil*, [3]*Empresa Brasileira de Pesquisa Agropecuária - Pecuária Sul, Bagé, RS, Brazil*.

M90 **Tiller density in Piatâ palisadegrass deferred in different seasons and initial heights.**
B. M. L. Sousa[1], D. Nascimento Júnior*[1], H. H. Vilela[1], M. E. R. Santos[2], C. Z. Assis[1], G. O. Rocha[1], and B. D. Faria[1], [1]*Univsersidade Federal de Viçosa, Viçosa, MG, Brazil*, [2]*Faculdade de Medicina Veterinaria e Zootecnia, Uberlândia, MG, Brazil*.

Draft

M91 **Animal productivity on brachiaria grass deferred at different heights[1].**
M. C. T. Silveira[1], D. M. Fonseca[2], D. Nascimento Júnior*[2], M. E. R. Santos[3], V. M. Gomes[2], F. K. Gomes[2], V. L. N. Brandâo[2], G. O. Rocha[2], B. M. L. Sousa[2], A. Deus[2], R. L. Albino[2], L. S. Moura[2], and G. A. Borges[2], [1]*CPPSU-Embrapa Pecuária Sul, Bagé, RS, Brazil*, [2]*Universidade Federal de Viçosa, Viçosa, MG, Brazil*, [3]*Faculdade de Medicina Veterinaria e Zootecnia-UFU, Uberlândia, MG, Brazil*.

M92 **The effect of cutting at different stages of maturity on yield and quality of nine forage oat varieties in the peace region of Alberta.**
T. A. Omokanye*[1] and K. S. Gill[2], [1]*Peace Country Beef and Forage Association, Fairview, Alberta, Canada*, [2]*Smoky Applied Research and Demonstration Association, Falher, Alberta, Canada*.

Graduate Student Competition:
ADSA Dairy Foods Division Graduate Poster Competition
Chair: Stephanie Clark, Iowa State University

M93 **Structural properties of milk protein concentrate (MPC) dispersions and emulsions as influenced by presence of small molecule components.**
Y. Liang*[1,2], H. Patel[1], L. Matia-Merino[2], A. Ye[3], and M. Golding[2,3], [1]*Fonterra Research Centre, Palmerston North, New Zealand*, [2]*Institute of Food, Nutrition and Human Health, Massey University, Palmerston North, New Zealand*, [3]*Riddet Institute, Massey University, Palmerston North, New Zealand*.

M94 **Application of bixin as an alternative colorant for Cheddar cheese.**
X. Li*, T. J. Smith, and M. A. Drake, *North Carolina State University, Raleigh*.

M95 **Cold enzymatic bleaching of fluid whey and retentate.**
R. E. Campbell* and M. A. Drake, *North Carolina State University, Raleigh*.

M96 **The effect of milk pasteurization temperature on the bleaching of fluid whey.**
E. Kang* and M. A. Drake, *North Carolina State University, Raleigh*.

M97 **The effect of acidification of retentate on the flavor of spray-dried whey protein concentrate.**
C. W. Park*[1], E. Bastian[2], B. Farkas[1], and M. A. Drake[1], [1]*North Carolina State University, Raleigh*, [2]*Glanbia Nutritionals, Twin Falls, ID*.

M98 **Sensory properties and composition of permeate and permeate fractions.**
K. Frankowski* and M. A. Drake, *North Carolina State University, Raleigh*.

M99 **Effect of SO-TEC clear whey on physico-chemical characteristics of Cheddar cheese and its whey.**
A. C. Biswas* and L. E. Metzger, *Dairy Science Department, Midwest Dairy Foods Research Center, South Dakota State University, Brookings*.

M100 **Effectiveness of ultrasonication in inactivating spores of *Bacillus* spp. in skim milk.**
S. Khanal*[1], S. Anand[1], and K. Muthukumarappan[2], [1]*Midwest Dairy Foods Research Center, Dairy Science Department, South Dakota State University, Brookings*, [2]*Agricultural and Biosystems Engineering Department, South Dakota State University, Brookings*.

M101 **Screening of different enzymes for modification of the enzyme cleaning step of an existing membrane CIP protocol.**
D. Singh* and S. Anand, *Dairy Science Department, Midwest Dairy Foods Research Center, South Dakota State University, Brookings*.

Graduate Student Competition:
ADSA Production Poster Competition, MS Division
Chair: Barry Bradford, Kansas State University

M102 **Meta-analysis: Impact of corn silage harvest practices on intake, digestion, and milk production by dairy cows.**
L. F. Ferraretto* and R. D. Shaver, *University of Wisconsin-Madison, Madison*.

M103 **Response to different concentrations and sources of dietary protein on blood urea nitrogen concentrations and plasma amino acid utilization for milk production.**
I. P. Acharya*, D. J. Schingoethe, K. F. Kalscheur, and D. P. Casper, *South Dakota State University, Brookings*.

Draft

M104 **Effects of adjustable and stationary fans with misters on core body temperature and resting behavior of lactating dairy cows in a semi-arid climate.**
S. D. Anderson*[1], B. J. Bradford[2], J. P. Harner[2], C. B. Tucker[3], J. D. Allen[1], L. W. Hall[1], S. Rungruang[1], E. Rajapaksha[3], R. J. Collier[1], and J. F. Smith[1], [1]*The University of Arizona, Tucson*, [2]*Kansas State University, Manhattan*, [3]*University of California, Davis*.

M105 **Evaluation of fc receptor gene variants in cow genomic DNA.**
J. Williams* and M. Worku, *North Carolina Agricultural and Technical State University, Greensboro, North Carolina*.

M106 **Quantitative calcium determination from an ashed feed sample.**
D. J. LaMay*, J. L. Squire, K. D. Baldock, and D. L. Smith, *Eastern New Mexico University, Portales*.

M107 **Cow comfort in dry lots: Lameness, leg injuries and lying times on dairy farms in Texas and New Mexico.**
A. K. Barrientos*[1], D. M. Weary[1], E. Galo[2], and M. A. G. von Keyserlingk[1], [1]*Animal Welfare Program, University of British Columbia, Vancouver, British Columbia, Canada*, [2]*Novus International Inc., St. Louis, MO*.

M108 **The effect of temperature on performance of Keto-Test strips.**
J. Shire*[1], J. L. Gordon[2], and E. L. Karcher[1], [1]*Department of Animal Science, Michigan State University, East Lansing*, [2]*Department of Population Medicine, University of Guelph, Guelph, Ontario, Canada*.

M109 **Effects of prepartum grouping strategy on immune parameters of peripartum dairy cows.**
P. R. B. Silva*[1,2], J. G. N. Moraes[1,2], L. G. D. Mendonça[1], A. A. Scanavez[1], G. Nakagawa[1], M. I. Endres[2], M. A. Ballou[3], and R. C. Chebel[1], [1]*Department of Veterinary Population Medicine, University of Minnesota, St. Paul*, [2]*Department of Animal Science, University of Minnesota, St. Paul*, [3]*Department of Animal and Food Sciences, Texas Tech University, Lubbock*.

M110 **Detection of clinical and subclinical mastitis using reticulorumen temperatures.**
A. E. Sterrett*, K. N. Brock, B. I. Kiser, J. D. Clark, D. L. Ray, and J. M. Bewley, *University of Kentucky*.

Graduate Student Competition:
ADSA Production Poster Competition, PhD Division
Chair: Barry Bradford, Kansas State University

M111 **Effects of energy supplementation for pasture forages on in vitro ruminal fermentation in continuous cultures.**
C. T. Noviandi*[1], M. N. McDonald[1], D. R. ZoBell[1], J.-S. Eun[1], M. D. Peel[2], and B. L. Waldron[2], [1]*Department of Animal, Dairy, and Veterinary Sciences, Utah State University, Logan*, [2]*Forage and Range Research Laboratory, USDA-ARS, Logan, UT*.

M112 **Evaluation of feed delivery methods for prepubertal dairy heifers during the growing period.**
T. S. Dennis*, J. E. Tower, and T. D. Nennich, *Purdue University, West Lafayette, IN*.

M113 **Prediction of pregnancy outcome using machine learning algorithms.**
S. Shahinfar*[1], K. Weigel[1], D. Page[2], J. Gunter[1], V. Cabrera[1], and P. Fricke[1], [1]*Department of Dairy Science, University of Wisconsin-Madison, Madison*, [2]*Department of Biostatistics and Medical Informatics, and Department of Computer Science, University of Wisconsin-Madison, Madison*.

M114 **Genes for lysine catabolism in lactating dairy cows are responsive to postruminal lysine supply.**
H. A. Tucker*[1], M. D. Hanigan[2], J. Escobar[3], P. H. Doane[4], and S. S. Donkin[1], [1]*Department of Animal Sciences, Purdue University, West Lafayette, IN*, [2]*Department of Dairy Science, Virginia Polytechnic Institute and State University, Blacksburg*, [3]*Department of Animal and Poultry Sciences, Virginia Polytechnic Institute and State University, Blacksburg*, [4]*Archer Daniels Midland Company, Decatur, IL*.

M115 **Evaluation of rumen protected lysine supplementation to lactating dairy cows consuming increasing amounts of DDGS.**
H. A. Paz*[1], M. de Veth[2], R. Ordway[2], and P. J. Kononoff[1], [1]*University of Nebraska-Lincoln, Lincoln*, [2]*Balchem Corp., New Hampton, NY*.

M116 **Integrating nutritional and reproductive models to improve reproductive efficiency in dairy cattle.**
S. L. Shields*[1], H. Woelders[2], M. Boer[2,3], C. Stötzel[4], S. Röeblitz[4], J. Plöntzke[4], and J. P. McNamara[1], [1]*Department of Animal Sciences, Washington State University, Pullman*, [2]*Animal Breeding and Genomics Centre, Wageningen UR Livestock Research, Lelystad, the Netherlands*, [3]*Adaptation Physiology Group, Department of Animal Sciences, Wageningen University, Wageningen, the Netherlands*, [4]*Computational Systems Biology Group, Zuse Institute Berlin, Berlin, Germany*.

M117 **Variation of mucosal innate immune genes expression in the gastrointestinal tract of dairy calves fed with or without calf starter during weaning transition.**
N. Malmuthuge*, M. Oba, and L. L. Guan, *University of Alberta, Edmonton, AB, Canada*.

Draft

M118 **Web forums as a method for engagement on contentious issues in dairying: Should dairy calves be separated from the cow within the first few hours after birth?**
B. A. Ventura*, M. A. G. von Keyserlingk, C. A. Schuppli, and D. M. Weary, *Animal Welfare Program, Faculty of Land and Food Systems, University of British Columbia, Vancouver, BC, Canada*.

M119 **A cluster analysis to describe profitability on Wisconsin dairy farms.**
M. Dutreuil*[1], V. E. Cabrera[1], R. Gildersleeve[2], C. A. Hardie[1], and M. Wattiaux[1], [1]*University of Wisconsin-Madison, Madison*, [2]*University of Wisconsin Extension, Dodgeville*.

Growth and Development I

M120 **Effect of protein supplementation in the last trimester of gestation in Nellore cows on subsequent growth of their bull calves submitted or not submitted to creep-feeding.**
F. M. da Rocha[3], A. V. Pires[2], R. Sartori[2], D. D. Nepomuceno[2], M. V. Biehl*[3], I. Susin[2], E. M. Ferreira[2], M. V. C. Ferraz Junior[3], J. R. S. Goncalves[4], L. H. Cruppe[1], and M. L. Day[1], [1]*The Ohio State University, Columbus*, [2]*University of Sao Paulo, Piracicaba, SP, Brazil*, [3]*University of Sao Paulo, Pirassununga, SP, Brazil*, [4]*Experimental Station Hildegard Georgina Von Pritzelwitz, Londrina, PR, Brazil*.

M121 **Protein supplementation of Nellore cows in the last trimester of gestation and consequent performance of their heifer calves in creep feeding.**
D. D. Nepomuceno[2], A. V. Pires[2], R. Sartori[2], F. M. da Rocha[3], M. V. Biehl*[2], I. Susin[2], E. M. Ferreira[3], M. V. C. Ferraz Junior[3], J. R. S. Goncalves[4], F. M. Abreu[1], L. H. Cruppe[1], and M. L. Day[1], [1]*The Ohio State University, Columbus*, [2]*University of Sao Paulo, Piracicaba, SP, Brazil*, [3]*University of Sao Paulo, Pirassununga, SP, Brazil*, [4]*Experimental Station Hildegard Georgina Von Pritzelwitz, Londrina, PR, Brazil*.

M122 **Identification of key amino acids associated with fetal skeletal muscle growth in sheep.**
F. A. Sales*[1,4], B. P. Treloar[1], D. Pacheco[1], H. T. Blair[2], P. R. Kenyon[2], G. Nicholas[3], M. Senna-Salerno[3], and S. A. McCoard[1], [1]*Agresearch Grasslands, Palmerston North, New Zealand*, [2]*Sheep Research Centre, Massey University, Palmerston North, New Zealand*, [3]*Agresearch Ruakura, Hamilton, New Zealand*, [4]*Instituto de Investigaciones Agropecuarias, Punta Arenas, Chile*.

M123 **Is placental functionality different between singletons and twins in sheep?**
D. S. van der Linden* and S. A. McCoard, *Animal Nutrition Team, AgResearch Grasslands Limited, Palmerston North, New Zealand*.

M124 **Placental efficiency at birth has no effects on postnatal muscle development.**
T. A. Wilmoth*[1], C. S. Perkins[2], Z. E. Kerley[2], Z. D. Callahan[2], M. E. Wilson[1], and B. R. Wiegand[2], [1]*West Virginia University, Morgantown*, [2]*University of Missouri, Columbia*.

M125 **Effects of metabolizable protein supply during late gestation on ovine offspring growth and development.**
C. A. Schwartz*[1], K. R. Maddock-Carlin[1], C. O. Lemley[1], L. E. Camacho[1], W. L. Keller[1], J. S. Caton[1], R. D. Yunusova[1], C. S. Schauer[2], and K. A. Vonnahme[1], [1]*Department of Animal Sciences, North Dakota State University, Fargo*, [2]*Hettinger Research Extension Center, North Dakota State University, Hettinger*.

M126 **Vascularization in ovine utero-placental tissues during early pregnancy: Effects of assisted reproductive technology (ART).**
P. P. Borowicz*, L. P. Reynolds, D. A. Redmer, and A. T. Grazul-Bilska, *Department of Animal Sciences, and Center for Nutrition and Pregnancy, North Dakota State University, Fargo*.

M127 **Influence of *Bos indicus* genetics on pregnancy-associated glycoproteins (PAG) and their association with fetal development.**
P. M. Mercadante*[1], K. M. Bischoff[2], V. R. G. Mercadante[2], G. C. Lamb[2], and A. D. Ealy[1], [1]*University of Florida, Gainesville*, [2]*University of Florida, North Florida Research and Education Center, Marianna*.

M128 **Fetal size and pregnancy-associated glycoprotein concentrations are influenced by *Bos indicus* genetics during early gestation.**
C. M. Waits*, P. M. Mercadante, S. E. Johnson, A. D. Ealy, and J. V. Yelich, *University of Florida, Gainesville*.

M129 **Effects of nutrient restriction in beef cows during early gestation on maternal and fetal small intestinal and hepatic mass and in vitro oxygen (O2) consumption.**
L. D. Prezotto*, L. E. Camacho, C. O. Lemley, J. S. Caton, K. A. Vonnahme, M. Kapphahn, M. Van Emon, R. S. Goulart, R. D. Yunosova, T. J. Swanson, and K. C. Swanson, *Animal Science Department, North Dakota State University, Fargo*.

M130 **The effects of intrauterine growth retardation (IUGR) due to poor maternal nutrition on muscle development in lambs.**
M. L. Hoffman*, M. A. Rokosa, S. Neupane, K. K. McFadden, S. M. Tornaquindici, S. A. Zinn, and K. E. Govoni, *Department of Animal Science, University of Connecticut, Storrs*.

Draft

M131 **Maternal diet interactions with fetal sex in beef cattle.**
C. Fitzsimmons*[1,2], K. Wood[3], F. Paradis[1,2], B. McBride[3], S. Miller[3], I. Mandell[3], and K. Swanson[4], [1]*Agriculture and Agri-Food Canada, Edmonton, Alberta, Canada*, [2]*Dept. of Animal, Food, and Nutritional Science, University of Alberta, Edmonton, Alberta, Canada*, [3]*Dept. of Animal and Poultry Science, University of Guelph, Guelph, Ontario, Canada*, [4]*Dept. of Animal Sciences, North Dakota State University, Fargo*.

M132 **Lamb growth in response to the duration of maternal undernutrition during gestation in twin sheep pregnancies.**
M. E. Field*, R. V. Anthony, T. E. Engle, S. L. Archibeque, and H. Han, *Colorado State University, Fort Collins*.

Lactation Biology I

M133 **Nursing frequency alters circadian patterns of mammary gene expression in lactating mice.**
D. L. Hadsell*, W. Olea, and L. W. Rottman, *Baylor College of Medicine, Houston, TX.*

M134 **Functional analysis of swine mammary gland transcriptome during late gestation using two bioinformatics approaches.**
W. S. Zhao*[1,2], K. Shahzad[1], D. E. Graugnard[1], J. Luo[2], J. J. Loor[1], and W. L. Hurley[1], [1]*University of Illinois, Urbana*, [2]*Northwest A & F University, YangLing, Shaanxi, China*.

M135 **Changes in milk composition of Holstein dairy cows within a milking.**
D. E. Rico*, E. R. Marshall, and K. J. Harvatine, *Penn State University, University Park.*

M136 **Osteopontin secretion in milk is correlated to the presence of DNA polymorphisms in the secreted phosphoprotein 1 (*SPP1*) gene.**
P.-L. Dudemaine*[2] and N. Bissonnette[1,2], [1]*Agriculture and Agri-Food Canada, Dairy and Swine Research and Development Center, Sherbrooke, QC, Canada*, [2]*Université de Sherbrooke, Sherbrooke, QC, Canada*.

M137 **Growth hormone influences mTORC1 and IGF-1 signaling in the lactating bovine mammary gland.**
S. McCoard*, Q. Sciascia, and D. Pacheco, *Animal Nutrition Team, AgResearch Grasslands Limited, Palmerston North, New Zealand*.

M138 **First demonstration of decorin, an extracellular matrix molecule, in bovine mammary tissue.**
K. M. O'Diam*[1], S. G. Velleman[1], V. A. Swank[1], S. Ellis[2], A. V. Capuco[3], and K. M. Daniels[1], [1]*Department of Animal Sciences, The Ohio State University, OARDC, Wooster*, [2]*Animal and Veterinary Sciences Department, Clemson University, Clemson, SC*, [3]*Bovine Functional Genomics Lab, USDA-ARS, Beltsville, MD.*

M139 **MicroRNA expression patterns are affected by stage of lactation in dairy cattle mammary gland.**
M. Z. Wang*[1,2], S. Moisa[2], D. Bu[1], J. Wang[1], and J. J. Loor[2], [1]*State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*, [2]*University of Illinois, Urbana*.

M140 **Proteomic analysis in MAC-T cells reveals proteins involved in *cis*-9, *trans*-11 CLA de novo synthesis.**
T. Wang*, J. J. Oh, D. C. Piao, J. H. Hwang, Y. C. Jin, S. B. Lee, K. H. Lee, J. N. Lim, H. S. Kang, and H. G. Lee, *Department of Animal Science, Pusan National University, Miryang, Gyeongnam, Korea*.

M141 **Potent growth promoting activity of prolactin and estrogen to E-cadherin/β-catenin adhesion molecules in bovine mammary gland: Modulation of Wnt signaling.**
J.-J. Tong, Q.-Z. Li*, X.-J. Gao, N. Zhang, and Y. Lin, *Key Lab of Dairy Science, Ministry of Education, Northeast Agriculture University,, Harbin, Heilongjiang, China*.

Meat Science and Muscle Biology I

M142 **Effect of power ultrasound on the physicochemical properties of beef longissimus dorsi muscle.**
C. Valenzuela-Gonzalez*[1], A. D. Alarcon-Rojo[1], E. Santellano[1], and A. Quintero-Ramos[2], [1]*Universidad Autonoma de Chihuahua, Facultad de Zootecnia y Ecologia, Chihuahua, Mexico*, [2]*Universidad Autonoma de Chihuahua, Facultad de Ciencias Quimicas, Chihuahua, Mexico*.

M143 **Diffusion of sodium chloride in bovine meat treated with power ultrasound in continuous and pulse modes.**
E. B. Ordaz-Portillo, A. D. Alarcon-Rojo, and C. Valenzuela-Gonzalez*, *Universidad Autonoma de Chihuahua, Chihuahua, Mexico*.

Draft

M144 **Meat traits of steers fed with whole cottonseed.**
D. P. Borges da Costa*[1], R. de Oliveira Roça[2], Q. P. Borges da Costa[3], L. da Silva Cabral[4], D. P. D. Lanna[5], E. da Silva Lima[3], D. G. Fagundes[1], and N. L. Filho[1], [1]*Instituto Federal de Mato Grosso, Campo Novo do Parecis, Brazil*, [2]*Faculty of Agricultural Sciences, Universidade Estadual Paulista, Botucatu, Brazil*, [3]*Faculty of Veterinary Medicine, Universidade Estadual Paulista, Botucatu, Brazil*, [4]*Universidade Federal de Mato Grosso, Cuiabá, Brazil*, [5]*Escola Superior de Agricultura "Luiz de Queiroz,"Universidade de São Paulo, Piracicaba, Brazil*.

M145 **Lipid peroxidation and color of meat from young bulls fed different levels of crude glycerin.**
M. M. Ladeira*, J. R. R. Carvalho, M. L. Chizzotti, E. M. Ramos, P. D. Teixeira, M. C. L. Alves, P. E. P. Barros, and O. R. Machado Neto, *Federal University of Lavras, Lavras, MG, Brazil*.

M146 **The use of visible and near infrared spectroscopy for quality control of organic and conventional beef stored under protective atmospheres.**
M. Ólivan[1], V. Sierra[1], G. Fiorentini*[2,4], N. Prado[3], P. González[3], B. Álvarez[3], J. Díaz[3], and K. Osoro[1], [1]*Servicio Regional de Investigación y Desarrollo Agroalimentario (SERIDA), Asturias, Spain*, [2]*Universidade Estadual Paulista (UNESP), Jaboticabal, SP, Brazil*, [3]*Asociación de Investigación de Industrias Cárnicas del Principado de Asturias (ASINCAR), Polígono de la Barreda, Noreña, Spain*, [4]*Bolsista Processo nº2469-11-1 - CAPES, Setor Bancário Norte, Brasília, Brazil*.

M147 **Fatty acid composition of cattle fattened with tropical forage at rainy and drought season.**
M. E. E. Rodríguez*[1], G. Corral-Flores[1], B. S. Solorio[2], A. D. R. Alarcón[1], J. A. Grado-Ahuir[1], C. Rodríguez-Muela[1], L. P. Cortés[1], and V. E. B. Segovia[1], [1]*Facultad de Zootecnia y Ecología. UACH, Chihuahua, México*, [2]*Fundación Produce Michoacán A. C., Morelia, México*.

M148 **Genetic parameters for fat thickness measured in different anatomical points of *Longissimus* muscle in Nellore cattle.**
M. N. Bonin*[1], F. J. Novais[1], S. L. Silva[1], R. C. Gomes[2], A. S. Figueiredo[1], P. F. Torralvo[1], L. G. Figueiredo[1], P. A. B. McLean[1], V. N. Barbosa[1], J. H. A. Campo[1], T. V. Solpelsa[1], M. H. A. Santana[1], F. M. Rezende[1], and J. B. S. Ferraz[1], [1]*College of Animal Science and Food Engineering, University of Sao Paulo, Pirassununga, Brazil*, [2]*State University of Londrina, Londrina, Brazil*.

M149 **Comparative effects of two beta adrenergic agonists on Warner-Bratzler and slice shear force of USDA Choice strip steaks from calf-fed Holsteins.**
A. J. Garmyn*[1], J. N. Martin[1], J. C. Brooks[1], R. J. Rathmann[1], J. M. Hodgen[2], K. D. Pfieffer[2], C. L. Armstrong[2], D. A. Yates[2], J. P. Hutcheson[2], and M. F. Miller[1], [1]*Texas Tech University, Lubbock*, [2]*Merck Animal Health, DeSoto, KS*.

M150 **Carcass characteristics of Nellore steers receiving protected linseed oil during different periods of feedlot.**
T. M. Pivaro*[1], W. Henrique[2], A. A. M. Sampaio[1], J. L. V. Coutinho Filho[2], E. A. Oliveira[1], B. L. Rosa[1], and V. G. Carvalho[1], [1]*FCAV/Unesp, Jaboticabal, SP, Brazil*, [2]*APTA, São José do Rio Preto, SP, Brazil*.

M151 **Meat fatty acids profile of Nellore steers receiving protected linseed oil during different periods of feedlot.**
T. M. Pivaro*[1], W. Henrique[2], E. A. Oliveira[1], A. A. M. Sampaio[1], B. L. Rosa[1], J. L. V. Coutinho Filho[2], and V. G. Carvalho[1], [1]*FCAV/Unesp, Jaboticabal, SP, Brazil*, [2]*APTA, São José do Rio Preto, SP, Brazil*.

M152 **Meat quality of crossbred cattle finished at feedlot and fed increasing levels of linseed oil.**
E. A. Oliveira*[1,3], B. L. Rosa[1], T. M. Pivaro[1], M. B. P. Costa[1], V. G. Carvalho[1], A. T. Andrade[1], W. Henrique[2], and A. A. M. Sampaio[1], [1]*FCAV/Unesp, Jaboticabal, SP, Brazil*, [2]*APTA, São José do Rio Preto, SP, Brazil*, [3]*FAPESP Post-doctorate fellowship, São Paulo, SP, Brazil*.

M153 **A study of the variance in tenderness and carcass traits of pasture and feedlot finished beef cattle.**
L. A. Goonewardene*[1,2], J. A. Basarab[1], Z. Wang[2], R. W. Seneviratne[2], W. N. P. Yalingasinghe[2], P. S. Mir[3], J. L. Aalhus[4], and E. K. Okine[2], [1]*Alberta Agriculture and Rural Development, Edmonton, Alberta, Canada*, [2]*University of Alberta, Edmonton, Alberta, Canada*, [3]*Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada*, [4]*Agriculture and Agri-Food Canada, Lacombe, Alberta, Canada*.

M154 **Partitioning of energy into muscle and fat in relation to beef composite type and age at harvest.**
N. P. Y. Welegedara*[1], E. K. Okine[1], J. A. Basarab[2], Z. Wang[1], C. Li[3], H. Bruce[1], S. Markus[2], J. Stewart-Smith[4], and L. A. Goonewardene[1,2], [1]*University of Alberta, Edmonton, Alberta, Canada*, [2]*Alberta Agriculture and Rural Development, Edmonton, Alberta, Canada*, [3]*Agriculture and Agri-Food Canada, Lacombe Research Centre, Lacombe, Alberta, Canada*, [4]*BeefBooster Inc., Calgary, Alberta, Canada*.

Nonruminant Nutrition
Amino Acids and Energy

M155 **Influence of energy concentration of the diet and terminal sire line on growth performance and carcass and meat quality of pigs slaughtered at 115 kg of BW.**
G. Coca[1], M. P. Serrano[1], L. Cámara[1], P. Guzmán[1], J. D. Berrocoso[1], J. Coma[2], and G. G. Mateos*[1], [1]*Animal Science Department, Universidad Politécnica de Madrid, Madrid, Spain*, [2]*Vall Company, Lleida, Spain*.

Draft

M156 **The utilization of energy by pigs differing in estimated growth potential.**
A. D. Beaulieu*[1], D. A. Gillis[1], J. N. Shea[1], J. P. Marriott[1], and J. F. Patience[2], [1]*Prairie Swine Centre Inc., Saskatoon, SK, Canada*, [2]*Iowa State University, Ames*.

M157 **Effect of starch level in pig diets on digestible energy value of crude glycerin using the mobile nylon bag technique.**
C. A. Ordoñez-Gomez*[1,2], C. Ariza-Nieto[1], and G. Afanador-Tellez[2], [1]*CORPOICA, Bogota, Colombia*, [2]*Universidad Nacional de Colombia, Bogota, Colombia*.

M158 **Dynamic changes in blood flow, oxygen consumption and metabolite responses to acute arginine supplementation in growing-finishing pigs.**
B. E. Tan[1], Y. L. Yin*[1], X. F. Kong[1], and G. Y. Wu[1,2], [1]*Institute of Subtropical Agriculture, The Chinese Academy of Sciences, Changsha, Hunan, China*, [2]*Department of Animal Science, Texas A&M University, College Station*.

M159 **Dietary valine:lysine ratios of 0.80 and 0.85 did not differ performance of primiparous sow and nursing large litters.**
S. M. Hong*, P. Y. Zhao, and I. H. Kim, *Department of Animal Resource & Science, Dankook University, Cheonan, Choongnam, South Korea*.

M160 **Sequence of apparent ileal digestible lysine for growing-finishing gilts.**
G. C. Rocha*[1], F. C. O. Silva[2], R. F. M. Oliveira[1], L. Alebrante[1], A. Saraiva[1], and J. L. Donzele[1], [1]*Federal University of Viçosa, Viçosa, MG, Brazil*, [2]*EPAMIG, Viçosa, MG, Brazil*.

M161 **Feed efficiency and carcass grade can be improved in finishing pigs by increasing the standardized ileal digestible lysine to metabolizable energy ratio.**
J. A. Jendza* and S. K. Baidoo, *University of Minnesota, Waseca*.

M162 **Chemical composition of dietary fat affects fat and energy digestibility when supplemented to lactating sows.**
D. S. Rosero*[1], J. Odle[1], R. D. Boyd[2], and E. van Heugten[1], [1]*Department of Animal Sciences, North Carolina State University, Raleigh*, [2]*Hanor Company Inc., Franklin, KY*.

M163 **Feeding phytonutrients to chickens: the relationship between energy availability and growth performance.**
D. Bravo*[1], V. Pirgosliev[2], and S. P. Rose[3], [1]*Pancosma, Geneva, Switzerland*, [2]*Avian Science Research Centre, Scottish Agricultural College, Ayr, UK*, [3]*National Institute of Poultry Husbandry, Harper Adams University College, Newport, UK*.

M164 **An evaluation of glutamine feed supplementation on the immune response, intestinal morphology, and growth performance of broilers at various stages of development.**
S. Khempaka* and W. Molee, *School of Animal Production Technology, Institute of Agricultural Technology, Suranaree University of Technology, Muang, Nakhon Ratchasima, Thailand*.

M165 **Velocity of l-methionine incorporation into the blood plasma of broiler chickens at the first week of age.**
A. C. Stradiotti*[1,4], C. Ducatti[2], J. R. Sartori[1], J. A. Bendassolli[3], V. C. Pelícia[1], P. C. Araujo[1], M. K. Maruno[1], L. V. C. Girão[1], F. G. Luiggi[1], R. Fasanaro[1], M. M. P. Sartori[2], J. C. Denadai[2], E. T. Silva[2], C. R. Souza-Kruliski[2], A. C. Pezzato[1], [1]*São Paulo State University, Faculty of Veterinary Medicine and Animal Science, Botucatu Campus, Botucatu, Brazil*, [2]*São Paulo State University, Institute of Bioscience, Botucatu Campus, Botucatu, Brazil*, [3]*University of São Paulo, Center of Nuclear Energy in Agriculture, "Luiz de Queiroz" Campus, Piracicaba, Brazil*, [4]*FAPESP*.

Draft

Nonruminant Nutrition
Enzymes

M166 **Influence of dietary Quantum phytase on bone strength and bone phosphorus contents of weaned pigs.**
S. K. Baidoo*[1], Q. Yang[1], G. He[1], T. D. Crenshaw[2], C. L. Wyatt[3], and J. A. Jendza[1], [1]*University of Minnesota, SROC, Waseca*, [2]*Department of Animal Science, University of Wisconsin, Madison*, [3]*AB Vista Feed Ingredient, Stillwell, KS*.

M167 **Dietary effects of Quantum phytase on performance and phosphorus utilization of weaned pigs.**
S. K. Baidoo*[1], Q. Yang[1], G. He[1], C. L. Wyatt[2], and J. A. Jendza[1], [1]*University of Minnesota, SROC, Waseca*, [2]*AB Vista Feed Ingredients, Stillwell, KS*.

M168 **Evaluation of phytase with different calcium and phosphorous density diet on the growth performance, nutrient digestibility, blood characteristics, and fecal noxious gas emission in growing pigs.**
L. Yan*[1], S. Zhang[1], D. S. Nam[2], and I. H. Kim[1], [1]*Department of Animal Resource and Science, Dankook University, Cheonan, Choongnam, South Korea*, [2]*Nonghyup Feed Co. Ltd., Seoul, South Korea*.

M169 **Nutritional balance of broilers at starter and grower phase fed diets containing multienzyme complex and lipid sources.**
G. do Valle Polycarpo*[1], V. C. da Cruz[2], J. C. M. Cravo[3], P. de Assunção Pimenta Ribeiro[3], C. C. do Valle Polycarpo[1], and A. C. Pezzato[1], [1]*São Paulo State University, Botucatu, Brazil*, [2]*São Paulo State University, Dracena, Brazil*, [3]*University of São Paulo, Pirassununga, Brazil*.

M170 **Performance of 1- to 42-day-old broilers fed diets supplemented with multienzyme complexes.**
V. C. da Cruz*[1], G. A. M. Pasquali[1], P. A. B. Aiello[1], G. do Valle Polycarpo[2], R. Crivellari[1], R. F. de Oliveira[1], A. Barbieri[1], L. H. Zanetti[1], and C. C. do Valle Polycarpo[3], [1]*São Paulo State University, Dracena campus, Dracena, Brazil*, [2]*University of São Paulo, Pirassununga campus, Pirassununga, Brazil*, [3]*São Paulo State University, São José do Rio Preto campus, São José do Rio Preto, Brazil*.

M171 **Effects of Crina Poultry Plus and Ronozyme ProAct supplementation on growth performance, nutrient digestibility, relative organ weight, blood profiles, fecal microflora, and fecal noxious gas emission in broilers.**
Z. F. Zhang*[1], B. R. Lee[1], A. V. Rolando[2], D. H. Yoo[3], and I. H. Kim[1], [1]*Department of Animal Resource & Science, Dankook University, Cheonan, Choongnam, South Korea*, [2]*DSM Nutritional Products Philippines Inc., Bonifacio Global City, Taguig, Philippines*, [3]*All The Best Ltd., Seoul, South Korea*.

Nonruminant Nutrition
Weanling Pig

M172 **Effects of freeze-dried *Lactobacillus reuteri* on growth performance, serum indices, and intestinal microflora of weaned pigs.**
D. Y. Zhang, H. F. Ji*, J. Wang, S. X. Wang, H. Liu, and Y. M. Wang, *Institute of Animal Husbandry and Veterinary Medicine, Beijing Academy of Agriculture and Forestry Sciences, Beijing, China*.

M173 **Effects of two kinds of lactic acid bacteria on productive performance and intestinal microflora of weaned piglets.**
H. Liu, H. F. Ji*, S. X. Wang, J. Wang, D. Y. Zhang, and Y. M. Wang, *Institute of Animal Husbandry and Veterinary Medicine, Beijing Academy of Agriculture and Forestry Sciences, Beijing, China*.

M174 **Assessment of probiotic properties of *Enterococcus faecalis* isolated from gastrointestinal tract of piglet and its effect on growth performance of weaned pigs.**
J. Wang, H. F. Ji*, F. M. Wang, S. X. Wang, D. Y. Zhang, H. Liu, and Y. M. Wang, *Institute of Animal Husbandry and Veterinary Medicine, Beijing Academy of Agriculture and Forestry Sciences, Beijing, China*.

M175 **Digestibility of feed containing energy and protein ingredients to substitute dried whey and lactose for weanling pigs.**
L. V. C. Girão*[1], F. G. Luiggi[1], G. Mello[1], A. C. Stradiotti[1], C. C. E. J. Villela[1], N. B. Athayde[1], V. S. Cantarelli[2], R. Fasanaro[1], and D. A. Berto[1], [1]*São Paulo State University, Faculty of Veterinary Medicine and Animal Science, Botucatu Campus, Botucatu, SP, Brazil*, [2]*University Federal of Lavras, Lavras, MG, Brazil*.

M176 **Dietary clay does not negatively affect growth performance, nitrogen and iron status, or diarrhea score of weanling pigs.**
M. Song*[1], B. G. Kim[2], O. Osuna[3], and H. H. Stein[1], [1]*University of Illinois, Urbana*, [2]*Konkuk University, Seoul, Korea*, [3]*Milwhite Inc., Brownsville, TX*.

M177 **Effects of dry matter content of milk replacer on intake and growth in suckling pigs.**
S. M. Mendoza*[1], E. van Heugten[1], P. Hock[2], D. McKilligan[3], and R. D. Boyd[2], [1]*Department of Animal Science, North Carolina State University, Raleigh*, [2]*Hanor Company Inc., Franklin, KY*, [3]*TechMix Inc., Stewart, MN*.

M178 **The protein-to-energy ratio is a main driver of growth performance in piglets.**
S. A. Guzmán-Pino, D. Solà-Oriol, J. Figueroa*, and J. F. Pérez, *Universitat Autònoma de Barcelona, Bellaterra, Spain*.

M179 **Nucleotides in weanling pig diets.**
C. Andrade*[1], V. V. Almeida[1], M. Sbardella[1], D. P. Perina[1], F. L. Silva[1], P. L. Y. C. Chang[2], B. Berenchtein[3], L. B. Costa[4], and V. S. Miyada[1], [1]*USP/ESALQ, Piracicaba, SP, Brazil*, [2]*University of North Carolina, Raleigh*, [3]*USP/CENA, Piracicaba, SP, Brazil*, [4]*UESC, Ilhéus, BA, Brazil*.

M180 **Time-related changes of serum amino acids in weanling piglets.**
Y. Xiao*, T. Wu, A. Chen, L. Yang, and C. Yang, *College of Animal Sciences, Zhejiang University, Hangzhou, Zhejiang, China*.

M181 **Comparing different copper sources at pharmacological levels in nursery pigs.**
J. Zhao*[1], G. Allee[2], M. Vazquez-Anon[1], and R. J. Harrell[1], [1]*Novus International Inc., St. Charles, MO*, [2]*University of Missouri, Columbia*.

M182 **Effects of steam-processed rice, natural vitamin E, and glutamine in diets for weaning piglets.**
G. J. M. M. Lima*[1], M. Kutschenko[2], and E. T. Nogueira[2], [1]*Embrapa, Concordia, SC, Brazil*, [2]*Ajinomoto, Sao Paulo, SP, Brazil*.

Draft

Physiology and Endocrinology I

M183 **Cortisol levels during roping acclimation in rodeo calves.**
K. Comeaux, B. Pousson, A. Greathouse, D. Terro, J. Browning, and C. E. Ferguson*, *McNeese State University, Lake Charles, LA*.

M184 **Improving reproductive performance of Ossimi ewes using hormonal and enzymatic treatments.**
E. B. Abdalla*[1], A. Q. Al-Momani[2], F. A. Khalil[1], H. M. Gado[1], and F. S. Al-Barakeh[3], [1]*Ain Shams University, Cairo, Egypt*, [2]*Ministry of Agriculture, Amman, Jordan*, [3]*National Center for Agricultural Research and Extension, Al- Baq'a, Al-Balqa, Jordan*.

M185 **Prostaglandin-$F_{2\alpha}$ may not be necessary in short-term progesterone-based estrous synchronization protocols in cyclic ewes.**
K. N. D'Souza*, S. L. Rastle-Simpson, Q. S. Baptiste, and M. Knights, *West Virginia University, Morgantown*.

M186 **Is a CIDR as effective as a sponge in a novel follicle wave emergence and estrus synchronization protocol in anestrous ewes?**
M. B. Gordon[1], M. Bidarimath[1], M. Moggy[1], M. Camara[1], J. A. Small[3], P. M. Bartlewski[2], and D. M. W. Barrett*[1], [1]*Department of Plant & Animal Science, Nova Scotia Agricultural College, Truro, NS, Canada*, [2]*Ontario Veterinary College, University of Guelph, Guelph, ON, Canada*, [3]*Atlantic Food & Horticulture Research Centre, Agriculture & Agri-Food Canada, Truro, NS, Canada*.

M187 **Effects of parity and litter size on body reserves dynamics across a complete physiological year in Romane ewes reared under extensive grazing conditions.**
E. González-García*[1], V. Gozzo de Figuereido[2], D. Foulquie[3], E. Jousserand[3], A. Tessniere[1], F. Bocquier[1], and M. Jouven[1], [1]*INRA UMR868 Systèmes d'Èlevage Méditerranéens et Tropicaux (SELMET), 34060 Montpellier, France*, [2]*Escola Superior de Agricultura, São Paulo, Brazil*, [3]*INRA UE0321, Domaine de La Fage, 12250 Roquefort-sur-Soulzon, France*.

M188 **Pregnancy per AI (P/AI) after presynchronizing estrous cycles with Presynch-10 or PG-3-G before Ovsynch-56 in four dairy herds.**
J. S. Stevenson* and S. L. Pulley, *Kansas State University, Manhattan*.

M189 **Effect of bovine somatotropin (bST) injected at fixed-timed insemination of Holstein cows exposed to an ovsynch protocol.**
A. Reyes-Gomez, C. F. Arechiga*, M. A. Lopez-Carlos, J. I. Aguilera, R. R. Lozano, R. M. Rincon, F. De la Colina, and F. J. Escobar, *Autonomous University of Zacatecas, Zacatecas, Mexico*.

M190 **Effect of adding a GnRH or $PGF_{2\alpha}$ between the Presynch and Ovsynch program for first AI in lactating dairy cows.**
R. G. S. Bruno*[1,2], A. M. Farias[1], J. A. Hernández-Rivera[1], A. E. Navarrette[1], D. E. Hawkins[2], and T. R. Bilby[1], [1]*Texas A&M University, College Station*, [2]*West Texas A&M University, Canyon*.

M191 **Application of progesterone insert for the induction of lactation in nonpregnant dairy cows or heifers.**
F. Rivera-Acuña*[1], R. C. Fierros[1], E. M. Prado[1], P. Luna-Nevarez[1], J. G. Aceves[1], L. R. Avendaño[2], A. C. Correa[2], and R. C. Chebel[3], [1]*Instituto Tecnológico de Sonora, Ciudad Obregón, México*, [2]*Universida Autónoma de Baja California, Mexicali, México*, [3]*University of Minnesota, Saint Paul*.

M192 **Enhancing endogenous progesterone during growth of the ovulatory follicle is positively associated with fertility in dairy cows treated with Presynch-11/Ovsynch, Double Ovsynch, and G6G/Ovsynch.**
F. Jiminez-Krassel*, J. P. Martins, B. S. Raghavendra, M. Kron, and J. R. Pursley, *Michigan State University, East Lansing*.

M193 **Effect of progesterone (P4) supplementation after AI on circulating P4 and development of the corpus luteum (CL) in dairy cattle.**
P. L. J. Monteiro*[1], F. L. M. Silva[1], M. Borsato[1], G. P. Nogueira[2], G. B. Mourão[1], L. D. Silva[1], M. C. Wiltbank[1], and R. Sartori[1], [1]*University of São Paulo, Piracicaba, SP, Brazil*, [2]*São Paulo State University, Araçatuba, SP, Brazil*, [3]*University of Wisconsin-Madison, Madison, WI*.

M194 **Reproductive performance of lactating dairy cows managed for first service using timed artificial insemination with or without detection of estrus using an accelerometer system.**
P. M. Fricke*, A. Valenza, J. O. Giordano, M. C. Amundson, and G. Lopes, *University of Wisconsin, Madison*.

M195 **Accuracy of pregnancy diagnosis outcomes using transrectal ultrasonography 29 days after artificial insemination in lactating dairy cows.**
J. O. Giordano* and P. M. Fricke, *University of Wisconsin-Madison, Madison*.

M196 **Early detection of pregnancy-specific protein B (PSPB) following conception in Holstein heifers.**
J. Howard*[1,2], C. Autran[1], J. Branen[2], G. Sasser[2], and A. Ahmdzadeh[1], [1]*University of Idaho, Moscow*, [2]*BioTracking LLC, Moscow, ID*.

M197 **Possible associations between ova-embryos characteristics in early lactating cows and subsequent reproductive performance.**
R. L. A. Cerri*[1], W. W. Thatcher[2], and J. E. P. Santos[2], [1]*University of British Columbia, Vancouver, BC, Canada*, [2]*University of Florida, Gainesville*.

M198 **Effects of induced clinical and subclinical mastitis on oocyte developmental competence in bovine.**
S. Asaf[1], O. Furman[1], G. Leitner[2], D. Wolfenson[1], and Z. Roth*[1], [1]*The Robert H. Smith Faculty of Agriculture, Food and Environment, the Hebrew University, Rehovot, Israel*, [2]*The Veterinary Institute, Bet Dagan, Israel*.

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M199 **Assessing the relationships of prostaglandin E2 in uterine flush fluid, peripheral blood prostaglandin E2 and progesterone with pregnancy outcome in dairy cattle.**
J. L. Fain*[1], M. W. Overton[2], D. J. Hurley[2], and G. P. Birrenkott[1], [1]*Clemson University, Clemson, SC*, [2]*University of Georgia, Athens*.

M200 **Effect of oral or subcutaneous administration of vitamin E and selenium on milk quality and reproductive function of Holstein cows.**
C. Garcia-Barrios, M. Rodriguez-Loera, C. F. Arechiga, M. A. Lopez-Carlos, J. I. Aguilera, R. M. Rincon, H. Rodriguez-Frausto, D. Rodriguez-Tenorio, and Z. Cortes*, *Universidad Autonoma de Zacatecas, Zacatecas, Mexico*.

M201 **Effects of supplementation with different PUFA during the postpartum periods of early lactating dairy cows, estradiol concentration and luteal function.**
E. Dirandeh[1], A. Towhidi*[1], S. Zeinoaldini[1], M. Ganjkhanlou[1], Z. Ansari Pirsaraei[2], and T. Saberifar[1], [1]*Department of Animal Science, Faculty of Agricultural Science and Engineering, University College of Agriculture and Natural Resources, University of Tehran, Karaj, Tehran, Iran*, [2]*Department of Animal Science, Faculty of Animal Science and Fishery, Sari University of Agricultural and Natural Resources, Sari, Mazandaran, Iran*.

M202 **Hepatic patatin-like phospholipase domain-containing protein 3 mRNA expression is increased during feed restriction and in transition dairy cows.**
M. E. Viner*[1], S. S. Donkin[2], and H. M. White[1], [1]*Department of Animal Science, University of Connecticut, Storrs*, [2]*Department of Animal Sciences, Purdue University, West Lafayette, IN*.

M203 **Changes of the serum and milk proteome in lactating dairy cows duodenal infused with α-linolenic acid.**
J. H. Yang, J. Q. Wang*, T. J. Yuan, D. P. Bu, Y. X. Yang, P. Sun, and L. Y. Zhou, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*.

M204 **Investigation of the relationship between resumption of ovarian cyclicity and plasma nutritional markers in lactating dairy cows.**
A. Ahmadzadeh[1], J. Spencer*[1], B. Shafii[1], C. Johnson[1], J. Dalton[2], K. Carnahan[1], and S. Reeds[1], [1]*University of Idaho, Moscow*, [2]*University of Idaho R & E Center, Caldwell*.

M205 **Insulin responses in dairy cows with different fat mobilization during early lactation.**
U. Kautzsch[1], B. Kuhla[1], M. Röntgen[1], S. Görs[1], R. M. Bruckmaier[2], C. C. Metges[1], and H. M. Hammon*[1], [1]*Leibniz Institute for Farm Animal Biology (FBN), Dummerstorf, Germany*, [2]*Veterinary Physiology, Vetsuisse Faculty, Bern, Switzerland*.

M206 **Effects of heat stress and plane of nutrition on adipose tissue metabolism-related gene expression in lactating Holstein cows.**
G. Xie*[1], L. W. Hall[2], M. Nearing[2], L. C. Cole[2], J. Allen[2], L. H. Baumgard[3], D. M. Spurlock[3], and R. P. Rhoads[1], [1]*Virginia Polytechnic Institute and State University, Blacksburg*, [2]*University of Arizona, Tucson*, [3]*Iowa State University, Ames*.

M207 **Relevance of mineralocorticoid receptors in different fat depots of dairy cows supplemented with CLA.**
K. Friedauer*[1], S. Dänicke[2], D. von Soosten[2], H. Sauerwein[1], and S. Häussler[1], [1]*University of Bonn, Bonn, NRW, Germany*, [2]*Federal Research Institute, Braunschweig, Lower Saxony, Germany*.

M208 **The effects of a soybean and canola diet during pre-pubertal growth on dairy heifer fertility.**
M. B. Gordon*[1], E. Thompson[1], T. Gowan[2], D. Mosely[3], J. A. Small[2], and D. M. W. Barrett[1], [1]*Department of Plant & Animal Science, Nova Scotia Agricultural College, Truro, NS, Canada*, [2]*Atlantic Food & Horticulture Research Centre, Agriculture & Agri-Food Canada, Truro, NS, Canada*, [3]*AgraPoint, Bible Hill, NS, Canada*.

M209 **Reproduction in grazing dairy cows treated with 14-d CIDR for presynchronization before a timed AI (TAI) compared with AI after observed estrus.**
R. C. Escalante*, S. E. Poock, D. J. Mathew, W. R. Martin, E. M. Newsom, S. A. Hamilton, K. G. Pohler, and M. C. Lucy, *University of Missouri, Columbia*.

M210 **Hormonal therapies on repeat breeder cows of a dairy production unit of central Mexico (Aguascalientes State).**
F. Lugo-Garcia, C. F. Arechiga*, A. Reyes-Gomez, R. R. Lozano, F. J. Escobar, R. M. Rincon, J. I. Aguilera, and M. A. Lopez-Carlos, *Universidad Autonoma de Zacatecas, Zacatecas, Mexico*.

M211 **Effects of month of breeding on reproductive efficiency of dairy cows inseminated with sexed or nonsexed semen in a hot arid environment.**
E. Sepulveda*[1], O. Angel-Garcia[1], J. M. Guillen[1], C. A. Meza-Herrrera[2], F. G. Veliz[1], and M. Mellado[1], [1]*Universidad Autonoma Agraria Antonio Narro, Torreon, Coahuila, Mexico*, [2]*Universidad Autonoma Chapingo-Unidad Regional Universitaria de Zonas Aridas, Bermejillo, Durango, Mexico*.

M212 **Effects of follicular wave and progesterone concentration during follicle growth on conceptus global gene expression in dairy cows.**
R. S. Bisinotto*[1], E. S. Ribeiro[1], L. F. Greco[1], N. Martinez[1], R. L. A. Cerri[2], W. W. Thatcher[1], and J. E. P. Santos[1], [1]*University of Florida, Gainesville*, [2]*University of British Columbia, Vancouver, BC, Canada*.

Draft

M213 **Expression of CYP11A1, CYP17, and CYP19A1 in granulosa cells, and determination of hormone levels in follicular fluid from dominant follicles and follicular cysts in Holstein cows.**
P. Hernández-Briano, J. A. Grado-Ahuir*, E. Burrola-Barraza, R. M. Villaseñor González, L. E. Escobedo-Morales, and S. A. Quintana-Quintana, *Facultad de Zootecnia y Ecología, Universidad Autónoma de Chihuahua, Chihuahua, Chihuahua, México*.

M214 **Comparison of dry matter intake and somatotropic axis components of Holstein and crossbred dairy cows.**
L. G. D. Mendonça*[1], N. B. Litherland[2], M. C. Lucy[3], D. H. Keisler[3], and R. C. Chebel[1], [1]*Department of Veterinary Population Medicine, University of Minnesota, Saint Paul*, [2]*Department of Animal Science, University of Minnesota, Saint Paul*, [3]*Division of Animal Sciences, University of Missouri, Columbia*.

M215 **Effect of subclinical mastitis and postpartum uterine disease on expression of estrous behavior in cows.**
Y. Lavon[1], M. Kaim[2], G. Leitner[3], H. Voet[4], and D. Wolfenson*[4], [1]*Israel Cattle Breeders Association, Caesarea, Israel*, [2]*Agricultural Research Organization, Bet-Dagan, Israel*, [3]*The Veterinary Institute, Bet Dagan, Israel*, [4]*Faculty of Agriculture, Food and Environment, The Hebrew University, Rehovot, Israel*.

M216 **Dietary protein:carbohydrate ratio affects glucose tolerance and oxidation in pregnant gilts.**
C. C. Metges*, S. Görs, I. Lang, K.-P. Brüssow, C. Rehfeldt, and W. Otten, *Leibniz Institute for Farm Animal Biology (FBN), Dummerstorf, Germany*.

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M217 **Measuring dry matter of corn silage, haylage, and TMR samples with a food dehydrator.**
R. J. Norell*[1], C. M. Matuk[2], S. Hines[2], M. Chahine[2], M. de Haro Marti[3], and S. C. Parkinson[4], [1]*University of Idaho, Idaho Falls*, [2]*University of Idaho, Twin Falls*, [3]*University of Idaho, Gooding*, [4]*University of Idaho, Preston*.

M218 **Determining surface area of exposed silage on California dairy farms.**
D. Meyer[1], P. H. Robinson[1], P. L. Price[1], R. Rauch[1], and J. M. Heguy*[2], [1]*University of California, Davis*, [2]*University of California Cooperative Extension, Modesto*.

M219 **Comparison of two methods of collecting calf birthweights (BW) in dairy calves.**
N. M. Long* and J. F. Smith, *Department of Animal Sciences, University of Arizona, Tucson*.

M220 **Assessing among-farm variability in heifer body weights.**
G. B. Bond*[1,2], M. A. G. von Keyserlingk[1], N. Chapinal[1], E. A. Pajor[2], and D. M. Weary[1], [1]*University of British Columbia, Vancouver, BC, Canada*, [2]*University of Calgary, Calgary, AB, Canada*.

M221 **The effects of increased space allowance on dairy calf performance, behavior, and respiratory antibody production.**
M. S. Calvo*[1], L. E. Hulbert[1], A. Louie[2], L. J. Gershwin[3], K. E. Pinkerton[4], K. C. Klasing[1], C. B. Tucker[1], and F. M. Mitloehner[1], [1]*Department of Animal Science, University of California, Davis*, [2]*School of Veterinary Medicine, University of California, Davis*, [3]*Department of Pathology, Microbiology and Immunology, School of Veterinary Medicine, University of California, Davis*, [4]*Department of Anatomy, Physiology, and Cell Biology, School of Veterinary Medicine; Center for Health and the Environment; University of California, Davis*.

M222 **Growth measurements of organically raised dairy steers compared with conventionally raised dairy steers.**
E. A. Bjorklund* and B. J. Heins, *University of Minnesota, West Central Research and Outreach Center, Morris*.

M223 **Associations between herd-level feeding management practices, feed sorting, and milk production in freestall dairy farms.**
A. D. Sova*[1], S. J. LeBlanc[2], B. W. McBride[3], and T. J. DeVries[1], [1]*Dept. of Animal and Poultry Science, University of Guelph, Kemptville Campus, Kemptville, ON, Canada*, [2]*Dept. of Population Medicine, University of Guelph, Guelph, ON, Canada*, [3]*Dept. of Animal and Poultry Science, University of Guelph, Guelph, ON, Canada*.

M224 **Comparison of the effects of conductive cooling to fan cooling on lactating dairy cattle.**
R. B. Thornton*[1], W. A. Greene[1], J. Bruer[2], and T. Steele[2], [1]*The Ohio State University, Wooster*, [2]*Conco Technologies, Chandler, AZ*.

M225 **Effect of FlipFan cooling system on lactating dairy cattle performance in an open dry-lot commercial dairy in a sub-tropical environment in central Texas.**
J. A. Hernandez-Rivera*[2], F. D. Alvarez-Valenzuela[2], U. Macias-Cruz[2], L. Avendano-Reyes[2], and T. R. Bilby[1], [1]*Texas AgriLife Research and Extension Service, Texas A&M System, Stephenville*, [2]*Instituto de Ciencias Agricolas, Universidad Autonoma de Baja California, Ejido Nuevo Leon, Valle de Mexicali, Mexico*.

M226 **Correlation between invasive methods for recording physiological parameters and infrared thermography in calves.**
P. A. B. Mac-Lean[1], H. Savastano Junior[1], L. C. Roma Junior*[2], S. Correa[1], C. N. Barra[1], C. G. Titto[1], and C. E. L. Oliveira[1], [1]*University of Sao Paulo, Pirassununga, Sao Paulo State, Brazil*, [2]*APTA Centro Leste, Ribeirao Preto, Sao Paulo State, Brazil*.

Draft

M227 **Agreement between reticular and vaginal measurement of core temperature in dairy cattle.**
J. A. Small[1,2], R. Hayman[2], T. Rudderham[2], A. Fredeen[2], and W. Webster*[3], [1]*Agriculture and Agri-Food Canada, Truro, NS, Canada*, [2]*Nova Scotia Agricultural College, Truro, NS, Canada*, [3]*DVM Systems LLC, Denver, CO*.

M228 **Warm drinking water lowers core temperature in dairy cattle.**
J. A. Small[1,2], T. Rudderham[2], R. Hayman[2], A. Fredeen*[2], and W. Webster[3], [1]*Agriculture and Agri-Food Canada, Truro, NS, Canada*, [2]*Nova Scotia Agricultural College, Truro, NS, Canada*, [3]*DVM Systems LLC, Denver, CO*.

M229 **Influence of time of day, breed, and season on reticulorumen temperature in lactating dairy cows.**
D. Liang*, D. L. Ray, J. D. Clark, and J. M. Bewley, *University of Kentucky, Lexington*.

M230 **Udder skin temperature of dairy cows under heat stress and physiological parameters tested by infrared thermography in two cooling system conditions.**
R. B. Younes[1,3], G. Licitra[2,3], G. Azzaro[2], I. Schadt[2], M. Caccamo*[2], R. Petriglieri[2], and S. Carpino[2], [1]*Institut National Agronomique de Tunisie, Tunis, Tunisia*, [2]*CoRFiLaC, Regione Siciliana, Ragusa, Italy*, [3]*DISPA, Catania University, Catania, Italy*.

M231 **Establishing the summer:winter ratio to evaluate the effects of heat stress on conception rates in US commercial dairies.**
H. M. Robertson*[1,2] and T. R. Bilby[2], [1]*Department of Animal Science and Wildlife Management, Tarleton State University, Stephenville, TX*, [2]*Texas AgriLife Research and Extension, Texas A&M System, Stephenville*.

M232 **Utilizing production parameters to establish the summer:winter ratio to evaluate the effects of heat stress on commercial dairies in the southwest.**
H. M. Robertson*[1,2] and T. R. Bilby[2], [1]*Department of Animal Science and Wildlife Management, Tarleton State University, Stephenville, TX*, [2]*Texas AgriLife Research and Extension Service, Texas A&M System, Stephenville*.

M233 **Heat stress effects on milk production and udder health in Holstein and Jersey cows.**
D. L. Smith, S. H. Ward*, T. Smith, and B. J. Rude, *Department of Animal and Dairy Sciences, Mississippi State University, Mississippi State*.

M234 **Impact of season on the metabolic profile in transition Holstein dairy cows in summer and winter.**
K. J. Lager*[1,2], E. R. Jordan[1], R. G. S. Bruno[1,2], J. A. H. Rivera[3], R. Sprowls[4], and D. R. Topliff[2], [1]*Texas AgriLife Extension Service, Texas A&M System, College Station*, [2]*West Texas A&M University, Canyon*, [3]*Texas AgriLife Research, Stephenville*, [4]*Texas Veterinary Medical Diagnostic Laboratory, Amarillo*.

M235 **Abundance of antibiotic resistance genes in the gut and feces of ionophore-fed lactating cows.**
T. Galligan*, P. P. Ray, A. Pruden, and K. F. Knowlton, *Virginia Polytechnic Institute and State University, Blacksburg*.

M236 **Production and management consequences of abortion in dairy herds of central Mexico.**
R. R. Lozano-Dominguez*, C. F. Arechiga, R. M. Rincon, F. J. Escobar, and J. M. Silva, *Universidad Autonoma de Zacatecas, Zacatecas, Mexico*.

M237 **Prevalence of dairy cattle diseases and abortion in central Mexico.**
C. Murillo, R. R. Lozano, C. F. Arechiga*, M. Rincon, and Z. Cortes, *Autonomous University of Zacatecas, Zacatecas, Mexico*.

M238 **Analysis of factors affecting heifer fertility traits in Chinese Holstein.**
Y. Wang*[1], X. Guo[1], G. Guo[2,4], X. Li[2], L. Liu[3], W. Zheng[3], T. Yang[3], Q. Liu[5], Y. Zhang[1], S. Zhang[1], and Y. Zhang[1], [1]*College of Animal Science and Technology, China Agriculture University, Beijing, China*, [2]*Beijing Sanyuan Lvhe Dairy Cattle Center, Beijing Sanyuan Breeding Technology Co., Beijing, China*, [3]*Beijing Dairy Cattle Center, Beijing, China*, [4]*Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*, [5]*Beijing Capital Agribusiness Group, Beijing, China*.

M239 **Characterization of certified organic Wisconsin dairy farms: Management practices, feeding regimens, and milk production.**
C. A. Hardie*[1], V. E. Cabrera[1], M. Dutreuil[1], R. Gildersleeve[2], and M. Wattiaux[1], [1]*University of Wisconsin-Madison, Madison*, [2]*University of Wisconsin Extension, Dodgeville*.

M240 **Impact of dairy herd reproductive performance on predicted economic performance, enteric CH_4 emission and excretion of N and P using a Markov-chain model.**
M. J. Aguerre*, J. O. Giordano, A. S. Kalantari, M. A. Wattiaux, P. M. Fricke, and V. E. Cabrera, *University of Wisconsin-Madison, Madison*.

M241 **Reproductive indicators of dairy enterprises in north and west Mexico.**
H. Estrella-Quintero*, D. V. Mariscal-Aguayo, R. Núñez-Domínguez, and G. Maldonado-García, *Universidad Autónoma Chapingo, Chapingo, Estado de México, México*.

M242 **Effects of presynchronization with GnRH or prostaglandin F2α before the start of a resynchronization protocol on reproductive performance of dairy cows.**
A. A. Scanavez[1], L. G. D. Mendonça[1], J. G. N. Moraes[1], P. R. B. Silva[1], G. Lopes[2], and R. C. Chebel*[1], [1]*Department of Veterinary Population Medicine, University of Minnesota, Saint Paul*, [2]*Accelerated Genetics, Baraboo, WI.*

M243 **Effects of prepartum grouping strategy on health, reproductive, and productive parameters of dairy cows.**
P. R. B. Silva*[1,2], J. G. N. Moraes[1,2], L. G. D. Mendonça[1], A. A. Scanavez[1], G. Nakagawa[1], M. I. Endres[2], J. Fetrow[1], and R. C. Chebel[1], [1]*Department of Veterinary Population Medicine, University of Minnesota, St Paul*, [2]*Department of Animal Science, University of Minnesota, St Paul*.

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M244 **Effects of prepartum grouping strategy on body condition score and metabolic parameters of peripartum dairy cows.**
P. R. B. Silva*[1,2], J. G. N. Moraes[1,2], L. G. D. Mendonça[1], A. A. Scanavez[1], G. Nakagawa[1], M. I. Endres[2], and R. C. Chebel[1], [1]*Department of Veterinary Population Medicine, University of Minnesota, St Paul*, [2]*Department of Animal Science, University of Minnesota, St Paul*.

M245 **Culling reasons and the association of herd size and milk yield with culling rates in dairy herds in southern Brazil.**
R. Almeida*[1], D. F. F. Silva[1], L. Alegransi[1], R. B. Navarro[2], A. A. Valloto[3], and J. A. Horst[3], [1]*Universidade Federal do Paraná, Curitiba, PR, Brazil*, [2]*Capal Cooperativa Agroindustrial, Arapoti, PR, Brazil*, [3]*Associação Paranaense de Criadores de Bovinos da Raça Holandesa, Curitiba, PR, Brazil*.

M246 **Nitrogen utilization efficiency in specialized dairy herds in southern Brazil.**
D. Jerszurki[1], L. Jerszurki[2], R. B. Navarro[3], A. Ostrensky[4], G. T. Santos[5], and R. Almeida*[1], [1]*Universidade Federal do Paraná, Curitiba, PR, Brazil*, [2]*Universidade Tecnológica Federal do Paraná, Curitiba, PR, Brazil*, [3]*Capal Cooperativa Agroindustrial, Arapoti, PR, Brazil*, [4]*Pontifícia Universidade Católica do Paraná, Curitiba, PR, Brazil*, [5]*Universidade Estadual de Maringá, Maringá, PR, Brazil*.

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M247 **Carcass primary cuts proportions of Nellore bulls stratified for residual feed intake.**
F. L. Araujo*[1], R. H. Branco[2], C. D. A. Batalha[1], S. F. M. Bonilha[2], A. C. Queiroz[1], and W. P. Costa[1], [1]*Departmento de Zootecnia, Universidade Federal de Viçosa, Viçosa, MG, Brazil*, [2]*Centro APTA Bovinos de Corte, Instituto de Zootecnia, Sertãozinho, SP, Brazil*.

M248 **Creatinine excretion and metabolizable protein requirements for maintenance of Red Norte young bulls.**
T. R. Amorim, M. M. Ladeira*, M. L. Chizzotti, J. R. R. Carvalho, A. R. V. Lima, N. L. Magalhães, and P. D. Teixeira, *Federal University of Lavras, Lavras, MG, Brazil*.

M249 **Measurement of purine derivatives and creatinine excretion in steers fed fescue seed.**
J. H. Eisemann*, G. B. Huntington, and A. E. Lamb, *North Carolina State University, Raleigh*.

M250 **Feedlot performance and carcass characteristics of limit-fed steers.**
K. Thompson*[1], P. Gunn[2], R. Lemenager[2], M. Claeys[2], T. Nennich[2], and S. Lake[1], [1]*University of Wyoming, Laramie*, [2]*Purdue University, West Lafayette, IN*.

M251 **Ergovaline disappearance from a ruminally incubated buffer.**
A. P. Foote*[1], N. B. Kristensen[2], J. L. Klotz[3], K. R. Brown[3], J. R. Strickland[3], D. H. Kim[1], A. F. Koontz[1], K. R. McLeod[1], L. P. Bush[1], and D. L. Harmon[1], [1]*University of Kentucky, Lexington*, [2]*Syddansk Kvæg, Vojens, Denmark*, [3]*USDA-ARS, FAPRU, Lexington, KY*.

M252 **Body condition score and heart girth change between 7 and 18 months of age to estimate pregnancy probability of Hereford heifers mated at 18 months of age.**
J. B. G. Costa Junior*[1], J. O. J. Barcellos[1], J. C. Whittier[2], I. D. P. S. Diaz[3], L. Canellas[1], V. Peripolli[1], J. K. Ahola[2], and R. K. Peel[2], [1]*Universidade Federal do Rio Grande do Sul, Porto Alegre, Rio Grande do Sul, Brazil*, [2]*Colorado State University, Fort Collins*, [3]*Universidade Estadual Paulista, Jaboticabal, Sao Paulo, Brazil*.

M253 **Use of body weight gain at different ages to evaluate the pregnancy probability and the change in the pregnancy chance of Hereford heifers mated at 18 months of age.**
J. B. G. Costa Junior*[1], J. O. J. Barcellos[1], J. C. Whittier[2], I. D. P. S. Diaz[3], L. Canellas[1], V. Peripolli[1], J. K. Ahola[2], and R. K. Peel[2], [1]*Universidade Federal do Rio Grande do Sul, Porto Alegre, RS, Brazil*, [2]*Colorado State University, Fort Collins*, [3]*Universidade Estadual Paulista, Jaboticabal, Sao Paulo, Brazil*.

M254 **Use of a fescue seed model to study effects of ergot alkaloids on temperature regulation in steers.**
G. B. Huntington* and J. H. Eisemann, *North Carolina State University, Raleigh*.

M255 **Deposition of muscular and subcutaneous fat tissues of Nellore steers fed pasture with crude glycerin.**
E. San Vito*, T. T. Berchielli, J. F. Lage, E. E. Dallantonia, L. M. Delevatti, C. S. R. Junior, R. G. Canesin, M. Machado, A. F. Ribeiro, R. A. Silva, and R. A. Reis, *Universidade Estadual Paulista "Júlio de Mesquita Filho," Jaboticabal, São Paulo, Brazil*.

M256 **Differences in residual feed intake are largely associated with changes in body weight gain composition.**
M. L. Nascimento*[1], A. R. D. L. Souza[1], R. R. Tullio[2], M. M. Alencar[2], A. N. Rosa[3], and D. P. D. Lanna[1], [1]*University of Sao Paulo, Piracicaba, São Paulo, Brazil*, [2]*Embrapa Cattle Southeast, São Carlos, São Paulo, Brazil*, [3]*Embrapa Beef Cattle, Campo Grande, Mato Grosso do Sul, Brazil*.

M257 **Effects of trehalose on performance and morbidity of newly received beef steers.**
E. M. Domby*, C. H. Ponce, J. S. Schutz, and M. L. Galyean, *Department of Animal and Food Sciences, Texas Tech University, Lubbock*.

Draft

M258 **Performance of fattening steers on Marandu pasture supplemented with levels of total digestible nutrient in the water season.**
J. F. W. Koscheck*, J. T. Zervoudakis, L. K. Hatamoto-Zervoudakis, L. S. Cabral, A. A. Oliveira, J. M. B. Benatti, D. M. G. Carvalho, and R. P. Silva, *Federal University of Mato Grosso, Cuiabá, MT, Brazil*.

M259 **Different supplementation strategies to grazing beef cattle in Brazil.**
H. O. A. Santana[1], H. J. Fernandes*[1], M. A. Rezende[3,2], G. L. D. Feijó[2], A. Aguiar[4], E. P. Rosa[1], C. N. F. Guaraldo[1], and J. A. da Costa Lima[1], [1]*State University of Mato Grosso do Sul, Aquidauana, MS. Brazil*, [2]*EMBRAPA Beef Cattle Center, Campo Grande, MS. Brazil*, [3]*Federal University of Grande Dourados, Dourados, MS. Brazil*, [4]*University of Florida, Gainesville*.

M260 **Determination of net energy requirements of growing Nellore cattle.**
S. L. Posada[1], A. L. C. C. Borges*[2], R. R. Noguera[1], N. M. Rodríguez[2], R. R. Silva[2], C. G. Pancoti[2], and H. F. Lage[2], [1]*Universidad de Antioquia, Medellín, Antioquia, Colombia*, [2]*Universidade Federal de Minas Gerais, Belo Horizonte, Minas Gerais, Brazil*.

M261 **Supplementation of fattening steers on Marandu pasture in the summer: intake and digestibility.**
J. W. K. Koscheck*, J. T. Zervoudakis, L. K. Hatamoto-Zervoudakis, L. S. Cabral, A. A. Oliveira, J. M. B. Benatti, D. M. G. Carvalho, R. P. Silva, and R. G. F. Silva, *Federal University of Mato Grosso, Cuiabá, MT, Brazil*.

M262 **Performance, feed efficiency and ultrasound carcass traits of Nellore cattle with different classes of residual gain.**
M. H. A. Santana*[1], R. C. Gomes[2], S. L. Silva[1], J. B. S. Ferraz[1], and P. R. Leme[1], [1]*College of Animal Science and Food Engineering, University of São Paulo, Pirassununga, SP, Brazil*, [2]*State University of Londrina, Londrina, PR, Brazil*.

M263 **Effect of diet type on the expression of genes regulating ruminal epithelium function of cattle.**
A. K. Kelly*[1], S. M. Waters[2], K. Keogh[1,2], E. O'Shea[1,2], and D. A. Kenny[2], [1]*School of Agriculture and Food Science, University College Dublin, Dublin, Ireland*, [2]*Teagasc, Animal Bioscience Department, Dunsany, Co. Meath, Ireland*.

M264 **Correlations between arrival plasma amino acid concentrations and feedlot performance and effects of arrival sex and antibiotic treatments in high-risk calves.**
C. L. Maxwell*[1], S. J. Terrill[1], J. W. Dillwith[2], R. D. Madden[2], M. L. May[3], G. K. Kim[3], S. L. Parr[3], C. W. Booker[3], C. R. Krehbiel[1], and L. O. Burciaga-Robles[3], [1]*Department of Animal Science, Oklahoma State University, Stillwater*, [2]*Department of Entomology and Plant Pathology, Oklahoma State University, Stillwater*, [3]*Feedlot Health Management Services Ltd., Okotoks, AB, Canada*.

M265 **Evaluation of the acid insoluble ash technique as a method for determining apparent diet digestibility in beef cattle.**
E. J. Mc Geough*[1,2], D. A. Kenny[2], and P. O'Kiely[1], [1]*Teagasc Animal & Grassland Research and Innovation Centre, Grange, Dunsany, Co. Meath, Ireland*, [2]*School of Agriculture, Food Science and Veterinary Medicine, University College Dublin, Dublin, Ireland*.

M266 **Feedlot performance and carcass traits of Nellore cattle as affected by sex condition and frame size.**
S. L. Silva*[1], R. C. Gomes[2], M. N. Bonin[1], L. S. Martello[1], P. L. Alvarez[1], L. S. Oliveira[1], M. R. Mazon[1], J. C. M. Nogueira Filho[1], J. B. S. Ferraz[1], and P. R. Leme[1], [1]*Universidade de São Paulo, Faculdade de Zootecnia e Engenharia de Alimentos, Pirassununga, SP, Brazil*, [2]*Dep. Zootecnia, Universidade Estadual de Londrina, Londrina, PR, Brazil*.

M267 **Evaluation of a rapid determination of heat production and respiratory quotient in Holstein steers using the washed rumen technique.**
D. H. Kim*[1], K. R. McLeod[1], J. L. Klotz[2], A. F. Koontz[1], A. P. Foote[1], and D. L. Harmon[1], [1]*University of Kentucky, Lexington*, [2]*USDA-ARS, Forage-Animal Production Research Unit, Lexington, KY*.

M268 **Effects of lipid sources on intake and digestibility of beef cattle finished at pasture.**
I. P. C. Carvalho*[1,3], T. T. Berchielli[1,2], G. Fiorentini[1,3], J. F. Lage[1,3], Y. T. G. Salcedo[1], H. V. Brandt Filho[1], L. G. Rossi[1], C. S. Ribeiro Junior[1,3], and L. M. Delevatti[1], [1]*Universidade Estadual Paulista Julio de Mesquita Filho, Jaboticabal, Brazil*, [2]*INCT/CA member, Brazil*, [3]*FAPESP Fundação de Amparo a*, [4]*Pesquisa do Estado de São Paulo, São Paulo, Brazil*.

M269 **Nutrient mass balance and performance of feedlot cattle fed barley segregated by near infrared spectroscopy.**
E. M. Hussey, C. F. O'Neill*, R. E. Peterson, L. O. Burciaga-Robles, and M. L. May, *Feedlot Health Management Services Ltd., Okotoks, AB, Canada*.

M270 **Development of a fecal starch index to predict the feeding value of barley grain for feedlot cattle.**
W. Z. Yang* and T. A. McAllister, *Research Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada*.

M271 **Effect of direct-fed microbials on utilization of ruminally degradable protein in receiving steers.**
N. M. Kenney*, C. A. Schaeffer, E. S. Vanzant, J. W. Lehmkuhler, D. L. Harmon, and K. R. McLeod, *University of Kentucky, Lexington*.

Draft

Ruminant Nutrition
Dairy I

M272 **Utilizing dietary nutrients to predict nitrogen efficiency in lactating dairy cattle.**
N. Swanepoel* and P. H. Robinson, *University of California, Davis*.

M273 **Effects of water iron concentration, valence and source on drinking water preference of lactating cows.**
O. N. Genther* and D. K. Beede, *Michigan State University, East Lansing*.

M274 **Effect of cecum starch infusion on hindgut fermentation and inflammatory response in dairy cattle.**
S. Li*, H. Khazanehei, E. Khafipour, and J. C. Plaizier, *University of Manitoba, Winnipeg, MB, Canada*.

M275 **Hepatic triglyceride concentration and fatty acid profile in early lactation Holstein cows fed saturated medium- or long-chain fatty acids.**
M. Hollmann*[1], T. H. Herdt[2,3], J. A. Zyskowski[3], and D. K. Beede[1], [1]*Department of Animal Science, Michigan State University, East Lansing*, [2]*Department of Large Animal Clinical Sciences, Michigan State University, East Lansing*, [3]*Diagnostic Center for Population and Animal Health, Michigan State University, East Lansing*.

M276 **Production and metabolic response of lactating dairy cows to heat stress while supplemented with a dietary antioxidant.**
A. L. Kenny*[1], Y. M. Wang[2], N. M. Barkley[1], R. R. Rodrigues[1], K. A. Davison[1], G. I. Zanton[2], and M. R. Waldron[1], [1]*University of Missouri, Columbia*, [2]*Novus International Inc., St. Charles, MO*.

M277 **Effect of supplemental fatty acids on production responses and hepatic fatty acid composition and gene expression of dairy cows fed diets containing low concentrations of fatty acids.**
L. F. Greco*[1], M. Garcia[1], B. L. Artiaga[1], E. K. Ganda[1], R. S. Bisinotto[1], F. S. Lima[1], N. Martinez[1], E. S. Ribeiro[1], A. L. Lock[2], W. W. Thatcher[1], C. R. Staples[1], and J. E. P. Santos[1], [1]*University of Florida, Gainesville*, [2]*Michigan State University, East Lansing*.

M278 **Effect of lactation stage on milk production and milk quality in dairy cows in confinement.**
J. A. de Freitas*[1], J. C. de Souza[3], R. P. Lana[2], A. F. G. Neto[1], V. L. Souza[1], and A. L. dos Santos[1], [1]*Federal University of Parana, Palotina, Parana, Brazil*, [2]*Federal University of Viçosa, Viçosa, Minas Gerais, Brazil*, [3]*Federal University of South of Mato Grosso, Aquidauana, Mato grosso do Sul, Brazil*.

M279 **Comparison of growth curves between two genetic compositions of dairy goats using nonlinear mixed models.**
J. G. L. Regadas Filho*[1], M. T. Rodrigues[1], R. A. M. Vieira[2], L. F. Brito[1], and T. S. Oliveira[1], [1]*Universidade Federal de Viçosa, MG, Brazil*, [2]*Universidade Estadual do Norte Fluminense Darcy Ribeiro, Campos dos Goytacazes, RJ, Brazil*.

M280 **Nonlinear mixed models fitted to growth curves of dairy goats.**
J. G. L. Regadas Filho*[1], M. T. Rodrigues[1], R. A. M. Vieira[2], L. F. Brito[1], and T. S. Oliveira[1], [1]*Universidade Federal de Viçosa, MG, Brazil*, [2]*Universidade Estadual do Norte Fluminense Darcy Ribeiro, Campos dos Goytacazes, RJ, Brazil*.

M281 **Increasing doses of *trans*-10, *cis*-12 conjugated linoleic acid (CLA) and changes in milk fat content and secretion of dairy ewes.**
M. Baldin[1], R. Dresch[1], D. R. M. Alessio[1], J. Souza[2], M. A. S. Gama[3], M. P. Soares[4], and D. E. Oliveira*[1,5], [1]*Centro de Ciências Agroveterinárias, UDESC, Lages, SC, Brazil*, [2]*Esalq/USP, Piracicaba, SP, Brazil*, [3]*Embrapa, CNPGL, Juiz de Fora, MG, Brazil*, [4]*Instituto Federal Catarinense, Araquari, SC, Brazil*, [5]*Centro de Educação Superior do Oeste, UDESC, Chapecó, SC, Brazil*.

M282 **Impacts of fat level and source on production of high producing California dairy cows.**
J. M. Soderstrom*[1], P. H. Robinson[1], and K. Karges[2], [1]*University of California, Davis*, [2]*POET Nutrition, Sioux Falls, SD*.

M283 **Meta-analysis: Impact of grain type and corn harvest and processing practices on digestion and lactation performance by dairy cows.**
L. F. Ferraretto* and R. D. Shaver, *Department of Dairy Science, University of Wisconsin-Madison, Madison*.

M284 **Finding a proxy for the inhibiting effects of polyunsaturated fatty acids on milk fat in dairy cows.**
G. Maxin*[1], H. Rulquin[1], and F. Glasser[2], [1]*INRA-Agrocampus Ouest, Rennes, France*, [2]*INRA, Theix, Saint-Gènes-Champanelle, France*.

Ruminant Nutrition
Dairy: Calves and Heifers

M285 **Crude glycerin as a replacement for corn in starter concentrate for dairy calves: Ruminal and blood parameters.**
G. G. O. Napoles[1,2], C. E. Oltramari[1,3], J. T. Silva[1,3], G. B. Mourão[1,3], and C. M. M. Bittar*[1,3], [1]*Escola Superior de Agricultura Luiz de Queiroz, Piracicaba, SP, Brazil*, [2]*Fapesp, São Paulo, SP, Brazil*, [3]*CNPq, Brasília, DF, Brazil*.

Draft

M286 **Effect of feed presentation on pre- and post-weaning performance of dairy calves.**
E. K. Miller-Cushon[1], R. Bergeron[2], K. E. Leslie[3], G. J. Mason[4], and T. J. DeVries*[1], [1]*Dept. of Animal and Poultry Science, University of Guelph, Kemptville Campus, Kemptville, ON, Canada*, [2]*Dept. of Animal and Poultry Science, University of Guelph, Campus d'Alfred, Alfred, ON, Canada*, [3]*Dept. of Population Medicine, University of Guelph, Guelph, ON, Canada*, [4]*Dept. of Animal and Poultry Science, University of Guelph, Guelph, ON, Canada*.

M287 **Interactive effects of feeding frequency and feed bunk space on the feeding behavior of limit-fed dairy heifers.**
A. M. Greter[1], T. F. Duffield[2], B. W. McBride[3], T. M. Widowski[3], and T. J. DeVries*[1], [1]*Dept. of Animal and Poultry Science, University of Guelph, Kemptville Campus, Kemptville, ON, Canada*, [2]*Dept. of Population Medicine, University of Guelph, Guelph, ON, Canada*, [3]*Dept. of Animal and Poultry Science, University of Guelph, Guelph, ON, Canada*.

M288 **Effect of physical form of forage on performance, feeding behavior, and digestibility of Holstein calves.**
C. Montoro[1], E. K. Miller-Cushon*[2], T. J. DeVries[2], and A. Bach[1,3], [1]*Department of Ruminant Production, IRTA, Barcelona, Spain*, [2]*Department of Animal and Poultry Science, University of Guelph, Kemptville, ON, Canada*, [3]*ICREA, Barcelona, Spain*.

M289 **Effects of age on gene expression of transport proteins in ruminal epithelia of milk-fed calves.**
M. Oba*, T. B. McFadden, and L. L. Guan, *University of Alberta, Edmonton, AB, Canada*.

M290 **Ruminal and blood parameters of dairy calves managed on different milk-feeding programs.**
M. R. Paula[1,2], G. G. O. Napoles[1,3], M. P. C. Gallo[1,2], M. C. Soares[1,3], and C. M. M. Bittar*[1,2], [1]*Escola Superior de Agricultura, Piracicaba, SP, Brazil*, [2]*CNPq, Brasília, DF, Brazil*, [3]*Fapesp, São Paulo, SP, Brazil*.

M291 **Effects of kelp meal on performance and structural growth of conventional and organic dairy calves.**
G. M. Soule*, A. F. Brito, A. Miranda, L. Chase, N. L. Whitehouse, E. S. Fletcher, and N. T. Antaya, *University of New Hampshire, Durham*.

M292 **Total serum protein in calves is not correlated with future milk performance.**
B. Ozer*[1], A. Bach[2,3], and M. Chahine[1], [1]*University of Idaho, Twin Falls*, [2]*IRTA, Caldes de Montbui, Spain*, [3]*ICREA, Barcelona, Spain*.

M293 **Intake and performance of Holstein heifers transitioned to group housing from individual pens using differing grain mixes with or without hay the first two weeks after moving.**
D. Ziegler*[1], D. Schimek[2], B. Ziegler[2], H. Chester-Jones[1], M. Raeth-Knight[3], and G. Golombeski[4], [1]*University of Minnesota Southern Research and Outreach Center, Waseca*, [2]*Hubbard Feeds Inc., Mankato, MN*, [3]*University of Minnesota, St. Paul*, [4]*Hubbard Feeds Inc., Iowa City, IA*.

M294 **Precision-feeding dairy heifers with different levels of dietary fiber and F:C. Effects on protein utilization, N efficiency, and rumen fermentation.**
G. J. Lascano*[1] and A. J. Heinrichs[2], [1]*The California Polytechnic State University, San Luis Obispo*, [2]*The Pennsylvania State University, University Park*.

M295 **Insulin response is affected by the level of milk replacer offered to young calves.**
A. Bach*[1,2], Ll. Castells[2], C. Montoro[2], and M. Terre[2], [1]*ICREA, Barcelona, Spain*, [2]*Department of Ruminant Production, IRTA, Barcelona, Spain*.

M296 **Optimizing particle size and moisture in diets for dairy heifers.**
M. A. Khan[1], A. Bach[2,3], Ll. Castells*[3], D. M. Weary[1], and M. A. G. von Keyserlingk[1], [1]*Animal Welfare Program, University of British Columbia, Vancouver, BC, Canada*, [2]*ICREA, Barcelona, Spain*, [3]*Deparment of Ruminant Production, IRTA, Barcelona, Spain*.

M297 **Replacing processed grains with whole corn in starter diet did not affect the performance of dairy calves.**
M. A. Khan*[1], J. H. Kim[2], D. M. Veira[2], and M. A. G. von Keyserlingk[1], [1]*Animal Welfare Program, University of British Columbia, Vancouver, BC, Canada*, [2]*Agriculture and Agri-Food Canada, Agassiz BC, Canada*.

M298 **Performance of dairy calves managed on different milk-feeding programs.**
M. R. Paula[1,2], M. P. C. Gallo[1,3], M. C. Soares[1], G. B. Mourão[1,2], and C. M. M. Bittar*[1,2], [1]*Escola Superior de Agricultura Luiz de Queiroz, Piracicaba, SP, Brazil*, [2]*CNPq, Brasília, DF, Brazil*, [3]*Fapesp, São Paulo, SP, Brazil*.

M299 **Effect of increasing intake of linoleic acid in milk replacer on Holstein calf performance.**
M. Garcia*, J. H. Shin, A. Schlaefli, J. E. P. Santos, and C. R. Staples, *University of Florida, Gainesville*.

M300 **Effect of feeding increasing amounts of linoleic acid on health and immunity of unweaned Holstein calves.**
M. Garcia*, J. H. Shin, A. Schlaefli, D. Wang, J. E. P. Santos, and C. R. Staples, *University of Florida, Gainesville*.

M301 **Jersey calf blood metabolites in response to liquid feeds with varied fatty acid profiles.**
V. A. Swank*, W. S. Bowen, K. M. O'Diam, M. L. Eastridge, and K. M. Daniels, *Department of Animal Sciences, The Ohio State University, Columbus*.

Draft

M302 **Ponderal development of dairy heifers fed sugarcane and increasing crude protein levels.**
M. F. S. Queiroz*[1], T. T. Berchielli[2], R. D. Signoretti[3], and J. A. S. Morais[4], [1]*Universidade Federal da Paraíba, CCHSA/UFPB, Bananeiras, Paraíba, Brazil*, [2]*Faculdade de Ciências Agrárias e Veterinárias, UNESP, Jaboticabal, São Paulo, Brazil*, [3]*Agência Paulista de Tecnologia dos Agronegócios, Colina, São Paulo, Brasil*, [4]*Universidade Federal de Sergipe (UFS), São Cristovão, Sergipe, Brazil*.

M303 **Pre- and postweaning performance and health of dairy calves when sodium butyrate is fed in milk replacer and/or calf starter during the summer months.**
H. Chester-Jones*[1], S. Moreland[2], D. Ziegler[1], M. Raeth-Knight[3], and J. van Eys[2], [1]*University of Minnesota Southern Research and Outreach Center, Waseca*, [2]*Nutriad Inc., Elgin, IL*, [3]*University of Minnesota, St. Paul*.

M304 **Limiting amino acids for pregnant heifers fed corn silage-based diet.**
D. Wang, J. Q. Wang*, S. C. Li, D. P. Bu, Y. D. Zhang, P. Sun, and L. Y. Zhou, *Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*.

Ruminant Nutrition
Dairy: Feed Additives I

M305 **Effect of live yeast on milk yield and related responses in a commercial dairy herd.**
G. E. Higginbotham*[1], A. R. Castillo[2], J. M. Heguy[3], and H. A. Rossow[4], [1]*University of California Cooperative Extension, Madera*, [2]*University of California Cooperative Extension, Merced*, [3]*University of California Cooperative Extension, Modesto*, [4]*University of California School of Veterinary Medicine, Tulare*.

M306 **Effects of corn shredlage on lactation performance by dairy cows.**
L. F. Ferraretto* and R. D. Shaver, *University of Wisconsin-Madison, Madison*.

M307 **Could live yeast supplement improve milk composition of mid lactating Holstein cows during heat stress?**
M. Dehghan-Banadaky*[1], R. Motameni[2], and M. Ebrahimi[1], [1]*University of Tehran, Karaj, Tehran, Iran*, [2]*Islamic Azad University, Tehran, Iran*.

M308 **Investigation of live yeast supplement on blood metabolites and nutrient digestibility in mid lactating Holstein cows.**
M. Dehghan-Banadaky*[1], R. Motameni[2], and M. Ebrahimi[1], [1]*University of Tehran, Karaj, Tehran, Iran*, [2]*Islamic Azad University, Tehran, Iran*.

M309 **Influence of *Salix babylonica* extract on daily milk production and composition as well as in vitro gas production in dairy cows.**
A. Z. M. Salem*[1], R. Rojo[2], M. Ronquillo[1], H. Gado[3], N. Pescador[1], and F. Peralta[2], [1]*Facultad de Medicina Veterinaria y Zootecnia, Universidad Autónoma del Estado de México, Toluca, Estado de Mexico, Mexico*, [2]*Centro Universitario UAEM Temascaltepec, Universidad Autónoma del Estado de México, Temascaltepec, Estado de México, México*, [3]*Department of Animal Production, Faculty of Agriculture, Ain Shams University, Cairo, Egypt*.

M310 **A novel approach to measure the bioavailability of rumen protected l-lysine.**
K. B. Cunningham*[1], J. A. Davidson[1], S. E. Boucher[2], and B. L. Miller[1], [1]*LongView Animal Nutrition Center, Land O' Lakes Purina Feed, Gray Summit, MO*, [2]*Kemin AgriFoods North America, Des Moines, IA*.

M311 **Determining the bioavailability of lysine in AjiPro-L using the plasma free amino acid dose response method.**
N. L. Whitehouse*[1], E. S. Fletcher[1], A. F. Brito[1], C. G. Schwab[2], and I. Shinzato[3], [1]*University of New Hampshire, Durham*, [2]*Schwab Consulting LLC, Boscobe*, [3]*Ajinomoto Heartland Inc., Chicago, IL*.

M312 **Microencapsulated sodium selenite supplementation in dairy cows: Effects on selenium status.**
E. Grilli*[1], P. Fantinati[2], M. Morlacchini[3], and A. Piva[1], [1]*DISMVET, Facoltà di Medicina Veterinaria, Ozzano Emilia, Italy*, [2]*Vetagro SpA, Reggio Emilia, Italy*, [3]*Centro Ricerche per la Zootecnia e l' Ambiente, San Bonico, Italy*.

M313 **Effects of dietary amylase and sucrose on productivity of cows fed low-starch diets.**
C. F. Vargas*[1], M. Engstrom[2], and B. J. Bradford[1], [1]*Kansas State University, Manhattan*, [2]*DSM Nutritional Products, Parsippany, NJ*.

M314 **The effect of essential oil/botanical product on performance and health of calves.**
B. L. Miller, T. J. Earleywine*, and T. E. Johnson, *Land O' Lakes Inc., Webster City, IA*.

M315 **Effects of two sources of rumen-protected fat associated or not with conjugated linoleic acid (CLA) on milk fatty acid profile in dairy ewes.**
E. Ticiani[1], J. De Souza[2], F. Batistel[2], M. Baldin[3], R. Dresch[3], M. A. S. Gama[4], F. C. F. Lopes[4], and D. E. Oliveira*[1,3], [1]*Universidade do Estado de Santa Catarina, CEO, Chapecó, Santa Catarina, Brazil*, [2]*Universidade de São Paulo, ESALQ, Piracicaba, São Paulo, Brazil*, [3]*Universidade do Esatado de Santa Catarina, CAV, Lages, Santa Catarina, Brazil*, [4]*Embrapa Gado de Leite, Juiz de Fora, Minas Gerais, Brazil*.

Draft

M316 **Feeding protected lysine to lactating dairy cows improved milk protein yield.**
J. A. Davidson*[1], S. E. Boucher[2], and B. L. Miller[1], [1]*LongView Animal Nutrition Center, Land O' Lakes Purina Feed, Gray Summit, MO*, [2]*Kemin AgriFoods North America, Des Moines, IA*.

M317 **The effect of treating corn stover silage with cellulase and *Lactobacillus* on nutritive value of silage in dairy cows.**
H. Ma, J. Q. Wang*, D. P. Bu, P. Sun, and L. Y. Zhou, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences,, Beijing, China*.

M318 **Degradation of L-arginine and N-carbomyl glutamate and their effect on rumen fermentation in vitro.**
B. Chacher*, D. M. Wang, H. Y. Liu, and J. X. Liu, *Institute of Dairy Science, MoE Key laboratory of Molecular Animal Nutrition, College of Animal Sciences, Zhejiang University, Hangzhou, China*.

M319 **Folic acid and vitamin B12 supplement enhances energy metabolism of dairy cows in early lactation.**
M. Duplessis*[1,2], C. L. Girard[2], D. E. Santschi[3], D. M. Lefebvre[3], and D. Pellerin[1], [1]*Université Laval, Département des sciences animales, Québec, Qc, Canada*, [2]*Agriculture and Agri-Food Canada, Sherbrooke, Qc, Canada*, [3]*Valacta, Ste-Anne-de-Bellevue, Qc, Canada*.

M320 **The potential benefits of supplementing corn-based dairy diets with Zado or yeast for milk yield and production efficiency in dairy cows.**
H. Gado*[1], B. E. Borhami[2], and A. Z. M. Salem[3,2], [1]*Ain Shams University, Cairo, Egypt*, [2]*Alexandria University, Alexandria, Egypt*, [3]*Universidad Autónoma del Estado de México, Estado de México, México*.

M321 **The effect of carnitine on growth and performance of calves fed milk replacer.**
B. L. Miller*, T. J. Earleywine, and T. E. Johnson, *Land O' Lakes Inc., Webster City, IA*.

M322 **Effects of a solid oil supplement (Oralac) on milk fatty acid composition of grazing dairy cows.**
G. A. Gagliostro*[1], L. E. Antonacci[1], J. Ballistreri[2], E. Bonina[2], M. R. Williner[3], and C. A. Bernal[3], [1]*Instituto Nacional de Tecnología Agropecuaria, INTA, Balcarce, Buenos Aires, Argentina*, [2]*Tecnuar SRL, Rosario, Santa Fé, Argentina*, [3]*Universidad Nacional del Litoral, Santa Fé, Santa Fé, Argentina*.

M323 **Combination of bacterial and yeast probiotics: A step forward to unravel their mode of action.**
J. Chiquette*[1], J. Lagrost[2], C. L. Girard[1], S. Li[3], J. C. Plaizier[3], and G. Talbot[1], [1]*Dairy and Swine Research and Development Centre, Sherbrooke, Quebec, Canada*, [2]*Institut Supérieur d'Agriculture Rhône-Alpes, Lyon, Rhône-Alpes, France*, [3]*University of Manitoba, Winnipeg, Manitoba, Canada*.

M324 **Effect of live yeast supplementation on milk yield, milk components, and rumen pH in dairy cows.**
M. B. de Ondarza[1], A. Hall[2], J. Sullivan[2], and E. Chevaux*[2], [1]*Paradox Nutrition LLC, West Chazy, NY*, [2]*Lallemand Animal Nutrition, Milwaukee, WI*.

M325 ***Enterococcus faecium* as a probiotic for lactating ruminants.**
I. K. Hindrichsen*, M. Raun, N. L. Milora, B. Struer-Lauridsen, M. M. Jensen, and E. Upton Augustsson, *Chr. Hansen A/S, Hørsholm, Denmark*.

M326 **Effect of oral calcium bolus supplementation on early lactation health and milk yield in commercial dairy herds.**
G. R. Oetzel*[1] and B. E. Miller[2], [1]*University of Wisconsin-Madison, Madison*, [2]*Boehringer Ingelheim Vetmedica Inc., St. Joseph, MO*.

M327 **Effect of dietary buffers and magnesium oxide on intake, milk yield and composition, and blood metabolites of lactating dairy cows.**
J. K. Bernard*, J. W. West, and N. A. Mullis, *University of Georgia, Tifton*.

Draft

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M328 **Milk fatty acids composition responses to dietary short-medium chain fatty acids and long chain fatty acids in lactating dairy cows.**
Y. Sun, D. P. Bu, J. Q. Wang*, H. Cui, X. W. Zhao, X. Y. Xu, P. Sun, and L. Y. Zhou, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*.

M329 **Effect of sorghum grain supplementation levels on ruminal volatile fatty acids: Comparison between cattle and sheep.**
M. Aguerre*[1], C. Cajarville[2], L. Assandri[2], A. Gonzalez[1], and J. L. Repetto[1], [1]*Departamento de Bovinos, Facultad de Veterinaria, Universidad de la República, Montevideo, Uruguay*, [2]*Departamento de Nutrición Animal, Facultad de Veterinaria, Universidad de la República, Montevideo, Uruguay*.

M330 **Effects of different ratios of short-medium chain fatty acids to long chain fatty acids on milk composition in dairy cows.**
Y. Sun, D. P. Bu, J. Q. Wang*, H. Cui, X. W. Zhao, X. Y. Xu, P. Sun, and L. Y. Zhou, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*.

M331 **Effects of different fatty acid mixtures on milk fatty acid composition and oxidative stability of milk fat.**
X. W. Zhao, J. Q. Wang*, D. P. Bu, Y. Sun, H. Cui, X. Y. Xu, L. Y. Zhou, and P. Sun, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*.

M332 **Endogenous contribution and urinary recovery of purine derivatives in Nellore cattle.**
A. M. Barbosa*[1], R. F. D. Valadares[2], S. de C. V. Filho[2], D. do Santos Pina[3], and M. A. Fonseca[2,4], [1]*Universidade Federal da Bahia, Salvador, Bahia, Brazil*, [2]*Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil*, [3]*Universidade Federal do Mato Grosso, Sinop, Mato Grosso, Brazil*, [4]*Texas A&M University, College Station*.

M333 **Effects of dietary inclusion of tannin and polyethylene glycol supplementation on nitrogen metabolism in Saanen dairy goats.**
A. Rahimi[1], A. A. Naserian[1], R. Valizadeh[1], A. Tahmasbi[1], B. Saremi*[2], and A. R. Shahdadi[3], [1]*Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran*, [2]*Institute of Animal Science, Physiology & Hygiene Unit, University of Bonn, Germany*, [3]*Agricultural Sciences & Natural Resources, University of Gorgan, Gorgan, Golestan, Iran*.

M334 **Intake and apparent total tract digestibility of dry matter and nutrients in Nellore steers fed with whole raw soybean.**
N. R. B. Cônsolo*[1], A. S. C. Pereira[1], J. R. Gandra[1], F. P. Rennó[1], R. Gardinal[1], J. E. Freitas Junior[2], C. S. Takiya[1], and R. D. Mingoti[1], [1]*Faculdade de Medicina Veterinária e Zootecnia da Universidade de São Paulo (FMVZ-USP), Pirassununga, SP, Brazil*, [2]*Universidade Estadual Paulista (UNESP), Jaboticabal, SP, Brazil*.

M335 **Evaluation of published models for predicting dry matter intake of lactating dairy cows.**
J. Lee* and S. Seo, *Chungnam National University, Daejeon, Republic of Korea*.

M336 **Effects of roughage source and dietary level of inclusion on total tract apparent digestibility in Nellore cattle.**
R. S. Goulart*[1,2], L. G. Nussio[1], R. A. M. Vieira[3], J. L. P. Daniel[1], R. C. Amaral[1], V. P. Santos[1], and A. V. Pires[1], [1]*University of Sao Paulo, ESALQ, Piracicaba, SP, Brazil*, [2]*Department of Animal Sciences, North Dakota State University, Fargo*, [3]*Universidade Estadual do Norte Fluminense, Campos dos Goytacazes, RJ, Brazil*.

M337 **Intake and digestibility of diets with different levels of concentrates in cattle feedlot Nellore.**
C. S. Ribeiro Junior*, Y. T. G. Salcedo, R. C. Canesin, T. T. Berchielli, M. Machado, L. M. Delevatti, E. San Vito, I. P. C. de Carvalho, J. F. Lage, and G. Fiorentini, *São Paulo State University, Faculty of Agriculture and Veterinary Sciences, Jaboticabal, São Paulo, Brazil*.

M338 **Voluntary intake, apparent digestibility and blood urea levels in hair sheep fed *Cynodon nlemfuensis* grass mixed with *Leucaena leucocephala* and supplemented with rumen fermentable energy.**
V. A. Arjona-Alcocer, A. Ruiz-Gonzalez, E. Briceño-Poot, A. J. Ayala-Burgos, N. Ruz-Ruiz, and J. C. Ku-Vera*, *FMVZ-Universidad Autonoma de Yucatan, Merida, Yucatan, Mexico*.

M339 **Rumen ammoniacal nitrogen and pH from cattle supplemented with levels of replacement of soybean meal by sunflower cake.**
R. G. F. Silva*, J. T. Zervoudakis, L. S. Cabral, D. P. Sousa, L. K. H. Zervoudakis, M. F. Costa Filho, R. S. Gomes, F. M. Negrão, and J. F. W. Koscheck, *Federal University of Mato Grosso, Cuiabá, Mato Grosso, Brazil*.

M340 **Comparison of three different methods in determination of accurate soluble fraction in feeds for CPM Dairy formulation to improve efficiency and milk prediction accuracy.**
P. Yu, B. Liu*, Z. Niu, and D. A. Christensen, *Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, SK, Canada*.

M341 **Economic analysis of the inclusion of macauba pie of dietary lactating dairy cows.**
C. S. Ribeiro Junior*[2], R. A. de Azevedo[1], A. C. R. dos Santos[1], L. C. Gerassev[1], R. N. Bahiense[1], L. Araújo[1], and A. R. C. Lima[2], [1]*Federal University of Minas Gerais, Montes Claros, Minas Gerais, Brazil*, [2]*São Paulo State University, Faculty of Agriculture and Veterinary Sciences, Jaboticabal, São Paulo, Brazil*.

M342 **Survey of nutritional recommendations used by feedlot nutritionists in Brazil in 2011.**
C. A. Oliveira[2], M. D. B. Arrigoni[1], J. T. Vasconcelos[3], R. D. L. Pacheco[1], T. V. B. Carrara[2], L. L. Cursino[2], A. L. N. Rigueiro[2], and D. D. Millen*[2], [1]*São Paulo State University (UNESP), Botucatu, São Paulo, Brazil*, [2]*São Paulo State University (UNESP), Dracena, São Paulo, Brazil*, [3]*Elanco Animal Health, Greenfield, IN*.

M343 **Effects of different ratios of short-medium chain fatty acids to long chain fatty acids on plasma fatty acids profiles in lactating dairy cows.**
Y. Sun, D. P. Bu, J. Q. Wang*, X. W. Zhao, H. Cui, X. Y. Xu, P. Sun, and L. Y. Zhou, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*.

M344 **Effects of total solids in drinking water and milk yield per cow on milk mineral concentrations from California dairy farms.**
A. R. Castillo*[1], N. S. del Rio[2], N. R. St-Pierre[3], and W. P. Weiss[3], [1]*University of California, Cooperative Extension, Merced*, [2]*University of California, Cooperative Extension, Tulare*, [3]*The Ohio State University, Department of Animal Science, Columbus*.

M345 **Effects of supplementing different sources of fatty acids on lipid metabolism and endocrine responses in mid-lactation dairy cows.**
X. Y. Xu, J. Q. Wang*, D. P. Bu, H. Cui, X. W. Zhao, Y. Sun, L. Y. Zhou, and P. Sun, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*.

Draft

M346 **Effect of replacing legume/grass silage with corn silage in dairy cow diets on enteric methane production.**
F. Hassanat*[1], R. Gervais[2], P. Y. Chouinard[2], C. Julien[3], F. Tremblay[1], D. I. Massé[1], and C. Benchaar[1], [1]*Dairy and Swine Research and Development Centre-Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada*, [2]*Département des Sciences Animales, Université Laval, Québec, QC, Canada*, [3]*INRA-Université de Toulouse, Castanet-Tolosan, France*.

M347 **Effects of supplementing different ratios of short-medium chain fatty acids to long-chain fatty acids on the immune function in mid-lactating dairy cows.**
X. Y. Xu, J. Q. Wang*, D. P. Bu, H. Cui, X. W. Zhao, Y. Sun, L. Y. Zhou, and P. Sun, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*.

M348 **Effects of supplemental extruded full-fat soybean (ESB) on ruminal fermentation, nutrient digestion, blood parameters and productive performance of early lactation dairy cows.**
H. Su*[1], F. Wang[1], Y. Zou[1], Z. Cao[1,2], M. Ma[1,2], and S. Li[1,2], [1]*State Key Laboratory of Animal Nutrition, College of Animal Science and Technology, China Agricultural University, Beijing, China*, [2]*Sino-US Dairy Research and Development Center, Beijing, China*.

M349 **Intake and digestibility by lactating cows fed different levels of palm kernel cake.**
R. L. Oliveira*[1], R. L. N. V. Silva[2], A. C. Ferreira[1], A. G. Leão[1], M. C. A. Santana[1], A. A. Pinheiro[1], G. G. P. Carvalho[1], and L. F. B. Pinto[1], [1]*Universidade Federal da Bahia, Salvador, BA, Brazil*, [2]*Instituto Federal Baiano, Catu, BA, Brazil*.

Ruminant Nutrition
Rumen function and digestion

M350 **Comparison of three marker systems and three sites of digesta sampling to estimate the rumen outflow in bulls fed with corn silage or sugar cane.**
P. P. Rotta*, S. de C. V. Filho, L. F. C. Silva, F. A. C. Villadiego, and E. M. Galindo, *Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil*.

M351 **Comparison of in situ nylon bag protocols for analysing ruminal degradation of dry matter and crude protein in forages.**
H. van Laar*[1], J. Doorenbos[1], J. D. Steckley[2], and J. A. Metcalf[2], [1]*Nutreco R&D, Boxmeer, the Netherlands*, [2]*Nutreco Canada Agresearch, Guelph, ON, Canada*.

M352 **Methane emissions and diet digestibility for sheep offered diets varying in fat content and forage quality.**
E. J. Mc Geough*, Y.-H. Chung, K. A. Beauchemin, S. M. McGinn, and T. A. McAllister, *Agriculture and Agri-Food Canada, Lethbridge Research Centre, Lethbridge, Alberta, Canada*.

M353 **Leucaena diets with or without polyethylene glycol affecting rumen fermentation and methane emission in sheep.**
Y. Soltan*[1,2], A. Morsy[1,3], R. Lucas[1], S. Sallam[2], H. Louvandini[1], and A. Abdalla[1], [1]*Centre for Nuclear Energy in Agriculture, University of Sao Paulo, Piracicaba,Sao Paulo, Brazil*, [2]*University of Alexandria, Alexandria, Egypt*, [3]*Animal Production Research Institute, Cairo, Egypt*.

M354 **Biometrics digestive tube of kids suckled up to 60 days fed different goat milk replacers.**
L. S. Knupp, M. I. Marcondes*, C. S. Cunha, T. S. Oliveira, J. G. L. Regadas Filho, J. C. M. Lima, L. C. Lacerda, and C. M. Veloso, *Universidade Federal de Viçosa, Viçosa, MG, Brazil*.

M355 **Comparative influence of solvent extracted-peanut meal and soybean meal on apparent digestibility of diets for finishing lambs.**
L. R. Flores*[1], A. Camacho[1], N. E. Villalba[2], J. J. Lomelí[1], and R. Barajas[1], [1]*FMVZ-Universidad Autonóma de Sinaloa, Culiacán, Sinaloa, México*, [2]*Agricola Ganadera Mojolo, Culiacán, Sinaloa, México*.

M356 **Development of a new marker for utilization in digestibility studies.**
C. C. C. Couto Filho[1], E. O. S. Saliba*[1], M. N. Pereira[2], N. M. Rodriguez[1], and N. N. Morais Júnior[3], [1]*Universidade Federal de Minas Gerais, Belo Horizonte, MG, Brazil*, [2]*Universidade Federal de Lavras, Lavras, MG, Brazil*, [3]*Instituto Federal de Educação Ciência e Tecnologia do Espírito Santo, Colatina, ES, Brazil*.

M357 **Effects of vitamin B_{12} on in vitro rumen fermentation and microbial enzyme activity.**
Y. X. Li, J. K. Wang, Y. M. Wu, and J. X. Liu*, *Institute of Dairy Science, MOE Key Laboratory of Molecular Animal Nutrition, Zhejiang University, Hangzhou, China*.

M358 **Urinary recovery of purine derivatives and microbial production in Nellore cattle.**
A. M. Barbosa*[1], R. F. D. Valadares[2], S. de C. V. Filho[2], D. do S. Pina[3], and M. A. Fonseca[2,4], [1]*Universidade Federal da Bahia, Salvador, Bahia, Brazil*, [2]*Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil*, [3]*Universidade Federal do Mato Grosso, Sinop, Mato Grosso, Brazil*, [4]*Texas A&M University, College Station*.

M359 **Methane emission potential, chemical composition and degradability of banana crop wastes for ruminants.**
L. N. Oliveira*[1], S. L. S. Cabral Filho[1], and L. C. Geraseev[2], [1]*University of Brasília, Brasília, Federal District, Brazil*, [2]*Federal University of Minas Gerais, Montes Claros, Minas Gerais, Brazil*.

Draft

M360 **Corn grain or citrus pulp associated with glycerin in Nellore feedlot steers: intake and ruminal fermentation.**
V. R. Fávaro*, J. M. B. Ezequiel, J. R. Paschoaloto, M. T. C. Almeida, A. P. D'Áurea, A. C. Homem Junior, and V. C. Santos, *São Paulo State University, Jaboticabal, São Paulo, Brazil*.

M361 **Assessment of the in vitro fermentation pattern of native forage from the Brazilian semiarid region.**
D. K. A. Silva*[1,2], L. O. Tedeschi[2], M. A. Fonseca[3,2], N. F. De Paula[3,2], K. P. Pereira[1], G. R. Medeiros[4], J. C. B. Dubeux Junior[1], and D. P. V. Silva[1], [1]*Federal Rural University of Pernambuco, Academic Unit of Garanhuns, Garanhuns, Pernambuco*, [2]*Texas A&M University, Department of Animal Science, College Station*, [3]*Federal University of Viçosa, Department of Animal Science, Viçosa, Minas Gerais, Brazil*, [4]*National Institute of Semiarid, Campina Grande, Paraíba*.

M362 **An in vitro evaluation of rumen fluid type on hydrogen sulfide production of common beef cattle feedstuffs.**
K. L. Neuhold*[1], J. J. Wagner[2], K. S. Sellins[1], and T. E. Engle[1], [1]*Colorado State University, Fort Collins*, [2]*Southeast Colorado Research Center, CSU, Lamar, CO*.

M363 **In vitro methane production and dry matter degradability of citral.**
T. S. Canaes*, I. C. S. Bueno, F. G. Vilela, A. P. C. Araújo, M. C. B. Santos, B. C. Venturelli, S. N. Macedo, J. E. Freitas Junior, and F. P. Rennó, *Sao Paulo University, Sao Paulo, Sao Paulo, Brazil*.

M364 **Estimated microbial production, efficiency and nitrogen balance in sheep fed high concentrate varying amounts of glycerin from soybean biodiesel.**
R. L. Galati*, R. S. Gomes, P. G. Paiva, L. S. Cabral, J. T. Zervoudakis, J. G. Abreu, L. R. Rebelo, and M. Zanchetin, *Universidade Federal do Mato Grosso, FAMEV/UFMT, Cuiabá, Brazil*.

M365 **Microbial kinetics, fermentative and chemical characteristics in solid-state fermentation of apple bagasse.**
O. Ruiz[1], Y. Castillo[2,1], C. Angulo[1], C. Rodriguez[1], O. Enriquez*[1], and C. Arzola[1], [1]*Facultad de Zootecnia y Ecología de la Universidad Autónoma de Chihuahua, Chihuahua, Chihuahua, México*, [2]*División multidiciplinaria de Nuevo Casas Grandes de la Universidad Autónoma de Ciudad Juarez Chihuahua, Nuevo Casas Grandes, Chihuahua, México*.

M366 **Evaluation external and internal markers for digestibility studies.**
T. T. Berchielli[1], R. C. Canesin[1], D. A. Mota[2], I. M. Cezinbra[3], and G. Fiorentini*[1], [1]*São Paulo State University, Jaboticabal, São Paulo, Brazil*, [2]*Federal University of Amazonas, Parintins, Amazonas, Brazil*, [3]*Federal University of Rio Grande do Sul, Porto Alegre, Rio Grande do Sul, Brazil*.

M367 **Addition of fumarate reducing bacteria on in vitro fermentation.**
L. Mamuad, S. Kim, C. Jeong, and S. Lee*, *Sunchon National University, Suncheon, Republic of Korea*.

M368 **Rumen wall morphology of lambs fed high concentrate diets.**
L. S. Oliveira*[1], P. R. Leme[1], M. R. Mazon[1], D. M. C. Pesce[2], S. da Luz e Silva[1], C. A. Zotti[1], R. F. Carvalho[2], and A. P. dos Santos Silva[1], [1]*Faculdade de Zootecnia e Engenharia de Alimentos, Pirassununga, São Paulo, Brasil*, [2]*Pontifícia Univerdidade Católica, Poços de Caldas, Minas Gerais, Brasil*.

M369 **Growth rate of mixed ruminal bacteria as a function of energetic substrate concentration in bath culture.**
T. S. de Oliveira*, R. de Paula Lana, V. S. de Oliveira, T. M. de Oliveira Alves, and G. L. R. Filho, *Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brasil*.

M370 **Nutrient digestibility of pregnant WAD ewe fed Mexican sunflower leaf meal (MSLM) based diets.**
A. H. Ekeocha*, *University of Ibadan, Ibadan, Oyo, Nigeria*.

M371 **Rumen bacteria growth and pH of culture medium on different substrate concentrations.**
C. P. Ghedini[1], R. P. Lana[1], A. S. Oliveira[2], D. C. Abreu*[1], R. M. Paula[1], G. A. Freitas[1], and M. G. Camilo[3], [1]*Universidade Federal de Viçosa, Viçosa, MG, Brazil*, [2]*Universidade Federal do Mato Grosso, Sinop, MT, Brazil*, [3]*Instituto Federal do Sudeste de Minas Gerais, Rio Pomba, MG, Brazil*.

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Small Ruminant Nutrition

M372 **Effect of breed and sex on fatty acid composition of fat-tailed and tailed lambs.**
A. Yousefi*, H. Kohram, A. Z. Shahneh, M. Sadeghi, and M. Poorhamdollah, *University of Tehran, Karaj, Tehran, Iran*.

M373 **The energetic efficiency of growing lambs fed high-concentrate diets with different roughages.**
D. B. Galvani[1], A. V. Pires*[2], I. Susin[2], V. N. Gouvea[2], A. Berndt[3], L. J. Chagas[2], J. R. R. Dórea[2], A. L. Abdalla[4], and L. O. Tedeschi[5], [1]*EMBRAPA Goats and Sheep, Sobral, CE, Brazil*, [2]*University of São Paulo, "Luiz de Queiroz" College of Agriculture, Piracicaba, SP, Brazil*, [3]*EMBRAPA Southeast Livestock, São Carlos, SP, Brazil*, [4]*University of São Paulo, Center for Nuclear Energy in Agriculture, Piracicaba, SP, Brazil*, [5]*Texas A&M University, Department of Animal Science, College Station*.

M374 **Intake and feeding behavior of Morada Nova lambs fed different energy levels.**
D. A. Camilo[1], E. S. Pereira*[1], P. G. Pimentel[1], M. S. S. Carneiro[1], I. Y. Mizubuti[2], M. R. G. F. Costa[1], G. M. B. Moreno[1], and J. N. Rocha Junior[1], [1]*Federal University of Ceara, Fortaleza, Ceara, Brazil*, [2]*State University of Londrina, Londrina, Parana, Brazil*.

M375 **Different supplement treatments for lactating meat goat does grazing grass/forb pastures.**
A. L. Goetsch*, G. D. Detweiler, Z. Wang, J. Hayes, K. Tesfai, and T. A. Gipson, *Langston University, Langston, OK*.

M376 **Effects of level and length of supplementation on BW and harvest characteristics of yearling Boer and Spanish wethers.**
R. C. Merkel, T. A. Gipson*, Z. Wang, and A. L. Goetsch, *Langston University, Langston, OK*.

M377 **Energy requirements for growth of male and female Saanen goat kids.**
M. H. M. R. Fernandes*, O. Boaventura Neto, A. N. Mendonca, S. F. Souza, D. Oliveira, T. F. V. Bompadre, T. R. Delphino, K. T. Resende, and I. A. M. A. Teixeira, *UNESP/Sao Paulo State University, Jaboticabal, Sao Paulo, Brazil*.

M378 **Influence of reducing starch and increasing digestible fiber on glucose tolerance test of lactating ewes.**
R. S. Gentil*[1], I. Susin[1], A. V. Pires[1], E. M. Ferreira[1], A. Cannas[2], D. Eysink[1], M. V. Biehl[1], and C. P. Nolli[1], [1]*Universidade de São Paulo/ESALQ, Piracicaba, São Paulo, Brazil*, [2]*Università degli Studi di Sassari, Sassari, Sardegna, Italy*.

M379 **Soybean meal supplementation of lambs grazing native pastures in the summer-fall season.**
L. Piaggio[1], M. L. delPino[1], H. Deschenaux[1], and M. de J. Marichal*[2], [1]*Secretariado Uruguayo de la Lana, Montevideo, Uruguay*, [2]*Facultad de Agronomía, Universidad de la República, Montevideo, Uruguay*.

M380 **Nutritional quality, intake, and apparent digestibility of mulberry (*Morus alba*) and star grass (*Cynodon nlemfuensis*) in goats.**
J. A. Elizondo-Salazar* and J. Rodríguez-Zamora, *Estación Experimental Alfredo Volio Mata, Facultad de Ciencias Agroalimentarias, Universidad de Costa Rica, Costa Rica*.

M381 **Effect of dietary supplementation of ferrous sulfate on performance and carcass characteristics of meat sheep.**
G. Abdelrahim*[1], J. Khatiwada[2], and A. Gueyec[3], [1]*Alabama A&M University, Huntsville*, [2]*North Carolina A&T State University, Greensboro*, [3]*Mount Ida College, Newton, MA*.

M382 **Effects of diets with different qualities of roughage on fatty acids metabolism in mammary glands of lactating dairy goats.**
L. W. Song[1], C. J. Ao*[1], K. Khas-Erdene[1], H. Zhang[1], Y. X. Wu[2], and S. W. Liu[1], [1]*Department of Animal Science, Inner Mongolia Agricultural University, Huhhot, Inner Mongolia, China*, [2]*Key Laboratory of Grass and Herbivores of Chongqing, College of Animal Science and Technology, Southwest University, ChongQing, China*.

M383 **Effects of diets with different forage profiles on the gene expression of enzymes related to fatty acid synthesis in the mammary gland of lactating dairy goats.**
H. Zhang, C. J. Ao*, K. Khas-Erdene, L. W. Song, and X. F. Zhang, *Department of Animal Science, Inner Mongolia Agricultural University, Huhhot, Inner Mongolia, China*.

M384 **Performance of Ile de France lambs fed with diets containing different percentages of mulberry hay.**
L. G. A. Cirne*, A. G. Silva Sobrinho, T. Santana, R. Takahashi, N. M. B. L. Zeola, F. A. Almeida, G. M. Manzi, and F. U. Silva, *São Paulo State University, Jaboticabal, São Paulo, Brazil*.

M385 **Effect of metabolizable protein supplementation to ewes during late gestation on wether offspring feedlot performance, carcass characteristics, and nitrogen balance.**
M. L. Van Emon*[1,2], K. A. Vonnahme[2], P. T. Berg[2], K. R. Maddock Carlin[2], and C. S. Schauer[1], [1]*Hettinger Research Extension Center, North Dakota State University, Hettinger*, [2]*Department of Animal Sciences, North Dakota State University, Fargo*.

M386 **Effects of sources of oil on intake, performance and carcass characteristics of feedlot sheep.**
F. B. O. Scarpino*[1,2], J. M. B. Ezequiel[1], E. H. C. B. van Cleef[1,3], A. P. D'Aurea[1,3], M. T. C. Almeida[1], and H. L. Perez[1], [1]*São Paulo State University, Jaboticabal, São Paulo, Brazil*, [2]*CNPq*, [3]*FAPESP*.

M387 **Lipid sources in diets for feedlot sheep: Blood parameters.**
F. B. O. Scarpino*[1,2], J. M. B. Ezequiel[1], D. A. V. Silva[1,3], and E. H. C. B. van Cleef[1,3], [1]*São Paulo State University, Jaboticabal, São Paulo, Brazil*, [2]*CNPq*, [3]*FAPESP*.

M388 **Relationship between phosphorus fluids concentration and phosphorus flows in growing ruminants.**
R. M. Patiño*[1], T. Soares da Silva[3], J. C. da Silva Filho[2], D. M. S. S. Vitti[3], J. A. Moreira[4], and E. H. van Cleef[5], [1]*University of Sucre, Sincelejo, Colombia*, [2]*Federal University of Lavras, Lavras, MG, Brazil*, [3]*Nuclear Energy Center for Agriculture, Piracicaba, SP, Brazil*, [4]*Federal University of Rio Grande do Norte, Natal, RN, Brazil*, [5]*State University of São Paulo, Jaboticabal, SP, Brazil*.

M389 **Mineral requirements for gain in Saanen goats of different sexes.**
A. N. Mendonca*, C. J. Härter, A. M. A. Teixeira, O. Boaventura Neto, S. F. Souza, and D. Oliveira, *UNESP/Sao Paulo State University, Jaboticabal, Sao Paulo, Brazil*.

M390 **Effect of chromium supplementation on ruminal parameters of Mahabadi goat kids.**
A. Emami, A. Zali, M. Ganjkhanlou*, A. Hojabri, and A. Akbari, *University of Tehran, Tehran, Iran*.

Draft

M391 **Effect of feeding tannin-containing pine bark on performance, parasite load and blood metabolites in goats.**
E. A. Wilson*[1], S. Solaiman[1], B. R. Min[1], N. Gurung[1], W. McElhenny[1], and J. Miller[2], [1]*Tuskegee University, Tuskegee Institute, AL*, [2]*Louisiana State University, Baton Rouge*.

M392 **Lamb performance feeding diets with different crude protein level.**
P. Meda Alducin, J. Maldonado Jaquez, I. Tovar Luna*, and J. Jaimes Jaimes, *Universidad Autonoma Chapingo, URUZA, Bermejillo, Mexico*.

M393 **Effect of copper and zinc on nutrient digestibility and growth performance in goats.**
R. R. Rojo*, A. Z. M. Salem, J. F. Vázquez, and B. Albarrán, *Centro Universitario UAEM Temascaltepec, Temascaltepec, Estado de México, México*.

M394 **Growth and carcass characteristics of lambs fed high-concentrate diets containing increasing levels of crude glycerin.**
D. M. Polizel*, R. S. Gentil, E. M. Ferreira, M. O. Maia, C. P. Nolli, D. Eysink, A. V. Pires, and I. Susin, *Escola Superior de Agricultura Luiz de Queiroz (ESALQ)/University of São Paulo (USP), Piracicaba, São Paulo, Brazil*.

M395 **Ruminal fermentation, kinetics and digestibility of hair lambs supplemented with cull pinto bean.**
F. Castillo, G. Villalobos*, D. Domínguez, J. A. Ortega, and L. Cortés, *Universidad Autónoma de Chihuahua, Chihuahua, Chihuahua, México*.

M396 **Effect of clinoptilolite (zeolite) substituting for soybean meal on apparent digestibility and energy concentration of feed in growing Pelibuey sheep.**
A. Estrada-Angulo*, S. A. Serrano-Cebreros, V. Martinez-Cruz, J. Cazarez-Rocha, A. Rubio-Angulo, B. I. Castro-Perez, H. Davila-Ramos, J. C. Robles, and F. G. Ríos, *FMVZ-UAS, Culiacan, Sinaloa, Mexico*.

M397 **Influence of level of protein and energy on growth performance and tissue composition of feedlot hair lambs.**
F. G. Rios[1], H. Davila-Ramos*[1], A. Estrada-Angulo[1], A. Plascencia[2], J. J. Portillo[1], and J. C. Robles[1], [1]*FMVZ-UAS, Culiacan, Sinaloa, Mexico*, [2]*IICV-UABC, Mexicali, BC, Mexico*.

Swine Species I

M398 **Neutral semi-purified glycerin in starting pigs feeding in Brazil.**
I. Moreira*[1], A. G. Gallego[1,2], P. C. Pozza[1], P. L. O. Carvalho[1], L. M. Peñuela-Sierra[1,3], and L. M. Huepa[1,2], [1]*Universidade Estadual de Maringá, Maringá, Paraná, Brazil*, [2]*Universidad del Tolima, Ibagué, Tolima, Colombia*, [3]*Universidad Cooperativa de Colombia, Ibagué, Tolima, Colombia*.

M399 **Brazilian neutral semi-purified glycerin on growing and finishing pigs feeding.**
I. Moreira*[1], A. G. Gallego[1,2], P. L. O. Carvalho[1], C. C. Filho[1], T. J. Pasquetti[1], and D. Perondi[1], [1]*Universidade Estadual de Maringá, Maringá, Paraná, Brazil*, [2]*Universidad del Tolima, Ibagué, Tolima, Colombia*.

M400 **Performance and carcass traits of finishing pigs fed on crude glycerin in Brazil.**
I. Moreira*[1], P. L. O. Carvalho[1], L. M. Piano[1], J. B. Toledo[1], A. G. Gallego[1,2], and L. M. Peñuela-Sierra[1,3], [1]*Universidade Estadual de Maringá, Maringá, Paraná, Brazil*, [2]*Universidad del Tolima, Ibagué, Tolima, Colombia*, [3]*Universidad Cooperativa de Colombia, Ibagué, Tolima, Colombia*.

M401 **Determination of optimal dose and time of administration of intravaginal triptorelin gel for synchronizing ovulation in weaned sows.**
R. Knox[1], S. Breen[1], J. Taibl[1], M. Swanson[2], and S. Webel*[3], [1]*University of Illinois, Urbana*, [2]*Pennatek LLC, Radnor, PA*, [3]*JBS United Inc., Sheridan, IN*.

M402 **The effects of arginine supplementation of weanling pig diets on growth performance and IGF expression.**
W. C. Wang*[1,3], R. J. Chen[1,2], J. Pan[4], T. J. Li[1], and Y. L. Yin[1], [1]*Institute of Subtropical Agriculture, Chinese Academy of Sciences, Changsha, Hunan, China*, [2]*Rice Research Institute of Sichuan Agricultural University, Chengdu, Sichuan, China*, [3]*Guelph Food Research Center, Agriculture and Agri-Food Canada, Guelph, ON, Canada*, [4]*Department of Animal Science, Hunan Agricultural University, Changsha, Hunan, China*.

M403 **Assessment of zero-tannin faba bean and co-fermented corn and wheat DDGS in diets of growing-finishing pigs.**
C. Furedi*[1], P. Lopez[1], M. Licayu[1], D. Gurney[1], E. Kiarie[2], and C. M. Nyachoti[2], [1]*The Puratone Corporation, Niverville, MB, Canada*, [2]*University of Manitoba, Winnipeg, MB, Canada*.

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Graduate Student Competition:
ASAS Western Section Graduate Student Paper Competition
Chair: Holly L. Neibergs, Washington State University
227AB

8:20 AM **Introduction**
H. L. Neibergs and J. B. Taylor.

8:30 AM 17 **Effect of supplementing activated charcoal on intake of honey mesquite leaves by lambs.**
P. Mayagoitia*[1], D. Bailey[1], and R. Estell[2], [1]*New Mexico State University, Las Cruces*, [2]*USDA-ARS Jornada Experimental Range, Las Cruces, NM*.

8:45 AM 18 **Pre-breeding β-hydroxybutyrate concentration influences conception date in young postpartum range beef cows.**
J. T. Mulliniks*[1], M. E. Kemp[1], R. L. Endecott[2], S. H. Cox[1], E. J. Scholljegerdes[1], T. W. Geary[3], and M. K. Petersen[3], [1]*New Mexico State University, Las Cruces*, [2]*Montana State University, Miles City*, [3]*USDA-ARS, Fort Keogh Livestock and Range Research Laboratory, Miles City, MT*.

9:00 AM 19 **Effects of algal meal supplementation to finishing wethers on performance and carcass characteristics.**
M. G. Dib*, T. E. Engle, H. Han, N. Roman-Muniz, and S. L. Archibeque, *Colorado State University, Fort Collins*.

9:15 AM 20 **Influence of the level of dried distillers grains with solubles on feedlot performance, carcass characteristics, serum testosterone concentrations, and semen quality of growing rams.**
M. L. Van Emon*[1,2], K. A. Vonnahme[2], P. T. Berg[2], R. R. Redden[2], M. M. Thompson[1], J. D. Kirsch[2], and C. S. Schauer[1], [1]*Hettinger Research Extension Center, North Dakota State University, Hettinger*, [2]*Department of Animal Sciences, North Dakota State University, Fargo*.

9:30 AM 21 **Effect of weaning method on welfare and performance of beef calves during receiving.**
E. A. Bailey*[1], J. R. Jaeger[2], J. W. Waggoner[2], L. W. Murray[3], G. W. Preedy[1], L. A. Pacheco[1], D. L. Davis[1], and K. C. Olson[1], [1]*Department of Animal Sciences & Industry, Kansas State University, Manhattan*, [2]*Western Kansas Agricultural Research Center, Kansas State University, Hays*, [3]*Department of Statistics, Kansas State University, Manhattan*.

9:45 AM 22 **Effects of timing of vaccination (day 0 versus day 14 of a receiving period) with a modified-live respiratory viral vaccine on performance, feed intake and febrile response of beef heifers.**
K. P. Sharon*[1], G. C. Duff[1], M. M. Harbac[1], J. A. Paterson[1], J. A. Carroll[2], and J. W. Dailey[2], [1]*Department of Animal and Range Sciences, Montana State University, Bozeman*, [2]*USDA-ARS, Livestock Issues Research Unit, Lubbock, TX*.

10:00 AM 23 **Assessment of chestnut tannin extract supplementation on animal performance and ruminal fermentation profiles in feedlot finishing diets.**
J. M. Sieg*[1], J.-S. Eun[1], D. R. ZoBell[1], and B. R. Min[2], [1]*Department of Animal, Dairy, and Veterinary Sciences, Utah State University, Logan*, [2]*Department of Agricultural and Environmental Sciences, Tuskegee University, Tuskegee, AL*.

10:15 AM **Break**

10:30 AM 24 **Evaluation of the incidence, causes, and potential solutions for the occurrence of disabled or non-ambulatory cattle within the California beef and dairy industries.**
M. V. Sis*[1], J. K. Ahola[1], H. A. Foster[2], D. L. VanOverbeke[3], and D. A. Daley[4], [1]*Colorado State University, Fort Collins*, [2]*California Beef Council, Sacramento*, [3]*Oklahoma State University, Stillwater*, [4]*California State University-Chico, Chico*.

10:45 AM 25 **Effect of two, four, and six-hour intervals between two prostaglandin $F_{2\alpha}$ injections administered with five-day CO-Synch + CIDR protocol on pregnancy rate in beef cows.**
C. J. Berrett*[1], J. L. Seabrook[1], G. E. Seidel[1], J. C. Whittier[1], J. K. Ahola[1], R. K. Peel[1], and A. V. Grove[2], [1]*Colorado State University, Fort Collins*, [2]*AG Research LLC, White Sulphur Springs, MT*.

11:00 AM 26 **Effects of pain mitigation and method of castration on behavior and feedlot performance in cull beef bulls.**
P. E. Repenning*[1], J. K. Ahola[1], R. J. Callan[2], J. T. French[1], R. L. Giles[1], R. K. Peel[1], J. C. Whittier[1], J. T. Fox[3], and T. E. Engle[1], [1]*Department of Animal Sciences, Colorado State University, Fort Collins*, [2]*Department of Clinical Sciences, Colorado State University, Fort Collins*, [3]*JBS Five Rivers Cattle Feeding LLC, Greeley, CO*.

11:15 AM 27 **Fetal and maternal induction of angiogenic factors during early pregnancy.**
K. E. Quinn*[1], J. D. Lindsey[1], S. M. Stanbrough[1], A. K. Ashley[2], and R. L. Ashley[1], [1]*Department of Animal and Range Sciences, New Mexico State University, Las Cruces*, [2]*Center for Animal Health, Food Safety, and Bio-Security, New Mexico State University, Las Cruces*.

11:30 AM 28 **Effect of swath grazing on forage intake and wastage by ewes.**
E. E. Nix*, D. L. Ragen, J. G. P. Bowman, R. W. Kott, and P. G. Hatfield, *Montana State University, Bozeman*.

Draft

11:45 AM	29	**Maternal diet restriction in beef cows alters fetal cardiovascular hemodynamics and fetal and placental development during early pregnancy.** L. E. Camacho*, C. O. Lemley, K. C. Swanson, and K. A. Vonnahme, *Department of Animal Sciences, North Dakota State University, Fargo*.
12:00 PM		**Lunch**
1:00 PM	30	**Serum exosome profile as related to early pregnancy status in the mare.** J. R. Hergenreder*, J. C. da Silveira, A. D. Belk, D. N. R. Veeramachaneni, J. G. Bouma, and J. E. Bruemmer, *Colorado State University, Fort Collins*.
1:15 PM	31	**Effects of natural service and artificial insemination breeding systems on pregnancy rates and days to conception.** P. L. Steichen*[1], S. I. Klein[1], Q. P. Larson[1], K. M. Bischoff[2], V. G. R. Mercadante[2], G. C. Lamb[2], C. S. Schauer[3], B. W. Neville[4], and C. R. Dahlen[1], [1]*Department of Animal Sciences, North Dakota State University, Fargo*, [2]*North Florida Research and Education Center, University of Florida, Marianna*, [3]*Hettinger Research Extension Center, North Dakota State University, Hettinger*, [4]*Central Grasslands Research Extension Center, Streeter, ND*.
1:30 PM	32	**Evaluation of the ability of grain distillers dried yeast to replace fish meal in the diets of juvenile rainbow trout *Oncorhynchus mykiss*.** B. S. Hauptman*[1], F. T. Barrows[3], S. Block[4], T. G. Gaylord[2], W. M. Sealey[2], and J. A. Paterson[1], [1]*Montana State University, Bozeman*, [2]*USFWS, Bozeman Fish Technology Center, Bozeman, MT*, [3]*USDA, Agriculture Research Service, Bozeman, MT*, [4]*Archer Daniels Midland Company, Decatur, IL*.
1:45 PM	33	**Differences in allele frequency distribution of bovine high-density genotyping platforms in Holsteins and Jerseys.** K. L. Weber*[1], G. Rincon[1], A. L. Van Eenennaam[1], B. L. Golden[2], and J. F. Medrano[1], [1]*Department of Animal Science, University of California, Davis*, [2]*Dairy Science Department, California Polytechnic State University, San Luis Obispo*.
2:00 PM	34	**Comparing the lifetime productivity of beef females initially conceiving to, or sired by, artificial insemination or natural service.** B. J. Bigler*, J. T. French, J. K. Ahola, J. C. Whittier, W. M. Frasier, G. E. Seidel, R. M. Enns, and R. K. Peel, *Colorado State University, Fort Collins*.
2:15 PM	35	**Identification of single nucleotide polymorphisms associated with feed efficiency in rams.** R. R. Cockrum*[1], N. K. Pickering[2], R. M. Anderson[2], D. L. Hyndman[2], M. J. Bixley[2], K. G. Dodds[2], R. H. Stobart[1], J. C. McEwan[2], and K. M. Cammack[1], [1]*University of Wyoming, Laramie*, [2]*AgResearch Limited, Mosgiel, New Zealand*.
2:30 PM	36	**Out-of-season reproductive performance of ewes synchronized to estrus with various 5-d protocols.** C. G. Jackson*[1], T. L. Neville[1], V. R. G. Mercadante[2], K. M. Bischoff[2], G. C. Lamb[2], C. R. Dahlen[1], and R. R. Redden[1], [1]*North Dakota State University, Fargo*, [2]*North Florida Research and Education Center, University of Florida, Marianna*.
2:45 PM	37	**Effects of maternal fluoxetine dosage on lamb serum hormone concentrations and reproductive traits.** P. L. Black*, D. M. Hallford, and T. T. Ross, *New Mexico State University, Las Cruces*.
3:00 PM		**Break**
3:15 PM	38	**Digestibility of algal biofuel co-product in a forage diet.** M. K. Beckman*, L. N. Tracey, N. Miller, K. Norman, K. Marchetti, E. J. Scholljegerdes, S. A. Soto-Navarro, C. L. Löest, and S. L. Lodge-Ivey, *New Mexico State University, Las Cruces*.
3:30 PM	39	**Effects of preovulatory estradiol concentration on embryo survival and pregnancy establishment in beef cows.** C. A. Roberts*[1,3], G. A. Perry[3], M. D. MacNeil[1], M. A. Minten[2], and T. W. Geary[1], [1]*USDA-ARS Fort Keogh, Miles City, MT*, [2]*Washington State University, Pullman*, [3]*South Dakota State University, Brookings*.
3:45 PM	40	**Individual Mineral Supplement Intake By Ewes Swath Grazing Or Confinement Fed Pea-Barley Forage.** D. L. Ragen*[1], E. E. Nix[1], P. G. Hatfield[1], R. L. Endecott[2], and J. G. P. Bowman[1], [1]*Montana State University, Bozeman*, [2]*Montana State University, Miles City*.
4:00 PM	41	**Effects of weaning age and winter development environment on heifer grazing distribution.** N. L. Hojer*[1], M. B. Hubert[2], P. S. Johnson[2], M. H. Price[3], and K. C. Olson[2], [1]*South Dakota State University, Brookings*, [2]*South Dakota State University, Rapid City*, [3]*South Dakota School of Mines & Technology, Rapid City*.
4:15 PM	42	**Effects of distillers dried grains with solubles supplementation on grazing and subsequent feedlot performance of heifers grazing northern Great Plains rangelands.** Q. P. Larson*[1], R. J. Maddock[1], P. L. Steichen[1], K. K. Karges[2], and B. W. Neville[3], [1]*Department of Animal Sciences, North Dakota State University, Fargo*, [2]*Dakota Gold Research Association, Sioux Falls, SD*, [3]*Central Grassland Research Extension Center, Streeter, ND*.
4:30 PM	43	**Effects of post-AI nutrition on reproductive and growth performance of yearling beef heifers.** R. P. Arias*[1], P. J. Gunn[2], R. P. Lemenager[2], G. A. Bridges[3], and S. L. Lake[1], [1]*University of Wyoming, Laramie*, [2]*Purdue University, West Lafayette, IN*, [3]*University of Minnesota, St. Paul*.

Draft

4:45 PM 44 **Dietary intake in a group of old mares.**
S. Otabachian* and T. Hess, *Colorado State University, Fort Collins*.

Animal Health I
Chair: Pedram Rezamand, University of Idaho
228AB

9:30 AM 45 **Histological examination of the organs of the rats administered varying levels of *Vernonia amygdalina* leaves.**
A. H. Ekeocha*, P. C. Ekeocha, and T. Fasola, *University of Ibadan, Ibadan, Oyo, Nigeria*.

9:45 AM 46 **Toxicological properties of liquid dishwashing detergent in Swiss albino mice.**
M. S. Gulay*, O. Yildiz Gulay, A. Ata, A. Demirtas, and S. Gungor, *Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Burdur, Turkiye*.

10:00 AM 47 **Isolation of lactobacillus strains with high adhesive ability to the intestinal epithelial cells.**
W. M. Zhang*[1], H. F. Wang[1,2], and J. X. Liu[1], [1]*Institute of Dairy Science, MOE Key Laboratory of Molecular Animal Nutrition, Zhejiang University, Hangzhou, China*, [2]*Department of Animal Science, College of Forestry and Biotechnology, Zhejiang A & F University, Hangzhou, China*.

10:15 AM 48 **Effect of mycotoxins on the intestine: Analysis of the interaction between fusariotoxins.**
B. Grenier*[1,3], A. P. Loureiro-Bracarense[2], G. D. Pacheco[1,2], J. Lucioli[2], A. M. Cossalter[1], W. D. Moll[3], G. Schatzmayr[3], and I. P. Oswald[1], [1]*Institut National de la Recherche Agronomique-ToxAlim, Immuno-Mycotoxicology, Toulouse, France*, [2]*Universidade Estadual de Londrina, Lab Patologia Animal, Londrina, Brazil*, [3]*Biomin Research Center, Tulln, Austria*.

10:30 AM 49 **Dietary supplementation of young broiler chickens with capsicum and turmeric oleoresin increases resistance to necrotic enteritis.**
S.-H. Lee*[1], H. Lillehoj[1], S.-I. Jang[1], D.-K. Kim[1], M.-S. Park[1], E. Lillehoj[2], and D. Bravo[3], [1]*Animal and Natural Resources Institute, ARS-USDA, Beltsville, MD*, [2]*University of Maryland, School of Medicine, Baltimore*, [3]*Pancosma S. A., Geneva, Switzerland*.

10:45 AM 50 **The identification of candidate genes for BSE and the application to chronic wasting disease in mule deer.**
J. Thomson*[1], V. Bowles[1], U. Basu[1], Y. Meng[1], P. Stothard[1], and S. Moore[2], [1]*University of Alberta, Edmonton, AB, Canada*, [2]*University of Queensland, Brisbane, Qld, Australia*.

11:00 AM 51 **Phosphorus utilization in broilers fed soybean and benniseed-based diets with and without microbial phytase supplementation.**
O. Adebiyi, A. Ologhobo, A. Omojola, O. Olusola, W. Muhammed, and M. Olumide*, *University of Ibadan, Ibadan, Nigeria*.

11:15 AM 52 **Effects of tropical legume supplementation on parasite burden and health parameters in goats.**
M. A. Zarate*[1], J. C. Hamie[1], J. J. Romero[1], E. N. Muniz[2], Y. J. Jang[3], K. G. Arriola[1], O. C. Queiroz[1], and A. T. Adesogan[1], [1]*University of Florida, Gainesville*, [2]*Empresa Brasileira de Pesquisa Agropecuária, EMBRAPA, Aracajú, Sergipe, Brazil*, [3]*Gyeongsang National University, Jinju, South Korea*.

11:30 AM 53 **Carboxymethylation and antioxidant activity of exopolysaccharides.**
M. Huang*, T. F. Zhu, Z. Q. Lu, G. X. Wu, and Y. Z. Wang, *National Engineering Laboratory of Bio-Feed Safety and Pollution Prevention and Key Laboratory of Animal Nutrition and Feed Science of Ministry of Agriculture, Institute of Feed Science, Zhejiang University, Hangzhou, Zhejiang, China*.

11:45 AM 54 **Risk factors for switch in status from *Mycobacterium avium* ssp. *paratuberculosis* test positive to negative; data from the national Johne's disease control demonstration program.**
A. Kenyon*[1], S. Aly[1], and I. Gardner[2], [1]*Veterinary Medicine Teaching and Research Center, School of Veterinary Medicine, University of California-Davis, Tulare*, [2]*Department of Medicine and Epidemiology, School of Veterinary Medicine, University of California-Davis, Davis*.

12:00 PM 55 **Expressing an antimicrobial peptide cathelicidin-BF by fusion with SUMO in *Bacillus subtilis*.**
C. Luan*, Y. G. Xie, H. W. Zhang, and Y. Z. Wang, *Institute of Feed Science, Zhejiang University, National Engineering Laboratory of Biological Feed Safety and Pollution Prevention and Control, Key Laboratory of Animal Nutrition & Feed Science, Ministry of Agriculture, Hangzhou, Zhejiang Province, People's Republic of China*.

Draft

Breeding and Genetics
Symposium: Systems Biology in Animal Breeding: Identifying relationships among markers, genes, and phenotypes
Chair: John B. Cole, Animal Improvement Programs Laboratory, ARS, USDA
125AB

9:30 AM 56 **Building SNP-derived regulatory networks.**
A. Reverter*, *CSIRO Livestock Industries, Brisbane, Queensland, Australia*.

10:10 AM 57 **Networks and pathways to guide genomic selection.**
W. M. Snelling*[1], R. A. Cushman[1], J. W. Keele[1], C. Maltecca[2], M. G. Thomas[3], M. R. S. Fortes[4,5], and A. Reverter[4], [1]*USDA, ARS, US Meat Animal Research Center, Clay Center, NE*, [2]*Animal Science, North Carolina State University, Raleigh*, [3]*Animal Sciences, Colorado State University, Fort Collins*, [4]*Cooperative Research Center for Beef Genetic Technologies, CSIRO Livestock Industries, Brisbane, QLD, Australia*, [5]*The University of Queensland, School of Veterinary Medicine, Gatton, QLD, Australia*.

10:50 AM 58 **Causal graphical models in quantitative genetics and genomics settings.**
G. J. M. Rosa* and B. D. Valente, *University of Wisconsin, Madison*.

11:30 AM 59 **A systems biology definition for semen quality.**
D. Froman*[1], D. Rhoads[2], and S. Burgess[3], [1]*Oregon State University, Corvallis*, [2]*University of Arkansas, Fayetteville*, [3]*University of Arizona, Tucson*.

12:00 PM 60 **A systems-genetics analysis of bovine skeletal muscle iron content.**
J. E. Koltes*[1], R. G. Tait[1], E. R. Fritz[1], B. P. Mishra[1,2], A. L. Van Eenennaam[3], R. G. Mateescu[4], D. L. Van Overbeke[4], A. J. Garmyn[4], Q. Liu[1], G. Duan[1], D. Nettleton[5], D. Beitz[1], D. Garrick[1], and J. M. Reecy[1], [1]*Department of Animal Science, Iowa State University, Ames*, [2]*National Bureau of Animal Genetic Resources, Karnal, India*, [3]*Department of Animal Science, University of California, Davis*, [4]*Department of Animal Science, Oklahoma State University, Stillwater*, [5]*Department of Statistics, Iowa State University, Ames*.

Companion Animals Symposium:
Nutrition Special Needs—The relationship between novel ingredients, environment and gene expression
Chair: Maria Cattai de Goday, University of Illinois
121AB

9:30 AM **Introduction**

9:35 AM 61 **Alternative ingredients: Which have scientific merit?**
G. Aldrich*, *Pet Food & Ingredient Technology Inc., Topeka, KS.*

10:10 AM 62 **Benefits of probiotic supplementation in stressful situations in companion animals.**
M. R. Lappin*, *Department of Clinical Sciences, Colorado State University, Fort Collins*.

10:45 AM 63 **Dietary and environmental management of feline lower urinary tract disease (FLUTD).**
K. R. Kerr*, *University of Illinois, Urbana.*

11:20 AM 64 **Functional nutrition: Novel ingredients and new findings.**
I. S. Middelbos*, *Novus International Inc., St. Charles, MO.*

11:55 AM 65 **Nutrigenomics: Using gene expression data to understand and manage pet obesity.**
K. S. Swanson*, *University of Illinois, Urbana*.

Draft

Dairy Foods
Cheese and Products Processing
Chair: Donald McMahon, Utah State University
121C

9:30 AM 66 **Influence of proteolysis and amino acid release on bitterness and texture of reduced-fat Cheddar cheese.**
M. W. Børsting[1], K. B. Qvist*[1], J. Vindeløv[1], F. K. Vogensen[2], and Y. Ardö[2], [1]*Chr. Hansen A/S, Hørsholm, Denmark*, [2]*Department of Food Science, Faculty of Life Sciences, University of Copenhagen, Copenhagen, Denmark*.

9:45 AM 67 **Impact of sodium, potassium, magnesium, and calcium salt cations on pH, proteolysis and microbial populations during storage of Cheddar cheese.**
D. J. McMahon*[1], N. Farkye[2], L. V. Moyes[3], and C. J. Oberg[1,3], [1]*Western Dairy Center, Utah State University, Logan*, [2]*Dairy Products Technology Center, California Polytechnic State University, San Luis Obispo*, [3]*Department of Microbiology, Weber State University, Ogden, UT*.

10:00 AM 68 **Impact of different types of emulsifiers on the reformability of grated cheese.**
C. Akbulut* and J. A. Lucey, *University of Wisconsin-Madison, Madison*.

10:15 AM 69 **Phenotypic factors affecting cheese yield and whey losses from individual cows.**
C. Cipolat Gotet*, M. Penasa, A. Cecchinato, M. De Marchi, and G. Bittante, *Department of Agronomy, Food, Natural Resources, Animals and Environment (DAFNAE), University of Padova, Legnaro, Padova, Italy*.

10:30 AM 70 **Sensory selection of an antimicrobial for use in string cheese.**
A. Lammert*[1], L. Collinsworth[1], N. Farkye[1], M. Arnold[1], A. Lathrop[2], and T. Taylor[2], [1]*Dairy Products Technology Center, California Polytechnic State University, San Luis Obispo*, [2]*Department of Food Science and Nutrition, California Polytechnic State University, San Luis Obispo*.

10:45 AM 71 **Microfiltration of skim milk and modified skim milk using a 0.1-µm ceramic uniform transmembrane pressure system at 50, 55, 60, and 65°C.**
E. E. Hurt*, M. Adams, and D. M. Barbano, *Cornell University, Department of Food Science, Northeast Dairy Foods Research Center, Ithaca, NY*.

11:00 AM 72 **Leveraging existing processing lines for yogurt product innovation through the use of advanced texturizing systems.**
M. E. Yildiz*, S. Mutz-Darwell, M. Yurgec, A. Perez, and H. Simpson, *National Starch, Bridgewater, NJ*.

11:15 AM 73 **Gravity separation of fat, somatic cells, and bacteria in raw and pasteurized milks.**
Z. Caplin, C. Melilli, and D. M. Barbano*, *Cornell University, Department of Food Science, Northeast Dairy Foods Research Center, Ithaca, NY*.

11:30 AM 74 **Effect of PEF and UV and their combination on selected microorganisms and physico-chemical properties in whey.**
A. Dave*[1], M. Walkling-Ribeiro[1], O. Rodríguez-González[2], M. W. Griffiths[1], and M. Corredig[1], [1]*Canadian Research Institute for Food Safety, Department of Food Science, University of Guelph, Guelph, ON, Canada*, [2]*Rodríguez-González Services, Toronto, ON, Canada*.

Forages and Pastures Symposium
Impact of Fungal-Endophytes on Pasture and Environmental Sustainability
Chairs: Jim Strickland, USDA-ARS, FAPRU, and Steve Washburn, North Carolina State University
225AB

9:30 AM **Introductions.**

9:40 AM 75 **Fungal endophytes: Forage friend or foe?**
C. Young*, *Noble Foundation, Ardmore, OK*.

10:10 AM 76 **Impact of tall fescue—Fungal endophyte associations on sustainability of pastures under current and future environmental conditions.**
R. McCulley*, J. Iqbal, J. Siegrist, G. Brosi, and J. Nelson, *University of Kentucky, Lexington*.

10:40 AM 77 **Lessons from "down-under" in New Zealand and Australia: The critical role of endophyte in pasture quality and production.**
D. E. Hume*, *AgResearch, Palmerston North, New Zealand*.

11:10 AM **Break**

Draft

11:25 AM 78 **Phases of physiological adaptation to heat stress and fescue toxicosis.**
D. E. Spiers*, B. A. Scharf, J. S. Johnson, and P. A. Eichen, *University of Missouri, Columbia*.

11:55 AM 79 **Managing the fungal endophyte/forage symbiosis for optimum forage-animal production.**
G. Aiken*, *USDA-ARS, FAPRU*.

Graduate Student Competition: ADSA Dairy Foods Oral Competition

Chair: Sanjeev Anand, South Dakota State University
122C

9:30 AM **Introduction**

9:45 AM 80 **Norbixin partitioning in full-fat and fat-free Cheddar cheese.**
T. J. Smith* and M. A. Drake, *North Carolina State University, Raleigh*.

10:00 AM 81 **The effect of glucose and citric acid concentration on polymerization of lactose by twin-screw extrusion.**
A. J. Tremaine* and T. C. Schoenfuss, *University of Minnesota*.

10:15 AM 82 **Impact of bleaching on flavor and functional properties of 80% serum protein concentrate.**
R. E. Campbell*[1], M. Adams[2], D. M. Barbano[2], and M. A. Drake[1], [1]*North Carolina State University, Raleigh*, [2]*Cornell University, Ithaca, NY*.

10:30 AM 83 **Study of the heat-induced interaction pathway between whey protein and buttermilk components.**
M. Saffon*[1], R. Jiménez-Flores[2], M. Britten[3], and Y. Pouliot[1], [1]*STELA Dairy Research Center, Institute of Nutraceuticals and Functional Foods (INAF), Université Laval, Quebec City, QC, Canada*, [2]*Dairy Products Technology Center, California Polytechnic State University, San Luis Obispo*, [3]*Food Research and Development Center (FRDC), Agriculture and Agri-Food Canada, St-Hyacinthe, QC, Canada*.

10:45 AM 84 **Effect of milk processing on the anticarcinogenic capacity of the milk fat globule membrane.**
R. Zanabria*[1], A. Tellez[2,1], 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*.

11:00 AM 85 **Heat stability of micellar casein concentrate (MCC) as affected by temperature and pH.**
A. Sauer* and C. I. Moraru, *Cornell University, Ithaca, NY*.

11:15 AM 86 **Development of a model system to understand the mechanisms of instability and to predict the shelf-life of oil-in-water emulsions.**
Y. Liang*[1,2], H. Patel[1], L. Matia-Merino[2], A. Ye[3], and M. Golding[2,3], [1]*Fonterra Research Centre, Palmerston North, New Zealand*, [2]*Institute of Food, Nutrition and Human Health, Massey University, Palmerston North, New Zealand*, [3]*Riddet Institute, Massey University, Palmerston North, New Zealand*.

11:30 AM 87 **Shear stabilized micro-phase-separated dairy gels containing significant concentrations of β-glucan.**
N. Sharafbafi*[1], S. M. Tosh[2], and M. Corredig[1], [1]*University of Guelph, Guelph, Ontario, Canada*, [2]*Agriculture and Agri-Food Canada, Guelph Food Research Center, Guelph, Ontario Canada*.

11:45 AM 88 **Streamlining the product development process: Use of the preferred attribute elicitation technique to extract key texture attributes influencing consumer liking of dairy yogurts.**
A. Grygorczyk*[1], M. Corredig[1], I. Lesschaeve[2], and L. Duizer[1], [1]*University of Guelph, Guelph, ON, Canada*, [2]*Vineland Research and Innovation Centre, Vineland Station, ON, Canada*.

Draft

Graduate Student Competition:
ADSA Production Division Graduate Oral Competition—PhD Students
Chair: Tanya Gressley, University of Delaware
222C

9:30 AM 89 **Hyperprolactinemia during late gestation increases milk yield from primiparous gilts and piglet growth.**
M. K. VanKlompenberg*, R. Manjarin, H. F. McMicking, and R. C. Hovey, *University of California, Davis*.

9:45 AM 90 **Photoperiod treatment during lactation alters organ weights but does not affect litter weight gain in mice.**
P. A. Bentley* and T. B. McFadden, *University of Alberta, Edmonton, Alberta, Canada*.

10:00 AM 91 **Serotonin (5-HT) affects glucose metabolism in transition rats.**
J. Laporta*, T. L. Peters, K. E. Merriman, and L. L. Hernandez, *University of Wisconsin, Madison*.

10:15 AM 92 **Inflammatory pathways contribute to the metabolic adaptations to lactation in dairy cattle.**
J. K. Farney*[1], L. K. Mamedova[1], J. F. Coetzee[2], B. KuKanich[1], L. M. Sordillo[3], J. E. Minton[1], L. C. Hollis[1], and B. J. Bradford[1], [1]*Kansas State University, Manhattan*, [2]*Iowa State University, Ames*, [3]*Michigan State University, East Lansing*.

10:30 AM 93 **Metabolism of butyrate infused in the rumen or abomasum of lactating dairy cows.**
K. J. Herrick*[1], A. R. Hippen[1], K. F. Kalscheur[1], D. J. Schingoethe[1], D. P. Casper[1], S. C. Moreland[2], and J. E. van Eys[2], [1]*South Dakota State University, Brookings*, [2]*Nutriad Inc., Elgin, IL*.

10:45 AM 94 **Effect of breed on the metabolic profile in transition Holstein and Jersey dairy cows.**
K. J. Lager*[1,2], E. R. Jordan[1], R. G. S. Bruno[1,2], J. A. H. Rivera[3], A. M. Farias[3], R. Sprowls[4], and D. R. Topliff[2], [1]*Texas AgriLife Extension Service, Texas A&M System, College Station*, [2]*West Texas A&M University, Canyon*, [3]*Texas AgriLife Research, Stephenville*, [4]*Texas Veterinary Medical Diagnostic Laboratory, Amarillo*.

11:00 AM **Break**

11:15 AM 95 **Effects of corn silage hybrids and quality of alfalfa hay on nitrogen metabolism and ruminal fermentation of early lactating dairy cows.**
M. S. Holt*[1], A. J. Young[1], J.-S. Eun[1], and K. E. Nestor[2], [1]*Department of Animal, Dairy, and Veterinary Sciences, Utah State University, Logan*, [2]*Mycogen Seeds, Indianapolis, IN*.

11:30 AM 96 **Effects of partial replacement of dietary starch from barley or corn with lactose on the performance of dairy cows.**
G. E. Chibisa*[1], G. B. Penner[1], P. Gorka[1], R. Berthiaume[2], and T. Mutsvangwa[1], [1]*Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, Saskatchewan, Canada*, [2]*Dairy and Swine Research and Development Centre, Agriculture and Agri-Food Canada, Sherbrooke, Quebec, Canada*.

11:45 AM 97 **In search of privacy: Dairy cow preference for an isolated calving area.**
K. L. Proudfoot*, D. M. Weary, and M. A. G. von Keyserlingk, *University of British Columbia, Vancouver, British Columbia, Canada*.

12:00 PM 98 **II. Identifying within-herd risk factors affecting reproductive performance of lactating dairy cows under field conditions.**
S. Bas*[1], R. L. Nebel[2], and G. M. Schuenemann[1], [1]*Department of Veterinary Preventive Medicine, The Ohio State University, Columbus*, [2]*Select Sires Inc., Plain City, OH*.

12:15 PM 99 **Efficacy of a combination butaphosphan and cyanocobalamin product and insulin for ketosis treatment.**
J. L. Gordon*[1], S. J. LeBlanc[1], L. Neuder[2], T. H. Herdt[2], D. F. Kelton[1], and T. F. Duffield[1], [1]*University of Guelph, Guelph, ON, Canada*, [2]*Michigan State University, East Lansing*.

12:30 PM 100 **Ecology of subclinical ketosis in transition dairy cattle.**
J. A. A. McArt*[1], D. V. Nydam[1], and G. R. Oetzel[2], [1]*Cornell University, Department of Population Medicine and Diagnostic Science, Ithaca, NY*, [2]*School of Veterinary Medicine, University of Wisconsin, Madison*.

Graduate Student Competition:
ADSA/ASAS Northeast Graduate Paper Competition
Chair: Kristen E. Govoni, University of Connecticut
127C

9:30 AM 101 **Metabolomic profiling of the liver in developing chicken embryos and post-hatch chicks reveals unique metabolic differences.**
Q. Hu*, U. Agarwal, and B. J. Bequette, *University of Maryland, College Park*.

Draft

9:45 AM 102 **Effect of resveratrol supplementation on glycemic response in moderately exercised geldings.**
J. L. Zambito*[1], H. S. Spooner[1], and R. Hoffman[2], [1]*West Virginia University, Morgantown*, [2]*Middle Tennessee State University, Murfreesboro*.

10:00 AM 103 **Effects of intrauterine growth retardation due to poor maternal nutrition on bone formation in sheep.**
S. Neupane*[1], M. L. Hoffman[1], M. A. Rokosa[1], E. R. Ackell[1], D. M. Kaelin[1], S. A. Zinn[1], T. D. Crenshaw[2], and K. E. Govoni[1], [1]*Department of Animal Science, University of Connecticut, Storrs*, [2]*Department of Animal Science, University of Wisconsin, Madison*.

10:15 AM 104 **Hypoxia stimulates GLUT1 expression in bovine mammary epithelial cells.**
Y. Shao*[1], K. M. Lounsbury[2], T. L. Wellman[2], and F.-Q. Zhao[1], [1]*Laboratory of Lactation Physiology, Department of Animal Science, University of Vermont, Burlington*, [2]*Department of Pharmacology, University of Vermont, Burlington*.

10:30 AM 105 **Poor maternal nutrition reduced body weights and circulating concentrations of IGF-I and IGFBP-3 in lambs.**
M. A. Rokosa*, M. L. Hoffman, S. Neupane, K. E. Govoni, A. M. Bush, T. A. Hoagland, and S. A. Zinn, *Department of Animal Science, University of Connecticut, Storrs*.

10:45 AM 106 **Effect of rumen-protected amino acid supplementation of a protein-deficient diet on performance of lactating dairy cows.**
C. Lee*[1], A. N. Hristov[1], T. Cassidy[1], K. Heyler[1], H. Lapierre[2], G. A. Varga[1], M. J. de Veth[3], A. Patton[4], and C. Parys[5], [1]*The Pennsylvania State University, University Park*, [2]*Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada*, [3]*Balchem Corporation, New Hampton, NY*, [4]*Nittany Dairy Nutrition Inc., Mifflinburg, PA*, [5]*Evonik Industries AG, Hanau, Germany*.

11:00 AM 107 **Effects of lasalocid and pulse-dosed chlortetracycline on health, growth, and thyroxine concentrations of prepubertal dairy heifers.**
R. Cabral*[1], P. Erickson[1], N. Guindon[1], E. Kent[1], C. Chapman[1], K. Aragona[1], M. Cabral[1], E. Massa[1], and M. Branine[2], [1]*University of New Hampshire, Durham*, [2]*Pfizer Animal Health, Canon City, CO*.

11:15 AM 108 **Effect of post-ruminal supplementation of phytonutrients on immune response, blood cell counts, and blood chemistry in lactating dairy cows.**
J. Oh*[1], A. N. Hristov[1], C. Lee[1], K. Heyler[1], T. Cassidy[1], J. Pate[1], S. Walusimbi[1], E. Brzezicka[1], K. Toyokawa[1], J. Werner[1], and D. Bravo[2], [1]*The Pennsylvania State University, University Park*, [2]*Pancosma, Geneva, Switzerland*.

Draft

Graduate Student Competition: CSAS Student Competition I
Chair: Greg Penner, University of Saskatchewan
223

9:30 AM 384 **Dynamics of nitrogen retention in entire male pigs immunized with Improvest.**
L. Huber*, D. Wey, and C. de Lange, *University of Guelph, Guelph, ON, Canada*.

9:45 AM 662 **Restricting sulfur amino acid intake in immune system stimulated pigs decreases plasma protein and albumin synthesis.**
N. Litvak* and C. F. M. de Lange, *University of Guelph, Guelph, ON, Canada*.

10:00 AM 382 **Hepatic gene expression analysis of nursery pigs fed simple and complex starter diets.**
M. Rudar*, L. D. Skinner, and C. F. M. de Lange, *University of Guelph, Guelph, ON, Canada*.

10:15 AM 304 **Effect of vaccination technique and antibody level on primary and secondary response in beef calves after vaccination against bovine viral diarrhea virus.**
M. R. Rey*[1], J. C. Rodriguez-Lecompte[1], T. Joseph[3], J. Morrison[2], A. Yitbarek[1], K. M. Wittenberg[1], M. Undi[1], and K. H. Ominski[1], [1]*Department of Animal Science, University of Manitoba, Winnipeg, MB, Canada*, [2]*Department of Biosystems Engineering, University of Manitoba, Winnipeg, MB, Canada*, [3]*Veterinary Diagnostic Services, Manitoba Agriculture, Food and Rural Initiatives, Winnipeg, MB, Canada*.

10:30 AM 545 **Impact of diet on the abundance and diversity of fecal *Escherichia coli* shed from cattle in overwintering environments.**
K. Christiuk*, D. O. Krause, K. Ominski, T. De Kievit, and E. Khafipour, *University of Manitoba, Winnipeg, Manitoba, Canada*.

10:45 AM 208 **Gradual cessation of milking reduces milk leakage and anticipatory behavior in dairy cows at dry-off.**
G. Zobel*[1], D. M. Weary[1], K. Leslie[2], and M. A. G. von Keyserlingk[1], [1]*Animal Welfare Program, University of British Columbia, Vancouver, BC, Canada*, [2]*Population Medicine, University of Guelph, Guelph, ON, Canada*.

11:00 AM 701 **The effect of limiting feed intake on concentration of proteins associated with energy balance in the pregnant beef cow.**
K. M. Wood*[1], C. J. Fitzsimmons[2,3], S. P. Miller[1], B. W. McBride[1], and K. C. Swanson[4], [1]*Dept. of Animal and Poultry Science, University of Guelph, Guelph, ON, Canada*, [2]*Agriculture and Agri-Food Canada, Edmonton, AB, Canada*, [3]*Dept. of Agriculture, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada*, [4]*Dept. of Animal Sciences, North Dakota State University, Fargo*.

11:15 AM 856 **Effects of short-term feed restriction on ruminal function.**
S. Zhang*[1], D. R. Barreda[2], J. R. Aschenbach[3], and G. B. Penner[1], [1]*University of Saskatchewan, Saskatoon, SK, Canada*, [2]*University of Alberta, Edmonton, AB, Canada*, [3]*Free University of Berlin, Berlin, Germany*.

11:30 AM 569 **Effects of dietary forage-to-concentrate ratio and sulfur concentration on ruminal fermentation and sulfur metabolism in feedlot heifers.**
S. Amat*, J. J. McKinnon, G. B. Penner, E. Simko, and S. Hendrick, *University of Saskatchewan, Saskatoon, SK, Canada*.

11:45 AM 538 **Effect of the forage-to-concentrate ratio on DMI and ruminal fermentation based on timing of feeding relative to feed restriction.**
R. I. Albornoz*[1], J. R. Aschenbach[2], D. R. Barreda[3], and G. B. Penner[1], [1]*University of Saskatchewan, Saskatoon, SK, Canada*, [2]*Free University of Berlin, Berlin, Germany*, [3]*University of Alberta, Edmonton, AB, Canada*.

12:00 PM 567 **Effect of ruminal adaptation on short-chain fatty acid absorption and risk for ruminal acidosis.**
T. Schwaiger*[1,2], K. A. Beauchemin[2], and G. B. Penner[1], [1]*University of Saskatchewan, Saskatoon, SK, Canada*, [2]*Lethbridge Research Center, Lethbridge, AB, Canada*.

12:15 PM 794 **Effect of dried distillers grains with solubles on enteric methane emissions and nitrogen excretion from finishing beef cattle.**
M. Hünerberg*[1,2], T. A. McAllister[2], K. A. Beauchemin[2], S. M. McGinn[2], O. M. Harstad[3], and E. K. Okine[1], [1]*University of Alberta, Edmonton, AB, Canada*, [2]*Agriculture and Agri-Food Canada, Lethbridge, AB, Canada*, [3]*Norwegian University of Life Sciences, Norway*.

Draft

Growth and Development
Chair: Sally Johnson, University of Florida
123

9:30 AM 109 **Zfp423 promotes adipogenic differentiation of bovine stromal vascular cells.**
Y. Huang*[1], A. Das[1,2], Q. Yang[1,2], M.-J. Zhu[1,2], and M. Du[1,2], [1]*Department of Animal Science, University of Wyoming, Laramie*, [2]*Department of Animal Sciences, Washington State University, Pullman*.

9:45 AM 110 **Agouti signaling protein abundance in cattle—Relationship with fat deposition.**
E. Albrecht*[1], K. Komolka[1], H. Sauerwein[2], T. Gotoh[3], and S. Maak[1], [1]*Leibniz Institute for Farm Animal Biology, Dummerstorf, Germany*, [2]*University Bonn, Bonn, Germany*, [3]*Kyushu University, Kuju-cho, Oita, Japan*.

10:00 AM 111 **Blood glucose and acylated ghrelin in response to duration of maternal undernutrition during gestation in twin sheep pregnancies.**
M. E. Field*, R. V. Anthony, M. D. Vetters, C. Flörcke, T. E. Engle, S. L. Archibeque, and H. Han, *Colorado State University, Fort Collins*.

10:15 AM 112 **Delaying a bovine viral diarrhea vaccine and growth implant with metaphylaxis affects performance, but not health of feedlot heifers.**
M. R. McDaniel*[1], M. E. Hubbert[2], and C. A. Loest[1], [1]*Department of Animal and Range Sciences, New Mexico State University, Las Cruces*, [2]*Clayton Livestock Research Center, New Mexico State University, Clayton*.

10:30 AM 113 **The effects of intrauterine growth retardation (IUGR) due to poor maternal nutrition on adipose tissue development and metabolic status in sheep.**
M. L. Hoffman*[1], M. A. Rokosa[1], S. Neupane[1], S. M. Spignesi[1], J. Lee[2], S. A. Zinn[1], and K. E. Govoni[1], [1]*Department of Animal Science, University of Connecticut, Storrs*, [2]*Department of Nutritional Sciences, University of Connecticut, Storrs*.

10:45 AM 114 **Maternal nutrition of beef cattle on pasture mediates long-term consequences for offspring primarily through effects on growth early in life.**
P. L. Greenwood*, L. M. Cafe, and D. L. Robinson, *Australian Cooperative Research Centre for Beef Genetic Technologies and NSW Department of Primary Industries, Armidale, NSW, Australia*.

11:00 AM 115 **Lean tissue accretion and the efficiency of energy and protein retention are enhanced by intermittent bolus compared to continuous feeding.**
S. W. El-Kadi*, C. Boutry, M. C. Gazzaneo, A. Suryawan, R. A. Orellana, N. Srivastava, H. V. Nguyen, M. L. Fiorotto, and T. A. Davis, *USDA/ARS Children's Nutrition Research Center, Department of Pediatrics, Baylor College of Medicine, Houston, TX*.

11:15 AM 116 **Tripalmitolein infusion in finished lambs.**
T. A. Burns*, M. C. Miller, A. K. G. Kadegowda, H. M. Stowe, S. M. Calcatera, and S. K. Duckett, *Clemson University, Clemson, SC*.

11:30 AM 117 **Nutritional milieu of preadipocytes determines the differentiating capabilities of bovine primary stromal vascular cultures.**
A. K. G. Kadegowda*, M. C. Miller, T. A. Burns, A. Wright, and S. K. Duckett, *Clemson University, Clemson, SC*.

11:45 AM 118 **Effects of feeding different forage sources on rumen fermentation and gastrointestinal tract development in young calves.**
Ll. Castells*[1], A. Bach[1,2], and M. Terré[1], [1]*Department of Ruminant Production, IRTA, Caldes de Montbui, Spain*, [2]*ICREA, Barcelona, Spain*.

International Animal Agriculture Symposium
Increasing undergraduate and graduate student training in international animal agriculture
Chair: Jeffrey Bewley, University of Kentucky
222AB

9:30 AM 119 **What type of employee will international agribusiness companies be seeking?**
K. A. Jacques* and K. A. Dawson, *Alltech Center for Animal Nutrigenomics & Applied Animal Nutrition, Nicholasville, KY*.

10:00 AM 120 **The role of animal scientists in assuring food security in developing countries.**
J. Turk*, *U.S. Agency for International Development, Washington, DC*.

10:30 AM 121 **Implementing new technologies in developing countries: Intellectual property, patent laws, and technology transfer agreements.**
K. Krafka*, *Kemin Industries Inc., Des Moines, IA*.

11:00 AM 122 **A theme-based approach in smallholder dairy training through a partnership between Malawi and Scotland.**
M. G. G. Chagunda*[1], T. N. Gondwe[2], and D. J. Roberts[1], [1]*Scottish Agricultural College, Edinburgh, UK*, [2]*Bunda College of Agriculture, Lilongwe, Malawi*.

11:30 AM 123 **Preparing students for a changing world: Employer prioritized attributes from international engagement.**
L. J. Unruh Snyder*, J. M. Fernandez, and M. A. Russell, *Purdue University, West Lafayette, IN*.

12:00 PM 124 **In-country partnering needed for successful international service learning.**
P. Ebner*[1], H. Oliver[2], and M. Russell[1], [1]*Department of Animal Sciences, Purdue University*, [2]*Department of Food Science, Purdue University*.

Lactation Biology I
Chair: Kirsty Daniels, Ohio State University
231C

9:30 AM 125 **Serotonin (5-HT) regulates calcium mobilization at the onset of lactation in rats.**
J. LaPorta, T. L. Peters, K. E. Merriman, and L. L. Hernandez*, *University of Wisconsin, Madison*.

9:45 AM 126 **Genes and functions associated with photoperiodic effects on the mammary gland.**
T. B. McFadden*[1] and E. H. Wall[2], [1]*Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, Alberta, Canada*, [2]*Department of Medicine, University of Vermont, Burlington*. 10:00 AM 127 **Effect of ovariectomy on milk yield and mammary gland activity in lactating cow.**
L. Yart*[1,2], F. Dessauge[1,2], L. Finot[1,2], S. Wiart[1,2], A. Mottin[1,2], A. Eveno[1,2], P. G. Marnet[2,1], and V. Lollivier[2,1], [1]*INRA, UMR1348 Pegase, Saint-Gilles, France*, [2]*Agrocampus Ouest, UMR1348 Pegase, Rennes, France*.

Draft

10:15 AM 128 **Effect of cooling during the dry period on neutrophil gene expression after *Streptococcus uberis* infection.**
I. M. Thompson*, S. Tao, K. C. Jeong, W. W. Thatcher, and G. E. Dahl, *University of Florida*.

10:30 AM 129 **Short-term increases in milking frequency and a higher plane of nutrition did not increase total milk production in pasture-based dairy cows during an extended lactation.**
A. G. Rius*, C. V. C. Phyn, J. K. Kay, and J. R. Roche, *DairyNZ, Hamilton, New Zealand*.

10:45 AM 130 **Transcriptome analysis of blood in heat-stressed dairy goats.**
A. A. K. Salama*[1], S. Hamzaoui[1], B. Badaoui[2], A. Zidi[3], and G. Caja[1], [1]*Grup de Recerca en Remugants (G2R), Universitat AutÃ³noma de Barcelona, Bellaterra, Barcelona, Spain*, [2]*Integrative Biology Group, Parco Tecnologico Padano-CERSA, Lodi, Italy*, [3]*Centre de Recerca en Agrigenomica (CRAG), Bellaterra, Barcelona, Spain*.

11:00 AM 131 **Effects of high feeding level on caprine mammary gland development and milk yield potential.**
J. M. Aubry[1,2], L. Finot[1,2], L. Yart[1,2], S. Wiart[1,2], E. Siroux[1], M. Chorho[1], J. Lassalas[1], and F. Dessauge*[1,2], [1]*INRA, UMR1348 Pegase, Saint-Gilles, France*, [2]*Agrocampus Ouest, UMR1348 Pegase, Rennes, France*.

Nonruminant Nutrition
Minerals and Vitamins
Chair: Ryan Dilger, University of Illinois
129AB

9:30 AM 132 **Determination of endogenous intestinal losses of Ca and digestibility of Ca in canola meal fed to growing pigs.**
J. C. Gonzalez-Vega*[1], C. L. Walk[2], and H. H. Stein[1], [1]*University of Illinois, Urbana*, [2]*AB Vista, Marlborough, UK*.

9:45 AM 133 **The effect of supplemental vitamin D_3 as an oral dose or in early nursery pig diets on pig growth performance and serum 25(OH)D_3 concentrations.**
J. R. Flohr*[1], M. D. Tokach[1], S. S. Dritz[1], S. C. Henry[2], M. L. Potter[2], N. S. Shelton[1], L. L. Greiner[3], J. Connor[3], R. D. Goodband[1], J. L. Nelssen[1], and J. M. DeRouchey[1], [1]*Kansas State University, Manhattan*, [2]*Abilene Animal Hospital, Abilene, KS*, [3]*Innovative Swine Solutions, Carthage, IL*.

10:00 AM 134 **Carbohydrase and phytase complex improves performance and bone mineralization of pigs fed wheat-soybean base diet.**
P. Cozannet[1], R. Gerritsen[2], R. Maillard[1], E. Devillard*[1], and A. Preynat[1], [1]*Adisseo France SAS, CERN, Malicorne, France*, [2]*Schothorst Feed Research, Lelystad, Netherlands*.

10:15 AM 135 **Modulation of phosphorus digestive utilization in weanling pigs: influence of dietary calcium and phytase on gastro-intestinal digesta pH and mineral solubility.**
A. Narcy[1], M. P. Létourneau-Montminy*[2], E. Bouzouagh[1], N. Même[1], M. Magnin[3], and J. Y. Dourmad[4], [1]*INRA, UR83 Recherches Avicoles, Nouzilly, France*, [2]*Agriculture et Agroalimentaire Canada, Sherbrooke, QC, Canada*, [3]*BNA-NA, Chateau-Gontier, France*, [4]*INRA-Agrocampus Ouest, UMR 1348, Saint Gilles, France*.

10:30 AM 136 **Phosphorus utilization in finishing broiler chickens: Effect of dietary calcium and microbial phytase.**
X. Rousseau*[1,2], M. P. Letourneau-Montminy[3], M. Magnin[1], N. Même[2], Y. Nys[2], and A. Narcy[2], [1]*BNA NA, Château-Gontier, France*, [2]*INRA UR83 Recherches avicoles, Nouzilly, France*, [3]*Agriculture and Agri-Food Canada, Lennoxville, Québec, Canada*.

10:45 AM 137 **The effect of dietary levels of copper and zinc on rate and efficiency of growth by rainbow trout.**
E. S. Read*[1], W. M. Sealey[2], F. T. Barrows[3], M. K. Petersen[4], and J. A. Paterson[1], [1]*Montana State University, Bozeman*, [2]*US Fish and Wildlife Service, Bozeman, MT*, [3]*US Department of Agriculture, Agriculture Research Service, Bozeman, MT*, [4]*US Department of Agriculture, Agriculture Research Service, Miles City, MT*.

11:00 AM 138 **Varied sources of conjugated linoleic acid (CLA) does not alter bone mineral density (BMD), bone mineral content (BMC), or body fat content in postmenopausal ovariectomized rats.**
K. M. Kanosky*, Z. D. Callahan, M. A. Brown, C. S. Perkins, E. A. Benavides, D. H. Keisler, and B. R. Wiegand, *University of Missouri, Columbia*.

11:15 AM 139 **Effects of selenium-enriched exopolysaccharide produced by *Enterobacter cloacae* Z0206 on growth performance, immunity and antioxidant activities in broiler chickens.**
Z. Q. Lu*, Y. M. Wang, M. Huang, and Y. Z. Wang, *Institute of Feed Science, Zhejiang University, National Engineering Laboratory of Bio-feed Safety and Pollution Prevention, Key Laboratory of Animal Nutrition and Feed science of Ministry of Agriculture, Hangzhou, Zhejiang Province, China*.

Draft

Ruminant Nutrition
Beef Production I
Chair: Allan Chestnut, Provimi
226ABC

9:30 AM 140 **Effects of metabolic imprinting on growth performance and gene expression of early-weaned beef heifers.**
P. Moriel*[1], V. Mercadante[2], A. D. Aguiar[1], S. E. Johnson[2], M. J. Hersom[2], J. M. B. Vendramini[1], and J. D. Arthington[1], [1]*Range Cattle Research and Education Center, University of Florida, Ona, FL*, [2]*University of Florida, Gainesville*.

9:45 AM 141 **Effects of metabolic imprinting on growth performance of early-weaned beef steers.**
P. Moriel*[1], V. Mercadante[2], A. D. Aguiar[1], S. E. Johnson[2], M. J. Hersom[2], J. M. B. Vendramini[1], and J. D. Arthington[1], [1]*Range Cattle Research and Education Center, University of Florida, Ona*, [2]*University of Florida, Gainesville*.

10:00 AM 142 **Correlation of feed intake and efficiency with small intestinal angiogenic factor and receptor expression in finishing cattle born to dams fed varying levels of nutrients during early to mid-gestation.**
A. M. Meyer*[1], K. M. Cammack[1], K. J. Austin[1], J. M. Kern[1], M. Du[1], J. S. Caton[2], and B. W. Hess[1], [1]*Department of Animal Science, University of Wyoming, Laramie*, [2]*Department of Animal Sciences, North Dakota State University, Fargo*.

10:15 AM 143 **Reproductive and productive responses to suckling-restriction treatments and flushing in primiparous grazing beef cows.**
P. Soca*[1], M. Carriquiry[1], D. Keisler[2], M. Claramunt[1], M. Do Carmo[1], J. Olivera- Muzante[1], M. Rodriguez[1], and A. Meikle[1], [1]*University of Uruguay, Paysandu, Uruguay*, [2]*University of Missouri, Columbia*.

10:30 AM 144 **Use of an injectable mineral in beef cattle: Mineral status.**
O. N. Genther* and S. L. Hansen, *Iowa State University, Ames*.

10:45 AM 145 **Use of an injectable mineral in beef cattle: Growth and carcass characteristics.**
O. N. Genther* and S. L. Hansen, *Iowa State University, Ames*.

11:00 AM 146 **Effects of restricted versus conventional dietary adaptation over periods of 9 and 14 days on feedlot performance and carcass traits of Nellore cattle.**
R. S. Barducci[1], M. D. B. Arrigoni[1], C. L. Martins[1], D. D. Millen*[2], L. M. N. Sarti[1], M. C. S. Franzói[1], L. C. Vieira Júnior[1], T. L. de Jesus[1], T. C. Putarov[1], M. T. Cesar[1], A. S. Pereira[1], E. T. Macedo[1], A. Perdigão[1], F. A. Ribeiro[1], A. L. N. Rigueiro[2], [1]*São Paulo State University (UNESP), Botucatu, São Paulo, Brazil*, [2]*São Paulo State University (UNESP), Dracena, São Paulo, Brazil*.

11:15 AM 147 **Effect of dietary energy density and control of meal size on growth performance, eating pattern, and carcass and meat quality in Holstein steers fed high-concentrate rations.**
S. Marti*[1], M. Pérez-Juan[2], A. Aris[1], A. Bach[3,1], and M. Devant[1], [1]*IRTA-Ruminant Production, Animal Nutrition, Management, and Welfare Research Group, Torre Marimon, Caldes de Montbui, Barcelona, Spain*, [2]*IRTA-Monells, Girona, Spain*, [3]*ICREA, Barcelona, Spain*.

11:30 AM 148 **Dataset-specific dry matter intake prediction equation determination for growing calves.**
M. F. Wilken*, L. L. Berger, G. E. Erickson, M. K. Nielsen, M. L. Spangler, and S. D. Kachman, *University of Nebraska-Lincoln, Lincoln*.

11:45 AM 149 **The use of biometric measures to assess body fat composition of F1 Nellore × Angus bulls and steers.**
M. A. Fonseca*[1,2], L. O. Tedeschi[2], S. C. Valadares Filho[1], H. J. Fernandes[3], N. F. De Paula[1,2], M. G. Machado[1], F. A. C. Villadiego[1], and J. M. Silva Junior[4], [1]*Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil*, [2]*Texas A&M University, College Station, Texas, United States*, [3]*Universidade Estadual do Mato Grosso do Sul, Aquidauana, Mato Grosso do Sul, Brazil*, [4]*Universidade Federal Rural de Pernambuco, Garanhuns, Pernambuco, Brazil*.

12:00 PM 150 **Evaluation of volatile fatty acid stoichiometries and methane predictions for high grain fed beef cattle within a mechanistic digestion model.**
J. L. Ellis*[1,2], J. Dijkstra[2], A. Bannink[3], E. Kebreab[4], S. Archibeque[5], and J. France[1], [1]*Centre for Nutrition Modelling, Department of Animal and Poultry Science, University of Guelph, Guelph, ON, Canada*, [2]*Animal Nutrition Group, Wageningen University, Wageningen, the Netherlands*, [3]*Wageningen UR Livestock Research, Lelystad, the Netherlands*, [4]*Department of Animal Science, University of California-Davis, Davis*, [5]*Animal Sciences, Colorado State University, Fort Collins*.

12:15 PM 151 **Supplemental vitamin C alleviates negative effects of high sulfur diets on beef quality.**
D. J. Pogge*, S. M. Lonergan, and S. L. Hansen, *Iowa State University, Ames*.

Draft

Ruminant Nutrition
Dairy Production I
Chair: Rick Kohn, University of Maryland
132ABC

9:30 AM 152 **Liver gene expression patterns can explain accumulation of lipid in the liver during the transition period.**
H. R. Khazanehei*, P. Eck, A. Regassa, D. O. Krause, and J. C. Plaizier, *University of Manitoba, Winnipeg, MB, Canada*.

9:45 AM 153 **Effects of nutrition, ketosis, and inflammation on hepatokine and nuclear receptor expression in liver of peripartal Holstein dairy cows.**
H. Akbar*, J. M. Khan, D. B. Carlson, J. K. Drackley, and J. J. Loor, *University of Illinois, Urbana*.

10:00 AM 154 **Effects of a moderate-energy diet during the close-up dry period on immunometabolic indices in peripartal dairy cows.**
J. S. Osorio*[1], E. Trevisi[2], P. Ji[1], J. K. Drackley[1], G. Bertoni[2], and J. J. Loor[1], [1]*University of Illinois, Urbana*, [2]*Universita Cattolica del Sacro Cuore, Piacenza, Italy*.

10:15 AM 155 **Integrating control by gene expression in adipose tissue into a mechanistic, dynamic model of metabolism to investigate the biological basis for variation in genetics of feed conversion efficiency in lactating dairy cattle.**
S. Shields* and J. McNamara, *Washington State University, Pullman*.

10:30 AM 156 **Dietary manipulation of crude protein and starch content affects energy balance in early lactation dairy cows.**
S. J. Whelan*[1,3], F. J. Mulligan[2], V. Gath[2], B. Flynn[3], and K. M. Pierce[1], [1]*School of Agriculture and Food Science, University College Dublin, Belfield, Dublin 4, Ireland*, [2]*School of Veterinary Medicine, University College Dublin, Belfield, Dublin 4, Ireland*, [3]*University College Dublin Lyons Research Farm, Newcastle, Dublin, Ireland*.

10:45 AM 157 **Colostrum yield by multiparous cows is positively correlated with prepartum body fat mobilization.**
N. Litherland*, W. Weich, D. Lobao, and Z. Sawall, *University of Minnesota, St. Paul*.

11:00 AM 158 **A starch-binding agent decreases the in vitro rate of fermentation of wheat.**
F. R. Dunshea*[1], V. M. Russo[1], I. Sawyer[2], and B. J. Leury[1], [1]*Melbourne School of Land and Environment, The University of Melbourne, Parkville, Victoria, Australia*, [2]*Feedworks Pty Ltd., Lancefield, Victoria, Australia*.

11:15 AM 159 **Effects of intrajugular glucose infusion and dietary protein concentration on feed intake, milk yield and metabolic responses of postpartum cows.**
W. E. Brown* and M. S. Allen, *Michigan State University, East Lansing*.

11:30 AM 160 **Effects of feeding moderate-energy high-forage diets with reduced DCAD for 21 or 42 days prepartum on mineral homeostasis and postpartum performance by multiparous dairy cows.**
W. D. Weich*[1], E. Block[2], and N. B. Litherland[1], [1]*University of Minnesota Department of Animal Science, St. Paul*, [2]*Church and Dwight Co. Inc., Arm and Hammer Animal Nutrition, Princeton, NJ*.

11:45 AM 161 **Comparison of methane prediction for pasture fed dairy cows using a simulation model (Molly) incorporating revised VFA stoichiometry and microbial pools.**
J. McNamara*[1], P. Buekes[2], P. Gregorini[2], M. Hanigan[3], and G. Waghorn[2], [1]*Washington State University, Pullman*, [2]*Dairy New Zealand, Hamilton, New Zealand*, [3]*Virginia Tech University, Blacksburg*.

12:00 PM 162 **Effects of dry period management and time relative to calving on the expression of genes involved in carbohydrate metabolism in the liver.**
H. R. Khazanehei*, P. Eck, A. Regassa, D. O. Krause, and J. C. Plaizier, *University of Manitoba, Winnipeg, MB, Canada*.

Draft

Ruminant Nutrition I
Chair: Aimee Wertz, ADM
131ABC

9:30 AM 163 **Silage process affects chemical composition and digestion site in high moisture sorghum grain.**
M. Torterolo[1], A. Curbelo[2], C. Cajarville[2], J. L. Repetto[1], and M. Aguerre*[1], [1]*Departamento de Bovinos, Facultad de Veterinaria, Universidad de la República, Montevideo, Uruguay*, [2]*Departamento de Nutrición Animal, Facultad de Veterinaria, Universidad de la República, Montevideo, Uruguay*.

9:45 AM 164 **Effect of corn residue removal on cattle performance and subsequent grain yield.**
A. L. McGee*, J. L. Harding, T. J. Klopfenstein, S. J. van Donk, and L. A. Stalker, *University of Nebraska, Lincoln*.

10:00 AM 165 **Effects of restricted versus conventional dietary adaptation over periods of 9 and 14 days on rumen papillae of feedlot Nellore cattle.**
T. V. B. Carrara[2], D. D. Millen*[2], M. D. B. Arrigoni[1], C. L. Martins[1], R. S. Barducci[1], F. T. V. Pereira[2], L. M. N. Sarti[1], M. C. S. Franzói[1], D. D. Estevam[2], L. L. Cursino[2], P. L. P. Fontes[1], R. D. L. Pacheco[1], R. A. Rizzieri[1], C. F. da Costa[1], L. D. F. Miranda[1], [1]*São Paulo State University (UNESP), Botucatu, São Paulo, Brazil*, [2]*São Paulo State University (UNESP), Dracena, São Paulo, Brazil*.

10:15 AM 166 **Fatty acid composition of backfat, intermuscular, KPH and tail fat depot sites of Angus cross steers finished on grass or high grain diets.**
G. Acetoze*[1] and H. A. Rossow[2], [1]*Department of Animal Science, University of California, Davis*, [2]*Veterinary Medicine Teaching and Research Center, School of Veterinary Medicine, University of California- Davis, Tulare*.

10:30 AM 167 **Replacing corn and soybean meal in lactating dairy cow diets with field peas (*Pisum sativum*) on milk production and nitrogen utilization.**
J. J. Albrecht*, K. F. Kalscheur, A. R. Hippen, D. J. Schingoethe, and D. P. Casper, *South Dakota State University, Brookings*.

10:45 AM 168 **Milk production response to increasing net energy intake in dairy cows. A meta-analysis.**
C. Jensen*[1,2], M. R. Weisbjerg[1], and S. Østergaard[1], [1]*Department of Animal Science, Aarhus University, Denmark*, [2]*Knowledge Centre of Agriculture, Skejby, Denmark*.

ADSA-SAD Undergraduate Competition
Dairy Foods
Chair: Kas Ingawa, North Carolina State University, Raleigh
231A

11:00 AM 169 **Nutritive value of bovine milk as compared with alternative dairy-free beverages.**
S. M. Smith* and J. M. Bewley, *University of Kentucky, Lexington*.

11:15 AM 170 **Milk and cognitive abilities: Can dairy products work to improve your memory?**
N. L. Leckie* and C. L. Widener, *Clemson University, Clemson, SC*.

11:30 AM 171 **Milk production and pasteurization: Two opposing viewpoints.**
M. Sprague* and E. L. Karcher, *Department of Animal Science, Michigan State University, East Lansing*.

11:45 AM 172 **The effects of flavored milk in the cafeteria.**
S. M. Vignes* and C. C. Williams, *Louisiana State University, Baton Rouge*.

12:00 PM 173 **Importance of texturants in dairy products.**
H. R. Wentworth* and D. R. Olver, *The Pennsylvania State University*.

12:15 PM 174 **Production of functional probiotic and prebiotic dairy foods.**
L. Hetrick*, D. Winston, and B. Corl, *Virginia Tech, Blacksburg*.

Physiology and Endocrinology
Estrous Cycle Manipulation - Dairy
Chair: Anthony McNeel, USDA-ARS U.S. Meat Animal Research Center
231C

11:30 AM 175 **Ovulatory responses to withdrawal of progesterone feedback during the early and late luteal phase.**
G. E. Mann*[1] and R. S. Robinson[2], [1]*University of Nottingham, School of Biosciences, Division of Animal Sciences, Sutton Bonington Campus, Loughborough, UK*, [2]*University of Nottingham, School of Veterinary Medecine and Science, Sutton Bonington Campus, Loughborough, UK*.

11:45 AM 176 **Estrus behavior and fertility responses in lactating grazing dairy cows after a timed AI program using estradiol cypionate.**
M. N. Correa*[1], M. E. Lima[1], C. C. Brauner[1], A. R. T. Krause[1], E. G. Xavier[2], E. Schmitt[1], A. Schneider[1], and F. A. B. Del Pino[1], [1]*Universidade Federal de Pelotas, NUPEEC, Pelotas, RS, Brazil*, [2]*Granjas 4 Irmaos S/A, Rio Grande, RS, Brazil*.

Draft

12:00 PM 177 **Effect of reusing CIDRs on estrus behavior and fertility responses in a Heatsynch protocol of grazing dairy cows.**
C. C. Brauner*[1], M. E. Lima[1], A. R. T. Krause[1], E. G. Xavier[2], A. Schneider[1], E. Schmitt[1], F. A. B. Del Pino[1], and M. N. Correa[1], [1]*Universidade Federal de Pelotas, NUPEEC, Pelotas, RS, Brazil*, [2]*Granjas 4 Irmaos S/A, Rio Grande, RS, Brazil*.

12:15 PM 178 **Effect of intrauterine administration of GnRH on LH secretion in lactating dairy cows.**
S. Bas*[1], M. L. Day[2], and G. M. Schuenemann[1], [1]*Department of Veterinary Preventive Medicine, The Ohio State University, Columbus*, [2]*Department of Animal Sciences, The Ohio State University, Columbus*.

Graduate Student Competition: ADSA Southern Section (Graduate)
Chair: Kasim Ingawa, NCSU-DRMS
127C

11:45 AM 179 **Volatile fatty acids and biohydrogenation intermediates in continuous cultures are returned to normal by addition of potassium carbonate but not by potassium chloride.**
P. H. Morris*[1], J. G. Andrae[1], J. K. Bernard[2], E. Block[3], and T. C. Jenkins[1], [1]*Clemson University, Clemson, SC*, [2]*University of Georgia, Tifton*, [3]*Arm & Hammer Animal Nutrition, Princeton, NJ*.

12:00 PM 180 **Dietary l-arginine supplementation effects on growth and health parameters in neonatal Holstein bull calves.**
A. N. Vanderlick*[1], G. A. Holub[1], and W. T. Bissett[2], [1]*AgriLife Research Texas A&M University, College Station*, [2]*College of Veterinary Medicine, Texas A&M University, College Station*.

12:15 PM 181 **Changes in cortisol levels with alternating access to rotating cow brushes.**
R. A. Black*[1], M. R. P. Elmore[2], D. L. Ray[1], A. B. Klingenfus[3], B. L. Klingenfus[3], J. D. Clark[1], and J. M. Bewley[1], [1]*University of Kentucky, Lexington*, [2]*University of Illinois, Urbana*, [3]*Harvest Home Dairy, Crestwood, KY*.

ADSA-SAD Undergraduate Competition
Dairy Production
Chair: Mary Sowerby, University of Florida, Gainesville
231A

1:30 PM 182 **Glucose transporter and hypoxia-associated gene expression in the mammary gland of transition dairy cattle.**
C. N. Niewiadomski*, S. A. Mattmiller, and E. L. Karcher, *Michigan State University, East Lansing*.

1:45 PM 183 **Challenges and inconsistencies associated with goat somatic cell counts.**
K. M. Wolf* and J. M. Bewley, *University of Kentucky, Lexington*.

2:00 PM 184 **On-farm culturing as a new management practice.**
A. Patch*, D. Winston, I. Mullarky, and C. Petersson-Wolfe, *Virginia Tech, Blacksburg*.

2:15 PM 185 **New approaches to combat milk fat depression.**
J. M. Risser* and D. R. Olver, *Pennsylvania State University, University Park*.

2:30 PM **Break**

2:45 PM 186 **Monitoring the composition of waste milk fed to dairy calves.**
E. L. Stayduhar*, K. D. Stevens, M. L. Eastridge, and K. M. Daniels, *The Ohio State University, Columbus*.

3:00 PM 187 **Early pregnancy detection methods in reproductive management.**
C. E. Burke* and C. C. Williams, *Louisiana State University, Baton Rouge*.

3:15 PM 188 **Anaerobic digestion and the benefits to dairy farmers.**
S. K. Luther*, A. C. Wilkie, and M. E. Sowerby, *University of Florida, Gainesville*.

3:30 PM 189 **Supplemental melatonin: A potential strategy for maintaining mammary health in dairy cattle.**
M. M. Palmer*, D. N. Williams, and J. L. Fain, *Clemson University, Clemson, SC*.

Draft

ADSA Southern Section Symposium
Meeting the Nutrient Requirements of Dairy Cattle During Heat Stress
Chair: Christie Stanley, Land O'Lakes Purina Feed
225AB

2:00 PM 190 **Heat stress in young dairy calves.**
C. C. Williams*, *Louisiana State University AgCenter, Baton Rouge*.

2:30 PM 191 **Managing heat stress in dairy heifers.**
R. E. James* and S. Neal, *Department of Dairy Science, Virginia Tech, Blacksburg*.

3:00 PM 192 **Impact of management on feeding dairy cows in heat stress.**
G. Bethard*, *Dairy Records Management Systems, Raleigh, NC*.

3:30 PM 193 **Lactating cows and changes in dry matter intake during heat stress.**
J. W. West*, *University of Georgia, Tifton*.

4:00 PM 194 **Use of fat and other feed additives in heat-stressed cattle.**
L. H. Baumgard*[1], A. Nayeri[1], M. V. Sanz-Fernandez[1], J. S. Johnson[1], D. B. Snider[1], D. P. Bu[2], and R. P. Rhoads[3], [1]*Iowa State University, Ames*, [2]*State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agriculture Sciences, Beijing, China*, [3]*Virginia Polytechnic Institute and State University, Blacksburg*.

4:30 PM 195 **Feeding dairy cattle in a grazing system during heat stress.**
J. K. Bernard*, *University of Georgia, Tifton*.

5:00 PM **ADSA Southern Section Business Meeting.**

ADSA-SAD Undergraduate Competition
Original Research
Chair: Elizabeth Karcher, Michigan State University
231C

2:00 PM 196 **Monitoring the incidence of ketosis in fresh cows using milk composition, urine ketones, and milk ketones.**
K. D. Stevens*, E. L. Stayduhar, M. L. Eastridge, and K. M. Daniels, *The Ohio State University, Columbus*.

2:15 PM 197 **Effect of a liquid acid footbath solution containing a cationic surfactant on digital dermatitis in dairy cattle.**
T. A. Reiter*[1], B. A. Beavers[2], F. R. Moreira[3], K. J. McQueery[1], C. L. Wood[1], and J. M. Bewley[1], [1]*University of Kentucky, Lexington*, [2]*Beavers Hoofcare Service LLC, Lebanon, KY*, [3]*GEA Farm Technologies, Naperville, IL*.

2:30 PM 198 **Establishment of antibiotic resistance genes in the gut of pre-weaned dairy calves.**
L. Woloohojian*, E. Hurley, P. Ray, B. Willing, H. Littier, A. Pruden, and K. Knowlton, *Virginia Tech, Blacksburg*.

2:45 PM 199 **Effects of supplementing propionibacteria in lactation dairy diets on ruminal fermentation in continuous cultures.**
K. A. Dolecheck*[1], J. M. Vera[1], A. J. Young[1], A. H. Smith[2], V. Fellner[3], and J.-S. Eun[1], [1]*Department of Animal, Dairy, and Veterinary Sciences, Utah State University, Logan*, [2]*Danisco USA Inc., Waukesha, WI*, [3]*Department of Animal Science, North Carolina State University, Raleigh*.

3:00 PM 200 **Effect of calf starter form and milk source on growth and intake of dairy calves.**
S. A. McCullough*, T. S. Dennis, and T. D. Nennich, *Purdue University, West Lafayette, IN*.

3:15 PM **Break**

3:30 PM 201 **Effect of a mannanoligosaccharide (Bio-Mos) on health and growth of Holstein and Jersey calves.**
L. R. Such*, G. D. Hobgood, B. A. Hopkins, and S. Davidson, *North Carolina State University, Raleigh*.

3:45 PM 202 **Predicting early life illness in Holstein heifer calves.**
C. A. Bellmund*, K. C. McRoberts, and D. J. R. Cherney, *Cornell University, Ithaca, NY*.

4:00 PM 203 **Who's listening? The preferred means of communication for Tennessee dairy producers.**
M. E. Conley*, G. M. Pighetti, and P. D. Krawczel, *University of Tennessee, Knoxville*.

4:15 PM 204 **Incorporation of palmitic and stearic acids into plasma lipid fractions of lactating dairy cows.**
S. Schmidt*, C. L. Preseault, J. E. Rico, M. S. Allen, and A. L. Lock, *Michigan State University, East Lansing*.

Draft

4:30 PM 205 **Effect of temperature during drying and mechanical extrusion on soybean meal protein in situ degradability and in vitro digestibility.**
B. J. Isenberg*[1], A. N. Hristov[1], D. M. Kniffen[1], C. Lee[1], K. S. Heyler[1], T. W. Cassidy[1], and R. A. Fabin[2], [1]*The Pennsylvania State University, University Park*, [2]*Fabin Bros. Farms, Indiana, PA*.

Animal Behavior and Well-Being
Use of animal behavior to assess animal welfare
Chair: Cassandra Tucker, University of California-Davis
121C

2:00 PM 206 **Use of animal behavior to assess animal welfare.**
E. A. Pajor*, *Faculty of Veterinary Medicine, University of Calgary, Calgary, AB, Canada*.

2:45 PM 207 **Prevalence of hock, knee and neck injuries, stall dimensions and lying time on Canadian free-stall dairy farms.**
J. C. Zaffino*[1], C. G. R. Nash[1], T. J. DeVries[2], S. J. LeBlanc[1], D. F. Kelton[1], J. Gibbons[3], E. Vasseur[3,5], A. M. de Passillé[3], J. Rushen[3], K. Orsel[4], H. W. Barkema[4], L. Solano[4], G. B. Bond[4], and D. B. Haley[1], [1]*University of Guelph, Department of Population Medicine, Guelph, ON, Canada*, [2]*University of Guelph, Department of Animal and Poultry Science, Guelph, ON, Canada*, [3]*Agriculture and Agri-Food Canada, Agassiz, BC, Canada*, [4]*University of Calgary, Department of Production Animal Health, Calgary, AB, Canada*, [5]*Organic Dairy Research Centre, University of Guelph Alfred Campus, Alfred, ON, Canada*.

3:00 PM 208 **Gradual cessation of milking reduces milk leakage and anticipatory behavior in dairy cows at dry-off.**
G. Zobel*[1], D. M. Weary[1], K. Leslie[2], and M. A. G. von Keyserlingk[1], [1]*Animal Welfare Program, University of British Columbia, Vancouver, BC, Canada*, [2]*Population Medicine, University of Guelph, Guelph, ON, Canada*.

3:15 PM 209 **Physiological and behavioral responses to bovine respiratory disease.**
R. Toaff-Rosenstein*[1], L. Gershwin[2], A. J. Zanella[3], and C. Tucker[1], [1]*Department of Animal Science, University of California-Davis, Davis*, [2]*Department of Pathology, Microbiology and Immunology, School of Veterinary Medicine, University of California-Davis, Davis*, [3]*Chair, Animal Health and Welfare, Scottish Agricultural College, Edinburgh, UK*.

3:30 PM **ASAS Early Career Achievement Award: Working to foster the discovery, sharing and application of knowledge concerning the well-being of farm animals.**
A. Johnson, *Iowa State University, Ames*.

4:00 PM 210 **Effect of prepartum grouping strategy on agonistic behavior of dairy cows.**
K. M. Lobeck*, M. I. Endres, P. R. B. Silva, and R. Chebel, *University of Minnesota, St. Paul*.

4:15 PM 211 **Individual differences in calf defense pattern in Red Angus beef cows.**
C. Flörcke*, T. E. Engle, T. Grandin, and M. J. Deesing, *Colorado State University, Fort Collins*.

4:30 PM 212 **Physiologic and behavioral responses of horses to shaded or unshaded pens in a hot, sunny environment.**
K. E. Holcomb*[1], C. L. Stull[1], and C. B. Tucker[2], [1]*University of California at Davis, School of Veterinary Medicine, Population Health & Reproduction, Davis*, [2]*University of California at Davis, Department of Animal Science, Davis*.

4:45 PM 213 **Effect of a magnesium rich marine extract on behavior, salivary cortisol levels and skin lesions in growing pigs in response to mixing and an out of feed event.**
K. K. M. O'Driscoll*[1], D. Lemos Teixeira[3], D. O'Gorman[2], S. Taylor[2], and L. Boyle[3], [1]*Teagasc, Animal and Bioscience Research Department, Animal & Grassland Research and Innovation Centre, Grange, Dunsany, Co. Meath, Ireland*, [2]*Celtic Sea Minerals, Currabinny, Carrigaline, Co. Cork, Ireland*, [3]*Teagasc, Pig Development Unit, Animal & Grassland Research and Innovation Centre, Moorepark, Fermoy, Co. Cork, Ireland*.

5:00 PM 214 **Neophobic reactions to a new flavored feed are overriden by social learning in pigs.**
J. Figueroa*, D. Solà-Oriol, J. F. Pérez, and X. Manteca, *Universitat Autònoma de Barcelona, Bellaterra, Barcelona, Spain*.

Draft

Animal Health II
Chair: Todd Bilby, Texas AgriLife Research and Extension
228AB

2:00 PM 215 **The effect of yeast cell wall supplementation on the physiological and acute phase responses of crossbred heifers to endotoxin challenge.**
N. C. Burdick*[1], T. R. Young[2], J. A. Carroll[1], J. R. Corley[3], R. J. Rathmann[2], and B. J. Johnson[2], [1]*USDA-ARS, Livestock Issues Research Unit, Lubbock, TX*, [2]*Texas Tech University, Department of Animal and Food Sciences, Lubbock*, [3]*Lesaffre Feed Additives, Milwaukee, WI.*

2:15 PM 216 **OmniGen-AF supplementation modulates the physiological and acute phase responses of Brahman heifers to an endotoxin challenge.**
N. C. Burdick*[1], J. A. Carroll[1], J. D. Chapman[2], T. H. Welsh[3], R. C. Vann[4], and R. D. Randel[5], [1]*USDA-ARS, Livestock Issues Research Unit, Lubbock, TX*, [2]*Prince Agri Products, Inc, Quincy, IL*, [3]*Texas AgriLife Research, Texas A&M System, College Station*, [4]*MAFES, Mississippi State University, Raymond*, [5]*Texas AgriLife Research, Texas A&M System, Overton*.

2:30 PM 217 **Yeast cell wall supplementation alters the performance and physiological response of beef heifers following an immune challenge.**
T. R. Young*[1], N. C. Burdick[2], J. A. Carroll[2], M. A. Jennings[1], J. T. Cribbs[1], R. J. Rathmann[1], J. R. Corley[3], and B. J. Johnson[1], [1]*Texas Tech University, Department of Animal and Food Sciences, Lubbock*, [2]*USDA-ARS, Livestock Issues Research Unit, Lubbock, TX*, [3]*Lesaffre Feed Additives, Milwaukee, WI.*

2:45 PM 218 **A description of dairy heifer raising operations in the United States.**
J. E. Lombard*, C. A. Kopral, J. M. Rodriguez, B. A. Wagner, and G. W. Hill, *USDA-APHIS-VS-CEAH, National Animal Health Monitoring System, Fort Collins, CO.*

3:00 PM 219 **Biosecurity practices on dairy heifer raising operations in the United States.**
J. E. Lombard*, C. A. Kopral, J. M. Rodriguez, B. A. Wagner, and G. W. Hill, *USDA-APHIS-VS-CEAH, National Animal Health Monitoring System, Fort Collins, CO.*

3:15 PM 220 **Pre- and postpartum immunomodulatory effects of a dietary supplement on the immune system of dairy heifers.**
V. J. Eubanks*[1], D. J. Hurley[1], L. O. Ely[1], F. M. Kautz[1], S. C. Nickerson[1], N. E. Forsberg[2], Y. Q. Wang[2], K. P. Zanzalari[3], and J. D. Chapman[3], [1]*University of Georgia, Athens*, [2]*OmniGen Research LLC, Corvallis, OR*, [3]*Prince Agri Products Inc., Quincy, IL.*

3:30 PM 221 **Indoor group housing does not influence performance or measures of innate immune activity of Holstein calves during the neonatal, weaning, and commingling periods.**
C. J. Cobb*, D. L. Hanson, M. D. Sellers, A. R. Pepper-Yowell, B. S. Obeidat, and M. A. Ballou, *Texas Tech University, Lubbock.*

3:45 PM 222 **Feed intake, rectal temperature and weight gain in *Bos indicus* crossbred steers challenged with bovine viral diarrhea virus.**
C. A. Runyan*[1], X. Fang[1], E. Downey[1], T. B. Hairgrove[3], J. E. Sawyer[2], J. C. Bailey[1], J. F. Ridpath[4], and A. D. Herring[1], [1]*Texas A&M University, College Station*, [2]*Texas Agrilife Research, College Station*, [3]*Texas Agrilife Extension, College Station*, [4]*USDA-ARS, Ames, IA*.

4:00 PM 223 **Correlations of temperament with titer and hematological responses of crossbred steers challenged with bovine viral diarrhea virus.**
X. Fang*[1], E. Downey[1], C. A. Runyan[1], J. E. Sawyer[4], T. B. Hairgrove[2], J. F. Ridpath[3], C. A. Gill[1], W. Mwangi[1], and A. D. Herring[1], [1]*Texas A&M University, College Station*, [2]*Texas AgriLife Extension, College Station*, [3]*USDA-ARS, Ames, IA*, [4]*Texas AgriLife Research, College Station*.

4:15 PM 224 ***Cis*-9, *trans*-11 conjugated linoleic acid and NF-κB inhibitor pyrrolidine dithiocarbamate decrease prostaglandin production by bovine endometrial cells treated with lipopolysaccharide.**
L. Badinga*, M. S. Gulay, and A. D. Ealy, *University of Florida, Gainesville*.

4:30 PM 225 **Peripartum metabolic, immune, and hematological parameters of Jersey cows diagnosed with periparturient diseases.**
P. R. B. Silva*[1,2], J. G. N. Moraes[1,2], L. G. D. Mendonça[1], G. Nakagawa[1], and R. C. Chebel[1], [1]*Department of Veterinary Population Medicine, University of Minnesota, St Paul*, [2]*Department of Animal Science, University of Minnesota, St Paul*.

Draft

Breeding and Genetics
Dairy Cattle Breeding I—Genetic Improvement of Animal Health
Chair: Christian Maltecca, North Carolina State University
125AB

2:00 PM 226 **Genomics of functional traits in dairy cattle.**
N. Vukasinovic*[1], Y. Li[2], J. D. Nkrumah[1], P. Boddhireddy[1], J. Osterstock[1], F. A. Di Croce[1], M. Kelly[2], M. Hvinden[1], D. J. Weigel[3], and S. K. DeNise[1], [1]*Pfizer Animal Genetics, Kalamazoo, MI*, [2]*Pfizer Animal Genetics, Brisbane, Australia*, [3]*Pfizer Animal Health, Kalamazoo, MI*.

2:15 PM 227 **Genomic selection for enhanced immune response to improve dairy health.**
K. Thompson-Crispi*[1], R. Ventura[2,3], F. Schenkel[2], F. Miglior[4,5], and B. Mallard[1], [1]*Department of Pathobiology, Ontario Veterinary College, Guelph, ON, Canada*, [2]*Department of Animal and Poultry Science, University of Guelph, Guelph, ON, Canada*, [3]*Beef Improvement Opportunities, Guelph, ON, Canada*, [4]*Guelph Food Research Center, Agriculture and Agri-Food Canada, Guelph, ON, Canada*, [5]*Canadian Dairy Network, Guelph, ON, Canada*.

2:30 PM 228 **Telomere length assessment of Holstein cows in 10 Pennsylvania dairy herds.**
D. E. Brown*, C. D. Dechow, W. S. Liu, and K. J. Harvatine, *The Pennsylvania State University, University Park*.

2:45 PM 229 **Incidence validation and causal relationship analysis of producer-recorded health event data from on-farm computer systems in the United States.**
K. L. Parker Gaddis*[1], J. P. Cassady[1], J. B. Cole[2], and C. Maltecca[1], [1]*North Carolina State University, Raleigh*, [2]*Animal Improvement Programs Laboratory, Agricultural Research Service, USDA, Beltsville, MD*.

3:00 PM 230 **Genetic relationships of mastitis, cystic ovaries and lameness with milk yield and somatic cell score in first-lactation Canadian Holstein cows.**
A. Koeck*[1], F. Miglior[2,3], S. Loker[1], D. F. Kelton[4], A. Sewalem[2,3], and F. S. Schenkel[1], [1]*Centre for Genetic Improvement of Livestock, University of Guelph, Guelph, ON, Canada*, [2]*Guelph Food Research Centre, Agriculture and Agri-Food Canada, Guelph, ON, Canada*, [3]*Canadian Dairy Network, Guelph, ON, Canada*, [4]*Department of Population Medicine, Ontario Veterinary College, University of Guelph, Guelph, ON, Canada*.

3:15 PM 231 **Genetic relationships among health related fatty acids in milk of Canadian Holsteins.**
G. Bilal*, R. I. Cue, A. F. Mustafa, and J. F. Hayes, *McGill University, Macdonald Campus, Ste-Anne de Bellevue, Quebec, Canada*.

3:30 PM 232 **Crossbreds of Holstein with Jersey and Montbéliarde compared to pure Holsteins for 305-d production and mastitis in a pasture production system.**
B. J. Heins*, L. B. Hansen, A. R. Hazel, J. C. Becker, and E. A. Bjorklund, *University of Minnesota, St. Paul*.

3:45 PM 233 **An update: Responses of production and mastitis to selection for milk yield with a control population in a pasture production system.**
B. J. Heins*, *University of Minnesota, West Central Research and Outreach Center, Morris*.

4:00 PM 234 **Genetic analysis of leukosis incidence in a US Holstein cattle population.**
E. Abdalla*[1], G. J. M. Rosa[1], K. A. Weigel[2], and T. Byrem[2], [1]*Department of Animal Sciences, University of Wisconsin-Madison, Madison*, [2]*Department of Dairy Science, University of Wisconsin-Madison, Madison*, [3]*Antel BioSystems Inc., Lansing, MI.*

4:15 PM 235 **Production traits, somatic cell score, and days open of crossbred cows versus pure Holsteins during their first lactation in Italian commercial dairy herds.**
F. Malchiodi*, M. Penasa, and G. Bittante, *Department of Agronomy, Food, Natural Resources, Animals and Environment, University of Padova, Legnaro, Padova, Italy*.

4:30 PM 236 **Birth weight, gestation length, calving-ease and mortality in Holstein, Jersey, and crossbred cows in a pasture-based dairy herd.**
K. Dhakal*, J. Cassady, C. Maltecca, and S. Washburn, *North Carolina State University, Raleigh*.

4:45 PM 237 **Genetic parameters associated with feedlot bovine respiratory disease complex morbidity and mortality.**
B. W. Brigham*[1], C. M. McAllister[1], R. K. Peel[1], R. L. Weaber[2], H. VanCampin[1], G. H. Loneragan[3], J. L. Salak-Johnson[4], C. C. L. Chase[5], J. J. Wagner[1], and R. M. Enns[1], [1]*Colorado State University, Fort Collins*, [2]*Kansas State University, Manhattan*, [3]*Texas Tech University, Lubbock*, [4]*University of Illinois, Urbana*, [5]*South Dakota State University, Brookings*.

5:00 PM 238 **Performance of a German Holstein cattle population under stressful conditions near Benghazi, Libya.**
R. S. Gargoum*[1], S. A. M. Bozrayda[1], and E. Abdalla[2], [1]*Department of Animal Production, University of Benghazi, Benghazi, Libya*, [2]*Department of Animal Sciences, University of Wisconsin-Madison, Madison*.

Draft

Companion Animals Symposium
Companion Animal Reproduction: To breed or not to breed?
Chair: Jill Cline, K9Crazy Consulting
123

2:00 PM		**Introduction**
2:05 PM	239	**Canine and feline reproductive biology 101.** M. Kutzler*, *Oregon State University, Corvallis*.
2:40 PM	240	**Companion animal reproduction and nutrition 101.** D. Greco*, *Nestle Purina Petcare*.
3:15 PM	241	**Companion animal population control: Past, present and future.** S. Zawistowski*, *The American Society for the Prevention of Cruelty to Animals, New York, NY*.
3:50 PM	242	**The role of the domestic cat in endangered species conservation.** J. Herrick*, *National Foundation for Fertility Research, Lone Tree, CO*.
4:25 PM	243	**Population control in wildlife: Lessons learned.** J. F. Kirkpatrick*, *Science and Conservation Center, Billings, MT*.
5:00 PM	244	**Obesity is associated with adverse cardiovascular outcomes and insulin resistance in dogs.** J. L. Adolphe*, T. I. Silver, M. D. Drew, and L. P. Weber, *University of Saskatchewan, Saskatoon, SK, Canada*.

Dairy Foods Symposium
Maximizing Value of Milk Proteins—Manufacture, Applications and Market Opportunitiesfor Milk Protein Concentrate
Chair: Shantanu Agarwal, Dairy Research Institute
121AB

2:00 PM		**Introduction** S. Agarwal, *Dairy Research Institute, Rosemont, IL*.
2:05 PM	245	**Market trends and opportunities for milk protein concentrates.** V. Lagrange*, *US Dairy Export Council, Arlington, VA*.
2:35 PM	246	**Impact of processing and storage on milk protein concentrate functionality.** J. A. Lucey*, *University of Wisconsin-Madison, Madison*.
3:15 PM		**Break**
3:30 PM	247	**Advances in processing and development of new milk protein products.** H. Singh*, *Riddet Institute, Massey University, Palmerston North, New Zealand*.
4:00 PM	248	**Manufacture and application of micellar casein concentrates.** D. M. Barbano*, *Cornell University, Department of Food Science, Northeast Dairy Foods Research Center, Ithaca, NY*.
4:30 PM	249	**Performance of spiral wound microfiltration membranes during production of micellular casein concentrate.** L. E. Metzger*, C. Marella, and P. Salunke, *Midwest Dairy Foods Research Center, South Dakota State University, Brookings*.

Draft

Graduate Student Competition:
ADSA Production Division Graduate Student Poster Competition—MS Division
Chair: Matthew Waldron, University of Missouri
222C

2:00 PM 250 **Neutrophil function in the transition period and reproductive tract health in dairy cows.**
J. A. M. Wittrock*, T. F. Duffield, D. Bienzle, and S. J. LeBlanc, *University of Guelph, Guelph, ON, Canada*.

2:15 PM 251 **Effects of intrauterine infusion with *E. coli* lipopolysaccharide on systemic and local inflammatory and immune response.**
J. G. N. Moraes*[1], P. R. B. Silva[1], L. G. D. Mendonça[1], J. Silva[1], M. A. Ballou[2], K. N. Galvão[3], and R. C. Chebel[1], [1]*Department of Veterinary Population Medicine, University of Minnesota, St. Paul*, [2]*Department of Animal and Food Sciences, Texas Tech University, Lubbock*, [3]*Department of Large Animal Clinical Sciences, University of Florida, Gainesville*.

2:30 PM 252 **Effects of fresh-cow diseases on reproduction in a large commercial dairy herd.**
R. P. Tollefsrud*[1], R. L. Larson[1], H. M. Scott[1], G. A. Hanzlicek[1], and D. E. Little[2], [1]*Kansas State University, Manhattan*, [2]*DairyNet Incorporated, Brookings, SD*.

2:45 PM 253 **Using temperature-sensing reticular boluses to aid in the detection of disease in dairy cows.**
A. E. Adams*, F. J. Olea-Popelka, and I. N. Roman-Muniz, *Colorado State University, Fort Collins*.

3:00 PM **Break**

3:15 PM 254 **Optimization of methods for the detection of *Mycobacterium avium* ssp. *paratuberculosis* in milk and colostrum of naturally infected dairy cows with Johne's disease.**
L. Bradner*[1], S. Robbe-Austerman[2], D. Beitz[1], and J. Stabel[3], [1]*Iowa State University, Ames*, [2]*USDA-APHIS, National Veterinary Services Laboratory, Ames, IA*, [3]*USDA-ARS, National Animal Disease Center, Ames, IA*.

3:30 PM 255 **Effects of transient silage DM concentration variation on dairy cows.**
L. R. McBeth*[1], W. P. Weiss[1], N. R. St-Pierre[1], and D. E. Shoemaker[2], [1]*The Ohio State University, Wooster*, [2]*Ohio State University Extension, Wooster*.

3:45 PM 256 **Development of a merit-based genetic selection index for dairy grazing systems.**
K. D. Gay*, N. J. Olynk, T. D. Nennich, A. P. Schinckel, and M. M. Schutz, *Purdue University, West Lafayette, IN*.

4:00 PM 257 **Effects of stocking rate, supplement strategy and breed in a pasture-based automatic milking system.**
C. Nieman*, S. Utsumi, D. K. Beede, and J. Rowntree, *Michigan State University, East Lansing*.

Draft

Graduate Student Competition:
CSAS Student Competition II
Chair: Greg Penner, University of Saskatchewan
223

2:00 PM 788 **Performance of cattle fed diets based on blended by-product pellets varying in rumen available energy and protein content.**
M. G. Zenobi*[1], P. Yu[1], D. A. Christensen[1], P. G. Jefferson[1,2], H. A. Lardner[1,2], and J. J. McKinnon[1], [1]*University of Saskatchewan, Saskatoon, SK, Canada*, [2]*Western Beef Development Centre, Humboldt, SK, Canada*.

2:15 PM 469 **Identification of single nucleotide polymorphisms for feed efficiency and performance in crossbred beef cattle.**
M. K. Abo-Ismail*[1], G. Vander Voort[1], E. J. Squires[1], K. C. Swanson[1,2], J. Thomson[3], B. Karisa[3], G. Plastow[3], S. Moore[3], and S. P. Miller[1,3], [1]*Centre for Genetic Improvement of Livestock, University of Guelph, Guelph, ON, Canada*, [2]*Animal Sciences Department, North Dakota State University, Fargo*, [3]*Faculty of Agricultural, Life and Environmental Sciences, University of Alberta, Edmonton, AB, Canada*.

2:30 PM 549 **Assessing how RFI classification in the growing phase predicts RFI classification in the finishing phase.**
D. Johns*, G. Vander Voort, C. Campbell, M. Quinton, and I. Mandell, *Department of Animal and Poultry Science, University of Guelph, Guelph, ON, Canada*.

2:45 PM 405 **Effects of method of forage finishing and cattle breed on growth performance, carcass characteristics, meat quality, and fatty acid composition.**
L. Shepherd*[1], R. Berthiaume[2], C. Lafreniere[3], C. Campbell[1], L. Pivotto[1], and I. Mandell[1], [1]*Department of Animal and Poultry Science, University of Guelph, Guelph, ON, Canada*, [2]*Agriculture & Agri-Food Canada, Sherbrooke, QC, Canada*, [3]*Agriculture & Agri-Food Canada, Kapuskasing, ON, Canada*.

3:00 PM 400 **Effect of rumen degradable energy source on performance and forage intake of steers grazing stockpiled crested wheatgrass pasture.**
F. Anez*[1], J. J. McKinnon[1], H. A. Lardner[1,2], G. B. Penner[1], and P. G. Jefferson[1,2], [1]*University of Saskatchewan, Saskatoon, SK, Canada*, [2]*Western Beef Development Centre, Humboldt, SK, Canada*.

3:15 PM 542 **Effect of maturity on the yield and in situ digestibility of whole-crop cereals.**
C. L. Rosser*[1], A. Beattie[1], H. C. Block[2], J. J. McKinnon[1], H. A. Lardner[1,3], and G. B. Penner[1], [1]*University of Saskatchewan, Saskatoon, SK, Canada*, [2]*Agriculture and Agri-Food Canada, Brandon, MB, Canada*, [3]*Western Beef Development Centre, Humbolt, SK, Canada*.

3:30 PM 418 **Effect of carbohydrate conformation in hulless barley *(Hordeum vulgare* L.) on in situ rumen and in vitro intestinal nutrient availability.**
L. Yang*[1,3], J. McKinnon[1,3], D. Christensen[1,3], B. Rossnagel[2,3], A. Beattie[2,3], and P. Yu[1,3], [1]*Department of Animal and Poultry Science*, [2]*Crop Development Centre*, [3]*University of Saskatchewan, Saskatoon, SK, Canada*.

3:45 PM 152 **Liver gene expression patterns can explain accumulation of lipid in the liver during the transition period.**
H. R. Khazanehei*, P. Eck, A. Regassa, D. O. Krause, and J. C. Plaizier, *University of Manitoba, Winnipeg, MB, Canada*.

Nonruminant Nutrition Symposium
Swine NRC
Chair: Brian Kerr, USDA-ARS
222AB

2:00 PM **Introduction**
L. Southern*, *Louisiana State University Agricultural Center*.

2:10 PM **Energy.**
P. Miller*, *University of Nebraska*.

2:30 PM **Amino Acids I.**
L. Adeola*, *Purdue University*.

2:50 PM **Amino Acids II.**
N. Trottier*, *Michigan State University*.

3:10 PM **Minerals and Vitamins.**
M. Lindemann*, *University of Kentucky*.

3:30 PM **Modeling.**
K. de Lang*, *University of Guelph*.

3:50 PM **Ingredient Data Base.**
L. Southern*, *Louisiana State University Agricultural Center*.

4:05 PM **Open Question and Discussion**

Draft

Physiology and Endocrinology
Estrous Cycle Manipulation—Beef
Chair: Robert A. Cushman, USDA-ARS U.S. Meat Animal Research Center
122C

2:00 PM 258 **Mean and basal LH concentrations increased in peri-puberal beef heifers during early exposure to androgenized steers.**
C. Fiol*[1], N. Curbelo[2], G. Larraz[2], L. de Melo Menezes[3], and R. Ungerfeld[2], [1]*Departamento de Bovinos, Facultad de Veterinaria, Universidad de la República, Montevideo, Uruguay*, [2]*Departamento de Fisiología, Facultad de Veterinaria, Universidad de la República, Montevideo, Uruguay*, [3]*Universidad de Pelotas, Rio Grande del Sur, Brazil*.

2:15 PM 259 **Plasma progesterone concentration in beef heifers receiving exogenous glucose, insulin, or bovine somatotropin.**
B. I. Cappellozza*[1], R. F. Cooke[1], M. M. Reis[2], F. N. T. Cooke[1], D. W. Bohnert[1], and J. L. M. Vasconcelos[2], [1]*Oregon State University - EOARC, Burns*, [2]*UNESP - FMVZ/DPA, Botucatu, SP, Brazil*.

2:30 PM 260 **Prediction of estrus in beef cows using ruminal temperature.**
B. H. Boehmer* and R. P. Wettemann, *Oklahoma Agricultural Experiment Station, Stillwater*.

2:45 PM 261 **Comparison of three CIDR-based fixed-time AI protocols for beef heifers.**
G. A. Perry*[1], J. K. Grant[1], J. A. Walker[1], G. A. Bridges[2], S. G. Kruse[2], S. Bird[2], K. Heaton[3], R. Arias[4], and S. L. Lake[4], [1]*Department of Animal Science, South Dakota State University, Brookings*, [2]*North Central Research and Outreach Center, University of Minnesota, Grand Rapids*, [3]*Utah State University, Logan*, [4]*Department of Animal Science, University of Wyoming, Laramie*.

3:00 PM 262 **Ovarian dynamics and AI pregnancy rates with PGF2α administration 2 d prior to the onset of a 5-d CO-Synch + CIDR program in beef cattle.**
L. H. Cruppe*[1], G. A. Bridges[2], M. V. Biehl[3], F. M. Abreu[1], A. D. P. Rodrigues[4], S. G. Kruse[2], M. Maquivar[1], J. L. M. Vasconcelos[4], and M. L. Day[1], [1]*The Ohio State University, Columbus*, [2]*University of Minnesota, Grand Rapids*, [3]*University of Sao Paulo, Piracicaba, SP, Brazil*, [4]*Sao Paulo State University, Botucatu, SP, Brazil*.

3:15 PM 263 **Efficacy of a new, once-used, or twice-used CIDR in a 5-day CO-Synch + CIDR estrous synchronization protocol in suckled beef cows.**
P. J. Gunn*[1], R. P. Lemenager[1], L. A. Horstman[2], and G. A. Bridges[3], [1]*Department of Animal Sciences, Purdue University, West Lafayette, IN*, [2]*Department of Veterinary Clinical Sciences, Purdue University, West Lafayette, IN*, [3]*North Central Research and Outreach Center, University of Minnesota, Grand Rapids*.

3:30 PM 264 **Fixed-time AI in lactating beef cows after GnRH on day 9 of a 14-d CIDR.**
R. L. Giles*[1], R. K. Peel[1], J. T. French[1], P. E. Repenning[1], J. K. Ahola[1], J. C. Whittier[1], and G. E. Seidel[2], [1]*Department of Animal Sciences, Colorado State University, Fort Collins*, [2]*Department of Biomedical Sciences, Colorado State University, Fort Collins*.

3:45 PM 265 **Comparison of long-term CIDR-based protocols to synchronize estrus and ovulation prior to fixed-time artificial insemination in postpartum beef cows.**
N. T. Martin*, J. M. Thomas, J. M. Nash, D. A. Mallory, M. R. Ellersieck, S. E. Poock, M. F. Smith, and D. J. Patterson, *University of Missouri, Columbia*.

4:00 PM 266 **Determination of concentrations of anti-Müllerian hormone at estrus during a synchronized and a natural bovine estrous cycle.**
K. Pfeiffer*, L. Jury, and J. Larson, *Mississippi State University, Mississippi State*.

4:15 PM 267 **Effect of time of insemination relative to ovulation on pregnancy rate of Nelore cows submitted to TAI protocols.**
M. Maturana Filho, R. Germano de Rezende, J. R. Naves*, G. A. Fonseca, T. K. Nishimura, V. B. Nunes, and E. H. Madureira, *FMVZ/USP, Pirassununga, SP, Brazil*.

Draft

Production, Management and the Environment
Beef, Sheep, Swine
Chair: Shane Gadberry, University of Arkansas
127C

2:00 PM 268 **Substituting ground redberry juniper leaves and stems for oat hay in lamb feedlot diets: Growth performance, serum urea nitrogen, serum insulin-like growth factor-1, and wool characteristics.**
T. R. Whitney*[1], C. D. Swening[1], J. P. Muir[2], C. J. Lupton[1], and W. C. Stewart[1], [1]*Texas AgriLife Research, San Angelo*, [2]*Texas AgriLife Research, Stephenville*.

2:15 PM 269 **Dietary betaine improves physiological responses in sheep under chronic heat load in a dose dependent manner.**
K. DiGiacomo*, S. Simpson, B. J. Leury, and F. R. Dunshea, *Melbourne School of Land and Environment, The University of Melbourne, Parkville, Vic, Australia*.

2:30 PM 270 **Evaluation of body temperature and sweating rate of Senepol and crossbred heifers in the tropics.**
R. W. Godfrey*[1], A. J. Weis[1], P. E. Hillman[2], K. G. Gebremedhin[2], C. N. Lee[3], and R. J. Collier[4], [1]*University of the Virgin Islands, St Croix*, [2]*Cornell University, Ithaca, NY*, [3]*University of Hawaii, Manoa*, [4]*University of Arizona, Tucson*.

2:45 PM 271 **Evaluation of body temperature and sweating rate of Senepol cows in the tropics.**
R. W. Godfrey*[1], A. J. Weis[1], P. E. Hillman[2], K. G. Gebremedhin[2], C. N. Lee[3], and R. J. Collier[4], [1]*University of the Virgin Islands, St Croix, VI*, [2]*Cornell University, Ithaca, NY*, [3]*University of Hawaii, Manoa*, [4]*University of Arizona, Tucson*.

3:00 PM 272 **Variation in skin surface temperature in different body parts of pigs in response to varying air temperatures.**
A. Sapkota* and J. J. McGlone, *Pork Industry Institute, Texas Tech University, Lubbock.*

3:15 PM 273 **Routine exercise of feedlot cattle: Implications for stress response, productivity, and beef quality.**
N. Miller*, B. Gerlach, H. Glynn, K. Miller, C. van Bibber, L. Edwards-Calloway, J. Drouillard, and T. Houser, *Kansas State University, Manhattan.*

3:30 PM 274 **Effects of different implant management options on performance of pre and post weaned calves.**
H. B. Jones*[1], J. D. Rivera[1], and R. C. Vann[2], [1]*MAFES South Mississippi Branch Experiment Station, Poplarville*, [2]*MAFES Brown Loam Branch Experiment Station, Raymond, MS.*

3:45 PM 275 **Comparison of chelated versus inorganic trace minerals on rate and efficiency of gain and pregnancy rates in beef heifers.**
W. A. Whitehurst*[1], J. A. Paterson[1], M. M. Harbac[1], M. K. Petersen[2], G. C. Duff[2], and T. W. Geary[2], [1]*Montana State University Bozeman, Bozeman*, [2]*USDA-ARS Fort Keogh, Miles City, MT.*

4:00 PM 276 **Relationships between postweaning residual feed intake in heifers and efficiency, digestibility, and productivity of Bonsmara cows.**
A. N. Hafla*[1], G. E. Carstens[1], T. D. A. Forbes[2], J. C. Bailey[1], J. T. Walter[1], J. G. Moreno[1], and J. R. Johnson[1], [1]*Texas A&M University, College Station*, [2]*Texas AgriLife Research, Uvalde.*

Ruminant Nutrition
Beef
Chair: Shawn Archibeque, Colorado State Universiry
131ABC

2:00 PM 277 **Effect of yeast β-glucan and antibiotics on growth and gastrointestinal development in pre-ruminant calves.**
Y. Zhou, Y. Tu*, Q.-Y. Diao, Q. Yun, X.-H. Gao, and L.-H. Zhao, *Feed Research Institute of Chinese Academy of Agricultural Sciences, Beijing, China.*

2:15 PM 278 **Effect incremental levels of exogenous enzyme preparation on extent of ruminal fermentation, nutrient digestibilties and average daily gain in steers.**
H. Gado*[1], A. Z. M. Salem[2], and B. E. Borhami[3], [1]*Department of Animal Production, Faculty of Agriculture, Ain Shams University, Cairo, Egypt*, [2]*Facultad de Medicina Veterinaria y Zootecnia, Universidad Autónoma del Estado de México, Toluca Estado de México, México*, [3]*Department of Animal Production, Faculty of Agriculture (El-Shatby), Alexandria University, Alexandria, Egypt.*

2:30 PM 279 **Effect of a blend of castor oil and cashew nut shell liquid on performance, eating pattern, rumen health and carcass quality in Holstein bulls fed high-concentrate rations.**
M. Devant*[1], A. Aris[1], A. Bach[2,1], and J. Torrent[3], [1]*IRTA-Ruminant Production, Animal Nutrition, Management, and Welfare Research Group, Torre Marimon, Caldes de Montbui, Barcelona, Spain*, [2]*ICREA, Barcelona, Spain*, [3]*Oligo Basics USA LLC, Excelsior, MN.*

2:45 PM 280 **Yeast cell wall supplementation alters the performance of beef heifers during the receiving period.**
T. R. Young*[1], N. C. Burdick[2], J. A. Carroll[2], M. A. Jennings[1], J. T. Cribbs[1], R. J. Rathmann[1], J. R. Corley[3], and B. J. Johnson[1], [1]*Texas Tech University, Department of Animal and Food Sciences, Lubbock*, [2]*USDA-ARS, Livestock Issues Research Unit, Lubbock, TX*, [3]*Lesaffre Feed Additives, Milwaukee, WI.*

3:00 PM 281 **Feedlot performance of Nellore young bulls fed biodiesel coproduct.**
R. L. Oliveira*[1], C. H. da Cruz[1], N. B. de Santana Filho[2], W. G. Cerutti[3], C. A. dos Santos Dias[2], E. I. de Souza Costa[1], O. L. Ribeiro[1], A. G. Leão[1], M. C. A. Santana[1], and A. A. Pinheiro[1], [1]*Universidade Federal da Bahia, Salvador, Brazil*, [2]*Universidade Federal do Recôncavo Baiano, Cruz Das Almas, Brazil*, [3]*Universidade Federal de Santa Maria, Santa Maria, Brazil.*

3:15 PM 282 **Effect of corn oil or corn protein supplementation on performance and rumen fermentation characteristics of feedlot lambs consuming a 90% concentrate diet containing 30% DDGS.**
C. L. Shelley*, M. Pimienta, J. Caballero, J. Browne-Silva, S. L. Lodge-Ivey, and S. A. Soto-Navarro, *New Mexico State University.*

3:30 PM 283 **Prospects of raising Sahiwal cow calves for veal production under tropical environment.**
S. A. Bhatti*[1], K. Nazir[1], M. J. Basra[2], M. S. Khan[3], M. Sarwar[1], and M. A. I. Mughal[2], [1]*Institute of Animal Nutrition and Feed Technology, University of Agriculture, Faisalabad, Punjab, Pakistan*, [2]*Livestock and Dairy Development Department, Punjab, Lahore, Pakistan*, [3]*Department of Animal Breeding and Genetics, University of Agriculture, Faisalabad, Punjab, Pakistan.*

Draft

Ruminant Nutrition
Dairy Production II
Chair: Aimee Wertz, ADM
132ABC

2:00 PM 284 **Effect of diet composition and incubation time on feed indigestible NDF concentration in dairy cows.**
S. J. Krizsan* and P. Huhtanen, *Swedish University of Agricultural Sciences, Department of Agricultural Research for Northern Sweden, Umeå, Sweden*.

2:15 PM 285 **Effect of corn snaplage on lactation performance of Holstein dairy cows.**
M. S. Akins*[1], M. Digman[2], and R. D. Shaver[1], [1]*Department of Dairy Science, University of Wisconsin-Madison, Madison*, [2]*U.S. Dairy Forage Research Center, Madison, WI*.

2:30 PM 286 **Dry heat popping of sorghum grain to increase ruminal starch digestion in dairy cattle.**
A. R. Anstis[1], D. G. Barber[1], E. Raffrenato*[2,3], and D. P. Poppi[2], [1]*Agri-Science Queensland, Department of Employment, Economic Development and Innovation, Lawes, Queensland, Australia*, [2]*School of Agriculture and Food Sciences, The University of Queensland, Gatton, Queensland, Australia*, [3]*Department of Animal and Wildlife Sciences, University of Pretoria, Pretoria, Gauteng, South Africa*.

2:45 PM 287 **Daily methane emission profile in Holstein heifers fed rice straw.**
G. D. Cruz*[1], P. H. Hai[2], S. Polyorach[3], N. Anantassok[3], P. Beelen[4], H. D. Rosa[5], and E. Kebreab[1], [1]*University of California, Davis*, [2]*Institute of Agricultural Science for Southern Vietnam, Hochiminh City, Vietnam*, [3]*Khon Kaen University, Khon Kaen, Thailand*, [4]*Federal University of Alagoas, Rio Largo, Brazil*, [5]*Sao Paulo State University, Botucatu, Brazil*.

3:00 PM 288 **The effects of a two ration feeding regimen on intake, milk production, and rumen fermentation in dairy cows.**
L. W. Rottman, Y. Ying, P. A. Bartell, and K. J. Harvatine*, *Penn State University, University Park*.

3:15 PM 289 **Validation of an acidosis model.**
H. M. Golder*[1,2], W. J. Wales[3], M. J. Auldist[3], A. R. Rabiee[1,2], E. Bramley[4], P. Celi[1], R. King[5], and L. J. Lean[1,2], [1]*University of Sydney, Camden, New South Wales, Australia*, [2]*SBScibus, Camden, New South Wales, Australia*, [3]*Future Farming Systems Research Division, Department of Primary Industries, Ellinbank, Victoria, Australia*, [4]*Murdoch University, School of Veterinary and Biomedical Sciences, Murdoch, Western Australia, Australia*, [5]*Dairy Australia, Southbank, Victoria, Australia*.

3:30 PM 290 **Evaluation of two versions of a mechanistic, metabolic model including bacterial pools, to describe FA flux, pH and milk fat in cattle on various pasture supplementation feeding strategies.**
J. McNamara*[1], W. Wales[2], and M. Auldist[2], [1]*Washington State University, Pullman*, [2]*DPI Ellinbank, Ellinbank, Victoria, Australia*.

3:45 PM 291 **Multi-component versus one-component analysis: A different way of assessing the effect of TMR chemical composition on milk, fat, and protein yield individual lactation curves.**
M. Caccamo*[1], R. F. Veerkamp[2], G. Licitra[1,3], R. Petriglieri[1], F. La Terra[1], A. Pozzebon[1], and J. D. Ferguson[4], [1]*1CoRFiLaC, Regione Siciliana, Ragusa, Italy*, [2]*WageningenUR Livestock Research, Animal Breeding and Genomics Centre, Lelystad, the Netherlands*, [3]*Catania University, DISPA, Catania, Italy*, [4]*University of Pennsylvania, PA*.

4:00 PM 292 **Intestinal digestibility of long chain fatty acids in lactating dairy cattle: A meta-analysis.**
J. C. Ploetz* and A. L. Lock, *Michigan State University, East Lansing*.

4:15 PM 293 **Effect of replacing dietary soybean meal with canola meal on production of lactating dairy cows.**
G. A. Broderick*[1], A. P. Faciola[2], L. Nernberg[3], and D. Hickling[3], [1]*U.S. Dairy Forage Research Center, Madison, WI*, [2]*University of Wisconsin, Madison*, [3]*Canola Council of Canada, Winnipeg, MB, Canada*.

4:30 PM 294 **Milk yield and composition of dairy cows fed diets combining pasture and total mixed ration.**
A. Mendoza[1,2], C. Cajarville[3], E. de la Quintana[1], M. E. Garmendia[1], E. Mutuberría[1], E. de Torres[4], and J. L. Repetto*[1], [1]*Facultad de Veterinaria, Departamento de Bovinos, Montevideo, Uruguay*, [2]*Instituto Nacional de Investigación Agropecuaria, Programa de Producción de Leche, Colonia, Uruguay*, [3]*Facultad de Veterinaria, Departamento de Nutrición Animal, Montevideo, Uruguay*, [4]*Facultad de Veterinaria, Campo Experimental N°2, Libertad, Uruguay*.

4:45 PM 295 **Effects of dietary fiber source on lactation performance, nutrient digestion, and rumen microbial protein synthesis in early-lactating dairy cows.**
W. Zhu*, Y. Fu, B. Wang, Y. M. Wu, and J. X. Liu, *Institute of Dairy Science, MoE Key Laboratory of Molecular Animal Nutrition, College of Animal Sciences, Zhejiang University, Hangzhou, China*.

Draft

WSASAS Symposium
Beef—Beef Production in Arid Environments
Chair: Rick Funston, University of Nebraska
226ABC

2:00 PM 296 **Significant research accomplishments applicable to arid environments.**
J. Paterson*, *Montana State University-Bozeman, Bozeman*.

2:35 PM 297 **Cows that fit arid environments.**
B. H. Dunn*, *South Dakota State University, Brookings*.

3:10 PM 298 **Supplementation strategies in arid environments.**
D. W. Bohnert*, *Eastern Oregon Agricultural Research Center, Oregon State University, Burns*.

3:45 PM 299 **Restocking the cow herd.**
D. Peel*, *Oklahoma State University, Stillwater*.

4:20 PM 300 **A systems approach to ranching in arid environments.**
C. P. Mathis*, K. C. McCuistion, and R. D. Rhoades, *King Ranch Institute for Ranch Management, Texas A&M University-Kingsville, Kingsville*.

Draft

Tuesday, July 17

POSTER PRESENTATIONS

Animal Behavior and Well-Being
Physiology emphasis

T1 **Stress affects plasma serotonin, but not tryptophan, in Holstein steer calves.**
A. L. Adams*, T. H. Friend, G. A. Holub, L. R. Berghman, P. K. Riggs, S. M. Garey, C. L. Terrill, and M. J. Carter, *Texas A&M University, College Station*.

T2 **Development of a novel method for measuring stress in beef cattle.**
D. Moya*[1], K. S. Schwartzkopf-Genswein[1], and D. Veira[2], [1]*Agriculture and Agri-Food Canada, Lethbridge, AB, Canada*, [2]*Agriculture and Agri-Food Canada, Agassiz, BC, Canada*.

T3 **Body temperature and panting in feedlot cattle.**
J. B. Gaughan*[1] and T. L. Mader[2], [1]*The University of Queensland, Gatton, Qld, Australia*, [2]*University of Nebraska, Concord*.

T4 **Use of artificial shade during grazing and its effects on body weight at the end of gestation in red deer (*Cervus elaphus*).**
N. G. Mejía, A. Sánchez, A. Paez, and L. Alvarez*, *Facultad de Medicina Veterinaria y Zootecnia, UNAM, México DF, México*.

T5 **Evaluation of on-farm methods assessing locomotor disorders of individual or group housed sows.**
S. Conte*[1], J. Grégoire[1], R. Bergeron[2], S. D'Allaire[3], M.-C. Meunier-Salaün[4], and N. Devillers[1], [1]*Agriculture and Agri-Food Canada, Dairy and Swine R & D Centre, Sherbrooke QC, Canada*, [2]*University of Guelph, Alfred Campus, Alfred, ON, Canada*, [3]*Faculty of Veterinary Medicine, University of Montreal, St-Hyacinthe, QC, Canada*, [4]*Institut National de la Recherche Agronomique, UMR1348 Pegase, Saint-Gilles, France*.

T6 **Effectiveness of a non-penetrating captive bolt for the euthanasia of nursing and weaned piglets from 3 to 9 kg.**
T. M. Casey-Trott*[1], S. G. Nykamp[1], P. V. Turner[1], S. T. Millman[2], and T. M. Widowski[1], [1]*University of Guelph, Guelph, Ontario, Canada*, [2]*Iowa State University, Ames*.

T7 **Trailer compartment and trip duration affect stress of pigs transported under Canadian conditions.**
Y. M. Seddon*[1], J. Brown[1], T. Crowe[2], R. Bergeron[3], T. Widowski[3], L. Faucitano[4], and H. Gonyou[1,2], [1]*Prairie Swine Centre, Saskatoon, SK, Canada*, [2]*University of Saskatchewan, Saskatoon, SK, Canada*, [3]*University of Guelph, Guelph, ON, Canada*, [4]*Dairy and Swine Research and Development Centre, Sherbrooke, QC, Canada*.

T8 **Effect of commercial transport by road on prevalence of bruises and meat pH of beef cattle in Brazil.**
M. H. Romero*[1], M. J. R. Paranhos da Costa[2], L. F. Uribe[1], J. Braga[2], and A. Riobueno[2], [1]*Universidad de Caldas, Manizales, Caldas, Colombia*, [2]*La Universidad Estadual Paulista, Jaboticabal, Sao Paulo, Brazil*.

T9 **The effect of water sprinkling on behavior and core body temperature of market hogs transported during summer.**
J. Fox*[1], T. Widowski[1], S. Torrey[2], E. Nannoni[4], R. Bergeron[5], HW Gonyou[6], JA Brown[6], T. Crowe[7], and L. Faucitano[3], [1]*University of Guelph, Guelph, ON, Canada*, [2]*Agriculture and Agri-Food Canada, Guelph, ON, Canada*, [3]*Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada*, [4]*University of Bologna, Bologna, Italy*, [5]*University of Guelph, Alfred, ON, Canada*, [6]*Prairie Swine Centre, Saskatoon, SK, Canada*, [7]*University of Saskatchewan, Saskatoon, SK, Canada*.

T10 **Characteristics of bruises in carcasses of commercial zebu cattle in Colombia.**
M. H. Romero*, L. F Uribe, J. A. Sánchez, and H. Mesa, *Universidad de Caldas, Manizales, Caldas, Colombia*.

Draft

Animal Health II

T11 **Intravaginal administration of lactic acid bacteria modulated selected plasma metabolites in transition dairy cows.**
Q. Deng, J. F. Odhiambo, T. Lam, S. M. Dunn, and B. N. Ametaj*, *Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada*.

T12 **Indoor versus outdoor housing during the neonatal, weaning, and commingling periods influences innate immune responses in single-housed Holstein calves.**
M. D. Sellers*, C. J. Cobb, D. L. Hanson, A. R. Pepper-Yowell, and B. S. Obeidat, *Department of Animal and Food Sciences, Texas Tech University, Lubbock*.

T13 **Prevalence of nematodes eggs of the genera *Cooperia*, *Ostertagia*, and *Haemonchus*, before and after treatment of dairy heifers with commercial anthelmintics in commercial dairy farms in Puerto Rico.**
L. López-Soberal*, A. Ruíz-Lugo, Á. González-Sanabria, M. Pagán, and G. Ortiz-Colón, *University of Puerto Rico, Mayagüez Campus*.

T14 **Eicosapentaenoic acid and NF-κB inhibitor pyrrolidine dithiocarbamate attenuate prostaglandin production by bovine endometrial cells treated with lipopolysaccharide.**
L. Badinga*, M. S. Gulay, and A. D. Ealy, *University of Florida, Gainesville*.

T15 **Plane of milk replacer nutrition influences the acute phase response of weaned Jersey calves to an oral *Salmonella typhimurium* challenge.**
D. L. Hanson*[1], M. D. Sellers[1], C. J. Cobb[1], T. J. Earleywine[2], and M. A. Ballou[1], [1]*Department of Animal and Food Sciences, Lubbock, TX*, [2]*Land O'Lakes, Animal Milk Products Co., Shoreview, MN*.

T16 **Intravaginal probiotics expedited uterine involution in postpartum dairy cows.**
Q. Deng, J. F. Odhiambo, T. Lam, S. M. Dunn, and B. N. Ametaj*, *Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada*.

T17 **Plane of nutrition during the pre- and post-weaned periods influences the innate immune activity of Holstein calves.**
B. S. Obeidat[1], C. J. Cobb[1], M. D. Sellers[1], A. R. Pepper-Yowell[1], D. L. Hanson[1], T. J. Earleywine[2], and M. A. Ballou*[1], [1]*Department of Animal and Food Sciences, Texas Tech University, Lubbock*, [2]*Land O'Lakes, Animal Milk Products Co., Shoreview, MN*.

T18 **Pathophysiological response to an oral *Salmonella typhimurium* challenge is influenced by the inoculum dose in newborn colostrum-fed Jersey calves.**
A. R. Pepper-Yowell*, D. L. Hanson, M. D. Sellers, C. J. Cobb, B. S. Obeidat, and M. A. Ballou, *Texas Tech University, Lubbock*.

T19 **Effect of dietary supplementation with *Curcuma longa* (turmeric) during *Eimeria maxima* and *Eimeria tenella* infection of chickens.**
D. K. Kim*[1], H. S. Lillehoj[1], S. H. Lee[1], S. I. Jang[1], M. S. Park[1], and D. Bravo[2], [1]*Animal Parasitic Diseases Laboratory, Animal and Natural Resources Institute, United States Department of Agriculture, Beltsville, MD*, [2]*Pancosma SA, Geneva, Switzerland*.

T20 **Detection of neutralizing antibody titration against rabies virus in dogs.**
A. E. Gazi*[1] and S. Ak[2], [1]*Tarim Ilce Mudurlugu, Bozyazi, Turkey*, [2]*Istanbul University, Veteriner Fak. Microbiology, Istanbul, Turkey*.

T21 **Dairy health records use and management by producers in Washington and Idaho.**
J. R. Wenz*[1], D. A. Moore[1], R. A. Jussaume[1], S. Giebel[1], S. Poisson[1], and C. S. Schneider[2], [1]*Wasington State University, Pullman*, [2]*University of Idaho, Moscow*.

T22 **Effect of method of detection and uterine dimensions in the diagnosis of endometritis in lactating dairy cows.**
R. L. A. Cerri*[1], D. M. Veira[2], A. M. Tabmasbi[3], A. M. L. Madureira[1], S. A. Balios[1], A. H. Souza[4], and J. L. M. Vasconcelos[5], [1]*University of British Columbia, Vancouver, BC, Canada*, [2]*Agriculture and Agri-Food Canada, Agassiz, BC, Canada*, [3]*Fedowsi University of Mashhad, Iran*, [4]*University of Wisconsin, Madison*, [5]*Sao Paulo State University, Botucatu, SP, Brazil*.

T23 **Effects of phytoncide supplementation on growth performance, nutrient digestibility, blood profiles, diarrhea score, and fecal microbial shedding in weaning pigs.**
S. Zhang*[1], J. H. Jung[1], H. S. Kim[2], B. Y. Kim[2], and I. H. Kim[1], [1]*Department of Animal Resource & Science, Dankook University, Cheonan, Choongnam, South Korea*, [2]*Phylus Co. Ltd., Chungbuk, South Korea*.

T24 **Influence of tannins extract supplementation on feedlot performance of receiving bull-calves naturally infested with gastro intestinal parasites.**
R. Barajas*[1], B. J. Cervantes[2], M. A. Espino[1,3], A. Camacho[1], I. Enriquez[1], C. Barraza[1], L. R. Flores[1], J. J. Lomeli[1], and J. A. Romo[1], [1]*FMVZ-Universidad Autonóma de Sinaloa, Culiacán, Sinaloa, México*, [2]*Ganadera Los Migueles S. A. de C. V., Culiacán, Sinaloa, México*, [3]*Pronutrient Developers, León, Guanajuato, México*.

T25 **Effects of different levels of fermented oat on growth performance, diarrhea score, fecal microbial shedding, and fecal noxious gas emission in weaning pigs.**
J. P. Wang*, J. P. Lee, and I. H. Kim, *Department of Animal Resource & Science, Dankook University, Cheonan, Choongnam, South Korea*.

T26 **GPR109A mediates calcium mobilization induced by BHBA in isolated bovine monocytes.**
L. K. Mamedova*[1], E. C. Titgemeyer[1], G. M. Pighetti[2], J. Y. Lu[1], D. H. Hua[1], and B. J. Bradford[1], [1]*Kansas State University, Manhattan*, [2]*University of Tennessee, Knoxville*.

T27 **Effects of bacteriophage as an alternative for antibiotics on egg performance, egg quality, fecal microbial shedding, and fecal moisture content in laying hens.**
P. Y. Zhao*, B. R. Lee, and I. H. Kim, *Department of Animal Resource & Science, Dankook University, Cheonan, Choongnam, South Korea*.

T28 **Effects of bacteriophage as an alternative for antibiotics on growth performance, nutrient digestibility, blood profiles, fecal microbial shedding, diarrhea score, and fecal moisture content in growing pigs.**
S. M. Hong*, H. Y. Baek, and I. H. Kim, *Department of Animal Resource & Science, Dankook University, Cheonan, Choongnam, South Korea*.

Draft

T29 **Effects of bacteriophage as an alternative for antibiotics on growth performance, nutrient digestibility, relative organ weight, blood profiles, and fecal microbial shedding in broilers.**
X. Y. Guo*, J. H. Cho, and I. H. Kim, *Department of Animal Resource & Science, Dankook University, Cheonan, Choongnam, South Korea*.

T30 **Changes in bacterial communities in bovine milk when comparing low and high somatic cell count quarters using culture independent analysis.**
S. M. Buttram*[1], K. M. Hunt[1], L. K. Fox[2], and M. A. McGuire[1], [1]*Department of Animal and Veterinary Science, University of Idaho, Moscow*, [2]*Department of Animal Science, Washington State University, Pullman*.

T31 **Group housed Holstein bull calves have suppressed innate immune function compared to individually housed calves during weaning.**
L. E. Hulbert*[1], M. S. Calvo[1], M. A. Ballou[2], K. C. Klasing[1], and F. M. Mitloehner[1], [1]*Department of Animal Science, University of California-Davis, Davis*, [2]*Animal and Food Sciences, Texas Tech University, Lubbock*.

T32 **Effects of dietary herb supplementation on growth performance, and appearance of diarrhea in weaning-growing pigs.**
J. P. Wang*, X. Y. Guo, and I. H. Kim, *Department of Animal Resource & Science, Dankook University, Cheonan, Choongnam, South Korea*.

T33 **Efficacy of a yeast cell wall-derived mycotoxin adsorbent on excretion of aflatoxin B_2 in rats.**
B. Walters*, T. Smith, and M. Crump, *University of Guelph, Guelph, Ontario, Canada*.

T34 **Biotransformation approaches to alleviate the toxic effects induced by Fusarium toxins in swine.**
B. Grenier*[1,3], A. P. Loureiro-Bracarense[2], J. Lucioli[2], A. M. Cossalter[1], W. D. Moll[3], G. Schatzmayr[3], and I. P. Oswald[1], [1]*Institut National de la Recherche Agronomique-ToxAlim, Immuno-Mycotoxicology, Toulouse, France*, [2]*Universidade Estadual de Londrina, Lab Patologia Animal, Londrina, Brazil*, [3]*Biomin Research Center, Tulln, Austria*.

T35 **Impact of cow genetics regarding the osteopontin gene for the immune response to MAP infection.**
C. Thibault[1], P.-L. Dudemaine[2,1], and N. Bissonnette*[1,2], [1]*Agricultre and Agri-Food Canada, Dairy and Swine Research and Development Center, Sherbrooke, Quebec, Canada*, [2]*Université de Sherbrooke, Sherbrooke, Quebec, Canada*.

T36 **Polymorphisms in the osteopontin gene are associated with *Mycobacterium avium* ssp. *paratuberculosis* infection status.**
C. Thibault[1], P.-L. Dudemaine[2], G. Fecteau[3], G. Côté[4,2], O. Labrecque[5], and N. Bissonnette*[1,2], [1]*Agriculture and Agri-Food Canada, Dairy and Swine Research and Development Center, Sherbrooke, QC, Canada*, [2]*Université de Sherbrooke, Sherbrooke, Québec, Canada*, [3]*Faculté de médecine vétérinaire de l'Université de Montréal, Saint-Hyacinthe, QC, Canada*, [4]*Ministère de l'Agriculture, des pêcheries et de l'Alimentation, Québec, QC, Canada*, [5]*Laboratoire d'épidémiosurveillance animale du Québec, Saint-Hyacinthe, QC, Canada*.

T37 **Phytonutrients affect the integrity of the mucus layer and susceptibility to enteric pathogens.**
M. Wlodarska[1], B. B. Finlay[1], and D. Bravo*[2], [1]*University of British Columbia, Vancouver, British Columbia, Canada*, [2]*Pancosma, Geneva, Switzerland*.

Draft

Breeding and Genetics
Applications and Methods in Animal Breeding

T38 **Effect of diet and sex on growth of cattle evaluated with non-linear mixed effects models.**
A. Dufek*[1,2] and E. Vacatko[1,2], [1]*Research Institute for Cattle Breeding, Ltd., Rapotin, Czech Republic*, [2]*Agriresearch Rapotin Ltd., Vikyrovice, Czech Republic*.

T39 **The effect of the ancestor on inbreeding depression in milk yield during the first lactation.**
J. Bezdicek*[1], L. Stadnik[2], F. Louda[3], and O. Latal[1], [1]*Agrovyzkum Rapotin Ltd., Vikyrovice, Czech Republic*, [2]*Czech University of Life Sciences Prague, Prague, Czech Republic*, [3]*Research Institute for Cattle Breeding, Ltd., Vikyrovice, Czech Republic*.

T40 **Association between milk production and Holstein fraction of upgraded dairy cattle in the Thai tropics.**
S. Koonawootrittriron[1], P. Yodklaew[1], M. A. Elzo*[2], and T. Suwanasopee[1], [1]*Kasetsart University, Bangkok, Thailand*, [2]*University of Florida, Gainesville*.

T41 **Genetic analysis of longevity traits in a Holstein cattle population near Benghazi, Libya.**
E. Abdalla*[1], S. A. M. Bozrayda[2], and I. A. S. Al-Drussi[2], [1]*Department of Animal Sciences, University of Wisconsin-Madison, Madison*, [2]*Department of Animal Production, University of Benghazi, Benghazi, Libya*.

T42 **Ranking of Brown Swiss cattle based on genetic evaluation and grades in judgment at the show ring.**
R. Ramírez-Valverde*, R. Núñez-Domínguez, M. Hernández-León, and M. A. Pablo-Altunar, *Universidad Autónoma Chapingo, Chapingo, Mexico, Mexico*.

T43 **Genetic evaluation of mobility for Brown Swiss dairy cattle.**
G. R. Wiggans[1], J. R. Wright*[1], C. J. Muenzenberger[2], and R. R. Neitzel[2], [1]*Animal Improvement Programs Laboratory, USDA-ARS, Beltsville, MD*, [2]*Brown Swiss Cattle Breeders Association of the USA, Beloit, WI*.

T44 **Considerations in using residual feed intake to define feed efficiency in dairy cattle.**
M. VandeHaar*[1], D. M. Spurlock[2], L. Armentano[3], R. Tempelman[1], K. Weigel[3], and R. Veerkamp[4], [1]*Michigan State University, East Lansing*, [2]*Iowa State University, Ames*, [3]*University of Wisconsin, Madison*, [4]*Wageningen UR, Wageningen, the Netherlands*.

T45 **Contribution of heredity, nutrition and management to milk yield improvement in Shanghai from 1998 to 2010.**
G. L. Liu*[1,2], L. M. Huang[2], C. G. Zhang[1], X. L. Tang[2], and F. S. Fu[2], [1]*State Key Laboratory of Dairy Biotechnology, Shanghai Bright Holstan Co. Ltd., Shanghai, China*, [2]*Shanghai Dairy Breeding Center Co. Ltd., Shanghai, China*.

T46 **Multiple trait analysis for milk yield and milking time of Holstein Cows.**
L. El Faro*[1], J. P. Pereira[2], C. C. P. Paz[1], D. A. C. Cruz[3], V. L. Cardoso[1], and A. B. Bignardi[4], [1]*APTA/SAA, Ribeirao Preto, Sao Paulo, Brazil*, [2]*UNESP, Jaboticabal, Sao Paulo, Brazil*, [3]*Instituto de Zootecnia, Nova Odessa, Sao Paulo, Brazil*, [4]*Federal University of Mato Grosso, Rondonopolis, Mato Grosso, Brazil*.

T47 **Milk fat:protein ratio in lactating dairy cows: Effects on conception at first postpartum AI.**
A. H. Souza*[1], L. F. Ferraretto[1], P. D. Carvalho[1], A. R. Dresch[1], L. M. Vieira[1,2], R. A. Cerri[3], M. C. Wiltbank[1], and R. D. Shaver[1], [1]*University of Wisconsin-Madison, Madison*, [2]*University of Sao Paulo-VRA, SP 05508, Brazil*, [3]*University of British Columbia, BC, Canada*.

T48 **Prediction of milk and fat production and estimation of breeding values in Holstein dairy cows using neuro-fuzzy and artificial neural networks.**
S. Shahinfar*[1], H. Mehrabani-Yeganeh[1], C. Lucas[2], A. Kalhor[2], A. Kazemian[2], and K. A. Weigel[3], [1]*Department of Animal Science, University of Tehran, Karaj, Tehran, Iran*, [2]*Center of Excellence: Control and Intelligent Processing, Faculty of Electrical and Computer Engineering, Tehran, Iran*, [3]*Department of Dairy Science, University of Wisconsin-Madison, Madison*.

T49 **New software for sparse matrix factorization and inversion using the supernodal techniques.**
Y. Masuda* and M. Suzuki, *Obihiro University of A & VM, Obihiro, Japan*.

T50 **Genotype × climate interaction in the genetic evaluation for growing traits in Braunvieh cattle.**
L. A. Saavedra-Jiménez[1], R. Ramírez-Valverde[1], R. Núñez-Domínguez*[1], N. López-Villalobos[2], A. Ruíz-Flores[1], and J. G. García-Muñiz[1], [1]*Universidad Autónoma Chapingo, Chapingo, México*, [2]*Massey University, Palmerston North, New Zealand*.

T51 **Relationships among visual scores with feedlot performance and feed efficiency in *Bos indicus* cattle.**
P. H. Cancian*[1], S. L. Silva[1], A. C. Ianni[1], F. R. Manicardi[1], R. C. Gomes[2], and J. B. S. Ferraz[1], [1]*Faculdade de Zootecnia e Engenharia de Alimentos / Universidade de São Paulo (FZEA/USP), Pirassununga, São Paulo, Brazil*, [2]*Departamento de Zootecnia / Universidade Estadual de Londrina (UEL), Londrina, Paraná, Brazil*.

T52 **Genetic parameters for carcass traits and weaning weight of composite beef cattle in Brazil.**
J. Ramírez-Díaz[1], T. A. Oliveira[1], A. Zampar[1], S. F. N. Pertile[1], M. A. Elzo[3], J. B. S. Ferraz[2], and G. B. Mourão*[1], [1]*University of São Paulo - ESALQ, Piracicaba, São Paulo, Brazil*, [2]*University of São Paulo - FZEA, Pirassununga, São Paulo, Brazil*, [3]*University of Florida, Gainesville*.

T53 **Influence of maternal genetic effect on the estimation of genetic parameters in post-weaning traits.**
G. A. Oliveira Júnior*[1], F. M. Rezende[1], J. B. S. Ferraz[1], J. P. Eler[1], and G. B. Mourão[2], [1]*Faculdade de Zootecnia e Engenharia de Alimentos - Universidade de São Paulo, Pirassununga, São Paulo, Brazil*, [2]*Escola Superior de Agricultura Luiz de Queiroz - Universidade de São Paulo, Piracicaba, São Paulo, Brazil*.

T54 **Selection for resistance to *Haemonchus contortus* in Santa Ines hair sheep: Comparisons of methods of animal evaluation at countryside and in the laboratory.**
P. S. Oliveira*, J. B. S. Ferraz, J. P. Eler, L. S. Oliveira, C. T. Moncau, M. D. Poleti, B. Silva, F. M. Rezende, G. A. Oliveira Júnior, J. Daniel, and E. C. Mattos, *Faculdade de Zootecnia e Engenharia de Alimentos - Universidade de São Paulo, Pirassununga, São Paulo, Brazil*.

T55 **Test-day model for milk yield of dairy buffaloes in Colombia.**
N. Hurtado Lugo*[1,2], G. M. F. de Camargo[1], R. Aspilcuelta[1], S. Gutiérrez[2], E. Taccari[1], F. M. M. Gil[1], L. G. Albuquerque[1], M. Cerón[2], and H. Tonhati[1], [1]*State University of São Paulo, Faculty of Agriculture and Veterinary Sciences, Jaboticabal, São Paulo, Brazil*, [2]*University of Antioquia, Medellín, Ant, Colombia*.

T56 **Random regression models for test-day milk production for first lactation in Colombian buffaloes.**
N. Hurtado-Lugo*[1,2], M. Cerón[2], R. Aspilcuelta[1], S. Gutierrez[2], L. Albuquerque[1], F. R. Araujo Neto[1], G. M. F. de Camargo[1], and H. Tonhati[1], [1]*Faculty of Agriculture and Veterinary Sciences, State University of São Paulo, Jaboticabal, São Paulo, Brazil*, [2]*Faculty of Agriculture Sciences, University of Antioquia, Medellín, Colombia*.

T57 **Genetic parameters for growth curves in free range chickens.**
G. A. Rovadoscki, F. L. Silva, T. A. Oliveira, A. Zampar, V. J. M. Savino, A. A. D. Coelho, J. Ramírez-Díaz, G. B. Mourão, R. S. Bueno, and G. A. Oliveira Junior*, *University of São Paulo, Piracicaba, São Paulo, Brazil*.

T58 **Comparative analyses of proximate and chemical characteristics of eggs from six indigenous bird species.**
O. T. F. Abanikannda*, A. O. Leigh, and H. Y. Ogungbo, *Lagos State University, Ojo, Lagos, Nigeria*.

Draft

T59 **Statistical classification of six indigenous bird species based on external and internal qualities of their eggs.**
O. T. F. Abanikannda*, A. O. Leigh, and O. I. Adekanbi, *Lagos State University, Ojo - Lagos, Nigeria*.

Dairy Foods
Cheese and Dairy Products

T60 **Prediction of process cheese functionality using dielectric spectroscopy.**
J. K. Amamcharla* and L. E. Metzger, *Midwest Dairy Foods Research Center, Dairy Science Department, South Dakota State University, Brookings*.

T61 **The impact of cation substitution on the flavor of reduced sodium full fat Cheddar cheese.**
E. Kang*[1], M. Kim[1], D. J. McMahon[2], and M. A. Drake[1], [1]*North Carolina State University, Raleigh*, [2]*Utah State University, Logan*.

T62 **A novel approach to produce low fat Cheddar cheese.**
I. Amelia*[1], D. M. Barbano[1], and M. A. Drake[2], [1]*Cornell University, Ithaca, NY*, [2]*North Carolina State University, Raleigh*.

T63 **Effect of grazing on Caciocavallo cheese quality produced in Alta Irpinia.**
G. Esposito*[1,3], A. Di Francia[1], F. Napolitano[2], M. L. Varricchio[1], A. Braghieri[2], and F. Masucci[1], [1]*Dipartimento di Scienze del Suolo, della Pianta, dell'Ambiente e delle Produzioni Animali,Universitá*, [2]*degli Studi di Napoli Federico II, Portici (Napoli), Italy*, [3]*Dipartimento di Scienze delle Produzioni animali, Universitá degli Studi della Basilicata, Potenza, Italy*, [4]*Department of Production Animal Studies, Faculty of Veterinary Science, University of Pretoria, Pretoria, South Africa*.

T64 **Sensory and instrumental measure of temporal volatile release from cheese.**
S. White*, R. E. Miracle, E. A. Foegeding, and M. A. Drake, *North Carolina State University, Raleigh*.

T65 **Light backscatter–Shedding new light on milk coagulation.**
R. Miller, A. Villarroel, B. Krahn, and L. Goddik*, *Oregon State University, Corvallis*.

T66 **Selection criteria for lactic cultures in reduced fat Cheddar cheese.**
A. C. Biswas*, A. N. Hassan, and L. E. Metzger, *Dairy Science Department, South Dakota State University, Brookings*.

T67 **Influence of salt levels, rate of salting and potassium chloride on whey syneresis from Cheddar cheese curd.**
Y. Lu* and D. J. McMahon, *Western Dairy Center, Utah State University, Logan*.

T68 **Effect of different gums supplementation on textural properties of goat milk yogurts.**
Y. W. Park*[1], J. Oglesby[1], S. A. Hayek[2], R. Gyawali[2], and S. Ibrahim[2], [1]*Fort Valley State University, Fort Valley, GA*, [2]*North Carolina A&T State University, Greensboro*.

T69 **The role of different sweeteners on WPI flavor contributions in acidic protein beverages.**
S. White* and M. A. Drake, *North Carolina State University, Raleigh*.

T70 **Concentrations of IGF-1 and IGFBP-3 in several Korean commercial dairy products by immunoradiometric assay.**
S. H. Kang*, D. W. Kim, K. H. Kim, K. S. Kim, and S. C. Baick, *Seoul Dairy Cooperative R&D Center, Shingil-dong, Ansan-si, Kyunggi-do, Republic of Korea*.

T71 **The fatty acid composition of butter and cultured butter with lactobacillus acidophilus added to starter.**
O. Tsisaryk*[1], L. Musij[1], and O. Golubets[2], [1]*Lviv National University of Veterinary Medicine and Biotechnologies, Lviv, Ukraine*, [2]*Ukrainian State Research and Production Centre for Standardization, Metrology, Certification and Consumer Rights Production, Kiev, Ukraine*.

T72 **Effect of sodium reduction on the survival of *Listeria monocytogenes* and *Bacillus anthracis* in Cheddar cheese.**
E. Hystead*, F. Diez-Gonzalez, and T. C. Schoenfuss, *University of Minnesota, St. Paul*.

T73 **Effects of acidification of milk by glucono-δ-lactone (GDL) on the solubility of milk protein concentrate powder.**
H. Eshpari*[1,2], M. Corredig[1], and P. Tong[2], [1]*University of Guelph, Guelph, Ontario, Canada*, [2]*California Polytechnic State University, San Luis Obispo*.

T74 **Influence of ethanol on some characteristics of stirred yogurt.**
B. Mena*[1,2] and K. Aryana[2,1], [1]*Louisiana State University*, [2]*Louisiana State University Agricultural Center*.

Draft

Extension Education

T75 **Water use efficiency on small-scale irrigated dairy farms in the Mexicali Valley, México.**
L. Avendaño-Reyes*[1], F. D. Alavarez-Valenzuela[1], U. Macías-Cruz[1], A. López-López[1], P. H. Robinson[2], and A. Correa[1], [1]*Universidad Autónoma de Baja California, Valle de Mexicali, Baja California, México*, [2]*University of California, Davis*.

T76 **Complexity graphics for complex issues in animal science.**
M. Boggess*, *USDA-ARS, Beltsville, MD*.

T77 **Factors limiting productive efficiency in small dairies of central Mexico (Aguascalientes State).**
R. R. Lozano-Dominguez*, C. F. Arechiga, R. M. Rincon, and L. M. Escareno-Sanchez, *Universidad Autonoma de Zacatecas, Zacatecas, Mexico*.

T78 **Evaluation of on-farm forage dry matter determined by near infrared spectroscopy.**
M. S. Akins*[1], M. Dobberstein[2], and R. D. Shaver[1], [1]*Department of Dairy Science, University of Wisconsin-Madison*, [2]*Dinamica Generale US, DeKalb, IL*.

T79 **Compliance of small and medium-sized farms in adopting recommendations for improved farm productivity and nutrient utilization.**
L. D. Baker*, R. J. Munson, Z. Dou, D. T. Galligan, J. D. Ferguson, C. F. Ramberg, D. W. Remsburg, and Z. Wu, *University of Pennsylvania, Kennett Square*.

T80 **A collaborative bovine artificial insemination course for students attending a Caribbean veterinary school.**
J. C. Dalton*[1], J. Q. Robinson[2], and J. M. DeJarnette[3], [1]*University of Idaho, Caldwell*, [2]*Ross University School of Veterinary Medicine, Basseterre, St. Kitts*, [3]*Select Sires Inc., Plain City, OH*.

T81 **Repro money: A farmer-directed team-based extension program to improve reproductive performance in Wisconsin dairy herds.**
M. C. Cordoba*, P. M. Fricke, P. L. Ruegg, R. D. Shaver, K. A. Weigel, and V. E. Cabrera, *University of Wisconsin-Madison*.

T82 **Calf-ETERIA: Using calf health and productivity as a template for extension and translation of research information for agriculture.**
V. Bielmann*[1], K. Leslie[1], T. Wright[2], and T. DeVries[1], [1]*University of Guelph, Guelph, Ontario, Canada*, [2]*Ontario Ministry of Agriculture, Food and Rural Affairs, Guelph, Ontario, Canada*.

T83 **Comparison of out-of-season estrus synchronization protocols in meat goats.**
N. C. Whitley[1], K. Moulton*[1], R. A. Franco[1], A. E. Cooper[1], and T. J. Conrad-Acuna[2], [1]*Cooperative Extension Program, North Carolina A&T State University, Greensboro*, [2]*North Carolina State University Cooperative Extension, Richmond County, Rockingham*.

T84 **Using soil moisture monitoring to improve irrigation in dairy pastures.**
T. W. Downing*, *Oregon State University, Corvallis*.

Draft

Food Safety
Food Safety Advances

T85 **Occurrence of several antibiotic residues in raw milk in ten provinces of China.**
R. W. Han[1,2], J. Q. Wang*[1], N. Zheng[1], X. M. Xu[1], Y. P. Zhen[1], X. Y. Qu[1], P. Sun[1], and Z. N. Yu[3], [1]*State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*, [2]*College of Food Science and Engineering, Qingdao Agricultural University, Qingdao, Shandong, China*, [3]*Haidu College, Qingdao Agricultural University, Laiyang, Shandong, China*.

T86 **Occurrence of aflatoxin M1 in raw milk and UHT milk in China.**
N. Zheng, J. Q. Wang*, R. W. Han, X. M. Xu, Y. P. Zhen, X. Y. Qu, and P. Sun, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*.

T87 **Purple prairie clover condensed tannins inhibit *Escherichia coli* through disruption of outer and inner membranes.**
X. L. Liu*[1,2], L. Jin[1], Z. Xu[1], Y. Q. Hao[2], T. A. McAllister[1], and Y. Wang[1], [1]*AAFC, Lethbridge, AB, Canada*, [2]*Inner Mongolia Agricultural University, China*.

T88 **Antimicrobial resistance of *Salmonella enterica* isolated from bulk tank milk and milk filters in the United States.**
J. S. Van Kessel*[1], J. Sonnier[1], S. Zhao[2], and J. S. Karns[1], [1]*Environmental Microbial and Food Safety Laboratory, USDA-ARS, Beltsville, MD*, [2]*Center for Veterinary Medicine, US FDA, Laurel, MD*.

T89 **The effects of tetracycline analogue on prevalence of resistance genes encoded by *Escherichia coli* isolated from feedlot cattle.**
X. Jin[1,2], T. A. McAllister[1], Q. Li[2], and T. W. Alexander*[1], [1]*Agriculture and Agri-Food Canada, Lethbridge, AB, Canada*, [2]*Inner Mongolia Agricultural University, Hohhot, Inner Mongolia, China*.

T90 **Cranberry juice and cranberry fiber are accepted by newly weaned pigs.**
S. D. Eicher*[1], B. T. Richert[2], and M. H. Rostagno[1], [1]*USDA-ARS, West Lafayette, IN*, [2]*Purdue University, West Lafayette, IN*.

T91 **Evaluation of hygienic and sanitary quality of jerked beef commercialized in Salvador city, Bahia, Brazil.**
L. Pereira, M. Silva, W. Costa, and R. Matoso*, *UFBA, Salvador, Bahia, Brazil*.

Forage and Pastures II

T92 **Productive response of finishing young bulls to tannins supplementation.**
M. Velázquez-Martínez[1], O. Hernández-Mendo[1], S. Pérez-Elizalde[1], E. López-Pérez[2], and G. Aranda-Osorio*[2], [1]*Colegio de Postgraduados, Montecillos, Texcoco, México*, [2]*Universidad Autónoma Chapingo, Chapingo, Texcoco, México*.

T93 **Pelibuey sheep productive response to different sources of tannins from forage trees.**
M. Velázquez-Martínez[1], O. Hernández-Mendo[1], S. Pérez-Elizalde[1], E. López-Pérez[2], and G. Aranda-Osorio*[2], [1]*Colegio de Postgraduados, Montecillos, Texcoco, México*, [2]*Universidad Autónoma Chapingo, Chapingo, Texcoco, México*.

T94 **Effects of tannin deactivation by alkaline chemicals on in vitro dry matter and organic matter digestibility in sainfoin (*Onobrychis vicifolia*).**
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*.

T95 **Different rumen environments can cause different degradation profile of dry matter from 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*.

T96 **Comparisons of metabolizable energy estimates for sainfoin (*Onobrychis viciifolia*) from different in vitro and in vivo methods.**
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*.

T97 **Deactivation of tannins by chemical materials affect ruminal degradability kinetics and metabolizable protein profiles of sainfoin (*Onobrychis vicifolia*).**
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*.

T98 **Correlations between condensed tannins and CNCPS protein fractions of sainfoin.**
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*.

T99 **Local equations to predict relative feed value for alfalfa in northern Mexico.**
C. Arzola*[1], F. Carrera[1], R. Copado[1], J. Salinas[2], C. Rodriguez[1], O. Ruiz[1], H. Gaytan[1], and A. Corral[1], [1]*Universidad Autonoma de Chihuahua, Chihuahua, Chihuahua, Mexico*, [2]*Universidad Autonoma de Tamaulipas, Cd. Victoria, Tamaulipas, Mexico*.

T100 **A simplified procedure for measuring NDF within in situ Dacron bags for corn plant components ground to 6 mm.**
L. J. Nuzback, W. M. Rutherford, and F. N. Owens*, *Pioneer Hi-Bred International, a DuPont Company, Johnston, IA*.

T101 **Digestibility and fecal output prediction using acid-detergent lignin, alkaline-peroxide lignin, and acid-detergent insoluble ash in cattle offered bermudagrass hays of varying quality.**
J. Kanani*[1], D. Philipp[1], K. P. Coffey[1], E. B. Kegley[1], C. P. West[1], S. Gadberry[2], J. Jennings[2], A. Young[1], and R. Rhein[1], [1]*University of Arkansas, Division of Agriculture, Fayetteville*, [2]*University of Arkansas, Division of Agriculture, Little Rock*.

T102 **Diurnal variation in fecal concentrations of indigestible-acid detergent fiber, acid-detergent insoluble ash, and alkaline-peroxide lignin from cattle offered bermudagrass hays of varying quality.**
J. Kanani*[1], D. Philipp[1], K. P. Coffey[1], E. B. Kegley[1], C. P. West[1], S. Gadberry[2], J. Jennings[2], A. Young[1], and R. Rhein[1], [1]*University of Arkansas, Division of Agriculture, Fayetteville*, [2]*University of Arkansas, Division of Agriculture, Little Rock*.

T103 **Evaluating particle size of dry and wet forages using the Ro-Tap separator and Penn State Particle Size Separator method.**
A. D. Kmicikewycz*, D. D. Maulfair, and A. J. Heinrichs, *Pennsylvania State University, University Park*.

T104 **In vitro evaluation of *Miscanthus sacchariflorus* var. as a roughage source for ruminants.**
S. J. Oh*, J. H. Yang, A. R. Lee, C. H. Ryu, J. H. Lim, S. B. Cho, and N. J. Choi, *Department of Animal Science, Chonbuk National University, Jeonju, Korea*.

Draft

T105 **Relationship between dynamic degradation and 48-hour degradation of alfalfa hay in Holstein heifers.**
Y. Tian*[1], Z. Cao[1], S. Li[1], and S. Yan[2], [1]*State Key Laboratory of Animal Nutrition, College of Animal Science and Technology, China Agricultural University, Beijing, China*, [2]*College of Animal Science, Inner Mongolia Agricultural University, Huhhot, China*.

T106 **In vitro organic matter and nitrogen disappearance of Kenyan browse using rumen from goats ingesting grass versus browse.**
A. McEwin*[1], C. Wambui[3], J. P. Muir[2], J. Githiori[4], and B. D. Lambert[1,2], [1]*Tarleton State University, Stephenville, TX*, [2]*Texas Agrilife Research, Stephenville*, [3]*Edgerton University, Kenya*, [4]*International Livestock Research Institute, Kenya*.

T107 **Chemical composition and in vitro gas production of mulberry (*Morus alba* sp.) leaves during regrowth.**
R. A. Gomes[1], M. H. M. R. Fernandes*[1], I. A. M. A. Teixeira[1], K. T. Resende[1], R. A. Reis[1], F. S. B. Rey[2], and D. C. Soares[1], [1]*UNESP/ Sao Paulo State University, Jaboticabal, Sao Paulo, Brazil*, [2]*Faculdade de Medicina Veterinaria e Zootecnia/USP, Pirassununga, Sao Paulo, Brazil*.

T108 **Methane-generating potential of *Lotus subbiflorus* 'El Rincón' (LR) and *Lotus uliginosus var. Maku* (LM) harvested in spring.**
M. de J. Marichal*[1], R. Crespi[1], G. Arias[1], S. Furtado[1], M. H. Guerra[1], and L. Piaggio[2], [1]*Facultad de Agronomía, Universidad de la República, Montevideo, Uruguay*, [2]*Secretariado Uruguayo de la Lana, Montevideo, Uruguay*.

T109 **Factors affecting in vitro undigested NDF as estimates of indigestible NDF.**
D. R. Mertens*[1], D. Taysom[2], and B. Steinlicht[2], [1]*Mertens Innovation & Research LLC, Belleville, WI*, [2]*Dairyland Laboratories Inc., Arcadia, WI*.

T110 **Intensive milk production on marandugrass pasture during the rainy season.**
C. A. M. Gomide*[1], A. J. Anjos[2], K. G. Ribeiro[2], E. A. Salgado[1], M. J. F. Morenz[1], and D. S. C. Paciullo[1], [1]*Embrapa Dairy Cattle, Juiz de Fora, Minas Gerais, Brasil*, [2]*UFVJM, Diamantina, Minas Gerais, Brasil*.

T111 **Nutrient digestibility of annual winter forages using different indigestible markers and fecal collection schedules in growing beef heifers.**
C. A. Njombwa, D. D. Henry*, F. M. Ciriaco, V. R. G. Mercadante, K. M. Bischoff, G. H. L. Marquezini, M. Ruiz-Moreno, G. C. Lamb, and N. DiLorenzo, *University of Florida, North Florida Research and Education Center, Marianna*.

T112 **Estimating crude protein and fiber contents in Tifton-85 bermudagrass swards with a new portable chlorophyll meter.**
R. Silva[1], R. Rossiello[2], É. Junior[2], M. Morenz[2], and J. Costa Junior*[3], [1]*UFBA, Salvador, Bahia, Brazil*, [2]*UFRRJ, Seropédica, Rio de Janeiro, Brazil*, [3]*UFRGS, Rio Grande do Sul, Brazil*.

T113 **Mixed silage of potato residue and corn straw affects growth performance and blood biochemical parameters in mutton sheep.**
D. Wang[1,2], J. Q. Wang*[1,2], D. P. Bu[2], Y. D. Zhang[2], P. Sun[2], and L. Y. Zhou[2], [1]*College of Animal Science and Technology, Heilongjiang Bayi Agricultural University, Daqing, Heilongjiang, China*, [2]*Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*.

T114 **Effect of different fat protected sources on milk yield and composition in goats fed on corn silage as based diet in dairy goats.**
C. Vázquez-Fontes*[1], R. Ayala[2], A. Z. M. Salem[2], N. Pescador-Salas[2], L. R. Bernal-Martínez[1], and M. Gonzalez Ronquillo[2], [1]*Universidad Autonoma del Estado de Mexico, Facultad de Ciencias Agrícolas*, [2]*Facultad de Medicina Veterinaria y Zootecnia, Toluca, Estado de Mexico, Mexico*.

T115 **Effect of oil palm (*Eleais guineensis*) effluent plus supplement in the feeding of pigs (Duroc x Pietrain) in the finishing phase during dry season.**
I. Espinoza*, R. Vivas, D. Zambrano, B. Montenegro, G. Muñoz, M. Romero, H. Medina, R. Soria, M. Medina, L. Godoy, and E. Torres, *Universidad Técnica Estatal de Quevedo, Quevedo, Los Ríos, Ecuador*.

T116 **Planting date and crop harvest phenological stage effects on biomass and nutritive value of non-photosensitive forage soybean lines in Puerto Rico.**
A. Aponte, E. Valencia*, and J. Beaver, *University of Puerto Rico, Mayaguez, Mayaguez, PR*.

T117 **Nutritional characterization of pastures used in Colombian dairies with emphasis on fatty acid profile.**
E. A. De La Vega*, J. E. Parales, C. A. Mendoza, M. M. Knowles, G. J. Díaz, M. L. Pabón, and J. E. Carulla, *Universidad Nacional de Colombia, Bogotá, Cundinamarca, Colombia*.

T118 **Effect of sowing density and planting date on the establishment of *Pennisetum purpureum* 'CT-115' in a semiarid region of northern Mexico.**
E. Gutierrez Ornelas*[1,3], J. J. Nava Cabello[1], R. Herrera[2,3], H. Bernal Barragan[1,3], E. Treviño Ramirez[1], and E. Olivares Saenz[1], [1]*Universidad Autónoma de Nuevo León, San Nicolás de los Garza, Nuevo León, México*, [2]*Instituto de Ciencia Animal, San José de Las Lajas, Habana, Cuba*, [3]*Red Internacional de Nutición y Alimentación en Rumiantes, México*.

T119 **Effect of plant density over the productive performance of gliricidia.**
E. N. Muniz*[1], J. H. A. Rangel[1], D. O. Santos[1], C. O. Sá[1], and J. L. Sá[2], [1]*Embrapa Tabuleiros Costeiros, Aracaju, Sergipe, Brazil*, [2]*Embrapa Semi Árido, Petrolina, Pernambuco, Brazil*.

Draft

T120 **Assessment of the socio-economic value of goods and services from Manitoba grasslands.**
S. Kulshreshtha[1], M. Undi*[2], J. Zhang[1], M. Ghorbani[1], K. M. Wittenberg[2], A. A. Stewart[3], E. Salvano[4], E. Kebreab[5], and K. H. Ominski[2], [1]*Dept of Bioresource Policy, Business and Economics, University of Saskatchewan, Saskatoon, SK, Canada*, [2]*Department of Animal Science & National Centre for Livestock and the Environment, University of Manitoba, Winnipeg, MB, Canada*, [3]*Shur-Gro Farm Services Ltd., Waskada, MB, Canada*, [4]*Manitoba Agriculture, Food, and Rural Initiatives, Winnipeg, MB, Canada*, [5]*Dept of Animal Science, University of California, Davis*.

Growth and Development II

T121 **Effect of residual feed intake on hypothalamic gene expression and meat quality in heat-stressed Angus-sired cattle.**
C. N. Key*, S. D. Perkins, C. F. Garrett, C. D. Foradori, C. L. Bratcher, L. A. Kriese-Anderson, and T. D. Brandebourg, *Auburn University, Auburn, AL*.

T122 **Effect of residual feed intake on meat quality and hypothalamic gene expression in Angus-sired cattle.**
S. D. Perkins*, C. N. Key, C. F. Garrett, C. D. Foradori, C. L. Bratcher, L. A. Kriese-Anderson, and T. D. Brandebourg, *Auburn University, Auburn, AL*.

T123 **Serum IGFI and hepatic *IGFI* mRNA levels in feedlot cattle infected with bovine respiratory disease.**
C. A. Gifford*[1], B. Wilson[1], C. Maxwell[1], D. M. Hallford[2], and C. R. Krehbiel[1], [1]*Oklahoma State University, Stillwater*, [2]*New Mexico State University, Las Cruces*.

T124 **Relationship between carcass traits and tenderness with residual feed intake and residual average daily gain of Brahman steers.**
F. Rouquette*[1], R. Randel[1], J. Paschal[2], T. Machado[3], and C. Long[1], [1]*Texas AgriLife Research and Extension Center, Overton*, [2]*Texas AgriLife Extension Service, Corpus Christi*, [3]*Texas A&M University-Kingsville, Kingsville*.

T125 **Adipocyte location and anabolic implant alter adipocyte transcriptome in steers.**
S. K. Duckett*, J. W. Long, M. D. Owens, S. E. Ellis, and S. L. Pratt, *Clemson University, Clemson, SC*.

T126 **Subcutaneous adipose tissue gene expression in bulls fed ergot alkaloid-containing fescue seed.**
T. A. Burns*, M. C. Miller, H. M. Stowe, S. M. Calcatera, S. L. Pratt, J. G. Andrae, and S. K. Duckett, *Clemson University, Clemson, SC*.

T127 **Growth performance of Mahabadi goat kids fed different levels organic trivalent chromium.**
A. Emami, A. Zali, M. Ganjkhanlou*, A. Hojabri, and A. Akbari, *University of Tehran, Tehran, Iran*.

T128 **Postweaning feed restriction effects on steer feedlot performance and carcass characteristics.**
R. L. Endecott*[1], B. L. Shipp[2], M. D. MacNeil[2], L. J. Alexander[2], and A. J. Roberts[2], [1]*Department of Animal and Range Sciences, Montana State University, Miles City*, [2]*USDA-ARS, Fort Keogh Livestock and Range Research Laboratory, Miles City, MT*.

T129 **Stearoyl-CoA desaturase (SCD1) localization and intensity in bovine adipose and muscle tissues from implanted and non-implanted steers.**
M. Wilder, S. Safayi, S. E. Ellis, and S. K. Duckett*, *Clemson University, Clemson, SC*.

T130 **Body's growth curve and shape of grazing young bulls, receiving concentrate supplementation with different protein profiles.**
H. J. Fernandes*[1,2], A. G. da Silva[2], M. F. Paulino[2], S. A. Lopes[2], L. O. Tedeschi[4], J. A. G. Azevêdo[3,2], and A. Aguiar[5], [1]*State University of Mato Grosso do Sul, Aquidauana, MS, Brazil*, [2]*Federal University of Viçosa, Viçosa, MG, Brazil*, [3]*State University of Santa Cruz, Ilhéus, BA, Brazil*, [4]*Texas A&M University, College Station*, [5]*University of Florida, Gainesville*.

T131 **Mathematical models to describe growth of grazing beef cattle.**
H. J. Fernandes*[1], V. S. Siquiera[1], G. C. Z. N. de Oliveira Coelho[1], A. L. B. Netto[2], K. O. De Barros[1], A. Aguiar[3], L. M. Paiva[1], and J. C. de Souza[2], [1]*State University of Mato Grosso do Sul, Aquidauana, MS, Brazil*, [2]*Federal University of Mato Grosso do Sul, Aquidauana, MS, Brazil*, [3]*University of Florida, Gainesville*.

T132 **Dietary fat content and fiber type influence adiposity, lipid oxidative genes and cecal volatile fatty acid concentrations in pigs.**
H. Yan*, V. Almeida, H. Lu, T. Stewart, A. Schinckel, and K. Ajuwon, *Purdue University, West Lafayette, IN*.

T133 **Factors affecting serum IGF-1 and triiodothyronine concentrations as related to fat deposition in feedlot lambs.**
F. A. Rodriguez-Almeida*[1], D. M. Hallford[2], J. A. Grado-Ahuir[1], D. Briones[1], and E. Flores[1], [1]*Universidad Autónoma de Chihuahua, Chihuahua, México*, [2]*New Mexico State University, Las Cruces*.

Draft

Lactation Biology II

T134 **Effects of feed restriction and prolactin-release inhibition at drying-off on milk production, metabolism and mammary gland involution.**
S. Ollier*[1], X. Zhao[2], and P. Lacasse[1], [1]*AAFC-Dairy and Swine Research and Development Centre, Sherbrooke, QC, Canada*, [2]*Department of Animal Science, McGill University, Sainte-Anne-de-Bellevue, QC, Canada*.

T135 **Effects of recombinant bovine somatotropin on blood flow to the mammary gland in early lactating Holstein cows.**
H. L. Sánchez-Rodríguez*[1], R. C. Youngblood[1], J. E. Curbelo[1], C. Steadman[1], R. C. Vann[2], E. Baravik-Munsell[3], S. T. Willard[1,5], and P. L. Ryan[1,4], [1]*Department of Animal and Dairy Sciences, Mississippi State University*, [2]*Brown Loam Branch Experimental Station, Mississippi State University, Raymond*, [3]*Department of Clinical Sciences, Mississippi State University*, [4]*Department of Pathobiology and Population Medicine, Mississippi State University*, [5]*Department of Biochemistry and Molecular Biology, Mississippi State University*.

T136 **Effects of colostrum versus formula feeding on hepatic glucocorticoid and α_1- and β_2-adrenergic receptors in neonatal calves.**
D. Rohrbeck, J. Steinhoff-Wagner, E. Kanitz, and H. M. Hammon*, *Leibniz Institute for Farm Animal Biology (FBN), Dummerstorf, Germany*.

T137 **Fitness of lactation curve functions to daily and monthly test-day milk data in an Ethiopian dairy cattle population.**
G. Gebreyohannes[1], S. Koonawootrittriron[1], M. A. Elzo*[2], and T. Suwanasopee[1], [1]*Kasetsart University, Bangkok, Thailand*, [2]*University of Florida, Gainesville*.

T138 **Effect of rearing intensity on growth performance and on mammary tissue in Holstein yearling heifers.**
V. Lollivier*[2,1], F. Dessauge[1,2], M. Boutinaud[1,2], and Y. le Cozler[2,1], [1]*INRA, UMR1348 Pegase, Saint-Gilles, France*, [2]*Agrocampus Ouest, UMR1348 Pegase, Rennes, France*.

T139 **Obesity and parity affect the mammary gland serotonin (5-HT) system.**
K. E. Merriman*, J. LaPorta, and L. L. Hernandez, *University of Wisconsin, Madison*.

T140 **Cooling of heat-stressed cows during the dry period alters lymphocyte but not mammary gland gene expression.**
S. Tao*[1], E. E. Connor[2], J. W. Bubolz[1], I. M. Thompson[1], B. C. do Amaral[1], M. J. Hayen[1], and G. E. Dahl[1], [1]*University of Florida, Gainesville*, [2]*USDA-ARS, Beltsville, MD*.

T141 **Identification and quantification of milk synthesis and secretion related proteins in bovine milk using a proteomics approach.**
J. Lu*[1,2], S. Boeren[2], J. Vervoort[2], H. van Valenberg[1], S. de Vries[2], J. van Arendonk[3], T. van Hooijdonk[1,4], and K. Hettinga[1], [1]*Dairy Science and Technology Group, Wageningen University, Wageningen, the Netherlands*, [2]*Laboratory of Biochemistry, Wageningen University, Wageningen, the Netherlands*, [3]*Animal Breeding and Genomics Centre, Wageningen University, Wageningen, the Netherlands*, [4]*FrieslandCampina, Amersfoort, the Netherlands*.

T142 **Physiological state but not gestational photoperiod affects weights of liver and thymus in mice.**
P. A. Bentley* and T. B. McFadden, *University of Alberta, Edmonton, Alberta, Canada*.

Draft

Meat Science and Muscle Biology II

T143 **Pearson correlation coefficients of multiple methods for measuring water-holding capacity in two pork muscles.**
J. W. Rickard[1], Z. D. Callahan*[1], T. A. Wilmoth[2], C. S. Perkins[1], M. E. Wilson[2], and B. R. Wiegand[1], [1]*University of Missouri, Columbia*, [2]*West Virginia University, Morgantown*.

T144 **Carcass and muscle fiber characteristics of ractopamine fed market pigs with a genetic propensity to deposit significant subcutaneous carcass fat.**
C. S. Perkins*[1], T. A. Wilmoth[2], Z. E. Kerley[1], Z. D. Callahan[1], M. E. Wilson[2], and B. R. Wiegand[1], [1]*University of Missouri, Columbia*, [2]*West Virginia University, Morgantown*.

T145 **Shelf stability and quality of fresh ground pork and pork sausage from pigs fed a combination of dried distillers grains with solubles, ractopamine hydrochloride, and conjugated linoleic acid.**
B. R. Wiegand*, H. L. Evans, Z. D. Callahan, and C. S. Perkins, *University of Missouri, Columbia*.

T146 **Effects of genotype and dietary oil supplementation in pigs. 2. Pork quality and fatty acid composition.**
T. M. Bertol*[1], R. M. L. de Campos[2], J. V. Ludke[1], N. N. Terra[3], E. A. P. de Figueiredo[1], V. L. Kawski[1], A. Coldebella[1], and N. M. Lehr[1], [1]*Embrapa Suínos e Aves, Concórdia, SC, Brazil*, [2]*Fundação Universidade Federal do Vale do São Francisco, Petrolina, PE, Brazil*, [3]*Universidade Federal de Santa Maria, Santa Maria, RS, Brazil*.

T147 **Effects of antibiotics on growth performance, plasma biochemical index and meat quality of growing-finishing pigs.**
X. Wu, Y. Zhang, X. Liu, H. Yang, and Y. Yin*, *Key Laboratory of Agro-Ecological Processes in Subtropical Region, Institute of Subtropical Agriculture, Chinese Academy of Sciences, Changsha, China*.

T148 **Effects of level of feeding and breed on fatty acid profile of meat from Brazilian native goats.**
L. S. Lopes[1], M. L. Chizzotti*[2], M. M. Ladeira[2], K. C. Busato[2], J. R. R. Carvalho[2], R. T. S. Rodrigues[2], and D. P. D. Lana[3], [1]*State University of Santa Catarina, Chapecó, SC, Brazil*, [2]*Federal University of Lavras, Lavras, MG, Brazil*, [3]*University of São Paulo, Piracicaba, SP, Brazil*.

T149 **Effect of dietary organic chromium on meat quality of Mahabadi goat kids.**
A. Emami, M. Ganjkhanlou*, A. Zali, A. Hojabri, and A. Akbari-Afjani, *University of Tehran, Tehran, Iran*.

T150 **Influence of dietary zilpaterol hydrochloride on finishing performance, carcass characteristics and meat quality of castrated male goats.**
A. Hatefi*[1], A. Towhidi[1], A. Zail[1], M. Ganjkhanlou[1], and A. Plascencia[2], [1]*Department of Animal Science, University of Tehran, Karaj, Alborz, Iran*, [2]*Instituto de Investigaciones en Ciencias Veterinarias, Universidad Autónoma de Baja, CaliforniaMexicali, Baja California, México*.

T151 **Effect of diet linseed supplementation in ewes during gestation and lactation on fatty acid profile of suckling lamb meat.**
A. Nudda*, G. Battacone, M. Lovicu, N. Castanares, R. Boe, A. Fenu, and G. Pulina, *Dipartimento di Agraria, Sezione di Scienze Zootecniche, Università di Sassari, Sassari, Italy*.

T152 **The influences of intermittent feeding zilpaterol hydrochloride during two last week finishing period on growth performance in Japanese quails.**
A. Towhidi*, M. Mohammadi Arekhlo, H. Moravej, and A. Zare Shahneh, *Department of Animal Science, College of Agriculture and Natural Resources, University of Tehran, Karaj, Iran*.

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T153 **Dietary *Aspilia africana* leaf on nutrients digestibility and physio-chemical properties of intestinal segments in quails.**
O. O. K. Oko*, E. A. Agiang, and I. E. Iso, *University of Calabar, University of Calabar, Calabar, Cross River State, Nigeria*.

T154 **Effects of egg by-product supplementation on the egg production, nutrient digestibility, egg quality, blood profiles, and fecal noxious gas emission in laying hens.**
L. Yan*, J. P. Wang, and I. H. Kim, *Department of Animal Resource & Science, Dankook University, Cheonan, Choongnam, South Korea*.

T155 **Economic evaluation of increasing levels of acerola meal replacing corn in the diet of broilers.**
V. C. da Cruz*[1], L. H. Zanetti[1], G. do Valle Polycarpo[2], R. F. de Oliveira[1], A. L. C. Brichi[1], L. C. Carvalho[1], O. J. Sabbag[1], and C. C. do Valle Polycarpo[3], [1]*São Paulo State University, Dracena Campus, Dracena, São Paulo, Brazil*, [2]*University of São Paulo, Pirassununga Campus, Pirassununga, São Paulo, Brazil*, [3]*São Paulo State University, São José do Rio Preto Campus, São José do Rio Preto, São Paulo, Brazil*.

T156 **Effects of egg by-product supplementation on growth performance, nutrient digestibility, blood profiles, relative organ weights, and meat quality in broiler.**
H. Y. Baek*, Z. F. Zhang, and I. H. Kim, *Department of Animal Resource & Science, Dankook University, Cheonan, Choongnam, South Korea*.

T157 **A survey of free and conjugated deoxynivalenol in European feedstuffs.**
S.-T. Tran* and T. K. Smith, *Department of Animal and Poultry Science, University of Guelph, Guelph, ON, Canada*.

T158 **Effects of sorghum particle size on growth performance and carcass characteristics in finishing pigs.**
C. B. Paulk*, J. D. Hancock, A. C. Fahrenholz, J. M. Wilson, L. J. McKinney, and K. C. Behnke, *Kansas State University, Manhattan*.

T159 **Chemical composition of canola meal, 00-rapeseed meal, and 00-rapeseed expellers.**
T. Maison* and H. H. Stein, *University of Illinois, Urbana*.

T160 **Comparison of growth performance of pigs fed cull chickpeas high in fiber.**
J. M. Uriarte*, J. F. Obregon, H. R. Güemez, J. A. Romo, J. M. Romo, and A. Leon, *Universidad Autonoma de Sinaloa*.

T161 **Standardized ileal digestibility of Illinois bundleflower, low-oligosaccharide soybean meal and conventional soybean meal.**
J. A. Jendza* and S. K. Baidoo, *University of Minnesota, Waseca*.

T162 **Resistant starch content of cereal grains common utilized for pig nutrition.**
G. Giuberti, A. Gallo, M. Rzepus, M. Moschini, and F. Masoero*, *Università Cattolica del Sacro Cuore, Piacenza, Italy*.

Draft

T163 **Effects of molasses supplementation on the growth performance, nutrient digestibility, blood characteristics, fecal moisture, and fecal noxious gas emission in growing pigs.**
J. Li*[1], X. Y. Guo[1], D. S. Nam[2], and I. H. Kim[1], [1]*Department of Animal Resource & Science, Dankook University, Cheonan, Choongnam, South Korea*, [2]*Nonghyup Feed Co. Ltd., Seoul, South Korea*.

T164 **Effects of fermented corn by *Bacillus subtilis* on the growth performance, nutrient digestibility, fecal microbial shedding, and fecal noxious gas emission in growing pigs.**
J. H. Jung*, H. Y. Baek, and I. H. Kim, *Department of Animal Resource & Science, Dankook University, Cheonan, Choongnam, South Korea*.

T165 **Apparent dry matter digestibility and nitrogen balance in pigs fed high fiber diets.**
A. Woldeghebriel*, S. Smith, T. Barios, and B. Pope, *North Carolina A&T State University, Greensboro*.

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Health

T166 **Effects of supplemental zinc amino acid complex on physiology and performance in heat-stressed growing pigs.**
M. V. Sanz-Fernandez*[1], S. C. Pearce[1], L. R. Long[1], N. K. Gabler[1], J. F. Patience[1], M. E. Wilson[2], M. T. Socha[2], R. P. Rhoads[3], and L. H. Baumgard[1], [1]*Iowa State University, Ames*, [2]*Zinpro Corporation, Eden Prairie, MN*, [3]*Virginia Polytechnic Institute and State University, Blacksburg*.

T167 **Evaluation of the antioxidative capacity of *Lactobacillus plantarum* in vitro and its antioxidative effect on weaned pigs.**
H. F. Ji*, J. Wang, L. Hou, S. X. Wang, D. Y. Zhang, H. Liu, and Y. M. Wang, *Institute of Animal Husbandry and Veterinary Medicine, Beijing Academy of Agriculture and Forestry Sciences, Beijing, China*.

T168 **Evaluation of Oleobiotec in the diet of broilers challenged with *Clostridium perfringens* compared with an antibiotic administered continuously in feed.**
V. Noirot, P. Etienne, M. Champagnac, and D. Eclache*, *Laboratoires Phodé, Terssac, France*.

T169 **Ingestion of a novel galactoglucomannan oligosaccharide-arabinoxylan (GGMO-AX) complex affected growth performance and fermentative and immunological characteristics of broiler chicks challenged with *Salmonella typhimurium*.**
T. A. Faber*[1], R. N. Dilger[1], M. Iakiviak[1], A. C. Hopkins[2], N. P. Price[3], and G. C. Fahey[1], [1]*University of Illinois, Urbana*, [2]*Temple-Inland, Diboll, TX*, [3]*National Center for Agricultural Utilization Research (NCAUR), ARS-USDA, Peoria, IL*.

T170 **Effects of oligosaccharides in a soybean meal-based diet on fermentative and immune responses in broiler chicks challenged with *Eimeria acervulina*.**
T. A. Faber*[1], R. N. Dilger[1], A. C. Hopkins[2], N. P. Price[3], and G. C. Fahey[1], [1]*University of Illinois, Urbana*, [2]*Temple-Inland, Diboll, TX*, [3]*National Center for Agricultural Utilization Research (NCAUR), ARS-USDA, Peoria, IL*.

T171 **Effect of *Lactobacillus gasseri* from chicken origin on the production performance, intestinal flora, and immune function of broiler chickens.**
X.-H. Teng*, X. Li, and J. Li, *College of Animal Science and Technology, Northeast Agricultural University, Harbin, Heilongjiang, China*.

T172 **Effect of supplementing curcumin as feed additive on the performance, biochemical profile, immune response and carcass characteristics in broilers.**
M. Pavani[1], Y. Ramana-Reddy*[1], P. Gopal-Reddy[2], S. R. Sakunthala-Devi[1], T. Monika[1], M. Sudhakar-Reddy[1], and A. Gopal-Reddy[1], [1]*S. V. Veterinary University, Tirupati, Andhra Pradesh, India*, [2]*Tuskegee University, Tuskegee, AL*.

T173 **Effect of a mixture of turmeric and capsicum oleoresins on performance and oocyst excretion of broilers challenged with coccidiosis.**
C. Oguey*[1], V. Brito[2], A. Casarin[3], and M. Forat[3], [1]*Pancosma, Geneva, Switzerland*, [2]*Euronutec, Queretaro, Mexico*, [3]*Instituto Internacional de Investigacion Animal, Queretaro, Mexico*.

T174 **Preventive supplementation with L-arginine and glutamine improved self-renewing of intestinal mucosa in LPS-injected rats.**
X. Wu[1,2], C. Zhang[1,2], Z. Ruan[2], Z. Deng[1], and Y. Yin*[1,2], [1]*State Key Laboratory of Food Science and Technology and College of Life Science and Food Engineering, Nanchang University, China;*, [2]*Institute of Subtropical Agriculture, Chinese Academy of Sciences, China*.

T175 **Effects of different levels of dihydromyricetin from *Ampelopsis grossedentata* in feed on growth performance, immune and antioxidantive activities in *Sarotherodon* sp.**
X. Shu[1], C. Cai[1,2], and Y. L. Yin*[1], [1]*Institute of Subtropical Agriculture, Chinese Academy of Sciences, Changsha, Hunan, China*, [2]*Institute of Biological Resources, Jiangxi Academy of Science, Jiangxi, Nanchang, China*.

Draft

T176 **Effects of mild heat stress on growth and carcass characteristics in broiler chickens.**
E. Sucu[1,2], M. V. Sanz-Fernandez[1], S. C. Pearce[1], A. Nayeri[1], G. P. Murugesan[1], R. R. Rhoads[3], M. E. Persia[1], and L. H. Baumgard*[1], [1]*Department of Animal Science, Iowa State University, Ames*, [2]*Department of Animal Science, Uludag University, Bursa, Turkey*, [3]*Department of Animal Science, Virginia Polytechnic Institute and State University, Blacksburg*.

T177 **Effect of season on copper concentration in blood serum from goats in different reproductive status.**
R. Rojo, B. Albarrán-Portillo, A. García-Martínez, J. Cedillo-Monroy, and J. F. Vázquez-Armijo*, *Centro Universitario UAEM Temascaltepec, Universidad Autónoma del Estado de México, Temascaltepec, México, Mexico*.

T178 **Effects of the beta-2 adrenergic agonist zilpaterol hydrochloride in castrated male goats: Plasma insulin, cortisol, thyroids, triglyceride, and glucose concentrations.**
A. Hatefi*[1], A. Towhidi[1], A. Zail[1], M. Ganjkhanlou[1], and A. Plascencia[2], [1]*Department of Animal Science, University of Tehran, Karaj, Alborz, Islamic Republic of Iran*, [2]*Instituto de Investigaciones en Ciencias Veterinarias, Universidad Autónoma de Baja, California Mexicali, Baja California, México*.

T179 **Effect of water deprivation on the thermoregulatory system of desert goats (*Capra hircus*).**
A. Al-Haidary* and E. Samara, *King Saud University, Riyadh, Saudi Arabia*.

T180 **Comparison of the morphological characters of ovulated follicular waves during synchronized and normal estrous cycle in dairy cattle.**
M. Poorhamdollah*[1], H. Kohram[1,2], A. Z. Shahneh[1], and A. Sadeghi-Sefidmazgi[3], [1]*University of Tehran, Karaj, Tehran, Iran*, [2]*Shahid Chamran University, Ahvaz, Iran*, [3]*Isfahan University of Technology, Isfahan, Iran*.

T181 **Effect of methionine supplementation during postpartum period in dairy cows. II: Embryo quality.**
A. H. Souza*[1], P. D. Carvalho[1], A. R. Dresch[1], L. M. Vieira[1,2], K. S. Hackbart[1], D. Luchini[3], S. Bertics[1], N. Betzold[4], M. C. Wiltbank[1], and R. D. Shaver[1], [1]*University of Wisconsin-Madison, Madsion*, [2]*University of Sao Paulo-VRA, Brazil*, [3]*Adisseo, Alpharetta, GA*, [4]*U.S. Dairy Forage Research Farm, Prairie du Sac, WI*.

T182 **Lactation and physiological performance in Holstein dairy cows managed under summer heat stress conditions in northwest Mexico.**
P. Luna-Nevarez*[1], C. Leyva-Corona[1], F. Rivera-Acuña[1], J. F. Medrano[2], G. Rincon[2], G. A. Silver[3], D. M. Hallford[3], R. L. Ashley[3], and M. G. Thomas[4], [1]*Instituto Tecnologico de Sonora, Ciudad Obregon, Sonora, Mexico*, [2]*University of California, Davis*, [3]*New Mexico State University, Las Cruces*, [4]*Colorado State University, Fort Collins*.

T183 **Relative quantification of mRNA abundance for LH receptor, angiogenin and p450scc, and determination of hormone levels in dominant follicles and follicular cysts from dairy cows.**
R. M. Villaseñor-González, J. A. Grado-Ahuir*, E. Burrola-Barraza, P. Hernández-Briano, L. E. Escobedo-Morales, and S. A. Quintana-Quintana, *Facultad de Zootecnia y Ecología, Universidad Autónoma de Chihuahua, Chihuahua, Chihuahua, México*.

T184 **Hormonal regulation of the hedgehog system in ovarian granulosa and theca cells of cattle.**
L. J. Spicer*, P. Y. Aad, and N. B. Schreiber, *Oklahoma State University, Stillwater*.

T185 **Pregnancy per AI of conventional versus sex sorted semen in dairy heifers subjected to a modified CIDR-PGF2α-GnRH timed-AI protocol.**
J. Howard*[1,2], C. Autran[1], J. Branen[2], K. Carnahan[1], R. Kasimanickam[3], G. Sasser[2], and A. Ahmadzadeh[1], [1]*University of Idaho, Moscow*, [2]*BioTracking LLC, Moscow, ID*, [3]*Washington State University, Pullman*.

T186 **Insulin action on hepatic gene expression in dairy cows with different fat mobilization during early lactation.**
H. M. Hammon*[1], U. Kautzsch[1], C. Weber[1], B. Kuhla[1], M. Röntgen[1], and R. M. Bruckmaier[2], [1]*Leibniz Institute for Farm Animal Biology (FBN), Dummerstorf, Germany*, [2]*Veterinary Physiology, Vetsuisse Faculty, Bern, Switzerland*.

T187 **Modulation of the metabolic response to an endotoxin challenge in Brahman heifers through OmniGen-AF supplementation.**
N. C. Burdick*[1], J. A. Carroll[1], J. D. Chapman[2], T. H. Welsh[3], R. C. Vann[4], and R. D. Randel[5], [1]*USDA-ARS, Livestock Issues Research Unit, Lubbock, TX*, [2]*Prince Agri Products Inc., Quincy, IL*, [3]*Texas AgriLife Research, Texas A&M System, College Station*, [4]*MAFES, Mississippi State University, Raymond*, [5]*Texas AgriLife Research, Texas A&M System, Overton*.

T188 **Ultrasound body composition traits response to an endotoxin challenge in Brahman heifers supplemented with OmniGen-AF.**
R. C. Vann*[1], N. C. Burdick[2], J. A. Carroll[2], J. D. Chapman[3], T. H. Welsh[4], and R. D. Randel[5], [1]*MAFES-Brown Loam Experiment Station, Raymond, MS*, [2]*USDA-ARS, Livestock Issues Research Unit, Lubbock, TX*, [3]*Prince Agri Products Inc., Quincy, IL*, [4]*Texas AgriLife Research, Texas A&M University, College Station*, [5]*Texas AgriLife Research, Texas A&M University, Overton*.

T189 **Hepatic expression of mitochondrial respiratory complex genes of pure and crossbred beef cows grazing different herbage allowances of native pastures.**
M. Veyga, A. L. Astessiano, A. Kaitazoff, V. Bassaizteguy, A. I. Trujillo, and M. Carriquiry*, *School of Agronomy, UdelaR, Montevideo, Uruguay*.

Draft

T190 **Expression of adipokines and their receptors in adipose tissue of pure and crossbred beef cows grazing different herbage allowances of native pastures.**
A. Kaitazoff*, A. Casal, A. L. Astessiano, M. Veyga, A. I. Trujillo, and M. Carriquiry, *Facultad de Agronomía, UdelaR, Montevideo, Uruguay*.

T191 **Hepatokines in periparturient dairy cows with different extent of body fat mobilization.**
C. Schäff, T. Laeger, H. M. Hammon, M. Röntgen, and B. Kuhla*, *Nutritional Physiology "Oskar Kellner," Leibniz Institute for Farm Animal Biology (FBN), Dummerstorf, Germany*.

T192 **Glucose and epinephrine tolerance tests in steers categorized as residual feed intake efficient versus inefficient.**
M. H. Ramos*[1], D. H. Keisler[2], and M. S. Kerley[2], [1]*Research Instituto Flavio Guarani - Rehagro, Belo Horizonte, Minas Gerais, Brazil*, [2]*University of Missouri, Columbia*.

T193 **Insertion of used CIDRs on day 3 to 5 post-insemination in heifers to improve pregnancy rate.**
C. E. Ferguson*[1], B. Pousson[1], H. Nordberg[1], J. Veillon[1], W. Storer[1], and D. J. Kesler[2], [1]*McNeese State University, Lake Charles, LA*, [2]*University of Illinois, Champaign-Urbana*.

T194 **Effect of phase of estrous cycle and fixed-timed insemination on fertility of Criollo cows after a norgestomet or progesterone based treatment.**
A. Quezada-Casasola*[1,2], L. Avendaño-Reyes[1], J. A. Ramírez-Godínez[3], J. R. Núñez-Cuesta[2], F. J. Carlos-Pérez[2], G. Mena-Ortíz[2], and K. Siqueiros[2], [1]*Instituto de Ciencias Agrícolas, Universidad Autónoma de Baja California, Mexicali, B. C., México*, [2]*Universidad Autónoma de Ciudad Juárez, Cd. Juárez, Chihuahua, México*, [3]*Universidad Autónoma de Chihuahua, Chihuahua, Chihuahua, México*.

T195 **Injection site does not alter effectiveness of beef cattle synchronization.**
C. L. Pickworth*[1,2], D. H. Poole[2], and W. Greene[1], [1]*The Ohio State University, Wooster*, [2]*North Carolina State University, Raleigh*.

T196 **Presynchronizing $PGF_{2\alpha}$ injection before a fixed time artificial insemination (TAI) CO-Synch + CIDR program.**
S. L. Hill*[1], S. L. Pulley[1], H. I. Mellieon[1], K. C. Olson[1], J. R. Jaeger[1], R. M. Breiner[1], G. A. Perry[2], G. C. Lamb[3], and J. S. Stevenson[1], [1]*Kansas State University, Manhattan*, [2]*South Dakota State University, Brookings*, [3]*University of Florida, Marianna*.

T197 **Effects of pregnancy on endometrial gene expression related to amino acid, fatty acid and glucose metabolism in dairy cattle.**
R. L. A. Cerri*[1,2], I. M. Thompson[1], I. H. Kim[3], A. D. Ealy[1], P. J. Hansen[1], C. R. Staples[1], J. L. Li[1], and W. W. Thatcher[1], [1]*University of Florida, Gainesville*, [2]*University of British Columbia, Vancouver, BC, Canada*, [3]*Chungbuk National University, South Korea*.

T198 **Use of bovine pregnancy-associated glycoproteins (bPAGs) to diagnose pregnancy in postpartum Nelore beef cows.**
K. G. Pohler*[1], M. F. Smith[1], T. Martins[2], R. F. G. Peres[3], and J. L. M. Vasconcelos[2], [1]*Division of Animal Sciences, University of Missouri, Columbia*, [2]*FMVZ – UNESP, Botucatu, SP, Brazil*, [3]*Agropecuária Fazenda Brasil, Barra do Garças, MT, Brazil*.

T199 **Fetal to maternal transplacental DNA transfer in female beef cattle.**
D. R. Eborn*, T. G. McDaneld, R. M. Thallman, and S. E. Echternkamp, *USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE*.

T200 **Nutrient restriction during early pregnancy alters cotyledon arterial vascular reactivity in response to bradykinin in beef cows.**
A. Reyaz*[1], F. Yao[2], M. S. Sane[2], L. E. Camacho[1], C. O. Lemley[1], K. C. Swanson[1], S. T. O'Rourke[2], and K. A. Vonnahme[1], [1]*Center for Nutrition and Pregnancy, Department of Animal Sciences, Fargo*, [2]*Department of Pharmaceutical Sciences, North Dakota State University, Fargo*.

T201 **Assessment of serum IGF-1 and β-hydroxybutyrate concentrations on reproductive performance prior to calving and breeding in young beef cows grazing native range.**
J. T. Mulliniks*[1], A. J. Roberts[2], R. C. Waterman[2], T. W. Geary[2], E. J. Scholljegerdes[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*.

T202 **Sex comparison of white Fulani cattle blood profile in southwestern Nigeria.**
A. O. Ladokun*[1], O. A. Oyebode[1], and T. O. Ososanya[2], [1]*University of Agriculture, Abeokuta, Ogun, Nigeria*, [2]*University of Ibadan, Ibadan, Oyo, Nigeria*.

T203 **Maternal diet restriction effects on fetal organ weights in beef cows during early pregnancy.**
L. E. Camacho*, C. O. Lemley, T. J. Swanson, K. C. Swanson, and K. A. Vonnahme, *Department of Animal Sciences, North Dakota State University, Fargo*.

T204 **Maternal feed efficiency during gestation is correlated with offspring birth weight and girth in nutrient restricted and control-fed ewes.**
A. M. Meyer*[1], K. A. Vonnahme[2], D. A. Redmer[2], L. P. Reynolds[2], and J. S. Caton[2], [1]*Department of Animal Science, University of Wyoming, Laramie*, [2]*Center for Nutrition and Pregnancy, Department of Animal Sciences, North Dakota State University, Fargo*.

T205 **Nutrient intake during lactation affects performance of beef cows and calf growth.**
K. J. McLean*, B. H. Boehmer, L. J. Spicer, and R. P. Wettemann, *Oklahoma Agricultural Experiment Station, Stillwater*.

Draft

T206 **Mineral supplementation associated with Megalac E and/or citrus pulp during timed AI synchronization programs in post-partum Nellore cows.**
M. V. Biehl*[1], A. V. Pires[2,1], I. Susin[2], D. D. Nepomuceno[2], J. R. S. Goncalves[3], R. Sartori[2], F. M. da Rocha[1], L. H. Cruppe[4], J. L. M. Vasconcelos[5], and M. L. Day[4], [1]*University of Sao Paulo, Pirassununga, SP, Brazil*, [2]*University of Sao Paulo, Piracicaba, SP, Brazil*, [3]*Experimental Station Hildegard Georgina Von Pritzelwitz, Londrina, PR, Brazil*, [4]*The Ohio State University, Columbus*, [5]*Sao Paulo State University, Botucatu, SP, Brazil*.

T207 **Different luteolytic doses of $PGF_{2\alpha}$ in Nellore cows on days 5 and 7 of the estrous cycle.**
M. V. C. Ferraz Junior[1], A. V. Pires[2], R. Sartori[2], M. V. Biehl*[1], D. D. Nepomuceno[2], I. Susin[2], E. M. Ferreira[2], F. M. Rocha[1], J. R. S. Goncalves[3], L. H. Cruppe[4], and M. L. Day[4], [1]*University of Sao Paulo, Pirassununga, SP, Brazil*, [2]*University of Sao Paulo, Piracicaba, SP, Brazil*, [3]*Experimental Station Hildegard Georgina Von Pritzelwitz, Londrina, PR, Brazil*, [4]*The Ohio State University, Columbus*.

T208 **Relationship of body condition with serum prolactin, antral follicle count, and calving rate of beef cows.**
M. L. Looper*[1], J. D. Patterson[1], B. C. Williamson[1], D. M. Hallford[2], and C. F. Rosenkrans[1], [1]*University of Arkansas, Fayetteville*, [2]*New Mexico State University, Las Cruces*.

T209 **Serum progesterone concentrations in Holstein and Nelore cows after the insertion of two different progesterone devices.**
A. B. Nascimento*[1], P. L. J. Monteiro[1], F. L. M. Silva[1], M. M. Guardieiro[1], A. B. Prata[1], G. P. Nogueira[2], G. B. Mourão[1], M. C. Wiltbank[3], A. V. Pires[1], and R. Sartori[1], [1]*University of São Paulo, Piracicaba, SP, Brazil*, [2]*São Paulo State University, Araçatuba, SP, Brazil*, [3]*University of Wisconsin-Madison, Madison*.

Production, Management and the Environment
Beef, Swine, Sheep

T210 **Management and facility factors that affect mortality in grow-finishing pigs.**
P. S. Agostini*[1,2], A. G. Fahey[2], E. G. Manzanilla[1], J. V. O'Doherty[2], C. de Blas[3], and J. Gasa[1], [1]*Universitat Autònoma de Barcelona, Bellaterra, Spain*, [2]*University College Dublin, Belfield, Dublin, Ireland*, [3]*Universidad Politécnica de Madrid, Madrid, Spain*.

T211 **Housing and management factors that affect feed conversion ratio in grow-finishing pigs.**
P. S. Agostini*[1,2], A. G. Fahey[2], E. G. Manzanilla[1], J. V. O'Doherty[2], C. de Blas[3], and J. Gasa[1], [1]*Universitat Autònoma de Barcelona, Bellaterra, Spain*, [2]*University College Dublin, Belfield, Dublin, Ireland*, [3]*Universidad Politécnica de Madrid, Madrid, Spain*.

T212 **Management and facility factors that affect the variability of average daily gain in grow-finishing pigs.**
P. S. Agostini*[1,2], A. G. Fahey[2], E. G. Manzanilla[1], J. V. O'Doherty[2], C. de Blas[3], and J. Gasa[1], [1]*Universitat Autònoma de Barcelona, Bellaterra, Spain*, [2]*University College Dublin, Belfield, Dublin, Ireland*, [3]*Universidad Politécnica de Madrid, Madrid, Spain*.

T213 **Effects of herb supplementation on growth performance, litter performance, and diarrhea occurrence in lactating sows and piglets.**
J. H. Jung*, J. P. Lee, and I. H. Kim, *Department of Animal Resource and Science, Dankook University, Cheonan, Choongnam, South Korea*.

T214 **Wood to Feed: Diversifying income opportunities by increasing the livestock feeding value of woody plant species.**
T. R. Whitney*[1], J. W. Walker[1], W. C. Stewart[1], R. J. Ansley[2], B. D. Lambert[3], A. F. Cibils[4], C. B. Scott[5], J. L. Johnson[6], T. Bader[7], W. Winters[8], L. O. Tedeschi[9], G. E. Carstens[9], and J. P. Muir[3], [1]*Texas AgriLife Research, San Angelo*, [2]*Texas AgriLife Research, Vernon*, [3]*Texas AgriLife Research, Stephenville*, [4]*New Mexico State University, Las Cruces*, [5]*Angelo State University, San Angelo, TX*, [6]*Texas AgriLife Extension, Stephenville*, [7]*Cedar Beetle, Concan, TX*, [8]*Novas Wood Group, Houston, TX*, [9]*Texas A&M University, College Station*.

T215 **Effect of body size on feed intake and methane emissions from ewes offered fresh ryegrass.**
M. D. Fraser, H. Fleming, V. J. Theobald, and J. M. Moorby*, *Institute of Biological, Environmental and Rural Sciences, Aberystwyth University, Aberystwyth, UK*.

T216 **Fifty years of the Wyoming ram test: How have sheep changed?**
D. J. Burton*, P. A. Ludden, R. H. Stobart, and B. M. Alexander, *University of Wyoming, Laramie*.

T217 **The environmental and economic impact of removing growth-enhancing technologies from United States beef production.**
J. L. Capper[1] and D. J. Hayes*[2], [1]*Washington State University, Pullman*, [2]*Iowa State University, Ames*.

T218 **Drought management: Replacing hay with a field pea/co-product supplement fed daily or on alternate days.**
D. G. Landblom*[1] and S. Senturklu[2], [1]*North Dakota State University-Dickinson Research Extension Center, Dickinson*, [2]*Canakkale Onsekiz Mart Universitesi, BMYO, Canakkale, Turkey*.

T219 **Effect of grazing stockpiled perennial forages on beef cow performance, nutrient intake and soil nutrients.**
H. A. Lardner*[1,2] and D. Damiran[1,2], [1]*Western Beef Development Centre, Humboldt, Saskatchewan, Canada*, [2]*Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, Saskatchewan, Canada*.

Draft

T220 **The environmental, economic and social implications of improving yield and average daily gain in beef production.**
R. R. White* and J. L. Capper, *Washington State University, Pullman*.

T221 **Body development and endocrine relations at puberty in crossbred heifers.**
J. O. J. Barcellos*[1], C. McManus[1], L. C. Canellas[1], E. R. Prates[1], S. R. Menegassi[1], J. Braccini Neto[1], and R. P. Oaigen[2], [1]*Federal University of Rio Grande do Sul, Porto Alegre, RS, Brazil*, [2]*Federal University of Para, Belém, PA, Brazil*.

T222 **Effects of temporary calf removal (CR) prior to fixed-time AI (TAI) on pregnancy rates and subsequent calf performance in suckled beef cows.**
G. H. L. Marquezini*, F. M. C. Silva, K. M. Bischoff, T. E. Black, V. R. G. Mercadante, N. DiLorenzo, and G. C. Lamb, *North Florida Research and Education Center, University of Florida, Marianna*.

T223 **Effect of cattle processing and handling on changes in measures of temperament during a 70-d feed efficiency test.**
K. M. Bischoff*, T. E. Black, V. R. G. Mercadante, G. H. L. Marquezini, D. Henry, N. DiLorenzo, and G. C. Lamb, *North Florida Research and Education Center, University of Florida, Marianna*.

T224 **Heterosis of productivity rates in the breeding cycle of pure and crossbred Hereford and Angus cattle grazing native pastures at low and high allowances.**
A. C. Espasandin*[1,3], M. do Carmo[1], C. R. López-Mazz[1,2], M. Carriquiry[1], and P. Soca[1], [1]*Udelar School of Agronomy, Departament of Animal and Grass Production, School of Agronomy, Udelar, Uruguay*, [2]*Estación Experimental Bernardo Rosengurtt, Cerro Largo, Uruguay*, [3]*Estación Experimental, Paysandú, Uruguay*.

T225 **Effects of dried distillers grains fed for programmed rate of body weight gain in beef heifers grazing native rangelands prior to breeding on growth and reproductive performance.**
N. P. Miller*, R. C. Dunlap, S. H. Cox, M. M. Marricle, D. M. Hallford, and E. J. Scholljegerdes, *New Mexico State University, Las Cruces*.

T226 **Beef heifer growth and reproductive performance responses to stockpiled fall forage allowances.**
B. L. Bailey*, K. M. Krause, and T. C. Griggs, *West Virginia University, Morgantown*.

T227 **Effects of climate and moon illumination on grazing activity of weaned beef calves during early summer.**
S. Gadberry*[1], W. Whitworth[2], G. Montgomery[2], and K. Simon[1], [1]*University of Arkansas, Little Rock*, [2]*University of Arkansas, Monticello*.

T228 **Riparian management practices in the Manitoba landscape: Off-stream watering systems for beef cattle.**
A. A. Rawluk*[1], G. H. Crow[1], D. M. Veira[2], P. Bullock[1], L. A. Gonzalez[3], and K. H. Ominski[1], [1]*University of Manitoba, Winnipeg, Manitoba, Canada*, [2]*Agriculture & Agri-Food Canada, Agassiz, British Columbia, Canada*, [3]*Commonwealth Scientific and Industrial Research Organisation, Townsville, Queensland, Australia*.

T229 **Effects of injectable trace minerals on the humoral immune response to porcine red blood cell challenge and fertility in beef heifers.**
P. Moriel[1], P. G. M. A. Martins*[1], G. C. Lamb[2], L. J. Havenga[3], and J. D. Arthington[1], [1]*University of Florida, Range Cattle Research and Education Center, Ona*, [2]*University of Florida, North Florida Research and Education Center, Marianna*, [3]*MultiMin USA Inc., Fort Collins, CO*.

T230 **Effect of propionate salt inclusion in postpartum supplementation on young cow reproductive performance.**
J. A. Walker*, G. A. Perry, and K. C. Olson, *South Dakota State University, Brookings*.

T231 **Metabolizable protein supply alters pregnancy and subsequent retention rate during heifer development while grazing dormant winter forage.**
J. T. Mulliniks*[1], D. E. Hawkins[2], K. K. Kane[1], S. H. Cox[1], L. A. Torell[1], E. J. Scholljegerdes[1], and M. K. Petersen[3], [1]*New Mexico State University, Las*, [2]*West Texas A&M University, Canyon*, [3]*USDA-ARS, Fort Keogh Livestock and Range Research Laboratory, Miles City, MT*.

T232 **Winter growing rate of gain on subsequent growth of beef steers grazing a subtropical pasture in summer.**
J. I. Arroquy*[1,3], A. E. Fumagalli[1], D. Kuckseva[2], and P. Vispo[2], [1]*INTA EEA Santiago del Estero, Santiago del Estero, Argentina*, [2]*INTA EEA Colonia Benitez, Resistencia, Chaco, Argentina*, [3]*CONICET, Santiago del Estero, Argentina*, [4]*FAyA-UNSE, Santiago del Estero, Argentina*.

T233 **Effects of weaning age and winter development environment on heifer performance.**
N. L. Hojer*[1], M. B. Hubert[2], P. S. Johnson[2], M. H. Price[3], and K. C. Olson[2], [1]*South Dakota State University, Brookings*, [2]*South Dakota State University, Rapid City*, [3]*South Dakota School of Mines & Technology, Rapid City*.

T234 **Blended byproduct feeds in finishing rations on performance, carcass, and fecal characteristics of yearling heifers.**
B. T. Johnson*, C. L. Maxwell, B. K. Wilson, J. J. Wagner, S. L. Roberts, B. W. Woolfolk, C. J. Richards, and C. R. Krehbiel, *Oklahoma State University, Department of Animal Science, Stillwater*.

T235 **Transit effects on fecal *E. coli* O157:H7 prevalence and coliform concentrations in feedlot cattle.**
C. C. Aperce*, C. A. Alvarado, C. L. Van Bibber, K. A. Miller, and J. S. Drouillard, *Kansas State University, Animal Sciences and Industry, Manhattan*.

Draft

T236 **Cattle anthelmintic resistance testing and training in North Carolina.**
N. C. Whitley[1], M. L. Alley[2], R. M. Kaplan[3], S. Howell[3], K. Moulton[1], R. A. Franco*[1], and A. E. Cooper[1], [1]*North Carolina A&T State University, Greensboro*, [2]*North Carolina State University, Raleigh*, [3]*University of Georgia, Athens*.

T237 **Effects of temperament on physiological responses, feedlot performance, and carcass characteristics of Nelore steers.**
C. L. Francisco[1,4], A. M. Jorge*[1], F. D. Rezende[2], A. Schmidek[2], J. M. B. Benatti[3], M. H. Faria[2], E. Oba[1], and R. F. Cooke[4], [1]*Universidade Estadual Paulista - FMVZ, Botucatu, SP, Brazil*, [2]*APTA, Colina, SP, Brazil*, [3]*Universidade Estadual Paulista - FCAV, Jaboticabal, SP, Brazil*, [4]*Oregon State University, EOARC, Burns*.

T238 **Skin temperature differentials in relation to residual feed intake in beef cattle using infrared thermography.**
L. S. Martello*[1], P. R. Leme[1], S. da Luz e Silva[1], R. da Costa Gomes[2], C. A. Zotti[1], C. L. Oliveira[1], and T. F. Canata[1], [1]*Faculdade de Zootecnia e Engenharia de Alimentos, Universidade de São Paulo, Pirassununga, SP, Brazil*, [2]*Faculdade de Zootecnia, Universidade Estadual de Londrina, Londrina, PR, Brazil*.

Ruminant Nutrition
Beef: Co-products

T239 **Microbial community shifts during anaerobic digestion of finishing cattle manure with and without distillers grains in the diet.**
S. C. Fernando, A. K. Watson, Y. A. Wanniarachchi, T. J. Klopfenstein, G. E. Erickson, J. L. Harding, A. L. Shreck*, C. J. Johnson, and M. M. Klosterman, *University of Nebraska, Lincoln*.

T240 **Effects of crude glycerin on in vitro gas production and VFA profiles in Nellore feedlot steers.**
E. H. C. B. van Cleef*[1,2], J. M. B. Ezequiel[2], A. P. D'Aurea[1,2], A. C. Homem Junior[1,3], F. B. O. Scarpino[1,4], R. M. P. Pardo[5], and E. M. Ferreira[6], [1]*São Paulo State University, Jaboticabal, São Paulo, Brazil*, [2]*FAPESP*, [3]*CAPES*, [4]*CNPq*, [5]*Sucre University, Sincelejo, Colombia*, [6]*University of São Paulo, Piracicaba, São Paulo, Brazil*.

T241 **Effect of lipid sources addition on nutrient intake of steers finished at feedlot.**
G. Fiorentini*[1,2], I. P. C. Carvalho[1,2], J. F. Lage[1,2], R. C. Canesin[1,2], C. S. Ribeiro Junior[1,2], and T. T. Berchielli[1,3], [1]*Universidade Estadual Paulista (UNESP) - FCAV, Jaboticabal, SP, Brasil*, [2]*Fundaçao de Amparo à Pesquisa do Estado de Sao Paulo (FAPESP), Sao Paulo, SP, Brazil*, [3]*Instituto Nacional de Ciência e Tecnologia em Ciência Animal (INCT-CA), Brasília, DF, Brazil*.

T242 **Feeding distillers grains as an energy source to gestating and lactating beef heifers: Impact on steer progeny longissimus muscle fatty acid profile.**
P. J. Gunn*[1], G. A. Bridges[2], R. P. Lemenager[1], and J. P. Schoonmaker[1], [1]*Department of Animal Sciences, Purdue University, Lafayette, IN*, [2]*North Central Research and Outreach Center, University of Minnesota, Grand Rapids*.

T243 **Effect of distillers grain supplementation on fescue intake and utilization.**
C. A. Schaeffer*, E. S. Vanzant, J. W. Lehmkuler, and K. R. McLeod, *University of Kentucky, Lexington*.

T244 **Effect of soybean hull level on diet digestibility and growth performance of beef calves.**
J. R. Russell*, M. S. Kerley, and W. J. Sexten, *University of Missouri, Columbia*.

T245 **Ruminal fermentation and blood metabolites of Holstein steers fed diets differing in wheat processing and fat source.**
K. Erjaei, A. Zali, M. Ganjkhanlou*, and M. Dehghan-Banadaky, *University of Tehran, Tehran, Iran*.

T246 **Feedlot performance and fatty acid composition of muscles from Holstein steers fed diets differing in wheat processing and fat source.**
K. Erjaei, A. Zali, M. Ganjkhanlou*, and M. Dehghan-Banadaky, *University of Tehran, Tehran, Iran*.

T247 **Evaluation of the ruminal bacterial diversity of cattle fed diets containing citrus pulp pellets (CP) using bacterial tag-encoded FLX amplicon pyrosequencing (bTEFAP).**
P. R. Broadway*[1], T. R. Callaway[2], J. A. Carroll[3], N. C. Burdick[3], J. R. Donaldson[4], R. J. Rathmann[1], B. J. Johnson[1], J. T. Cribbs[1], L. M. Durso[5], D. N. Miller[5], D. J. Nisbet[2], and T. B. Schmidt[6], [1]*Department of Animal and Food Sciences, Texas Tech University, Lubbock*, [2]*Food and Feed Safety Research Unit, Southern Plains Agricultural Research Center, USDA-Agricultural Research Service, College Station, TX*, [3]*Livestock Issues Research Unit, USDA, Agricultural Research Service, Lubbock, TX*, [4]*Department of Biological Sciences, Mississippi State University, Mississippi State*, [5]*Agroecosystem Management Research Unit, USDA-Agricultural Research Service, Lincoln, NE*, [6]*Department of Animal and Dairy Sciences, Mississippi State University, Mississippi State*.

T248 **Rumen dynamics of neutral detergent fiber in grazing steers supplemented with lipid sources.**
I. P. C. Carvalho*[1,4], T. T. Berchielli[1,3], G. Fiorentini[1,4], E. Detmann[2], L. G. Rossi[1], J. F. Lage[1,4], Y. T. G. Salcedo[1], and C. S. Ribeiro Junior[1,4], [1]*Universidade Estadual Paulista Julio de Mesquita Filho, Jaboticabal, Brazil*, [2]*Universidade Federal de Viçosa, Viçosa*, [3]*INCT/CA member, Brazil*, [4]*FAPESP, Sao Paulo, Brazil*.

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T249 **Effects of supplementation with a pressed dried distillers grain block on beef cow performance and hay intake during late gestation.**
C. L. Marshall*[1], J. D. C. Molle[1], J. M. Kern[1], R. A. Vraspir[1], A. N. Scheaffer[2], S. L. Lake[1], and A. M. Meyer[1], [1]*Department of Animal Science, University of Wyoming, Laramie*, [2]*SweetPro LLC, Walhalla, ND*.

T250 **Supplementing urea in beef finishing diets containing 25% modified distillers grains has no influence on cattle performance, but does decrease marbling in yearling steers.**
L. J. Garbel* and B. P. Holland, *South Dakota State University, Brookings*.

T251 **Effects of alternate day feeding of dried distillers grains plus solubles on ruminal ammonia concentration, blood urea nitrogen, nonesterified fatty acids, and insulin-like growth factor I in forage-fed steers.**
S. I. Klein*[1], A. M. Meyer[2], Q. P. Larson[1], J. S. Caton[1], and C. R. Dahlen[1], [1]*Department of Animal Sciences, North Dakota State University, Fargo*, [2]*Department of Animal Sciences, University of Wyoming, Laramie*.

T252 **Carcass traits of steers finished in feedlot fed crude glycerin.**
J. F. Lage*, T. T. Berchielli, E. San Vito, A. F. Ribeiro, R. A. Silva, E. E. Dallantonia, L. M. Delevatti, B. O. Felipe, M. Machado, P. M. França, and R. A. Reis, *Universidade Estadual Paulista "Júlio de Mesquita Filho," Jaboticabal, São Paulo, Brazil*.

T253 **Performance of Nellore steers receiving protected linseed oil during different periods of feedlot.**
W. Henrique*[1], V. G. Carvalho[2], T. M. Pivaro[2], J. L. V. Coutinho Filho[1], A. A. M. Sampaio[2], E. A. Oliveira[2,3], and B. L. Rosa[2], [1]*Sao Paulo Agency for Agribusiness Tecnhology, Sao Jose Rio Preto, Sao Paulo, Brazil*, [2]*FCAV/Sao Paulo State University, Jaboticabal, Sao Paulo, Brazil*, [3]*FAPESP Post-doctorate fellowship, Sao Paulo, Sao Paulo, Brazil*.

T254 **Performance of crossbred heifers and steers fed increasing linseed oil levels.**
W. Henrique*[1], B. L. Rosa[2], E. A. Oliveira[2,3], A. A. M. Sampaio[2], T. M. Pivaro[2], A. T. Andrade[2], and V. G. Carvalho[2], [1]*Sao Paulo Agency for Agribusiness Technology, Sao Jose Rio Preto, Sao Paulo, Brazil*, [2]*FCAV/Sao Paulo State University, Jaboticabal, Sao Paulo, Brazil*, [3]*FAPESP Post-doctorate fellowship, Sao Paulo, Sao Paulo, Brazil*.

T255 **Performance of growing Nellore steers on pasture in the dry season fed crude glycerin.**
E. San Vito*, T. T. Berchielli, J. F. Lage, R. C. Canesin, R. A. Reis, C. S. R. Junior, L. M. Delevatti, M. Machado, E. E. Dallantonia, A. F. Ribeiro, and R. A. Silva, *Universidade Estadual Paulista "Julio de Mesquita Filho," Jaboticabal, São Paulo, Brazil*.

T256 **Palatability of post-extraction algal residue as a protein supplement for cattle.**
M. L. Drewery*, J. E. Sawyer, and T. A. Wickersham, *Texas A&M University, College Station*.

T257 **Protein sources and nitrogen associated with the residual biodiesel glycerin supplements to fattening cattle during the rainy season: performance productive.**
A. J. Neto[1], J. T. Zervoudakis[1], L. da Silva Cabral[1], L. K. H. Zervoudakis*[1], R. L. Galati[1], P. V. R. Paulino[2], L. C. R. P. Silva[1], R. P. da Silva[1], J. Q. Soares[1], and T. de Paulo Trindade[1], [1]*Universidade Federal de Mato Grosso, Cuiabá, Mato Grosso, Brazil*, [2]*Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil*.

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Ruminant Nutrition
Dairy II

T258 **Oocyte and embryo quality of dairy cows fed omega 3 and 6 fatty acids sources in the transition period and early lactation.**
J. R. Gandra*, R. D. Mingoti, L. C. Verdurico, R. V. Barletta, J. E. Freitas, C. S. Takiya, T. H. A. Vendramine, R. Gardinal, and F. P. Rennó, *1University of Sao Paulo, Sao Paulo, Brazil*.

T259 **Effects of different PUFAs supplementation during the postpartum periods of early lactating dairy cows. I: Milk production and composition.**
E. Dirandeh[1], A. Towhidi*[1], M. Ganjkhanlou[1], S. Zeinoaldini[1], Z. Ansari Pirsaraei[2], and A. R. Zarenezhad[3], [1]*Department of Animal Science, Faculty of Agricultural Science and engineering, University College of Agriculture and Natural Resources, University of Tehran, Karaj, Tehran, Iran*, [2]*Department of Animal Science, Faculty of Animal Science and Fishery, Sari University of Agricultural and Natural Resources, Sari, Mazandaran, Iran*, [3]*Mahdasht Dairy Farm, Sari, Mazandaran, Iran*.

T260 **Effects of lipid and propionic acid infusions on feed intake of lactating dairy cows.**
S. E. Stocks* and M. S. Allen, *Michigan State University, East Lansing*.

T261 **Relationships between ruminal volatile fatty acid concentrations, milk production, digestibility, and milk fatty acid composition in dairy cows.**
A. N. Hristov*[1], K. J. Shingfield[2], P. Huhtanen[3], J. L. Firkins[4], and K. Harvatine[1], [1]*The Pennsylvania State University, University Park*, [2]*MTT Agrifood Research Finland, Jokioinen, Finland*, [3]*Swedish University of Agricultural Sciences, Umeå, Sweden*, [4]*The Ohio State University, Columbus*.

T262 **Occurrence and concentration of mycotoxins, molds and yeasts in total mixed rations from South Dakota and Minnesota dairy farms.**
F. Diaz-Royon*[1], A. Garcia[1], K. F. Kalscheur[1], K. A. Rosentrater[2], J. S. Jennings[3], and K. Mjoun[3], [1]*Dairy Science Department, South Dakota State University, Brookings*, [2]*Department of Agricultural and Biosystems Engineering, Iowa State University, Ames*, [3]*Alltech South Dakota, Brookings*.

T263 **Feed restriction, but not l-carnitine infusion, affects the liver transcriptome with an evident induction of gluconeogenesis and inhibition of energy production and sterol synthesis in mid-lactating dairy cows.**
H. Akbar*, M. Bionaz, D. B. Carlson, S. L. Rodriguez-Zas, R. E. Everts, H. A. Lewin, J. K. Drackley, and J. J. Loor, *University of Illinois, Urbana*.

T264 **A comparison of methods to analyze physical effective factor and physically effective NDF in TMR and orts.**
S. D. Ranathunga*, K. F. Kalscheur, and D. P. Casper, *Dairy Science Department, South Dakota State University, Brookings*.

T265 **Effect of post-ruminal supplementation of phytonutrients on bacterial diversity in feces of dairy cows.**
J. Oh*[1], A. N. Hristov[1], C. Lee[1], K. Heyler[1], T. Cassidy[1], S. Dowd[2], and D. Bravo[3], [1]*The Pennsylvania State University, University Park*, [2]*MR DNA Molecular, Shallowater, TX*, [3]*Pancosma, Geneva, Switzerland*.

T266 **Applicability of the plasma free amino acid dose response approach for determining lysine bioavailability of ruminally protected lysine products.**
N. L. Whitehouse*[1], E. S. Fletcher[1], A. F. Brito[1], and C. G. Schwab[2], [1]*University of New Hampshire, Durham*, [2]*Schwab Consulting LLC, Boscobel, WI*.

T267 **Physiological variables associated with reproductive success in dairy cows with different prepartum feeding strategies.**
F. C. Cardoso*, N. V. L. Serão, and J. K. Drackley, *University of Illinois, Urbana*.

T268 **Plasma responses to intra-ruminal or post-ruminal administration of 2-hydroxy-4-methylthio-butanoic acid and its isopropyl ester in dairy cattle to evaluate rumen escape.**
G. I. Zanton*, S. E. Bettis, and M. Vazquez-Anon, *Novus International, Inc., St. Charles, MO*.

T269 **Casein and fatty acid fractions in milk are affected by parity and nutritional regulated body condition score at the beginning of the transition period in dairy cows under grazing conditions.**
V. Artegoitia*[1,2], A. Meikle[2], L. Olazabal[3], J. P. Damian[2], M. L. Adrien[1], D. A. Mattiauda[1], J. Bermudez[1], A. Torre[3], and M. Carriquiry[1], [1]*Facultad de Agronomía, Universidad de la República Oriental del Uruguay, Montevideo, Uruguay*, [2]*Facultad de Veterinaria, Universidad de la República Oriental del Uruguay, Montevideo, Uruguay*, [3]*Laboratorio Tecnológico del Uruguay, Montevideo, Uruguay*.

T270 **Arterial amino acid concentrations drives milk yield in postpartum transition dairy cows.**
M. Larsen* and N. B. Kristensen, *Department of Animal Science, Aarhus University, Foulum, Tjele, Denmark*.

T271 **Productive performance of dairy cows fed with omega 3 and 6 fatty acids sources in the transition period and early lactation.**
J. R. Gandra*, L. C. Verdurico, R. D. Mingoti, R. V. Barletta, J. E. Freitas, C. E. Araújo, K. A. Koyama, G. D. Calomeni, E. Ferreira de Jesus, and F. P. Rennó, *University of Sao Paulo, Sao Paulo, Brazil*.

T272 **Effects of 18-carbon fatty acids on triacylglycerol accumulation in bovine mammary epithelial cells in vitro.**
R. L. Cui, J. Q. Wang*, H. Y. Wei, D. P. Bu, X. M. Nan, H. Hu, P. Sun, and L. Y. Zhou, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*.

T273 **Effects of 18-carbon fatty acids on cell proliferation and triacylglycerol accumulation in bovine mammary epithelial cells in vitro.**
R. L. Cui, J. Q. Wang*, H. Y. Wei, D. P. Bu, X. M. Nan, H. Hu, P. Sun, and L. Y. Zhou, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*.

T274 **Lipopolysaccharide-induced alterations in milk fatty acid composition and mRNA expression of genes related to fatty acid metabolism.**
Y. D. Zhang, J. Q. Wang*, D. P. Bu, T. Hu, X. M. Nan, H. Hu, R. L. Cui, and L. Y. Zhou, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*.

T275 **Hepatic expression of GH-IGF axis genes in Holstein cows with different nutritional managements during early lactation.**
A. L. Astessiano*[1], P. Chilibroste[2], M. Fajardo[2], J. Laporta[1], J. Gil[2], D. A. Mattiauda[1], A. Meikle[3], and M. Carriquiry[1], [1]*1School of Agronomy, UDELAR, Montevideo, Uruguay*, [2]*2School of Veterinary Medicine, UDELAR, Paysandú (EEMAC), Uruguay*, [3]*3School of Veterinary Medicine, UDELAR, Montevideo, Uruguay*.

T276 **New discovery on bovine glutathione peroxidase 3.**
H. R. Khazanehei*, P. Eck, and J. C. Plaizier, *University of Manitoba, Winnipeg, MB, Canada*.

Draft

Ruminant Nutrition
Dairy: Feed Additives II

T277 **Effect of post-ruminal supplementation of phytonutrients on total-tract digestibility, nitrogen losses, and milk production and composition in dairy cows.**
J. Oh*[1], A. N. Hristov[1], C. Lee[1], K. Heyler[1], T. Cassidy[1], and D. Bravo[2], [1]*The Pennsylvania State University, University Park*, [2]*Pancosma, Geneva, Switzerland*.

T278 **Effects of plant extracts on microbial population, methane emission and ruminal fermentation characteristics in in vitro.**
E. T. Kim*[1], K.-S. Min[2], C.-H. Kim[2], S. C. Kim[1], and S. S. Lee[1], [1]*Division of Applied Life Science (BK21 Program), Gyeongsang National University, Jinju, Gyeongsangnamdo, Republic of Korea*, [2]*Hankyong National University, Anseong, Gyeonggido, Republic of Korea*.

T279 **Adding plant oils to dairy goat diets: Changes in milk fatty acids with sampling time.**
A. L. Martínez Marín[1], P. Gómez-Cortés[2], G. Gómez Castro[1], M. Juarez[2], L. M. Pérez Alba[1], M. Pérez Hernández[1], and M. A. de la Fuente*[2], [1]*Universidad de Córdoba, Córdoba, Spain*, [2]*Instituto de Investigación en Ciencias de la Alimentación, Madrid, Spain*.

T280 **Supplementing rumen-protected Met and Lys in low protein diets based on corn distillers grains fed to lactating dairy cows.**
N. E. Lobos*[1], G. A. Broderick[2], and M. J. de Veth[3], [1]*University of Wisconsin, Madison, WI*, [2]*U.S. Dairy Forage Research Center, Madison, WI*, [3]*Balchem Corporation, New Hampton, NY*.

T281 **Performance and diet digestibility of dairy cows supplemented with *Bacillus subtilis* spores.**
V. L. Souza[2], V. A. Silveira[1], N. M. Lopes[1], O. F. Zacaroni[1], R. A. M. Pereira[3], J. A. de Freitas*[2], R. Almeida[2], and M. N. Pereira[1], [1]*Universidade Federal de Lavras, Lavras, Brazil*, [2]*Universidade Federal do Parana, Curitiba, Brazil*, [3]*Empresa de Pesquisa Agropecuaria de Minas Gerais, Lavras, Brazil*.

T282 **Milk fatty acids composition of dairy ewes fed increasing levels of an unprotected CLA (UnCLA) supplement.**
D. R. M. Alessio[1], M. Baldin[1], R. Dresch[1], J. Souza[2], M. A. S. Gama[3], M. P. Soares[4], and D. E. Oliveira*[5,1], [1]*Centro de Ciências Agroveterinárias, UDESC, Lages, SC, Brasil*, [2]*Esalq/USP, Piracicaba, SP, Brasil*, [3]*Embrapa, CNPGL, Juiz de Fora, MG, Brasil*, [4]*Instituto Federal Catarinense, Araquari, SC, Brasil*, [5]*Centro de Educação Superior do Oeste, UDESC, Chapecó, SC, Brasil*.

T283 **Effect of monensin and tallow on methane estimation and protozoan and bacterial populations in dairy cows rumen.**
A. R. Castillo-Gonzalez*[1], M. E. Burrola-Barraza[1], J. A. Ortega-Gutierrez[1], M. I. Rivas-Martinez[2], and A. Chavez-Martinez[1], [1]*Facultad de Zootecnia y Ecología, Chihuahua, Chihuaha, México*, [2]*Colegio de Postgraduados, Texcoco, Edo. de México, México*.

T284 **Hepatic transcriptomics in dairy cows supplemented with SmartamineM or MetaSmart during the peripartal period.**
J. S. Osorio*[1], P. Ji[1], S. L. Rodriguez-Zas[1], D. Luchini[2], R. E. Everts[1], H. A. Lewin[1], J. K. Drackley[1], and J. J. Loor[1], [1]*University of Illinois, Urbana*, [2]*Adisseo, Alpharetta, GA*.

T285 **Production response of lactating dairy cows in a confinement operation to a commercial probiotic.**
J. K. Bernard* and N. A. Mullis, *University of Georgia, Tifton*.

T286 **Evaluating in situ procedures for testing lipid encapsulated products — lysine as an example.**
T. F. Gressley*[1], M. J. de Veth[2], N. K. Diana[1], and E. Mackey[1], [1]*University of Delaware, Newark*, [2]*Balchem Corporation, New Hampton, NY*.

T287 **Effects of PEG and water on condensed tannin deactivation and nutrient digestibility of sainfoin in Holstein cows.**
H. Khalilvandi-Behroozyar*[1,2], M. Dehghan-Banadaky[1], K. Rezayazdi[1], and F. Ghaziani[1], [1]*Department of Animal Science, University of Tehran, Karaj, Tehran, Iran*, [2]*Department of Animal Science, University of Urmia, Urmia, West Azerbaijan, Iran*.

T288 **Effect of dietary methionine supplementation in early lactation dairy cows I: dry matter intake, milk yield, milk composition and component yields.**
A. H. Souza*[1], P. D. Carvalho[1], A. R. Dresch[1], L. M. Vieira[1,2], K. S. Hackbart[1], D. Luchini[3], S. Bertics[1], N. Betzold[4], M. C. Wiltbank[1], and R. D. Shaver[1], [1]*University of Wisconsin-Madison, Madison*, [2]*University of Sao Paulo-VRA, SP 05508, Brazil*, [3]*Adisseo, Alpharetta, GA*, [4]*U.S. Dairy Forage Research Farm, Prairie du Sac, WI*.

T289 **Effect of dietary antioxidant and increased rumen unsaturated fatty acid load on milk fat yield and fatty acid composition.**
J. C. Ploetz*, C. L. Preseault, and A. L. Lock, *Michigan State University, East Lansing*.

T290 **Effects of condensed tannins on ruminal VFA profile in fistulated Holstein cows fed sainfoin (*Onobrychis vicifolia*).**
H. Khalilvandi-Behroozyar*[1,2], M. Dehghan-Banadaky[1], K. Rezayazdi[1], and F. Ghaziani[1], [1]*Department of Animal Science, University of Tehran, Karaj, Tehran, Iran*, [2]*Department of Animal Science, University of Urmia, Urmia, West Azerbaijan, Iran*.

T291 **Influence of ionophore source and a proprietary nutrition supplement on the performance and rumen metabolism of Holstein calves previously fed a high plane of milk replacer.**
K. K. Guatam*[1], C. J. Cobb[1], B. S. Obeidat[1], M. L. Galyean[1], B. L. Miller[2], J. A. Davidson[2], K. L. Perfield[3], T. A. Brooks[1], and M. A. Ballou[1], [1]*Department of Animal and Food Sciences, Texas Tech University, Lubbock*, [2]*Land O'Lakes Purina Feed, Gray Summit, MO*, [3]*Elanco, Greenfield, IN*.

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T292 **Effect of feeding *Bacillus subtilis* spores on performance of Holstein dairy calves.**
V. L. de Souza[1], J. A. de Freitas*[1], S. L. Viechinieski[5], P. H. N. Pinto[2], M. N. Pereira[3], and J. C. Souza[4], [1]*Federal University of Parana, Curitiba, Parana, Brazil*, [2]*FAG, Cascavel, Parana, Brazil*, [3]*Federal University of Lavras, Lavras, Minas Gerais, Brazil*, [4]*Federal University of South of MAto Grosso, Aquidauana, Mato Grosso do Sul, Brazil*, [5]*Iguacu Farm - Star Milk, Vera Cruz do Oeste, Parana, Brazil*.

T293 **Interaction between vitamin E and rumen-protected conjugated linoleic acid on milk composition in grazing dairy cows.**
M. Ramírez-Mella[1], O. Hernández-Mendo[1], J. E. Ramírez-Bribiesca[1], R. D. Améndola-Massiotti[2], M. M. Crosby-Galván[1], J. A. Burgueño-Ferreira[3], and G. Aranda-Osorio*[2], [1]*Colegio de Postgraduados, Montecillos, Texcoco, México*, [2]*Universidad Autónoma Chapingo, Chapingo, Texcoco, México*, [3]*Centro Internacional de Mejoramiento de Maíz y Trigo, Estado de México, México*.

T294 **Assessment of lysine released from rumen-protected lysine products exposed to high and low moisture TMR over 24 hours.**
P. Ji*, C. S. Ballard, R. E. Clark, B. M. Sweeney, and C. Kokko, *William H. Miner Agricultural Research Institute, Chazy, NY*.

T295 **Does mechanical mixing of TMR compromise protection efficacy of rumen-protected lysine products?**
P. Ji*, C. S. Ballard, R. E. Clark, B. M. Sweeney, and C. Kokko, *William H. Miner Agricultural Research Institute, Chazy, NY*.

T296 **Ionophore source in a calf starter influences the performance of calves during the immediate post-weaned period.**
C. J. Cobb*[1], B. S. Obeidat[1], D. L. Hanson[1], M. D. Sellers[1], B. L. Miller[2], J. A. Davidson[2], K. L. Perfield[3], and M. A. Ballou[1], [1]*Department of Animal and Food Sciences, Texas Tech University, Lubbock*, [2]*Land O' Lakes Purina Feed, Gray Summit, MO*, [3]*Elanco, Greenfield, IN*.

T297 **Effects of microbial additives on nutrient metabolism in continuous culture of rumen contents.**
W. Braman* and L. C. Solórzano, *Chr. Hansen Inc., Milwaukee, WI*.

T298 **Immunometabolic indices in dairy cows supplemented with Smartamine M or MetaSmart during the peripartal period.**
J. S. Osorio*[1], E. Trevisi[2], P. Ji[1], D. Luchini[3], J. K. Drackley[1], G. Bertoni[2], and J. J. Loor[1], [1]*University of Illinois, Urbana*, [2]*Universita Cattolica del Sacro Cuore, Piacenza, Italy*, [3]*Adisseo, Alpharetta, GA*.

T299 **Ruminal biohydrogenation and abomasal fatty acid flow in dairy cows fed with fatty acids unsaturated sources.**
J. E. Freitas*[1], R. V. Barletta[1], K. Havartine[2], S. L. D. A. Robassini[1], M. D. S. Oliveira[3], B. C. Venturelli[1], E. F. Jesus[1], F. G. Vilela[1], G. D. Calomeni[1], J. R. Gandra[1], T. S. Canaes[1], and F. P. Rennó[1], [1]*University of São Paulo, Pirassununga, SP, Brazil*, [2]*Penn State University, University Park*, [3]*State University Julio de Mesquita, Jaboticabal, SP, Brazil*.

T300 **Evaluation of models ruminal biohydrogenation in dairy cows fed unsaturated fatty acids sources.**
J. E. Freitas*[1], R. V. Barletta[1], K. Harvatine[2], V. P. Bettero[1], M. D. S. Oliveira[3], B. C. Venturelli[1], R. Gardinal[1], J. R. Gandra[1], C. E. Araújo[1], F. G. Vilela[1], V. G. C. Lacuna[1], and F. P. Rennó[1], [1]*University of São Paulo, Pirassununga, SP, Brazil*, [2]*Pennsylvania State University, University Park*, [3]*State University Julio of Mesquita, Jaboticabal, SP, Brazil*.

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Ruminant Nutrition
Feeds

T301 **Evaluating the mineral composition of *Vernonia amygdalina* leaf.**
A. H. Ekeocha*, *University of Ibadan, Ibadan, Oyo, Nigeria*.

T302 **Determination of the nutritional value of some perennial forage species for ruminants.**
C. Bayourthe*[1,2] and C. Julien[1,2], [1]*INRA, UMR1289 TANDEM, Tissus Animaux Nutrition Digestion Ecosystème et Métabolisme, Castanet Tolosan Cedex, France*, [2]*Université de Toulouse, INPT-ENSAT, INP-ENVT, UMR1289 TANDEM, Castanet Tolosan Cedex, France*.

T303 **Dry matter changes in corn silage with rain.**
H. A. Rossow[1], L. Kallaway*[1], N. Falcony[2], and T. Meister[3], [1]*Veterinary Medicine Teaching and Research Center, School of Veterinary Medicine, University of California-Davis, Tulare*, [2]*Alpha Dairy Consulting, Visalia, CA*, [3]*John Deere Forage Products, Moline, IL*.

T304 **Canola meals from different production plants differ in ruminal protein degradability.**
G. A. Broderick*[1], S. Colombini[2], M. A. Karsli[3], L. Nernberg[4], and D. Hickling[4], [1]*U.S. Dairy Forage Research Center, Madison, WI*, [2]*University of Milan, Milan, Italy*, [3]*Yüzüncü Yil University, Van, Turkey*, [4]*Canola Council of Canada, Winnipeg, MB, Canada*.

T305 **Influence of different levels of exogenous enzymes preparation at two application methods on in vitro ruminal fermentation of some fibrous feeds in sheep.**
A. Z. M. Salem*[1], H. Gado[2], N. E. Odongo[3], R. Rojo[4], M. M. Y. Elghandour[1], and A. Olmido[4], [1]*Facultad de Medicina Veterinaria y Zootecnia, Universidad Autónoma del Estado de México, Toluca, Estado de Mexico, Mexico*, [2]*Faculty of Agriculture, Ain Shams University, Cairo, Egypt*, [3]*Animal Production and Health Section, Joint FAO/IAEA Division of Nuclear Techniques in Food and Agriculture, International Atomic Energy Agency, Vienna, Austria*, [4]*CU-UAEM- Temascaltepec, Universidad Autónoma del Estado de México, Estado de México, México*.

T306 **Composition of diets fed to different groups of lactating cows on California dairies.**
A. R. Castillo*[1], N. Silva del Rio[2], N. R. St-Pierre[3], and W. P. Weiss[3], [1]*University of California, Cooperative Extension, Merced*, [2]*University of California, Cooperative Extension, Tulare*, [3]*The Ohio State University, Department of Animal Science, Columbus*.

T307 **Ruminal degradability, duodenal flow, and intestinal digestibility of protein from canola meal or corn and wheat distillers grains in growing beef heifers.**
C. Li[1,2], J. Q. Li[2], K. A. Beauchemin[1], and W. Z. Yang*[1], [1]*Research Centre, Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada*, [2]*College of Animal Science, Inner Mongolia Agricultural University, Hohhot, Inner Mongolia, China*.

T308 **Tables of nutritive values for farm animals in tropical and Mediterranean regions: an important asset for improving the use of local feed resources.**
D. Sauvant*[4,1], G. Tran[1], V. Heuze[1], D. Bastianelli[2], and H. Archimède[3], [1]*Association Française de Zootechnie, Paris, France*, [2]*CIRAD, Systèmes d'élevage et produits animaux, Montpellier, France*, [3]*INRA, UR143 Unité de Recherches Zootechniques, Petit-Bourg, Guadeloupe, France*, [4]*AgroParisTech-INRA, Paris, France*.

T309 **Quality evaluation of italian rye grass and whole crop barley with homofermentative and heterofermentative lactic acid bacteria.**
H. Lee[1], M. Jeong[1], S. Kim[1], L. Mamuad[1], B. Cha[1], E. Kang[1], C. Jeong[1], D. Kim[1], D. Kim[2], and S. Lee*[1], [1]*Sunchon National University, Suncheon, Republic of Korea*, [2]*National Institute of Animal Science, Suwon, Korea*.

T310 **Sunflower cake in multiple supplements for cattle grazing in the dry season: pH and ruminal ammonia nitrogen.**
R. P. da Silva*[1], A. C. Mesacasa[1], J. T. Zervoudakis[1], L. K. Hatamoto-Zervoudakis[1], L. da Silva Cabral[1], F. de Paula Leonel[2], R. G. F. da Silva[1], J. Q. Soares[1], L. C. R. P. Silva[1], A. J. Neto[1], A. de Oliveira Zanette[1], and J. F. W. Koscheck[1], [1]*Federal University of Mato Grosso, Cuiaba, Mato Grosso, Brazil*, [2]*University of ST John King Del, Sao Joao Del-Rei, Minas Gerais Brazil*.

T311 **Prediction of carbohydrate fractions in some tropical grasses.**
R. S. Fukushima*, C. B. Bacha, A. P. Fuzeto, A. C. R. Port, and A. V. Vargas, *Universidade de Sao Paulo, Pirassununga, SP, Brazil*.

T312 **Using the acetyl bromide lignin method to quantify lignin content in forages.**
M. H. Ramos[1], R. S. Fukushima*[2], and M. S. Kerley[1], [1]*University of Missouri, Columbia, MO*, [2]*Universidade de Sao Paulo, Pirassununga, SP, Brazil*.

T313 **Estimates of kinetic degradability parameters and passage of materials originated from intercropping between brachiaria grass and plantations of corn and soybeans.**
T. S. de Oliveira*[1], V. S. de Oliveira[1], T. M. de Oliveira Alves[1], J. C. Pereira[1], and R. A. M. Vieira[2], [1]*Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil*, [2]*Universidade Estadual Norte Fluminense, Campos dos Goytacazes, Rio de Janeiro, Brazil*.

T314 **Utilization of infrared thermography image analysis in ruminant feeding experiments.**
M. S. V. Salles*[1], S. C. Silva[1], L. C. Roma Junior[1], C. E. L. Oliveira[2], F. A. Salles[1], C. M. M. Bittar[3], and L. El Faro[1], [1]*APTA Centro Leste, Ribeirao Preto, Sao Paulo State, Brazil*, [2]*FZEA USP, Pirassununga, Sao Paulo State, Brazil*, [3]*ESALQ USP, Piracicaba, Sao Paulo State, Brazil*.

T315 **Evaluating and refining the CNCPS feed library.**
R. J. Higgs*, L. E. Chase, D. A. Ross, and M. E. Van Amburgh, *Department of Animal Science, Cornell University, Ithaca, NY*.

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Ruminant Nutrition
General II

T316 **Investigation on the nutritive value of *Vernonia amygdalina* leaves (bitter leaves) for ruminant animals.**
A. H. Ekeocha*, *University of Ibadan, Ibadan, Oyo, Nigeria*.

T317 **Screening of dairy cows for ketosis by routine analysis of β-hydroxybutyrate in DHI test milk samples.**
D. E. Santschi* and D. M. Lefebvre, *Valacta, Ste-Anne-de-Bellevue, Quebec, Canada*.

T318 **Prediction of empty body weight of adult Pelibuey ewes.**
A. J. Chay-Canul[1], J. C. Ku-Vera*[2], A. J. Ayala-Burgos[2], J. G. Magaña-Monforte[2], and L. O. Tedeschi[3], [1]*División Académica de Ciencias Agropecuarias, Universidad Juárez Autónoma de Tabasco, Villahermosa, Tabasco, México*, [2]*Facultad de Medicina Veterinaria y Zootecnia, Universidad Autónoma de Yucatán, Yucatán, México*, [3]*Department of Animal Science, Texas A&M University, College Station*.

T319 **Effect of precision processing barley grain on dry matter intake, milk production, rumen pH and nutrient digestibility in lactating dairy cows.**
N. Schlau*[1], L. Duineveld[1], W. Z. Yang[2], T. A. McAllister[2], and M. Oba[1], [1]*University of Alberta, Edmonton, AB Canada*, [2]*Agriculture and Agri-Food Canada Research Centre, Lethbridge, AB Canada*.

T320 **Effects of different levels of quebracho tannins and sunflower oil on nutrients digestibility and milk fatty acids composition in dairy ewes.**
S. N. Al-Dobaib*[1], H. E. M. Kamel[1], M. A. M. M. Shehab-El-Deen[1], and M. Y. Al-Saiady[2], [1]*Qassim University, Buriedah-51452, Saudi Arabia*, [2]*Arabian Agricultural Services Company, Riyadh-11593, Saudi Arabia*.

T321 **Relationships between residual feed intake and performance of Nellore bulls in feedlot.**
T. P. Guimarães[1], J. J. de Resende Fernandes*[1], K. K. G. Moreira[1], M. D. de Freitas Neto[1,2], V. R. M. Couto[1], B. J. M. Lemos[1], L. F. N. Souza[2], and É. G. Moraes[2], [1]*Universidade Federal de Goiás, Goiânia, Goiás, Brazil*, [2]*Nelore Qualitas, Goiânia, Goiás, Brazil*.

T322 **Adipose tissue preferences for acetate in finishing steers.**
W. A. D. Nayananjalie*, T. R. Wiles, D. E. Gerrard, M. A. McCann, and M. D. Hanigan, *Virginia Polytechnic Institute and State University, Blacksburg*.

T323 **Effects of different amino acid patterns on the expression of four major milk protein genes in primary cultured bovine mammary epithelial cells.**
X. F. Zhang[1], M. Gao*[2], R. P. Du[2], D. X. Lu[2], C. J. Ao[1], K. Erdene[1], and H. Zhang[1], [1]*Inner Mongolia Agricultural University, Hohhot, Inner Mongolia, China*, [2]*Inner Mongolia Academy of Agricultural & Animal Husbandry Sciences, Hohhot, Inner Mongolia, China*.

T324 **Evaluation of equations to predict body composition in Nellore bulls.**
L. F. Costa e Silva*, S. C. Valadares Filho, E. Detmann, M. I. Marcondes, and P. P. Rotta, *Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil*.

T325 **Performance of Holstein dairy cows under different feeding strategies in early lactation.**
M. Fajardo*[1], D. A. Mattiauda[1], A. Meikle[2], M. Carriquiry[1], J. Gil[2], G. Motta[1], G. Guala[1], G. Ortega[1], D. Pelaez[1], P. Sorhouet[1], F. Souza[1], and P. Chilibroste[1], [1]*Facultad de Agronomía, Universidad de la República, Montevideo, Uruguay*, [2]*Facultad de Veterinaria, Universidad de la República, Montevideo, Uruguay*.

T326 **Effect of dietary cation-anion difference (DCAD) on beef tenderness.**
J. P. Schoonmaker*, K. T. Korn, K. N. Condron, C. N. Shee, M. C. Claeys, T. D. Nennich, and R. P. Lemenager, *Purdue University, West Lafayette, IN*.

T327 **Performance of early lactation cows fed whole versus chopped sugarcane.**
J. E. P. de la Ossa*[1,2], R. Lana[1,2], and E. M. Balbino[1], [1]*Universidade Federal de Viçosa, Viçosa, MG, Brazil*, [2]*FAPEMIG, Viçosa, MG, Brazil*, [3]*CNPq, Viçosa, MG, Brazil*.

T328 **The relationship of feed efficiency and visceral organ size in growing lambs fed a concentrate or forage-based diet.**
R. A. Vraspir*, M. J. Ellison, K. M. Cammack, and A. M. Meyer, *Department of Animal Science, University of Wyoming*.

T329 **Performance of Nellore young bulls grazing *Brachiaria brizantha* 'Xaraés' supplemented with different lipid sources.**
A. L. S. Valente*, R. A. Reis, T. T. Berchielli, T. Borgui, I. P. Carvalho de Carvalho, and L. G. Rossi, *Sao Paulo State University, Jaboticabal, Sao Paulo, Brazil*.

T330 **Seminiferous tubule traits of lambs fed with cottonseed co-products (*Gossypium* ssp.).**
T. Paim*[1], P. Viana[2], E. Brandão[2], S. Amador[2], T. Barbosa[2], C. Cardoso[2], A. Abdalla[1], C. McManus[3], and H. Louvandini[1], [1]*Center of Nuclear Energy in Agriculture, Piracicaba, SP, Brazil*, [2]*College of Agronomy and Veterinary, University of Brasília, Brasília, DF, Brazil*, [3]*Animal Production Department, University of Rio Grande do Sul, Porto Alegre, RS, Brazil*.

T331 **Fatty acid profile of meat from lambs fed with cottonseed co-products.**
T. Paim[1], P. Viana[2], E. Brandão[2], S. Amador[2], T. Barbosa[2], C. Cardoso[2], B. Berenchtein[1], C. McManus[3], A. Abdalla[1], and H. Louvandini*[1], [1]*Center of Nuclear Energy in Agriculture, Piracicaba, SP, Brazil*, [2]*College of Agronomy and Veterinary, University of Brasília, Brasília, DF, Brazil*, [3]*Animal Production Department, University of Rio Grande do Sul, Porto Alegre, RS, Brazil*.

T332 **Inclusion of urea in spineless cactus diets for Girolando steers.**
R. A. S. Pessoa*[1], R. da Silva Lima[2], W. G. do Nascimento[2], I. Ferraz[3], and P. C. Vasconcelos[2], [1]*Universidade Federal Rural de Pernambuco, Animal Science Department, Recife, Pernambuco, Brazil*, [2]*Universidade Federal Rural de Pernambuco, Unidade Acadêmica de Garanhuns, Garanhuns, Pernambuco, Brazil*, [3]*Instituto Agronômico de Pernambuco, Recife, Pernambuco, Brazil*.

T333 **Levels of roughage supplementation with cottonseed hull for cattle grazing during the rainy transition season: Performance.**
A. J. Neto*[1], J. T. Zervoudakis[1], L. da Silva Cabral[1], L. K. Hatamoto-Zervoudakis[1], R. L. Galati[1], P. V. R. Paulino[2], R. P. da Silva[1], L. C. R. P. Silva[1], J. Q. Soares[1], and A. P. de Souza Borges[1], [1]*Federal University of Mato Grosso, Cuiabá, Mato Grosso, Brazil*, [2]*Federal University of Viçosa, Viçosa, Minas Gerais, Brazil*.

T334 **Blood cell and metabolic profile of Nellore bulls ranked by residual feed intake.**
K. K. G. Moreira[1], J. J. de Resende Fernandes*[1,4], T. P. Guimarães[1], E. A. Bento[3,4], E. Arnhold[1], H. F. Oliveira[1], M. D. de Freitas Neto[1,2], V. R. M. Couto[1], É. G. de Moraes[2], and L. F. N. Souza[2], [1]*Universidade Federal de Goiás, Goiânia, Goiás, Brazil*, [2]*Nelore Qualitas, Goiânia, Goiás, Brazil*, [3]*Instituto Federal Goiano, Rio Verde, Goiás, Brazil*, [4]*Conselho Regional de Medicina Veterinaria e Zootecnia, Goiânia, Goiás, Brazil*.

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T335 **Carcass evaluation of subjected to feed restriction.**
A. R. C. Lima*, M. H. M. da Rocha Fernandes, I. A. M. de Almeida Teixeira, K. T. de Resende, and R. G. Aparecido, *Sao Paulo State University, Faculty of Agriculture and Veterinary Sciences, Jaboticabal, Sao Paulo, Brazil*.

T336 **Carcass traits and meat quality of goats subjected to feed restriction.**
A. K. Almeida*, L. S. Fonseca, D. C. Soares, S. P. Silva, I. A. M. A. Teixeira, K. T. Resende, and H. Borba, *Universidade Estadual Paulista, UNESP, Jaboticabal, São Paulo, Brazil*.

T337 **The relationship between feed efficiency and pancreatic α-amylase and trypsin activity in growing lambs.**
F. E. Doscher*[1], A. M. Meyer[2], M. J. Ellison[2], K. M. Cammack[2], and K. C. Swanson[1], [1]*North Dakota State University, Fargo*, [2]*University of Wyoming, Laramie*.

T338 **Effect of zinc concentration on performance and carcass characteristics of feedlot steers.**
E. Caldera*[1], J. J. Wagner[1,2], K. L. Neuhold[1], G. I. Zanton[3], K. S. Sellins[1], and T. E. Engle[1], [1]*Colorado State University, Fort Collins*, [2]*Southeast Colorado Research Center, CSU, Lamar*, [3]*Novus International Inc., St. Charles, MO*.

T339 **Effects of feeding corn- or legume/grass silage-based diets on ruminal bacteria and archaea communities.**
A. Lettat*, F. Hassanat, and C. Benchaar, *Agriculture and Agri-Food Canada, Dairy and Swine Research and Development Centre, Sherbrooke, QC, Canada*.

T340 **Biochemical blood parameters and liver enzymes of Saanen dairy goats fed with diets containing tannin and polyethylene glycol supplement.**
A. Rahimi[1], A. A. Naserian[1], R. Valizadeh[1], A. Tahmasbi[1], B. Saremi*[2], and A. R. Shahdadi[3], [1]*Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran*, [2]*Institute of Animal Science, Physiology & Hygiene Unit, University of Bonn, Germany*, [3]*Agricultural Sciences & Natural Resources University of Gorgan, Gorgan, Golestan, Iran*.

T341 **Levels of concentrate for crossbred Holstein-Zebu cows under grazing.**
C. P. Ghedini[1], R. P. Lana[1], A. S. Oliveira[2], J. Perottoni[4], D. C. Abreu*[1], R. L. Albino[1], J. E. P. de la Ossa[1], R. M. Paula[1], P. E. P. Barros[3], and F. G. Silva[1], [1]*Universidade Federal de Viçosa, Viçosa, MG, Brazil*, [2]*Universidade Federal do Mato Grosso, Sinop, MT, Brazil*, [3]*Universidade Federal de Lavras, Lavras, MG, Brazil*, [4]*Universidade Federal de Santa Maria, Santa Maria, RS, Brazil*.

T342 **The relationship between feed efficiency traits and fertility in young beef bulls.**
B. J. Awda*[1], S. P. Miller[1], Y. R. Montanholi[1], G. Vander Voort[1], T. Caldwell[1], M. M. Buhr[2], and K. C. Swanson[3], [1]*Department of Animal & Poultry Science, University of Guelph, Guelph, ON, Canada*, [2]*Department of Animal and Poultry Sciences, College of Agriculture & Bioresources, University of Saskatchewan, Saskatoon, SK, Canada*, [3]*Department of Animal Sciences, North Dakota State University, Fargo*.

T343 **Influence of tannins extract addition on feedlot-performance of bulls fed sorghum-based diets.**
R. Barajas*[1], B. J. Cervantes[2], M. A. Espino[1,3], A. Camacho[1], M. Verdugo[1], L. R. Flores[1], S. C. Aréchiga[1], J. J. Lomeli[1], and J. A. Romo[1], [1]*FMVZ-Universidad Autonóma de Sinaloa, Culiacán, Sinaloa, México*, [2]*Ganadera Los Migueles S. A. de C. V., Culiacán, Sinaloa, México*, [3]*Pronutrient Developers, León, Guanajuato, México*.

T344 **Performance of milking crossbred cows under pasture as a function of levels of concentrate in the diet.**
D. C. Abreu*[1], R. P. Lana[1], A. S. Oliveira[2], C. P. Ghedini[1], R. M. Paula[1], R. L. Albino[1], F. G. Silva[1], and E. M. Balbino[1], [1]*Universidade Federal de Viçosa, Viçosa, MG, Brazil*, [2]*Universidade Federal do Mato Grosso, Sinop, MT, Brazil*.

T345 **Effect of supplementation of tannin-extract in corn silage based-diets on performance of growing bulls under commercial feedlot conditions.**
M. A. Espino[1,2] and R. Barajas*[2], [1]*Pronutrient Developers, León, Guanajuato, México*, [2]*Facultad de Medicina Veterinaria y Zootecnia, Universidad Autónoma de Sinaloa, Culiacán, Sinaloa, México*.

T346 **Effect of pasture type and dietary lipid supplementation on animal performance, carcass composition and fatty acid composition of muscle and adipose tissue in lamb.**
N. S. Brooks*[1], J. L. Duynisveld[3], D. M. W. Barrett[1], Y. A. Papadopolous[1,4], J. Wort[2], A. H. Fredeen[1], and K. E. Glover[1], [1]*Nova Scotia Agricultural College, Truro, NS, Canada*, [2]*AgraPoint, Truro, NS, Canada*, [3]*Agriculture and Agri-Food Canada, Nappan, NS, Canada*, [4]*Agriculture and Agri-Food Canada, Truro, NS, Canada*.

T347 **The effect of diet on feed intake traits and relationships with carcass traits in sheep.**
M. J. Ellison*, R. R. Cockrum, K. W. Christensen, R. A. Vraspir, L. Speiser, W. J. Means, A. M. Meyer, and K. M. Cammack, *Department of Animal Science, University of Wyoming*.

T348 **Effects of roughage level and corn processing method on finishing performance of Nellore bulls.**
M. Caetano*[1], R. S. Goulart[2], P. M. Rizzo[1], S. L. Silva[3], P. R. Leme[3], J. S. Drouillard[4], and D. P. D. Lanna[1], [1]*University of Sao Paulo, ESALQ, Piracicaba, SP, Brazil*, [2]*North Dakota State University, Fargo*, [3]*University of Sao Paulo, FZEA, Pirassununga, SP, Brazil*, [4]*Kansas State University, Manhattan*.

T349 **Estimation of carcass and body fat composition using biometric measurements of grazing beef cattle.**
N. F. De Paula[1,2], L. O. Tedeschi[2], M. F. Paulino[1], H. J. Fernandes[3], M. A. Fonseca*[1,2], V. R. M. Couto[1], I. F. S. Maciel[1], and D. M. Almeida[1], [1]*Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil*, [2]*Texas A&M University, College Station*, [3]*Universidade Estadual do Mato Grosso do Sul, Aquidauana, Mato Grosso do Sul, Brazil*.

Draft

T350 **Performance of dairy kids submitted to different sources of goat milk replacers.**
M. I. Marcondes*, L. S. Knupp, A. L. Silva, L. M. Carvalho, M. M. S. Santos, J. S. A. A. Santos, C. G. Vitor, and C. M. Veloso, *Universidade Federal de Viçosa, Viçosa, MG, Brazil*.

T351 **Early feeding of low levels of fat supplement suppresses postprandial in vitro rumen metabolism.**
Q. Baptiste*, K. D'Souza, S. Simpson, S. Chavez, E. Nestor, M. Knights, and E. Felton, *West Virginia University, Morgantown*.

Ruminant Nutrition
Young Stock

T352 **Effects of limiting concentrate during growing period on performance and plasma variables, and gene expression of hepatic gluconeogenic enzymes in Holstein calves.**
J. D. Lohakare*, N. K. Singh, J. Ghassimi Nejad, K. I. Sung, and S. L. Ingale, *College of Animal Life Sciences, Kangwon National University, Chuncheon, Kangwon Province, South Korea*.

T353 **Plane of nutrition during the pre- and post-weaned periods influences the performance and innate immune activity of Jersey calves.**
D. L. Hanson*[1], C. J. Cobb[1], M. D. Sellers[1], T. J. Earleywine[2], and M. A. Ballou[1], [1]*Department of Animal and Food Sciences, Texas Tech University, Lubbock*, [2]*Land O'Lakes, Animal Milk Products Co., Shoreview, MN*.

T354 **Influence of tannins-extract supplementation on plasma urea nitrogen concentration of bull-calves grazing Bermuda grass.**
D. González*[1,2], M. A. Espino[2], and R. Barajas[2], [1]*Instituto Nacional de Investigaciones Forestales, Agrícolas y Pecuarias. Campo Experimental Valle de Culiacán, Culiacán, Sinaloa, México*, [2]*Facultad de Medicina Veterinaria y Zootecnia, Universidad Autónoma de Sinaloa, Culiacán, Sinaloa, México*.

T355 **The influence of grassland management and housing on voluntary dry matter intake in heifers.**
O. Latal*[1], J. Pozdisek[2], and J. Bezdicek[1], [1]*Agrovyzkum Rapotin Ltd., Vikyrovice, Czech Republic*, [2]*Research Institute for Cattle Breeding Ltd., Vikyrovice, Czech Republic*.

T356 **Effect of time of access to temperate forage on intake and digestibility of organic matter and fiber fractions in heifers.**
A. Félix[1], N. Hernández[1], P. Restuccia[1], S. Ruiz[1], M. Aguerre[1], A. Pérez-Ruchel[2], J. L. Repetto[1], and C. Cajarville*[2], [1]*Departamento de Bovinos, Facultad de Veterinaria, UdelaR, Montevideo, Uruguay*, [2]*Departamento de Nutrición Animal, Facultad de Veterinaria, UdelaR, Montevideo, Uruguay*.

T357 **Assessment of bone metabolism in pregnant heifers with high and low residual feed intake.**
R. Dias[1], J. Kim*[1], S. Lopez[2], Y. Montanholi[1], B. Smith[1], S. Miller[1], and J. France[1], [1]*University of Guelph, Guelph, Ontario, Canada*, [2]*Universidad de León, Leon, Leon, Spain*.

T358 **Dried citrus pulp alters feedlot performance of crossbred heifers during the receiving period.**
J. T. Cribbs*[1], T. R. Young[1], M. A. Jennings[1], N. C. Burdick[2], J. A. Carroll[2], T. R. Callaway[3], T. B. Schmidt[4], B. J. Johnson[1], and R. J. Rathmann[1], [1]*Texas Tech University, Lubbock*, [2]*USDA-ARS, Livestock Issues Research Unit, Lubbock, TX*, [3]*USDA-ARS, Food and Feed Safety Research Unit, College Station, TX*, [4]*Mississippi State University, Department of Animal and Dairy Science, Starkville*.

T359 **Effect of time of access to temperate pasture on nitrogen utilization, digestibility of nitrogen and microbial protein synthesis in heifers.**
N. Hernández[1], A. Félix[1], A. Pérez Ruchel[2], M. Aguerre[1], C. Cajarville[2], and J. L. Repetto*[1], [1]*Departamento de Bovinos, Facultad de Veterinaria, UdelaR, Montevideo, Uruguay*, [2]*Departamento de Nutrición, Facultad de Veterinaria, UdelaR, Montevideo, Uruguay*.

T360 **Comparison of pH, volatile fatty acids, and microbial quantification on rumen samples from young calves obtained via cannula or stomach tube.**
M. Terré*[1], Ll. Castells[1], and A. Bach[2,1], [1]*Institut de Recerca i Tecnologia Agroalimentàries, Caldes de Montbui, Spain*, [2]*Institució Catalana de Recerca i Estudis Avançats, Barcelona, Spain*.

T361 **Effects of limiting concentrate during growing period on performance and plasma variables, and gene expression of hepatic gluconeogenic enzymes and visfatin in Korean native beef calves.**
J. D. Lohakare*[1], S. S. Chang[2], N. K. Singh[1], E. G. Kwon[2], J. Ghassimi Nejad[1], K. I. Sung[1], and S. K. Hong[2], [1]*College of Animal Life Sciences, Kangwon National University, Chuncheon, South Korea*, [2]*Hanwoo Experimental Station, National Institute of Animal Science, RDA, Pyeongchang, South Korea*.

T362 **How the provision of forage in pre-weaned calves affects performance and digestibility after weaning.**
Ll. Castells*[1], A. Bach[1,2], C. Montoro[1], E. M. Rodríguez[1], P. Ureña[1], and M. Terré[1], [1]*Department of Ruminant Production, IRTA, Caldes de Montbui, Spain*, [2]*ICREA, Barcelona, Spain*.

Draft

T363 **The effects of confinement and protein levels on carcass traits of kids raised under mixed-species grazing system.**
S. Gebrelul*, L. Gray, R. Marshall, and C. Chisley, *Southern University Ag Center, Baton Rouge, LA*.

T364 **Fatty acids profile in *Longissimus dorsi* of Santa Ines lambs fed with different energy levels.**
P. C. L. Arruda, E. S. Pereira*, P. G. Pimentel, G. M. B. Moreno, J. N. Rocha Junior, J. G. L. Regadas Filho, and R. M. Fontenele, *Federal University of Ceara, Fortaleza, Ceara, Brazil*.

T365 **The effect of induction hypothyroidism on carcass quality and performance in lamb.**
Y. Baghcheghi*, A. Yousefi, A. Z. Shahneh, M. G. Khanlo, and M. Poorhamdollah, *University of Tehran, Karaj, Tehran, Iran*.

T366 **Effect of transient hypothyroidism on lamb's meat quality.**
Y. Baghcheghi*[1], A. Z. Shahneh[1], A. Yousefi[1], M. Poorhamdollah[1], and M. Joki[2], [1]*Department of Animal Sciences, University of Tehran, Karaj, Tehran, Iran*, [2]*Department of Food Sciences, University of Tehran, Karaj, Tehran, Iran*.

T367 **Biochemical and hormonal response and chemical composition of milk following ACTH administration in goats fed lemongrass (*Cymbopogon citratus* (DC.) Stapf).**
T. S. Canaes*[1], S. N. Macedo[1], C. G. Lima[1], V. A. Pimentel[2], and J. A. Negrão[1], [1]*Sao Paulo University, Sao Paulo, Sao Paulo, Brazil*, [2]*Federal University of Espirito Santo, Sao Mateus, Espirito Santo, Brazil*.

T368 **Forage yield and quality changes in mixed cattle and goats grazing practices.**
Y. Ghebreiyessus*, S. Gebrelul, M. Berhane, and R. Payne, *Southern University Ag Center, Baton Rouge, LA*.

T369 **Quantitative traits of carcass of Ile de France lambs fed diets containing different percentages of hay mulberry.**
V. T. Santana, A. G. Silva Sobrinho, L. G. A. Cirne*, V. Endo, N. L. L. Lima, F. A. Almeida, G. M. Manzi, and N. M. B. L. Zeola, *Universidade Estadual Paulista, Jaboticabal, São Paulo, Brazil*.

T370 **Relationships among internal fat depots and subcutaneous fat in sheep.**
R. C. Gomes*, C. Constantino, F. Fernandes, N. A. Koritiaki, M. V. G. Niwa, M. N. Marconato, F. A. B. Castro, and E. L. A. Ribeiro, *Department of Animal Science, State University of Londrina, Londrina, Parana, Brazil*.

T371 **Impact of different stocking rates of goats under pine silvopasture systems on understory biomass, crown cover density, and animal productivity.**
I. Howard*, A. S. Kumi, N. K. Gurung, U. Karki, R. Smith, S. G. Solaiman, W. H. McElhenney, and B. R. Min, *Tuskegee University, Tuskegee, AL*.

T372 **Influence of trenbolone acetate and estradiol ear-implant level on feedlot-performance of hair lambs.**
B. Ortiz*[1], J. J. Álvarez[2], and R. Barajas[1], [1]*FMVZ-Universidad Autonóma de Sinaloa, Culiacán, Sinaloa, México*, [2]*Productores de Ovinos de Guanajuato, SPR de RL, Silao, Guanajuato, México*.

T373 **Femur biometry and densitometry of Saanen goats subjected to feed restriction.**
D. C. Soares*, K. T. Resende, A. K. Almeida, S. P. Silva, M. H. M. R. Fernandes, E. M. Oliveira, S. M. B. Artoni, and I. A. M. A. Teixeira, *UNESP/Sao Paulo State University, Jaboticabal, Sao Paulo, Brazil*.

T374 **Influence of dry period length on blood leukocyte subsets of Sarda dairy ewes and their offspring.**
P. Bonelli[1], C. Carzedda[2], A. Fenu[2], G. Spanu[2], C. Dimauro*[2], R. Re[1], P. Nicolussi[1], and SPG Rassu[2], [1]*Istituto Zooprofilattico Sperimentale della Sardegna, Sassari, Italy*, [2]*Dipartimento di Agraria, Sezione di Scienze Zootecniche, University of Sassari, Italy*.

T375 **Effects of plant extracts and monensin on metabolite status and performance of peripartum ewes.**
H. Mirzaei Alamouti*, H. Namdarpor, H. Amanlo, M. H. Shahir, and D. Aliyari, *University of Zanjan, Zanjan, Iran*.

T376 **Efficacy of a bovine colostrum replacement product for goat kids.**
S. Hart*[1], S. Genova[2], D. M. Haines[3,4], and B. Bah[1], [1]*American Institute for Goat Research, Langston Univ., Langston, OK*, [2]*Boren Veterinary Teaching Hospital, Oklahoma State Univ., Stillwater*, [3]*Department of Veterinary Microbiology, Western College of Veterinary Medicine, University of Saskatchewan, Saskatoon, SK, Canada*, [4]*The Saskatoon Colostrum Co., Saskatoon, SK, Canada*.

T377 **Effect of chromium supplementation on carcass traits and blood parameters of Mahabadi goat kids.**
A. Emami, M. Ganjkhanlou*, A. Zali, A. Akbari, and A. Hojabri, *University of Tehran, Tehran, Iran*.

T378 **Pasture lambing: An alternative to intensive indoor management at lambing.**
N. L. Pettifor* and M. L. Thonney, *Cornell University, Ithaca, NY*.

T379 **Evaluation of the impact of dietary sericea lespedeza on rumen microflora and innate immunity in goats.**
A. Abdalla*, H. Ismail, S. Ibrahim, N. Whitley, and M. Worku, *North Carolina A&T University, Greensboro*.

T380 **Effect of continuous suckling/ewe-rearing and supplementation on growth performance of Katahdin lambs.**
S. L. Rastle-Simpson*, K. N. D'Souza, M. Knights, and Q. S. Baptiste, *West Virginia University, Morgantown*.

Draft

T381 **Pre-partum nutritional supplementation strategies in goats managed under grazing conditions: 2. Serum glucose concentration profiles and milk production.**
V. Contreras-Villarreal[1], O. Angel-Garcia[1], J. M. Guillen-Muñoz[1], R. Rodriguez-Martinez[1], G. Arellano-Rodriguez[1], C. A. Meza-Herrera[2], M. Mellado[3], and F. G. Véliz*[1], [1]*Universidad Autónoma Agraria Antonio Narro, Torreón, Coahuila, México*, [2]*URUZA, Universidad Autónoma Chapingo, Gómez Palacio, Durango, México*, [3]*Universidad Autónoma Agraria Antonio Narro, Saltillo, Coahuila, México*.

T382 **Comparison of different mathematical models applied to lactation adjustment of F_1 sheep in an organic production system.**
J. C. Angeles Hernandez*, B. Albarran Portillo, A. V. Gomez Gonzalez, N. Pescador Salas, and M. Gonzalez Ronquillo, *Universidad Autonoma del Estado de Mexico, Facultad de Medicina Veterinaria y Zootecnia, Toluca, Estado de Mexico, Mexico*.

T383 **Pre-partum nutritional supplementation strategies in goats managed under grazing conditions: 1. Doe and offspring BW dynamics.**
V. Contreras-Villareal[1], O. Angel-Garcia[1], J. M. Guillen-Muñoz[1], R. Rodriguez-Martinez[1], G. Arellano-Rodriguez[1], C. A. Meza-Herrera[2], M. Mellado[3], and F. G. Véliz*[1], [1]*Universidad Autónoma Agraria Antonio Narro, Torreón, Coahuila, México*, [2]*URUZA, Universidad Autónoma Chapingo, Gómez Palacio, Durango, México*, [3]*Universidad Autónoma Agraria Antonio Narro, Saltillo, Coahuila, México*.

T384 **Pre-partum nutritional supplementation (energy or protein) strategies in goats managed under grazing conditions: 3. Offspring growth dynamics and doe milk production.**
V. Contreras-Villarreal[1], O. Angel-Garcia[1], J. M. Guillen-Muñoz[1], R. Rodriguez-Martinez[1], G. Arellano-Rodriguez[1], C. A. Meza-Herrera[2], M. Mellado[3], and F. G. Véliz*[1], [1]*Universidad Autónoma Agraria Antonio Narro, Torreón, Coahuila, México*, [2]*URUZA, Universidad Autónoma Chapingo, Gómez Palacio, Durango, México*, [3]*Universidad Autónoma Agraria Antonio Narro, Saltillo, Coahuila, México*.

T385 **Effects of ground linted cottonseed on growth and carcass characteristics of feedlot lambs fed high-concentrate diets.**
R. A. Souza, R. S. Gentil, E. M. Ferreira, D. M. Polizel, M. I. C. Alves, L. G. M. Gobato, A. V. Pires, and I. Susin*, *Escola Superior de Agricultura Luiz de Queiroz (ESALQ)/University of São Paulo (USP), Piracicaba, São Paulo, Brazil*.

T386 **Effect of concentrate versus forage diet on feed intake and reproductive traits in crossbred ewes.**
R. R. Cockrum*, S. L. Lake, R. H. Stobart, and K. M. Cammack, *University of Wyoming, Laramie*.

T387 **Influence of level of zilpaterol hydrochloride supplementation at different live weight on carcass characteristics of feedlot lambs.**
J. C. Robles-Estrada*[1], H. Dávila-Ramos[1], A. Estrada-Angulo[1], F. G. Ríos[1], K. I. Leyva-Medina[1], and A. Plascencia[2], [1]*Universidad Autónoma de Sinaloa, Culiacán, Sinaloa, México*, [2]*Universidad Autónoma de Baja California, Mexicali, Baja California, México*.

T388 **Fatty acids in milk of goats fed sunflower seeds at different crude protein levels in the diet and thrombogenicity and atherogenicity indexes.**
C. Vázquez Fontes*[1], A. Domïnguez López[1], N. Pescador Salas[2], L. R. Bernal Martinez[1], and M. Gonzalez Ronquillo[2], [1]*Universidad Autónoma del Estado de Mexico. Facultad de Ciencias Agricolas*, [2]*Facultad de Medicina Veterinaria y Zootecnia, Toluca, Estado de Mexico. Mexico. 50000*.

Swine Species II

T389 **Genistein decreases LPS-stimulated production of TNF-α in porcine peripheral blood mononuclear cells.**
L. Seefeldt* and J. Clapper, *South Dakota State University, Brookings*.

T390 **Effort on an oral endotoxin challenge in pigs.**
S. Schaumberger* and G. Schatzmayr, *Biomin Research Center, Tulln, Austria*.

T391 **Effect of Actigen supplementation in gestation and lactation on sow and piglet performance, colostrum Ig level and milk composition.**
R. S. Samuel* and K. M. Brennan, *Alltech Center for Animal Nutrigenomics and Applied Animal Nutrition, Nicholasville, KY.*

T392 **Effect of maternal Actigen supplementation during gestation and lactation on piglet gut development and gene expression.**
K. M. Brennan* and D. E. Graugnard, *Alltech Center for Animal Nutrigenomics and Applied Animal Nutrition, Nicholasville, KY.*

T393 **Effect of social ranks on oxidative stress status, reproductive performance, and immune status of sows housed in groups during gestation.**
Y. Zhao*, W. L. Flowers, and S. W. Kim, *North Carolina State University, Raleigh*.

Draft

T394 **Novel strategies to stimulate GLP-2 secretion and intestinal adaptation in weanling piglets.**
I. R. Ipharraguerre*[1], D. G. Burrin[2], G. Tedó[1], D. Menoyo[3], J. J. Holst[4], and A. Mereu[1], [1]*Feed Additives Division, Lucta S. A., Montornés del Vallés, Spain*, [2]*USDA/ARS Children's Nutrition Research Center, Department of Pedriatics, Baylor College of Medicine, Houston, Texas*, [3]*Departamento de Producción Animal, Universidad Politécnica de Madrid, ETS Ingenieros Agrónomos, Madrid, Spain*, [4]*Department of Biomedical Sciences, University of Copenhagen, Copenhagen, Denmark.*

Teaching/Undergraduate and Graduate Education

T395 **Student perceptions and moral conflict of animal use in society.**
M. Amstutz, K. Bennett-Wimbush*, and D. Willoughby, *Ohio State ATI, Wooster*.

T396 **Developing horsemanship skills through the understanding of equine behavior.**
M. Nicodemus* and S. Lindsey, *Mississippi State University, Mississippi State*.

T397 **A web-based computer simulator to teach dairy farm management.**
S. Calsamiglia*, L. Castillejos, A. Ferret, G. Vera, and G. Espinosa, *Universidad Autonoma de Barcelona, Barcelona, Spain*.

T398 **Relationships between course schedule and student academic performance and attendance in undergraduate animal science courses.**
K. Stutts, M. Beverly*, S. Kelley, M. McMillan, A. Bullion, and L. McMillan, *Sam Houston State University, Huntsville, TX.*

T399 **The effects of note-taking method on academic performance in undergraduate animal science courses.**
K. Stutts*, M. Beverly, S. Kelley, M. McMillan, A. Bullion, and L. McMillan, *Sam Houston State University, Huntsville, TX.*

Draft

ADSA Multidisciplinary and International Leadership Keynote (MILK) Symposium
How Dairy Exporters Can Provide Food Security
Chair: Katharine F. Knowlton, Virginia Tech
121AB

9:30 AM **Introduction**
K. F. Knowlton, *Virginia Tech*.

9:45 AM 301 **Making safe, affordable, abundant food a global reality.**
T. A. Armstrong*, *Elanco Animal Health, Greenfield, IN*.

10:30 AM 302 **How dairy foods aid in food security.**
V. Lagrange*, *US Dairy Export Council*.

11:15 AM 303 **Development of local dairy production: The Indian experience.**
G. Sohani*, *BAIF Development Research Foundation, Pune, Maharashtra, India*.

Animal Health III
Chair: Holly Neibergs, Washington State University
228AB

9:30 AM 304 **Effect of vaccination technique and antibody level on primary and secondary response in beef calves after vaccination against bovine viral diarrhea virus.**
M. R. Rey*[1], J. C. Rodriguez-Lecompte[1], T. Joseph[3], J. Morrison[2], A. Yitbarek[1], K. M. Wittenberg[1], M. Undi[1], and K. H. Ominski[1], [1]*Department of Animal Science, University of Manitoba, Winnipeg, MB, Canada*, [2]*Department of Biosystems Engineering, University of Manitoba, Winnipeg, MB, Canada*, [3]*Veterinary Diagnostic Services, Manitoba Agriculture, Food and Rural Initiatives, Winnipeg, MB, Canada*.

9:45 AM 305 **Bacteria counts in on-farm pasteurized milk for dairy calves versus season and time post-pasteurization.**
D. J. Wilson*[1], K. A. Rood[1], and G. M. Goodell[2], [1]*Utah State University, Logan*, [2]*The Dairy Authority, Greeley, CO*.

10:00 AM 306 ***Salmonella* carriage rates in neonatal dairy calves.**
E. M. Chavez*[1], R. B. Harvey[2], K. Andrews[2], T. S. Edrington[2], C. M. Scanlan[3], and G. R. Hagevoort[1], [1]*Agricultural Science Center at Clovis, New Mexico State University, Clovis*, [2]*Food and Feed Safety Research Unit, Agricultural Research Service, USDA, College Station, TX*, [3]*Department of Veterinary Pathobiology, Texas A&M University, College Station*.

10:15 AM 307 **The association between colostrum bacteria counts and immunoglobulin absorption, calf growth and mortality.**
A. Lago*[1], J. Quigley[2], J. Polo[2], and J. Campbell[2], [1]*DairyExperts, Tulare, CA*, [2]*APC Inc., Ankeny, IA*.

10:30 AM 308 **Adding an anti-inflammatory lactic acid bacteria to a *Bacillus*-based direct-fed microbial improves calf immune development.**
M. Duersteler*[1], K. N. Novak[1], C. A. Wehnes[1], M. E. Davis[1], D. R. Shields[2], and A. H. Smith[1], [1]*Danisco USA Inc., Waukesha, WI*, [2]*Merrick's Inc., Union Center, WI*.

10:45 AM 309 **An evaluation of the efficacy of Metacam NSAID therapy for improving calf vigor, general health and overall performance in newborn Ontario dairy calves.**
C. Murray*, S. Deelen, D. B. Haley, T. Duffield, and K. Leslie, *University of Guelph, Guelph, ON, Canada*.

11:00 AM 310 **Innate immunological or metabolic status prior to an oral *Salmonella typhimurium* challenge is not predictive of a heightened acute phase response in weaned Jersey calves.**
M. A. Ballou*, M. D. Sellers, D. L. Hanson, A. R. Pepper-Yowell, C. J. Cobb, and B. S. Obeidat, *Department of Animal and Food Sciences, Texas Tech University, Lubbock*.

11:15 AM 311 **Outdoor group-housed calves have improved performance and heightened innate immune responses during the neonatal and weaning periods compared to outdoor single-housed calves.**
C. J. Cobb*, D. L. Hanson, M. D. Sellers, A. R. Pepper-Yowell, B. S. Obeidat, and M. A. Ballou, *Texas Tech University, Lubbock*.

Draft

11:30 AM 312 **Immune, health, and growth responses of beef calves administered modified-live virus respiratory vaccine during the presence of maternal antibody versus a traditional vaccination regimen.**
J. G. Powell*[1], J. T. Richeson[2], E. B. Kegley[1], K. P. Coffey[1], G. F. Erf[1], A. H. Brown[1], W. Downum[1], and D. T. Ensley[3], [1]*University of Arkansas, Fayetteville*, [2]*West Texas A&M University, Canyon*, [3]*Boehringer Ingelheim Vetmedica Inc., St. Joseph, MO*.

11:45 AM 313 **Dietary adjuvanting prior to vaccine administration increases maternal antibody transfer to calves.**
A. D. Rowson, T. H. Schell, Y. Wang, N. E. Forsberg, and S. B. Puntenney*, *OmniGen Research LLC, Corvallis, OR*.

12:00 PM 314 **Correlation between circulating white blood cell counts and level of protective immune response against bovine viral diarrhea virus elicited by a modified live vaccine.**
S. M. Falkenberg*[1], J. Ridpath[1], J. R. Tait[2], B. Vander Lay[1,2], and J. M. Reecy[2], [1]*USDA-ARS-National Animal Disease Center, Ames, IA*, [2]*Iowa State University, Ames*.

12:15 PM 315 **Omnigen-AF restores GR-1, L-selectin, and RANTES expression by immunosuppressed murine PMN challenged with lipopolysaccharide in a MyD88-dependent manner.**
R. J. Ortiz-Marty[1], N. E. Forsberg[2], J. D. Chapman[3], and I. K. Mullarky*[1], [1]*Virginia Polytechnic Institute and State University, Blacksburg*, [2]*OmniGen Research LLC, Corvallis, OR*, [3]*Prince Agri Products Inc., Quincy, IL*.

Draft

ARPAS Symposium
Feed Efficiency: Opportunities for Improvement, Economics, and Integration with Environmental Sustainability
Chair: Bill Sanchez, Diamond V
125AB

9:30 AM **Introduction**
B. Sanchez, *Diamond V*.

9:35 AM 316 **Feed efficiency: Basic principles and opportunities for improvement.**
M. VandeHaar*[1], L. Armentano[2], D. M. Spurlock[3], J. Patience[3], and J. Taylor[4], [1]*Michigan State University, East Lansing*, [2]*University of Wisconsin, Madison*, [3]*Iowa State University, Ames*, [4]*University of Missouri, Columbia*.

10:15 AM 317 **Impact of milk yield, herd size, and feed efficiency on economic change between and within California dairies from 2006 through 2010.**
L. Rodriguez*[1], G. Bethard[2], D. Tomlinson[1], and M. McGilliard[3], [1]*Zinpro Corporation, Elk Grove, CA*, [2]*G & R Consulting, Blacksburg, VA*, [3]*Virginia Tech, Blacksburg*.

11:00 AM 318 **Integrating productivity and whole-farm efficiency to achieve environmental sustainability.**
J. L. Capper*[1] and D. E. Bauman[2], [1]*Washington State University, Pullman*, [2]*Cornell University, Ithaca, NY*.

Bioethics Symposium
Bioethical Challenges in Education: New Challenges and Opportunities
Chair: Jodie Pennington, Lincoln University
227AB

9:30 AM **Introduction**
J. Pennington, *Lincoln University*.

9:35 AM 319 **Challenges and opportunities in teaching agricultural animal bioethics: Part 1.**
C. C. Croney*[1], W. R. Stricklin[2], and D. Scott[3], [1]*Purdue University*, [2]*University of Maryland, College Park*, [3]*University of Montana*.

10:05 AM 319 **Challenges and opportunities in teaching agricultural animal bioethics: Part 2**
C. C. Croney*[1], W. R. Stricklin[2], and D. Scott[3], [1]*Purdue University*, [2]*University of Maryland, College Park*, [3]*University of Montana*.

10:35 AM **Break**

10:50 AM 320 **Assessing the merits of animal welfare assessment tools: A philosophical framework from virtue ethics and narrative ethics.**
R. Anthony*, *University of Alaska, Anchorage*.

11:30 AM 321 **Challenges and opportunities for bioethicial education in extension/outreach activities.**
H. M. Zaleski*[1] and D. Newman[2], [1]*University of Hawaii at Manoa, Honolulu*, [2]*North Dakota State University, Fargo*.

12:10 PM **Panel Discussion and Comments**

Breeding and Genetics
Dairy Cattle Breeding II—Applied Molecular Biology and Genomics
Chair: John B. Cole, Animal Improvement Programs Laboratory, ARS, USDA
123

9:30 AM 322 **Effects of genomic inbreeding on production, reproduction, and udder health in Holstein dairy cows.**
D. W. Bjelland*[1], K. A. Weigel[1], D. J. Nkrumah[2], and N. Vukasinovic[2], [1]*University of Wisconsin-Madison, Madison*, [2]*Pfizer Animal Genetics, Kalamazoo, MI*.

9:45 AM 323 **Maternal grandsire confirmation and discovery in dairy cattle.**
G. R. Wiggans[1], T. A. Cooper*[1], P. M. VanRaden[1], J. R. O'Connell[2], and L. R. Bacheller[1], [1]*Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD*, [2]*University of Maryland School of Medicine, Baltimore*.

10:00 AM 324 **Sequence analysis and methylation patterns of the bovine IWS1 gene localized to a region of BTA2 involved in postnatal growth.**
I. G. Imumorin*[1], M. De Donato[1,2], S. O. Peters[1,3], A. M. Corn[1], Y. Bing[1], H. E. Rudolfo[2,4], M. Al-Abri[1,4], and T. Hussain[1,5], [1]*Cornell University, Ithaca, NY*, [2]*Universidad de Oriente, Cumana, Venezuela*, [3]*Federal University of Agriculture, Abeokuta, Nigeria*, [4]*Sultan Qaboos University, Muscat, Oman*, [5]*University of Veterinary and Animal Sciences, Lahore, Pakistan*.

10:15 AM 325 **Characterization of sequence diversity of IFNAA and INFB1 in Pakistani breeds of cattle.**
T. Hussain*[1,2], M. E. Babar[1], A. Nadeem[1], A. Ali[1], A. Wajid[1], M. Al Abri[2], M. De Donato[2,3], S. O. Peters[2], and I. G. Imumorin[2], [1]*Institute of Biochemistry and Biotechnology, University of Veterinary and Animal Sciences, Lahore, Pakistan*, [2]*Department of Animal Science, Cornell University, Ithaca, NY*, [3]*IIBCA, Universidad de Oriente, Cumana, Venezuela*.

10:30 AM 326 **Effect of GHR *Alu*I polymorphism on reproductive performance of Holstein cows.**
A. Schneider*[1], M. N. Corrêa[1], and W. R. Butler[2], [1]*Veterinary College, Federal University of Pelotas, Pelotas, RS, Brazil*, [2]*Department of Animal Science, Cornell University, Ithaca, NY*.

10:45 AM 327 **Genomic evaluation of rectal temperature in Holstein cattle.**
S. Dikmen*[1], J. B. Cole[2], D. J. Null[2], and P. J. Hansen[3], [1]*Department of Animal Science, Faculty of Veterinary Medicine, Uludag University, Bursa, Turkey*, [2]*Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD*, [3]*Department of Animal Sciences, University of Florida, Gainesville*.

11:00 AM 328 **Feasibility of genomic prediction of fatty acids composition in milk of dairy cattle from Luxembourg using single-step procedure.**
P. Faux*[1], V. M.-R. Arnould[1,2], H. Soyeurt[1,3], and N. Gengler[1,3], [1]*Animal Science Unit, Gembloux Agro-Bio Tech, University of Liege, Gembloux, Belgium*, [2]*CONVIS s.c., Ettelbruck, Luxembourg*, [3]*National Fund for Scientific Research (FNRS), Brussels, Belgium*.

11:15 AM 329 **Microsatellite markers based genetic evaluation of Pakistani cattle breeds.**
M. E. Babar*[1], T. Hussain[1,2], A. Nadeem[1], A. Ali[1], A. Wajid[1], S. A. Shah[1], K. Abbas[1], A. Azam[1], Z. Ahmad[1], M. De Donato[1,3], S. O. Peters[1], and I. G. Imumorin[1], [1]*Institute of Biochemistry and Biotechnology, University of Veterinary and Animal Sciences, Lahore, Pakistan*, [2]*Dept. Animal Science, Cornell University, Ithaca, NY*, [3]*IIBCA, Universidad de Oriente, Cumana, Venezuela*.

11:30 AM 330 **Effects of β-casein, κ-casein and β-lactoglobulin gene allelic variants on milk production and protein composition traits of Brown Swiss cows.**
C. Ribeca*, A. Cecchinato, M. Penasa, V. Bonfatti, F. Tiezzi, P. Carnier, and G. Bittante, *Department of Agronomy, Food, Natural Resources, Animals and Environment (DAFNAE), Legnaro, Padova, Italy*.

11:45 AM 331 **Associations between single nucleotide polymorphisms in multiple candidate genes on milk yield, composition, coagulation properties and individual cheese yield in Brown Swiss cows.**
A. Cecchinato*, C. Ribeca, M. Penasa, C. Cipolat Gotet, M. De Marchi, A. Maurmayr, and G. Bittante, *Department of Agronomy, Food, Natural Resources, Animals and Environment (DAFNAE), University of Padova, Legnaro, Padova, Italy*.

Draft

12:00 PM 332 **Sire and vaccine treatment effects on immune response to BVDV 1b challenge.**
E. D. Downey*[1], X. Fang[1], C. A. Runyan[1], J. E. Sawyer[2], T. B. Hairgrove[3], J. F. Ridpath[4], C. A. Gill[1], and A. D. Herring[1], [1]*Texas A&M University, College Station*, [2]*Texas AgriLife Research, College Station*, [3]*Texas AgriLife Extension, College Station*, [4]*National Animal Disease Center, USDA-ARS, Ames, IA*.

12:15 PM 333 **Genome-wide DNA methylation fluctuation in mastitis mice infected by *Staph. aureus*.**
Y. Yu*, Y. Wei, L. Fan, Y. He, and Y. Wang, *China Agricultural University, China*.

CSAS Symposium
Are We Experiencing a Paradigm Shift in How We Feed Livestock As Industrial Agriculture Evolves in the 21st Century?
Chair: Gregory Penner, University of Saskatchewan
223

9:30 AM **Introduction**
G. Penner, *University of Saskatchewan, Saskatoon, SK, Canada*.

9:35 AM 334 **Are we experiencing a paradigm shift in how we feed livestock as industrial agriculture evolves in the 21st century?**
J. Newman*, *American Feed Industry Association, Arlington, VA*.

10:20 AM 335 **Rethinking and expanding the role of co-products and crop residues as livestock feeds.**
S. S. Donkin*[1] and M. J. Cecava[2], [1]*Purdue University, West Lafayette, IN*, [2]*Archer Daniels Midland Company, Decatur, IL*.

11:05 AM 336 **Feeding low starch diets to swine.**
A. D. Beaulieu*[1] and R. T. Zijlstra[2], [1]*Prairie Swine Centre Inc., Saskatoon, SK, Canada*, [2]*University of Alberta, Edmonton, AB, Canada*.

11:35 AM 337 **Alternatives to starch-based feeding programs for growing and finishing cattle.**
J. J. McKinnon*[1] and T. A. McAllister[2], [1]*University of Saskatchewan, Saskatoon, Saskatchewan, Canada*, [2]*Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada*.

12:05 PM 338 **Ethanol co-products for dairy cows: There goes our starch ... now what?**
H. Paz and P. J. Kononoff*, *University of Nebraska-Lincoln, Lincoln*.

Extension Education I
Chair: Elaine Grings, South Dakota State University
128AB

9:30 AM 339 **The Missouri Show-Me-Select Replacement Heifer Program: A retrospective on marketing and sales.**
J. M. Nash*, N. T. Martin, J. M. Thomas, B. D. Mayhan, M. F. Smith, S. E. Poock, and D. J. Patterson, *University of Missouri, Columbia*.

9:45 AM 340 **The Missouri Show-Me-Select Replacement Heifer Program: Prebreeding reproductive evaluation of heifers and subsequent pregnancy outcome after fixed-time AI.**
J. M. Thomas*, J. M. Nash, N. T. Martin, B. D. Mayhan, M. F. Smith, S. E. Poock, and D. J. Patterson, *University of Missouri, Columbia*.

10:00 AM 341 **The Missouri Beef Project: An industry partnership designed to link economic incentives with technology adoption.**
D. J. Patterson*, D. S. Brown, S. E. Poock, and M. F. Smith, *University of Missouri*.

10:15 AM 342 **Impact of management practices on the value of heifers sold in Texas auction barns.**
K. Stutts*, M. Beverly, S. Kelley, and B. Freel, *Sam Houston State University, Huntsville, TX.*

10:30 AM 343 **Phenotypic characteristics that affect the value of heifers sold in Texas auction barns.**
M. Beverly, S. Kelley*, K. Stutts, and B. Freel, *Sam Houston State University, Huntsville, TX.*

Draft

10:45 AM 344 **Beef Excellence Education for You: A program to teach youth about the beef industry.**
L. A. Kriese-Anderson*[1], C. L. Bratcher[1], R. A. Ebert[1], J. B. Elmore[2], R. W. Colquitt[2], and M. K. Stanford[2], [1]*Auburn University, Auburn, AL*, [2]*Alabama Cooperative Extension System, Auburn, AL*.

11:00 AM 345 **A survey of the presence, structure, and effectiveness of Beef Quality Assurance (BQA) or BQA-type programs across the United States.**
J. K. Ahola* and R. J. Urie, *Colorado State University, Fort Collins*.

11:15 AM 346 **National Animal Identification System versus National Livestock Identification System.**
K. Semple[1], M. Robert*[2], and H. Pittman[1], [1]*Department of Primary Industries, Melbourne, Victoria, Australia*, [2]*The National Agricultural Law Center, Fayetteville, AR*.

11:30 AM 347 **Development of the pioneer organic beef supply chain in the Mexican tropics—Promotion of sustainable beef production through integration of extension, education and research.**
P. Fajersson*[1,3] and P. Parada[2], [1]*EcoAgroPec, Hueytamalco, Puebla, Mexico*, [2]*Carnes La Rumorosa, Poza Rica, Veracruz, Mexico*, [3]*Colegio de Postgraduados, Campus Veracruz, Veracruz, Mexico*.

Forages and Pastures I
Chair: Matt Poore, North Carolina State University
225AB

9:30 AM 348 **Sustainable goat farming: Pasture enhancement and identification of suitable forages for goats.**
U. Karki*[1], L. B. Karki[2], N. K. Gurung[1], and A. Elliott[1], [1]*Tuskegee University, Tuskegee, AL*, [2]*PadmaDal Memorial Foundation, Auburn, AL*.

9:45 AM 349 **Effects of co-grazing on herbivory patterns and performance by cattle and goats grazing native tallgrass rangeland infested by sericea lespedeza (*Lespedeza cuneata*).**
L. A. Pacheco*[1], W. H. Fick[2], G. W. Preedy[1], E. A. Bailey[1], D. L. Davis[1], and K. C. Olson[1], [1]*Department of Animal Sciences & Industry, Kansas State University, Manhattan*, [2]*Department of Agronomy, Kansas State University, Manhattan*.

10:00 AM 350 **Effect of different regrowth ages of *Andropogon gayanus* grass silages on intake, digestive efficiency and methane emissions in sheep.**
G. O. Ribeiro Junior*, L. C. Gonçalves, and N. M. Rodriguez, *School of Veterinary, Federal University of Minas Gerais, Belo Horizonte, Minas Gerais, Brazil*.

10:15 AM 351 **Effects of feeding perennial peanut hay on growth, development, attainment of puberty, and fertility in beef replacement heifers.**
K. M. Bischoff*[1], T. E. Black[1], V. R. G. Mercadante[1], G. H. L. Marquezini[1], R. O. Myer[1], A. T. Adesogan[2], N. DiLorenzo[1], and G. C. Lamb[1], [1]*North Florida Research and Education Center, University of Florida, Marianna*, [2]*Department of Animal Sciences, University of Florida, Gainesville*.

10:30 AM 352 **Effects of different sources of rumen-degradable protein supplementation on performance of cows and calves grazing limpograss stockpiled pastures in Florida.**
A. D. Aguiar*[1], J. M. B. Vendramini[1], J. D. Arthington[1], and L. E. Sollenberger[2], [1]*Range Cattle Research Education Center, Ona, FL*, [2]*University of Florida, Gainesville*.

10:45 AM 353 **Effects of three levels of rumen-undegradable protein supplementation on performance of early weaned calves receiving stargrass.**
J. M. B. Vendramini*[1], J. D. Arthington[1], and L. E. Sollenberger[2], [1]*University of Florida/IFAS Range Cattle Research and Education Center, Ona*, [2]*University of Florida, Department of Agronomy, Gainesville*.

11:00 AM 354 **Ruminal availability of iron in forages.**
Y. L. Huang*[1,2], K. E. Lloyd[1], C. L. Pickworth[1], and J. W. Spears[1], [1]*North Carolina State University, Raleigh*, [2]*Southwest University for Nationalities, Chengdu, Sichuan, China*.

11:15 AM 355 **Nutritional profile of native warm season grass grown as a mono- or multi-species pasture.**
B. S. Oloyede*, B. J. Rude, H. T. Boland, and B. S. Baldwin, *Mississippi State University, Starkville*.

11:30 AM 356 **Using switchgrass to produce stocker cattle gain and bioenergy feedstock I: Production potential.**
J. R. Blanton*, J. T. Biermacher, J. Mosali, and B. J. Cook, *The Samuel Roberts Noble Foundation, Ardmore, OK*.

11:45 AM 357 **Using switchgrass to produce stocker cattle gain and bioenergy feedstock II: Economic potential.**
J. T. Biermacher*, J. Mosali, B. Cook, and J. Blanton, *The Samuel Roberts Noble Foundation Inc., Ardmore, OK*.

12:00 PM 358 **Investigating the nutritive value of *Panicum maximum* leaves for ruminant animals.**
A. H. Ekeocha*, *University of Ibadan, Ibadan, Oyo, Nigeria*.

Draft

12:15 PM 359 **Evaluating the mineral composition of *Panicum maximum* leaves.**
A. H. Ekeocha* and O. T. Bankole, *University of Ibadan, Ibadan, Oyo, Nigeria*.

Horse Species I
Chair: Carrie Hammer, North Dakota State University
229AB

9:30 AM 360 **Influence of maternal plane of nutrition and arginine supplementation on mares and their foals: Determination of voluntary dry matter intake of mares during late pregnancy.**
K. N. Winsco*[1], J. A. Coverdale[1], T. A. Wickersham[1], C. J. Hammer[2,3], and J. L. Lucia[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, North Dakota State University, Fargo*.

9:45 AM 361 **The effect of hay steaming on forage quality and intake by horses.**
J. E. Earing*, M. R. Hathaway, C. C. Shaeffer, J. C. Paulson, S. L. Privatsky, and K. L. Martinson, *University of Minnesota, St. Paul*.

10:00 AM 362 **High non-structural carbohydrate diet in ponies alters location and absorptive capacity of glucose, phosphorus and glutamine across the gastrointestinal tract.**
B. E. Aldridge*[1], A. D. Woodward[2], J. S. Radcliffe[1], R. J. Geor[3], L. J. McCutcheon[3], and N. L. Trottier[2], [1]*Purdue University, West Lafayette, IN*, [2]*Michigan State University, Department of Animal Science, East Lansing*, [3]*Michigan State University, Department of Large Animal Clinical Science, East Lansing*.

10:15 AM 363 **Exercise-induced suppression of lymphocyte function is unaffected by a higher level of dietary selenium.**
J. Bobel*, L. K. Warren, and S. White, *University of Florida, Gainesville*.

10:30 AM 364 **Feeding graded amounts of lysine to yearling Thoroughbred colts does not activate the mTOR signaling pathway.**
S. L. Tanner*, L. R. Good, E. A. DeLuca, R. J. Coleman, and K. L. Urschel, *University of Kentucky*.

10:45 AM **Break**

11:00 AM 365 **Influence of oral glucosamine supplementation on young horses in training: Pharmacokinetics.**
J. L. Lucia*[1], K. L. Gehl[1], J. A. Coverdale[1], C. E. Arnold[2], R. Dabareiner[2], and E. D. Lamprecht[3], [1]*Department of Animal Science, Texas A&M University, College Station*, [2]*Large Animal Teaching Hospital, Texas A&M University, College Station*, [3]*Cargill Animal Nutrition, Elk River, MN*.

11:15 AM 366 **Effects of prolonged exercise and citrulline supplementation on metabolic status in equine blood and skeletal muscle.**
S. White*, L. K. Warren, S. E. Johnson, and B. Miller, *University of Florida, Gainesville*.

11:30 AM 367 **Selenium supplementation and immune function.**
M. Brummer*, S. Hayes, A. Betancourt, A. A. Adams, D. W. Horohov, and L. M. Lawrence, *University of Kentucky, Lexington*.

11:45 AM 368 **Effect of strenuous exercise on stallion sperm quality.**
J. L. Rosenberg*, C. A. Cavinder, C. C. Love, M. M. Vogelsang, S. R. Teague, D. H. Sigler, D. D. Varner, and T. L. Blanchard, *Texas A&M University, College Station*.

Lactation Biology II
Chair: Eric Scholljegerdes, New Mexico State Univeristy
122C

9:30 AM 369 **Milk fat synthesis in thyroid hormone responsive spot 14 null mice is acutely responsive to *trans*-10, *cis*-12 conjugated linoleic acid (CLA).**
K. J. Harvatine*[1], M. Tanino[2], Y. R. Boisclair[2], and D. E. Bauman[2], [1]*Penn State University, University Park*, [2]*Cornell University, Ithaca, NY*.

Draft

9:45 AM 370 **Increased milk production by Holstein cows consuming endophyte-infected fescue seed during the dry period.**
R. L. Baldwin*[1], A. V. Capuco[1], C. M. Evock-Clover[1], P. Grossi[2], R. K. Choudhary[3], T. H. Elsasser[1], G. Bertoni[2], E. Trevisi[2], D. L. Harmon[4], and K. R. McLeod[4], [1]*Bovine Functional Genomics Lab, USDA-ARS, Beltsville, MD*, [2]*Istituto di Zootecnica, Università Cattolica del Sacro Cuore, Piacenza, Italy*, [3]*Department of Animal and Avian Sciences, University of Maryland, College Park*, [4]*Department of Animal Sciences, University of Kentucky, Lexington*.

10:00 AM 371 **Association between plasma insulin and progesterone concentrations and the composition of milk fatty acids and lipids.**
N. Argov-Argaman*, H. Malka, and R. Mesilati-Stahy, *Animal Science Department, Hebrew University, Rehovot, Israel*.

10:15 AM 372 **Ontogeny of nuclear and cytoplasmic myoepithelial cell markers in pre-weaning Holstein heifers.**
S. Safayi[1], N. Korn[1], A. DiMascio[2], R. M. Akers[3], A. V. Capuco[4], and S. Ellis*[1], [1]*Clemson University, Clemson, SC*, [2]*University of Georgia, Athens*, [3]*Virginia Polytechnic Institute and State University, Blacksburg*, [4]*USDA-ARS, Beltsville Agricultural Research Center, Beltsville, MD*.

10:30 AM 373 **Ultrasonographic monitoring of mammary parenchyma growth in preweaned Holstein heifers.**
K. M. Esselburn*[1], T. M. Hill[2], K. M. O'Diam[1], V. A. Swank[1], H. G. Bateman[2], R. L. Schlotterbeck[2], and K. M. Daniels[1], [1]*Department of Animal Sciences, The Ohio State University, Ohio Agricultural Research and Development Center, Wooster*, [2]*Nurture Research Center, Provimi North America, Brookville, OH*.

10:45 AM 374 **Proteomic analysis of the nuclear phosphorylated proteins in dairy cow mammary epithelial cells treated with prolactin.**
J.-G. Huang, X.-J. Gao*, Q.-Z. Li, L. Zhang, F. Zhao, N. Zhang, Y. Lin, and Z. Sun, *Key Lab of Dairy Science, Ministry of Education, Northeast Agriculture University, Harbin, Heilongjiang, China*.

11:00 AM 375 **Analysis of differentially expressed miRNA in dairy cow mammary gland identifies HK2-regulating miRNAs.**
Z. Li*, H. Y. Liu, and J. X. Liu, *Institute of Dairy Science, MOE Key Laboratory of Molecular Animal Nutrition, Zhejiang University, Hangzhou, China*.

Draft

Meat Science and Muscle Biology Symposium
In Utero Factors that Influence Postnatal Muscle Growth, Carcass Composition, and Meat Quality
Chair: Brian Bowker, USDA-ARS
122AB

9:30 AM 376 **Fetal programming of skeletal muscle mitochondrial function and insulin sensitivity: Perspectives from non-human primates and mouse models.**
J. A. Houck[1], K. L. Grove[2], and C. E. McCurdy*[1], [1]*Department of Pediatrics, University of Colorado*, [2]*National Primate Research Center, Oregon Health and Sciences University*.

10:10 AM 377 **Manipulating mesenchymal progenitor cell differentiation to optimize performance and carcass value of beef cattle.**
M. Du*, *Department of Animal Sciences, Washington State University, Pullman*.

10:50 AM 378 **In utero nutrition related to fetal development, postnatal growth, and pork quality.**
N. Oksbjerg*, *Aarhus University-Foulum, Dept. of Food Science, Tjele, Denmark*.

11:30 AM 379 **Maternal nutrition on pasture mediates long-term consequences for offspring primarily through effects on growth early in life of beef cattle.**
P. L. Greenwood*, L. M. Cafe, and D. L. Robinson, *Australian Cooperative Research Centre for Beef Genetic Technologies, and NSW Department of Primary Industries, UNE, Armidale NSW, Australia*.

Nonruminant Nutrition
Management/Metabolism
Chair: David Bravo, Pancosma
222AB

9:30 AM 380 **Diet form and by-product level affect growth performance and carcass characteristics of grow-finish pigs.**
R. S. Fry*, W. Hu, S. B. Williams, N. D. Paton, and D. R. Cook, *Provimi North America, Akey Nutrition and Research Center*.

9:45 AM 381 **Influence of ingredient complexity, feed form, and length of feeding of the phase I diets on nutrient digestibility and productive performance of Iberian pigs.**
J. D. Berrocoso, B. Saldaña, L. Cámara, M. P. Serrano, M. A. Ibáñez, and G. G. Mateos*, *Universidad Politécnica de Madrid, Madrid, Spain*.

10:00 AM 382 **Hepatic gene expression analysis of nursery pigs fed simple and complex starter diets.**
M. Rudar*, L. D. Skinner, and C. F. M. de Lange, *University of Guelph, Guelph, ON, Canada*.

10:15 AM 383 **Development and evaluation of a model estimating nitrogen partitioning in lactating sows.**
A. V. Hansen[1], A. B. Strathe[1], P. K. Theil[2], and E. Kebreab*[1], [1]*Department of Animal Science, University of California, Davis*, [2]*Department of Animal Science, Faculty of Science and Technology, Aarhus University, Tjele, Denmark*.

10:30 AM 384 **Dynamics of nitrogen retention in entire male pigs immunized with Improvest.**
L. Huber*, D. Wey, and C. de Lange, *University of Guelph, Guelph, ON, Canada*.

10:45 AM 385 **Effects of dietary protein and lipid levels on growth and stress tolerance of juvenile tilapia (*Oreochromis niloticus*).**
C. G. Hooley*[1], F. T. Barrows[3], J. A. Paterson[1], and W. M. Sealey[2], [1]*Montana State University, Bozeman*, [2]*United States Fish and Wildlife Service, Bozeman, MT*, [3]*US Department of Agriculture, Agriculture Research Service, Bozeman, MT*.

11:00 AM 386 **Comparison of the in vitro fermentation activity of fecal inocula from piglets and dogs.**
S. Brambillasca*, C. Deluca, A. Britos, and C. Cajarville, *Departamento de Nutrición Animal, Facultad de Veterinaria, Universidad de la República, Montevideo, Uruguay*.

11:15 AM 387 **Prediction of voluntary feed intake in weaner pigs using physicochemical properties of bulky diets.**
S. P. Ndou*, M. Chimonyo, and R. M. Gous, *Animal and Poultry Science, University of KwaZulu-Natal, Scottsville, Pietermaritzburg, South Africa*.

Physiology and Endocrinology Symposium:
The Current Status of Heat Shock in Early Embryonic Survival and Reproductive Efficiency
Chair: Robert A. Cushman, USDA-ARS U.S. Meat Animal Research Center
222C

9:30 AM **Introduction**

9:35 AM 388 **Influence of sire breed on heat stress tolerance of in vitro-produced bovine embryos.**
C. M. Barros* and R. A. Satrapa, *Department of Pharmacology, Institute of Biosciences, University of Sao Paulo State, Botucatu, Sao Paulo, Brazil*.

10:05 AM 389 **Associations between heat shock protein 70 genetic polymorphisms and calving traits in crossbred Brahman cows.**
C. Rosenkrans*[1], M. Brown[2], H. Brown[1], and M. Looper[1], [1]*University of Arkansas, Fayetteville*, [2]*USDA-ARS, El Reno, OK*.

10:35 AM **Break**

10:50 AM 390 **Expression of heat shock protein genes and their splice variants in in vivo and in vitro bovine preimplantation embryos.**
H. Khatib*, *University of Wisconsin, Madison*.

11:20 AM 391 **Consequences of heat shock on development of the preimplantation bovine embryo: Role of free radicals, antioxidants, apoptosis, and heat shock proteins.**
P. J. Hansen*[1] and M. Sakatani[2], [1]*University of Florida, Gainesville*, [2]*Kyushu-Okinawa Agricultural Research Center, National Agriculture and Food Research Organization, Kumamoto, Japan*.

11:50 AM **Concluding Questions.**

Draft

Production, Management and the Environment
Beef production
Chair: Marcia Endres, University of Minnesota
226ABC

9:30 AM 392 **GPS/GIS technology in range cattle management.**
D. M. Anderson*, *USDA-ARS, Jornada Experimental Range, Las Cruces, NM.*

10:15 AM 393 **Detection of pregnancy in Arizona range cattle using near infrared spectroscopy of feces.**
D. R. Tolleson* and D. W. Schafer, *University of Arizona, V Bar V Ranch, Rimrock.*

10:30 AM 394 **Effect of beef heifer development system on ADG, reproduction, and feed efficiency during first pregnancy.**
A. F. Summers*, T. L. Meyer, S. P. Weber, and R. N. Funston, *University of Nebraska, West Central Research and Extension Center, North Platte.*

10:45 AM 395 **Use of MTB-100, provided through a mineral mix, in a strategic supplementation plan to alleviate the effects of fescue toxicity when lactating beef cows graze endophyte-infected tall fescue.**
M. E. Hoar*, D. K. Aaron, D. G. Ely, and M. M. Simpson, *University of Kentucky, Lexington, Ky, United States.*

11:00 AM 396 **Effects of anti-phospholipase A2 antibody (aPLA2) supplementation on DMI, feed efficiency and blood differentials of steers fed forage and grain-based diets.**
V. R. G. Mercadante*[1], K. M. Bischoff[1], G. H. L. Marquezini[1], J. D. Arthington[2], N. DiLorenzo[1], and G. C. Lamb[1], [1]*North Florida Research and Education Center, University of Florida, Marianna*, [2]*Range Cattle Research and Education Center, University of Florida, Ona.*

11:15 AM 397 **Effects of acclimation to human handling on temperament, physiological responses, and performance of beef steers during feedlot receiving.**
C. L. Francisco*[1,2], R. F. Cooke[1], R. S. Marques[1], T. Leiva[1], F. Sanches[1], A. Bouck[1], F. N. T. Cooke[1], and D. W. Bohnert[1], [1]*Oregon State University, EOARC, Burns*, [2]*Universidade Estadual Paulista - FMVZ/DPA, Botucatu, SP, Brazil.*

11:30 AM 398 **Effects of 24-h transport or 24-h nutrient restriction on acute-phase and performance responses of feeder cattle.**
R. S. Marques*[1], R. F. Cooke[1], C. L. Francisco[1,2], T. Leiva[1], F. Sanches[1], A. Bouck[1], F. N. T. Cooke[1], and D. W. Bohnert[1], [1]*Oregon State University, EOARC, Burns*, [2]*Universidade Estadual Paulista - FMVZ/DPA, Botucatu, SP, Brazil.*

TUESDAY ORALS

Ruminant Nutrition
Beef Production II
Chair: Aimee Wertz, ADM
131ABC

9:30 AM 399 **Precision processing barley grain improves the feeding value of barley grain in beef cattle.**
W. Z. Yang*[1], M. Oba[2], and T. A. McAllister[1], [1]*Research Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada*, [2]*Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada.*

9:45 AM 400 **Effect of rumen degradable energy source on performance and forage intake of steers grazing stockpiled crested wheatgrass pasture.**
F. Anez*[1], J. J. McKinnon[1], H. A. Lardner[1,2], G. B. Penner[1], and P. G. Jefferson[1,2], [1]*University of Saskatchewan, Saskatoon, SK, Canada*, [2]*Western Beef Development Centre, Humboldt, SK, Canada.*

10:00 AM 401 **Effects of sugarcane fiber digestibility and concentrate level on intake and growth of finishing Nellore bulls.**
B. S. Mesquita, D. O. Souza, J. F. Penso, M. H. A. Santana, J. B. S. Ferraz, and L. F. P. Silva*, *Universidade de São Paulo, Pirassununga, SP, Brazil.*

10:15 AM 402 **High dietary sulfur decreases apparent absorption of copper and manganese by steers.**
D. J. Pogge, M. E. Drewnoski*, and S. L. Hansen, *Iowa State University.*

10:30 AM 403 **Comparison of receiving strategies on feedlot performance in beef calves at weaning.**
K. L. Neuhold*[1], J. K. Ahola[1], C. W. Shonk[1,2], T. E. Engle[1], and J. J. Wagner[1,3], [1]*Colorado State University, Fort Collins*, [2]*Agriculture, Research, Development and Education Center, Wellington, CO*, [3]*Southeast Colorado Research Center, Lamar.*

10:45 AM 404 **Determining the influence of dietary NDF concentration from bromegrass hay on performance of steers fed high sulfur diets.**
S. J. Morine*, M. E. Drewnoski, and S. L. Hansen, *Iowa State University, Ames.*

Draft

11:00 AM 405 **Effects of method of forage finishing and cattle breed on growth performance, carcass characteristics, meat quality, and fatty acid composition.**
L. Shepherd*[1], R. Berthiaume[2], C. Lafreniere[3], C. Campbell[1], L. Pivotto[1], and I. Mandell[1], [1]*Department of Animal and Poultry Science, University of Guelph, Guelph, ON, Canada*, [2]*Agriculture & Agri-Food Canada, Sherbrooke, QC, Canada*, [3]*Agriculture & Agri-Food Canada, Kapuskasing, ON, Canada*.

11:15 AM 406 **Evaluation of weight gain pattern between 7 and 18 months of age of Hereford heifers and reproductive performance when mated at 18 months of age.**
J. B. G. Costa Junior*[1], J. O. J. Barcellos[1], J. C. Whittier[2], I. D. P. S. Diaz[3], L. Canellas[1], V. Peripolli[1], J. K. Ahola[2], and R. K. Peel[2], [1]*Universidade Federal do Rio Grande do Sul, Porto Alegre, Rio Grande do Sul, Brazil*, [2]*Colorado State University, Fort Collins*, [3]*Universidade Estadual Paulista, Jaboticabal, Sao Paulo, Brazil*.

11:30 AM 407 **Evaluation of feed efficiency and feeding behavior traits in performance tested bulls.**
J. G. Moreno*[1], G. E. Carstens[1], D. Crews[2], L. O. Tedeschi[1], L. R. McDonald[3], and S. Williams[3], [1]*Texas A&M University, College Station*, [2]*Colorado State University, Fort Collins*, [3]*Midland Bull Test, Columbus, MT*.

11:45 AM 408 **Ergot alkaloids decrease rumen epithelial blood flow.**
A. P. Foote*[1], N. B. Kristensen[2], J. L. Klotz[3], D. H. Kim[1], A. F. Koontz[1], K. R. McLeod[1], L. P. Bush[1], and D. L. Harmon[1], [1]*University of Kentucky, Lexington*, [2]*Syddansk Kvæg, Vojens, Denmark*, [3]*USDA-ARS, FAPRU, Lexington, KY*.

12:00 PM 409 **Feeding distillers grains as an energy source to gestating and lactating beef heifers: Effect on feedlot performance, carcass characteristics, and glucose tolerance of steer progeny.**
P. J. Gunn*[1], G. A. Bridges[2], R. P. Lemenager[1], and J. P. Schoonmaker[1], [1]*Department of Animal Sciences, Purdue University, West Lafayette, IN*, [2]*North Central Research and Outreach Center, University of Minnesota, Grand Rapids*.

12:15 PM 410 **Effects of roughage concentration in dry-rolled corn-based diets containing wet distillers grains with solubles on performance and carcass characteristics of finishing beef steers.**
K. E. Hales* and H. C. Freetly, *USDA, ARS, US Meat Animal Research Center, Clay Center, NE*.

Ruminant Nutrition
Dairy Production III
Chair: Guillermo Scaglia, Louisiana State University Ag Center
132ABC

9:30 AM 411 **Impacts of feeding a citrus extract on measures of heat stress, as well as production, of high producing dairy cows during summer heat.**
J. M. Soderstrom*[1], P. H. Robinson[1], and J. M. Clauzel[2], [1]*Department of Animal Science, University of California-Davis, Davis*, [2]*Phodé Laboratoires, Terssac, France*.

9:45 AM 412 **Meta-analysis of the effects of dietary sugar on intake and productivity of dairy cattle.**
C. F. Vargas*[1], C. D. Reinhardt[1], J. L. Firkins[2], and B. J. Bradford[1], [1]*Kansas State University, Manhattan*, [2]*Ohio State University, Columbus*.

10:00 AM 413 **Potential use of specific milk fatty acids to predict enteric methane emissions from lactating dairy cows.**
K. E. DeLand*, M. Hollmann, J. C. Ploetz, W. J. Powers, D. K. Beede, and A. L. Lock, *Michigan State University, East Lansing*.

10:15 AM 414 **Nitrogen concentration and source alter products from fermentation of glucose by mixed ruminal microbes.**
M. B. Hall*, *U.S. Dairy Forage Research Center, USDA-ARS, Madison, WI*.

10:30 AM 415 **Interactions in rumen pool characteristics by dairy cows fed two concentrations of a novel co-product from corn wet milling with different forage sources.**
D. M. Shepherd*[1], J. L. Firkins[1], and P. von Behren[2], [1]*Department of Animal Sciences, The Ohio State University, Columbus*, [2]*Cargill Corn Milling, Blaire, NE*.

10:45 AM 416 **Fates of medium-chain fatty acids fed to lactating dairy cows.**
M. Hollmann*[1], M. S. Allen[1], T. H. Herdt[2,3], J. S. Zyskowski[3], K. M. Lebbin[1], J. P. Steibel[1], and D. K. Beede[1], [1]*Department of Animal Science, Michigan State University, East Lansing*, [2]*Department of Large Animal Clinical Sciences, Michigan State University, East Lansing*, [3]*Diagnostic Center for Population and Animal Health, Michigan State University, East Lansing*.

11:00 AM 417 **The effect of rumen digesta inoculation on the time course of recovery from diet induced milk fat depression in dairy cows.**
D. E. Rico*, Y. Ying, A. R. Clarke, and K. J. Harvatine, *Penn State University, University Park*.

Draft

11:15 AM 418 **Effect of carbohydrate conformation in hulless barley *(Hordeum vulgare* L.) on in situ rumen and in vitro intestinal nutrient availability.**
L. Yang*[1,3], J. McKinnon[1,3], D. Christensen[1,3], B. Rossnagel[2,3], A. Beattie[2,3], and P. Yu[1,3], [1]*Department of Animal and Poultry Science*, [2]*Crop Development Centre*, [3]*University of Saskatchewan, Saskatoon, SK, Canada*.

11:30 AM 419 **Palmitic acid increased milk yield and feed efficiency across production level of lactating cows.**
P. Piantoni*, A. L. Lock, and M. S. Allen, *Michigan State University, East Lansing*.

11:45 AM 420 **Palmitic acid increased the yield of milk fat and improved feed efficiency across production level of cows compared with stearic acid.**
J. E. Rico*, M. S. Allen, and A. L. Lock, *Michigan State University, East Lansing*.

12:00 PM 421 **Linseed oil reduces methane emissions from grazing dairy cows.**
T. M. Boland*[1], K. M. Pierce[1], J. D. Rowntree[1], D. A. Kenny[2], and A. K. Kelly[1], [1]*University College Dublin, Lyons Research Farm, Newcastle, Co. Dublin, Ireland*, [2]*Animal Bioscience Centre, Teagasc, Grange, Dunsany, Co. Meath, Ireland*.

12:15 PM 422 **Effects of different protein supplements on AA availability in dairy cows.**
G. Maxin*, D. R. Ouellet, and H. Lapierre, *Dairy and Swine Research and Development Center, Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada*.

Draft

Small Ruminant Nutrition and Parasites
Chair: R. Reid Redden, North Dakota State University
127C

9:30 AM 423 **Nitrogen balance of growing West African Dwarf ewe fed Mexican sunflower leaf meal based diets.**
A. H. Ekeocha*, *University of Ibadan, Ibadan, Oyo, Nigeria*.

9:45 AM 424 **Excess iodine intake by the ewe in late pregnancy programs on the lamb for reduced immunoglobulin G absorption.**
T. M. Boland*, *University College Dublin, Lyons Research Farm, Newcastle, Co. Dublin, Ireland*.

10:00 AM 425 **Effects of different NFC/NDF ratios of TMR on ruminal pH and VFA in meat sheep.**
J. Liu*, Q. Y. Diao, Y. Tu, Y. G. Zhao, X. H. Gao, and L. H. Zhao, *Key Laboratory of Feed Biotechnology of Ministry of Agriculture/Feed Research Institute, Chinese Academy of Agricultural Sciences, Beijing, China*.

10:15 AM 426 **Protein supplementation of low-quality forage: Effects of amount and frequency on intake and nutrient digestibility by lambs.**
M. L. Van Emon*[1,2], C. S. Schauer[2], and D. W. Bohnert[3], [1]*Department of Animal Sciences, North Dakota State University, Fargo*, [2]*Hettinger Research Extension Center, North Dakota State University, Hettinger*, [3]*Eastern Oregon Agricultural Research Center, Oregon State University, Burns*.

10:30 AM 427 **Effect of feeding differently processed sweet sorghum (*Sorghum bicolor* L. Moench) bagasse based complete diet on nutrient utilization and microbial N supply in growing ram lambs.**
N. Nalini Kumari[1], Y. Ramana Reddy*[1], M. Blummel[2], T. Monika[1], B. V. S. Reddy[3], and Ch. Ravinder Reddy[3], [1]*S. V. Veterinary University, Tirupati, Andhra Pradesh, India*, [2]*International Livestock Research Institute (ILRI), Patancheru, Andhra Pradesh, India*, [3]*International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), Patancheru, Andhra Pradesh, India*.

10:45 AM 428 **Effect of the dietary cation-anion difference on the lactation performances of dairy ewes at early-mid lactation.**
M. M. Youssef, G. Caja*, A. A. K. Salama, A. Ait-Saidi, and E. Albanell, *Grup de Recerca en Remugants (G2R), Universitat Autonoma de Barcelona, Bellaterra, Barcelona, Spain*.

11:00 AM 429 **Factors affecting dry matter intake of grazing goats in the Brazilian rangelands.**
M. A. D. Bomfim*[1,2], L. O. Tedeschi[2], and N. F. De Paula[3,2], [1]*Embrapa Goats and Sheep, Sobral, Ceara, Brazil*, [2]*Texas A&M University, College Station*, [3]*Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil*.

11:15 AM 430 **Effects of diet on carcass quality and consumer taste panel acceptance of intact or castrated hair lambs.**
J. D. Kohler*[1], W. W. Miller[1], J. L. Vest[1], J. M. Burke[2], M. A. Brown[3], K. R. Maddock Carlin[4], M. D. Hudson[1], and E. L. Walker[1], [1]*Missouri State University, Springfield*, [2]*Dale Bumpers Small Farms Research Center, Booneville, AR*, [3]*USDA ARS Grazinglands Research Laboratory, El Reno, OK*, [4]*North Dakota State University, Fargo*.

11:30 AM 431 **Exploring the combined effects of dietary tannins and saponins on sheep infected with *Haemonchus contortus*.**
G. Copani[1], H. Hall[2], J. Miller[3], A. Priolo[1], and J. Villalba*[2], [1]*University of Catania, Catania, Sicily, Italy*, [2]*Utah State University, Logan*, [3]*Louisiana State University, Baton Rouge*.

11:45 AM 432 **Effect of feeding sericea lespedeza pellets on *Haemonchus contortus* in goats.**
D. S. Kommuru*[1], T. H. Terrill[1], N. C. Whitley[2], J. E. Miller[3], and J. M. Burke[4], [1]*Fort Valley State University, Fort Valley, GA*, [2]*North Carolina A&T State University, Greensboro*, [3]*Louisiana State University, Baton Rouge*, [4]*USDA/ARS/ DBSFRC, Booneville, AR*.

ADSA-ASAS Northeast Section Symposium
The Future of Animal Agriculture Programs in the Northeast in the Face of Reducing Animal Holdings on Campus
Chair: Heather Dann, William H. Miner Agricultural Research Institute
122C

2:00 PM **Welcome and Introduction.**
M. Wilson, *West Virginia University*.

2:05 PM 433 **The challenges associated with sustaining livestock farms for undergraduate teaching programs.**
T. Etherton*, *The Pennsylvania State University, University Park*.

2:40 PM 434 **Budgeting for teaching programs in animal science with shrinking resources.**
M. G. Hogberg*, *Iowa State University, Ames*.

3:15 PM 435 **Who are the animal science customers of the future? An industry perspective.**
D. E. Putnam*, *Balchem Corporation, New Hampton, NY*.

3:50 PM **Panel Discussion**

4:10 PM **NE ASAS/ADSA Business Meeting, Awards, and Reception.**

Draft

Animal Health IV
Chair: Todd Bilby, Texas AgriLife Research and Extension
228AB

2:00 PM 436 **I. Demographic trends in livestock inventory and number of operations in the United States.**
G. M. Schuenemann* and W. P. Shulaw, *Department of Veterinary Preventive Medicine, The Ohio State University, Columbus*.

2:15 PM 437 **II. Effect of trends in livestock inventory and number of operations on food animal veterinary practices in the United States.**
G. M. Schuenemann* and W. P. Shulaw, *Department of Veterinary Preventive Medicine, The Ohio State University, Columbus*.

2:30 PM 438 **Estimation of genetic parameters for hoof lesions in Canadian Holstein cows.**
N. Chapinal*[1,2], A. Koeck[3], S. Mason[4], A. Sewalem[5,6], D. Kelton[1], and F. Miglior[5,6], [1]*Department of Population Medicine, University of Guelph, Guelph, ON, Canada*, [2]*Animal Welfare Program, University of British Columbia, Vancouver, BC, Canada*, [3]*Centre for Genetic Improvement of Livestock, Department of Animal & Poultry Science, University of Guelph, Guelph, ON, Canada*, [4]*Alberta Milk, Edmonton, AB, Canada*, [5]*Guelph Food Research Centre, Agriculture and Agri-Food Canada, Guelph, ON, Canada*, [6]*Canadian Dairy Network, Guelph, ON, Canada*.

2:45 PM 439 **An international overview of the recording and use of functional traits in dairy cattle breeding and management.**
J. B. Cole*[1], K. F. Stock[2], J. Pryce[3], A. Bradley[4], N. Gengler[5], L. Andrews[6], and C. Egger-Danner[7], [1]*Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD*, [2]*Vereinigte Informationssysteme Tierhaltung w.V. (vit), Verden, Germany*, [3]*Department of Primary Industries, Victorian AgriBiosciences Centre, Bundoora, Victoria, Australia*, [4]*Quality Milk Management Services Ltd., Westbury-sub-Mendip, United Kingdom*, [5]*University of Liège, Gembloux Agro-Bio Tech (GxABT), Animal Science, Gembloux, Belgium*, [6]*Holstein UK, Rickmansworth, United Kingdom*, [7]*ZuchtData EDV-Dienstleistungen GmbH, Vienna, Austria*.

3:00 PM 440 **Effect of intrauterine dextrose therapy on reproductive performance of lactating dairy cows with clinical endometritis.**
M. G. Maquivar*[1], G. M. Schuenemann[1], S. Bas[1], and T. A. Brick[2], [1]*Department of Veterinary Preventive Medicine, The Ohio State University, Columbus*, [2]*Large Animal Medicine and Surgery Academic Program, St. George's University, Grenada, West Indies*.

3:15 PM 441 **Efficacy of two herbal remedies as alternatives to antibiotic dry cow therapy: preliminary microbiology results.**
K. A. E. Mullen*, R. L. Lyman, S. P. Washburn, and K. L. Anderson, *North Carolina State University, Raleigh*.

3:30 PM 442 **Comparison of low versus high calcium "anionic" diets for prevention of hypocalcemia and milk fever.**
J. P. Goff*[1] and R. L. Horst[2], [1]*Iowa State University, Ames*, [2]*Heartland Assays, Ames, IA*.

3:45 PM 443 **Variation in metabolic, hematologic, and innate immunologic parameters in early postpartum dairy cows is not largely influenced by dairy, days in milk, or parity.**
M. D. Sellers*, A. R. Pepper-Yowell, D. L. Hanson, C. R. Nightingale, C. J. Cobb, B. S. Obeidat, and M. A. Ballou, *Department of Animal and Food Sciences, Texas Tech University, Lubbock*.

4:00 PM 444 **Production and metabolic response of lactating dairy cows supplemented with a dietary antioxidant to intramammary infusion of lipopolysaccharide during thermoneutral and heat stress conditions.**
A. L. Kenny*[1], Y. M. Yang[2], N. M. Barkley[1], R. R. Rodrigues[1], G. I. Zanton[2], and M. R. Waldron[1], [1]*University of Missouri, Columbia*, [2]*Novus International Inc., St. Charles, MO*.

4:15 PM 445 **Potential risk of western juniper-induced abortion in beef cattle.**
C. T. Parsons*[1], D. R. Gardner[2], K. D. Welch[2], D. Cook[2], J. A. Pfister[2], and K. E. Panter[2], [1]*Oregon State University, Corvallis*, [2]*USDA Agricultural Research Service, Poisonous Plant Research Laboratory, Logan, UT*.

4:30 PM 446 **Assessment of daily milk fat and protein composition and the milk fat-protein ratio early postpartum as a predictor for subclinical ketosis in dairy cows.**
F. S. Lima*[1], C. A. Risco[1], R. V. K. Pereira[2], K. N. Galvão[1], and J. E. P. Santos[1], [1]*University of Florida, Gainesville*, [2]*Cornell University, Ithaca, NY*.

Draft

Breeding and Genetics
Advances in Genomic Methodology
Chair: Katie Olson, ABS Global Inc.
125AB

2:00 PM 447 **Iterative combination of national phenotype, genotype, pedigree, and foreign information.**
P. M. VanRaden*, *Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD*.

2:15 PM 448 **Adaptation of BGF90 package for genomic computations.**
I. Misztal*[1], A. Aguilar[3], S. Tsuruta[1], and A. Legarra[3], [1]*University of Georgia, Athens*, [2]*INIA, Las Brujas, Canelones, Uruguay*, [3]*INRA, UR631 Station d'Amélioration Génétique des Animaux (SAGA), Castanet-Tolosan, France*.

2:30 PM 449 **Methods to include foreign information in national evaluations.**
P. M. VanRaden and M. E. Tooker*, *Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD*.

2:45 PM 450 **Characteristics and use of the Illumina BovineLD BeadChip.**
G. R. Wiggans*[1], P. M. VanRaden[1], T. A. Cooper[1], C. P. Van Tassell[2], T. Sonstegard[2], and B. Simpson[3], [1]*Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD*, [2]*Bovine Functional Genomics Laboratory, ARS, USDA, Beltsville, MD*, [3]*GeneSeek, Lincoln, NE*.

3:00 PM 451 **Partitioning genetic (co)variances leading to alternative derivation of single-step type genomic prediction equations allowing joint estimation of GEBV and SNP effects.**
N. Gengler*[1], G. Nieuwhof[2], K. Konstantinov[2], and M. Goddard[3,4], [1]*ULg - Gembloux Agro-Bio Tech, Gembloux, Belgium*, [2]*ADHIS, Bundoora, Australia*, [3]*DPI, Bundoora, Australia*, [4]*University of Melbourne, Melbourne, Australia*.

3:15 PM 452 **Use of canonical discriminant analysis for detecting selection signatures in cattle.**
R. Steri, C. Dimauro, S. Sorbolini, G. Marras, M. Cellesi, G. Gaspa, and N. P. P. Macciotta*, *Dipoartimento di AGRARIA, Università di Sassari, Sassari, Italia*.

3:30 PM 453 **Genome-wide association mapping including phenotypes from relatives without genotypes.**
H. Wang*[1], I. Misztal[1], I. Aguilar[2], A. Legarra[3], and W. Muir[4], [1]*Department of Animal and Dairy Science, University of Georgia, Athens*, [2]*Instituto Nacional de Investigación Agropecuaria, INIA Las Brujas, Canelones, Uruguay*, [3]*INRA, UR631 Station d'Amélioration Génétique des Animaux (SAGA), Castanet-Tolosan, France*, [4]*Department of Animal Science, Purdue University, West Lafayette, IN*.

3:45 PM 454 **Genotyping by sequencing (GBS): A novel, efficient and cost-effective genotyping method in cattle.**
M. De Donato*[1,2], S. O. Peters[1,3], S. E. Mitchell[4], T. Hussain[1,5], and I. G. Imumorin[1], [1]*Department of Animal Science, Cornell University, Ithaca, NY*, [2]*IIBCA, Universidad de Oriente, Cumana, Venezuela*, [3]*Department of Animal Breeding and Genetics, University of Agriculture, Abeokuta, Nigeria*, [4]*Institute for Genomic Diversity, Cornell University, Ithaca, NY*, [5]*Institute of Biochemistry and Biotechnology, University of Veterinary and Animal Sciences, Lahore, Pakistan*.

4:00 PM 455 **Models' predictive ability of breeding values for a small data set of genotyped animals.**
F. M. Rezende*[1], J. B. S. Ferraz[1], F. V. Meirelles[1], J. P. Eler[1], and N. Ibañéz-Escriche[2], [1]*Faculdade de Zootecnia e Engenharia de Alimentos-Universidade de São Paulo, Pirassununga, São Paulo, Brazil*, [2]*Genètica i Millora Animal-IRTA, Lleida, Cataluña, Spain*.

4:15 PM 456 **Improving efficiency of inferring genetic architecture parameters in whole genome prediction models.**
W. Yang* and R. J. Tempelman, *Michigan State University, East Lansing*.

4:30 PM 457 **A multi-compartment model for genomic selection in admixture populations.**
E. Hay*, S. Smith, and R. Rekaya, *University of Georgia, Athens*.

4:45 PM 458 **Bayesian integration of external information into the single step approach for genomically enhanced prediction of breeding values.**
J. Vandenplas*[1,2], I. Misztal[3], P. Faux[1], and N. Gengler[1], [1]*University of Liege - Gembloux Agro-Bio Tech, Gembloux, Belgium*, [2]*National Fund for Scientific Research, Brussels, Belgium*, [3]*University of Georgia, Animal and Dairy Science Department, Athens*.

5:00 PM 459 **Conceptual comparison between standard multiple-trait and structural equation models in animal breeding applications.**
B. D. Valente*, G. J. M. Rosa, X.-L. Wu, D. Gianola, and K. A. Weigel, *University of Wisconsisn, Madison*.

Breeding and Genetics
Beef Cattle Breeding I—Production Traits
Chair: D. H. Crews Jr., Colorado State University
123

2:00 PM 460 **Incorporation of external EBV into the American Gelbvieh Association carcass national cattle evaluation.**
S. E. Speidel*[1], R. M. Enns[1], and S. Willmon[2], [1]*Colorado State University, Fort Collins*, [2]*American Gelbvieh Association, Westminster, CO*.

2:15 PM 461 **Across-population estimation of heritability of carcass traits in beef cattle: Meta- vs. mega-analyses.**
H. Okut*[1,3], X.-L. Wu[1], D. Gianola[1], G. J. M. Rosa[1], S. Bauck[2], and B. W. Woodward[2], [1]*University of Wisconsin, Madison*, [2]*Merial Limited, Duluth, GA*, [3]*University of Yuzuncu Yil, Van, Turkey*.

2:30 PM 462 **Accuracies with different genomic models for traits with maternal effects.**
D. A. L. Lourenco*[1], I. Misztal[1], H. Wang[1], I. Aguilar[2], and S. Tsuruta[1], [1]*University of Georgia, Athens*, [2]*Instituto Nacional de Investigación Agropecuaria INIA, Las Brujas, Canelones, Uruguay*.

2:45 PM 463 **Cumulative discounted gene expression for economically relevant traits for terminal and maternal purpose in cattle production system.**
X. Zeng*, B. W. Brigham, S. E. Speidel, D. H. Crews, and R. M. Enns, *Colorado State University, Fort Collins*.

3:00 PM 464 **Cluster and meta analyses of genetic parameters for feed intake traits in beef cattle.**
I. D. P. S. Diaz[1], D. H. Crews*[2], and R. M. Enns[2], [1]*Universidade Estadual Paulista, Jaboticabal, Sao Paulo, Brazil*, [2]*Colorado State University, Fort Collins*.

3:15 PM 465 **Marbling change patterns of rib eye area by slaughter age using random regression sire model.**
K. Kato*, Y. Nakahashi, and K. Kuchida, *Obihiro University of Agriculture & Veterinary Medicine, Obihiro, Japan*.

3:30 PM 466 **Estimation of heterotic effects on stayability in beef cattle.**
E. M. Huff*[1], B. W. Brigham[1], S. Willmon[2], and R. M. Enns[1], [1]*Department of Animal Science, University of Colorado, Fort Collins*, [2]*American Gelbvieh Association, Westminster, CO*.

3:45 PM 467 **Comparison of single breed and admixed reference populations for across-breed prediction of direct genomic breeding values in Red Angus beef cattle.**
M. Saatchi*[1], R. D. Schnabel[2], J. F. Taylor[2], and D. J. Garrick[1,3], [1]*Department of Animal Science, Iowa State University, Ames*, [2]*Division of Animal Science, University of Missouri, Columbia*, [3]*Institute of Veterinary, Animal and Biomedical Sciences, Massey University, Palmerston North, New Zealand*.

Draft

4:00 PM 468 **Adipose and muscle tissue expression of two genes (*NCAPG* and *LCORL*) located in a chromosomal region associated with cattle feed intake and gain.**
A. K. Lindholm-Perry*, A. K. Sexten, L. A. Kuehn, L. A. Rempel, J. R. Miles, R. A. Cushman, and H. C. Freetly, *USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE*.

4:15 PM 469 **Identification of single nucleotide polymorphisms for feed efficiency and performance in crossbred beef cattle.**
M. K. Abo-Ismail*[1], G. Vander Voort[1], E. J. Squires[1], K. C. Swanson[1,2], J. Thomson[3], B. Karisa[3], G. Plastow[3], S. Moore[3], and S. P. Miller[1,3], [1]*Centre for Genetic Improvement of Livestock, University of Guelph, Guelph, ON, Canada*, [2]*Animal Sciences Department, North Dakota State University, Fargo*, [3]*Faculty of Agricultural, Life and Environmental Sciences, University of Alberta, Edmonton, AB, Canada*.

4:30 PM 470 **Covariance functions, genetic parameters and breeding values for longitudinal ultrasound measures of ribeye area in a Colombian multibreed cattle population.**
C. A. Martinez[1], M. A. Elzo*[2], A. Jimenez[3], C. Manrique[1], and G. Hu[2], [1]*Universidad Nacional de Colombia, Bogota, Colombia*, [2]*University of Florida, Gainesville*, [3]*Colombian Association of Zebu Cattle Breeders, Bogota, Colombia*.

4:45 PM 471 **Genetic and environmental influences on movement patterns of beef cattle grazing foothill rangeland.**
D. Bailey*[1], D. Jensen[2], M. Thomas[3], D. Boss[2], and R. Welling[4], [1]*New Mexico State University, Las Cruces*, [2]*Montana State University, Havre*, [3]*Colorado State University, Fort Collins*, [4]*CashCattleBiz.com, Vaughn, MT*.

Cell Biology Symposium
Molecular basis for feed efficiency
Chair: James Sartin, Auburn University
121AB

2:00 PM **Introduction**

2:05 PM 472 **Unique roles for agouti proteins and melanocortin signaling in lower vertebrates.**
C. Zhang[1,2], P. M. Forlano[3], and R. D. Cone*[1], [1]*Department of Molecular Physiology and Biophysics, Vanderbilt University School of Medicine, Nashville, TN*, [2]*Department of Cell and Developmental Biology, Oregon Health Science University, Portland*, [3]*Department of Biology and The Aquatic Research and Environmental Assessment Center, Brooklyn College of The City University of New York, Brooklyn*.

2:50 PM **Introduction**

2:55 PM 473 **The physiological basis defining feed efficiency differences in pigs selected on residual feed intake.**
N. K. Gabler*, J. K. Grubbs, A. Harris, S. M. Cruzen, E. Huff-Lonergan, J. F. Patience, J. C. M. Dekkers, and S. M. Lonergan, *Iowa State University, Ames*.

3:40 PM **Introduction**

3:45 PM 474 **Genetics of feed efficiency in dairy and beef cattle.**
D. P. Berry*[1] and J. J. Crowley[2], [1]*Teagasc, Moorepark Dairy Production Research Center, Fermoy, Co. Cork, Ireland*, [2]*Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada*.

4:30 PM **Introduction**

4:35 PM 475 **Feed efficiency: Mitochondrial function to global gene expression.**
W. G. Bottje* and B.-W. Kong, *Department of Poultry Science, Center of Excellence for Poultry Science, University of Arkansas, Fayetteville*.

Companion Animals Symposium
Impact of Anthropomorphism on Companion and Captive Animal Husbandry
Chair: Greg Aldrich, Pet Food & Ingredient Technology Inc.
121C

2:00 PM **Introduction**

Draft

2:05 PM 476 **Capitalizing on human health trends to improve feline health and wellbeing.**
M. R. Lappin*, *Department of Clinical Sciences, Colorado State University, Fort Collins*.

2:40 PM 477 **Effect of anthropomorphism on companion and captive animal husbandry.**
T. M. Edling*, *Petco Animal Supplies Inc., San Diego, CA*.

3:15 PM 478 **Companion animal and captive animal husbandry: The balance between what animals need and what people think they need.**
M. S. Edwards*, *California Polytechnic State University, San Luis Obispo*.

3:50 PM 479 **Antimicrobial cathelicidin peptides: What are they and how do they help protect the dog?**
T. Melgarejo* and F. Blecha, *Kansas State University, Manhattan*.

4:25 PM 480 **New findings in the obligate carnivore-omnivore debate: Regulation of macronutrient intake in cats and dogs.**
A. K. Hewson-Hughes*[1], V. L. Hewson-Hughes[1], A. Colyer[1], A. T. Miller[1], S. M. McGrane[1], S. R. Hall[1], R. F. Butterwick[1], S. J. Simpson[2], and D. Raubenheimer[3], [1]*Waltham Centre for Pet Nutrition, Waltham-on-the-Wolds, Leicestershire, UK*, [2]*University of Sydney, Sydney, Australia*, [3]*Massey University, Auckland, New Zealand*.

Dairy Foods Symposium
Bioactive Components in Milk and Dairy Products: Recent International Perspectives and Progress in Different Dairy Species
Chair: Young Park, Fort Valley State University
122AB

2:00 PM **Introduction**
Y. Park, *Fort Valley State University, Fort Valley, GA*.

2:05 PM 481 **Bioactive components in cow milk and products.**
H. J. Korhonen*, *MTT Agrifood Research Finland, Jokioinen, Finland*.

2:35 PM 482 **Bioactive components in buffalo milk and products.**
M. Guo*, *University of Vermont, Burlington*.

3:05 PM **Break**

3:20 PM 483 **Bioactive components in goat milk and products.**
Y. W. Park*, *Fort Valley State University, Fort Valley, GA*.

3:50 PM 484 **Bioactive components in sheep milk and products.**
M. A. de la Fuente* and M. Juarez, *Instituto de Investigacion en Ciencias de la Alimentacion, Madrid, Spain*.

4:20 PM 485 **Biosynthesis and secretion of bioactive compounds in milk in relation to genetic, molecular, and endocrine mechanisms.**
R. M. Akers*, *Virginia Tech, Blacksburg*.

Forages and Pastures II
Chair: Limin Kung, University of Delaware
225AB

2:00 PM 486 **Corn hybrid and plant density effects on corn silage quality and yield.**
D. B. Burken*, J. L. Harding, T. C. Hoegemeyer, G. E. Erickson, and T. J. Klopfenstein, *University of Nebraska-Lincoln, Lincoln*.

2:15 PM 487 **Characterization of aerobic deterioration of corn silage treated with stabilizers.**
C. Merrill*, A. P. T. P. Roth, M. A. Santos, M. C. Der Bedrosian, and L. Kung, *University of Delaware, Newark*.

Draft

2:30 PM 488 **Exogenous fibrolytic enzyme effects on preingestive fiber hydrolysis and release of sugars and phenolics from bermudagrass haylage.**
J. J. Romero*[1], K. G. Arriola[1], M. A. Zarate[1], C. R. Staples[1], C. F. Gonzalez[2], W. Vermerris[3], and A. T. Adesogan[1], [1]*Department of Animal Sciences, IFAS, University of Florida, Gainesville*, [2]*Department of Microbiology and Cell Science, IFAS, University of Florida, Gainesville*, [3]*Department of Agronomy, IFAS, University of Florida, Gainesville*.

2:45 PM 489 **Indigestible NDF in predictions of grass and red clover silage digestibility.**
S. J. Krizsan*[1], H. M. Alamouti[2], and P. Huhtanen[1], [1]*Swedish University of Agricultural Sciences, Department of Agricultural Research for Northern Sweden, Umeå, Sweden*, [2]*Zanjan University, Department of Animal Science, Zanjan, Iran*.

3:00 PM 490 **The effect of inoculants containing *Lactobacillus buchneri* on the fermentation of alfalfa silage harvested at two dry matters.**
M. C. Der Bedrosian*, B. G. Case, M. C. Santos, J. Lim, and L. Kung, *University of Delaware, Newark*.

3:15 PM 491 **Alfalfa/grass mixtures yield more DM, CP, NDF, and dNDF than alfalfa in monocultures.**
J. Paulson*, D. Holen, and P. Peterson, *University of Minnesota, St. Paul*.

3:30 PM 492 **Effect of land clearing and tillage methods on weed incidence under maize-cassava inter-cropping system.**
A. H. Ekeocha*, *University of Ibadan, Ibadan, Oyo, Nigeria*.

3:45 PM 493 **Agronomic characteristics of pearl millet genotypes for forage production in southwestern Nigeria.**
B. Ogunlolu*, A. Jolaosho, O. Onifade, B. Oduguwa, and P. Dele, *Department of Pasture and Range Management, University of Agriculture, Abeokuta, Ogun State, Nigeria*.

4:00 PM 494 **Influence of sample preparation technique on masticate fiber content collected from esophageally fistulated cattle.**
K. L. Gillespie*, J. A. Musgrave, L. A. Stalker, T. J. Klopfenstein, and S. K. Pruitt, *University of Nebraska, Lincoln*.

4:15 PM 495 **Influence of pre-collection diet and squeezing on crude protein content of masticate collected from fistulated cattle.**
J. A. Musgrave*, K. L. Gillespie, S. K. Pruitt, L. A. Stalker, and T. J. Klopfenstein, *University of Nebraska, Lincoln*.

4:30 PM 496 **Variability and implications of indigestible neutral detergent fiber in C3 and C4 forages.**
E. Raffrenato*[1,4], D. M. McNeill[2], D. G. Barber[3], M. N. Callow[3], and D. P. Poppi[1], [1]*School of Agriculture and Food Sciences, The University of Queensland, Gatton, Queensland, Australia*, [2]*School of Veterinary Science, The University of Queensland, Gatton, Queensland, Australia*, [3]*Agri-Science Queensland, Department of Employment, Economic Development and Innovation, Lawes, Queensland, Australia*, [4]*Department of Animal and Wildlife Sciences, University of Pretoria, Pretoria, Gauteng, South Africa*.

4:45 PM 497 **Fecal NIRS relationship with intake and diet digestibility of grazed Bahiagrass by cows determined by n-alkanes.**
S. W. Coleman*[1], C. C. Chase[2], and D. G. Riley[3], [1]*USDA ARS, El Reno, OK*, [2]*USDA ARS, Clay Center, NE*, [3]*Texas Agrilife, College Station*.

5:00 PM 498 **Dry season nutrient availability of vegetation species selected by the African elephant (*Loxodanta africana*) in the Pongola Game Reserve, South Africa.**
E. Cuthbert*, P. Yu, and D. A. Christensen, *University of Saskatchewan, Saskatoon, SK, Canada*.

Draft

Horse Species II
Chair: Carrie Hammer
229AB

2:00 PM 499 **Estimation of ideal body weight in horses and ponies using morphometric measurements.**
K. Martinson*[1], R. Coleman[2], J. Earing[1], A. Rendahl[1], and M. McCue[1], [1]*University of Minnesota, St. Paul*, [2]*University of Kentucky, Lexington*.

2:15 PM 500 **Influence of maternal plane of nutrition and arginine supplementation on mares and their foals: Glucose and insulin dynamics.**
A. E. Hanson*[1], K. N. Winsco[1], J. A. Coverdale[1], C. J. Hammer[2], and A. N. Wolford[1], [1]*Texas A&M University, College Station*, [2]*North Dakota State University, Fargo*.

2:30 PM 501 **Prevalence of internal parasites and anthelmintic efficacy in horses in relation to age, season and housing system.**
E. R. Share*, J. M. Reddish, C. Dyer, K. Koke, K. Barnhart, P. Sparks, and K. Cole, *The Ohio State University, Columbus*.

2:45 PM 502 **Antibiotic therapy disrupts equine fecal microflora.**
B. E. Davis*[1], L. M. Lawrence[1], M. D. Flythe[2,1], S. H. Hayes[1], G. L. Gellin[2], L. A. Strasinger[1], M. Brummer[1], and A. L. Fowler[1], [1]*University of Kentucky, Lexington*, [2]*United States Department of Agriculture, Agricultural Research Service, Forage-Animal Production Research Unit, Lexington, KY*.

3:00 PM 503 **Influence of probiotics on microflora in the gastrointestinal and reproductive tracts of horses.**
K. Barnhart*[1], J. M. Reddish[1], C. Dyer[1], J. Saul[1], M. A. Coutinho da Silva[2], and K. Cole[1], [1]*Department of Animal Sciences, The Ohio State University, Columbus*, [2]*Department of Veterinary Clinical Sciences, The Ohio State University, Columbus*.

3:15 PM 504 **Effects of weight distribution on movement of mature riding horses.**
H. Roberts*, J. M. Reddish, and K. Cole, *The Ohio State University, Columbus*.

Nonruminant Nutrition
Feed Ingredients
Chair: Ryan Dilger, University of Illinois
222AB

2:00 PM 505 **Energy, phosphorus, and amino acid digestibility in Lemna protein concentrate, fish meal, and soybean meal fed to weanling pigs.**
O. J. Rojas* and H. H. Stein, *University of Illinois, Urbana*.

2:15 PM 506 **Amino acid digestibility in camelina seeds and camelina expellers fed to growing pigs.**
F. N. Almeida*[1], J. K. Htoo[2], J. Thomson[3], and H. H. Stein[1], [1]*University of Illinois, Urbana*, [2]*Evonik Industries AG, Hanau, Germany*, [3]*Evonik Degussa Corporation, Kennesaw, GA*.

2:30 PM 507 **Withdrawal patterns of DDGS on performance, belly firmness, and fatty acids in pigs—A cooperative study.**
G. L. Cromwell*, M. J. Azain, O. Adeola, S. K. Baidoo, S. D. Carter, T. D. Crenshaw, G. M. Hill, P. S. Miller, J. F. Patience, M. C. Shannon, and H. H. Stein, *NCCC-42 Committee on Swine Nutrition, University of Kentucky, Lexington*.

2:45 PM 508 **Wheat-DDGS pig finishing diet reduces feed cost but does not improve net profit of production.**
G. A. Mastromano*, M. R. Ashby, R. C. Roberson, J. M. Scheffler, and J. Escobar, *Virginia Tech University, Blacksburg*.

3:00 PM 509 **The effects of corn- or sorghum-based diets with or without sorghum dried distillers grains and solubles on lactating sow and litter performance.**
K. M. Sotak*, R. D. Goodband, M. D. Tokach, J. M. DeRouchey, S. S. Dritz, and J. L. Nelssen, *Kansas State University, Manhattan*.

3:15 PM **Break**

3:30 PM 510 **Amino acid digestibility in blood products fed to weanling pigs.**
F. N. Almeida*[1], J. K. Htoo[2], J. Thomson[3], and H. H. Stein[1], [1]*University of Illinois, Urbana*, [2]*Evonik Industries AG, Hanau, Germany*, [3]*Evonik Degussa Corp., Kennesaw, GA*.

3:45 PM 511 **Amino acid digestibility in hydrolyzed feather meal fed to pigs.**
F. N. Almeida*[1], L. I. Chiba[2], S. D. Brotzge[2], R. L. Payne[3], and H. H. Stein[1], [1]*University of Illinois, Urbana*, [2]*Auburn University, Auburn, AL*, [3]*Evonik-Degussa Corp., Kennesaw, GA*.

4:00 PM 512 **Nutritive value and relationship between nutrient content and protein quality of soybean meals according to origin.**
G. G. Mateos*[1], M. P. Serrano[1], M. González[2], S. Sueiro[2], M. Hermida[2], R. Lázaro[1], and P. G. Rebollar[1], [1]*Universidad Politécnica de Madrid, Madrid, Spain*, [2]*Laboratorio de Mouriscade, Pontevedra, Spain*.

4:15 PM 513 **Influence of soybean meal source and micronization (fine grinding) of soybean meal on productive performance and digestive traits of Iberian pigs from 30 to 51 days of age.**
J. D. Berrocoso*, M. P. Serrano, L. Camara, P. G. Rebollar, A. Lopez, R. Abad, and G. G. Mateos, *Universidad Politecnica de Madrid, Madrid, Spain*.

4:30 PM 514 **Net portal absorption of amino acids in Iberian pigs fed with acorn.**
J. M. Rodriguez-Lopez, M. Lachica, L. Gonzalez-Valero, and I. Fernandez-Figares*, *CSIC (Spanish National Research Council), Granada, Spain*.

4:45 PM 515 **Gas production, in vitro organic matter disappearance, volatile fatty acid concentrations and physicochemical characteristics of fibrous sources for pigs.**
M. Chimonyo* and S. P. Ndou, *Animal and Poultry Science, Pietermaritzburg, South Africa*.

Draft

Physiology and Endocrinology
Pregnancy
Chair: George Perry, South Dakota State University
222C

2:00 PM 516 **Membrane progesterone receptors (α, β, and γ) in early pregnancy.**
R. L. Ashley*, S. M. Stanbrough, K. E. Quinn, J. D. Lindsey, and A. K. Ashley, *New Mexico State University, Las Cruces*.

2:15 PM 517 **Expression of PRSS, the plasminogen activator system and its activity in the ovine placentome during stage 2 of parturition.**
A. K. McNeel*, R. A. Cushman, and J. L. Vallet, *USDA, ARS US Meat Animal Research Center, Clay Center, NE*.

2:30 PM 518 **Physiological responses to repeated transportation of gestating Brahman cows.**
D. M. Price*[1], A. W. Lewis[1], D. A. Neuendorff[1], J. A. Carroll[2], T. H. Welsh[3], R. C. Vann[4], and R. D. Randel[1], [1]*Texas Agrilife Research, Texas A&M University System, Overton*, [2]*USDA-ARS, Livestock Issues Research Unit, Lubbock, TX*, [3]*Texas Agrilife Research, Texas A&M System, College Station*, [4]*MAFES, Mississippi State University, Raymond*.

2:45 PM 519 **Reduced fertility in female progeny from beef heifers on dietary restriction during development.**
S. E. Echternkamp*, D. R. Eborn, and R. A. Cushman, *USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE*.

3:00 PM 520 **The impact of cow nutrient status during the second and third trimester on development of the reproductive axis and fertility of daughters.**
R. A. Cushman*, A. K. McNeel, and H. C. Freetly, *USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE*.

3:15 PM 521 **Feeding distillers grains as an energy source to gestating and lactating beef heifers: Impact on growth, puberty attainment and reproductive processes in female progeny.**
P. J. Gunn*[1], J. P. Schoonmaker[1], R. P. Lemenager[1], and G. A. Bridges[2], [1]*Department of Animal Sciences, Purdue University, West Lafayette, IN*, [2]*North Central Research and Outreach Center, University of Minnesota, Grand Rapids*.

3:30 PM 522 **Chronic uterine infusion of melatonin or melatonin receptor antagonist alters ovine placental efficiency and fetal blood flow during mid-gestation.**
C. O. Lemley*, L. E. Camacho, and K. A. Vonnahme, *North Dakota State University, Fargo*.

3:45 PM 523 **Influence of metabolizable protein supplementation during late gestation on vasoreactivity of maternal placental arteries in sheep.**
L. A. Lekatz*[1], A. Reyaz[1], M. S. Sane[2], F. Yao[2], S. T. O'Rourke[2], C. Schwartz[1], M. L. Van Emon[3], C. S. Schauer[3], K. M. Carlin[1], C. O. Lemley[1], and K. A. Vonnahme[1], [1]*Center for Nutrition and Pregnancy, Department of Animal Sciences, North Dakota State University, Fargo*, [2]*Department of Pharmaceutical Sciences, North Dakota State University, Fargo*, [3]*Hettinger Research Extension Center, North Dakota State University, Hettinger*.

4:00 PM 524 **Transgenerational effects of n-3 and n-6 supplementation under the control of transcription factors related to lipid metabolism.**
C. B. Jacometo[1], S. Halfen[1], F. T. da Rosa[1], A. Schneider[1], C. C. Brauner[1], F. A. B. Del Pino[1], J. J. Loor[2], N. J. L. Dionello[1], L. F. M. Pfeifer[3], E. Schmitt*[1], and M. N. Corrêa[1], [1]*Federal University of Pelotas, Pelotas, Rio Grande do Sul, Brazil*, [2]*University of Illinois, Urbana*, [3]*Embrapa Rondônia, Porto Velho, RO, Brazil*.

Draft

Production, Management and the Environment
Dairy
Chairs: Stephanie Hill-Ward, Mississipi State University, and Julie Wittman, Elanco Animal Health
227AB

2:00 PM 525 **Use of electrical conductivity for the detection of subclinical mastitis in dairy cows in Saudi Arabia.**
A. Alyemni[1,2], R. Aljummah[2], M. Ayadi[2], M. Hussein[2], and M. Alshaikh*[2], [1]*Arasco, Riyadh, Saudi Arabia*, [2]*King Saud University, Riyadh, Saudi Arabia*.

2:15 PM 526 **Effect of feeding duration on growth, health, and economics of group-fed dairy calves in an organic production system.**
B. J. Heins* and E. A. Bjorklund, *University of Minnesota, West Central Research and Outreach Center, Morris*.

2:30 PM 527 **Survey of lameness, body condition score, hygiene, and hock lesions of Colorado dairy cows housed in outdoor dirt lots or free stalls with outdoor access.**
R. Woiwode*, T. Grandin, and I. Roman-Muniz, *Colorado State University, Fort Collins*.

2:45 PM 528 **Economics of using sheath protectors at the time of AI in dairy cows.**
S. Bas*[1], K. N. Galvão[2], and G. M. Schuenemann[1], [1]*Department of Veterinary Preventive Medicine, The Ohio State University, Columbus*, [2]*Department of Large Animal Clinical Sciences, University of Florida, Gainesville*.

3:00 PM 529 **Effect of AI technicians on reproductive performance and economics of lactating dairy cows.**
G. M. Schuenemann*[1], S. Bas[1], and K. A. Galvão[2], [1]*Department of Veterinary Preventive Medicine, The Ohio State University, Columbus*, [2]*Department of Large Animal Clinical Sciences, University of Florida, Gainesville*.

3:15 PM 530 **The effect of reproductive performance on the herd value assessed by integrating a daily dynamic programming with a daily Markov chain model.**
A. S. Kalantari* and V. E. Cabrera, *Department of Dairy Science, University of Wisconsin-Madison, Madison*.

3:30 PM 531 **Regression meta-models to predict the value of pregnancy in dairy cows.**
A. De Vries*, *University of Florida, Gainesville*.

3:45 PM 532 **Effect of heat stress during the dry period on immune function and growth performance of the offspring fed standardized pooled colostrum.**
A. P. A. Monteiro*, S. Tao, I. M. Thompson, and G. E. Dahl, *University of Florida, Gainesville*.

4:00 PM 533 **Accuracy of the AfiLab real time milk analyzer to predict DHIA fat, DHIA protein and lactose.**
K. Kanyiamattam*, K. D. Gay, E. J. Diepersloot, D. R. Bray, C. R. Staples, and A. De Vries, *University of Florida, Gainesville*.

4:15 PM 534 **Potential utility of a parlor-based individual quarter milking system.**
A. E. Sterrett*, C. L. Wood, K. J. McQuerry, and J. M. Bewley, *University of Kentucky*.

4:30 PM 535 **Reducing dietary protein decreased the ammonia-emitting potential of manure from commercial dairy farms.**
A. N. Hristov*, K. Heyler, E. Schurman, K. Griswold, P. Topper, M. Hile, V. Ishler, E. Wheeler, and S. Dinh, *The Pennsylvania State University, University Park*.

4:45 PM 536 **Dose effects of monensin on methane emissions from lactating Holstein dairy cattle.**
S. E. Place*[1], Y. Pan[1], Y. Zhao[1], C. E. Moore[2], J. K. Wittman[2], and F. M. Mitloehner[1], [1]*Department of Animal Science, University of California-Davis, Davis*, [2]*Elanco Animal Health, Greenfield, IN*.

5:00 PM 537 **Characterization of Shanghai dairy cattle lactation performance in 2008.**
C. G. Zhang[1], G. L. Liu*[1,2], L. M. Huang[1], Z. G. Wang[1], and G. Yang[1], [1]*State Key Laboratory of Dairy Biotechnology, Shanghai Bright Holstan Co. Ltd., Shanghai, China*, [2]*Shanghai Dairy Breeding Center Co., Ltd., Shanghai, China*.

Ruminant Nutrition
Beef Production III
Chair: Shawn Archibeque, Colorado State Universiry
131ABC

2:00 PM 538 **Effect of the forage-to-concentrate ratio on DMI and ruminal fermentation based on timing of feeding relative to feed restriction.**
R. I. Albornoz*[1], J. R. Aschenbach[2], D. R. Barreda[3], and G. B. Penner[1], [1]*University of Saskatchewan, Saskatoon, SK, Canada*, [2]*Free University of Berlin, Berlin, Germany*, [3]*University of Alberta, Edmonton, AB, Canada*.

2:15 PM 539 **Rumen and cecum methane emissions between steers that are either negative or positive for residual gain.**
H. Freetly*, K. Hales, and J. Wells, *USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE*.

2:30 PM 540 **Evaluation of a complete-feed (RAMP) receiving diet.**
C. J. Schneider*[1], B. L. Nuttelman[1], W. A. Griffin[1], D. B. Burken[1], R. A. Stock[2], T. J. Klopfenstein[1], and G. E. Erickson[1], [1]*University of Nebraska-Lincoln, Lincoln*, [2]*Cargill Inc., Blair, NE*.

2:45 PM 541 **Effects of RAMP on feed intake and ruminal pH during adaptation to finishing diets.**
C. J. Schneider*[1], A. L. Shreck[1], R. A. Stock[2], T. J. Klopfenstein[1], and Galen Erickson[1], [1]*University of Nebraska-Lincoln, Lincoln*, [2]*Cargill Inc., Blair, NE*.

3:00 PM 542 **Effect of maturity on the yield and in situ digestibility of whole-crop cereals.**
C. L. Rosser*[1], A. Beattie[1], H. C. Block[2], J. J. McKinnon[1], H. A. Lardner[1,3], and G. B. Penner[1], [1]*University of Saskatchewan, Saskatoon, SK, Canada*, [2]*Agriculture and Agri-Food Canada, Brandon, MB, Canada*, [3]*Western Beef Development Centre, Humbolt, SK, Canada*.

Draft

3:15 PM 543 **Rumen bacterial population responses to inclusion of wet distillers grains plus solubles in finishing diets of feedlot cattle.**
G. M. Shipp*[1], W. E. Pinchak[2], D. W. Pitta[3], B. Milligan[4], S. L. Ivey[4], and J. C. MacDonald[1], [1]*Texas AgriLife Research, Amarillo*, [2]*Texas AgriLife Research, Vernon*, [3]*Department of Clinical Studies, School of Veterinary Medicine, University of Pennsylvania, Kennett Square*, [4]*New Mexico State University, Las Cruces*.

3:30 PM 544 **Effect of sugarcane fiber digestibility and mode of conservation on intake and rumen pH of growing Nellore steers.**
D. O. Souza, B. S. Mesquita, J. Diniz-Magalhães, F. D. Rodriguez, B. S. Marques, and L. F. P. Silva*, *Universidade de São Paulo, Pirassununga, SP, Brazil*.

3:45 PM 545 **Impact of diet on the abundance and diversity of fecal *Escherichia coli* shed from cattle in overwintering environments.**
K. Christiuk*, D. O. Krause, K. Ominski, T. De Kievit, and E. Khafipour, *University of Manitoba, Winnipeg, Manitoba, Canada*.

4:00 PM 546 **Comparison of different supplemental cobalt forms on fiber digestion and cobalamin levels.**
W. L. Kelly*[1], C. K. Larson[2], M. K. Petersen[1], and R. C. Waterman[1], [1]*USDA-ARS, Fort Keogh Livestock and Range Research Laboratory, Miles City, MT*, [2]*Zinpro Corporation, Eden Prairie, MN*.

4:15 PM 547 **Comparison of animal and dietary effects on ruminal methanogens and their association with protozoa in beef cattle.**
M. Zhou*[1], M. Hünerberg[1], K. A. Beauchemin[2], T. A. McAllister[2], E. K. Okine[1], and L. L. Guan[1], [1]*Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, Alberta, Canada*, [2]*Agriculture and Agri-Food Canada Lethbridge Research Centre, Lethbridge, Alberta, Canada*.

4:30 PM 548 **Analysis of rumen methanogen diversity in cattle divergent for residual feed intake using next generation sequencing technology.**
C. A. Carberry*[1,2], D. A. Kenny[1], C. J. Creevey[1], and S. M. Waters[1], [1]*Animal and Bioscience Department, Animal and Grassland Research and Innovation Centre, Teagasc, Grange, Co. Meath, Ireland*, [2]*School of Agriculture, Food Science and Veterinary Medicine, University College Dublin, Belfield, Dublin 4, Ireland*.

4:45 PM 549 **Assessing how RFI classification in the growing phase predicts RFI classification in the finishing phase.**
D. Johns*, G. Vander Voort, C. Campbell, M. Quinton, and I. Mandell, *Department of Animal and Poultry Science, University of Guelph, Guelph, ON, Canada*.

Draft

Ruminant Nutrition
Dairy: Feed Additives
Chair: Rick Kohn, University of Maryland
132ABC

2:00 PM 550 **Effects of trace mineral source on oxidative metabolism, subclinical endometritis, and performance of transition dairy cows.**
T. Yasui*[1], C. M. Ryan[1], R. O. Gilbert[1], K. Perryman[2], and T. R. Overton[1], [1]*Cornell University, Ithaca, NY*, [2]*Micronutrients Inc., Indianapolis, IN*.

2:15 PM 551 **Effects of essential oils on methane production, fermentation, abundance and diversity of rumen microbial populations.**
A. Patra[1,2] and Z. Yu*[1], [1]*The Ohio State University, Columbus*, [2]*West Bengal University of Animal and Fishery Sciences, Kolkata, India*.

2:30 PM 552 **Effect of dietary fat and Rumensin on ruminal bacteriome revisited using metagenomic analysis.**
M. Kim[1], M. Morrison[2,1], M. Eastridge[1], and Z. Yu*[1], [1]*The Ohio State University, Columbus*, [2]*CSIRO Livestock Industries, St Lucia, QLD, Australia*.

2:45 PM 553 **Effect of dietary potassium on water intake and rumen dynamics.**
S. E. Fraley*[1], M. B. Hall[2], and T. D. Nennich[1], [1]*Purdue University, West Lafayette, IN*, [2]*USDA-ARS, Madison, WI.*

3:00 PM 554 **Effects of rumensin in lactating dairy cow diets with differing starch levels.**
M. S. Akins*[1], K. L. Perfield[2], H. B. Green[2], and R. D. Shaver[1], [1]*Department of Dairy Science, University of Wisconsin-Madison, Madison*, [2]*Elanco Animal Health, Greenfield, IN*.

3:15 PM 555 **Feeding blood meal or two rumen-protected lysine sources in early lactation dairy cows and the effect of withdrawal on production parameters.**
J. E. Nocek*[1] and I. Shinzato[2], [1]*Spruce Haven Farm and Research Center, Auburn, NY*, [2]*Ajinomoto Heartland Inc., Chicago, IL*.

3:30 PM 556 **Evaluation of dietary betaine (BET) in heat-stressed Holstein cows in lactation.**
L. W. Hall*[1], F. R. Dunshea[2], J. D. Allen[1], A. Wood[1], S. D. Anderson[1], S. Rungruang[1], J. L. Collier[1], N. M. Long[1], and R. J. Collier[1], [1]*The University of Arizona, Tucson*, [2]*The University of Melbourne, Parkville, Vic, Australia*.

3:45 PM 557 **Effect of dietary phytate on phosphorus digestibility in dairy cows.**
P. P. Ray* and K. F. Knowlton, *Virginia Polytechnic Institute and State University, Blacksburg*.

4:00 PM 558 **Application of rumen-protected lysine to lower crude protein diets for lactating dairy cows.**
J. P. Pretz*[1], M. J. de Veth[2], R. S. Ordway[2], and M. J. Brouk[1], [1]*Kansas State University, Manhattan*, [2]*Balchem Corp., New Hampton, NY*.

4:15 PM 559 **A meta-analysis of the effects of feeding yeast culture produced by anaerobic fermentation of *Saccharomyces cerevisiae*, on milk production of lactating dairy cows.**
G. D. Poppy*[1,2], A. R. Rabiee[3], I. J. Lean[3], W. K. Sanchez[2], K. L. Dorton[2], and P. S. Morley[1], [1]*Colorado State University, Fort Collins*, [2]*Diamond V, Cedar Rapids, IA*, [3]*SBScibus, Camden, NSW, Australia*.

4:30 PM 560 **Impact of feeding yeast culture under normal and SARA conditions in lactating dairy cows.**
S. Li*[1], E. Tesfaye[1], H. Khazanehei[1], M. Scott[2], I. Yoon[2], E. Khafipour[1], and J. C. Plaizier[1], [1]*University of Manitoba, Winnipeg, MB, Canada*, [2]*Diamond V, Cedar Rapids, IA*.

4:45 PM 561 **Effects of chromium propionate supplementation during the periparturient period and early lactation on metabolism, performance, and subclinical endometritis in dairy cows.**
T. Yasui*[1], J. A. A. McArt[1], C. M. Ryan[1], R. O. Gilbert[1], D. V. Nydam[1], F. Valdez[2], and T. R. Overton[1], [1]*Cornell University, Ithaca, NY*, [2]*Kemin Industries, Des Moines, IA*.

Ruminant Nutrition II
Chair: Guillermo Scaglia, Louisiana State University Ag Center
129AB

2:00 PM 562 **Study of effects of conjugated linoleic acid (CLA) on milk production and composition, and milk fatty acid profile of Holstein dairy cows.**
A. Mahdavi*, K. Rezayazdi, A. Z. Shahneh, and M. Dehghan-Banadaky, *Department of Animal Science, College of Agriculture and Natural Resources, University of Tehran, Karaj, Tehran, Iran*.

2:15 PM 563 **Measurement and regression models of methane emissions from sheep.**
Y.-G. Zhao, C.-G. Jiang, J. Liu, Y. Tu, K.-D. Deng, X.-H. Gao, and Q.-Y. Diao*, *Feed Research Institute of Chinese Academy of Agricultural Sciences, Beijing, China*.

2:30 PM 564 **Response of postpartum dairy cows to contrasting feeding strategies: Grazing plus supplements versus confinement on milk and solids production.**
M. Sprunck[1,2], D. A. Mattiauda[1], G. Motta[1], M. Fajardo[1], and P. Chilibroste*[1], [1]*Facultad de Agronomía, Paysandú, Paysandú, Uruguay*, [2]*Agencia Nacional de Investigación e Innovación, Montevideo, Montevideo, Uruguay*.

2:45 PM 565 **Effects of rumen-protected γ-aminobutyric acid on feed intake, performance and antioxidant status in transition cows.**
D. M. Wang*[1], C. Wang[1,2], H. Y. Liu[1], and J. X. Liu[1], [1]*Institute of Dairy Science, MoE Key laboratory of Molecular Animal Nutrition, College of Animal Sciences, Zhejiang University, Hangzhou, China*, [2]*College of Forestry and Biotechnology, Zhejiang A & F University, Lin'an, Hangzhou, China*.

3:00 PM 566 **Productive performance by lactating cows fed with different levels of Palm kernel cake.**
R. L. Oliveira*[1], R. L. N. Vaz Silva[2], A. C. Ferreira[1], A. G. Leão[1], M. C. A. Santana[1], A. A. Pinheiro[1], O. L. Ribeiro[1], and L. F. B. Pinto[1], [1]*Universidade Federal da Bahia, Salvador, BA, Brazil*, [2]*Instituto Federal Baiano, Catu, BA, Brazil*.

3:15 PM 567 **Effect of ruminal adaptation on short-chain fatty acid absorption and risk for ruminal acidosis.**
T. Schwaiger*[1,2], K. A. Beauchemin[2], and G. B. Penner[1], [1]*University of Saskatchewan, Saskatoon, SK, Canada*, [2]*Lethbridge Research Center, Lethbridge, AB, Canada*.

3:30 PM 568 **Effect of simultaneous reduction of ruminally degradable protein and ruminally undegradable protein in dairy cattle.**
M. Aguilar* and M. D. Hanigan, *Virginia Polytechnic Institute and State University, Blacksburg*.

3:45 PM 569 **Effects of dietary forage-to-concentrate ratio and sulfur concentration on ruminal fermentation and sulfur metabolism in feedlot heifers.**
S. Amat*, J. J. McKinnon, G. B. Penner, E. Simko, and S. Hendrick, *University of Saskatchewan, Saskatoon, SK, Canada*.

Draft

4:00 PM 570 **Intake, digestibility and microbial protein synthesis in heifers fed pasture, total mixed ration or both.**
A. Santana*[1], A. Perez-Ruchel[2], C. Cajarville[2], and J. L. Repetto[1], [1]*Facultad de Veterinaria, UdelaR, Depto. Bovinos, Montevideo, Uruguay*, [2]*Facultad de Veterinaria, UdelaR, Depto. Nutrición, Montevideo, Uruguay*.

4:15 PM 571 **A technology that enhances the utilization of low quality forages in ruminant animals.**
H.-L. Mao[1], H.-L. Mao[1], J. K. Wang*[1], J. A. Ye[1], J. X. Liu[1], and I. Yoon[2], [1]*Institute of Dairy Science, Zhejiang University, Hangzhou, China*, [2]*Diamond V, Cedar Rapids, IA*.

4:30 PM 572 **In vitro manipulation of Jersey cow rumen ecology with microbes from the wildebeest, horse and zebra.**
F. N. Fon* and I. V. Nsahlai, *University of KwaZulu-Natal, Pietermaritzburg, South Africa*.

4:45 PM 573 **Growth curve analysis of Sahiwal calves up to six-month age given milk or milk replacer up to weaning.**
M. S. Khan[1], S. A. Bhatti*[2], and H. A. Ahmad[3], [1]*Department of Animal Breeding and Genetics, University of Agriculture, Faisalabad, Pakistan*, [2]*Institute of Animal Nutrition and Feed Technology, University of Agriculture, Faisalabad, Pakistan*, [3]*Dept. Biology, Jackson State University, Jackson, MS.*

Small Ruminant Symposium
Novel Uses of Natural Bioactive Compounds in Small Ruminant Production and Future Directions
Chair: Sandra Solaiman, Tuskegee University
127C

2:00 PM **Introduction**
S. Solaiman, *Tuskegee University*.

2:05 PM 574 **Bioactive compounds and their mode of action in forage-fed ruminants.**
T. N. Barry*, *Massey University, Palmerston North, New Zealand*.

2:35 PM 575 **Consequences of plant secondary compounds on ruminant nutrition.**
B. R. Min* and S. Solaiman, *Department of Agricultural and Environmental Sciences, Tuskegee University, Tuskegee, AL*.

3:05 PM **Break**

3:15 PM 576 **Bioactive compounds for control of internal parasites.**
T. H. Terrill*, *Fort Valley State University, Fort Valley, GA*.

3:45 PM 577 **Emerging opportunities and challenges on exploitation of bioactive plant secondary compounds to mitigate environmental impacts by ruminants.**
J.-S. Eun*[1] and B. R. Min[2], [1]*Utah State University, Logan*, [2]*Tuskegee University, Tuskegee, AL*.

4:15 PM 578 **Bioactive plant compounds and food safety.**
R. C. Anderson*, *Southern Plains Agricultural Research Center, United States Department of Agriculture/Agricultural Research Service, College Station, TX*.

4:45 PM **Discussion**

Draft

Swine Species
Chair: J. Scott Radcliffe, Purdue University
128AB

2:00 PM 579 **Industry productivity analysis: Grow-finish traits.**
C. E. Hostetler*[1] and M. T. Knauer[2], [1]*National Pork Board, Des Moines, IA*, [2]*North Carolina State University, Raleigh*.

2:15 PM 580 **Periweaning failure to thrive syndrome in nursery pigs is associated with gastrointestinal lesions, but not enteric pathogens.**
C. K. Jones*, D. M. Madson, R. G. Main, N. K. Gabler, and J. F. Patience, *Iowa State University, Ames*.

2:30 PM 581 **Umbilical vein blood-oxygen relationship with pre-weaning growth in piglets.**
E. A. Hale*[1], T. J. Safranski[1], M. C. Lucy[1], J. N. Rhoades[1], J. W. Ross[2], N. K. Gabler[2], R. P. Rhoads[3], and L. H. Baumgard[2], [1]*University of Missouri, Columbia*, [2]*Iowa State University, Ames*, [3]*Virginia Tech, Blacksburg*.

2:45 PM 582 **Breed difference of porcine sirtuin 1 and its regulation by insulin.**
Y. Ren*, T. Z. Shan, L. N. Zhu, J. Huang, and Y. Z. Wang, *Institute of Animal Science, Zhejiang University, Key Laboratory of Molecular Animal Nutrition, Ministry of Education, Key Laboratory of Feed and Animal Nutrition of Zhejiang Province, Hangzhou, Zhejiang Province, China*.

3:00 PM **Break**

3:30 PM 583 **Growth response and blood profile of weaner pigs fed additive-enhanced agro-industrial by-product based diet.**
A. O. K. Adesehinwa*[1], O. O. Mgbere[2], O. O. Obi[1], B. A. Makanjuola[1], and I. A. Okere[1], [1]*Institute of Agricultural Research & Training, Obafemi Awolowo University, Ibadan, Oyo State, Nigeria*, [2]*Hatfield International Biometrical Service Centre, Houston, TX*.

3:45 PM 584 **An evaluation of the effects of a blend of essential oil compounds (Crina Piglets AF), a feed-grade antibiotic program, and their combination in nursery diets on the growth and economic performance of pigs in a commercial research facility.**
J. Bergstrom*[1], D. Campbell[1], C. Paulus[2], and M. DeBeer[1], [1]*DSM Nutritional Products, Parsippany, NJ*, [2]*DSM Nutritional Products, Kaiseraugst, Switzerland*.

4:00 PM 585 **Dietary antioxidant (Agrado Plus) sparing vitamin E in nursery pigs fed distillers dried grains with solubles (DDGS).**
J. Zhao*[1], T. Engle[2], T. Wineman[1], M. Vazquez-Anon[1], and R. J. Harrell[1], [1]*Novus International Inc., St. Charles, MO*, [2]*Colorado State University, Fort Collins*.

Teaching/Undergraduate and Graduate Education
Graduate and Undergraduate Teaching
Chair: Mark Hanigan, Virginia Polytechnic Institute and State University
223

2:00 PM 586 **Gender has a substantial impact on student success in introductory animal science courses.**
C. G. Jackson*[1], B. J. Williams[2], and E. P. Berg[1], [1]*North Dakota State University, Fargo*, [2]*Hutchinson Community College, Hutchinson, KS*.

2:15 PM 587 **Meeting the changing needs of animal science majors.**
G. M. Hill* and J. E. Link, *Michigan State University, East Lansing*.

2:30 PM 588 **Addressing agricultural and societal issues using a variety of teaching methods.**
E. L. Walker*, *Missouri State University, Springfield*.

2:45 PM 589 **Assessing the land-grant mission through undergraduate demographic data: A quantitative approach.**
S. Archibeque-Engle* and K. Pond, *Colorado State University, Fort Collins*.

3:00 PM 590 **Student perceptions of ethics and animal intelligence influenced by introductory animal science course.**
A. L. Adams*, G. A. Holub, W. S. Ramsey, and T. H. Friend, *Texas A&M University, College Station*.

3:15 PM 591 **Background experience affects student perceptions of the livestock industry.**
A. L. Adams*, G. A. Holub, W. S. Ramsey, and T. H. Friend, *Texas A&M University, College Station*.

3:30 PM 592 **Beef production student instructional video project.**
C. L. Pickworth*[1,3] and S. Boyles[2], [1]*The Ohio State University, Wooster*, [2]*The Ohio State University, Columbus*, [3]*North Carolina State University, Raleigh*.

3:45 PM 593 **Integrated program for reducing bovine respiratory disease complex (BRDC) in beef and dairy cattle, coordinated agricultural project (CAP): overview of the teaching program.**
M. G. Thomas*[1], G. R. Hagevoort[2], T. T. Ross[2], R. M. Enns[1], H. Van Campen[1], A. L. Van Eenennaam[3], H. L. Neibergs[4], C. Chase[5], S. V. Dindot[6], N. D. Cohen[6], and J. E. Womack[6], [1]*Colorado State University, Fort Collins*, [2]*New Mexico State University, Las Cruces*, [3]*University of California, Davis*, [4]*Washington State University, Pullman*, [5]*South Dakota State University, Brookings*, [6]*Texas A&M University, College Station*.

4:00 PM 594 **Why your school should host a Block and Bridle National Convention.**
M. W. Orth*, *Michigan State University, East Lansing*.

4:15 PM 595 **Enhancing the student learning experience through an undergraduate research program.**
E. L. Karcher* and N. L. Trottier, *Department of Animal Science, Michigan State University, East Lansing*.

4:30 PM 596 **Implementation of a capstone experience requirement in animal and poultry sciences.**
C. M. Wood*, D. M. Denbow, E. A. Dunnington, and R. K. Splan, *Virginia Tech, Blacksburg*.

Draft

4:45 PM 597 **The Graduate Experience Program: An opportunity for undergraduates to explore graduate study.**
E. L. Berg*[1], A. M. Meyer[2], and L. A. Lekatz[1], [1]*North Dakota State University, Fargo*, [2]*University of Wyoming, Laramie*.

WSASAS Symposium
Growing Beef Cattle—The future of stocker/backgrounding systems in beef production
Chair: Gerald Horn, Oklahoma State University
226ABC

2:00 PM 598 **ASAS Early Career Achievement Award: Improving the production, environmental, and economic efficiency of the stocker cattle industry in the Southeastern United States.**
P. Beck*[1], M. Anders[2], B. Watkins[2], S. Gunter[3], D. Hubbell[4], and S. Gadberry[5], [1]*University of Arkansas, Southwest Research & Extension Center, Hope*, [2]*University of Arkansas Rice Research & Extension Center, Stuttgart*, [3]*USDA-ARS Southern Plains Range Research Station, Woodward, OK*, [4]*University of Arkansas Livestock & Forestry Research Station, Batesville*, [5]*University of Arkansas Cooperative Extension Service, Little Rock*.

2:30 PM 599 **Growth, development, and the expression of genes in marketable tissues.**
P. A. Lancaster*[1], E. D. Sharman[1], M. A. Vaughn[2], C. R. Krehbiel[1], G. W. Horn[1], J. D. Starkey[2], and U. DeSilva[1], [1]*Oklahoma State University, Stillwater*, [2]*Texas Tech University, Lubbock*.

3:10 PM 600 **Opportunities for grazing cattle systems.**
J. C. MacDonald*[1,2] and F. T. McCollum[3], [1]*Texas AgriLife Research, Amarillo*, [2]*West Texas A&M University, Canyon*, [3]*Texas AgriLife Extension, Amarillo*.

3:50 PM 601 **Opportunities for drylot backgrounding systems in the beef industry.**
B. P. Holland*, *Department of Animal Science, South Dakota State University, Brookings*.

4:30 PM **Wrap-Up: Summary and future research directions.**
G. Horn, *Oklahoma State University*.

Draft

Wednesday, July 18

POSTER PRESENTATIONS

Animal Behavior and Well-Being
Behavior emphasis

W1 **Ruminal fermentation and behavior in Simmental heifers fed TMR with non-forage fiber sources in feedlots.**
S. P. Iraira*, J. L. Ruíz de la Torre, M. Rodríguez-Prado, X. Manteca, S. Calsamiglia, and A. Ferret, *Universitat Autònoma Barcelona, Bellaterra, Spain*.

W2 **Foraging behavior of beef cows grazing native grassland: Effect of herbage allowance on temporal and spatial grazing patterns.**
S. Scarlato*[1], M. Carriquiry[1], M. Do Carmo[1], A. Faber[1], C. Genro[3], E. Laca[2], and P. Soca[1], [1]*Unviersidad de la República, Paysandu Uruguay*, [2]*University of California, Davis*, [3]*Embrapa, Bage, Bage, RS, Brazil*.

W3 **Feeding behavior of grazing buffalo calves fed different types of supplement in tropical conditions.**
R. M. Patiño*, L. G. Altahona, and L. M. Botero, *University of Sucre, Sincelejo, Colombia*.

W4 **Effects of housing systems on behavioral responses of newborn Holstein calves.**
S. V. Matarazzo*[1], T. T. Fonseca[1], J. R. P. Arcaro[2], F. P. Campos[2], and S. A. de A. Fernandes[3], [1]*Universidade Estadual de Santa Cruz, UESC, Ilhéus, BA, Brazil*, [2]*Instituto de Zootecnia de Nova Odessa, Nova Odessa, SP, Brazil*, [3]*Universidade Estadual do Sudoeste da Bahia, Itapetinga, BA, Brazil*.

W5 **A preliminary study on the behavior of rodeo animals just prior to bucking events.**
E. A. Pajor*[1], T. Grandin[2], G. B. Bond[1], and C. Goldhawk[1], [1]*University of Calgary, Calgary, Alberta, Canada*, [2]*Colorado State University, Fort Collins*.

W6 **Determining the effects of castration with or without analgesia on growth performance, hematology, and behavior in neonatal beef cattle.**
A. C. Brown*[1], J. G. Powell[1], M. S. Gadberry[2], E. B. Kegley[1], J. T. Richeson[3], J. L. Reynolds[1], and Y. V. Thaxton[1], [1]*University of Arkansas Division of Agriculture, Fayetteville*, [2]*University of Arkansas Division of Agriculture, Little Rock*, [3]*West Texas A&M University, Canyon*.

W7 **Pain and pessimism: Dairy calves show negative bias in judgment tasks following hot-iron disbudding.**
H. W. Neave*, M. A. G. von Keyserlingk, and D. M. Weary, *University of British Columbia, Vancouver, BC, Canada*.

W8 **'The effect of previous experience on the adaptation to headlocks by Holstein dairy cows.**
P. D. Krawczel* and J. M. Hale, *Department of Animal Science, University of Tennessee, Knoxville*.

W9 **Lying behavior of lactating dairy cows is influenced by lameness especially around feeding time.**
C. Yunta*[1], I. Guasch[2], and A. Bach[1,3], [1]*Department of Ruminant Production, IRTA, Caldes de Montbui, Barcelona, Spain*, [2]*La Pirenaica, La Seu d'Urgell, Lleida, Spain*, [3]*ICREA, Barcelona, Spain*.

W10 **Effect of grouping calves post-weaning according to pre-grouping feed intake on eating behavior.**
C. M. Matuk*[1], M. Chahine[1], A. Bach[2,3], B. Ozer[1], M. E. de Haro Marti[4], J. B. Glaze[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*.

W11 **Association between behavioral patterns and risk of elevated somatic cell count in lactating dairy cows.**
M. E. A. Watters[1], K. Meijer[1], H. W. Barkema[2], K. E. Leslie[3], M. A. G. von Keyserlingk[4], and T. J. DeVries*[1], [1]*Dept. of Animal and Poultry Science, University of Guelph, Kemptville Campus, Kemptville, ON, Canada*, [2]*Dept. of Production Animal Health, University of Calgary, Calgary, Alberta, Canada*, [3]*Dept. of Population Medicine, University of Guelph, Guelph, Ontario, Canada*, [4]*Animal Welfare Program, University of British Columbia, Vancouver, British Columbia, Canada*.

W12 **Association of social rank during the prepartum period with health, reproduction, and milk production of dairy cows.**
K. M. Lobeck*, M. I. Endres, P. R. B. Silva, and R. Chebel, *University of Minnesota, St. Paul*.

W13 **To move or not to move: When should dairy cows be moved to maternity pens?**
K. L. Proudfoot*[1], M. B. Jensen[2], and M. A. G. von Keyserlingk[1], [1]*University of British Columbia, Vancouver, British Columbia, Canada*, [2]*Aarhus University, Tjele, Denmark*.

W14 **Web forums as a method for engagement on contentious issues in dairying: Should cows have access to pasture?**
M. A. G. von Keyserlingk*, C. A. Schuppli, and D. M. Weary, *University of British Columbia, Vancouver, BC, Canada*.

W15 **Social learning of feeding behavior in weaned pigs: Effects of the familiarity with conspecific model on flavor preferences.**
J. Figueroa*, D. Solà-Oriol, J. F. Pérez, and X. Manteca, *Universitat Autònoma de Barcelona, Bellaterra, Barcelona, Spain*.

Draft

W16 **Effect of feeding DDGS diets on behaviors of gestating sows in different housing systems.**
Y. Z. Li*[1], L. J. Johnston[1], S. K. Baidoo[2], C. E. Phillips[3], L. H. Wang[1], X. L. Xie[1], and G. C. Shurson[3], [1]*West Central Research and Outreach Center, University of Minnesota, Morris*, [2]*Southern Research and Outreach Center, University of Minnesota, Waseca*, [3]*Dept. Animal Science, University of Minnesota, St Paul*.

W17 **Piglet behavior as a measure of viability.**
R. Muns, E. G. Manzanilla, X. Manteca, and J. Gasa*, *Servei de Nutrició i Benestar Animal, Departament de Ciència Animal i dels Aliments, Universitat Autònoma de Barcelona, Bellaterra, Barcelona, Spain*.

W18 **Habitat selection and ranging patterns of the African elephant (*Loxodanta africana*) in the Pongola game reserve, South Africa.**
E. Cuthbert*, F. M. van Beest, D. A. Christensen, and R. Brook, *University of Saskatchewan, Saskatoon, SK, Canada*.

Animal Health III

W19 **Impaired vitamin E status in post-partum dairy cows as a complication of left displaced abomasum.**
G. Bobe*, K. Lytle, and M. Traber, *Oregon State University, Corvallis*.

W20 **Validation of three sampling strategies for estimating lameness prevalence in dairy herds.**
A. Hoffman[1], D. A. Moore*[1], J. R. Wenz[1], and J. Vanegas[2], [1]*Washington State University*, [2]*Oregon State University*.

W21 **Effects of feeding endophyte-infected fescue seed to Holstein cows during the dry period on plasma nitric oxide (NO), xanthine oxidase (XO), and haptoglobin (Hp) status in newborn calves.**
S. Kahl*[1], T. H. Elsasser[1], R. L. Baldwin[1], A. V. Capuco[1], P. Grossi[2], and K. R. McLoad[3], [1]*USDA, Agricultural Research Service, Beltsville, MD*, [2]*Istituto di Zootecnica, Università Cattolica, Piacenza, Italy*, [3]*University of Kentucky, Lexington*.

W22 **Leukocyte profiles of cows with claw horn disorders.**
K. K. M. O'Driscoll* and B. Earley, *Teagasc, Animal & Grassland Research and Innovation Centre, Grange, Dunsany, Co. Meath, Ireland*.

W23 **Investigation on a bio-hygienizing additive for oral use in dairy cows: Effect on milk somatic cell count.**
P. Luparia*[1], M. Poggianella[1], and V. Bronzo[2], [1]*SOP srl, Busto Arsizio, VA, Italy*, [2]*Universita di Milano, Milan, Italy*.

W24 **Oral administration of lipopolysaccharide and lipoteichoic acid modulated innate and humoral immunity in periparturient dairy cows.**
S. Iqbal*, Q. Zebeli, D. A. Mansmann, S. M. Dunn, and B. N. Ametaj, *University of Alberta, Edmonton, Alberta, Canada*.

W25 **Repeated oronasal administration of lipopolysaccharide modulated selected markers of innate and humoral immune responses in periparturient dairy cows.**
S. Iqbal*, Q. Zebeli, D. A. Mansmann, S. M. Dunn, and B. N. Ametaj, *University of Alberta, Edmonton, Alberta, Canada*.

W26 **Effect of polyunsaturated fatty acids (PUFA) on the infection of bovine epithelial cells with *Chlamydia psittaci*.**
A. Jaudszus[1], M. Grün[1], G. Jahreis[1], K. Sachse[2], and H. Sauerwein*[3], [1]*Institute of Nutrition, Department of Nutritional Physiology, Friedrich Schiller University Jena, Jena, Germany*, [2]*Institute of Molecular Pathogenesis, Friedrich-Loeffler-Institute (FLI), Federal Research Institute for Animal Health, Jena, Germany*, [3]*Institute of Animal Science, Physiology & Hygiene Unit, University of Bonn, Bonn, Germany*.

W27 **Immune status of dairy calves in the northern plains of Costa Rica: Year 1.**
J. A. Elizondo-Salazar*[1], J. Sánchez-Salas[1], G. Arroyo-Quesada[2], E. González-Arias[2], and A. J. Heinrichs[3], [1]*Estación Experimental Alfredo Volio Mata. Facultad de Ciencias Agroalimentarias, Universidad de Costa Rica*, [2]*Programa de Transferencia Tecnológica, Cooperativa de Productores de Leche R. L. Dos Pinos*, [3]*The Pennsylvania State University, University Park*.

W28 **Effects of Calibrin-Z on weanling pigs fed diets with naturally occurring deoxynivalenol.**
F. Chi[1], S. L. Johnston*[1], and D. C. Mahan[2], [1]*Amlan International Inc., Chicago, IL*, [2]*The Ohio State University, Columbus*.

W29 **Reproductive toxicity of liquid dishwashing detergent on male Swiss albino mice.**
A. Ata, M. S. Gulay*, S. Gungor, O. Yildiz Gulay, and A. Demirtas, *Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Burdur, Turkiye*.

W30 **Valuation of antimicrobial activities of 29 kinds of Chinese herbs against *E. coli*.**
L. C. Xiao[1,2], X. F. Kong[1], M. Q. Huang[1,2], X. Q. Guo[2], and Y. L. Yin*[1], [1]*Research Center for Healthy Breeding of Livestock and Poultry and Key Laboratory for Agro-ecological Processes in Subtropical Region, Institute of Subtropical Agriculture, Chinese Academy of Sciences, Changsha, Hunan, China*, [2]*College of Animal Science and Technology, Jiangxi Agricultural University, Nanchang, Jiangxi, China*.

Draft

W31 **Putrescine stimulates the mammalian target of rapamycin signaling pathway and protein synthesis in porcine trophectoderm cells.**
X. F. Kong[1,2], B. E. Tan[1,2], Y. L. Yin*[1], L. A. Jaeger[3], F. W. Bazer[2,3], and G. Y. Wu[1,2], [1]*Research Center for Healthy Breeding of Livestock and Poultry and Key Laboratory for Agro-ecological Processes in Subtropical Region, Institute of Subtropical Agriculture, Chinese Academy of Sciences, Changsha, Hunan, China*, [2]*Faculty of Nutrition and Department of Animal Science, Texas A&M University, College Station*, [3]*Department of Veterinary Integrative Biosciences, Texas A&M University, College Station*.

W32 **Dietary arginine supplementation confers immunostimulatory effects on inactivated *Pasteurella multocida* vaccines immunized mice.**
W. K. Ren[1], Y. L. Yin*[1], L. X. Zhou[2], Y. Wang[2], and Y. Peng[2], [1]*Institute of Subtropical Agriculture, Chinese Academy of Sciences, Changsha, Hunan, China*, [2]*Chongqing Key Laboratory of Forage & Herbivorce, College of Animal Science and Technology, Southwest University, Chongqing, China*.

W33 **Prevalence of clinical and subclinical ketosis at 8 and 30 days in milk and its relationships with parity, dry period length, peak milk yield and change in body condition score in a Jersey herd in the highlands of Costa Rica.**
J. M. I. Sánchez* and A. Saborío, *Centro de Investigaciones en Nutrición Animal. Universidad de Costa Rica, San José, Costa Rica*.

W34 **Effects of soy isoflavones on the male reproductive regulation in Huanjiang male pigs.**
X. Yuan[1], L. Li[1], J. Fan[1,2], B. Zhang*[2], C. Xiao[3], and Y. Yin[1], [1]*Institute of Subtropical Agriculture, the Chinese Academy of Science, Changsha, Hunan, China*, [2]*College of Animal Sciences, Hunan Agricultural University, Changsha, Hunan, China*, [3]*Nutrition Research Division, Food Directorate, Health Products and Food Branch, Health Canada, Ottawa, Canada*.

W35 **Estimate of serum IgG concentration using refractometry with or without caprylic acid fractionation.**
K. M. Morrill*[1], A. Lago[3], J. Polo[3], J. D. Quigley[3], and H. D. Tyler[2], [1]*Cornell Cooperative Extension, Westport, NY*, [2]*Iowa State University, Ames*, [3]*APC Inc., Ankeny, IA*.

W36 **Haptoglobin is a potential early indicator of postpartal diseases.**
D. Sabedra[1], E. Ramsing[1], C. Shriver-Munsch[1], J. Males[1], W. Sanchez[2], I. Yoon[2], and G. Bobe*[1], [1]*Oregon State University, Corvallis*, [2]*Diamond V, Cedar Rapids, IA*.

W37 **Bovine hepatic retinol binding protein gene expression and its relationship with tumor necrosis factor-α.**
P. Rezamand[1], K. M. Hunt[1], J. S. Watts[1], J. D. Blickenstaff*[1], B. J. Bradford[2], and L. K. Mamedova[2], [1]*University of Idaho, Moscow*, [2]*Kansas State University, Manhattan*.

W38 **Dried citrus pulp modulates the physiological and acute phase responses of crossbred heifers to an endotoxin challenge.**
N. C. Burdick*[1], J. T. Cribbs[2], J. A. Carroll[1], T. R. Callaway[3], T. B. Schmidt[4], B. J. Johnson[2], and R. J. Rathmann[2], [1]*USDA-ARS, Livestock Issues Research Unit, Lubbock, TX*, [2]*Texas Tech University, Department of Animal and Food Sciences, Lubbock*, [3]*USDA-ARS, Food and Feed Safety Research Unit, College Station, TX*, [4]*Mississippi State University, Department of Animal and Dairy Science, Mississippi State*.

Draft

Beef Species

W39 **Survey of beef quality assurance on California dairies.**
S. Aly[1], H. Rossow[1], G. Acetoze*[2], T. Lehenbauer[1], M. Payne[3], D. Meyer[2], J. Maas[4], and B. Hoar[3], [1]*Veterinary Medicine Teaching and Research Center, School of Veterinary Medicine, University of California-Davis, Tulare*, [2]*Department of Animal Science, University of California-Davis, Davis*, [3]*Western Institute of Food Safety and Security, University of California-Davis, Davis*, [4]*Veterinary Medicine Extension, School of Veterinary Medicine, University of California-Davis, Davis*.

W40 **Effects of stabilizing oxidative balance through dietary means on growth performance, antioxidant metabolites and fertility factors in bulls.**
T. J. Wistuba*, M. Becker, S. Court, and G. I. Zanton, *Novus International Inc., St. Charles, MO*.

W41 **Phenotypic correlations of the residual intake and gain with ultrasound carcass traits and other feed efficiency measures in Nellore cattle.**
R. C. Gomes*[1], S. L. Silva[2], M. H. A. Santana[2], J. B. S. Ferraz[2], P. Rossi[3], and P. R. Leme[2], [1]*Department of Animal Science, State University of Londrina, Londrina, Parana, Brazil*, [2]*College of Animal Science and Food Engineering, University of Sao Paulo, Pirassununga, Sao Paulo, Brazil*, [3]*Federal University of Parana, Curitiba, Parana, Brazil*.

W42 **Estimation of genetic parameters for carcass and image analysis traits of Japanese Black (Wagyu) in Australia.**
S. Maeda*[1], J. Grose[2], and K. Kuchida[1], [1]*Obihiro University of A&VM, Obihiro, Hokkaido, Japan*, [2]*Wagyu Genetics Pty Ltd., Brisbane, QLD, Australia*.

W43 **Effect of different feeding system on the fatty acid and lipid oxidation of raw and cooked meat of Sarda-Bruna young bulls.**
S. P. G. Rassu, R. Boe, R. Rubattu, A. Mazza, G. Pulina, and A. Nudda*, *Dipartimento di Agraria, Sezione di Scienze Zootecniche, Università di Sassari, Sassari, Italy*.

W44 **Analysis of twin births, calf stillbirth, abortion and calf death before 28 days of age in Irish Charolais and Limousin populations.**
A. M. Doyle*[1], R. D. Evans[2], and A. G. Fahey[1], [1]*School of Agriculture and Food Science, University College Dublin, Ireland*, [2]*Irish Cattle Breeding Federation, Bandon, Co. Cork, Ireland*.

W45 **The effect of limiting feed intake on visceral organ mass and performance in the pregnant beef cow.**
K. M. Wood*[1], C. J. Fitzsimmons[2,3], S. P. Miller[1], I. B. Mandell[1], B. W. McBride[1], and K. C. Swanson[4], [1]*Dept. of Animal and Poultry Science, University of Guelph, Guelph, ON, Canada*, [2]*Agriculture and Agri-Food Canada, Edmonton, AB, Canada*, [3]*Dept. of Agriculture, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada*, [4]*Dept. of Animal Sciences, North Dakota State University, Fargo*.

W46 **Whole cottonseed can promote as much rumination activity as barley straw when incorporated in TMR fed beef heifers at finishing period.**
S. P. Iraira*, J. L. Ruíz de la Torre, M. Rodríguez-Prado, X. Manteca, S. Calsamiglia, and A. Ferret, *Universitat Autònoma Barcelona, Bellaterra, Spain*.

W47 **Protein supplementation of low-quality forage: Effects of amount and frequency on cow performance and intake and nutrient digestibility by steers.**
D. W. Bohnert[1], R. F. Cooke[1], B. I. Cappellozza[1], D. L. McGuire*[1], and S. J. Falck[2], [1]*Eastern Oregon Agricultural Research Center, Oregon State University, Burns*, [2]*Eastern Oregon Agricultural Research Center, USDA-ARS, Burns*.

W48 **Using corn stover and DDGS to conserve stockpiled forages and improve reproductive performance and progeny growth in fall-calving beef cows.**
P. J. Gunn*[1], R. P. Lemenager[1], and G. A. Bridges[2], [1]*Department of Animal Sciences, Purdue University, West Lafayette, IN*, [2]*North Central Research and Outreach Center, University of Minnesota, Grand Rapids*.

W49 **Meta-analysis on the effects of supplementing distiller's grains to beef cows during early lactation on reproductive efficiency and pre-weaning progeny growth.**
P. J. Gunn*[1], J. P. Schoonmaker[1], R. P. Lemenager[1], and G. A. Bridges[2], [1]*Department of Animal Sciences, Purdue University, West Lafayette, IN*, [2]*North Central Research and Outreach Center, University of Minnesota, Grand Rapids*.

W50 **Effects of water stress and plant population on corn plant yields and composition.**
S. Soderlund, C. J. Fagan, A. T. Hassen, and F. N. Owens*, *Pioneer Hi-Bred International, a DuPont Business, LaSalle, CO*.

W51 **Prediction of preweaning ADG in beef calves from milk fatty acid methyl esters.**
Z. Deng*[1], M. A. Brown[2], Y. Peng[3], S. Coleman[2], and R. G. Mateescu[1], [1]*Oklahoma State University, Stillwater*, [2]*USDA-ARS, Grazinglands Research Laboratory, El Reno, OK*, [3]*Xi'an Vertexe Electronics Technology Co. Ltd., Xi'an, Shaanxi, China*.

W52 **Correlation of IGF-1, growth hormone, and leptin to breeding beef heifer productivity.**
C. J. Mueller*[1], D. Keisler[2], H. DelCurto[1], and T. DelCurto[1], [1]*Eastern Oregon Agricultural Research Center, Oregon State University, Union*, [2]*University of Missouri, Columbia*.

W53 **Exposure of prepubertal beef bulls to cycling females does not enhance sexual development.**
N. Miller* and K. Fike, *Kansas State University, Manhattan*.

Draft

Breeding and Genetics
Molecular Biology and Genomics

W54 **Protection and stabilization of whole blood at room temperature does not influence DNA yield, purity, and integrity.**
R. Flores*[1], M. Udtha[1], J. E. Sanner[1], E. A. Backes[2], L. S. Wilbers[2], and J. D. Caldwell[2], [1]*The University of Texas Health Science Center at Houston, Houston*, [2]*Lincoln University, Jefferson City, MO*.

W55 **Maximum differences analysis: An empirical method for genome-wide association studies.**
M. Cellesi, N. P. P. Macciotta*, G. Pulina, G. Gaspa, and C. Dimauro, *Dipartimento di Agraria, Universitá di Sassari, Italy*.

W56 **Adjustment of selection index coefficients and polygenic variance to improve regressions and reliability of genomic evaluations.**
P. M. VanRaden, J. R. Wright*, and T. A. Cooper, *Animal Improvement Programs Laboratory, USDA-ARS, Beltsville, MD*.

W57 **Use of canonical discriminant analysis to distinguish among three bovine breeds by using a low number of selected SNP markers.**
C. Dimauro*, M. Cellesi, R. Steri, S. Sorbolini, and NPP Macciotta, *Dipartimento di Agraria, Universitá di Sassari, Sassari, Italy*.

W58 **Reliability of genomic breeding values at different reference population's designs when some or all animals are genotyped.**
M. Pszczola[1,3], T. Strabel*[3], J. A. M. van Arendonk[2], and M. P. L. Calus[1], [1]*Animal Breeding and Genomics Centre, Wageningen UR Livestock Research, Lelystad, the Netherlands*, [2]*Animal Breeding and Genomics Centre, Wageningen University, Wageningen, the Netherlands*, [3]*Department of Genetics and Animal Breeding, Poznan University of Life Sciences, Poznan, Poland*.

W59 **Dealing with uncertainty of dependent variables in genome wide association studies.**
S. Smith*, E. H. Hay, and R. Rekaya, *University of Georgia, Athens*.

W60 **Increased use of young bulls in dairy cattle breeding programs.**
H. D. Norman, J. L. Hutchison*, and J. B. Cole, *Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD*.

W61 **Accuracy and bias for final score in US Holsteins from adding genomic information on bulls and cows.**
S. Tsuruta*[1], I. Misztal[1], and T. J. Lawlor[2], [1]*University of Georgia, Athens*, [2]*Holstein Association USA Inc., Brattleboro, VT*.

W62 **SNPs that affect microRNA binding sites in the bovine ACACA gene are associated with polyunsaturated fatty acid (PUFA) content of Canadian Holstein cows.**
E. M. Ibeagha-Awemu*[1], K. A. Akwanji[2], Z. Wang[3], and X. Zhao[2], [1]*Dairy and Swine Research and Development Centre, Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada*, [2]*Department of Animal Science, McGill University, Ste-Anne-De-Bellevue, QC, Canada*, [3]*Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada*.

W63 **Genomic-polygenic evaluation of postweaning weight and ultrasound carcass traits in an Angus-Brahman multibreed population.**
M. A. Elzo*[1], C. A. Martinez[1], G. C. Lamb[1], D. D. Johnson[1], M. G. Thomas[2], I. Misztal[3], D. O. Rae[1], J. G. Wasdin[1], and J. D. Driver[1], [1]*University of Florida, Gainesville*, [2]*Colorado State University, Fort Collins*, [3]*University of Georgia, Athens*.

W64 **Genomic-polygenic evaluation of Angus-Brahman cattle for carcass traits with the Illumina 3K chip.**
M. A. Elzo*[1], G. Hu[1], C. A. Martinez[1], G. C. Lamb[1], D. D. Johnson[1], M. G. Thomas[2], I. Misztal[3], D. O. Rae[1], J. G. Wasdin[1], and J. D. Driver[1], [1]*University of Florida, Gainesville*, [2]*Colorado State University, Fort Collins*, [3]*University of Georgia, Athens*.

W65 **Using low-density commercial DNA-marker panels on prediction accuracy for expected progeny differences of selection criteria: An application in a marker-assisted breeding program for Nellore cattle in Brazil.**
J. B. S. Ferraz*[1], F. M. Rezende[1], R. C. G. Silva[1,2], X. Wu[3], S. Bauck[2], J. P. Eler[1], and E. C. Mattos[1], [1]*University of Sao Paulo/FZEA/ZAB/GMAB, Pirassununga, SP, Brazil*, [2]*Igenity Livestock Production Business Unit, Merial Ltd., Duluth, GA*, [3]*Department of Animal Science, Univ. of Wisconsin, Madison*.

W66 **SNP AY428575.1:g.346G>A of the bovine *TCAP* gene: Genotyping with PCR-RFLP and occurrence in Nelore animals (*Bos indicus*) and Angus (*B. taurus*) × Nelore.**
B. Borges*[1], R. Curi[2], A. Tamanaha[2], and L. A. Chardulo[3], [1]*College of Agrarian and Veterinary Sciences, UNESP, Jaboticabal, SP, Brazil*, [2]*College of Animal Production and Veterinary Medicine, Animal Breeding and Nutrition Department, UNESP, Botucatu, SP, Brazil*, [3]*Bioscience Institute, Chemistry and Biochemistry Department, UNESP, Botucatu, SP, Brazil*.

W67 **Association study of heat shock protein 70 gene with serum biochemical indices in Sanhe cattle.**
Y. Wang*[1], L. Liu[1], Q. Xu[2], Q. Chu[3], Y. Yu[1], H. Wu[4], D. Wang[4], P. Yuan[4], and A. Liu[5], [1]*College of Animal Science and Technology, China Agricultural University, Beijing, China*, [2]*College of Biology, Beijing Jiaotong University, Beijing, China*, [3]*Institute of Animal Husbandry and Veterinary Medicine, Beijing Academy of Agriculture and Forestry Sciences, Beijing, China*, [4]*Xiertala Breeding Farm, Hailaer Farm Buro, Hailaer, Inner Mongolia, China*, [5]*Hailaer Farm Buro, Hailaer, Inner Mongolia, China*.

W68 **Molecular characterization of constitutive androstane receptor (CAR) and its association with feed efficiency of Nellore (*Bos indicus*) cattle.**
P. Alexandre, M. H. A. Santana, R. C. Gomes, J. B. S. Ferraz*, and H. Fukumasu, *College of Animal Science and Food Engeneering - Animal Breeding and Biotechnology Group (USP/FZEA/ZAB/GMAB), Pirassununga, SP, Brazil*.

W69 **Assessment of 16 candidate genes for growth and maternal ability traits in Mexican Charolais cattle.**
L. A. Meza-García, V. I. Pacheco-Contreras*, G. M. Parra-Bracamonte, and A. M. Sifuentes-Rincón, *Laboratorio de Biotecnología Animal, Centro de Biotecnología Genómica, Instituto Politécnico Nacional, Reynosa, Tamaulipas, México*.

W70 **Distribution of molecular markers and determination of molecular breeding values associated with feed efficiency, beef tenderness, and marbling in Senepol cattle.**
B. Velez*, B. Diaz, and M. Pagan, *University of Puerto Rico, Mayaguez, Puerto Rico*.

W71 **Function analysis of liver X receptor α regulating fatty acid synthesis in mammary epithelial cells of dairy goats.**
W. Wang, J. Luo*, Y. Zhong, X. Lin, and H. Shi, *Shaanxi Key Laboratory of Molecular Biology for Agriculture, College of Animal Science and Technology, Northwest A&F University, Yangling, Shaanxi, China*.

W72 **Structural and functional analysis of fatty acid synthase gene promoter of Xinong Saanen dairy goat.**
J. Li, J. Luo*, and Y. Sun, *Shaanxi Key Laboratory of Molecular Biology for Agriculture, College of Animal Science and Technology, Northwest A&F University, Yangling, Shaanxi, China*.

W73 **Use of different statistical approaches to study genetic variability of OAR6 in sheep breeds farmed in Italy.**
R. Steri[1], A. Criscione[2], E. Ciani[3], B. Moioli[4], P. Crepaldi[5], L. Nicoloso[5], D. Marletta[2], E. L. Nicolazzi[6], A. Passero[3], G. Catillo[4], F. Pilla[7], and N. P. P. Macciotta*[1], [1]*Università di Sassari, Sassari, Italy*, [2]*Università di Catania, Catania, Italy*, [3]*Università di Bari, Bari, Italia*, [4]*CRA, Rome, Italy*, [5]*Università di Milano, Milan, Italy*, [6]*Università Cattolica, Piacenza, Italy*, [7]*Università del Molise, Campobasso, Italy*.

W74 **Genotyping of five Chinese local pig breeds focused on meat quality by using PCR-RFLP based on halothane and Mx1.**
Z. M. Feng, G. G. Lian, X. F. Kong, X. Zhou, and Y. L. Yin*, *Institute of Subtropical Agriculture, Chinese Academy of Sciences, Changsha, Hunan, China*.

Draft

W75 **Which housekeeping gene can be used in gene expression analysis in Chinese local pig breeds?**
Z. M. Feng, J. P. Guo, X. F. Kong, and Y. L. Yin*, *Institute of Subtropical Agriculture, Chinese Academy of Sciences, Changsha, Hunan, China*.

W76 **Genotype imputation accuracy in an F_2 pig cross using high-density and low-density SNP panels.**
J. L. Gualdrón Duarte*[1,3], R. O. Bates[1], C. W. Ernst[1], N. E. Raney[1], R. J. C. Cantet[3], and J. P. Steibel[1,2], [1]*Department of Animal Science, Michigan State University, East Lansing*, [2]*Department of Fisheries and Wildlife, Michigan State University, East Lansing*, [3]*Departamento de Producción Animal, Facultad de Agronomía, UBA - CONICET, Ciudad Autónoma de Buenos Aires, Buenos Aires, Argentina*.

W77 **The proteome and mRNA expression of vimentin in the adipose tissue of broiler chickens.**
G. Kelley*, A. Stewart-Bohannon, F. Chen, X. Wang, and S. Nahashon, *Tennessee State University, Nashville*.

Dairy Foods
Microbiology and Dairy Chemistry

W78 **Viability of free and encapsulated *Lactobacillus acidophilus* ATCC 4356 in yogurt and artificial human gastric digestion system.**
F. Ortakci*[1,2] and S. Sert[2], [1]*Western Dairy Center Nutrition Dietetics and Food Sciences Department, Logan, UT*, [2]*Ataturk University, Erzurum, Turkey*.

W79 **Complete genome sequence of *Bifidobacterium animalis* subspecies *lactis* BF-6.**
A. Baker[1], A. Negrete-Raymond[2], K. Polzin[1], M. Souza[2], Y. Yu*[3], J. Loquasto[3], J. Amos[3], and R. Roberts[3], [1]*Cargill Texturizing Solutions, Waukesha, WI*, [2]*Cargill Biotechnology Development Center, Navarre, MN*, [3]*The Pennsylvania State University, Department of Food Science, University Park*.

W80 **Growth of yogurt culture bacteria in the presence of two antimicrobials.**
M. Vives[1,2] and K. Aryana*[2,1], [1]*Louisiana State University*, [2]*Louisiana State University Agricultural Center*.

W81 **Acquired resistance of yogurt culture bacteria to two different antimicrobials.**
M. Vives[1,2] and K. Aryana*[2,1], [1]*Louisiana State University*, [2]*Louisiana State University Agricultural Center*.

W82 **Isolation of an oligotrophic *Lactobacillus* species that may be associated with late gas production and splits in cheese.**
C. J. Oberg*[1,2], M. Culumber[1], T. Oberg[2], J. R. Broadbent[2], and D. J. McMahon[2], [1]*Department of Microbiology, Weber State University, Ogden, UT*, [2]*Western Dairy Center, Utah State University, Logan*.

W83 **Influence of various health beneficial spices on the acid tolerance of *Streptococcus thermophilus* ST-M5.**
M. Sanchez-Vega*[1,2] and K. Aryana[2,1], [1]*Louisiana State University*, [2]*Louisiana State University Agricultural Center*.

W84 **Bile tolerance of *Lactobacillus delbrueckii* ssp. *bulgaricus* LB-12 subjected to mild sonication intensities at different temperatures.**
M. Moncada*[1,2] and K. Aryana[2,1], [1]*Louisiana State University*, [2]*Louisiana State University Agricultural Center*.

W85 **A new approach to make milk calibration standards for electronic somatic cell counters.**
J. Podoll, D. M. Barbano*, and K. L. Wojciechowski, *Cornell University, Department of Food Science, Northeast Dairy Foods Research Center, Ithaca, NY*.

W86 **Freezing and thawing milk calibration standards for electronic somatic cell counters.**
L. V. Marzo[1] and D. M. Barbano*[2], [1]*University of Sao Paulo, Pirassununga, Brazil*, [2]*Cornell University, Department of Food Science, Northeast Dairy Foods Research Center, Ithaca, NY*.

W87 **Protease activity of *Streptococcus thermophilus* ST-M5 subjected to mild sonication intensities at different temperatures.**
M. Moncada*[1,2] and K. Aryana[2,1], [1]*Louisiana State University*, [2]*Louisiana State University Agricultural Center*.

W88 **Prediction of fatty acid chain length and unsaturation of milk fat by mid-infrared milk analysis.**
K. L. Wojciechowski[1], D. M. Barbano*[1], and E. de Jong[2], [1]*Cornell University, Department of Food Science, Northeast Dairy Foods Research Center, Ithaca, NY*, [2]*Delta Instruments, Drachten, the Netherlands*.

W89 **A ruggedness study: Casein content of milk by Kjeldahl analysis for milk concentrates and non-bovine milks.**
K. L. Wojciechowski and D. M. Barbano*, *Cornell University, Department of Food Science, Northeast Dairy Foods Research Center, Ithaca, NY*.

W90 **A review of the pH influenced casein-whey protein interactions in heated milk.**
H. Taterka*, B. Guamis, and M. Castillo, *Universitat Autònoma de Barcelona, Barcelona, Spain*.

W91 **Gel-based shotgun proteomics analysis of cow milk fat globules.**
T. J. Yuan, J. Q. Wang*, Y. X. Yang, D. P. Bu, J. H. Yang, P. Sun, and L. Y. Zhou, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*.

Draft

W92 **Chemical composition of oats straw treated with oxidizing and alkali-based agents.**
F. E. Miccoli[1,2], H. M. Arelovich*[2,3], R. D. Bravo[2,3], and M. F. Martínez[2,4], [1]*Facultad de Ciencias Agrarias, Universidad Nacional de Lomas de Zamora, Buenos Aires, Argentina*, [2]*Departamento de Agronomía, Universidad Nacional del Sur, Bahía Blanca, Argentina*, [3]*Comisión de Investigaciones Científicas (CIC), Buenos Aires, Argentina*, [4]*CERZOS-CONICET, Bahía Blanca, Argentina*.

W93 **In vitro true organic matter digestibility, partitioning factor, and ruminal microbial protein synthesis of crown rust resistant and susceptible oat cultivars in Northern Mexico.**
H. Bernal Barragán*[1,4], M. A. Cerrillo Soto[2,4], A. S. Juárez Reyes[2,4], M. Guerrero Cervantes[2,4], N. C. Vásquez Aguilar[1], F. G. Ríos Rincón[3,4], E. Gutiérrez Ornelas[1,4], and J. E. Treviño Ramirez[1], [1]*Universidad Autónoma de Nuevo León, Fac. Agronomía, San Nicolás de los Garza, NL, México*, [2]*Universidad Juárez del Estado de Durango, Fac. Medicina Veterinaria y Zootecnia, Durango, México*, [3]*Universidad Autónoma de Sinaloa, Fac. Medicina Veterinaria y Zootecnia, Culiacán, Sin, México*, [4]*Red Internacional de Nutición y Alimentación en Rumiantes, México*.

W94 **On farm corn silage evaluation method and its validation in a field study.**
B. Andrieu*, A. Perilhou, and J. Sindou, *Lallemand SAS, Blagnac, France*.

W95 **Transgenic corn hybrids reduce fungi in silage.**
G. B. Neto*[1], T. M. dos Santos Cividanes[1], R. B. F. Branco[1], A. L. Fachin[2], M. C. Beraldo[2], and T. A. Bitencourt[2], [1]*Agência Paulista de Tecnologia dos Agronegócios da Secretaria da Agricultura e Abastecimento do Estado de São Paulo, Ribeirão Preto, São Paulo, Brazil*, [2]*Universidade de Ribeirão Preto, Ribeirão Preto, São Paulo, Brazil*.

W96 **Effects of DM concentrations and inoculants on Jiggs and Tifton 85 bermudagrass silage.**
J. M. B. Vendramini*[1], A. T. Adesogan[2], L. E. Sollenberger[3], A. D. Aguiar[1], A. Valente[1], and P. Salvo[1], [1]*UF/IFAS Range Cattle Research and Education Center, Ona, FL*, [2]*Department of Animal Sciences, Gainesville, FL*, [3]*Department of Agronomy, Gainesville, FL*.

W97 **Effects of *Lactobacillus* inoculants and forage dry matter on the fermentation and aerobic stability of ensiled mixed-crop tall fescue and meadow fescue.**
X. S. Guo[1], D. J. Undersander[2], and D. K. Combs*[2], [1]*State Key Laboratory of Pastoral Ecosystem, Lanzhou University, Lanzhou, China*, [2]*University of Wisconsin, Madison*.

W98 **Effect of corn silage sample handling on nutritional parameters measured by wet chemistry.**
L. C. Solórzano*[1], D. Sawyer[2], and A. A. Rodríguez[3], [1]*Chr. Hansen Inc., Milwaukee, WI*, [2]*Rock River Laboratory Inc., Watertown, WI*, [3]*University of Puerto Rico, Mayagüez, PR*.

W99 **The effect of ensiling duration on fatty acid profile and concentration of corn silage.**
M. C. Der Bedrosian*[1], L. Kung[1], K. E. Nestor[2], C. L. Preseault[3], and A. L. Lock[3], [1]*University of Delaware, Newark*, [2]*Mycogen Seeds, Indianapolis, IN*, [3]*Michigan State University, East Lansing*.

W100 **Relationship between organoleptic characteristics, pH, and aerobic deterioration of alfalfa and orchard grass silages.**
R. González-Ortiz[1], L. Miranda-Romero[1], J. Burgueño-Ferreira[2], and R. Améndola-Massiotti*[1], [1]*Posgrado en Producción Animal Universidad Autónoma Chapingo, Chapingo, Estado de México, México*, [2]*CIMMYT, Texcoco, Estado de México, México*.

W101 **Effect of rate of application of various commercial exogenous fibrolytic enzymes on preingestive fiber hydrolysis and release of sugars and phenolics from bermudagrass haylage.**
J. J. Romero*[1], K. G. Arriola[1], M. A. Zarate[1], C. R. Staples[1], C. F. Gonzalez[2], W. Vermerris[3], and A. T. Adesogan[1], [1]*Department of Animal Sciences, IFAS, University of Florida, Gainesville*, [2]*Department of Microbiology and Cell Science, IFAS, University of Florida, Gainesville*, [3]*Department of Agronomy, IFAS, University of Florida, Gainesville*.

W102 **The effects of bacterial inoculants and enzymes on the fermentation, aerobic stability and in vitro organic matter digestibility characteristics of sunflower silages.**
M. L. Ozduven*[1], F. Koc[1], and V. Akay[2], [1]*Namik Kemal University, Tekirdag, Turkey*, [2]*Global Nutritech Biotechnology LLC, Richmond, VA*.

W103 **The inoculation rate of a mixture of homo-fermentative and hetero-fermentative bacteria strains affects the aerobic stability of tropical corn (TC) silage.**
A. A. Rodríguez*[1], L. C. Solórzano[2], and V. Rivera[1], [1]*University of Puerto Rico, Mayagüez, PR*, [2]*Chr. Hansen Inc., Milwaukee, WI*.

W104 **Infrared thermography to assess the relationship between corn silage quality and face temperature.**
L. O. Abdelhadi*[1], P. A. Saravia[2], W. R. Barneix[2], C. A. Malaspina[2], C. de Elia[3], and J. M. Tricarico[4], [1]*Est. El Encuentro, Research and Extension in Ruminant Nutrition, Brandsen, Buenos Aires, Argentina*, [2]*Cámara Argentina de Contratistas Forrajeros (CACF), Argentina*, [3]*Alltech Biotechnology, Argentina*, [4]*Innovation Center for U.S. Dairy, Rosemont, IL*.

W105 **Fermentative losses and yeasts population in sugarcane ensiled with different particle sizes.**
A. F. Campos*[1], G. R. Siqueira[1,2], V. D. Monção[3], and R. A. Reis[1], [1]*São Paulo State University, Jaboticabal, São Paulo, Brazil*, [2]*Agência Paulista de Tecnologia dos Agronegócios, Colina, São Paulo, Brazil*, [3]*Centro Universitário de Barretos, Barretos, São Paulo, Brazil*.

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W106 **A preliminary evaluation of corn silage affected by Hurricane Irene in 2011.**
J. M. Lim*[1], E. A. Cummings[2], H. M. Darby[2], and L. Kung[1], [1]*University of Delaware, Newark*, [2]*University of Vermont, Burlington*.

W107 **Feeding red clover cut at sundown and harvested as baleage did not improve milk yield in late-lactation dairy cows.**
N. T. Antaya*[1], A. F. Brito[1], R. Berthiaume[2], G. F. Tremblay[3], N. L. Whitehouse[1], G. M. Soule[1], N. E. Guidon[1], and E. S. Fletcher[1], [1]*University of New Hampshire, Durham*, [2]*Dairy and Swine R&D Centre/Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada*, [3]*Soils and Crops R&D Centre/Agriculture and Agri-Food Canada, Québec City, QC, Canada*.

W108 **The effect of feeding normal corn silage, BMR corn silage or 50:50 mixture of the two on the production performance of lactating cows.**
J. M. Lim*[1], M. C. Santos[1], M. C. der Bedrosian[1], K. E. Nestor[2], and L. Kung[1], [1]*University of Delaware, Newark*, [2]*Mycogen Seeds, Indianapolis, IN*.

W109 **Effects of an esterase-producing inoculant and chop-length on fermentation and aerobic stability of barley silage.**
W. Addah*[1,2], J. Baah[1], E. K. Okine[2], and T. A. McAllister[1], [1]*Lethbridge Research Centre, Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada*, [2]*Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, Alberta, Canada*.

W110 **Effects of applying bacterial inoculant with different shooting height on fermentation quality of barley silage.**
D. H. Kim*[1], H. J. Lee[1], S. M. Amanullah[2], S. C. Kim[2], Y. M. Song[3], H. Y. Kim[3], and S. B. Kim[4], [1]*Division of Applied Life Science (BK21), Gyeongsang National University, Jinju, Gyeongsangnamdo, South Korea*, [2]*Department of Animal Science (Inst. Agric. Life Sci.), Gyeongsang National University, Jinju, Gyeongsangnamdo, South Korea*, [3]*Department of Animal Resource Techology, GNUST, Jinju, Gyeongsangnamdo, South Korea*, [4]*Dairy Science Division, NIAS, Cheonan, Chungnam, South Korea*.

W111 **Effects of bacterial inoculant and shoot height on fermentation quality of barley silage.**
H. J. Lee*[1], D. H. Kim[1], S. M. Amanullah[2], S. C. Kim[2], Y. M. Song[3], H. Y. Kim[3], and S. B. Kim[4], [1]*Division of Applied Life Science (BK21), Gyeongsang National University, Jinju, Gyeongsangnamdo, South Korea*, [2]*Department of Animal Science (Inst. Agric. Life Sci.), Gyeongsang National University, Jinju, Gyeongsangnamdo, South Korea*, [3]*Department of Animal Resource Techology, GNUST, Jinju, Gyeongsangnamdo, South Korea*, [4]*Dairy Science Division, NIAS, Cheonan, Chungnam, South Korea*.

W112 **Effects of inoculant blends on emissions of volatile organic compounds, oxides of nitrogen, carbon dioxide, ammonia, and dry matter losses in alfalfa silage.**
R. B. Franco*[1], J. A. McGarvey[2], D. H. Putnam[3], P. G. Green[4], and F. M. Mitloehner[1], [1]*Department of Animal Science, University of California, Davis*, [2]*United States Department of Agriculture, Agricultural Research Service, Albany, CA*, [3]*Department of Plant Sciences, University of California, Davis*, [4]*Department of Civil and Environmental Engineering, University of California, Davis*.

W113 **Screening of bacteriocinogenic lactic acid bacteria from tropical legume silage.**
M. Silva, H. Mantovani, O. Pereira*, C. Moraes, A. Ribon, and W. Souza, *Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil*.

W114 **Chemical composition and fermentation profile of *Brachiaria brizantha* and Campo Grande *Stylosanthes* mixed silages.**
J. P. Rigueira, O. Pereira*, K. Ribeiro, A. Cezário, and W. Souza, *Federal University of Vicosa, Viçosa, Minas Gerais, Brazil*.

W115 **Feedtech CustomChop F-20 enhances the fermentation characteristics of elephant grass (*Pennisetum purpureum*) after 45 d of ensiling.**
A. A. Rodríguez*[1], L. C. Solórzano[2], and T. Hemling[3], [1]*University of Puerto Rico, Mayagüez, PR*, [2]*Chr. Hansen, Milwaukee, WI*, [3]*DeLaval Manufacturing, Kansas City, MO*.

W116 **Intake and total apparent digestibility of nutrients of corn and *Stylosanthes* silages in diets for sheep.**
L. Silva, O. Pereira*, K. Ribeiro, S. Valadares Filho, and T. Silva, *Federal University of Vicosa, Viçosa, Minas Gerais, Brazil*.

W117 **Condensed tannins concentrations of prairie legume forages at different phenological stages.**
Y. Li[1,2], A. D. Iwaasa*[1], Y. Wang[3], L. Jin[3], and G. Han[2], [1]*Semiarid Prairie Agricultural Research Centre, Agriculture and Agri-Food Canada, Swift Current, Saskatchewan, Canada*, [2]*Colleges of Ecology and Environment Science, Inner Mongolia Agricultural University, Huhhot, China*, [3]*Lethbridge Research Center, Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada*.

W118 **Mixing purple prairie clover with alfalfa reduced alfalfa N transforming to ammonia-N.**
L. Jin[1,2], Z. Xu[1], A. D. Iwaasa[3], Y. G. Zhang[2], M. P. Schellenberg[3], T. A. McAllister[1], and Y. Wang*[1], [1]*AAFC, Lethbridge, AB, Canada*, [2]*Northeast Agricultural University, China*, [3]*SPARC-AAFC, Swift Current, SK, Canada*.

W119 **Effect of sainfoin condensed tannins on the N transformation of alfalfa forage preserved as silage.**
Y. Wang*, Z. Xu, S. Acharya, and T. A. McAllister, *AAFC, Lethbridge, AB, Canada*.

W120 **Effect of application rate of a fibrolytic enzyme product on in vitro ruminal fermentation of three low-quality substrates.**
A. Díaz[1], I. Mateos[1], C. Saro[1], E. N. Odongo[3], M. D. Carro[1,2], and M. J. Ranilla*[1,2], [1]*Dpto. Producción Animal, Universidad de León, Campus de Vegazana, León, Spain*, [2]*Instituto de Ganadería de Montaña (CSIC-ULE), Grulleros, León,Spain*, [3]*International Atomic Energy Agency, Vienna, Austria*.

Draft

Growth and Development III

W121 **Effect of hay or corn silage in pre-weaned calf diets on eating behavior and rumen development.**
F. X. Suarez-Mena* and A. J. Heinrichs, *The Pennsylvania State University, University Park*.

W122 **Exogenous palimitic and palmitoleic acids respond differently in stearoyl-CoA desaturase (SCD1) inhibited bovine adipocytes.**
A. K. G. Kadegowda*, T. A. Burns, and S. K. Duckett, *Clemson University, Clemson, SC*.

W123 **Steroyl-CoA desaturase 1 (SCD1) inhibition decreases de novo fatty acid synthesis in primary bovine adipocytes.**
A. K. G. Kadegowda*, T. A. Burns, N. Tharayil, S. L. Pratt, and S. K. Duckett, *Clemson University, Clemson, SC*.

W124 **Metabolic differences in hepatocytes from Iberian and Landrace pigs.**
L. Gonzalez-Valero, J. M. Rodriguez-Lopez, M. Lachica, and I. Fernandez-Figares*, *CSIC (Spanish National Research Council), Granada, Spain*.

W125 **Effect of betaine and conjugated linoleic acid on porcine subcutaneous adipose tissue lipolysis.**
M. L. Rojas-Cano[1], M. Martinez-Perez[2], M. Lachica[1], L. Lara[1], T. Ramsay[3], and I. Fernandez-Figares*[1], [1]*CSIC (Spanish National Research Council), Granada, Spain*, [2]*Instituto de Ciencia Animal, La Habana, Cuba*, [3]*BARC, ANRI. USDA, Beltsville, MD*.

W126 ***T-box (Tbx)-2* is required for proliferation of osteoblast cells.**
N. Francis[1], S. M. Tornaquindici[1], S. Mohan[2], and K. E. Govoni*[1], [1]*Department of Animal Science, University of Connecticut, Storrs*, [2]*Musculoskeletal Disease Center, Jerry L. Pettis VA Medical Center, Loma Linda, CA*.

W127 **Comparison of feed form (pelleted vs. textured) on growing performance and rumen papillae development of dairy steers.**
J. A. Davidson*[1], T. E. Johnson[1], B. L. Miller[1], K. B. Cunningham[1], H. C. Puch[1], K. M. O'Diam[2], and K. M. Daniels[2], [1]*Land O'Lakes Research Farm, Land O'Lakes Purina Feed, Webster City, IA*, [2]*Ohio Agricultural Research and Development Center, The Ohio State University, Wooster*.

W128 **Effect of parenteral administration of glutamine on autophagy of liver cell and immune responses in weaned calves.**
Z. Hu*, Z. Cao, and S. Li, *State Key Laboratory of Animal Nutrition, College of Animal Science and Technology, China Agricultural University, Beijing, China*.

W129 **Influence of hay type on ruminal papillae surface area of growing dairy steers from 13 to 22 wk of age.**
J. A. Davidson*, T. E. Johnson, H. C. Puch, and B. L. Miller, *LongView Animal Nutrition Center, Land O'Lakes Purina Feed, Gray Summit, MO*.

W130 **Intake and performance of dairy heifers 12 to 24 wk of age following a full potential calf feeding program.**
J. A. Davidson*, D. C. Brown, and B. L. Miller, *LongView Animal Nutrition Center, Land O'Lakes Purina Feed, Gray Summit, MO*.

W131 **Effects of milk feeding strategies on performance, ruminal development, and metabolic and hormonal profile of Holstein calves.**
B. F. Silper*, S. G. Coelho, A. M. Q. Lana, A. U. Carvalho, C. S. Ferreira, A. P. S. Franzoni, H. M. Saturnino, and R. B. Reis, *Universidade Federal de Minas Gerais, Belo Horizonte, Minas Gerais, Brasil*.

W132 **Ontogenic changes of hepatic glucocorticoid and α_1- and β_2-adrenergic receptors in neonatal calves.**
D. Rohrbeck, J. Steinhoff-Wagner, E. Kanitz, and H. M. Hammon*, *Leibniz Institute for Farm Animal Biology (FBN), Dummerstorf, Germany*.

W133 **l-Arginine regulates expression of myokines and adipokines in myoblast and adipocyte cells.**
H. S. Yang, X. Xiong, Y. L. Yin*, and X. F. Kong, *Hunan Provincial Engineering Research Center of Healthy Livestock, Key Laboratory of Agro-ecological Processes in Subtropical Region, Institute of Subtropical Agriculture, Chinese Academy of Sciences, Hunan, Changsha,China*.

W134 **Role of estrogen receptor-α (ER-α) and insulin-like growth factor receptor-1 (IGFR-1) in estradiol-stimulated proliferation of cultured bovine satellite cells.**
E. Kamanga-Sollo, M. E. White, M. R. Hathaway, and W. R. Dayton*, *University of Minnesota, St. Paul*.

Horse Species

W135 **Trends in equine farm management and conservation practices.**
B. J. McIntosh* and S. A. Hawkins, *The University of Tennessee, Knoxville*.

W136 **The effects of feed-borne *Fusarium* mycotoxins on the presence and severity of equine gastric ulcer syndrome and the efficacy of a glucomannan mycotoxin adsorbent.**
M. Mortson*, G. Girgis, H. Staempfli, A. Gallastegui, and T. K. Smith, *University of Guelph, Guelph, Ontario, Canada*.

Draft

W137 **Comparison of high fat, high fiber, and high starch diets on serum levels of insulin, IGF-1, and glucose in growing horses.**
C. A. Craige*, S. R. Cooper, L. J. Spicer, and S. T. Kawcak, *Oklahoma State University, Stillwater*.

W138 **Horses decrease water intake when supplements are added to drinking water.**
M. E. Gordon*, B. L. Miller, and M. L. Jerina, *Land O'Lakes Purina Feed LLC, Gray Summit, MO*.

W139 **The effects of coprophagy on the hindgut bacterial community of neonatal foals.**
L. A. Strasinger*[1], L. M. Lawrence[1], M. D. Flythe[2,1], G. L. Gellin[2], M. Brummer[1], B. E. Davis[1], and L. R. Good[1], [1]*University of Kentucky, Lexington*, [2]*United States Department of Agriculture, Agricultural Research Service, Forage-Animal Production Research Unit, Lexington, KY*.

W140 **Influence of maternal plane of nutrition and arginine supplementation on mares and their foals: Foaling parameters.**
K. N. Winsco*[1], J. A. Coverdale[1], C. J. Hammer[2,3], K. L. Gehl[1], A. E. Hanson[1], J. L. Lucia[1], and A. N. Wolford[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, North Dakota State University, Fargo*.

W141 **Mineral concentrations of cool season grasses as affected by specie and season.**
A. L. Fowler*, L. M. Lawrence, S. H. Hayes, and S. R. Smith, *University of Kentucky, Lexington*.

W142 **Effects of late gestation on conformation and movement in mares.**
H. Roberts*, J. M. Reddish, and K. Cole, *Department of Animal Sciences, The Ohio State University, Columbus*.

W143 **Exercise response in unfit horses of different selenium status.**
M. Brummer*, S. Hayes, B. E. Davis, L. A. Strasinger, S. M. McCown, and L. M. Lawrence, *University of Kentucky, Lexington*.

W144 **The effect of antibiotic administration on fermentative characteristics of equine feces.**
B. E. Davis*[1], L. M. Lawrence[1], M. D. Flythe[2,1], S. H. Hayes[1], C. Wilson[1], A. L. Fowler[1], M. Brummer[1], and L. A. Strasinger[1], [1]*University of Kentucky, Lexington*, [2]*United States Department of Agriculture, Agricultural Research Service, Forage-Animal Production Research Unit, Lexington, KY*.

W145 **Effects of probiotic supplementation on stress and immune responses in horses.**
J. Saul, J. M. Reddish*, K. Barnhart, C. Dyer, and K. Cole, *The Ohio State University, Columbus*.

W146 **Biochemical markers of bone metabolism in growing Quarter Horses fed a higher starch versus a higher fat diet.**
K. R. Vineyard*, M. E. Gordon, and M. L. Jerina, *Land O'Lakes Purina Feed, Gray Summit, MO*.

W147 **Anthelmintic resistance testing and training on horse farms in the Southeast.**
N. C. Whitley*[1], R. M. Kaplan[2], R. K. Spann[3], A. M. Zajac[4], K. Moulton[1], R. A. Franco[1], C. Swanson[5], A. E. Cooper[1], and V. R. Jackson[1], [1]*North Carolina A&T State University, Greensboro*, [2]*University of Georgia, Athens*, [3]*Virginia Tech MARE Center, Middleburg*, [4]*VA-MD Regional College of Veterinary Medicine, Blacksburg, VA*, [5]*Virginia Cooperative Extension, Albemarle County, Charlottesville, VA*.

Draft

Lactation Biology III

W148 **Estradiol enhances apoptosis in bovine mammary epithelial cells in vitro.**
L. Yart*[1,2], L. Finot[1,2], V. Lollivier[2,1], P. G. Marnet[2,1], and F. Dessauge[1,2], [1]*INRA, UMR1348 Pegase, Saint-Gilles, France*, [2]*Agrocampus Ouest, UMR1348 Pegase, Rennes, France*.

W149 **Evaluation of mitogenic properties of colostrum and colostrum replacer (CR) on growth of bovine mammary epithelial cells (BMEC) in vitro.**
K. E. Stemm*, C. M. Jones, J. L. Collier, and R. J. Collier, *University of Arizona, Tucson*.

W150 **Effects of intra-mammary infusions of casein hydrolysate, EGTA, and lactose at drying-off on mammary gland involution.**
B. Ponchon*[1], P. Lacasse[2], N. Silanikove[3], S. Ollier[2], and X. Zhao[1], [1]*Department of Animal Science, McGill University, Sainte-Anne-de-Bellevue, QC, Canada*, [2]*AAFC-Dairy and Swine Research and Development Centre, Sherbrooke, QC, Canada*, [3]*Volcani Center, Bet Dagan, Israel*.

W151 **Expression of amino acid transporter LAT1 and the regulation by prolactin in mammary gland of dairy cow.**
L. Feng, Y. Lin, Q. Li*, X. Gao, and N. Zhang, *Key laboratory of Dairy Science, Ministry of Education, Northeast Agricultural University, Harbin, Heilongjiang, China*.

W152 **Bzw2 promotes proliferation and lactation of mammary epithelial cell in dairy goat.**
R. Sun, Q. Li*, H. Yan, J. Zhao, X. Gao, and N. Zhang, *The Key Laboratory of Dairy Science, Ministry of Education, Northeast Agricultural University, Harbin, Heilongjiang, China*.

W153 **CLA and diet induced milk fat depression reduces milk fat across the entire day.**
K. Cook[1], K. J. Harvatine*[1], and D. E. Bauman[2], [1]*Penn State University, University Park*, [2]*Cornell University, Ithaca, NY*.

W154 **Dairy cows having various levels of *cis*-9, *trans*-11 CLA de novo synthesis differently express proteins in milk epithelial cells.**
H. G. Lee*[1], T. Wang[1], J. N. Lim[1], J. D. Bok[2], J. H. Kim[3], S. B. Lee[1], S. K. Kang[2], J. H. Hwang[1], K. H. Lee[1], H. S. Kang[1], and Y. J. Choi[2], [1]*Department of Animal Science, Pusan National University, Miryang, Gyeongnam, Korea*, [2]*Department of Agricultural Biotechnology, Seoul National University, Seoul, Korea*, [3]*Research and Technology Center, Cargill Agri Purina, Seongnam, Gyeonggi, Korea*.

W155 **Modification of protein synthesis of bovine mammary epithelial cells induced by heat shock.**
H. Hu, 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*.

W156 **Choline and methionine affect oxidative stress in a bovine mammary epithelial cell line.**
L. Pinotti*[1], E. Skrivanova[2], R. Rebucci[1], E. Fusi[1], F. Cheli[1], and A. Baldi[1], [1]*Department of Veterinary Sciences and Technology for Food Safety, Università degli Studi di Milano, Milan, Italy*, [2]*Institute of Animal Science, Prague, Czech Republic*.

Nonruminant Nutrition
Feed Additives

W157 **Effects of dietary Aviplus-S supplementation on growth performance, fecal characteristics, and blood profiles in weanling pigs.**
J. H. Cho*, L. Yan, and I. H. Kim, *Department of Animal Resource & Science, Dankook University, Cheonan, Choongnam, South Korea*.

W158 **Effects of Alcopro supplementation as energy source on growth performance, nutrient digestibility, and blood characteristics in growing pigs.**
J. H. Cho*[1], P. Y. Zhao[1], K. D. Yang[2], S. W. Han[2], and I. H. Kim[1], [1]*Dankook University, Department of Animal Resource & Science, Cheonan, Choongnam, South Korea*, [2]*WooGene B&G, Seoul, South Korea*.

W159 **Effects of Calibrin-Z on weanling pigs fed diets with no mycotoxin contamination.**
F. Chi[1], S. L. Johnston*[1], and D. C. Mahan[2], [1]*Amlan International Inc., Chicago, IL*, [2]*The Ohio State University, Columbus*.

W160 **Bovine lactoferrampin-lactoferricin produced by *Pichia pastoris* fed-batch fermentation improves intestinal microflora in weaned piglets.**
X. S. Tang and Y. L. Yin*, *Institute of Subtropical Agriculture, the Chinese Academy of Sciences, Changsha, China*.

W161 **Effects of feeding capsicum oleoresin, garlicon, or turmeric oleoresin on gene expression of ileal mucosa of pigs.**
Y. Liu*[1], M. Song[1], T. M. Che[1], J. A. Soares-Almeida[1], J. J. Lee[1], D. Bravo[2], C. W. Maddox[1], and J. E. Pettigrew[1], [1]*University of Illinois, Urbana*, [2]*Pancosma SA, Geneva, Switzerland*.

W162 **Productive performance in post-weaned pigs conditioned by pre and postnatal porcine digestive peptides (PDP) exposure through maternal diet.**
J. Figueroa*[1], D. Solà-Oriol[1], E. Borda[2], S. A. Guzmán-Pino[1], and J. F. Pérez[1], [1]*Universitat Autònoma de Barcelona, Bellaterra, Barcelona, Spain*, [2]*Bioibérica, Barcelona, Spain*.

W163 **Effects of chitosan nanoparticles loaded with chromium ions on growth, blood metabolites, immune traits and tissue chromium in finishing pigs.**
M. Q. Wang*, C. Wang, H. Li, Y. J. Du, W. J. Tao, S. S. Ye, and Y. D. He, *Animal Science College of Zhejiang University, Hangzhou, Zhejiang, China*.

W164 **Effects of fermented chlorella supplementation on growth performance, nutrient digestibility, and blood characteristics in growing pigs.**
B. R. Lee*[1], J. Li[1], S. U. Lim[2], and I. H. Kim[1], [1]*Department of Animal Resource & Science, Dankook University, Cheonan, Choongnam, South Korea*, [2]*Ace M&F Ltd., Seoul, South Korea*.

W165 **The efficacy of using the external marker LIPE to predict digestibility values in Nile tilapia (*Oreochromis niloticus*) fed contrasting diets.**
R. Jones[1], O. Evans[1], E. A. Teixeira[2], E. O. S. Saliba[2], V. B. Silva[2], K. C. M. Filho[2], J. S. Saliba[2], S. J. Meale*[1], and A. V. Chaves[1], [1]*Faculty of Veterinary Science, University of Sydney, Sydney, NSW, Australia*, [2]*Laboratório de Aquacultura da Universidade Federal de Minas Gerais, Escola de Veterinária, Departamento de Zootecnia, Belo Horizonte, MG, Brazil*.

W166 **Validation of the external marker Nanolipe as an indicator of apparent nutrient and energy digestibility in juvenile Nile Tilapia (*Oreochromis niloticus*).**
O. Evans[1], R. Jones[1], E. A. Teixeira[2], E. O. S. Saliba[2], V. B. Silva[2], K. C. M. Filho[2], J. S. Saliba[2], S. J. Meale*[1], and A. V. Chaves[1], [1]*Faculty of Veterinary Science, University of Sydney, Sydney, NSW, Australia*, [2]*Laboratório de Aquacultura da Universidade Federal de Minas Gerais, Escola de Veterinária, Departamento de Zootecnia, Belo Horizonte, MG, Brazil*.

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W167 **Total serum cholesterol and triglycerides concentrations in broilers fed with diets containing different sources of oil associated with conjugated linoleic acid (CLA).**
V. C. da Cruz*[1], R. F. de Oliveira[1], G. do Valle Polycarpo[2], V. B. Fascina[3], L. H. Zanetti[1], G. A. M. Pasquali[1], R. Crivellari[1], L. C. Carvalho[1], and C. C. do Valle Polycarpo[4], [1]*São Paulo State University, Dracena Campus, Dracena, São Paulo, Brazil*, [2]*University of São Paulo, Pirassununga Campus, Pirassununga, São Paulo, Brazil*, [3]*São Paulo State University, Botucatu Campus, Botucatu, São Paulo, Brazil*, [4]*São Paulo State University, São José do Rio Preto Campus, São José do Rio Preto, São Paulo, Brazil*.

W168 **Effect of dietary oregano (*Origanum vulgare* L.) essential oil on growth performance of broiler chickens fed with diets of different metabolizable energy levels.**
E. van Eerden[1], L. Star[1], P. van der Aar[1], and L. Z. Jin*[2], [1]*Schothorst Feed Research, Lelystad, the Netherlands*, [2]*Meriden/Meritech Biotech, Guangzhou, China*.

W169 **Growth performance, nutrient digestibility, and carcass traits of rabbits fed diets added with DDGS or hemicellulases and glucanases.**
H. Bernal Barragán*[1,4], J. E. Gallegos Balderas[1], M. A. Liñán González[1], C. A. Hernández Martínez[1], F. G. Ríos Rincón[2,4], M. A. Cerrillo Soto[3,4], N. C. Vásquez Aguilar[1], and A. S. Juárez Reyes[3,4], [1]*Universidad Autónoma de Nuevo León, Fac. de Agronomía, San Nicolás de los Garza, NL, México*, [2]*Universidad Autónoma de Sinaloa, Fac. de Medicina Veterinaria y Zootecnia, Culiacán, México*, [3]*Universidad Juárez del Estado de Durango, Durango, México*, [4]*Red Internacional de Nutrición y Alimentación en Rumiantes, México*.

W170 **Evaluation of n-3 fatty acid and probiotic supplementation on growth performance, nutrient digestibility, blood characteristics, relative organ weight, and breast meat characteristics in broilers.**
L. Yan*, S. M. Hong, and I. H. Kim, *Department of Animal Resource & Science, Cheonan, Choongnam, South Korea*.

W171 **Effects of YGF-251 extract supplementation on egg production, egg weight, egg quality, blood characteristics, and fecal noxious gas emission in laying hens.**
S. C. Kim*, S. Zhang, and I. H. Kim, *Department of Animal Resource & Science, Dankook University, Cheonan, Choongnam, South Korea*.

W172 **Growth performance and carcass characteristics of Japanese quail fed different levels of zeolite.**
J. J. Portillo*, J. L. Bolado, A. Estrada-Angulo, B. I. Castro, D. Urías-Estrada, A. Aguilar-Hernandez, C. B. Castro-Tamayo, and F. G. Rios, *FMVZ-UAS, Culiacan, Sinaloa, Mexico*.

Draft

Nonruminant Nutrition Management

W173 **Appetite stimulants on diets of lactating sows.**
A. Rodríguez*, A. Pineda, E. Toledo, and A. Borbolla, *Department of Animal Production: Pigs, Facultad de Medicina Veterinaria y Zootecnia, Universidad Nacional Autónoma de México, D. F. México City, México*.

W174 **Reproductive response of sows in lactation anoestrus to additional organic chromium intake and postweaned GnRH-A application.**
S. A. Félix[1], J. A. Romo[1], J. M. Romo[1,2], H. R. Güemez[1,2], and R. Barajas*[1], [1]*FMVZ-Universidad Autonóma de Sinaloa, Culiacán, Sinaloa, México*, [2]*Granja Porcina La Huerta, Culiacán, Sinaloa, México*.

W175 **Feeding high fiber diet improves productive and reproductive performances of sows.**
A. Woldeghebriel*, M. Mama-Nodeli, T. Barios, and B. Pope, *North Carolina A&T State University, Greensboro*.

W176 **Effects of dietary fat and protein quantity from different feedstuffs on litter gain.**
K. Koch*[1], L. Chu[2], K. Kalscheur[1], R. C. Bott[1], and R. C. Thaler[1], [1]*South Dakota State University, Brookings*, [2]*China Agricultural University, Beijing, China*.

W177 **The effects of blends of sensory functional ingredients on feed intake and growth in juvenile pigs during a food transition.**
C. Clouard[1], V. Noirot*[2], M. Champagnac[2], P. Etienne[2], D. Éclache[2], MC Meunier-Salaün[1], and D. Val-Laillet[1], [1]*INRA, UMR1079 SENAH, Saint Gilles, France*, [2]*Laboratoires Phodé, Terssac, France*.

W178 **Effects of genotype and dietary oil supplementation in pigs. 1. Growth performance and carcass traits.**
T. M. Bertol*[1], J. V. Ludke[1], R. M. L. de Campos[2], N. N. Terra[3], E. A. P. de Figueiredo[1], A. Coldebella[1], and J. I. dos Santos Filho[1], [1]*Embrapa Suínos e Aves, Concórdia, SC, Brazil*, [2]*Fundação Universidade Federal do Vale do São Francisco, Petrolina, PE, Brazil*, [3]*Universidade Federal de Santa Maria, Santa Maria, RS, Brazil*.

W179 **Improving feed efficiency in fattening pigs through sensorial stimulation.**
G. Tedó[1], D. Torrallardona[2], and I. R. Ipharraguerre*[1], [1]*Feed Additives Division, Lucta S. A., Montornés del Vallée, Barcelona, Spain*, [2]*IRTA-Mas de Bover, Reus, Tarragona, Spain*.

W180 **Gene expression of myosin heavy chain isoforms and β-adrenergic receptors induced by ractopamine feeding duration in finishing pigs.**
V. V. Almeida*[1], A. J. C. Nuñez[2], A. P. Schinckel[3], M. Ward[3], K. Ajuwon[3], G. Gasparin[1], C. Andrade[1], M. Sbardella[1], L. L. Coutinho[1], and V. S. Miyada[1], [1]*University of Sao Paulo/ESALQ, Piracicaba, SP, Brazil*, [2]*University of Sao Paulo/FZEA, Pirassununga, SP, Brazil*, [3]*Purdue University, West Lafayette, IN*.

W181 **Influence of pellet size on pellet quality and performance and nutrient utilization of broilers.**
M. R. Abdollahi, T. J. Wester*, G. Ravindran, D. V. Thomas, and V. Ravindran, *Institute of Food, Nutrition and Human Health, Massey University, Palmerston North, New Zealand*.

Nonruminant Nutrition
Minerals and Vitamins

W182 **Effects of increasing inclusion of supplemental magnesium oxide (MgO) on laying performance and eggshell quality in 72-week-old brown egg-laying hens.**
C. H. Kim, I. K. Paik, and D. Y. Kil*, *Department of Animal Science and Technology, Chung-Ang University, Anseong-si, Korea*.

W183 **Evaluating the impact of pre-weaning calcium and phosphorus supplementation on growth performance and carcass characteristics of low and high birth-weight pigs.**
P. L. Y. C. Chang*[1], C. H. Stahl[1,2], and E. van Heugten[1], [1]*Department of Animal Science, North Carolina State University, Raleigh*, [2]*Laboratory of Developmental Nutrition, North Carolina State University, Raleigh*.

W184 **Bone ash and strength traits of young pigs fed diets with no supplemental vitamin D were compromised within a four-week trial.**
L. A. Rortvedt*, D. K. Schneider, and T. D. Crenshaw, *University of Wisconsin-Madison, Madison*.

W185 **Estimates of relative bioavailability of monocalcium and dicalcium phosphates based on whole body DXA scans to determine the efficiency of dietary P use by growing pigs.**
P. T. Merkatoris*, L. A. Rortvedt, and T. D. Crenshaw, *University of Wisconsin, Madison*.

W186 **Effects of sulfur concentration in diets containing distillers dried grains with solubles on carcass characteristics and tissue mineral concentrations in growing-finishing pigs.**
B. G. Kim*[1], D. Y. Kil[2], D. C. Mahan[3], G. M. Hill[4], and H. H. Stein[5], [1]*Konkuk University, Seoul, Korea*, [2]*Chung-Ang University, Anseong-si, Korea*, [3]*Ohio State University, Columbus*, [4]*Michigan State University, East Lansing*, [5]*University of Illinois, Urbana*.

Physiology and Endocrinology III

W187 **Effects of ruminally digested and undigested snakeweed extracts on female Sprague-Dawley rats.**
R. A. Halalsheh*, D. M. Hallford, and T. T. Ross, *New Mexico State University, Las Cruces*.

W188 **Effect of niacin on heat shock protein gene expression in transformed bovine mammary epithelial cells.**
S. Rungruang*, J. L. Collier, and R. J. Collier, *University of Arizona, Tucson*.

W189 **Effects of betaine on heat induced heat shock protein expression in primary bovine mammary epithelial cells.**
Y. Xiao*[1,2], J. L. Collier[1], S. Rungruang[1], L. W. Hall[1], F. R. Dunshea[3], and R. J. Collier[1], [1]*University of Arizona, Tucson*, [2]*Huazhong Agricultural University, Wuhan, Hubei, China*, [3]*The University of Melbourne, Parkville, Vic., Australia*.

W190 **Cloning and responsiveness of bovine glucose-6-phosphatase promoter to cyclic AMP and glucocorticoids.**
Q. Zhang*, S. Koser, and S. Donkin, *Purdue University, West Lafayette, IN*.

W191 **Effects of heat stress on insulin production in β-TC-6 pancreatic cells.**
M. V. Sanz-Fernandez*[1], R. L. Boddicker[1], J. W. Ross[1], R. P. Rhoads[2], and L. H. Baumgard[1], [1]*Iowa State University, Ames*, [2]*Virginia Polytechnic Institute and State University, Blacksburg*.

W192 **Relationship of single nucleotide polymorphisms of the bovine NOS2 and NOS3 genes with disease resistance in feedlot steers.**
A. J. Davis*, D. L. Kreider, E. B. Kegley, J. T. Richeson, and D. L. Galloway, *Animal Science Department, University of Arkansas Division of Agriculture, Fayetteville*.

Draft

W193 **Hypothalamic and abomasal mRNA expression of regulatory feed intake genes in cows grazing different herbage allowances of native pastures.**
V. Bassaizteguy, A. Casal, A. L. Astessiano, A. Kaitazoff, M. Veyga, M. Carriquiry, and A. I. Trujillo*, *Universidad de la Republica. Facultad de Agronomia, Montevideo, Montevideo, Uruguay*.

W194 **Identification of short-chain fatty acid (SCFA) receptor transcripts in ruminal papillae and responses to SCFA infusion.**
K. Yuan*, L. K. Mamedova, S. H. Li, and B. J. Bradford, *Kansas State University, Manhattan*.

W195 **Calibration of a dynamic, mechanistic model of amino acid and insulin effects on protein synthesis in animal tissues to represent liver and skeletal muscle.**
E. R. El-Haroun[1,2], J. J. Kim*[1], D. P. Bureau[1], A. R. Willms[1], and J. P. Cant[1], [1]*University of Guelph, Guelph, Ontario, Canada*, [2]*Cairo University, Giza, Cairo, Egypt*.

W196 **Expression of adiponectin and leptin receptors and angiopoietin-like protein 4 (ANGLP4) mRNA differed in the of pure and crossbred beef cows grazing different herbage allowances of native pastures.**
M. Carriquiry*, M. Veyga, A. Casal, A. L. Astessiano, and J. Laporta, *School of Agronomy, UdelaR, Montevideo, Uruguay*.

W197 **Gene expression analysis of glutathione peroxidase, catalase, and superoxide dismutase (Mn) in white blood cells from dairy cows receiving an apple base nutraceutic supplement.**
L. E. Escobedo-Morales, J. A. Grado-Ahuir*, C. Rodríguez-Muela, P. Hernández-Briano, and R. M. Villaseñor-González, *Facultad de Zootecnia y Ecología, Universidad Autónoma de Chihuahua, Chihuahua, Chihuahua, México*.

W198 **Measurements of saliva secretion and salivary fluxes of metabolites from jugular–arterial concentration differences, hemoglobin concentration, and jugular blood flow.**
A. C. Storm*[1], M. Larsen[1], and N. B. Kristensen[1,2], [1]*Aarhus University, Department of Animal Science, Tjele, Denmark*, [2]*Syddanskkvæg, Vojens, Denmark*.

W199 **Is colostrum quality in dairy cows related to postpartum health, production, or fertility?**
A. R. Dresch*[1], A. H. Souza[1], P. D. Carvalho[1], L. M. Vieira[1,2], J. L. M. Vasconcelos[3], R. A. Cerri[4], M. C. Wiltbank[1], and R. D. Shaver[1], [1]*University of Wisconsin-Madison, Madison*, [2]*University of Sao Paulo-VRA, SP, Brazil*, [3]*Sao Paulo State University Botucatu, SP, Brazil*, [4]*University of British Columbia, BC, Canada*.

W200 **Effect of 17β-estradiol on cGMP-PK1 expression in myometrial longitudinal muscles.**
O. Y. Gulay*[1], A. Bulbul[2], M. S. Gulay[1], K. Altunbas[2], and O. O. Akkaya[2], [1]*Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Burdur, Turkiye*, [2]*Afyonkocatepe University, Faculty of Veterinary Medicine, Afyonkocatepe, Turkiye*.

W201 **Expression of sex steroid receptors in placental tissues during early pregnancy in sheep.**
L. P. Reynolds*[1], P. P. Borowicz[1], M. L. Johnson[1], J. Haring[1], R. Ashley[2], and A. T. Grazul-Bilska[1], [1]*Center for Nutrition and Pregnancy, Department of Animal Sciences, North Dakota State University, Fargo*, [2]*Department of Animal and Range Sciences, New Mexico State University, Las Cruces*.

W202 **Carryover effects on progesterone concentrations and fetal numbers in ewes given human chorionic gonadotropin.**
C. M. Richardson*, R. A. Halalsheh, D. M. Hallford, and T. T. Ross, *New Mexico State University, Las Cruces*.

W203 **Serum testosterone concentrations after feeding in rams treated with GnRH.**
M. M. Guardieiro*[1], F. L. M. Silva[1], A. A. Johnson[2], R. S. Gentil[1], P. L. J. Monteiro[1], D. M. Polizel[1], R. A. Souza[1], I. Susin[1], E. Oba[3], G. B. Mourão[1], and R. Sartori[1], [1]*University of São Paulo, Piracicaba, SP, Brazil*, [2]*Texas A&M University, College Station*, [3]*São Paulo State University, Botucatu, SP, Brazil*.

W204 **The potential effects of dietary nitrate on pregnancy mechanisms in ewes.**
K. J. Austin*, R. R. Cockrum, L. E. Speiser, and K. M. Cammack, *University of Wyoming, Laramie*.

W205 **Effects of intravenous glucose infusion and nutritional balance on expression of enzymes responsible for catabolism of progesterone in cattle.**
F. Vieira[1], R. Cooke[2], A. Aboin[1], P. Lima[3], and J. L. Vasconcelos*[1], [1]*DPA-FMVZ-UNESP, Botucatu, SP, Brazil*, [2]*Oregon State University, Burns*, [3]*IBB-UNESP, Botucatu, SP, Brazil*.

W206 **Ex vivo model for endotoxic laminitis in ruminants.**
S. Schaumberger*, N. Reisinger, and G. Schatzmayr, *Biomin Research Center, Tulln, Austria*.

W207 **Effect of different centrifugation protocols and comparison of four extenders for storage of cooled Caspian horse spermatozoa for 48 hours.**
H. Nouri[1], A. Towhidi*[1], and M. Bahreini[2], [1]*Department of Animal Science, Faculty College of Agriculture and Natural Resources, University of Tehran, Karaj, Iran*, [2]*Animal Breeding Center of Iran (A.I. lab), Iran*.

W208 **Pigs fed camelina meal increases liver CYP8B1 expression.**
W. J. Meadus*[1], P. Duff[1], T. McDonald[2], and W. Caine[1], [1]*AAFC-Lacombe, Lacombe, AB, Canada*, [2]*Olds College, Olds, AB, Canada*.

W209 **Effect of exogenous testosterone on testes characteristics of large white pigs in a humid enviroment.**
A. O. Ladokun*[1], J. R. Otite[2], O. M. Alabi[3], and D. O. Adejumo[2], [1]*University of Agriculture, Abeokuta, Ogun, Nigeria*, [2]*University of Ibadan, Ibadan, Oyo, Nigeria*, [3]*Bowen University, Iwo, Osun, Nigeria*.

Draft

W210 **Effect of heat stress on phosphatidylinositol-3 kinase signaling in gilt ovaries.**
J. Nteeba*, E. E. Ullerich, S. C. Pearce, R. Boddicker, J. W. Ross, L. H. Baumgard, and A. F. Keating, *Department of Animal Science, Iowa State University of Science and Technology, Ames*.

W211 **Acute duration heat stress alters expression of cellular bioenergetic-associated genes in skeletal muscle of growing pigs.**
S. G. L. Won*[3], G. Xie[3], R. L. Boddicker[1], J. N. Rhoades[2], T. L. Scheffler[3], J. M. Scheffler[3], M. C. Lucy[2], T. J. Safranski[2], J. T. Selsby[1], S. Lonergan[1], L. H. Baumgard[1], J. W. Ross[1], and R. P. Rhoads[3], [1]*Iowa State University, Ames*, [2]*University of Missouri, Columbia*, [3]*Virginia Polytechnic Institute and State University, Blacksburg*.

W212 **Effect of heat stress (HS) on thermal regulation during pregnancy in first parity sows.**
M. C. Lucy*[1], T. J. Safranski[1], J. N. Rhoades[1], J. W. Ross[2], N. K. Gabler[2], R. P. Rhoads[3], and L. H. Baumgard[2], [1]*University of Missouri, Columbia*, [2]*Iowa State University, Ames*, [3]*Virginia Tech, Blacksburg*.

W213 **Hair cortisol concentrations—Influence of color and location in Holstein cows.**
R. L. A. Cerri*[1], A. M. Tabmasbi[2], and D. M. Veira[3], [1]*Land and Food Systems, University of British Columbia, Vancouver, BC, Canada*, [2]*Fedowsi University of Mashhad, Mashhad, Iran*, [3]*Agriculture & Agri-Food Canada, Agassiz, BC, Canada*.

W214 **Animal and ovarian parameters affect fertilization and embryo quality in high-producing lactating dairy cows.**
R. L. A. Cerri*[1], W. W. Thatcher[2], and J. E. P. Santos[2], [1]*University of British Columbia, Vancouver, BC, Canada*, [2]*University of Florida, Gainesville*.

W215 **Relationships between sperm motility and in vivo and in vitro fertility of Holstein and Jersey bulls.**
M. D. Utt*[1], M. A. Coutinho da Silva[2], C. A. Messerschmidt[2], J. M. DeJarnette[3], C. E. Marshall[3], F. A. Abreu[1], and M. L. Day[1], [1]*Department of Animal Sciences, The Ohio State University, Columbus*, [2]*Department of Clinical Sciences, College of Veterinary Medicine, The Ohio State University, Columbus*, [3]*Select Sires Inc., Plain City, OH*.

W216 **Placement of semen in uterine horns failed to improve fertilization rates in superovulated Holstein cows.**
P. D. Carvalho*[1], A. H. Souza[1], A. R. Dresch[1], L. M. Vieira[1,2], K. S. Hackbart[1], D. Luchini[3], S. Bertics[1], N. Betzold[4], M. C. Wiltbank[1], and R. D. Shaver[1], [1]*University of Wisconsin-Madison, Madsion*, [2]*University of Sao Paulo-VRA, SP 05508, Brazil*, [3]*Adisseo, Alpharetta, GA*, [4]*U.S. Dairy Forage Research Farm, Prairie du Sac, WI*.

W217 **Influence of sex and breed of the calf on synchronization and pregnancy rates in cows submitted to timed AI.**
A. P. Lemes*[1], R. F. G. Peres[2], A. D. P. Rodrigues[3], M. M. Guardieiro[1], E. Oba[3], G. B. Mourão[1], and R. Sartori[1], [1]*University of São Paulo, Piracicaba, SP, Brazil*, [2]*Agropecuária Fazenda Brasil, Barra do Garças, MT, Brazil*, [3]*São Paulo State University, Botucatu, SP, Brazil*.

W218 **The requirement of GnRH at the onset of the 5-d Select Synch + CIDR program in beef heifers.**
F. M. Abreu*[1], L. H. Cruppe[1], M. V. Biehl[3], A. D. P. Rodrigues[2], M. D. Utt[1], G. A. Bridges[4], J. L. M. Vasconcelos[2], and M. L. Day[1], [1]*The Ohio State University, Columbus*, [2]*Sao Paulo State University, Botucatu, SP, Brazil*, [3]*University of Sao Paulo, Pirassununga, SP, Brazil*, [4]*University of Minnesota, Grand Rapids*.

W219 **Efficacy of the "CoPGF" approach to induce luteolysis in the 5-d CO-Synch + CIDR program in lactating beef cows.**
M. V. Biehl*[1,3], L. H. Cruppe[1], F. M. Abreu[1], A. D. P. Rodrigues[4], M. L. Mussard[1], G. A. Bridges[2], A. V. Pires[3], and M. L. Day[1], [1]*The Ohio State University, Columbus*, [2]*University of Minnesota, Grand Rapids*, [3]*University of Sao Paulo, Piracicaba, SP, Brazil*, [4]*Sao Paulo State University, Botucatu, SP, Brazil*.

W220 **Effects of GnRH and administering number of PGF2α doses in the 5-d timed AI program on ovarian responses and fertility of dairy heifers.**
F. S. Lima*[1], E. S. Ribeiro[1], R. S. Bisinotto[1], N. Martinez[1], L. F. Greco[1], K. N. Galvão[1], C. A. Risco[1], W. W. Thatcher[1], M. Amstalden[2], and J. E. P. Santos[1], [1]*University of Florida, Gainesville*, [2]*Texas A&M University, College Station*.

W221 **Comparison between the GGPG and two PGF2α based resynchronization programs on fertility in lactating dairy cows.**
R. G. S. Bruno*[1,2], A. M. Farias[1], K. J. Lager[1,2], D. E. Hawkins[2], and T. R. Bilby[1], [1]*Texas A&M University, College Station*, [2]*West Texas A&M University, Canyon*.

Production, Management and the Environment
Dairy II

W222 **Evaluation of management, nutrient consistency and sanitation of automated calf feeders.**
K. L. Machado*, R. E. James, and M. L. McGilliard, *Dept. of Dairy Science, Virginia Tech, Blacksburg*.

W223 **Performance, health, behavior and respiratory antibody production of individually vs. grouped housed dairy calves.**
M. S. Calvo[1], C. J. Neumeier*[1], L. E. Hulbert[1], A. Louie[2], L. J. Gershwin[3], K. E. Pinkerton[4], C. B. Tucker[1], K. C. Klasing[1], and F. M. Mitloehner[1], [1]*Department of Animal Science, University of California, Davis*, [2]*School of Veterinary Medicine, University of California, Davis*, [3]*Department of Pathology, Microbiology and Immunology, School of Veterinary Medicine, University of California, Davis*, [4]*Department of Anatomy, Physiology, and Cell Biology, School of Veterinary Medicine, Center for Health and the Environment, University of California, Davis*.

Draft

W224 **Performance and welfare of high-yielding dairy cows subjected to 5 or 8 cooling sessions daily in a hot and humid climate.**
U. Moallem*, J. Miron, H. Lehrer, M. Zachut, and H. Honig, *Volcani Center, Bet Dagan, Israel*.

W225 **Seasonal variation on milk components and relation to quality payment program.**
L. C. Roma Junior*[1], A. C. S. Gonçalves[1], and P. F. Machado[2], [1]*APTA Centro Leste, Ribeirao Preto, Sao Paulo State, Brazil*, [2]*Clínica do Leite, ESALQ/USP, Piracicaba, Sao Paulo State, Brazil*.

W226 **Seasonal effect of a reduced dose of prostaglandin $F_{2\alpha}$ on estrus response in lactating dairy cows.**
R. W. Silcox*, J. B. Brinkerhoff, S. Hatch, and L. T. Jacobs, *Brigham Young University, Provo, UT*.

W227 **Degree of agreement between the ration formulated and the ration fed on seven California dairies.**
N. Silva-del-Río*[1] and A. R. Castillo[2], [1]*Veterinary Teaching and Research Center, Tulare, CA*, [2]*University of California, Cooperative Extension, Merced*.

W228 **Nitrogen and phosphorus utilization by dairy cows on small and medium-sized farms.**
Z. Dou, J. D. Ferguson, D. T. Galligan, C. F. Ramberg, D. W. Remsburg, L. D. Baker, R. J. Munson, and Z. Wu*, *University of Pennsylvania, Kennett Square*.

W229 **Basic economic indexes on small and medium sized dairy farms.**
D. T. Galligan*, Z. Dou, J. D. Ferguson, C. F. Ramberg, D. W. Remsburg, L. D. Baker, R. J. Munson, and Z. Wu, *University of Pennsylvania, Kennett Square*.

W230 **Technological level of Holstein cattle herds in the West and North of Mexico.**
D. V. Mariscal-Aguayo*, H. Estrella-Quintero, R. Núñez-Domínguez, and G. Maldonado-García, *Universidad Autónoma Chapingo, Chapingo, Estado de México, México*.

W231 **Association of stocking density, production, and behavioral patterns of dairy cows milked in automatic milking systems.**
J. A. Deming[1], R. Bergeron[2], K. E. Leslie[3], and T. J. DeVries*[1], [1]*Dept. of Animal and Poultry Science, University of Guelph, Kemptville Campus, Kemptville, ON, Canada*, [2]*Dept. of Animal and Poultry Science, University of Guelph, Campus d'Alfred, Alfred, ON, Canada*, [3]*Dept. of Population Medicine, University of Guelph, Guelph, ON, Canada*.

W232 **Performance of dairy cows managed with automatic milking and three contrasting feeding systems.**
S. A. Utsumi* and D. K. Beede, *Michigan State University, East Lansing*.

W233 **Potential for a real-time location system for dynamic tracking of dairy cow location within dairy facilities.**
R. A. Black*[1], T. S. Stombaugh[1], S. R. Luciani[2], M. P. Sama[1], R. L. Klingenfus[3], A. B. Klingenfus[3], and J. M. Bewley[1], [1]*University of Kentucky, Lexington*, [2]*AiRISTA, Sparks, MD*, [3]*Harvest Home Dairy, Crestwood, KY*.

W234 **Effects of prepartum dietary energy density and postpartum extruded full-fat soybean (ESB) supplementation on energy balance and productive performance of transition dairy cows.**
H. Su*, F. Wang, Z. Yang, Z. Cao, and S. Li, *State Key Laboratory of Animal Nutrition, College of Animal Science and Technology, China Agricultural University, Beijing, China*.

W235 **Physiological and productive responses to seasonal variation in transition dairy cows.**
H. Su*, F. Wang, Z. Yang, Z. Cao, and S. Li, *State Key Laboratory of Animal Nutrition, College of Animal Science and Technology, China Agricultural University, Beijing, China*.

Draft

Production, Management and the Environment
Environmental Quality

W236 **Using dietary saponin extracts to reduce methane emissions from steers.**
W. Li* and W. Powers, *Michigan State University, East Lansing*.

W237 **Does total condensed tannin concentration predict rumen methane production in vitro?**
H. D. Naumann*[1], L. O. Tedeschi[1], J. P. Muir[2], B. D. Lambert[2,3], D. K. Andrade Silva[4], and M. A. Fonseca[5], [1]*Texas A&M University, College Station*, [2]*Texas AgriLife Research, Stephenville*, [3]*Tarleton State University, Stephenville, TX*, [4]*Federal Rural University of Pernambuco, Garanhuns, Pernambuco, Brazil*, [5]*Federal University of Viçosa, Viçosa, Minas Gerais, Brazil*.

W238 **Methane production from novel oat varieties measured by gas production.**
J. M. Moorby*, A. A. Cowan, D. K. Leemans, and A. H. Marshall, *Institute of Biological, Environmental and Rural Sciences, Aberystwyth University, Aberystwyth, UK*.

W239 **Effect of crude glycerin on methane emissions of male beef calves finished in feedlot.**
J. F. Lage*[1], T. T. Berchielli[1], I. P. C. Carvalho[1], A. Berndt[2], R. T. S. Frighetto[3], E. San Vito[1], R. A. Silva[1], A. F. Ribeiro[1], L. M. Delevatti[1], E. E. Dallantonia[1], L. R. Simonetti[1], and R. A. Reis[1], [1]*Universidade Estadual Paulista, Jaboticabal, São Paulo, Brazil*, [2]*Embrapa Pecuária Sudeste, São Carlos, São Paulo, Brazil*, [3]*Embrapa Meio Ambiente, Jaguariúna, São Paulo, Brazil*.

W240 **Prediction of methane emission from enteric fermentation of growing-finishing Hanwoo steers using IPCC methodology.**
N. C. Jo*[1], S. Y. Jeong[1], K. H. Park[2], and S. Seo[1], [1]*Chungnam National University, Daejeon, Republic of Korea*, [2]*National Institute of Animal Science, R.D.A., Suwon, Republic of Korea*.

W241 **Enteric methane emissions by dairy cows grazing temperate pastures.**
N. Nelson*[1], K. Steensma[1], S. Utsumi[1], D. K. Beede[1], S. Zimmerman[2], and P. Zimmerman[2], [1]*Michigan State University, East Lansing*, [2]*C-Lock Technology Inc., Rapid City, SD*.

W242 **Estimation of greenhouse gas emissions from beef cattle production systems using whole-farm models.**
A. W. Alemu*[1], K. H. Ominski[1], M. Tenuta[1], and E. Kebreab[2], [1]*University of Manitoba, Winnipeg, MB, Canada*, [2]*University of California, California, Davis*.

W243 **Isotope ratio mass spectrometry monitoring of nitrogen volatilization from cattle feces and ^{15}N-labeled synthetic urine.**
F. Y. Ayadi*, E. L. Cortus, and D. E. Clay, *South Dakota State University, Brookings*.

W244 **Identifying ammonia hotspots on a Colorado dairy using conditional passive samplers and inverse modeling.**
C. Williams*, J. Ham, and K. Shonkwiler, *Colorado State University, Fort Collins*.

W245 **Effects of alum and aluminum chloride on volatile fatty acid concentration and pathogen populations in Hanwoo (Korean native cattle) manure.**
C. M. Kim[1], S. C. Kim[2], S. M. Amanullah[2], H. J. Lee[3], J. H. Choi[4], and I. H. Choi*[5], [1]*Department of Chemistry, Sookmyung Women's University, Seoul, South Korea*, [2]*Department of Animal Science (Inst. Agric. Life Sci.), Gyeongsang National University, Jinju, South Korea*, [3]*Division of Applied Life Science (BK 21), Gyeongsang National University, Jinju, South Korea*, [4]*Department of Chemistry, Hanyang University, Seoul, South Korea*, [5]*Department of Companion Animal & Animal Resources Science, Joongbu University, Kumsan, South Korea*.

W246 **Whole-farm balances of phosphorus and potassium on dairy farms.**
D. Fulawka, T. L. Garner, K. H. Ominski, D. Flaten, and J. C. Plaizier*, *University of Manitoba, Winnipeg, MB, Canada*.

W247 **Foliar uptake and utilization of phosphorus by grazing cattle as influenced by nitrogen fertilization regime.**
S. L. Dillard*, W. F. Owsley, C. W. Wood, B. H. Wood, and R. B. Muntifering, *Auburn University, Auburn, AL*.

W248 **Soil CO_2 emission during the dry season under different grazing intensities in Southern Brazil.**
L. de Figueiredo Brito, M. Vieira Azenha*, A. R. Panosso, F. H. M. de Souza, A. A. Oliveira, S. S. Santana, R. A. Reis, N. La Scala, and A. C. Ruggieri, *Sao Paulo State University, Jaboticabal, Sao Paulo, Brazil*.

W249 **Using a batch culture system to measure volatile organic compounds as the primary substrates for methanogenesis in anaerobic digestion of dairy waste.**
C. L. Ross*, K. C. Das, and M. A. Froetschel, *University of Georgia, Athens*.

Draft

Ruminant Nutrition
Beef: Feed Additives

W250 **Live yeast and adaptation protocols on finishing feedlot Nellore cattle fed high concentrate diets.**
P. L. Alvarez*, S. L. Silva, L. S. Martello, M. R. Mazon, L. S. Oliveira, P. H. Cancian, A. C. Ianni, L. Z. Zanoni, R. F. Carvalho, A. P. S. Silva, and P. R. Leme, *Universidade de São Paulo, Faculdade de Zootecnia e Engenharia de Alimentos, Pirassununga, SP, Brazil*.

W251 **Effect of slow release urea supplementation during the dry season on Nellore cattle performance in Brazil.**
D. P. Pantoni*[1], D. S. Graça[1], M. H. Ramos[2], and P. C. Molina[1], [1]*Federal University of Minas Gerais, Belo Horizonte, Minas Gerais, Brazil*, [2]*Research Institute Flávio Guarani - Rehagro, Belo Horizonte, Minas Gerais, Brazil*.

W252 **Intake, digestibility and digestion kinetics of beef steers supplemented with slow-release urea in diets with two concentrate levels.**
P. D. B. Benedeti, P. V. R. Paulino*, T. S. Martins, E. F. Lisboa, L. H. P. Silva, C. R. V. Teixeira, L. C. Alves, M. S. Duarte, R. Mezzomo, J. C. M. Lima, J. P. I. S. Monnerat, M. I. Marcondes, and S. C. Valadares Filho, *Universidade Federal de Viçosa, Viçosa, MG, Brazil*.

W253 **Dose response effects of laidlomycin propionate plus chlortetracycline or monensin plus tylosin on growth performance, carcass merit and health of growing-finishing beef steers.**
M. E. Branine*[1], M. E. Hubbert[2], M. L. Galyean[3], and B. D. Hunsaker[4], [1]*Pfizer Animal Health, Canon City, CO*, [2]*New Mexico State University, Clayton*, [3]*Texas Tech University, Lubbock*, [4]*Summit Research LLC, Wellington, CO*.

W254 **Adipose gene expression patterns in finishing steers fed steam-flaked corn diets supplemented with dietary *Aspergillus oryzae* extract containing α-amylase activity.**
D. E. Graugnard*[1], K. M. Brennan[1], J. S. Jennings[1], and J. J. Wagner[2], [1]*Alltech Center for Animal Nutrigenomics and Applied Animal Nutrition, Nicholasville, KY*, [2]*Southeast Colorado Research Center, Colorado State University, Lamar*.

W255 **Effect of *Saccharomyces cerevisiae* CNCM I-1077 supplementation on zootechnical performances and feeding behavior of dairy bull calves during growing period.**
C. Loncke[1], L. Van Nespen[1], C. Launay[1], E. Sulmont[1], L. Dussert*[2], and V. Demey[2], [1]*INZO, Chierry, France*, [2]*Lallemand SAS, Blagnac, France*.

W256 **Effects of medicinal feed additive (MFA) program fed with varying levels of wet distillers grains (WDGS) on growth performance, carcass characteristics and health of growing / finishing beef steers.**
M. E. Branine*[1], M. E. Hubbert[2], and B. D. Hunsaker[3], [1]*Pfizer Animal Health, Canon City, CO*, [2]*New Mexico State University, Clayton*, [3]*Summit Research LLC, Wellington, CO*.

W257 **Basal diet affects ruminal in situ degradation rate of urea and Optigen II in steers.**
V. B. Holder*[1], J. S. Jennings[2], and J. M. Tricarico[3], [1]*University of Kentucky, Lexington*, [2]*Alltech, Brookings, SD*, [3]*Innovation Center for U.S. Dairy, Rosemont, IL*.

W258 **Effect of feeding chelated forms of Zn, Cu, and Mn in combination with methionine on growth and reproductive development of heifers.**
R. Harvey*[1], Y. Wang[2], G. I. Zanton[2], T. J. Wistuba[2], and M. S. Kerley[1], [1]*University of Missouri, Columbia*, [2]*Novus International Inc., St. Charles, MO*.

W259 **The effect of combination of metal amino acid chelates, Se yeast, mannaoligosaccharides, and dietary antioxidants on the health and growth performance of high-risk calves.**
T. J. Wistuba*[1], G. I. Zanton[1], D. Nuzback[1], M. Andersen[1], and E. Larsen[2], [1]*Novus International Inc., St. Charles, MO*, [2]*Larsen Nutritional Solutiions, Fowler, CO*.

W260 **Effect of addition of increasing doses of chitosan in diets of Nellore cattle on the intake and digestibility total nutrients.**
R. V. Barletta*, A. P. C. Araújo, R. Gardinal, R. D. Mingoti, B. C. Ventureli, J. E. Freitas, T. H. A. Vendramine, J. R. Gandra, M. C. B. Santos, B. C. Benevento, V. G. C. Lacuna, and F. P. Rennó, *1University of Sao Paulo, Sao Paulo, Brazil*.

W261 **Ruminal parameters, microbial protein production, protein efficiency and nitrogen balance on beef steers supplemented with slow-release urea in diets with two concentrate levels.**
P. D. B. Benedeti[1], P. V. R. Paulino*[1], T. S. Martins[1], E. F. Lisboa[1], L. H. P. Silva[1], C. R. V. Teixeira[1], L. C. Alves[1], M. S. Duarte[1], R. Mezzomo[1], J. C. M. Lima[1], J. P. I. S. Monnerat[1], M. I. Marcondes[1], S. C. Valadares Filho[1], and M. Manella[2], [1]*Universidade Federal de Viçosa, Viçosa, MG, Brazil*, [2]*Alltech do Brasil, Curitiba, PR, Brazil*.

W262 **Impact of an all-natural liquid fermentation prototype on performance of feedlot cattle.**
M. Scott*[1], J. Miles[2], H. Vermaak[3], and S. Schalk[3], [1]*Diamond V, Cedar Rapids, IA*, [2]*University of Pretoria, Pretoria, Gauteng, South Africa*, [3]*Essential Nutrient Systems, Pretoria, Gauteng, South Africa*.

W263 **Effect of β-carotene supplementation on fatty acid profile and expression of genes involved in vitamin A metabolism in beef cattle.**
K. N. Condron*, J. N. Waddell, M. C. Claeys, R. P. Lemenager, and J. P. Schoonmaker, *Purdue University, West Lafayette, IN*.

Draft

Ruminant Nutrition
Co-Products

W264 **In vitro intestinal amino acid digestibility of distillers grains varies with grain source and milling process.**
C. Li[1,2], J. Q. Li[1], K. A. Beauchemin[2], and W. Z. Yang*[2], [1]*College of Animal Science, Inner Mongolia Agricultural University, Hohhot, Inner Mongolia, China*, [2]*Research Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada*.

W265 **In vivo determination of undegradable intake protein (UIP) of dried distillers grains with solubles (DDGS) and comparing DAPA and DNA as bacterial markers.**
E. Castillo-Lopez*, T. J. Klopfenstein, and P. J. Kononoff, *University of Nebraska-Lincoln, Lincoln*.

W266 **Urea treatment of different levels of pistachio hull and its relation to gas production in vitro.**
A. Rahimi[1], A. A. Naserian[1], R. Valizadeh[1], A. Tahmasbi[1], A. R. Shahdadi[2], and B. Saremi*[3], [1]*Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran*, [2]*Agricultural Sciences & Natural Resources, University of Gorgan, Gorgan, Golestan, Iran*, [3]*Bonn University, Bonn, Germany*.

W267 **Effect of different levels of pistachio hull on in vitro gas production.**
A. Rahimi[1], A. A. Naserian[1], R. Valizadeh[1], A. Tahmasbi[1], A. R. Shahdadi[2], and B. Saremi*[3], [1]*Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran*, [2]*Agricultural Sciences & Natural Resources University of Gorgan, Gorgan, Golestan, Iran*, [3]*Bonn University, Bonn, Germany*.

W268 **Increased dietary tannin by addition of pistachio hull and its relation to fermentation parameters and protozoa content of rumen in Balochi male lambs.**
A. Rahimi[1], A. A. Naserian[1], R. Valizadeh[1], A. Tahmasbi[1], A. R. Shahdadi*[2], and B. Saremi[3], [1]*Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran*, [2]*Agriculture Sciences and Natural Resources University of Gorgan, Gorgan, Iran*, [3]*Institute of Animal Science, Physiology & Hygiene Unit, University of Bonn, Germany*.

W269 **Effects using of pistachio hull and polyethylene glycol supplementation on feed intake and apparent digestibility of nutrients in Saanen dairy goats.**
A. Rahimi[1], A. A. Naserian[1], R. Valizadeh[1], A. Tahmasbi[1], A. R. Shahdadi[2], and B. Saremi*[3], [1]*Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran*, [2]*Agricultural Sciences & Natural Resources University of Gorgan, Gorgan, Golestan, Iran*, [3]*Institute of Animal Science, Physiology & Hygiene Unit, University of Bonn, Germany*.

W270 **Effects of feeding pistachio hull and polyethylene glycol (PEG) supplementation on milk fatty acids composition in Saanen dairy goats.**
A. Rahimi[1], A. A. Naserian[1], R. Valizadeh[1], A. Tahmasbi[1], A. R. Shahdadi[2], and B. Saremi*[3], [1]*Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran*, [2]*Agricultural Sciences & Natural Resources University of Gorgan, Gorgan, Golestan, Iran*, [3]*Institute of Animal Science, Physiology & Hygiene Unit, University of Bonn, Germany*.

W271 **Milk fatty acid profile of Saanen dairy goats fed diets containing pistachio hull tannin and polyethylene glycol supplementation.**
A. Rahimi[1], A. A. Naserian[1], R. Valizadeh[1], A. Tahmasbi[1], B. Saremi*[2], and A. Reza Shahdadi[3], [1]*Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran*, [2]*Institute of Animal Science, Physiology & Hygiene Unit, University of Bonn, Germany*, [3]*Agricultural Sciences & Natural Resources University of Gorgan, Gorgan, Golestan, Iran*.

W272 **Effects of pistachio hull and polyethylene glycol supplementation on milk yield and compositions in Saanen dairy goats.**
A. Rahimi[1], A. A. Naserian[1], R. Valizadeh[1], A. Tahmasbi[1], A. R. Shahdadi[2], and B. Saremi*[3], [1]*Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran*, [2]*Agricultural Sciences & Natural Resources University of Gorgan, Gorgan, Golestan, Iran*, [3]*Institute of Animal Science, Physiology & Hygiene Unit, University of Bonn, Germany*.

W273 **Liver enzymes and immune system response of Saanen dairy goats supplemented with pistachio hull and polyethylene glycol.**
A. Rahimi[1], A. A. Naserian[1], R. Valizadeh[1], A. Tahmasbi[1], A. R. Shahdadi[2], and B. Saremi*[3], [1]*Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran*, [2]*Agricultural Sciences & Natural Resources University of Gorgan, Gorgan, Golestan, Iran*, [3]*Institute of Animal Science, Physiology & Hygiene Unit, University of Bonn, Germany*.

W274 **Effects of pistachio tannins on nitrogen metabolism in Balochi male lambs.**
A. Rahimi[1], A. A. Naserian[1], R. Valizadeh[1], A. Tahmasbi[1], B. Saremi*[2], and A. R. Shahdadi[3], [1]*Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran*, [2]*Institute of Animal Science, Physiology & Hygiene Unit, University of Bonn, Germany*, [3]*Agriculture Sciences and Natural Resources University of Gorgan, Gorgan, Iran*.

W275 **Different levels of tannin by dietary addition of pistachio hull and plasma metabolic profile in Balochi male lambs.**
A. Rahimi[1], A. A. Naserian[1], R. Valizadeh[1], A. Tahmasbi[1], and B. Saremi*[2], [1]*Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran*, [2]*Bonn University, Bonn, Germany*.

W276 **Replacing alfalfa with different levels of pistachio hull and its effects on feed intake and digestibility of nutrients in total tract, rumen and post-rumen in Balochi male lambs.**
A. Rahimi[1], A. Ali Naserian[1], R. Valizadeh[1], A. Tahmasbi[1], A. R. Shahdadi[3], and B. Saremi*[2], [1]*Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran*, [2]*Institute of Animal Science, Physiology & Hygiene Unit, University of Bonn, Germany*, [3]*Agriculture Sciences and Natural Resources University of Gorgan, Gorgan, Iran*.

W277 **Effect of increasing amounts of corn dried distillers grains with solubles in dairy cow diets on enteric methane emissions, digestibility, and milk production.**
C. Benchaar*[1], F. Hassanat[2], R. Gervais[2], P. Y. Chouinard[2], C. Julien[3], F. Tremblay[1], D. I. Massé[1], and H. V. Petit[1], [1]*Dairy and Swine Research and Development Centre-Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada*, [2]*Département des Sciences Animales-Université Laval, Québec, QC, Canada*, [3]*INRA-Université de Toulouse, Castanet-Tolosan, France*.

W278 **The effect of feeding canola meal on the performance of Chinese Holstein cows.**
Z. G. Wang[1], C. R. Wang[1], G. L. Liu*[1,2], C. G. Zhang[1], and G. Yang[1], [1]*State Key Laboratory of Dairy Biotechnology, Shanghai Bright Holstan Co. Ltd., Shanghai, China*, [2]*Shanghai Dairy Breeding Center Co. Ltd., Shanghai, China*.

W279 **Effects of limit-feeding dried distillers grains to ewes during mid- to late-gestation on ram progeny post-weaning performance and carcass composition.**
R. L. Burgett*[1], J. R. Luther[2], D. L. Thomas[1], D. M. Schaefer[1], and A. E. Radunz[1], [1]*University of Wisconsin-Madison, Madiso*, [2]*University of Wisconsin-River Falls, River Falls*.

W280 **Effect of dried distillers grains with solubles (DDGS) on duodenal microbial crude protein (MCP) flow in steers as determined with DNA microbial markers.**
E. Castillo-Lopez*, T. J. Klopfenstein, and P. J. Kononoff, *University of Nebraska-Lincoln, Lincoln*.

Draft

W281 **Effect of canola meal on growth performance, carcass quality and meat fatty acid profiles of feedlot cattle.**
M. L. He*[1,2], T. A. McAllister[1], D. Gibb[3], and J. J. McKinnon[2], [1]*Lethbridge Research Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada*, [2]*University of Saskatchewan, Saskatoon, SK, Canada*, [3]*Viterra Feed Products, Lethbridge, AB, Canada*.

W282 **Effects of roughage concentration in steam-flaked corn-based diets containing wet distillers grains with solubles on nutrient digestibility by feedlot cattle.**
J. S. Schutz*, C. H. Ponce, D. R. Smith, and M. L. Galyean, *Department of Animal and Food Sciences, Texas Tech University, Lubbock.*

W283 **Effect of sarsaponin supplementation on digestive function of steers fed a high grain distillers grain-feedlot diet.**
E. Valencia[1], M. F. Montano*[1], J. Salinas[2], V. M. Gonzalez[1], O. M. Manriquez[1], J. A. Valdez[1], J. O. Chirino[1], O. J. Castillo[1], G. M. Carvajal[1], and W. G. Caceres[1], [1]*Universidad Autónoma de Baja California, Mexicali, B. C. Mexico*, [2]*Universidad Autónoma de Tamaulipas, Ciudad Victoria, Tam. Mexico*.

W284 **Effect of tannins extract supplementation on feedlot performance and plasma urea nitrogen of yearling bulls fed dry-ground corn-based diets containing corn-DDG and cane molasses.**
R. Barajas*[1], B. J. Cervantes[2], M. A. Espino[1,3], A. Camacho[1], M. Verdugo[1], L. R. Flores[1], J. J. Lomeli[1], and J. A. Romo[1], [1]*FMVZ-Universidad Autonóma de Sinaloa, Culiacán, Sinaloa, México*, [2]*Ganadera Los Migueles S. A. de C. V., Culiacán, Sinaloa, México*, [3]*Pronutrient Developers, León, Guanajuato, México*.

W285 **Inclusion of triticale dried distiller grains and flaxseed in feedlot cattle diets increases alpha-linolenic acid in beef without affecting carcass or meat quality traits.**
M. L. He*[1,2], L. M. Hernandez-Calva[1], T. A. McAllister[1], J. L. Aalhus[3], M. E. R. Dugan[3], and J. J. McKinnon[2], [1]*Lethbridge Research Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada*, [2]*University of Saskatchewan, Saskatoon, SK, Canada*, [3]*Lacombe Research Centre, Agriculture and Agri-Food Canada, Lacombe, AB, Canada*.

W286 **Effects of increasing distillers grain and monensin on feed intake and ruminal fermentation in feedlot cattle diets.**
L. Xu[1,2], Y. Jin[2], C. Li[1,2], and W. Z. Yang*[1], [1]*Research Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada*, [2]*College of Animal Science, Inner Mongolia Agricultural University, Hohhot, Inner Mongolia, China*.

W287 **Modeling nutrient supply from combined feeds of corn with wheat dried distillers grains with solubles at different ratios in ruminants.**
D. Damiran, M. Yari, L. Yang*, X. Zhang, and P. Yu, *Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, SK, Canada*.

W288 **Effects of biodiesel by-products on in vitro fermentation, digestion kinetics and methane production.**
S. J. Meale*[1], S. M. Olivares-Palma[1], L. G. R. Pereira[2], F. S. Machado[2], H. Carneiro[2], F. C. F. Lopes[2], and A. V. Chaves[1], [1]*Faculty of Veterinary Science, University of Sydney, Sydney, NSW, Australia*, [2]*Embrapa Dairy Cattle, Juiz de Fora, MG, Brazil.*

W289 **Effect of replacing barley grain with glycerol in feedlot diets on nutrient digestibility, methane emissions, growth, fatty acid profiles and carcass traits of lambs.**
J. S. Avila[1,3], S. J. Meale*[1,2], T. A. McAllister[2], M. L. He[2], O. M. Harstad[4], K. A. Beauchemin[2], S. M. McGinn[2], and A. V. Chaves[1], [1]*Faculty of Veterinary Science, University of Sydney, Sydney, NSW, Australia*, [2]*Lethbridge Research Center, Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada*, [3]*Facultad de Ciencias Veterinarias, Universidad de Concepción, Chillan, Chile*, [4]*Norwegian University of Life Sciences (UMB), Ås, Norway*.

W290 **Crude glycerin decreases fiber digestibility in finishing Nellore bulls.**
E. H. C. B. van Cleef*[1], J. M. B. Ezequiel[1], J. B. D. Sancanari[1,2], A. P. D'Aurea[1], V. R. Fávaro[1], D. A. V. Silva[1], J. W. Catellan[1], and F. B. O. Scarpino[1], [1]*São Paulo State University, Jaboticabal, São Paulo, Brazil*, [2]*Uzinas Chimicas Brasileiras S. A., Jaboticabal, São Paulo, Brazil*.

W291 **Effect of replacing wheat offal with dried oil palm slurry on the performance and carcass traits of Ndama weaners.**
M. K. Adewumi* and J. A. Aderiye, *Department of Animal Science, University of Ibadan, Ibadan, Oyo State, Nigeria*.

W292 **Glycerin from soybean biodiesel in diets with high levels of concentrate for sheep.**
R. L. Galati*, P. G. Paiva, L. S. Cabral, J. T. Zervoudakis, J. G. Abreu, R. S. Gomes, M. P. S. Fachin, and A. P. G. Baroni, *Universidade Federal do Mato Grosso, FAMEV/UFMT, Cuiabá, Brazil*.

W293 **Nitrogen balance and microbial efficiency in sheep fed with diets containing glycerin.**
R. L. Galati*, P. G. Paiva, J. T. Zervoudakis, L. S. Cabral, J. G. Abreu, M. Zanchetin, L. R. Rebelo, and R. S. Fioravante Filho, *Universidade Federal do Mato Grosso, FAMEV/UFMT, Cuiabá, Brazil*.

W294 **Blood parameters of Nelore steers fed with glycerin.**
V. R. Fávaro*, J. M. B. Ezequiel, A. P. D'Áurea, J. B. D. Sancanari, E. H. C. B. van Cleef, A. C. Homem Junior, and V. C. Santos, *São Paulo State University, Jaboticabal, São Paulo, Brazil*.

W295 **Levels of replacement of corn by glycerin in multiple supplements for Nelore steers grazing in dry season: Performance.**
J. T. Zervoudakis*, R. P. da Silva, L. C. R. P. Silva, A. J. Neto, J. F. W. Koscheck, R. G. F. da Silva, T. P. Trindade, A. O. Zanette, and E. R. Donida, *Federal University of Mato Grosso, Cuiabá, Mato Grosso, Brazil*.

Draft

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Dairy: Feeds and Co-products

W296 **Productive response of lactating cows fed low-fat dried distillers grains with solubles in combination with rumen-inert fat.**
H. A. Ramirez Ramirez*[1], P. J. Kononoff[1], and K. Karges[2], [1]*Department of Animal Science, University of Nebraska, Lincoln*, [2]*Dakota Gold Research Association, Sioux Falls, SD*.

W297 **Production performance and ruminal fermentation of dairy cows fed diets replacing starch from corn with non-forage fiber from distillers grains.**
S. D. Ranathunga*, M. M. Abdelqader, K. F. Kalscheur, A. R. Hippen, D. J. Schingoethe, and D. P. Casper, *Dairy Science Department, South Dakota State University, Brookings*.

W298 **Effect of supplementing dairy cow diets with different forms of palm oil-based supplements on the fatty acid profile of milk fat.**
P. C. Aikman[1], K. E. Kliem[1], R. M. Kirkland*[2], A. K. Jones[1], S. L. Potterton[1], and C. K. Reynolds[1], [1]*University of Reading, Reading, UK*, [2]*Volac International Ltd., Royston, UK*.

W299 **Influence of corn silage hybrid on lactation performance by dairy cows.**
M. S. Akins* and R. D. Shaver, *Department of Dairy Science, University of Wisconsin-Madison, Madison*.

W300 **Sugar cane silage for lactating dairy cows.**
M. I. Marcondes*[1], F. L. Andrade[1], R. A. V. Vergara[1], A. S. Trece[1], T. E. Silva[1], W. L. Cardoso[1], and A. B. Fonseca[2], [1]*Universidade Federal de Viçosa, Viçosa, MG, Brazil*, [2]*University of New Hampshire, Durham*.

W301 **Influence of dietary starch and forage NDF concentrations on digestion and lactation performance by dairy cows.**
L. F. Ferraretto* and R. D. Shaver, *University of Wisconsin-Madison, Madison*.

W302 **Processed corn stover as a corn silage replacement feed for lactating dairy cattle.**
S. S. Donkin*[1], A. C. Headley[1], H. A. Tucker[1], P. H. Doane[2], and M. J. Cecava[2], [1]*Purdue University, West Lafayette, IN*, [2]*Archer Daniels Midland Company, Decatur, IL*.

W303 **Effects of feeding camelina meal on milk production and composition in lactating Holstein cows.**
B. C. Casperson*, J. E. Williams, K. M. Hunt, K. M. Steinkamp, and M. A. McGuire, *Department of Animal and Veterinary Science, University of Idaho, Moscow*.

W304 **Comparison of the NRC (2001) model and the DVE/OEB system in the prediction of protein supply to dairy cows from hulless barley (*Hordeum vulgare* L.) with altered carbohydrate traits.**
L. Yang*[1,3], D. Christensen[1,3], J. McKinnon[1,3], B. Rossnagel[2,3], A. Beattie[2,3], and P. Yu[1,3], [1]*Department of Animal and Poultry Science*, [2]*Crop Development Centre*, [3]*University of Saskatchewan, Saskatoon, Saskatchewan, Canada*.

W305 **Effect of different forage and dried distillers grains with solubles concentrations on sorting behavior of lactating dairy cows.**
S. D. Ranathunga*, K. F. Kalscheur, and D. P. Casper, *Dairy Science Department, South Dakota State University, Brookings*.

W306 **Effects of sudden additions of condensed distillers solubles to diets of lactating dairy cows on milk production and milk components.**
S. E. Fraley*, J. R. Townsend, and T. D. Nennich, *Purdue University, West Lafayette, IN*.

W307 **Occurrence and concentration of mycotoxins, molds and yeasts on corn co-products from South Dakota and Minnesota dairy farms.**
F. Diaz-Royon*[1], A. Garcia[1], K. F. Kalscheur[1], K. A. Rosentrater[2], J. S. Jennings[3], and K. Mjoun[3], [1]*Dairy Science Department, South Dakota State University, Brookings*, [2]*Department of Agricultural and Biosystems Engineering, Iowa State University, Ames*, [3]*Alltech South Dakota, Brookings*.

W308 **Surveying the constraints of ethanol co-products utilization on dairy farms.**
F. Diaz-Royon*[1], A. Garcia[1], K. F. Kalscheur[1], K. A. Rosentrater[2], J. S. Jennings[3], and K. Mjoun[3], [1]*Dairy Science Department, South Dakota State University, Brookings*, [2]*Department of Agricultural and Biosystems Engineering, Iowa State University, Ames*, [3]*Alltech South Dakota, Brookings*.

W309 **Effects of molasses products on productivity and milk fatty acid profile of cows fed high-DDGS diets.**
A. V. Siverson* and B. J. Bradford, *Kansas State University, Manhattan*.

W310 **Effects of feeding brown midrib corn silage with a high dietary concentration of alfalfa hay during early and mid lactation on milk production of Holstein dairy cows.**
M. S. Holt*[1], A. J. Young[1], X. Dai[2], K. E. Nestor[3], and J.-S. Eun[1], [1]*Department of Animal, Dairy, and Veterinary Sciences, Utah State University, Logan*, [2]*Utah Agricultural Experiment Station, Utah State University, Logan*, [3]*Mycogen Seeds, Indianapolis, IN*.

W311 **Effects of harvest date and a BMR hybrid on yield and nutrient composition of corn plants harvested for silage.**
P. Walker[1], M. J. Faulkner[1], T. D. Kaufman*[1], L. Brown[2], and F. N. Owens[2], [1]*Illinois State University, Normal*, [2]*Pioneer Hi-Bred International, a DuPont Business, Bloomington, IL*.

Draft

W312 **Chemical and nutrient availability of hulless barley (*Hordeum vulgare* L.) with altered carbohydrate characteristics.**
L. Yang*[1,3], J. McKinnon[1,3], D. Christensen[1,3], B. Rossnagel[2,3], A. Beattie[2,3], and P. Yu[1,3], [1]*Department of Animal and Poultry Science*, [2]*Crop Development Centre*, [3]*University of Saskatchewan, Saskatoon, Saskatchewan, Canada*.

W313 **Effects of dietary protein content and source of grain on milk production and nitrogen efficiency in early lactating primiparous Holstein cows.**
H. Mirzaei Alamouti* and A. Mohammad, *University of Zanjan, Zanjan, Iran*.

W314 **Lactational performance, chewing behavior, and ruminal fermentation of dairy cows fed diets differing in amount and digestibility of NDF from two sources of corn silage.**
C. Kokko*, H. M. Dann, K. W. Cotanch, J. W. Darrah, and R. J. Grant, *William H. Miner Agricultural Research Institute, Chazy, NY*.

W315 **Reduced protein for late-lactation dairy cows fed ryegrass haylage-based diets.**
V. R. Moreira[1], A. B. D. Pereira*[2], L. K. Zeringue[1], C. Leonardi[3], B. F. Jenny[2], C. C. Williams[2], and M. E. McCormick[1], [1]*LSU AgCenter SE Research Sta., Franklinton, LA*, [2]*LSU AgCenter School of Animal Sciences, Baton Rouge, LA*, [3]*LSU Health Sciences Center, New Orleans, LA*.

W316 **Energy intake of dairy cows grazing native rangeland in México.**
R. Améndola-Massiotti*[1], H. Crespo-Lira[1], J. Burgueño-Ferreira[2], and M. Huerta-Bravo[1], [1]*Universidad Autónoma Chapingo, Chapingo, Estado de México, México*, [2]*CIMMYT, Texcoco, Estado de México, México*.

W317 **Feeding canola meal to dairy cows: A meta-analysis on lactational responses suggests underestimation of metabolizable protein supply by NRC (2001).**
R. Martineau, D. R. Ouellet, and H. Lapierre*, *Dairy and Swine R&D Centre Agriculture and Agri-Food Canada, Sherbrooke, Quebec, Canada*.

W318 **Milk production, milk composition and blood parameters of cows fed whole flaxseed or whole linola.**
H. V. Petit*[1], R. N. do Prado[1,2], M. F. Palin[1], and C. Benchaar[1], [1]*Dairy and Swine Research and Development Centre, Sherbrooke, QC, Canada*, [2]*Universidade Estadual de Maringa, Maringa, PR, Brazil*.

Draft

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Dairy: Rumen function and digestion

W319 **In situ ruminal degradability of soybean meal (SBM), canola meal (CM), and corn or wheat dried distillers grains (DDG).**
G. Maxin*, D. R. Ouellet, and H. Lapierre, *Dairy and Swine Research and Development Center, Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada*.

W320 **Effect of carbohydrate source on performance and ruminal responses of dairy cows fed low-starch diets.**
H. M. Dann*[1], K. W. Cotanch[1], C. Kokko[1], K. Fujita[2], and R. J. Grant[1], [1]*William H. Miner Agricultural Research Institute, Chazy, NY*, [2]*ZEN-NOH National Federation of Agricultural Cooperative, Tokyo, Japan*.

W321 **Duodenal bioavailability of quercetin and rutin in German Holstein cows.**
A. Gohlke[1], C. J. Ingelmann[1], S. Wolffram[2], and C. C. Metges*[1], [1]*Leibniz Institute for Farm Animal Biology (FBN), Dummerstorf, Germany*, [2]*Institute of Animal Nutrition & Physiology, Christian-Albrechts-University of Kiel, Germany*.

W322 **Differences in rate of ruminal hydrogenation of C18 fatty acids in clover and ryegrass.**
J. Lejonklev*[1], A. C. Storm[2], M. K. Larsen[1], G. Mortensen[1], and M. R. Weisbjerg[2], [1]*Aarhus University, Department of Food Science, Tjele, Denmark*, [2]*Aarhus University, Department of Animal Science, Tjele, Denmark*.

W323 **Corn source and dietary protein degradability: effects on ruminal measures and proposed mechanism for degradable protein effects.**
M. B. Hall*, *U.S. Dairy Forage Research Center, USDA-ARS, Madison, WI*.

W324 **A meta-analysis of continuous culture rumen fermentation and digestibility data.**
A. N. Hristov*[1], C. Lee[1], R. A. Hristova[1], P. Huhtanen[2], and J. L. Firkins[3], [1]*The Pennsylvania State University, University Park*, [2]*Swedish University of Agricultural Sciences, Umeå, Sweden*, [3]*The Ohio State University, Columbus*.

W325 **Amount and digestibility of NDF affects rumen nutrient pool sizes and passage kinetics of dairy cows.**
K. W. Cotanch*, C. Kokko, H. M. Dann, J. W. Darrah, and R. J. Grant, *William H. Miner Agricultural Research Institute, Chazy, NY*.

W326 **Orchard grass forage effects on bacterial communities and long-chain fatty acid profiles in the rumen of Holstein heifers.**
R. Mohammed[1,2], G. E. Brink[1], D. M. Stevenson[1], K. A. Beauchemin[2], and P. J. Weimer*[1], [1]*USDA-ARS, US Dairy Forage Research Center, Madison, WI*, [2]*AAFC, Lethbridge Research Center, Lethbridge, AB, Canada*.

W327 **Silicone plastination of rumen models: A room temperature technique.**
H. C. Puch*, K. B. Cunningham, and D. C. Brown, *LongView Animal Nutrition Center, Land O'Lakes Purina Feeds, Gray Summit, MO.*

W328 **Techniques for sampling and measuring total two-dimensional surface area of rumen papillae.**
H. C. Puch*[1], K. M. O'Diam[2], and K. M. Daniels[2], [1]*LongView Animal Nutrition Center, Land O' Lakes Purina Feeds, Gray Summit MO*, [2]*Ohio Agricultural Research and Development Center, The Ohio State University, Wooster*.

W329 **Changes in rumen bacterial communities and rumen chemistry in primiparous Holstein cows during the periparturient period.**
R. Mohammed[1,2], D. M. Stevenson[2], P. J. Weimer[2], G. B. Penner*[3], and K. A. Beauchemin[1], [1]*AAFC, Lethbridge Research Center, Lethbridge, AB, Canada*, [2]*USDA-ARS, US Dairy Forage Research Center, Madison, WI*, [3]*Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, SK, Canada*.

W330 **Detection of the methanol dehydrogenase structural gene *mxaF* in rumen fluid by PCR.**
E. T. Kim*[1], C. S. McSweeney[2], S. S. Lee[1], S. C. Kim[1], and S. H. Kang[2], [1]*Division of Applied Life Science (BK21 Program), Gyeongsang National University, Jinju, Gyeongnam, Republic of Korea*, [2]*CSIRO Livestock Industries, Queensland Bioscience Precinct, St Lucia, Qld, Australia*.

W331 **Evaluation of DM, NDF, and starch ruminal degradabilities of corn silage hybrids: A three-year study.**
D. R. Ouellet*[1], G. F. Tremblay[3], and A. F. Mustafa[2], [1]*Dairy and Swine R&D Centre, Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada*, [2]*Dept. of Animal Science, Ste-Anne de-Bellevue, QC, Canada*, [3]*Soils and Crops R&D Centre, Agriculture and Agri-Food Canada, Québec, QC, Canada*.

W332 **Rumen microorganisms growth as a function of the concentration of corn silage and soybean meal in culture medium.**
C. P. Ghedini[1], R. P. Lana[1], A. S. Oliveira[2], D. C. Abreu*[1], R. M. Paula[1], C. J. Silva[1], and P. E. P. Barros[3], [1]*Universidade Federal de Viçosa, Viçosa, MG, Brazil*, [2]*Universidade Federal do Mato Grosso, Sinop, MT, Brazil*, [3]*Universidade Federal de Lavras, Lavras, MG, Brazil*.

W333 **Passage of liquid and fiber particles in dairy cows fed diets differing in NDF from conventional and bmr corn silages.**
K. W. Cotanch*[1], C. Kokko[1], H. M. Dann[1], J. W. Darrah[1], R. J. Grant[1], and D. R. Mertens[2], [1]*William H. Miner Agricultural Research Institute, Chazy, NY*, [2]*Mertens Innovation & Research LLC, Belleville, WI.*

W334 **Effect of silica levels, and its location in the detergent fiber matrix, on in vitro gas production of rice straw.**
G. S. Cun*[1], G. A. Nader[2], and P. H. Robinson[1], [1]*University of California, Davis*, [2]*University of California Cooperative Extension, Yuba City*.

Draft

Ruminant Nutrition
General III

W335 **Variation in chemical composition among breeding lines of novel oat varieties as ruminant feeds.**
J. M. Moorby*, A. A. Cowan, and A. H. Marshall, *Institute of Biological, Environmental and Rural Sciences, Aberystwyth University, Aberystwyth, UK.*

W336 **Ruminal metabolism in continuous culture fermentation when administrating high concentration of inorganic selenium in mixed cultures of ruminal microorganisms.**
J. M. Vera[1], T. Z. Davis[2], D. N. Miller[3], K. E. Panter[2], D. R. ZoBell[1], and J.-S. Eun*[1], [1]*Department of Animal, Dairy, and Veterinary Sciences, Utah State University, Logan*, [2]*Poisonous Plant Research Laboratory, USDA-ARS, Logan, UT*, [3]*Agroecosystem Management Research Unit, USDA-ARS, Lincoln, NE*.

W337 **Effects of algae on ruminal fermentation and digestion in continuous culture fermenters.**
A. M. Gehman*, G. A. Harrison, and B. Jacobs, *Alltech Biotechnology Inc, Nicholasville, KY.*

W338 **Digestion response of dairy heifers to the supplementation of autolyzed yeast.**
D. R. Gomide[3], R. F. Lima[1], N. M. Lopes[1], R. C. Oliveira[1], A. Ganner[2], R. A. N. Pereira[3], and M. N. Pereira*[1], [1]*Universidade Federal de Lavras, Lavras, Brazil*, [2]*Biomin Research Center, Tulln, Austria*, [3]*Empresa de Pesquisa Agropecuaria de Minas Gerais, Lavras, Brazil*.

W339 **The effect of several sodium and potassium salts on rumen pH.**
R. Garcia-Gonzalez*, C. Yunta, and H. van Laar, *Nutreco R&D, Boxmeer, the Netherlands*.

W340 **Effect of polyethylene glycol on in vitro fermentation kinetics and digestibility of native tree fruits.**
F. Aviles-Nova*[1], J. G. Estrada-F[2], O. Castelan-Ortega[3], B. Albarran-P[1], and A. Ramirez-O[1], [1]*Centro Universitario UAEM-Temascaltepec. Universidad Autonoma del Estado de Mexico, Temascaltepec, Edo. de Mexico, Mexico*, [2]*Instituto de Ciencias Agropecuarias y Rurales (ICAR) de la UAEM, Toluca, Edo. de Mexico, Mexico*, [3]*Facultad de Medicina Veterinaria y Zootecnia de la UAEM, Toluca, Edo. de Mexico, Mexico*.

W341 **Chemical composition and in vitro digestibility of foliage trees, and their use in feeding lambs in the dry tropics of central highlands of Mexico.**
S. Rojas-Hernandez[1], D. Castelan-Ortega[3], A. Garciâ-Martinez[2], J. Olivares-Perez[1], J. G. Estrada-F[4], and F. Aviles-Nova*[2], [1]*U. A. Medicina Veterinaria y Zootecnia, Universidad Autonoma de Guerrero, Ciudad Altamirano, Guerrero, Mexico*, [2]*CU - Temascaltepec, Universidad Autonoma del Estado de Mexico, Temascaltepec, Edo. de Mexico, Mexico*, [3]*Facultad de Medicina Veterinaria y Zootecnia - Universidad Autonoma del Estado de Mexico, Toluca, Edo. de Mexico, Mexico*, [4]*Instituto de Ciencias Agropecuarias y Rurales, Toluca, Edo. de Mexico, Mexico*.

W342 **Effect of replacing barley grain with wheat dry distillers grains with solubles on *in situ* degradation kinetics, growth, and fatty acid profiles of lambs.**
J. S. Avila[1], S. J. Meale*[1], A. S. O'Hara[1], A. Horadogoda[1], D. Palmer[1], T. A. McAllister[2], and A. V. Chaves[1], [1]*Faculty of Veterinary Science, University of Sydney, Sydney, NSW, Australia*, [2]*Lethbridge Research Center, Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada*.

W343 **Could essential oils of thyme (*Zataria multiflora*) and peppermint (*Mentha piperita*) improve calf growth performance?**
M. Ebrahimi, M. Ganjkhanlou, and M. Dehghan-Banadaky*, *University of Tehran, Karaj, Tehran, Iran*.

W344 **In vitro investigation of various adsorbents to adsorb aflatoxin B1.**
M. Savari, M. Dehghan-Banadaky*, K. Rezayazdi, and M. Javan-Nikkhah, *University of Tehran, Karaj, Tehran, Iran*.

W345 **Influence of *Yucca schidigera* on in vitro gas production and fermentation of rumen fluid.**
K. D. Boden* and C. A. Loest, *New Mexico State University, Las Cruces*.

W346 **Effects of inclusion of bioethanol co-product on changes in the metabolic characteristics of the proteins in oat grain in ruminants.**
D. Damiran, M. Yari, L. Yang*, Z. Niu, and P. Yu, *Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, SK, Canada*.

W347 **Evaluation of forage indigestible NDF and relations with analytical parameters by principal component analysis.**
A. Gallo, S. Bruschi, G. Giuberti, M. Moschini, and F. Masoero*, *Università Cattolica del Sacro Cuore, Piacenza, Italy*.

W348 **Utilization of *Yucca schidigera* to alter hydrogen sulfide gas production from rumen fluid in vitro.**
J. Browne-Silva* and C. A. Loest, *New Mexico State University, Las Cruces*.

W349 **Effect of monensin and bismuth subsalicylate on hydrogen sulfide in continuous culture fermenters.**
M. Ruiz-Moreno*, E. Binversie, and M. D. Stern, *Department of Animal Science, University of Minnesota, St. Paul*.

W350 **Alteration of fasting heat production during fescue toxicosis in Holstein steers.**
A. F. Koontz*[1], A. P. Foote[1], D. H. Kim[1], L. P. Bush[2], J. L. Klotz[3], K. R. McLeod[1], and D. L. 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]*USDA-ARS, Forage-Animal Production Research Unit, Lexington, KY*.

W351 **Influence of maternal nutrition and prenatal adenovirus-VEGF gene therapy on fetal visceral tissues and crypt cell proliferation at d 130 of gestation.**
N. M. Chapel*[1], R. D. Yunusova[1], R. P. Aitken[2], J. S. Milne[2], D. J. Carr[2,3], P. P. Borowicz[1], A. L. David[3], J. M. Wallace[2], and J. S. Caton[1], [1]*Center for Nutrition and Pregnancy, Department of Animal Sciences, North Dakota State University, Fargo*, [2]*Rowett Institute of Nutrition and Health, University of Aberdeen, Scotland, UK*, [3]*Prenatal Cell and Gene Therapy Group, UCL Institute for Women's Health, University College London, UK*.

W352 **Effect of dried fermentation biomass on microbial fermentation in continuous culture.**
A. Carpenter*[1], E. Binversie[1], M. Ruiz-Moreno[1], J. Usry[2], I. Shinzato[2], and M. D. Stern[1], [1]*Department of Animal Science, University of Minnesota, St. Paul*, [2]*Ajinomoto Heartland Inc., Chicago, IL*.

W353 **Plasma metabolites and rumen ammonia concentration in steers fed high-forage diets and supplemented non-protein nitrogen.**
C. L. Cox*[1], R. H. Pritchard[1], B. P. Holland[1], and J. S. Jennings[2], [1]*South Dakota State University, Brookings*, [2]*Alltech Inc., Brookings, SD*.

W354 **Gossypol and total phenols of eleven varieties of whole cottonseed (*Gossypium hirsutum*) in the north of Argentina.**
M. García*[1], C. Berton[1], E. Casenave[1], M. Nazareno[1,2], and J. I. Arroquy[3], [1]*FAyA, UNSE, Santiago del Estero, Argentina*, [2]*INQUINOA-CONICET, Santiago del Estero, Argentina*, [3]*INTA - EEA Santiago del Estero, Santiago del Estero, Argentina*.

W355 **Influence of nitrogen fertilization and fibrolytic enzymes on digestibility and utilization of the nutrients of ryegrass (*Lolium multiflorum* var. Jumbo) hay fed to Holstein steers.**
J. A. Villarreal*, J. E. Camargo, E. G. Alvarez, J. Rodriguez, E. Vazquez, B. H. Gutierrez, M. F. Montano, and V. M. Gonzalez, *Universidad Autonoma de Baja California, Mexicali, BC, Mexico*.

Draft

Ruminant Nutrition
Other Ruminants

W356 **Diurnal pH of the first compartment stomach of alpacas fed alfalfa or grass hay supplemented with oats, corn, and corn/oats/barley.**
B. Harris*[1], T. F. Robinson[1], and N. I. Bott[2], [1]*Brigham Young University, Provo*, [2]*Bott Veterinary Services and Consulting, Elk Ridge, UT*.

W357 **Effect of castration on performance and carcass traits of crossbreed lamb on different time on feed.**
M. R. Mazon*[1], P. R. Leme[1], L. S. Oliveira[1], R. F. Carvalho[2], C. A. Zotti[1], L. E. Zanoni[1], D. M. C. Pesce[2], and S. da Luz e Silva[1], [1]*Faculdade de Zootecnia e Engenharia de Alimentos (FZEA/USP), Pirassununga, São Paulo, Brazil*, [2]*Pontificia Universidade Católica de Minas Gerais (PUC Minas), Poços de Caldas, Minas Gerais, Brazil*.

W358 **Efficacy of novel feed products to reduce locoweed toxicity in wether lambs.**
F. A. Allataifeh*[1], C. A. Loest[1], M. N. Sawalhah[1], L. N. Tracey[1], J. Browne-Silva[1], J. B. Taylor[2], and D. M. Hallford[1], [1]*New Mexico State University, Las Cruces*, [2]*USDA-ARS, Dubois, ID*.

W359 **Swainsonine excretion, nutrient digestibility, and nitrogen retention of lambs fed alfalfa hay, locoweed, and novel feed additives.**
F. A. Allataifeh*, C. A. Loest, M. N. Sawalhah, F. Castillo, A. F. Cibils, and E. J. Scholljegerdes, *New Mexico State University, Las Cruces*.

W360 **The serosal-to-mucosal urea flux across the cervine ruminal epithelium is not affected by mucosal ammonia or phloretin.**
M. E. Walpole*[1], G. B. Penner[1], M. Woodburry[2], and T. Mutsvangwa[1], [1]*Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, Saskatchewan, Canada*, [2]*Department of Large Animal Clinical Services, University of Saskatchewan, Saskatoon, Saskatchewan, Canada*.

Ruminant Nutrition
Feed Additives

W361 **Effects of different feed additives on performance and carcass traits of feedlot cattle.**
C. A. Zotti, S. da Luz e Silva*, L. S. Martello, R. L. Meirelles, A. P. dos Santos Silva, P. L. Alvarez, P. H. Cancian, A. C. Ianni, L. E. Zanoni, and P. R. Leme, *Faculdade de Zootecnia e Engenharia de Alimentos, Universidade de São Paulo, Pirassununga, SP, Brazil*.

W362 **Effect of *Propionibacterium freudenreichii* supplementation in diets containing canola or flaxseed oils on in vitro methanogenesis and lipid biohydrogenation.**
S. Ding[1,2], S. J. Meale*[1,2], M. L. He[2], J. Long[3], A. Y. Alazzeh[2], T. A. McAllister[2], and A. V. Chaves[1], [1]*Faculty of Veterinary Science, University of Sydney, Sydney, NSW, Australia*, [2]*Lethbridge Research Center, Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada*, [3]*Department of Animal Science, Northeast Agricultural University, Haerbin, Heilongjiang, China*.

W363 **Efficacy of an autolysed yeast product (Levabon Rumen) for ruminants versus live yeast and yeast culture in vitro.**
A. Ganner*[1], C. Stoiber[1], I. Dohnal[1], K. Deckardt[2], F. Klevenhusen[2], G. Schatzmayr[1], and Q. Zebeli[2], [1]*Biomin Research Center, Tulln, Lower Austria, Austria*, [2]*University of Veterinary Medicine, Vienna, Austria*.

W364 **Effect of monensin on methane emissions in dairy cattle can be explained by level of dry matter intake and fat content of the diet.**
J. A. D. R. N. Appuhamy*[1], A. B. Strathe[1], S. Jayasundara[2], C. Wagner-Riddle[2], J. Dijkstra[3], J. France[2], and E. Kebreab[1], [1]*University of California, Davis*, [2]*University of Guelph, Guelph, ON, Canada*, [3]*Wageningen University, Wageningen, the Netherlands*.

W365 **Effects of dietary supplementation of a yeast product on performance and morbidity of newly received beef heifers.**
C. H. Ponce*[1], J. S. Schutz[1], C. Elrod[2], U. Y. Anele[1], and M. L. Galyean[1], [1]*Department of Animal and Food Sciences, Texas Tech University, Lubbock*, [2]*Varied Industries Corp. Inc., Mason City, IA*.

W366 **Effect of oregano, ginger and thyme oils on in vitro rumen fermentation and methane emission.**
F. G. Vilela*, I. C. S. Bueno, A. S. Netto, T. S. Canaes, J. E. Freitas, B. C. Venturelli, and F. P. Rennó, *University of São Paulo, Pirassununga, SP, Brazil*.

W367 **Effect of some essential oils on rumen fermentation and methane emission in vitro.**
F. G. Vilela*, I. C. S. Bueno, A. S. Netto, J. E. Freitas Junior, B. C. Venturelli, T. S. Canaes, and F. P. Rennó, *University of São Paulo, Pirassununga, SP, Brazil*.

W368 **Effect of abomasal inorganic phosphorus infusion on phosphorus absorption in lactating dairy cows.**
X. Feng*, J. P. Jarrett, P. P. Ray, L. Karpinski, B. F. Willing, and K. F. Knowlton, *Virginia Polytechnic Institute and State University, Blacksburg*.

Draft

W369 **Effects of essential oils on in vitro ruminal fermentation and methane production of a mixed diet.**
I. Mateos[1], A. Díez[1], C. Saro[1], D. Yáñez-Ruiz[3], M. D. Carro[1,2], and M. J. Ranilla*[1,2], [1]*Dpto. Producción Animal, Universidad de León, Campus de Vegazana, León, Spain*, [2]*Instituto de Ganadería de montaña (CSIC-ULE), Finca Marzanas, Grulleros, León, Spain*, [3]*Estación Experimental del Zaidín (CSIC), Camino del Jueves, Armilla, Granada, Spain*.

W370 **Effect of feeding *Bacillus subtilis* and *Bacillus licheniformis* on dry matter and nutrient intake and digestibility by lambs fed a low quality roughage diet.**
E. Martínez-Loarte*, A. A. Rodríguez, and L. C. Solórzano, *University of Puerto Rico, Mayaguez, PR*.

W371 **Efficacy of live yeast *Saccharomyces cerevisiae* (strain Sc 47) and/or yeast cell wall on rumen fermentation and digestive utilization of corn silage-based diet in mid-lactating dairy cows.**
C. Bayourthe*[1,2], C. Julien[1,2], E. Auclair[3], and J. P. Marden[3], [1]*INRA, UMR1289 Tissus Animaux Nutrition Digestion Ecosystème et Métabolisme TANDEM), Castanet Tolosan Cedex, France*, [2]*Université de Toulouse, INPT-ENSAT, INP-ENVT, UMR1289 TANDEM, Castanet Tolosan Cedex, France*, [3]*Lesaffre Feed Additives, Marquette Lez Lille, France*.

W372 **Effect of live yeast *Saccharomyces cerevisiae* (strain Sc 47) on nutrient digestion and ruminal fermentation in relation with rumen degradable protein content of the diet.**
C. Julien*[1,2], J. P. Marden[3], E. Auclair[3], R. Moncoulon[1,2], and C. Bayourthe[1,2], [1]*INRA, UMR1289, Tissus Animaux Nutrition Digestion Ecosystème et Métabolisme (TANDEM), Castanet Tolosan Cedex, France*, [2]*Université de Toulouse, INPT-ENSAT, INP-ENVT, UMR1289 TANDEM, Castanet Tolosan Cedex, France*, [3]*Lesaffre Feed Additives, Marquette Lez Lille, France*.

W373 **Effects of difructose anhydride III supplementation on serum calcium, dry matter intake and energy status in periparturient dairy cows.**
M. Teramura*[1], S. Wynn[2], M. Abe[2], S. Hisasue[2], T. Sato[1], M. Ohtani[1], C. Kawashima[2], and M. Hanada[2], [1]*Nippon Beet Sugar Manufacturing Co. Ltd., Obihiro, Hokkaido, Japan*, [2]*Obihiro University of Agriculture and Veterinary Medicine, Obihiro, Hokkaido, Japan*.

W374 **Effects of monensin and extracts of hops and *Yucca schidigera* applied alone or in combination on rumen fermentation in vitro.**
N. Narvaez, Y. Wang*, and T. A. McAllister, *AAFC, Lethbridge, AB, Canada*.

W375 **Concentrate level and combined use of ionophore and virginiamycin on feeding behavior of Nelore steers fed high grain diets.**
A. J. C. Nuñez*[1], V. V. Almeida[2], J. P. Schoonmaker[3], F. T. Mercado[1], F. Pinese[1], I. E. Borges[1], R. R. Casagrande[1], P. R. Leme[1], and J. C. M. Nogueira Filho[1], [1]*USP/FZEA, Pirassununga, SP, Brazil*, [2]*USP/ESALQ, Piracicaba, SP, Brazil*, [3]*Purdue University, West Lafayette, IN*.

W376 **The effect of different doses of exogenous enzymes preparation on in vitro gas production and ruminal fermentation activities of some fibrous feeds in cows.**
M. M. Y. Elghandour[1], C. G. Peñuelas-Rivas[1], M. Ronquillo[1], A. Z. M. Salem*[1], H. Gado[2], and N. E. Odongo[3], [1]*Facultad de Medicina Veterinaria y Zootecnia, Universidad Autónoma del Estado de México, Toluca, Estado de Mexico, Mexico*, [2]*Faculty of Agriculture, Ain Shams University, Cairo, Egypt*, [3]*Animal Production and Health Section, Joint FAO/IAEA Division of Nuclear Techniques in Food and Agriculture, International Atomic Energy Agency, Vienna, Austria*.

W377 **Nutrient intake and ruminal parameters in response to *Bacillus subtilis* included on beef steer diet.**
B. Vieira*, R. Telles, V. Naves, I. Carvalho, and R. Reis, *Universidade Estadual Paulista*.

W378 **Effect of exogenous fibrolytic enzymes on *in vitro* rumen fermentation of corn silage.**
X. Chen, J. K. Wang, H. L. Mao, C. H. Wu, Y. M. Wu, and J. X. Liu*, *Institute of Dairy Science, MOE Key Laboratory of Molecular Animal Nutrition, Zhejiang University, Hangzhou, China*.

Draft

Small Ruminant
Reproduction, Parasites, and Environment

W379 **Effects of meat goat breed, sex, and conditions before and between measures on behavior in pens with barb wire and electric fence strands.**
Y. Tsukahara*, T. A. Gipson, G. D. Detweiler, T. Sahlu, and A. L. Goetsch, *Langston University, Langston, OK*.

W380 **GIS grid analysis of utilization of adjacent pastures by two herds of goats.**
T. A. Gipson*[1], S. P. Hart[1], and R. Heinemann[2], [1]*Langston University, Langston, OK*, [2]*Kiamichi Forestry Research Station, Oklahoma State University, Idabel*.

W381 **Ruminal methane emission by Boer and Spanish does supplemented with garlic.**
R. Puchala*, Z. Wang, A. L. Goetsch, and T. Sahlu, *Langston University, Langston, OK*.

W382 **Effects of Roscovitine on maturation and fertilization of ovine oocyte in vitro.**
S. Nasrollahi*, A. Z. Shahneh, S. Zeinoaldini, H. Kohram, and M. Poorhamdollah, *University of Tehran, Karaj, Tehran, Iran*.

W383 **Anthelmintic efficacy of medicinal herbs in goats infected with nematode parasites.**
R. Z. Zhong[1,2], Z. Wang*[2], D. Zhou[1], A. L. Goetsch[2], S. P. Hart[2], and T. Sahlu[2], [1]*Northeast Institute of Geography and Agroecology, Chinese Academy of Sciences, Changchun, China*, [2]*Langston University, Langston, OK*.

W384 **The effects of confinement and protein levels on the growth and parasitic loads of kids raised under mixed-species grazing system.**
S. Gebrelul, L. Gray*, R. Marshall, and Y. Ghebreiyessus, *Southern University Ag Center*.

W385 **The anthelmintic effect of Juniper and Tifton 85 on the infective larval stage of *Haemonchus contortus* in an in vitro system.**
S. A. Armstrong*[1], B. D. Lambert[1,2], T. R. Whitney[3], J. P. Muir[2], and A. McEwin[1], [1]*Tarleton State University, Stephenville, TX,* [2]*Texas Agrilife Research, Stephenville*, [3]*Texas Agrilife Research, San Angelo*.

W386 **Panicled tickclover, a native herbaceous legume, suppresses internal parasites without negative effects on kid performance.**
N. M. Cherry[1], M. Bullinger[3], B. D. Lambert*[1,3], J. P. Muir[1], and T. Whitney[2], [1]*Texas AgriLife Research, Stephenville*, [2]*Texas AgriLife Research, San Angelo*, [3]*Department of Animal Science, Tarleton State University, Stephenville, TX*.

W387 **Relative resistance to gastrointestinal nematode parasitic infection in sheep and goats.**
R. Merriott*, H. Ismail, G. Summers, and M. Worku, *North Carolina Agricultural and Technical State University, Greensboro*.

W388 **Effects of supplementing fat sources in pre-mating ewe diets on reproductive performance.**
Z. Mohammadi*[1], H. Mirzaei Alamouti[1], M. H. Shahir[1], H. Amanlo[1], and M. Yavari[2], [1]*University of Zanjan, Zanjan, Iran*, [2]*University of Hamedan, Hamedan, Iran*.

W389 **Effect of equine chorionic gonadotropin dosage and administration moment on reproductive performance in Pelibuey ewes.**
A. González-Reyna[1], J. Hernández-Meléndez[1], F. A. Lucero-Magaña[1], J. Cedillo-Monroy[2], and J. F. Vázquez-Armijo*[2], [1]*Universidad Autónoma de Tamaulipas, Facultad de Ingeniería y Ciencias, Cd. Victoria, Tamaulipas, Mexico*, [2]*Centro Universitario UAEM Temascaltepec, Universidad Autónoma del Estado de México, Temascaltepec, México, Mexico*.

W390 **Blood metabolites and insulin concentrations during pregnancy in ewes carrying one to five fetuses and supplemented with propylene glycol.**
H. Honig*, A. Rozov, E. Gootwine, L. Lifshits, and U. Moallem, *Volcani Center, Bet Dagan, Israel*.

W391 **Increased lamb production by implanting melatonin to induce out of season breeding.**
T. Wuliji*[1,2], [1]*Lincoln University, Jefferson City, MO*, [2]*University of Nevada, Reno*.

W392 **Bone morphogenetic protein 15 (BMP-15) in crossbred goat fertility.**
R. Hill, L. Canon, H. Ismail, R. Noble, and M. Worku*, *NC A&T State University, Greensboro*.

W393 **Induction of sexual activity of male goats during the reproductive resting season.**
O. Angel-Garcia[1], J. M. Guillen-Muñoz[1], M. A. De Santiago-Miramontes[1], P. A. Robles-Trillo[1], R. Rodriguez-Martinez[1], C. A. Meza-Herrera[2], F. G. Véliz[1], and G. Arellano-Rodriguez*[1], [1]*Universidad Autónoma Agraria Antonio Narro, Torreón, Coahuila, México*, [2]*URUZA, Universidad Autónoma Chapingo, Gómez Palacio, Durango, Móxico*.

W394 **Induction to sexual activity of goats from the Mexican semidesert during the seasonal anestrous throughout the "female-to-female effect.".**
J. M. Guillen-Muñoz[1], O. Angel-Garcia[1], M. A. De Santiago-Miramontes[1], G. Arellano-Rodriguez[1], C. A. Meza-Herrera[2], M. Mellado[3], F. G. Véliz[1], and R. Rodriguez-Martinez*[1], [1]*Universidad Autónoma Agraria Antonio Narro, Torreón, Coahuila, México*, [2]*URUZA, Universidad Autónoma Chapingo, Gómez Palacio, Durango, México*, [3]*Universidad Autónoma Agraria Antonio Narro, Saltillo, Coahuila, México*.

W395 **Influence of different GnRH treatments in an 11-d CIDR timed AI synchronization program in Santa Inês ewes.**
M. V. Biehl*[3], A. V. Pires[2], I. Susin[2], R. S. Gentil[2], E. M. Ferreira[2], F. M. Abreu[1], M. V. C. Ferraz Junior[3], L. H. Cruppe[1], and M. L. Day[1], [1]*The Ohio State University, Columbus*, [2]*University of Sao Paulo, Piracicaba, SP, Brazil*, [3]*University of Sao Paulo, Pirassununga, SP, Brazil*.

W396 **Effect of AI method on pregnancy rate following an 11d-CIDR estrus synchronization program in Santa Ines ewes.**
M. V. Biehl*[3], A. V. Pires[2,3], I. Susin[2], R. S. Gentil[2], E. M. Ferreira[2], M. V. C. Ferraz Junior[3], D. D. Nepomuceno[2], F. M. Abreu[1], L. H. Cruppe[1], and M. L. Day[1], [1]*The Ohio State University, Columbus*, [2]*University of Sao Paulo, Piracicaba, SP, Brazil*, [3]*University of Sao Paulo, Pirassununga, SP, Brazil*.

Swine Species III

W397 **Industry productivity analysis—Sow farm traits.**
C. E. Hostetler*[1] and M. T. Knauer[2], [1]*National Pork Board, Des Moines, IA*, [2]*North Carolina State University, Raleigh*.

W398 **Welfare of Camborough sows in gestation crates or pens.**
W. Chaya*[1] and J. McGlone[2], [1]*Department of Animal and Food Sciences, Texas Tech University, Lubbock*, [2]*Pork Industry Institute, Department of Animal and Food Sciences, Texas Tech University, Lubbock*.

Draft

W399 **Relationships of birth weight and weaning weight on performance traits in purebred pigs.**
R. L. Cutshaw*[1], A. Schinckel[1], J. Fix[2], M. Brubaker[3], and M. Einstein[1], [1]*Purdue University, West Lafayette, IN*, [2]*National Swine Registry, West Lafayette, IN*, [3]*Whiteshire Hamroc LLC, Albion, IN*.

W400 **Length of productive life and lifetime production of Landrace, Yorkshire and crossbred sows raised under Thai tropical conditions.**
S. Koonawootrittriron[1], U. Nopibool[1], M. A. Elzo*[2], and T. Suwanasopee[1], [1]*Kasetsart University, Bangkok, Thailand*, [2]*University of Florida, Gainesville*.

W401 **In utero heat stress alters postnatal body composition parameters in growing pigs.**
R. L. Boddicker*[1], N. J. Boddicker[1], J. N. Rhoades[2], S. Pearce[1], J. Johnson[1], M. C. Lucy[2], T. J. Safranski[2], N. K. Gabler[1], J. T. Selsby[1], J. Patience[1], R. P. Rhoads[3], L. H. Baumgard[1], and J. W. Ross[1], [1]*Iowa State University, Ames*, [2]*University of Missouri, Columbia*, [3]*Virginia Polytechnic Institute and State University, Blacksburg*.

W402 **Implementing a total traceability system for the pig chain based on electronic ear tags and molecular markers.**
P. Grassi[1], G. Caja*[1], J. H. Mocket[1], A. Costa[1], J. Soler[2], M. Gispert[2], J. Tibau[2], M. A. Rojas-Olivares[1], and A. Sánchez[1], [1]*Universitat Autònoma de Barcelona, Bellaterra, Barcelona, Spain*, [2]*Institut de Recerca i Tecnologia Agroalimentàries, Monells, Girona, Spain*.

Draft

SYMPOSIA AND ORAL SESSIONS

Alpharma/Beef Species Joint Symposium
Redefining the Replacement Heifer Paradigm
Chair: Matt Hersom, University of Florida
222AB

10:30 AM **Introduction**
M. Hersom, *University of Florida*.

10:35 AM 602 **Pubertal issues for beef replacement heifers.**
C. L. Gasser*, *Southern Utah University, Cedar City*.

11:10 AM 603 **Development systems for replacement beef heifers.**
R. N. Funston*, *University of Nebraska, West Central Research and Extension Center, North Platte*.

11:45 AM 604 **Interactions of feed efficiency with beef heifer reproductive development.**
R. D. Randel*[1] and T. H. Welsh[2], [1]*Texas AgriLife Research, Overton*, [2]*Texas AgriLife Research, College Station*.

12:20 PM 605 **Enterprise level implications of heifer development.**
R. L. Endecott*[1], A. J. Roberts[2], and J. T. Mulliniks[3], [1]*Department of Animal and Range Sciences, Montana State University, Miles City*, [2]*USDA-ARS, Fort Keogh Livestock and Range Research Laboratory, Miles City, MT*, [3]*Department of Animal and Range Sciences, New Mexico State University, Las Cruces*.

Breeding and Genetics
Beef Cattle Breeding II—Applied Genomics
Chair: Richard Tait, Iowa State University
225AB

10:30 AM 606 **Genomic technologies to increase production of Certified Angus Beef (CAB).**
J. D. Nkrumah*[1], P. Boddhireddy[1], M. Kelly[1], S. L. Northcutt[2], M. McCully[3], K. Anderson[1], J. Rumph[1], W. Herring[1], J. Osterstock[1], and S. DeNise[1], [1]*Pfizer Animal Genetics, Kalamazoo, MI*, [2]*Angus Genetics Inc., St Joseph, MO*, [3]*Certified Angus Beef, Wooster, OH*.

10:45 AM 607 **Genomic selection for dry matter intake using a combined European and Australian reference population.**
Y. de Haas*[1], J. E. Pryce[3], M. P. L. Calus[1], E. Wall[2], M. P. Coffey[2], H. D. Daetwyler[3], B. J. Hayes[3], and R. F. Veerkamp[1], [1]*Animal Breeding and Genomics Centre of Wageningen UR Livestock Research, Wageningen, the Netherlands*, [2]*Sustainable Livestock Systems Group at Scottish Agricultural College, Easter Bush, Midlothian, United Kingdom*, [3]*Biosciences Research Division of Department of Primary Industries Victoria, Bundoora, VIC 3083, Australia*.

11:00 AM 608 **Whole transcriptome sequencing of seven bovine tissues reveals gene expression profiles, splicing variants, and novel coding regions to improve genome annotation.**
J. Thomson*[1], U. Basu[1], Y. Meng[1], X. Liao[1], S. Moore[2], and P. Stothard[1], [1]*University of Alberta, Edmonton, AB, Canada*, [2]*University of Queensland, Brisbane, Qld, Australia*.

11:15 AM 609 **An ensemble-based approach to imputation of high-density genotypes for genomic selection with application to purebred Angus cattle.**
C. Sun*[1], X.-L. Wu[1,2], K. A. Weigel[1], G. J. M. Rosa[2,3], S. Bauck[4], B. W. Woodward[4], R. D. Schnabel[5], J. F. Taylor[5], and D. Gianola[2,3], [1]*Department of Dairy Science, University of Wisconsin, Madison*, [2]*Department of Animal Sciences, University of Wisconsin, Madison*, [3]*Department of Biostatistics and Medical Informatics, University of Wisconsin, Madison*, [4]*Merial Limited, Duluth, GA*, [5]*Division of Animal Sciences, University of Missouri, Columbia*.

11:30 AM 610 **Gene expression analysis of longissimus and semitendinosus muscle from Angus and Charolais finishing steers.**
J. W. Buchanan*[1], A. K. Sexten[2], J. W. Dillwith[1], C. R. Krehbiel[1], and R. G. Mateescu[1], [1]*Oklahoma State University, Stillwater*, [2]*Kansas State University, Manhattan*.

11:45 AM 611 **Single nucleotide polymorphisms in the NPY, leptin, and IGF-1 genes in Angus cattle: I Effects on feed efficiency.**
A. I. Trujillo*, A. Casal, and P. Chilibroste, *Universidad de la Republica, Facultad de Agronomia, Montevideo, Montevideo, Uruguay*.

12:00 PM 612 **Single nucleotide polymorphisms in the NPY, Leptin, and IGF-1 genes in Angus cattle: II Effects on serum IGF-1 and leptin concentrations.**
A. I. Trujillo*, A. Casal, and P. Chilibroste, *Universidad de la Republica, Facultad de Agronomia*.

Draft

12:15 PM 613 **A distributed parallel computing approach for tuning Bayesian regression models for genomic selection with application to Angus cattle.**
X.-L. Wu*[1,2], H. Okut[2], C. Sun[1], G. J. M. Rosa[2], S. Bauck[3], B. W. Woodward[3], R. D. Schnabel[4], J. F. Taylor[4], and D. Gianola[1,2], [1]*Department of Dairy Science, University of Wisconsin, Madison*, [2]*Department of Animal Sciences, University of Wisconsin, Madison*, [3]*Merial Limited, Duluth, GA*, [4]*Division of Animal Sciences, University of Missouri, Columbia*.

12:30 PM 614 **Quantitative traits and genomics of heterosis in Wagyu × Angus F_1 progeny.**
L. F. Zhang[1,2], J. J. Michal[1], J. V. O'Fallon[1], Z. X. Pan[1,3], C. T. Gaskins[1], J. J. Reeves[1], J. R. Busboom[1], M. V. Dodson[1], R. W. Wright[1], and Z. Jiang*[1], [1]*Department of Animal Sciences, Washington State University, Pullman*, [2]*College of Animal Sciences, Zhejiang University, Hangzhou, Zhejiang, China*, [3]*College of Animal Sciences and Technology, Nanjing Agricultural University, Nanjing, Jiangsu, China*.

Companion Animals
Chair: Jill Cline, K9Crazy Consulting
127C

10:30 AM 615 **ASAS Early Career Achievement Award: Use of genomic biology to study companion animal microbiota.**
K. S. Swanson*, *University of Illinois, Department of Animal Science, Urbana*.

11:00 AM 616 **Pheromones and interomones that change heart rate and behavior of anxious dogs.**
G. Thompson* and J. J. McGlone, *Texas Tech University, Lubbock*.

11:15 AM 617 **Genome-wide linkage scan for loci associated with canine hypoadrenocorticism.**
A. M. Oberbauer* and J. M. Belanger, *University of California-Davis, Davis*.

11:30 AM 618 **Effects of dietary macronutrient composition on postprandial endocrine response in domestic cats.**
P. Deng*[1], T. K. Ridge[2], T. K. Graves[2], J. K. Spears[4], and K. S. Swanson[1,3], [1]*Department of Animal Sciences, University of Illinois, Urbana*, [2]*Department of Veterinary Clinical Medicine, University of Illinois, Urbana*, [3]*Division of Nutritional Sciences, University of Illinois, Urbana*, [4]*Nestlé Purina PetCare, St. Louis, MO*.

11:45 AM 619 **Digestibility of day-old, whole ground, extruded, and canned chicken-based diets in African wildcats.**
K. R. Kerr*[1], C. L. Morris[3], S. L. Burke[3], L. M. Garner[1], and K. S. Swanson[1,2], [1]*Division of Nutritional Sciences, University of Illinois, Urbana*, [2]*Department of Animal Sciences, University of Illinois, Urbana*, [3]*Henry Doorly Zoo, Omaha, NE*.

12:00 PM 620 **Dietary protein:carbohydrate ratio alters kitten fecal microbiota as analyzed by 454 pyrosequencing.**
S. Hooda*[1], B. M. Vester Boler[1], K. R. Kerr[1], S. E. Dowd[2], and K. S. Swanson[1], [1]*University of Illinois, Department of Animal Sciences, Urbana*, [2]*MR DNA Molecular Research LP, Shallowater, TX*.

12:15 PM 621 **Influence of indigestible starch content in dry expanded diets on stool characteristics of dogs differing in body size.**
R. Goudez*[1,2], M. Weber[2], L. Martin[1], V. Leray[1], V. Biourge[2], H. Dumon[1], and P. Nguyen[1], [1]*LUNAM University, Oniris, National College of Veterinary Medecine, Food and Science and Engineering, Nutrition and Endocrinology Unit, Nantes, France*, [2]*Royal Canin Research Center, Aimargues, France*.

12:30 PM 622 **Influence of fresh citrus pulp and apple pomace on the digestibility of nutrients in dogs.**
S. Brambillasca*, C. Deluca, A. Britos, and C. Cajarville, *Departamento de Nutrición Animal, Facultad de Veterinaria, Universidad de la República, Montevideo, Uruguay*.

Dairy Foods
Microbiology and Chemistry
Chair: Young Park, Fort Valley State University
122AB

10:30 AM 623 **Impact of NaCl substitution with KCl on cell-wall extract and cell-free supernatant proteinase activities of *Lactobacillus delbrueckii* ssp. *bulgaricus* and *Streptococcus thermophilus* and *Lactobacillus acidophilus* and *Lactobacillus casei* at different pH and salt levels.**
M. M. Ayyash[1], F. Sherkat[2], and N. P. Shah*[1,3], [1]*Victoria University, Melbourne, Vic, Australia*, [2]*RMIT University, Melbourne, Vic, Australia*, [3]*The University of Hong Kong, Pokfulam, Hong Kong*.

Draft

10:45 AM 624 **Survival of microencapsulated probiotic *Lactobacillus paracasei* LBC-1e during manufacture of Mozzarella cheese and simulated gastric digestion.**
F. Ortakci*, J. R. Broadbent, W. R. McManus, and D. J. McMahon, *Western Dairy Center Department of Nutrition, Dietetics, and Food Science, Utah State University, Logan*.

11:00 AM 625 **Characterization of *Lactobacillus* sp. GF103 as potential probiotics in vitro.**
X. L. Dong[1], Q. Y. Diao*[1], N. F. Zhang[1], Y. Tu[1], M. Zhou[1,2], L. H. Zhao[1], and X. H. Gao[1], [1]*Key Laboratory of Feed Biotechnology of Ministry of Agriculture/Feed Research Institute, Chinese Academy of Agricultural Sciences, Beijing, China*, [2]*College of Animal Science Xinjiang Agricultural University, Urumqi, China*.

11:15 AM 626 **Microbial safety assessment of Juustoleipa cheese manufacture.**
B. Ganesan*, D. Irish, and C. Brothersen, *Western Dairy Center, Utah State University, Logan*.

11:30 AM 627 **Viability of probiotic bacteria and yeasts in traditional and commercial kefir following frozen storage.**
K. V. O'Brien*, C. A. Boeneke, K. J. Aryana, and W. Prinyawiwatkul, *Louisiana State University, Baton Rouge*.

11:45 AM 628 **Probing the foaming characteristics of milk proteins.**
J. A. Stankey*[1] and J. A. Lucey[1,2], [1]*University of Wisconsin-Madison, Department of Food Science, Madison*, [2]*Wisconsin Center for Dairy Research, Madison*.

12:00 PM 629 **The influence of Bactoscan total bacteria counting (TBC) and preliminary incubation (PI) counting on subsequent infrared milk component results.**
K. L. Wojciechowski and D. M. Barbano*, *Cornell University, Department of Food Science, Northeast Dairy Foods Research Center, Ithaca, NY*.

12:15 PM 630 **Protective action of serum amyloid A3 against *Salmonella* Dublin infection.**
A. Domènech*[1], A. ArÍs[1], A. Bach[1,2], and A. Serrano[1], [1]*Institut de Recerca i Tecnologia Agroalimentària (IRTA), Caldes de Montbui, Barcelona, Spain*, [2]*Institució Catalana de Recerca i Estudis Avançats (ICREA), Barcelona, Spain*.

Dairy Foods
Physico-chemical properties
Chair: Tonya Schoenfuss, University of Minnesota
122C

10:30 AM 631 **Development of whey protein concentrate incorporated dietetic kulfi.**
H. G. Ramachandra Rao*[1] and A. Giri[2], [1]*Dairy Science College, Bangalore, Karnataka, India*, [2]*National Dairy Research Institute, Karnal, Haryana, India*.

10:45 AM 632 **Application of ultrasound spectroscopy to monitor lactose crystallization.**
J. K. Amamcharla*[1], L. E. Metzger[1], and R. Tweedie[2], [1]*Midwest Dairy Foods Research Center, Dairy Science Department, South Dakota State University, Brookings*, [2]*Industrial Tomography Systems plc, Manchester, UK*.

11:00 AM 633 **Heat induced aggregation of whey proteins as influenced by shear, pH, and protein concentration.**
M. Dissanayake, L. Ramchandran, and T. Vasiljevic*, *Advanced Food Systems Faculty Research Unit, School of Biomedical and Health Sciences and Institute for Sustainability and Innovation, Victoria University, Werribee Campus, VIC, Australia*.

11:15 AM 634 **Effect of pH and protein concentration on denaturation kinetics of whey proteins.**
M. Dissanayake, L. Ramchandran, and T. Vasiljevic*, *Advanced Food Systems Faculty Research Unit, School of Biomedical and Health Sciences and Institute for Sustainability and Innovation, Victoria University, Werribee Campus, VIC, Australia*.

11:30 AM 635 **Comparison of heat stability of bovine milk subjected to UHT and in-container sterilisation.**
B. Chen*, F. Ren, A. Grandison, and M. Lewis, *University of Reading, Reading, UK*.

11:45 AM 636 **Investigating the influence of phospholipids on the viability of *Streptococcus thermophilus* and *Bifidobacterium lactis*.**
B. Chinnasamy* and S. Clark, *Food Science and Human Nutrition, Iowa State University, Ames*.

12:00 PM 637 **Elucidating the role of α_{s2}-casein in the superior functionality of acid gels prepared from high-pressure-treated milks compared with heat-treated milks.**
H. Patel*[1], P. Salunke[3], L. Creamer[2], and H. Singh[2], [1]*Fonterra Research Centre, Palmerston North, New Zealand*, [2]*Riddet Institute, Massey University, Palmerston North, New Zealand*, [3]*South Dakota State University, Brookings, SD*.

Draft

12:15 PM 638 **Coagulation properties of the casein micelle by combination of ultrafiltration and dilfiltration measured using rheology and diffusing wave spectroscopy.**
J. G. Luo*[1,2], E. Kristo[1], and M. Corredig[1], [1]*Department of Food Science, University of Guelph, Guelph, ON, Canada*, [2]*Gay Lea Foods Co-operative Ltd., Guelph, ON, Canada*.

12:30 PM 639 **Composition and physical properties of dairy products in the UK.**
B. Chen*, A. Grandison, and M. Lewis, *Univerisity of Reading, Reading, UK*.

Extension Education II
Chair: Jeff Keown, University of Nebraska-Lincoln
128AB

10:30 AM 640 **Assessing a team-based educational program designed to build communication skills for practicing dairy veterinarians.**
G. M. Schuenemann*[1], D. J. Klingborg[2], D. A. Moore[3], and J. D. Workman[1], [1]*Department of Veterinary Preventive Medicine, The Ohio State University, Columbus*, [2]*School of Veterinary Medicine, University of California, Davis*, [3]*Department of Veterinary Clinical Sciences, Washington State University, Pullman*.

10:45 AM 641 **Assessing a team-based educational program on nutrition and reproductive management for small dairy producers.**
G. M. Schuenemann*[1], W. P. Weiss[2], and J. D. Workman[1], [1]*Department of Veterinary Preventive Medicine, The Ohio State University, Columbus*, [2]*Department of Animal Sciences, The Ohio State University, Wooster*.

11:00 AM 642 **I. Interactive index to identify and rank risk factors affecting reproductive performance of lactating dairy cows under field conditions.**
S. Bas*[1], P. Federico[2], and G. M. Schuenemann[1], [1]*Department of Veterinary Preventive Medicine, The Ohio State University, Columbus*, [2]*Department of Mathematics, Computer Science, and Physics, Capital University, Columbus, OH*.

11:15 AM 643 **Using real-time futures market simulation to teach dairy risk management.**
M. E. Sowerby* and J. J. VanSickle, *University of Florida, Gainesville*.

11:30 AM 644 **A decision support tool for investment analysis of new dairy housing facility construction.**
R. A. Black* and J. M. Bewley, *University of Kentucky, Lexington*.

11:45 AM 645 **Quantifying the effect of an extension programme (InCalf) on the reproduction performance of New Zealand dairy herds using a randomized controlled study.**
T. S. Brownlie*[1,2], J. M. Morton[3], C. Heuer[2], and S. McDougall[1], [1]*Cognosco, Anexa Animal Health, Morrinsville, New Zealand*, [2]*Epicentre, Institute of Veterinary, Animal and Biomedical Sciences, Massey University, Palmerston North, New Zealand*, [3]*Jemora Pty Ltd., Geelong, Victoria, Australia*.

12:00 PM 646 **Stochastic simulation of the impact of commodity price variation on mastitis costs.**
D. Liang*[1], M. M. Schutz[2], and J. M. Bewley[1], [1]*University of Kentucky, Lexington*, [2]*Purdue University, West Lafayette, IN*.

12:15 PM 647 **A model: The Alabama Coalition for Farm Animal Care and Well-Being–A unified approach to animal care and well-being.**
R. Owen*, L. W. Greene, W. F. Owsley, and D. Wolfe, *Auburn University, Auburn, AL*.

Draft

Food Safety
Advances in Food Safety
Chair: Susan Duckett, Clemson University
223

10:30 AM 648 **Antimicrobial use in preweaned calves: Effects on fecal *E. coli* resistance.**
D. A. Moore*, D. Barone, A. C. B. Berge, T. E. Besser, and W. M. Sischo, *Washington State University*.

10:45 AM 649 **Effect of pre-slaughter stressors on intestinal microbial populations of pigs.**
M. H. Rostagno*[1], B. T. Richert[2], and D. C. Lay[1], [1]*USDA-ARS, Livestock Behavior Research Unit, West Lafayette, IN*, [2]*Purdue University, Department of Animal Sciences, West Lafayette, IN*.

11:00 AM 650 **Screening of antimicrobials and salt substitutes for use in reduced sodium dairy products.**
T. Taylor*, A. Lathrop, N. Farkye, and A. Lammert, *California Polytechnic State University, San Luis Obispo*.

11:15 AM 651 **Control of native microbiota in skim milk by pulsed electric fields and tangential-flow microfiltration versus high-temperature short-time pasteurization.**
D. Khanal*, A. Chugh, M. Walkling-Ribeiro, L. Duizer, and M. W. Griffiths, *University of Guelph, Guelph, Ontario, Canada*.

Horse Species Symposium
Equine-Assisted Therapies: Incorporation into University Programs
Chair: Carrie Hammer, North Dakota State University
121C

10:30 AM **Introduction**

10:35 AM 652 **Partnering therapeutic riding and higher education.**
C. Burke*, *University of New Hampshire, Durham*.

11:05 AM 653 **Equine-assisted therapy and recovery from combat trauma.**
J. M. Kouba*[1], B. L. McDaniel[1], E. A. Eason[2], and K. G. Odde[1], [1]*Kansas State University, Manhattan*, [2]*Fort Riley, KS.*

11:35 AM 654 **Research in equine-assisted activities and therapies.**
E. L. Berg*, *North Dakota State University, Fargo*.

12:05 PM **Discussion**

Draft

Meat Science and Muscle Biology Symposium
Pre-slaughter Stress, Postmortem Glycolysis, and Biophysical Mechanisms of Meat Quality
Chair: Min Du, Washington State University
226ABC

10:30 AM 655 **Preslaughter stress and pork meat quality.**
L. Faucitano*, *Agriculture & Agri-Food Canada, Sherbrooke, Canada*.

11:05 AM 656 **Muscle glycogen and postmortem glycolysis.**
E. Poulanne*, *Department of Food and Environmental Sciences, University of Helsinki, Helsinki, Finland*.

11:40 AM 870 **AMP-activated protein kinase as a controller of postmortem glycolysis?**
T. L. Scheffler, E. M. England, and D. E. Gerrard*, *Department of Animal and Poultry Sciences, Virginia Tech, Blacksburg*.

12:15 PM 657 **Biophysical approaches for improving our understanding of meat quality.**
A. Karlsson* and D. Brüggemann, *University of Copenhagen, Frederiksberg C, Denmark*.

Nonruminant Nutrition
Amino Acids and Energy
Chair: Brian Kerr, USDA-ARS
129AB

10:30 AM 658 **Influence of net energy content of the diet on productive performance and carcass merit of gilts, boars, and immunocastrated males fed barley-based diets and slaughtered at 119 kg of BW.**
L. Cámara[1], M. Romero[1], M. P. Serrano[1], J. L. Sánchez[2], E. Alcázar[2], and G. G. Mateos*[1], [1]*Departamento de Producción Animal, Universidad Politécnica de Madrid, Madrid, Spain*, [2]*SAT Vallehermoso S.A, Ciudad Real, Spain*.

10:45 AM 659 **Influence of increasing levels of lysine in the diet on growth performance and carcass quality of entire and inmunocastrated females.**
L. Cámara[1], M. P. Serrano[1], A. López[2], J. M. González[2], F. Ortin[2], and G. G. Mateos*[1], [1]*Departamento de Producción Animal, UPM, Ciudad Universitaria, Madrid, Spain*, [2]*Piensos Jiménez S. L., Lorca, Murcia, Spain*.

11:00 AM 660 **The standardized ileal digestible (SID) tryptophan to lysine ratio to optimize performance of 25 to 50 kg pigs fed low protein diets.**
G. Zhang[1], S. Qiao[1], and J. K. Htoo*[2], [1]*China Agricultural University, Beijing, China*, [2]*Evonik Industries AG, Hanau, Germany*.

11:15 AM 661 **Changes in amino acid accretion during immune activation of the chicken immune system by *E. coli*.**
V. J. Iseri* and K. C. Klasing, *University of California, Davis*.

11:30 AM 662 **Restricting sulfur amino acid intake in immune system stimulated pigs decreases plasma protein and albumin synthesis.**
N. Litvak* and C. F. M. de Lange, *University of Guelph, Guelph, ON, Canada*.

11:45 AM 663 **Response to dietary l-glutamine supplementation in weaned piglets: A serum metabolomic comparison and hepatic metabolic regulation analysis.**
Y. Xiao*, A. Chen, T. Wu, L. Yang, and Q. Hong, *College of Animal Sciences, Zhejiang University, Hangzhou, Zhejiang, China*.

12:00 PM 664 **Effects of dietary glutamine supplementation on nutrient absorption and activity of enzymes involved in glutamine metabolism and energy production in the jejunum of weaned piglets.**
A. Chen*, Y. Xiao, T. W. Wu, Q. Hong, and C. Yang, *College of Animal Sciences, Zhejiang University, Hangzhou, Zhejiang, China*.

12:15 PM 665 **Effects of oral supplementation with glutamate or combination of glutamate and N-carbamylglutamate on intestinal mucosa morphology in weanling piglets.**
W. Xin[1,2], P. Zhangzhi[1,2], L. Zhiqiang[1], L. Tiejun[1], and Y. Yulong*[1,2], [1]*Key Laboratory for Agro-ecological Processes in Subtropical Region, Institute of Subtropical Agriculture, Chinese Academy of Sciences, China*, [2]*State Key Laboratory of Food Science and Technology and College of Life Science and Food Engineering, Nanchang University, China*.

Physiology and Endocrinology I
Chair: Russ Hovey, University of California-Davis
123

10:30 AM 666 **Gram-negative or gram-positive toxin-induced subclinical mastitis affects preovulatory follicle responses in cows.**
O. Furman[1], G. Leitner[2], Z. Roth[1], Y. Lavon[3], S. Jacoby[4], and D. Wolfenson*[1], [1]*Faculty of Agriculture, Food and Environment, the Hebrew University, Rehovot, Israel*, [2]*The Veterinary Institute, Bet Dagan, Israel*, [3]*Israel Cattle Breeders Association, Caesarea, Israel*, [4]*Institute of Animal Science, Agricultural Research Organization, Bet-Dagan, Israel*.

10:45 AM 667 **Blood constituents in milk due to changed blood-milk barrier integrity during mastitis.**
O. Wellnitz, M. Lehmann, and R. M. Bruckmaier*, *Veterinary Physiology, Vetsuisse Faculty, University of Bern, Bern, Switzerland*.

11:00 AM 668 **Characterizing the temporal and seasonal pattern of plasma lipopolysaccharide binding protein during the transition period.**
A. Nayeri*[1], N. C. Upah[1], M. V. Sanz-Fernandez[1], E. Sucu[1,2], A. L. Gabler[1], R. L. Boddicker[1], D. B. Snider[1], J. M. Defrain[3], and L. H. Baumgard[1], [1]*Iowa State University, Ames*, [2]*Uludag University, Turkey*, [3]*Zinpro Corporation, Eden Prairie, MN*.

11:15 AM 669 **Effect of dry period length on rumen adaptation in dairy cows.**
R. M. A. Goselink*[1], J. T. Schonewille[2], G. van Duinkerken[1], and A. T. M. van Knegsel[3], [1]*Wageningen UR Livestock Research, Lelystad, the Netherlands*, [2]*Utrecht University, Utrecht, the Netherlands*, [3]*Wageningen University, Wageningen, the Netherlands*.

11:30 AM 670 **Sodium salicylate administration during the first 7 days of lactation has effects that extend through the entire lactation in dairy cattle.**
J. K. Farney*[1], L. K. Mamedova[1], J. F. Coetzee[2], J. E. Minton[1], and B. J. Bradford[1], [1]*Kansas State University, Manhattan*, [2]*Iowa State University, Ames*.

Draft

11:45 AM 671 **Responses to a nutritional challenge in early and late lactation.**
N. C. Friggens*[1,2], C. Duvaux-Ponter[1,2], J. Tessier[1,2], and P. Schmidely[1,2], [1]*INRA UMR 791 Modélisation Systémique Appliquée aux Ruminants, Paris, France*, [2]*AgroParisTech UMR 791 Modélisation Systémique Appliquée aux Ruminants, Paris, France*.

12:00 PM 672 **Supranutritional levels of antioxidants maintains feed intake and reduces heat stress in sheep.**
S. Chauhan[1,2], P. Celi[3], B. Leury[2], and F. Dunshea*[2], [1]*CSK, HP Agriculture University, Palampur, Kangra, India*, [2]*The University of Melbourne, Parkville, Victoria, Australia*, [3]*The University of Sydney, Sydney, Australia*.

Ruminant Nutrition
Beef: Feed Additives
Chair: Allan Chestnut, Provimi
131ABC

10:30 AM 673 **Feeding monensin or functional oils in high corn finishing diets for Nellore bulls.**
L. J. Chagas, R. S. Marques, C. Sitta, C. Guerra, V. N. Gouvea, J. Souza, F. Batistel, and F. A. P. Santos*, *University of São Paulo, Piracicaba, SP, Brazil*.

10:45 AM 674 **Feeding monensin, functional oils and combination of feed additives in high by-products finishing diets for Nellore bulls.**
L. J. Chagas, R. S. Marques, C. Sitta, C. Guerra, V. N. Gouvea, J. Souza, F. Batistel, and F. A. P. Santos*, *University of São Paulo, Piracicaba, SP, Brazil*.

11:00 AM 675 **Effect of Rumensin, Micotil, and Component TE-G with Tylan on health, growth performance, and carcass merit of stocker cattle grazing wheat pasture.**
E. D. Sharman*[1], P. A. Lancaster[1], B. D. Wallis[1], G. W. Horn[1], and G. D. Hufstedler[2], [1]*Oklahoma Agricultural Experiment Station, Stillwater*, [2]*Elanco Animal Health, Guthrie, OK*.

11:15 AM 676 **Effects of dietary *Aspergillus oryzae* extract containing α-amylase activity on feedlot performance and carcass characteristics of finishing beef cattle fed steam-flaked corn-based diets.**
K. A. White*[1], J. J. Wagner[2], T. E. Engle[1], D. R. Woerner[1], T. C. Bryant[3], J. S. Jennings[4], and K. M. Brennan[4], [1]*Animal Sciences Department, Colorado State University, Fort Collins*, [2]*Southeast Colorado Research Center, Colorado State University, Lamar*, [3]*JBS Five Rivers Cattle Feeding, Greeley, CO*, [4]*Alltech Inc., Nicholasville, KY*.

11:30 AM 677 **Accelerated step-up regimens for feedlot heifers following oral dosing with Lactipro (*Megasphaera elsdenii*).**
K. A. Miller*, C. L. Van Bibber-Krueger, and J. S. Drouillard, *Kansas State University, Manhattan*.

11:45 AM 678 **Oral dosing with Lactipro (*Megasphaera elsdenii*) decreases roughage required for feedlot finishing.**
K. A. Miller*, C. L. Van Bibber-Krueger, and J. S. Drouillard, *Kansas State University, Manhattan*.

12:00 PM 679 **Effect of Optaflexx level on growth performance and carcass characteristics of feedlot steers.**
J. W. Homm*, G. J. Vogel, N. A. Pyatt, and R. L. Botts, *Elanco Animal Health, Greenfield, IN*.

12:15 PM 680 **Effect of an injectable amino acid solution in calves fed barley-based rations with supplemental lysine and methionine during a 65-d preconditioning program.**
C. F. O'Neill*[1], C. L. Maxwell[1], S. L. Parr[2], M. L. May[2], E. J. Behlke[2], C. W. Booker[2], G. K. Jim[2], C. R. Krehbiel[1], and L. O. Burciaga-Robles[2], [1]*Department of Animal Science, Oklahoma State University, Stillwater*, [2]*Feedlot Health Management Services Ltd., Okotoks, Alberta, Canada*.

Small Ruminant
Production and Reproduction
Chair: Govind Kannan, Fort Valley State University
222C

10:30 AM 681 **Fabricated carcass measurements in terminally sired F_1 lambs.**
M. R. Mousel*[1], D. R. Notter[2], T. D. Leeds[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]*Virginia Tech, Blacksburg*, [3]*USDA, ARS, National Center for Cool and Cold Water Aquaculture, Kearneysville, WV*, [4]*The Ohio State University, Columbus*.

Draft

10:45 AM 682 **Awassi sheep productivity in central Anatolia region of Turkey.**
H. Üstüner* and M. Ogan, *Uludag University, Faculty of Veterinary Medicine, Department of Animal Science, Bursa, Turkey*.

11:00 AM 683 **Effect of lithium chloride for mid-term conditioned aversion to olive tree leaves in penned and grazing goats.**
C. L. Manuelian, E. Albanell, M. Rovai*, A. A. K. Salama, and G. Caja, *Grup de Recerca en Remugants (G2R), Universitat Autònoma de Barcelona, Bellaterra, Barcelona, Spain*.

11:15 AM 684 **Milk production losses in early lactating dairy goats under heat stress.**
S. Hamzaoui, A. A. K. Salama*, G. Caja, E. Albanell, C. Flores, and X. Such, *Group de Recerca en Remugants (G2R), Universitat Autònoma de Barcelona, Bellaterra, barcelona, Spain*.

11:30 AM 685 **Long-term effects of intrauterine rivalry on the reproductive performances of co-twin ewe-lambs.**
J. Casellas and G. Caja*, *Grup de Recerca en Remugants (G2R), Universitat Autònoma de Barcelona, Bellaterra, Barcelona, Spain*.

11:45 AM 686 **Fixed-time laparoscopic AI with frozen-thawed goat semen in progesterone and PMSG supplemented Cosynch protocol.**
Z. Nur[1], B. Üstüner*[1], Y. Nak[2], S. Alcay[1], Y. Yaman[3], and H. Sagirkaya[1], [1]*Department of Reproduction and Artificial Insemination, Uludag University, Faculty of Veterinary Medicine, Gorukle, Bursa, Turkey*, [2]*Department of Obstetrics & Gynecology, Uludag University, Faculty of Veterinary Medicine, Gorukle, Bursa, Turkey*, [3]*Marmara Animal Breeding Research Institute, Bandirma, Balikesir, Turkey*.

12:00 PM 687 **Pregnancy diagnosis in sheep using fecal near infrared reflectance spectroscopy.**
M. A. D. Bomfim*[1,2], S. Prince[2], J. Angerer[2], O. Faco[1], J. de L. Gonçalves[3,1], R. T. De Souza[3,1], F. E. P. Fernandes[1], A. M. F. Fernandes[3,1], and M. Ponciano[1], [1]*Embrapa Goats and Sheep, Sobral, Ceara, Brazil*, [2]*Blackland Research Center/ Texas A&M University, Temple*, [3]*State University of Acarau Valley, Sobral, Ceara, Brazil*.

12:15 PM 688 **Ability to culture of cells from postmortem goat skin tissues stored at room temperature for different time intervals.**
M. Singh* and X. Ma, *Fort Valley State University, Fort Valley, GA*.

Draft

Swine Species
Symposium: Recent Advances in Swine Genomics
Chair: Jeffrey Vallet, USMARC
125AB

10:30 AM 689 **Pigs, feed intake, and genes.**
J. P. Cassady*[1], S. Jiao[1], C. Maltecca[1], K. A. Gray[2], and J. W. Holl[1], [1]*North Carolina State University, Raleigh*, [2]*Smithfield Premium Genetics*.

11:05 AM 690 **A review of swine genome-wide association studies at USMARC.**
J. F. Schneider*, *USDA, ARS, USMARC, Clay Center, NE*.

11:40 AM **Break**

11:55 AM 691 **The genetic basis of host response to experimental infection with the PRRS virus in pigs.**
J. Dekkers*[1], N. Boddicker[1], E. Waide[1], J. K. Lunney[2], R. R. R. Rowland[3], D. J. Garrick[1], and J. Reecy[1], [1]*Iowa State University, Ames*, [2]*USDA, ARS, BARC, Beltsville, MD*, [3]*Kansas State University, Manhattan*.

Teaching/Undergraduate and Graduate Education Symposium
Giving Employers What They Want—How Ready is Today's Animal Science Graduate?
Chair: Donald Mulvaney, Auburn University
227AB

10:30 AM **Introduction**

10:40 AM 692 **The animal sciences curriculum of 2025.**
M. A. Wattiaux*, *University of Wisconsin-Madison, Madison*.

11:00 AM 693 **Creating animal scientists from scratch–Meeting industry needs with today's students.**
J. A. Sterle*, *Iowa State University, Ames*.

11:20 AM **Break**

11:35 AM 694 **Critical skills and characteristics expected by employers of animal science graduates and strategies for equipping them.**
S. Robinson*[1] and D. Mulvaney[2], [1]*Oklahoma State University, Stillwater*, [2]*Auburn University, Auburn, AL*.

11:55 AM 695 **Custom tailoring class information to each student for their eventual use in the workplace.**
T. G. Rozell*, *Kansas State University, Manhattan*.

12:15 PM **Panel Discussion**

Contemporary and Emerging Issues
Chair: Mulumebet Worku, NC A&T State University
223

11:45 AM 696 **Web forums as a method for engagement on contentious issues in dairying: Should pain relief be provided during disbudding and dehorning of dairy calves?**
D. M. Weary*, C. S. Schuppli, and M. A. G. von Keyserlingk, *University of British Columbia, Vancouver, BC, Canada*.

12:00 PM 697 **Preliminary assessment of graded *Garcinia kola* seed meal on the performance, hematology and serum enzymes of broilers.**
O. A. Ogunwole, E. A. Iyayi, M. D. Olumide*, O. Arinola, and O. A. Adebiyi, *University of Ibadan, Ibadan, Oyo State, Nigeria*.

12:15 PM 698 **Water usage and discharge volumes on New Mexico dairy operations.**
T. M. Vander Dussen*[1], G. R. Hagevoort[1], J. Lazarus[2], E. Naumburg[2], R. Ganta[2], and K. D. Casey[3], [1]*Agricultural Science Center at Clovis, New Mexico State University, Clovis*, [2]*Glorieta Geoscience Inc., Santa Fe, NM*, [3]*Texas AgriLife Research, Texas A&M System, Amarillo*.

Beef Species
Chair: Matt Hersom, University of Florida
222C

2:00 PM 699 **Evaluation of selecting half-sibling beef cows to increase calf crop uniformity.**
B. Nichols*, R. Reuter, and B. Cook, *The Samuel Roberts Noble Foundation Inc., Agriculture Division*.

2:15 PM 700 **Performance, residual feed intake, and carcass quality of progeny from Red Angus sires divergent for maintenance energy EPD.**
C. M. Welch*[1], J. K. Ahola[3], G. K. Murdoch[1], D. H. Crews[3], J. I. Szasz[1], L. C. Davis[1], M. E. Doumit[1], W. J. Price[2], L. D. Keenan[4], and R. A. Hill[1], [1]*Department of Animal and Veterinary Sciences, University of Idaho, Moscow*, [2]*Statistical Programs, University of Idaho, Moscow*, [3]*Department of Animal Sciences, Colorado State University, Fort Collins*, [4]*Red Angus Association of America, Denton, TX*.

2:30 PM 701 **The effect of limiting feed intake on concentration of proteins associated with energy balance in the pregnant beef cow.**
K. M. Wood*[1], C. J. Fitzsimmons[2,3], S. P. Miller[1], B. W. McBride[1], and K. C. Swanson[4], [1]*Dept. of Animal and Poultry Science, University of Guelph, Guelph, ON, Canada*, [2]*Agriculture and Agri-Food Canada, Edmonton, AB, Canada*, [3]*Dept. of Agriculture, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada*, [4]*Dept. of Animal Sciences, North Dakota State University, Fargo*.

2:45 PM 702 **Heifers with low antral follicle counts have low birth weights and produce progeny with low birth weights.**
A. F. Summers*[1], R. A. Cushman[2], and A. S. Cupp[1], [1]*University of Nebraska- Lincoln, Lincoln*, [2]*USDA-ARS U.S. Meat Animal Research Center, Clay Center, NE*.

3:00 PM 703 **Prediction of HCW of individual steers from partial live weight collected with an in-pen weighing device.**
R. Reuter* and C. Moffet, *The Samuel Roberts Noble Foundation Inc., Agriculture Division*.

Draft

3:15 PM 704 **Effect of various feeding regimens pre-shipment on shrink and subsequent weight recovery in feeder calves.**
J. Starnes* and D. Rankins, *Auburn University, Auburn, AL*.

3:30 PM 705 **Comparison of different feed additives for backgrounding of weaned beef calves.**
A. Imler[1], M. Hersom*[1], T. Thrift[1], J. Yelich[1], and J. Arthington[2], [1]*University of Florida, Department of Animal Sciences, Gainesville*, [2]*Range Cattle Research and Education Center, Ona, FL*.

3:45 PM 706 **Comparison of different feeding levels of a recycled-product supplemented to weaned beef calves.**
M. Hersom*, T. Thrift, and J. Yelich, *University of Florida, Department of Animal Sciences, Gainesville*.

Breeding and Genetics
Dairy Cattle Breeding III—Genetic Evaluation
Chair: Christian Maltecca, North Carolina State University
225AB

2:00 PM 707 **Extension of Bayesian procedures to integrate and to blend multiple external information into genetic evaluations.**
J. Vandenplas*[1,2] and N. Gengler[1], [1]*University of Liege - Gembloux Agro-Bio Tech, Gembloux, Belgium*, [2]*National Fund for Scientific Research, Brussels, Belgium*.

2:15 PM 708 **Are in-line measurements of somatic cell counts equally or more useful for genetic evaluations as those from DHI?**
L. P. Sørensen* and P. Løvendahl, *Department of Molecular Biology and Genetics, Center for Quantitative Genetics and Genomics, Aarhus University, Tjele, Denmark*.

2:30 PM 709 **Prediction of residual feed intake for first and second lactation dairy cows.**
G. H. Manafiazar*, T. McFadden, E. Okine, L. Goonewardene, and Z. Wang, *Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, Alberta, Canada*.

2:45 PM 710 **Random forest approach for SNP effects of residual feed intake in dairy cattle.**
C. Yao*[1], D. M. Spurlock[2], K. A. Weigel[1], L. E. Armentano[1], C. D. Page[1], and M. J. VandeHaar[3], [1]*University of Wisconsin, Madison*, [2]*Iowa State University, Ames*, [3]*Michigan State University, East Lansing*.

3:00 PM 711 **Use of milk fatty acids to substitute for body condition score in breeding purposes.**
C. Bastin*[1], D. P. Berry[2], H. Soyeurt[1,3], and N. Gengler[1], [1]*University of Liège, Gembloux Agro-Bio Tech, Animal Science Unit, Gembloux, Belgium*, [2]*Teagasc Moorepark Dairy Production Research Center, Fermoy, Co. Cork, Ireland*, [3]*National Fund for Scientific Research (F.R.S.-FNRS), Brussels, Belgium*.

3:15 PM 712 **Genetics of the mid-infrared prediction of lactoferrin content in milk for Holstein first-parity cows.**
C. Bastin*[1], G. Leclercq[1], H. Soyeurt[1,2], and N. Gengler[1], [1]*University of Liège, Gembloux Agro-Bio Tech, Animal Science Unit, Gembloux, Belgium*, [2]*National Fund for Scientific Research (F.R.S.-FNRS), Brussels, Belgium*.

3:30 PM 713 **Genetic parameters for methane indicator traits based on milk fatty acids in cows.**
P. B. Kandel*[1], A. Vanlierde[2], F. Dehareng[2], E. Froidmont[2], N. Gengler[1], and H. Soyeurt[1,3], [1]*Animal Science Unit, Gembloux Agro Biotech, University of Liège, Passage des Deportes, Gembloux, Belgium*, [2]*Valorisation of Agricultural Products Department, Walloon Agricultural Research Centre, Gembloux, Belgium*, [3]*National Fund for Scientific Research (FNRS), Brussels, Belgium*.

3:45 PM 714 **Comparison of daughter performance of New Zealand and North American sires in US herds.**
H. D. Norman*[1], J. R. Wright[1], R. L. Powell[1], T. J. Lawlor[2], and C. W. Wolfe[3], [1]*Animal Improvement Programs Laboratory, USDA-ARS, Beltsville, MD*, [2]*Holstein Association USA Inc., Brattleboro, VT*, [3]*American Jersey Cattle Association, Reynoldsville, OH*.

4:00 PM 715 **Genotype environment interaction of Holstein-Friesian dairy cattle in eastern Libya.**
S. A. M. Bozrayda*, R. S. Gargoum, and I. A. S. Al-Drussi, *Department of Animal Production, University of Benghazi, Benghazi, Libya*.

4:15 PM 716 **Casein and fatty acid content in milk of crossbred dairy cows under grazing conditions.**
V. Artegoitia*[1,2], M. Carriquiry[1], A. Meikle[2], J. Dutur[1], L. Olazabal[3], J. Bermudez[1], A. Torre[3], and P. Chilibroste[1], [1]*Facultad de Agronomía, Universidad de la República Oriental del Uruguay, Montevideo, Uruguay*, [2]*Facultad de Veterinaria, Universidad de la República Oriental del Uruguay, Montevideo, Uruguay*, [3]*Laboratorio Tecnológico del Uruguay, Montevideo, Uruguay*.

Draft

4:30 PM 717 **Effect of the milk recording time on the genetic parameters of milk production and mid-infrared milk components in Luxembourg dairy cattle.**
V. M.-R. Arnould*[1,2], H. Soyeurt[2,3], and N. Gengler[2,3], [1]*CONVIS s.c., Ettelbruck, Luxembourg*, [2]*University of Liège, Gembloux Agro Bio-Tech, Animal Science Unit, Gembloux Belgium*, [3]*National Fund for Scientific Research (F.N.R.S.), Brussels, Belgium*.

4:45 PM 718 **Integration of experimental designs and analytical approaches to co-ordinate efficiency of global efforts to optimize environmental and genetic effects on reproductive performance of dairy cattle.**
E. Block[1], B. Bradford[2], W. M. Chalupa[3], I. J. Lean*[4], S. LeBlanc[5], M. C. Lucy[6], J. McNamara[7], J. Morton[8], A. R. Rabiee[4], J. E. P. Santos[9], W. W. Thatcher[9], M. Van Amburgh[10], and M. J. VandeHaar[11], [1]*Church & Dwight Co, Princeton, NJ*, [2]*Kansas State University, Manhattan*, [3]*University of Pennsylvania, Kennett Square*, [4]*SBScibus, Camden, New South Wales, Australia*, [5]*Population Medicine Ontario Veterinary College University of Guelph, Guelph, ON Canada*, [6]*Division of Animal Sciences, University of Missouri, Columbia*, [7]*Department of Animal Sciences, Washington State University, Pullman*, [8]*Jemora Pty Ltd., Geelong Victoria, Australia*, [9]*Department of Animal Sciences, University of Florida, Gainesville*, [10]*Department of Animal Sciences, Cornell University, Ithaca, NY*, [11]*Department of Animal Sciences, Michigan State University, E. Lansing*.

Breeding and Genetics
Small Ruminants, Poultry, and Nontraditional Species
Chair: Ron Lewis, Virginia Tech
123

2:00 PM 719 **Associations between candidate gene polymorphisms and milk production traits in Alpine goats farmed in Italy.**
P. Crepaldi[1], E. Mlanesi[1], B. Coizet[1], L. Nicoloso[1], P. Fresi[2], S. Murru[2], R. Steri[3], and N. P. P. Macciotta*[3], [1]*Università di Milano, Milan, Italy*, [2]*ASSONAPA, Rome, Italy*, [3]*Università di Sassari, Sassari, Italy*.

2:15 PM 720 **Single nucleotide polymorphisms identified in polygenic traits through the use of the Ovine SNP50 BeadChip.**
R. R. Cockrum*[1], N. K. Pickering[2], R. M. Anderson[2], D. L. Hyndman[2], M. J. Bixley[2], K. G. Dodds[2], R. H. Stobart[1], J. C. McEwan[2], and K. M. Cammack[1], [1]*University of Wyoming, Laramie*, [2]*AgResearch Limited, Mosgiel, New Zealand*.

2:30 PM 721 **Genetic parameter estimates for birth weight in three Yemeni indigenous sheep breeds.**
S. Al-Shorepy*[1], M. Al-Karmah[1], and Ab. Albial[1], [1]*United Arab Emirates University, Al Ain, United Arab Emirates*, [2]*Sana'a University, Sana'a, Yemen*, [3]*Agricultural Research & Extension Authority, Sana'a, Yemen*.

2:45 PM 722 **Increased lean growth rate does not extend days to harvest in crossbred lambs.**
G. C. Márquez*[1], W. Haresign[2], M. H. Davies[3], D. R. Notter[1], R. Roehe[4], L. Bünger[4], G. Simm[4], and R. M. Lewis[1,4], [1]*Virginia Tech, Blacksburg*, [2]*Aberystwyth University, Aberystwyth, UK*, [3]*ADAS Rosemaund, Preston Wynne, UK*, [4]*Scottish Agricultural College, Edinburgh, UK*.

3:00 PM 723 **Evaluation of environmental factors affecting the speed of racing camels in the United Arab Emirates.**
S. Al-Shorepy*, S. Al Mansouri, and Z. Al Katheeri, *United Arab Emirates University, Al Ain, United Arab Emirates*.

3:15 PM 724 **Influence of genomic predictors on yearling sales price and total career earnings in Thoroughbred racehorses.**
C. R. Davis*[1,2], E. W. Hill[1,2], and A. G. Fahey[1], [1]*School of Agriculture and Food Science, University College Dublin, Belfield, Dublin 4, Ireland*, [2]*Equinome Ltd., NovaUCD, Belfield Innovation Park, Belfield, Dublin 4, Ireland*.

3:30 PM 725 **Genetic variation study in Pakistani buffalo breeds using microsatellite markers.**
T. Hussain*[1,2], M. E. Babar[1], M. Imran[1], A. Nadeem[1], A. Ali[1], R. Saif[1], A. Wajid[1], M. De Donato[2,3], S. O. Peters[2], and I. G. Imumorin[2], [1]*Institute of Biochemistry and Biotechnology, University of Veterinary and Animal Sciences, Lahore, Pakistan*, [2]*Dept. Animal Science, Cornell University, Ithaca, NY*, [3]*IIBCA, Universidad de Oriente, Cumana, Venezuela*.

3:45 PM 726 **Analysis of egg production using a random regression model with genomic relationships in layer chickens.**
A. Wolc*[1,2], J. Arango[3], P. Settar[3], J. E. Fulton[3], N. P. O'Sullivan[3], R. Preisinger[4], D. Habier[2], R. Fernando[2], D. J. Garrick[2], and J. C. M. Dekkers[2], [1]*Poznan University of Life Sciences, Poznan, Poland*, [2]*Iowa State University, Ames*, [3]*Hy-Line International, Dallas Center, IA*, [4]*Lohmann Tierzucht GmbH, Cuxhaven, Germany*.

Draft

Dairy Foods Symposium
Advances in Yogurt Manufacture and Product Functionalities
Chair: Randy Brandsma, Schreiber Foods
122AB

2:00 PM **Introduction**
R. Brandsma, *Schreiber Foods, Green Bay, WI*.

2:05 PM 727 **The impact of biopolymers on yogurt gelation and properties.**
J. A. Lucey*, *University of Wisconsin-Madison, Madison*.

2:35 PM 728 **Advancements in yoghurt process design and unit operations.**
L.-E. Nilsson*, *Tetra Pak, Lund, Sweden*.

3:25 PM **Break**

3:40 PM 729 **Impact of total solids, protein content, and protein source on the functionality of nonfat yogurt.**
L. E. Metzger* and K. N. Shah, *Midwest Dairy Foods Research center, South Dakota State University, Brookings*.

4:00 PM 730 **Advancements in starter technology and functional benefits in yogurt.**
DA Romero*[1], C. Fremaux[2], P. Fourcassie[2], S. Huppert[3], and P. Steele[1], [1]*DuPont/Danisco, Madison, WI*, [2]*DuPont/Danisco, Dangé-St.Romain, France*, [3]*DuPont/Danisco, Paris, France*.

4:40 PM 731 **Fine tuning the structure of yogurt by changing the milk properties.**
M. Corredig*, *University of Guelph, Guelph, Ontario, Canada*.

Extension Education Symposium
Does Extension Have a Future in Today's Agriculture?
Chair: Jeff Keown, University of Nebraska-Lincoln
128AB

2:00 PM **Industry's view of extension.**
J. A. Patterson*, *National Cattlemen's Beef Association*.

2:40 PM **USDA's vision for extension.**
S. I. Smith*, *Animal Production Systems, NIFA*.

3:20 PM 732 **National Science Foundation outreach: A non-traditional model.**
S. Ellis*, *Clemson University, Clemson, SC*.

4:00 PM **Making sense of it all.**
J. F. Keown*, *University of Nebraska, Lincoln*.

Graduate Student Symposium
From Hypothesis to Manuscript: How to conduct valuable and efficient research
Chair: Cassandra Jones, Iowa State University
227AB

2:00 PM **Introduction and ASAS Graduate Student Events at JAM.**
C. Jones and A. Mays.

2:15 PM 733 **Developing the research question, hypothesis, design, and protocol.**
D. E. Bauman*[1] and R. J. Collier[2], [1]*Cornell University, Ithaca, NY*, [2]*University of Arizona, Tucson*.

2:50 PM 734 **Data collection and integrity.**
G. Hartnell*, *Monsanto Company, St. Louis*.

3:25 PM **Break**

Draft

3:35 PM 735 **I'm an animal scientist, why do I need statistics?**
D. K. Aaron*, *University of Kentucky, Lexington*.

4:10 PM 736 **It is not a scientific contribution until it is published: Tips from a journal editor.**
S. A. Zinn*, *University of Connecticut, Storrs*.

4:45 PM **Final Questions and ADSA Graduate Student Events at JAM.**
K. Proudfoot and R. Campbell.

Growth and Development Symposium
Participation of Adult Tissue-Restricted Stem Cells in Livestock Growth and Development
Chair: Sally Johnson, University of Florida
222AB

2:00 PM 737 **Regulation of skeletal muscle satellite cell chemotaxis.**
R. E. Allen* and X. Liu, *University of Arizona, Tucson*.

2:35 PM 738 **Potentials of male germline stem cells to influence the efficiency of beef cattle production.**
J. M. Oatley*, *College of Veterinary Medicine, Washington State University, Pullman*.

3:10 PM 739 **Tenocytic potential of equine umbilical cord derived stem cells.**
S. A. Reed*[1] and S. E. Johnson[2], [1]*University of Connecticut, Storrs*, [2]*University of Florida, Gainesville*.

3:45 PM 740 **Development, characterization and use of a porcine epiblast-derived liver stem cell line: ARS-PICM-19.**
T. J. Caperna*, W. M. Garrett, and N. C. Talbot, *USDA/ARS, Beltsville, MD*.

4:20 PM 741 **Mammary stem cells: Novel markers and novel approaches to increase lactation efficiency.**
A. V. Capuco*[1], R. K. Choudhary[1,2], C. M. Evock-Clover[1], and K. M. Daniels[3], [1]*Bovine Functional Genomics Lab, USDA-ARS, Beltsville, MD*, [2]*Department of Animal and Food Sciences, University of Kentucky, Lexington*, [3]*Department of Animal Sciences, The Ohio State University, Wooster*.

Lactation Biology Symposium
The Long-Term Impact of Epigenetics and Maternal Influence on the Neonate Through Milk-Borne Factors and Nutrient Status
Chair: Michael Van Amburgh, Cornell University
125AB

2:00 PM **Introductions.**
M. Van Amburgh, *Cornell University*.

2:05 PM 742 **Role of colostrum and colostrum components on glucose metabolism in neonatal calves.**
H. M. Hammon*, *Leibniz Institute for Farm Animal Biology (FBN), Dummerstorf, Germany*.

2:40 PM 743 **Nutrition of the dam affects mammary gland development and milk production in the offspring.**
P. Kenyon*, A. Paten, E. Garnett, H. Blair, S. Pain, C. Jenkinson, S. Peterson, and N. Martin, *Massey University, Palmerston North, New Zealand*.

3:15 PM 744 **Lactational programming of infant behavioral and somatic development.**
K. Hinde*[1,2], A. Foster[2], and J. P. Capitanio[2,3], [1]*Human Evolutionary Biology, Harvard University, Cambridge, MA*, [2]*Brain, Mind, and Behavior Unit, California National Primate Research Center, University of California-Davis*, [3]*Department of Psychology, University of California-Davis, Davis*.

3:50 PM 745 **Lactocrine signaling and postnatal developmental programming.**
F. F. Bartol*[1], D. J. Miller[1], A. A. Wiley[1], J. C. Chen[2], A-L. Frankshun[2], M. E. Camp[2], K. M. Ferio[2], and C. A. Bagnell[2], [1]*Auburn University, Auburn, AL*, [2]*Rutgers, The State University of New Jersey, New Brunswick, NJ*.

4:25 PM 746 **The effect of nutrient intake from milk or milk replacer of pre-weaned dairy calves on lactation milk yield as adults.**
F. Soberon* and M. E. Van Amburgh, *Cornell University, Ithaca, NY*.

Draft

Meat Science and Muscle Biology
Chair: Brian Bowker, USDA-ARS
223

2:00 PM 747 **Impact of stunning and carcass chilling on pork quality and post-mortem proteolysis.**
G. Petca and G. Bee*, *Agroscope Liebefeld Posieux, Research Station ALP, Posieux, Switzerland*.

2:15 PM 748 **Effects of cannabinoid receptor 1 on muscle fiber types and muscle oxidative metabolism.**
E. Xu*[1,2], L. N. Zhu[1], T. Wu[1], Y. N. Huang[1], and Y. Z. Wang[1], [1]*Institute of Feed Science, Zhejiang University, The Key Laboratory of Molecular Animal Nutrition, Ministry of Education, Zhejiang Provincial Laboratory of Feed and Animal Nutrition, Hangzhou, Zhejiang, China*, [2]*College of Animal Science, Guiyang, Guizhou, China*.

2:30 PM 749 **Fatty acid profile of meat from young bulls fed different levels of crude glycerin.**
M. M. Ladeira*, J. R. R. Carvalho, M. L. Chizzotti, E. M. Ramos, P. D. Teixeira, M. C. L. Alves, P. E. P. Barros, and O. R. Machado Neto, *Federal University of Lavras, Lavras, MG, Brazil*.

2:45 PM 750 **Effect of vitamin E inclusion on *trans*-18:1 isomers in subcutaneous fat of steers fed a high-barley grain diet.**
C. Mapiye*[1], M. E. R. Dugan[1], M. Juárez[1], J. A. Basarab[2], V. S. Baron[1], T. Turner[1], X. Yang[1], N. Aldai[3], and J. L. Aalhus[1], [1]*Agriculture and Agri-Food Canada, Lacombe Research Centre, Lacombe, Alberta, Canada*, [2]*Alberta Agriculture and Rural Development, Lacombe Research Centre, Lacombe, Alberta, Canada*, [3]*University of Basque Country, Vitoria-Gasteiz, Spain*.

3:00 PM 751 **Influence of gender on meat quality and skatole in the fat of lambs.**
N. M. Schreurs*, *Institute of Food, Nutrition and Human Health, Massey University, Palmerston North, New Zealand*.

3:15 PM 752 **Comparison of skinning versus scalding and singeing: Effect on temperature, pH and meat quality in goats.**
A. B. Omojola*[1], E. S. Apata[2], O. O. Olusola[1], and A. B. Omotoso[1], [1]*University of Ibadan, Ibadan, Oyo State, Nigeria*, [2]*Olabisi Onabanjo University, Ago-Iwoye, Ogun, Nigeria*.

3:30 PM 753 **Organoleptic and shelf life of displayed Red Sokoto buck meat as influenced by post-slaughter processing methods.**
A. B. Omojola*[1], E. S. Apata[2], O. O. Olusola[1], and A. B. Omotosho[1], [1]*University of Ibadan, Ibadan, Oyo State, Nigeria*, [2]*Olabisi Onabanjo University, Ago-Iwoye, Ogun, Nigeria*.

Draft

Nonruminant Nutrition
Feed Additives
Chair: Joshua Jendza, University of Minnesota
129AB

2:00 PM 754 **Effect of different probiotics on diarrhea frequency and body weight of weaned piglets challenged with *Salmonella typhimurium*.**
L. J. Parazzi*, E. R. Afonso, S. M. M. K. Martins, T. A. Santo, A. F. C. Andrade, J. Diniz-Magalhães, and A. S. Moretti, *USP/FMVZ, Pirassununga, SP, Brazil*.

2:15 PM 755 **Effect of mannan oligosaccharides on performance of weanling piglets.**
F. C. Horta, L. J. Parazzi*, S. M. M. K. Martins, O. H. O. Eckhardt, T. A. D. Santo, A. F. C. Andrade, J. Diniz-Magalhães, and A. S. Moretti, *USP/FMVZ, Pirassununga, SP, Brazil*.

2:30 PM 756 **Multi-NSP enzymes improved growth performance and gut health in nursery pigs fed corn or rye and barley diets.**
J. Zhao*, F. Yan, D. L. Lichtenstein, A. Lawhorn, and M. Vazquez-Anon, *Novus International Inc., St Charles, MO*.

2:45 PM 757 **Effect of increasing concentrations of a novel β-glucanase to a constant β-mannanase in corn-soybean meal-corn distillers dried grains with solubles (DDGS) diets on grower pig performance.**
Z. Rambo[1], J. Ferrel*[2], D. Anderson[2], D. Kelly[1], and B. Richert[1], [1]*Purdue University, West Lafayette, IN*, [2]*ChemGen, Gaithersburg, MD*.

3:00 PM 758 **Evaluating nutritive value of pepper *Capsicum annuum* and garlic *Allium sativum* on performance, egg trait and serum parameters of old layers.**
F. A. Aderemi*, O. M. Alabi, and O. M. Ayoola, *Bowen University, Iwo State, Nigeria*.

3:15 PM **Break**

3:30 PM 759 **Defatted algae biomass may replace one-third of soybean meal in diets for laying hens.**
X. J. Leng, K. N. Hsu, R. E. Austic, and X. L. Lei*, *Cornell University, Ithaca, NY*.

3:45 PM 760 **Effects of various replacements of corn and soy by defatted microalgal meal on growth performance and biochemical status of weanling pigs.**
K. K. Lum*, K. R. Roneker, and X. G. Lei, *Cornell University, Ithaca, NY*.

4:00 PM 761 **Effects of a blend of essential oils on post-weaning growth performance of piglets.**
A. Aufy*[1], T. Steiner[1], and Y. Jung[2], [1]*Biomin Holding GmbH, Herzogenburg, Austria*, [2]*Jung P&C Institute, Yeongdoek-Dong, Giheung-Gu, Yongin-City, Gyeonggi-Do, Korea*.

4:15 PM 762 **Effects of a dietary antioxidant blend on growth and plasma markers of oxidative status in pigs fed an oxidative stress diet.**
T. Lu*[1], A. F. Harper[1], J. Zhao[2], R. A. Dalloul[1], and M. J. Estienne[1], [1]*Virginia Polytechnic Institute and State University, Blacksburg*, [2]*Novus International Inc., St. Charles, MO*.

4:30 PM 763 **Effects of eubiotics (VevoVitall, Crina Piglets, Cylactin ME10) supplementation on growth performance, nutrient digestibility, fecal noxious gas emission, and fecal microbial shedding in weanling pigs.**
Z. F. Zhang*[1], S. M. Hong[1], A. V. Rolando[2], D. H. Yoo[3], and I. H. Kim[1], [1]*Department of Animal Resource & Science, Dankook University, Cheonan, Choongnam, South Korea*, [2]*DSM Nutritional Products Philippines Inc., Bonifacio Global City, Taguig, Philippines*, [3]*All The Best Ltd., Seoul, South Korea*.

Physiology and Endocrinology
Nutritional Physiology
Chair: Kevin Harvatine, Pennsylvania State University
127C

2:00 PM 764 **mRNA expression of a novel adipokine (pigment epithelium-derived factor, PEDF) in various tissues from dairy cows receiving supplements with or without conjugated linoleic acids (CLA).**
B. Saremi*[1], S. Winand[1], S. Dänicke[2], J. Pappritz[2], D. von Soosten[2], H. Sauerwein[1], and M. Mielenz[1], [1]*Institute of Animal Science, Physiology & Hygiene Unit, University of Bonn, Bonn, North Rhine-Westphalia, Germany*, [2]*Institute of Animal Nutrition, Friedrich-Loeffler-Institute (FLI), Federal Research Institute for Animal Health, Braunschweig, Lower Saxony, Germany*.

2:15 PM 765 **Effects of long-term hyperketonemia on metabolism and performance in lactating dairy cows.**
M. Zarrin*[1,2], L. De Matteis[1,3], M. C. M. B. Vernay[1], O. Wellnitz[1], H. A. van Dorland[1], and R. M. Bruckmaier[1], [1]*Veterinary Physiology, Vetsuisse Faculty, University of Bern, Bern, Switzerland*, [2]*Department of Animal Science, Yasouj University, Yasouj, Iran*, [3]*Istituto di Zootecnica, Università Cattolica S, Cuore, Piacenza, Italy*.

2:30 PM 766 **Tissue-dependent expression of G-protein couple receptor (GPR) 40, 41, 43, 109A mRNA in early lactation dairy cows treated with conjugated linoleic acids (CLA) and long-chain fatty acids (LCFA).**
B. Saremi*[1], H. Sauerwein[1], D. von Soosten[2], S. Dänicke[2], and M. Mielenz[1], [1]*Institute of Animal Science, Physiology & Hygiene Unit, University of Bonn, Bonn, North Rhine-Westphalia, Germany*, [2]*Institute of Animal Nutrition, Friedrich-Loeffler-Institute (FLI), Federal Research Institute for Animal Health, Braunschweig, Lower Saxony, Germany*.

2:45 PM 767 **Is calcitonin involved in hypocalcemia of periparturient cows?**
E. M. Rodríguez*[1], A. Bach[1,2], M. Devant[1], and A. Arís[1], [1]*Department of Ruminant Production, IRTA, Caldes de Montbui, Spain*, [2]*ICREA, Barcelona, Spain*.

3:00 PM 768 **Reproductive performance of Ossimi rams fed biologically treated rations.**
E. B. Abdalla*[1], F. R. Abed El-Aziz[2], H. M. Gado[1], A. E. Hassan[2], and M. S. Ziada[3], [1]*Ain Shams University, Cairo, Egypt*, [2]*Anim. Prod. Res. Inst., Agric. Res. Center, Ministry of Agric., Giza, Egypt*, [3]*Anim. Reprod. Res. Inst., Agric. Res. Center, Ministry of Agric, Giza, Egypt*.

3:15 PM 769 **The effect of yeast cell wall supplementation on the metabolic responses of crossbred heifers to endotoxin challenge.**
N. C. Burdick*[1], T. R. Young[2], J. A. Carroll[1], J. R. Corley[3], R. J. Rathmann[2], and B. J. Johnson[2], [1]*USDA-ARS, Livestock Issues Research Unit, Lubbock, TX*, [2]*Texas Tech University, Department of Animal and Food Sciences, Lubbock*, [3]*Lesaffre Feed Additives, Milwaukee, WI.*

3:30 PM 770 **Effect of sward condition on metabolic endocrinology during the early postpartum period in primiparous grazing dairy cows and its association with productive and reproductive performance.**
A. Meikle*[1], L. Adrien[1], D. Mattiauda[2], and P. Chilibroste[2], [1]*Faculty of Veterinary, Montevideo, Uruguay*, [2]*Faculty of Agronomy, Montevideo, Uruguay*.

Draft

3:45 PM 771 **Association of biomarkers of stress, inflammation, and negative energy balance with milk yield and reproductive performance in Holstein dairy cows.**
J. M. Huzzey*[1], D. V. Nydam[2], R. J. Grant[3], and T. R. Overton[1], [1]*Department of Animal Science, Cornell University, Ithaca, NY*, [2]*Department of Population Medicine and Diagnostic Sciences, College of Veterinary Medicine, Cornell University, Ithaca, NY*, [3]*W. H. Miner Agricultural Research Institute, Chazy, NY*.

4:00 PM 772 **Serum amyloid A3 (SAA3) mRNA in liver and adipose tissue of dairy cows supplemented with or without conjugated linoleic acids (CLA): A whole lactation cycle study.**
B. Saremi*[1], S. Winand[1], J. Pappritz[2], S. Dänicke[2], M. Mielenz[1], M. M. Rahman[1], and H. Sauerwein[1], [1]*Institute of Animal Science, Physiology & Hygiene Unit, University of Bonn, Bonn, North Rhine-Westphalia, Germany*, [2]*Institute of Animal Nutrition, Friedrich-Loeffler-Institute (FLI), Federal Research Institute for Animal Health, Braunschweig, Lower Saxony, Germany*.

4:15 PM 773 **Responses of mammary gland metabolism to long-term manipulated plasma concentrations of insulin and glucose in lactating dairy cows.**
J. J. Gross*, M. C. M. B. Vernay, L. Kreipe, O. Wellnitz, H. A. van Dorland, and R. M. Bruckmaier, *Veterinary Physiology, Vetsuisse Faculty, University of Bern, Bern, Switzerland*.

4:30 PM 774 **Tumor necrosis factor-α (TNF-α) mRNA expression in early lactation in different tissues of dairy cows with a focus on different fat depots.**
B. Saremi*[1], H. Sauerwein[1], D. von Soosten[2], S. Dänicke[2], and M. Mielenz[1], [1]*Institute of Animal Science, Physiology & Hygiene Unit, University of Bonn, Bonn, North Rhine-Westphalia, Germany*, [2]*Institute of Animal Nutrition, Friedrich-Loeffler-Institute (FLI), Federal Research Institute for Animal Health, Braunschweig, Lower Saxony, Germany*.

Production, Management and the Environment
Environmental Quality
Chairs: Jude Capper, Washington State University, and Shane Gadberry, University of Arkansas
121C

2:00 PM 775 **ADSA/EAAP Award Presentation: Evaluation of a feeding strategy to reduce greenhouse gas emissions from milk production: The level of analysis matters.**
C. E. Van Middelaar*[1], P. B. M. Berentsen[2], J. Dijkstra[3], and I. J. M. De Boer[1], [1]*Animal Production Systems Group, Wageningen University, Wageningen, the Netherlands*, [2]*Business Economics Group, Wageningen University, Wageningen, the Netherlands*, [3]*Animal Nutrition Group, Wageningen University, Wageningen, the Netherlands*.

2:30 PM 776 **Are high production, low GHG emission dairy farms in New Zealand possible?**
R. E. Vibart*[1], T. White[2], D. Smeaton[3], S. Dennis[4], R. Dynes[4], and M. Brown[1], [1]*AgResearch Limited, Grasslands Research Centre, Palmerston North, New Zealand*, [2]*AgResearch Limited, Ruakura Research Centre, Hamilton, New Zealand*, [3]*DairyNZ, Hamilton, New Zealand*, [4]*AgResearch Limited, Lincoln Research Centre, Christchurch, New Zealand*.

2:45 PM 777 **Impact of animal density on predicted greenhouse gas emission from selected conventional, organic and grazing dairy farms in Wisconsin.**
M. Dutreuil*[1], V. E. Cabrera[1], R. Gildersleeve[2], C. A. Hardie[1], and M. Wattiaux[1], [1]*University of Wisconsin-Madison, Madison*, [2]*University of Wisconsin Extension, Dodgeville*.

3:00 PM 778 **Life-cycle assessment of greenhouse gas emissions from dairy production in eastern Canada: A case study.**
E. J. Mc Geough*, S. M. Little, H. H. Janzen, T. A. McAllister, S. M. McGinn, and K. A. Beauchemin, *Agriculture and Agri-Food Canada, Lethbridge Research Centre, Lethbridge, AB, Canada*.

3:15 PM 779 **Effects of saponin extracts, in the diet of Holstein steers or added directly to their manure, on gaseous emissions from that manure.**
W. Li* and W. Powers, *Michigan State University, East Lansing*.

3:30 PM 780 **Effect of manure source on ammonia emission on first day of application.**
F. Sun*[1], J. H. Harrison[1], E. Whitefield[1], P. Ndegwa[2], and H. S. Joo[2], [1]*Washington State University, Puyallup*, [2]*Washington State University, Pullman*.

3:45 PM 781 **Partitioning of solids, nitrogen, and phosphorus in solids and liquid fractions of anaerobically digested dairy effluent.**
J. H. Harrison*[1], E. Whitefield[1], and A. Werkhoven[2], [1]*Washington State University, Puyallup*, [2]*Werkhoven Dairy, Monroe, WA*.

Draft

4:00 PM 782 **Inoculant volume of a mixed culture of rumen microorganisms on rate and extent of methanogenesis from processed dairy excrement for biofuel production by anaerobic digestion.**
C. L. Ross*, K. C. Das, and M. A. Froetschel, *University of Georgia, Athens*.

4:15 PM 783 **Effects of inorganic versus organic copper on nitrous oxide reductase activity in peat soil.**
Q. Wang*, M. Burger, A. Castillo, W. Horwath, and F. Mitloehner, *University of California-Davis, Davis*.

4:30 PM 784 **Nutrient removal with harvest of soybean forage and soybean seed produced with and without irrigation of dilute swine manure lagoon effluent.**
A. F. Harper*, D. L. Holshouser, C. D. Teutsch, and M. J. Estienne, *Virginia Polytechnic Institute and State University, Blacksburg*.

4:45 PM 785 **Effect of fibrous diets and inclusion level on the chemical composition and odors from pig slurry.**
C. T. Mpendulo* and M. Chimonyo, *Animal and Poultry Science, College of Agriculture, Engineering and Science, University of KwaZulu-Natal, Pietermaritzburg, South Africa*.

Ruminant Nutrition
Beef Co-products
Chair: Allan Chestnut, Provimi
131ABC

2:00 PM 786 **Performance by feedlot cattle fed varying proportions and amounts of lime treated crop residues and distillers grains as substitutes for corn grain.**
A. L. Shreck*[1], C. J. Schneider[1], B. L. Nuttelman[1], D. B. Burken[1], G. E. Erickson[1], T. J. Klopfenstein[1], and M. J. Cecava[2], [1]*University of Nebraska-Lincoln, Lincoln*, [2]*Archer Daniels Midland, Decatur, IL*.

2:15 PM 787 **Comparing wet and dry distillers grains plus solubles for yearling finishing cattle.**
B. L. Nuttelman*, D. B. Burken, C. J. Schneider, G. E. Erickson, and T. J. Klopfenstein, *University of Nebraska-Lincoln, Lincoln*.

2:30 PM 788 **Performance of cattle fed diets based on blended by-product pellets varying in rumen available energy and protein content.**
M. G. Zenobi*[1], P. Yu[1], D. A. Christensen[1], P. G. Jefferson[1,2], H. A. Lardner[1,2], and J. J. McKinnon[1], [1]*University of Saskatchewan, Saskatoon, SK, Canada*, [2]*Western Beef Development Centre, Humboldt, SK, Canada*.

2:45 PM 789 **Replacement of grazed forage and animal performance with distillers grains supplementation in a forage system.**
K. L. Gillespie*, T. J. Klopfenstein, B. L. Nuttelman, C. J. Schneider, J. D. Volesky, and G. E. Erickson, *University of Nebraska, Lincoln*.

3:00 PM 790 **Flint corn grain processing and increasing levels of citrus pulp in finishing diets for Nellore bulls.**
V. N. Gouvea[1], L. J. Chagas[1], J. Souza[1], F. Batistel[1], C. Sitta[1], P. R. B. Campanili[1], D. B. Galvani[2], and F. A. P. Santos*[1], [1]*University of São Paulo, Piracicaba, SP, Brazil*, [2]*EMBRAPA Goats and Sheep, Sobral, CE, Brazil*.

3:15 PM 791 **Evaluation of rumen metabolism and digestibility when treated crop residues are fed in cattle finishing diets.**
A. L. Shreck*[1], J. L. Harding[1], G. E. Erickson[1], T. J. Klopfenstein[1], and M. J. Cecava[2], [1]*University of Nebraska-Lincoln, Lincoln*, [2]*Archer Daniels Midland, Decatur, IL*.

3:30 PM 792 **Effects of alternate feeding of dried distillers grains plus solubles on performance and body composition in gestating forage-fed beef cows.**
S. I. Klein*, P. L. Steichen, A. Islas, R. S. Goulart, T. C. Gilbery, and C. R. Dahlen, *Department of Animal Sciences, North Dakota State University, Fargo*.

3:45 PM 793 **Dry-rolled or whole shell corn with or without wet corn gluten feed in receiving diets.**
A. V. Siverson*[1], S. P. Montgomery[2,1], B. E. Oleen[1], and D. A. Blasi[1], [1]*Kansas State University, Manhattan*, [2]*Corn Belt Livestock Services, Cedar Rapids, IA*.

4:00 PM 794 **Effect of dried distillers grains with solubles on enteric methane emissions and nitrogen excretion from finishing beef cattle.**
M. Hünerberg*[1,2], T. A. McAllister[2], K. A. Beauchemin[2], S. M. McGinn[2], O. M. Harstad[3], and E. K. Okine[1], [1]*University of Alberta, Edmonton, AB, Canada*, [2]*Agriculture and Agri-Food Canada, Lethbridge, AB, Canada*, [3]*Norwegian University of Life Sciences, Norway*.

4:15 PM 795 **Comparing the digestibility of wet and dry distillers grains plus solubles in cattle finishing diets.**
B. L. Nuttelman*, A. L. Shreck, J. L. Harding, G. E. Erickson, and T. J. Klopfenstein, *University of Nebraska-Lincoln, Lincoln*.

Draft

4:30 PM 796 **The effects of titrating corn-based dried distillers grains plus solubles with sorghum-based wet distillers grains plus solubles on yearling heifers feedlot performance and carcass characteristics.**
B. T. Johnson*, C. L. Maxwell, B. K. Wilson, J. J. Wagner, C. J. Richards, and C. R. Krehbiel, *Oklahoma State University Department of Animal Science, Stillwater*.

4:45 PM 797 **Effects of increasing levels of distillers dried grains on intake and digestibility of moderate quality fescue hay.**
W. W. Miller*, J. D. Kohler, and M. D. Hudson, *Missouri State University, Springfield*.

Ruminant Nutrition
Dairy Production IV
Chair: Alex Bach, IRTA
132ABC

2:00 PM 798 **Sampling behavior of dairy cattle: Effects of spatial variation in feed quality on movements at the feed bunk.**
J. M. Huzzey*, J. A. Fregonesi, M. A. G. von Keyserlingk, and D. M. Weary, *University of British Columbia, Animal Welfare Program, Vancouver, BC, Canada*.

2:15 PM 799 **Effect of precision feeding on performance, nutrient excretion, and feeding behavior of early lactation dairy cows.**
E. Maltz*[1,2], L. F. Barbosa[1], P. Bueno[1], L. Scagion[1], L. F. Greco[1], K. Kaniyamattam[1], A. de Vries[1], and J. E. P. Santos[1], [1]*University of Florida, Gainesville*, [2]*The Volcani Center, Bet Dagan, Israel*.

2:30 PM 800 **Concentrate levels and supplemental fat for grazing mid lactating cows.**
F. L. Macedo, S. F. Angolini, W. F. Angolini, C. T. dos Santos Dias, and F. A. P. Santos*, *University of São Paulo, Piracicaba, SP, Brazil*.

2:45 PM 801 **Dry matter intake and behavior patterns of dairy cows fed diets combining pasture and total mixed ration.**
A. Mendoza[1,2], C. Cajarville*[3], R. Colla[1], G. Gaudentti[1], M. E. Martín[1], and J. L. Repetto[1], [1]*Facultad de Veterinaria, Departamento de Bovinos, Montevideo, Uruguay*, [2]*Instituto Nacional de Investigación Agropecuaria, Colonia, Uruguay*, [3]*Facultad de Veterinaria, Departamento de Nutrición Animal, Montevideo, Uruguay*.

3:00 PM 802 **Supplemental fat for dairy calves fed accelerated milk replacer during mild cold stress.**
N. Litherland*[1], D. Lobao[1], R. LaBerge[1], W. Weich[1], Z. Sawall[1], J. Schefers[1], and A. Kertz[2], [1]*University of Minnesota, St Paul*, [2]*ANDHILL LLC, St, Louis, MO*.

3:15 PM 803 **What do preweaned and weaned calves need in the diet: A high fiber content or a forage source?**
M. Terré*[1], E. Pedrals[1], and A. Bach[2,1], [1]*Institut de Recerca i Tecnologia Agroalimentàries, Caldes de Montbui, Spain*, [2]*Institució Catalana de Recerca i Estudis Avançats, Barcelona, Spain*.

3:30 PM 804 **Fat and fatty acid sources affect growth and health of milk-fed calves.**
K. M. Esselburn*[1], K. M. Daniels[1], T. M. Hill[2], H. G. Bateman[2], J. M. Aldrich[2], and R. L. Schlotterbeck[2], [1]*Department of Animal Sciences, The Ohio State University, Ohio Agricultural Research and Development Center, Wooster*, [2]*Nurture Research Center, Provimi North America, Brookville, OH*.

3:45 PM 805 **Fatty acid profile and global gene expression in liver of calves supplemented with linoleic acid.**
M. Garcia*[1], L. F. Greco[1], M. B. Rabaglino[1], A. L. Lock[2], W. W. Thatcher[1], J. E. P. Santos[1], and C. R. Staples[1], [1]*University of Florida, Gainesville*, [2]*Michigan State University, East Lansing*.

4:00 PM 806 **Use of tail skin temperature as a proxy for core body temperature in neonatal Holstein male calves.**
H. G. Bateman*, T. M. Hill, A. B. Chestnut, J. M. Aldrich, and R. L. Schlotterbeck, *Provimi North America, Brookville, OH*.

4:15 PM 807 **Body temperature of neonatal male Holstein calves is partially influenced by ambient temperature in the calf nursery.**
H. G. Bateman*, T. M. Hill, A. B. Chestnut, J. M. Aldrich, W. Hu, and R. L. Schlotterbeck, *Provimi North America, Brookville, OH*.

4:30 PM 808 **Jersey calf performance in response to high protein, high fat liquid feeds with varied fatty acid profiles.**
W. S. Bowen, V. A. Swank*, K. M. O'Diam, M. L. Eastridge, and K. M. Daniels, *Department of Animal Sciences, The Ohio State University, Columbus*.

4:45 PM 809 **Methods of reducing milk replacer to prepare dairy calves for weaning when large amounts of milk replacer have been fed.**
T. M. Hill*, H. G. Bateman, J. M. Aldrich, and R. L. Schlotterbeck, *Nurture Research Center, Provimi North America, Brookville, OH*.

Draft

WSASAS Symposium
Ruminant Stress: Implications on Health and Performance of Ruminants
Chair: Glenn Duff, Montana State University
226ABC

2:00 PM **Welcome and Introductions.**
G. Duff, *Montana State University, Bozeman*.

2:05 PM 810 **Effects of environment on fetal programming in ruminant livestock.**
S. W. Limesand*, D. T. Yates, A. R. Macko, and X. Chen, *University of Arizona, Tucson*.

2:35 PM 811 **An evaluation of cold stress on ruminant nutritional requirements.**
B. Olson*, *Montana State University, Bozeman*.

3:05 PM 812 **An evaluation of temperament on performance and health of ruminants.**
R. F. Cooke*, *Oregon State University, EOARC, Burns*.

3:35 PM 813 **Impact of weaning, transportation. and vaccination stress on beef cattle performance.**
J. D. Arthington*, *University of Florida, Range Cattle Research and Education Center, Ona*.

4:05 PM 814 **Impact of environmental stress on feedlot cattle.**
T. L. Mader*, *University of Nebraska, Concord*.

4:35 PM **Sympoisum Review and Discussion**
R. Pritchard, *South Dakota State University, Brookings*.

Draft

Breeding and Genetics
Swine Breeding
Chair: John B. Cole, Animal Improvement Programs Laboratory, ARS, USDA
123

4:00 PM 815 **Estimation of genetic parameters for birth weight, pre-weaning mortality and hot carcass weight in a crossbred population of pigs.**
M. Dufrasne*[1,2], I. Misztal[3], S. Tsuruta[3], J. Holl[4], K. A. Gray[4], and N. Gengler[1], [1]*Animal Science Unit, Gembloux Agro-Bio Tech, University of Liege, Gembloux, Belgium*, [2]*FRIA, Brussels, Belgium*, [3]*Department of Animal and Dairy Science, University of Georgia, Athens*, [4]*Smithfield Premium Genetics Group, Rose Hill, NC*.

4:15 PM 816 **Effect of within-year variation on growth performance and subsequent reproductive performance in gilts.**
C. R. G. Lewis*[1,2], K. L. Bunter[1], and S. Hermesch[1], [1]*Animal Genetics and Breeding Unit (AGBU), University of New England (UNE), Armidale, NSW, Australia*, [2]*PIC North America, Hendersonville, TN*.

4:30 PM 817 **Towards robust sows: Heat tolerance expressed in fecundity traits.**
S. Bloemhof*[1,2], E. Knol[1], E. van der Waaij[2], and I. Misztal[3], [1]*TOPIGS Research, Beuningen, the Netherlands*, [2]*Animal Breeding and Genomics Centre, Wageningen, the Netherlands*, [3]*Department of Animal and Dairy Science, University of Georgia, Athens, Georgia, United States of America*.

4:45 PM 818 **A comparison of methods for predicting litter size in commercial pig lines.**
L. Tusell*[1], P. Perez[1], S. Forni[2], X. L. Wu[1], and D. Gianola[1], [1]*Department of Animal Sciences, University of Wisconsin, Madison*, [2]*Genus Plc, Hendersonville, TN*.

Thursday, July 19

Animal Behavior and Well-Being
Pain and discomfort in farm animals
Chair: Marcia Endres, University of Minnesota
223

8:30 AM 819 **Pain and discomfort in farm animals.**
S. T. Millman*, *Iowa State University, Veterinary Diagnostic and Production Animal Medicine, Ames*.

9:15 AM 820 **The impact of housing and exercise on inflammatory molecules in the joints of open gilts.**
M. W. Orth*, J. M. Mapes, C. I. Robison, J. E. Link, and G. M. Hill, *Michigan State University, East Lansing*.

9:30 AM 821 **Argon versus CO_2 gas induction of unconsciousness in piglets.**
L. J. Sadler*[1], T. M. Widowski[2], C. Wang[1], A. K. Johnson[1], and S. T. Millman[1], [1]*Iowa State University, Ames*, [2]*University of Guelph, Guelph, Ontario, Canada*.

9:45 AM 822 **Return to sensibility: Use of yohimbine (alpha 2-antagonistic reversal agent) for anesthetized sows.**
M. D. Pairis*[1], A. K. Johnson[1], S. T. Millman[2], K. J. Stalder[1], and L. A. Karriker[2], [1]*Iowa State University Department of Animal Science, Ames*, [2]*Iowa State University Veterinary Department of Production Animal Medicine, Ames*.

10:00 AM **Break**

10:15 AM 823 **Herd-level risk factors for hock injuries in US freestall herds.**
A. K. Barrientos*[1], N. Chapinal[1], D. M. Weary[1], E. Galo[2], and M. A. G. von Keyserlingk[1], [1]*Animal Welfare Program, University of British Columbia, Vancouver, British Columbia, Canada*, [2]*Novus International Inc., St. Louis, MO*.

10:30 AM 824 **Herd-level risk factors for lameness in US freestall herds.**
N. Chapinal*[1], A. K. Barrientos[1], M. A. G. von Keyserlingk[1], E. Galo[2], and D. M. Weary[1], [1]*Animal Welfare Program, University of British Columbia, Vancouver, BC, Canada*, [2]*Novus International Inc., St Louis, MO*.

10:45 AM 825 **Differences in pain thresholds associated with active and healing digital dermatitis lesions in dairy cattle.**
J. H. Higginson Cutler*[1], D. F. Kelton[1], G. Cramer[2,1], J. Walter[1], and S. T. Millman[2], [1]*University of Guelph, Guelph, ON, Canada*, [2]*Cramer Mobile Bovine Veterinary Services, Stratford, ON, Canada*, [3]*Iowa State University, Ames*.

11:00 AM 826 **Effects of anti-GnRF vaccine Bopriva and band castration on acute indicators of pain in feedlot beef cattle under North American management practices.**
S. Marti*[1], M. Devant[1], S. Amatayakul-Chantler[2], L. A. Jackson[3], E. D. Janzen[4], and K. S. Schwartzkopf-Genswein[5], [1]*IRTA-Ruminant Production, Animal Nutrition, Management, and Welfare Research Group, Caldes de Montbui, Barcelona, Spain*, [2]*Veterinary Medicine R&D, Pfizer Animal Health, Parkville, Victoria, Australia*, [3]*Veterinary Medicine R&D, Pfizer Animal Health, Kalamazoo, MI*, [4]*University of Calgary Veterinary Medicine, Calgary, AB, Canada*, [5]*Agriculture and Agri-Food Canada, Lethbridge, AB, Canada*.

11:15 AM 827 **Effect of road transport and lairage on body temperature of feedlot steers.**
J. B. Gaughan*[1], S. L. Bonner[2], I. D. Loxton[3], and R. J. Lawrence[4], [1]*The University of Queensland, Gatton, Qld, Australia*, [2]*FSA Consulting, Toowoomba, Qld, Australia*, [3]*Beef Support Services, Yeppoon, Qld, Australia*, [4]*Integrated Animal Production, Toowoomba, Qld, Australia*.

Forages and Pastures III
Chair: Steve Washburn, North Carolina State University
225AB

8:30 AM 828 **An electronic rising plate meter improves ability to accurately determine cool-season annual forage availability: I. Calibration.**
C. Moffet*, J. Rogers, and R. Reuter, *The Samuel Roberts Noble Foundation Inc., Agriculture Division*.

8:45 AM 829 **An electronic rising plate meter improves ability to accurately determine cool-season annual forage availability: II. Application.**
R. Reuter*, J. Rogers, and C. Moffet, *The Samuel Roberts Noble Foundation Inc., Agriculture Division*.

Draft

9:00 AM 830 **Evaluation of forage quality predictors in early- and late-maturing cultivars of annual ryegrass (*Lolium multiflorum* Lam.).**
W. B. Smith*[1,2], R. B. Muntifering[1], E. van Santen[2], S. L. Dillard[1], E. A. Guertal[2], and D. M. Ball[2,3], [1]*Dept of Animal Sciences, Auburn University, Auburn, AL*, [2]*Dept of Agronomy & Soils, Auburn University, Auburn, AL*, [3]*Alabama Cooperative Extension System, Auburn*.

9:15 AM 831 **Response of postpartum dairy cows to different grazing strategies: Effect of herbage allowance on milk and solids production.**
M. Sprunck[1,2], D. A. Mattiauda[1], G. Motta[1], M. Fajardo[1], and P. Chilibroste*[1], [1]*Facultad de Agronomía, Paysandú, Paysandú, Uruguay*, [2]*Agencia Nacional de Investigación e Innovación, Montevideo, Montevideo, Uruguay*.

9:30 AM 832 **The effects of time of allocation of a ryegrass-based pasture on animal performance, nitrogen utilization and grazing behavior from late-lactation dairy cows.**
R. E. Vibart*, D. Pacheco, K. Lowe, and B. A. Barrett, *AgResearch Ltd., Grasslands Research Centre, Palmerston North, New Zealand*.

9:45 AM 833 **Effect of stocking rate and cow lactation stage on nitrogen balance of grazing dairy cows considering two periods of supplementation at pasture.**
A. I. Roca-Fernandez*, D. Baez-Bernal, and A. Gonzalez-Rodriguez, *Agrarian Research Centre of Mabegondo, La Coruna, Galicia, Spain*.

10:00 AM 834 **Milk performance of two dairy cow genotypes (Holstein-Friesian vs. Normande) at two levels of supplementation (low vs. high) in long residence time grazing paddocks.**
A. I. Roca-Fernandez*[1,2], L. Delaby[3], S. Leurent[4], M. E. Lopez-Mosquera[2], and A. Gonzalez-Rodriguez[1], [1]*Agrarian Research Centre of Mabegondo, La Coruna, Galicia, Spain*, [2]*University of Santiago de Compostela, Lugo, Galicia, Spain*, [3]*INRA Agro-Campus Ouest UMRPL, Saint Gilles-Rennes, Bretagne, France*, [4]*INRA Experimental Farm Le Pin au Haras, Borculo-Exmes, Normandy, France*.

10:15 AM 835 **Effect of daily herbage allowance (low vs. high) and cow lactation stage (early vs. middle) on sward quality and milk performance of grazing dairy cows.**
A. I. Roca-Fernandez*, A. Gonzalez-Rodriguez, and O. P. Vazquez-Yañez, *Agrarian Research Centre of Mabegondo, La Coruna, Galicia, Spain*.

10:30 AM 836 **Rearing of dairy heifers at pasture from temperate regions (Galicia, NW Spain).**
A. I. Roca-Fernandez*, A. Gonzalez-Rodriguez, and O. P. Vazquez-Yañez, *Agrarian Research Centre of Mabegondo, La Coruna, Galicia, Spain*.

10:45 AM 837 **Milk urea concentration test as a quick response of the energy/protein balance in dairy cattle ration.**
A. I. Roca-Fernandez*, A. Gonzalez-Rodriguez, and O. P. Vazquez-Yañez, *Agrarian Research Centre of Mabegondo, La Coruna, Galicia, Spain*.

11:00 AM 838 **Effect of calving date (spring vs. autumn) and parity (primiparous vs. multiparous) on milk performance of Holstein-Friesian grazing dairy cows from Galician conditions.**
A. I. Roca-Fernandez*, A. Gonzalez-Rodriguez, and O. P. Vazquez-Yañez, *Agrarian Research Centre of Mabegondo, La Coruna, Galicia, Spain*.

11:15 AM 839 **Effect of oilseed concentrate source (cottonseed vs. linseed) on milk composition and fatty acids profile of dairy cows (grazing vs. silage + grazing) from NW Spain humid region.**
A. I. Roca-Fernandez*[1], A. Gonzalez-Rodriguez[1], O. P. Vazquez-Yañez[1], and J. A. Fernández-Casado[2], [1]*Agrarian Research Centre of Mabegondo, La Coruna, Galicia, Spain*, [2]*Agrarian and Fitopathologic Laboratory of Galicia, La Coruna, Galicia, Spain*.

Draft

Physiology and Endocrinology II
Chair: Jason Ross, Department of Animal Science, Iowa State University
226ABC

8:30 AM 840 **ASAS Early Career Achievement Award: The physiology of heat stress: A shift in metabolic priorities at the systemic and cellular levels.**
R. P. Rhoads*[1] and L. H. Baumgard[2], [1]*Virginia Polytechnic Institute and State University, Blacksburg*, [2]*Iowa State University, Ames*.

9:00 AM 841 **Single and double, fixed-time insemination of postpartum sows given intravaginal triptorelin gel.**
N. R. Augspurger*[1], M. E. Johnston[1], M. E. Swanson[2], and S. K. Webel[1], [1]*JBS United Inc., Sheridan, IN*, [2]*Pennatek LLC, Radnor, PA*.

9:15 AM 842 **Effects of glucuronic acid and *N*-acetylglucosamine supplementation on the in vitro maturation and fertilization of pig oocytes.**
A. Mello*, K. Dalton, and B. D. Whitaker, *The University of Findlay, Findlay, OH*.

9:30 AM 843 **Litter characteristics and thermoregulatory behavior of first parity sows exposed to a controlled heat stress (HS) during gestation.**
M. C. Lucy*[1], T. J. Safranski[1], J. N. Rhoades[1], J. W. Ross[2], N. K. Gabler[2], R. P. Rhoads[3], and L. H. Baumgard[2], [1]*University of Missouri, Columbia*, [2]*Iowa State University, Ames*, [3]*Virginia Tech, Blacksburg*.

9:45 AM 844 **Comparison between conventional sex-sorted semen and a higher dose\ lower concentration sex-sorted semen on conception rates and calf gender ratio.**
J. A. Lucena*[1], A. G. Kenyon[1], J. P. Reynolds[2], J. D. Champagne[1], T. L. Lehenbauer[1], and S. S. Aly[1], [1]*Veterinary Medicine Teaching & Research Center, School of Veterinary Medicine, University of California, Davis*, [2]*Western University of Health Sciences, Pomona, CA*.

10:00 AM 845 **Effect of a post-weaning high-energy diet on age at puberty, testicular characteristics, and semen production in Holstein bulls.**
B. R. Harstine*[1], M. Maquivar[1], L. A. Helser[2], M. D. Utt[1], C. Premanandan[3], J. M. DeJarnette[2], and M. L. Day[1], [1]*Department of Animal Sciences, The Ohio State University, Columbus*, [2]*Select Sires Inc., Plain City, OH*, [3]*Department of Veterinary Biosciences, The Ohio State University, Columbus*.

10:15 AM 846 **Oviductal protein and ovarian hormone concentrations during the first five days of the estrous cycle in first and third estrous ewe lambs and mature ewes.**
J. G. Berardinelli*, *Montana State University, Bozeman*.

10:30 AM 847 **Effect of phytoestrogens on basal and GnRH-induced gonadotropin secretion from ovine pituitary cells in culture.**
S. A. Arispe*, B. M. Adams, and T. E. Adams, *University of California, Davis*.

10:45 AM 848 **Effect of acidic pH on uterine response to interferon-τ.**
A. Ahmadzadeh*, T. Davis, K. Carnahan, and C. Autran, *University of Idaho, Moscow*.

Draft

Symposium: Reproductive Immune Interactions
Chair: Craig Gifford, Oklahoma State University
222AB

8:30 AM **Welcome and Introduction.**

8:35 AM 849 **Maternal immunological adjustments to pregnancy in ruminants and possible implications for postpartum uterine health.**
P. J. Hansen*, *University of Florida, Gainesville*.

9:15 AM **Immune function in the CL.**
J. Pate*, *Pennsyvalnia State University*.

9:55 AM **ISG in the uterus and peripheral blood as well as work with BVDV.**
T. R. Hansen*, *Colorado State University*.

10:35 AM **Biological Role of Interferon Tau in Endometrial Function and Conceptus Elongation in Ruminants.**
T. Spencer*, *Washington State University*.

Ruminant Nutrition
General Ruminant Nutrition
Chair: Rick Kohn, University of Maryland
125AB

8:30 AM 850 **Effects of crude glycerol supplementation on in vitro ruminal fermentation and Merino ewes performance.**
S. J. Meale*[1], S. Ding[1], T. A. McAllister[2], R. D. Bush[1], D. Palmer[1], and A. V. Chaves[1], [1]*Faculty of Veterinary Science, University of Sydney, Sydney, NSW, Australia*, [2]*Lethbridge Research Center, Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada*.

8:45 AM 851 **Process development and nutritional evaluation of a supplemental byproduct feed for cattle from expired grocery foods.**
M. A. Froetschel*[1], C. L. Ross[1], and L. E. Brewer[2], [1]*The University of Georgia, Athens*, [2]*Viridiun LLC, Cumming, GA*.

9:00 AM 852 **Biometrics of digestive tube of kids suckled up to 90 days fed different sources of goat milk replacers.**
L. S. Knupp, M. I. Marcondes*, M. M. S. Santos, N. O. Souza, L. M. Carvalho, M. A. S. Novaes, J. V. F. Souza, and C. M. Veloso, *Universidade Federal de Viçosa, Viçosa, MG, Brazil*.

9:15 AM 853 **Evaluation of a prototype galactooligosaccharide supplement in milk replacer for neonatal calves.**
J. J. Castro*[1], C. R. Bromfield[1], H. J. Mangian[1], J. R. Loften[2], and J. K. Drackley[1], [1]*University of Illinois, Urbana*, [2]*Milk Specialties Global, Carpentersville, IL*.

9:30 AM 854 **Remote monitoring of individual animal mineral supplement intake by range cattle.**
T. Dal Molin*[1], D. Tolleson[1], J. Sprinkle[1], M. Sprinkle[2], D. Schafer[1], and B. McMurry[3], [1]*University of Arizona, Tucson*, [2]*Intel Corporation, Hillsboro, OR*, [3]*Cargill Animal Nutrition, Elk River, MN*.

9:45 AM 855 **Effect of corn processing on growth performance and fecal nutrient composition in dairy bull calves fed whole or steam-flaked corn diets from pre-weaning to 8 weeks post-weaning.**
J. D. Allen*[1], L. W. Hall[1], C. D. Burrows[1], and G. C. Duff[2,1], [1]*University of Arizona, Tucson*, [2]*Montana State University, Bozeman*.

10:00 AM 856 **Effects of short-term feed restriction on ruminal function.**
S. Zhang*[1], D. R. Barreda[2], J. R. Aschenbach[3], and G. B. Penner[1], [1]*University of Saskatchewan, Saskatoon, SK, Canada*, [2]*University of Alberta, Edmonton, AB, Canada*, [3]*Free University of Berlin, Berlin, Germany*.

10:15 AM 857 **Identifying improbable feed samples using a multivariate procedure.**
P. S. Yoder*, N. R. St-Pierre, and W. P. Weiss, *The Ohio State University, Wooster*.

10:30 AM 858 **Application of meta-analysis to build new feed unit systems for ruminants based on absorbed nutrients and animal responses in France.**
D. Sauvant*[1], J. L. Peyraud[2], and P. Noziere[3], [1]*AgroParistech-INRA, Paris, France*, [2]*INRA-AgroCampus, Rennes, France*, [3]*INRA UMR Herbivores, Clermont-Ferrand, France*.

10:45 AM 859 **Sampling sites and inserting depth of oral stomach tube affects the fermentation parameters of ruminal fluid collected in dairy cows.**
J. S. Shen*, Z. Chai, L. J. Song, J. X. Liu, and Y. M. Wu, *Institute of Dairy Science, MoE Key laboratory of Molecular Animal Nutrition, College of Animal Sciences, Zhejiang University, Hangzhou, China*.

11:00 AM 860 **Comparison of nutrient composition and in vitro digestion characteristics of spent mushroom soybean (*Pleurotus* spp.) substrate and soybean straw.**
J. P. Gafigi[1], M. Mutimura[2], and S. Uwituze*[1], [1]*National University of Rwanda, Faculty of Agriculture, Department of Animal Productions, Butare, Rwanda*, [2]*Rwanda Agriculture Board, Kigali, Rwanda*.

Draft

Ruminant Nutrition
Symposium: Update on nutrient requirements for ruminants
Chair: Alex Bach, IRTA
131ABC

8:30 AM 861 **Revising protein requirements of calves and heifers.**
T. M. Hill*[1], H. G. Bateman[1], J. M. Aldrich[1], and A. J. Heinrichs[2], [1]*Nurture Research Center, Provimi North America, Brookville, OH*, [2]*Department of Animal Science, Penn State University, University Park*.

9:15 AM 862 **Revising energy requirements of dairy breed calves and heifers.**
M. E. Van Amburgh*, *Cornell University, Ithaca, NY*.

10:00 AM 863 **Protein and amino acids for growth.**
E. C. Titgemeyer*, *Kansas State University, Manhattan*.

10:45 AM 864 **Update on protein and amino acid requirements for lactating dairy cows.**
H. Lapierre*[1], L. Doepel[2], and D. R. Ouellet[1], [1]*Dairy and Swine R&D Centre, Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada*, [2]*Faculty of Veterinary Medicine, University of Calgary, Calgary, AB, Canada*.

Teaching/Undergraduate and Graduate Education
Symposium: On-line Education for a Hands-On Career: The Good, The Bad and The Ugly of On-line Education in Animal Sciences
Chair: Olga Bolden-Tiller, Tuskegee University
222C

8:30 AM **Introduction**

8:45 AM 865 **Making the world your stage through best practices in distance education.**
E. Sewell[1], B. Parr*[1], and D. Mulvaney[2], [1]*College of Education, Auburn University, Auburn, AL*, [2]*Animal Sciences, Auburn University, Auburn, AL*.

9:10 AM 866 **Real and perceived barriers to distance education in animal sciences and other disciplines.**
K. Boland*[1], B. Parr[1], and D. Mulvaney[2], [1]*College of Education, Auburn University, Auburn, AL*, [2]*Animal Sciences, Auburn University, Auburn, AL*.

9:35 AM **Break**

9:50 AM 867 **Engaging the new biology: Integrating quantitative genetics and genomics in animal breeding graduate learning.**
R. M. Lewis* and B. B. Lockee, *Virginia Tech, Blacksburg*.

10:15 AM 868 **Service learning: Hands-on opportunities for on-line courses.**
O. U. Bolden-Tiller*[1], L. G. Martin[2], and I. Everett[1], [1]*Tuskegee University, Tuskegee Institute, AL*, [2]*Auburn University, Auburn, AL*.

10:40 AM 869 **Student learning in undergraduate animal breeding courses is improved through play of an online genetic simulation game.**
K. L. Kessler*[1], R. M. Lewis[2], J. P. Cassady[3], and K. M. Cammack[1], [1]*University of Wyoming, Laramie*, [2]*Virginia Polytechnic Institute and State University, Blacksburg*, [3]*North Carolina State University, Raleigh*.

11:05 AM **Panel Discussion**

Draft

Breaking into NSF
127C
8:30 AM - 11:30 AM