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*Scheduling and locations are subject to change without notice.*
*Please check the onsite newsletter each morning for changes.*

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## Tuesday, July 12

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## Tuesday, July 12

### *SYMPOSIA AND ORAL SESSIONS*

## Wednesday, July 13
### *POSTER PRESENTATIONS*



## Wednesday, July 13
### *SYMPOSIA AND ORAL SESSIONS*

## Thursday, July 14

### *SYMPOSIA AND ORAL SESSIONS*

# Saturday, July 9

## PRECONFERENCE SYMPOSIUM

### ASN-ASAS-ADSA Preconference:
### Agri-Medical Research: Providing Dual Benefit for Agriculture and Human Health

Sponsors: ASAS, ADSA, American Society for Nutrition (ASN), ASAS Foundation, Elanco Animal Health, Pfizer Animal Health, USDA, and Zinpro Corp.



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| 7:00 – 10:00 AM | **Registration open; badge and bag pick-up; poster check-in (posters up all day).** |
| 8:00 AM | **Welcome and introduction.**<br>Matthew Waldron, *University of Missouri.* |
| 8:10 AM | **Impact of metabolism on human health, companion animal health and farm health and production.**<br>James Ntambi, *University of Wisconsin-Madison.* |
| | **Development of models of obesity and metabolic syndrome.**<br>Michael Spurlock, *Iowa State University.* |
| | **Integration of molecular biology, cell culture approaches, and whole-organism physiology in lipid metabolism research.**<br>Sean Adams, *University of California-Davis, WHNRC.* |
| | **Panel discussion** |
| 10:15 AM | **Impact of developmental environment on the risk of chronic disease.**<br>Graham Burdge, *University of Southampton, UK.* |
| | **Fetal origins of adult disease.**<br>Stephen Ford, *Department of Animal Science, University of Wyoming.* |
| | **Gestational nutrition and placental effects on health and productivity.**<br>Lawrence Reynolds, *North Dakota State University.* |
| | **Panel discussion** |
| 12:15 PM | **Lunch (on your own) and poster viewing** |
| 1:50 PM | **Microbial endocrinology—Interactions of nutrition, host physiology, and microbes that impact infectious disease.**<br>Mark Lyte, *Texas Tech University Health Sciences Center.* |
| | **Interventions to reduce pathogens in swine and cattle.**<br>Todd Callaway, *USDA-Texas A&M University.* |
| | **Etiology of inflammatory bowel and liver diseases in small animals and humans.**<br>Kenneth Simpson, *Cornell University.* |
| | **Panel discussion** |
| 3:55 PM | **Nutritional impact of inflammation and infection.**<br>Charles Dinarello, *University of Colorado, Denver.* |
| | **The cost of immune protection—Nutritional accounting and production efficiency.**<br>Kirk Klasing, *University of California-Davis.* |
| | **Sculpting the optimal immune response.**<br>Mark Cook, *University of Wisconsin-Madison.* |
| | **Panel discussion** |
| 6:00 – 7:30 PM | **Awards and cocktail reception.** |

# Sunday, July 10

## SYMPOSIA AND ORAL SESSIONS

### Triennial Lactation Symposium
### Lactation Biology Training for the Next Generation – A Tribute to Dr. H. Allen Tucker
### Chair: Geoff Dahl, University of Florida

Sponsors: ASAS Foundation, EAAP, Elanco Animal Health

**286-287**

8:30 AM — **Introduction to the symposium and a history of Dr. Tucker's trainees.**
G. E. Dahl, *University of Florida, Gainesville*.

9:00 AM 1 — **Bovine mammary epithelial cell lineages and parenchymal development.**
S. Ellis*[1], R. M. Akers[2], A. V. Capuco[3], and S. Safayi[1], [1]*Clemson University, Clemson, SC*, [2]*Virginia Polytechnic Institute, Blacksburg, VA*, [3]*USDA-ARS, Beltsville Agricultural Research Center, Beltsville, MD.*

9:45 AM — **Break**

10:00 AM 2 — **Prolactin—The multi-faceted potentiator of mammary growth and function.**
R. C. Hovey*, J. F. Trott, A. Schennink, W. K. Petrie, and M. K. VanKlompenberg, *University of California, Davis.*

10:45 AM 3 — **The lactocrine hypothesis: Programming reproductive tract development.**
F. F. Bartol*[1], J. C. Chen[2], D. J. Miller[1], A.-L. Frankshun[2], A. A. Wiley[1], A. J. Silva[1], M. E. Camp[2], K. M. Ferio[2], and C. A. Bagnell[2], [1]*Auburn University, Auburn, AL*, [2]*Rutgers University, New Brunswick, NJ.*

11:30 AM — **Lunch Break**

1:00 PM 4 — **Opportunities for improving milk production efficiency in dairy cattle.**
E. E. Connor*[1], J. L. Hutchison[2], K. M. Olson[2], and H. D. Norman[2], [1]*USDA-ARS, Bovine Functional Genomics Laboratory, Beltsville, MD*, [2]*USDA-ARS, Animal Improvement Programs Laboratory, Beltsville, MD.*

1:45 PM 5 — **Lactational imprinting: The mechanism underlying the mammary response to changes in milking frequency?**
E. H. Wall*[1], J. P. Bond[2], and T. B. McFadden[3], [1]*Department of Animal Science, University of Vermont, Burlington*, [2]*Vermont Genetics Network Bioinformatics Core, University of Vermont, Burlington*, [3]*Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, Alberta, Canada.*

2:30 PM — **Break**

3:00 PM 6 — **Mammary metabolism of amino acids in dairy cows.**
H. Lapierre*[1], L. Doepel[2], G. Raggio[3], and S. Lemosquet[4], [1]*Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada*, [2]*University of Calgary, Calgary, AB, Canada*, [3]*College Alfred, Guelph University, Guelph, ON, Canada*, [4]*UMR1080 Dairy Production, INRA, Saint-Gilles, France.*

3:45 PM 7 — **Stress effects on postpartum reproduction in dairy cows.**
M. A. Crowe* and E. J. Williams, *Veterinary Sciences Centre, University College Dublin, School of Agriculture, Food Science and Veterinary Medicine, Belfield, Dublin 4, Ireland.*

4:30 PM — **Panel Discussion**

## OTHER EVENTS

### Late-Breaking Abstracts
### 288-289
### 3:00 to 5:00 PM

### Opening Session
### Convention Center, Conference Auditorium
### 7:00 to 8:15 PM

### Opening Reception
### Convention Center, La Nouvelle Orleans
### 8:15 to 10:00 PM

# Monday, July 11

## POSTER PRESENTATIONS

### Animal Behavior and Well-Being

M1 **Validation of an automated method for recording the feeding behavior of dairy cows using a Calan Broadbent Feeding System.**
L. M. Klaiber*, P. D. Krawczel, S. S. Thibeau, and H. M. Dann, *William H. Miner Agricultural Research Institute, Chazy, NY.*

M2 **Animal welfare assessment of intensive dairy farms from central zone of Chile under confinement with different housing systems.**
M. J. Castro, C. Kobrich, and M. S. Morales*, *Departamento Fomento de la Produccion Animal, Facultad de Ciencias Veterinarias y Pecuarias, Universidad de Chile, Santiago, RM, Chile.*

M3 **Effect of dietary starch on the behavior of early postpartum dairy cows.**
P. D. Krawczel*[1], B. H. Nelson[1,2], H. M. Gauthier[1], L. M. Klaiber[1], R. E. Clark[1], R. J. Grant[1], and H. M. Dann[1], [1]*William H. Miner Agricultural Research Institute, Chazy, NY*, [2]*Department of Animal Science, The University of Vermont, Burlington.*

M4 **Effects of a high forage prepartum diet on feeding behavior of dairy cows.**
L. A. Vickers*[1], D. M. Weary[1], D. M. Veira[2], and M. A. G. von Keyserlingk[1], [1]*Animal Welfare Program, University of British Columbia, Vancouver, BC, Vancouver, British Columbia, Canada*, [2]*Agriculture and Agri-Food Canada, Agassiz, British Columbia, Canada.*

M5 **Diurnal grazing behavior of cattle fed a concentrate supplement during the dry-rainy transition season in tropical conditions.**
H. J. Fernandes*[1], V. Siqueira[1], L. O. Tedeschi[2], G. C. Coelho[1], L. M. Paiva[1], C. Guaraldo[1], and J. C. Souza[3], [1]*State University of Mato Grosso do Sul, Aquidauana, MS, Brazil*, [2]*Texas A&M University, College Station*, [3]*Federal University of Mato Grosso do Sul, Aquidauana, MS, Brazil.*

M6 **Competition and feed restriction affect feeding and competitive behavior of group-housed dairy cows.**
L. K. M. Collings*[1], D. M. Weary[1], N. Chapinal[1,2], and M. A. G. von Keyserlingk[1], [1]*University of British Columbia, Vancouver, BC, Canada*, [2]*University of Guelph, Guelph, ON, Canada.*

M7 **Effect of residual feed intake in reactivity of Nellore heifers.**
T. L. Sobrinho[1], L. T. Egawa[2], R. H. Branco[2], E. Magnani[2], S. F. M. Bonilha[2], and M. E. Z. Mercadante*[2], [1]*Faculdade de Ciências Agrárias e Veterinárias, Jaboticabal, São Paulo, Brazil*, [2]*Instituto de Zootecnia, Sertãozinho, São Paulo, Brazil.*

M8 **Effect of different short- and long-term heat stress exposure periods and fescue toxicosis on the immune system.**
P. A. Eichen*[1], D. K. Kishore[1], M. R. Waldron[1], T. J. Evans[2], K. L. Fritsche[1], and D. E. Spiers[1], [1]*University of Missouri, Division of Animal Sciences, Columbia*, [2]*University of Missouri, Department of Veterinary Pathobiology, Columbia.*

M9 **Intake and feeding behavior in growing heifers fed a high concentrate diet and offered a total mixed ration or dietary components separately.**
S. P. Iraira, M. Rodríguez-Prado, X. Manteca, J. L. Ruíz de la Torre, S. Calsamiglia*, and A. Ferret, *Universitat Autònoma Barcelona, Bellaterra, Barcelona, Spain.*

M10 **Validation and cross-prediction of a single or dual accelerometers for the prediction of grazing, standing/walking, and lying behavior of beef cattle using linear discriminant analysis.**
M. S. Gadberry[1], W. Whitworth*[2], G. Montgomery[2], and K. Simon[1], [1]*University of Arkansas, Cooperative Extension Service, Little Rock*, [2]*University of Arkansas, Southeast Research and Extension Center, Monticello.*

M11 **Comparison of logging intervals for accelerometer predicted grazing, standing/walking, and lying behavior of beef cattle.**
M. S. Gadberry*[1], W. Whitworth[2], G. Montgomery[2], and K. Simon[1], [1]*University of Arkansas, Cooperative Extension Service, Little Rock*, [2]*University of Arkansas, Southeast Research and Extension Center, Monticello.*

M12 **A comparison of lipopolysaccharide-induced febrile responses across heat-tolerant and -sensitive *Bos taurus* cattle in different thermal environments.**
R. E. Chaffin*[1], B. Scharf[1], J. S. Johnson[1], J. K. Bryant[1], D. K. Kishore[1], P. A. Eichen[1], J. A. Carroll[2], C. C. Chase[3], S. W. Coleman[3], N. C. Burdick[2], R. L. Weaber[1], and D. E. Spiers[1], [1]*University of Missouri, Columbia*, [2]*USDA-ARS, Livestock Issues Research Unit, Lubbock, TX*, [3]*USDA-ARS, SubTropical Agricultural Research Station, Brooksville, FL.*

M13 **Effects of alternative housing and feeding systems on the performance of dairy heifer calves.**
J. A. Pempek*, M. L. Eastridge, N. A. Botheras, C. C. Croney, and W. S. Bowen, *The Ohio State University, Columbus.*

M14 **Environmental enrichment influence on feedlot cattle performance.**
B. J. Howell*[1], J. R. Brethour[2], and J. R. Jaeger[2], [1]*Fort Hays State University, Hays, KS*, [2]*Kansas State University, Hays.*

M15 **Lack of the expressive associations between temperament, aggression and weight gain in finishing weight feedlot cattle.**
D. R. Soares*[1], K. Schwartzkopf-Genswein[2], A. C. Sant'anna[1], T. da Silva Valente[1], P. M. Rueda[1], J. N. dos Santos Gonçalves Cyrilo[3], and M. J. R. P. da Costa[4], [1]*Sao Paulo State University, Animal Science Posgraduation, Jaboticabal, Sao Paulo, Brazil*, [2]*Agriculture and Agri–Food Canada, Lethbridge Research Centre, Lethbridge, Alberta, Canada*, [3]*Animal Science Institut of Sertaozinho, Sertaozinho, Sao Paulo, Brazil*, [4]*Animal Science Department, Sao Paulo State University, Jaboticabal, Sao Paulo, Brazil.*

M16 **Relationship between temperament, blood flow and area in the external jugular vein, and body temperature in crossbred beef calves.**
H. L. Sanchez-Rodriguez*, R. C. Vann, E. Baravik-Munsell, S. T. Willard, and P. L. Ryan, *Mississippi State University, Mississippi State, MS.*

M17 **Pre-separation behavior of calves being weaned by different methods.**
H. T. Boland*[1,5], S. T. Willard[2], K. Umemura[3], G. Scaglia[4], J. A. Parish[5], and T. F. Best[1], [1]*Mississippi State University, Prairie Research Unit, Prairie*, [2]*Mississippi State University, Department of Biochemistry and Molecular Biology, Mississippi State*, [3]*National Agricultural Research Center for Hokkaido Region, Toyohira, Sapporo, Japan*, [4]*Louisiana State University Agricultural Center, Iberia Research Station, Jeanerette*, [5]*Mississippi State University, Department of Animal and Dairy Sciences, Mississippi State.*

M18 **Predictors of body thermal status in heat-tolerant and -sensitive *Bos taurus* cattle exposed to different temperature loads under controlled conditions.**
D. E. Spiers*, H. L. Vellios, P. A. Eichen, B. Scharf, J. S. Johnson, D. K. Kishore, and R. L. Weaber, *University of Missouri, Columbia.*

M19 **Sexual behavior of Nellore cattle in the Pantanal.**
J. C. DeSouza*[1], U. G. P. Abreu[2], J. R. B. Sereno[3], C. H. M. Malhado[4], J. A. Freitas[5], P. B. Ferraz Filho[6], H. J. Fernandes[7], R. L. Weaber[8], and W. R. Lamberson[8], [1]*Mato Grosso do Sul Federal University – UFMS/Animal Science, Aquidauana, Brazil*, [2]*Empresa Brasileira de Pesquisa Agropecuária - CPAP-EMBRAPA, Corumbá, Brazil*, [3]*Empresa Brasileira de Pesquisa Agropecuária - CPAC - EMBRAPA, Brasília, DF, Brazil*, [4]*South of Bahia State University - UESB, Bahia, Brazil*, [5]*Parana Federal University - UFPR, Palotina, Brazil*, [6]*Mato Grosso do Sul Federal University - UFMS, Tres Lagoas, Brazil*, [7]*State University of Mato Grosso do Sul, Aquidauana, Brazil*, [8]*Animal Sciences, University of Missouri, Columbia.*

M20 **Behavioral reactivity to psychosocial stress determines the effects of lavender oil on anxiety in sheep.**
P. Hawken[1], C. Fiol*[2], and D. B. Blache[1], [1]*UWA Institute of Agriculture (Animal Production), The University of Western Australia, Perth, Western Australia, Australia*, [2]*Departamento de Bovinos, Facultad de Veterinaria, Universidad de la República, Montevideo, Uruguay.*

M21 **Characteristics and welfare of horses used for transportation in northeast Ohio.**
K. Bennett-Wimbush*, M. Amstutz, and D. Willoughby, *Ohio State University Agricultural Technical Institute, Wooster.*

M22 **Female mate choice in the domesticated goat (*Capra hircus*).**
K. M. Longpre* and L. S. Katz, *Rutgers University, New Brunswick, NJ.*

M23 **Effects of spray-dried porcine plasma (SDPP) administered as an oral gavage on indicators of health, welfare, and performance in pigs transported after weaning.**
L. M. Wittish* and M. J. Estienne, *Virginia Polytechnic Institute and State University, Blacksburg.*

M24 **Castration is no laughing matter, nitrous oxide can't even help.**
J. L. Rault*[1] and D. C. Lay[2], [1]*Department of Animal Sciences, Purdue University, West Lafayette, IN*, [2]*USDA-ARS-Livestock Behavior Research Unit, West Lafayette, IN.*

M25 **The effect of using carbon dioxide gas and/or a NSAID to reduce the pain associated with castration in pigs.**
B. L. Davis*[1] and M. A. Sutherland[1,2], [1]*Texas Tech University, Lubbock*, [2]*Ruakura Research Centre, AgResearch, Hamiliton, New Zealand.*

M26 **The effects of group size on aggression when mixing unacquainted sows in outdoor paddocks.**
J. N. Marchant-Forde*[1], J. P. Garner[2], A. K. Johnson[3], R. M. Marchant-Forde[2], and D. C. Lay[1], [1]*USDA-ARS, West Lafayette, IN*, [2]*Purdue University, West Lafayette, IN*, [3]*Iowa State University, Ames.*

M27 **Association of sow fear with prolactin and cortisol concentrations pre- and post-farrowing.**
C. E. Phillips*[1], Y. Z. Li[2], L. J. Johnston[2], G. C. Shurson[1], J. Deen[4], and C. Farmer[5], [1]*University of Minnesota, St. Paul*, [2]*West Central Research and Outreach Center, Morris, MN*, [3]*University of Minnesota-Morris, Morris*, [4]*College of Veterinary Medicine, St. Paul, MN*, [5]*Agriculture and Agri-Food Canada, Dairy and Swine R & D Centre, Sherbrooke, Quebec, Canada.*

## Animal Health I

Sponsor: Elanco Animal Health

M28 **Molecular basis of virulence in *Staphylococcus aureus* ovine mastitis.**
C. Le Maréchal[1,2], N. Seyffert[1,4], J. Jardin[1,2], D. Hernandez[5], G. Jan[1,2], V. Azevedo[4], P. François[5], J. Schrenzel[5], S. Even[1,2], N. Berkova[1,2], R. Thiéry[3], J. R. Fitzgerald[6], S. Lortal*[1,2], and Y. Le Loir[1,2], [1]*INRA STLO, Rennes, France*, [2]*AGROCAMPUS OUEST STLO, Rennes, France*, [3]*ANSES, Sophia-Antipolis, France*, [4]*ICB/UFMG, Belo Horizonte, MG, Brazil*, [5]*University of Geneva Hospitals (HUG), Geneva, Switzerland*, [6]*University of Edinburgh, Edinburgh, Scotland, United Kingdom.*

M29 **Serological proteome analysis of *Staphylococcus aureus* strains isolated from gangrenous and subclinical ewe mastitis reveals core and accessory seroproteomes.**
C. Le Maréchal[1,2], J. Jardin[1,2], G. Jan[1,2], S. Even[1,2], D. Hernandez[4], P. Francois[4], J. Schrenzel[4], D. Demon[5], E. Meyer[5], N. Berkova[1,2], R. Thiéry[3], E. Vautor[3], S. Lortal*[1,2], and Y. Le Loir[1,2], [1]*INRA STLO, Rennes, France*, [2]*AGROCAMPUS OUEST STLO, Rennes, France*, [3]*ANSES, Sophia-Antipolis, France*, [4]*University of Geneva Hospitals (HUG), Geneva, Switzerland*, [5]*Ghent University, Faculty of Veterinary Medicine, Merelbeke, Belgium.*

M30 **Changes of plasma fatty acid and metabolites during the transition period in dairy cows with or without subclinical mastitis after calving.**
Y. Yang[1,2], J. Wang*[1], S. Li[1], D. Bu[1], T. Yuan[1], L. Zhou[1], and P. Sun[1], [1]*State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences,, Beijing, China*, [2]*Institute of Animal Science and Veterinary Medicine, Anhui Academy of Agricultural Sciences, Hefei, China.*

M31 **iTRAQ quantitative analysis of changes of serum protein from the cows in the periparturient period.**
S. S. Li, J. Q. Wang*, H. Y. Wei, Y. X. Yang, D. P. Bu, T. J. Yuan, and P. Sun, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China.*

M32 **Prevalence, transmission and impact of bovine leukosis in Michigan dairies.**
T. M. Byrem*[1], J. T. Houseman[1], R. J. Erskine[2], P. C. Bartlett[2], C. Render[2], C. Febvay[2], D. H. Norman[3], and J. R. Wright[3], [1]*Antel BioSystems Inc., Lansing, MI*, [2]*Michigan State University, College of Veterinary Medicine, East Lansing*, [3]*Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD.*

M33 **Relationship between test-day somatic cell count with test-day milk yields in Iranian Holstein cows.**
A. Laki, S. Babai, and M. Dehghan-Banadaky*, *Department of Animal Sci., Campus of Agriculture and Natural Resources, University of Tehran, Karaj, Tehran, Iran.*

M34 **Effects of drying the udder using paper versus cloth towels on bacterial contamination of teat ends of lactating dairy cattle.**
C. N. Baloun*, S. I. Kehoe, and L. E. Baumann, *University of Wisconsin-River Falls, River Falls.*

M35 **Metabolic and clinical responses of dairy cows to increasing oral doses of lipoteichoic acid.**
S. Iqbal*, Q. Zebeli, D. A. Mansmann, S. M. Dunn, and B. N. Ametaj, *University of Alberta, Edmonton, AB, Canada.*

M36 **Repeated oronasal application of lipopolysaccharide affected milk yield and composition in transition dairy cows.**
A. Hosseini*, D. A. Mansmann, Q. Zebeli, S. Iqbal, S. M. Dunn, and B. N. Ametaj, *University of Alberta, Edmonton, Alberta, Canada.*

M37 **Mortality patterns in Midwest DHIA herds.**
M. Q. Shahid*, M. I. Endres, J. K. Reneau, R. Chebel, and H. Chester-Jones, *University of Minnesota, St. Paul.*

M38 **Cost analysis of feeding varying doses of *Saccharomyces cerevisiae* fermentation product on a commercial dairy.**
C. M. Shriver-Munsch*[1], E. M. Ramsing[1], J. R. Males[1], W. K. Sanchez[2], I. Yoon[2], and G. Bobe[1], [1]*Department of Animal Science, Oregon State University, Corvallis*, [2]*Diamond V, Cedar Rapids, IA.*

M39 **The effect of feeding pasteurized or non-pasteurized waste milk on fecal populations and prevalence of *Salmonella* in dairy calves.**
J. A. Garcia*[1], T. S. Edrington[2], G. R. Hagevoort[1], R. F. Farrow[2], T. R. Callaway[2], N. A. Krueger[2], R. C. Anderson[2], and D. J. Nisbet[2], [1]*NMSU Ag Science Center, Clovis, NM*, [2]*Food and Feed Safety Research Unit, Southern Plains Agricultural Research Center, USDA-ARS, College Station, TX.*

M40 **Effect of paste or wrap oxytetracycline treatment on papillomatous digital dermatitis.**
J. H. Higginson*[1], J. Walter[1], G. Cramer[1,2], and D. F. Kelton[1], [1]*University of Guelph, Guelph, Ontario, Canada*, [2]*Cramer Mobile Bovine Veterinary Services, Stratford, Ontario, Canada.*

M41 **Association between virulence factors of *Escherichia coli*, *Fusobacterium necrophorum*, and *Arcanobacterium pyogenes* and uterine diseases of dairy cows.**
M. Bicalho*, R. Bicalho, and V. Machado, *Cornell University, Ithaca, NY.*

M42 **Repeated oronasal application of lipopolysaccharide lowered the incidence of metabolic diseases in periparturient dairy cows.**
A. Hosseini*, D. A. Mansmann, Q. Zebeli, S. Iqbal, S. M. Dunn, and B. N. Ametaj, *University of Alberta, Edmonton, Alberta, Canada.*

M43 **Peripartal intravaginal application of probiotic bacteria lowered the incidence of uterine infections and improved fertility in dairy cows.**
S. Sharma*, Q. Zebeli, S. Iqbal, S. M. Dunn, J. F. Odhiambo, M. Gäenzle, and B. N. Ametaj, *University of Alberta, Edmonton, Alberta, Canada.*

M44 **Partitioning innate immune response variation: How much variation is due to the animal?**
M. D. Sellers*[1], L. E. Hulbert[1,2], C. J. Cobb[1], and M. A. Ballou[1], [1]*Department of Animal and Food Sciences, Texas Tech University, Lubbock*, [2]*Department of Animal Sciences, University of California-Davis, Davis.*

M45 **Effect of various dosages of *Saccharomyces cerevisiae* fermentation product on health and metabolism of multiparous dairy cows.**
C. M. Shriver-Munsch*[1], E. M. Ramsing[1], J. R. Males[1], W. K. Sanchez[2], I. Yoon[2], and G. Bobe[1], [1]*Department of Animal Science, Oregon State University, Corvallis*, [2]*Diamond V, Cedar Rapids, IA.*

M46 **Influence of starch sources in prepartum diet on colostrum quality and blood immunoglobulin concentration of calves.**
F. Fatahni[1], H. Mirzaei Alamouti*[2], and A. Shahsavar[1], [1]*Department of Animal Science, University of Ilam, Iran*, [2]*Department of Animal Science, University of Zanjan, Iran.*

## Animal Health
## Johne's Disease

M47 **Development of a lab-on-a-chip immunoassay system for diagnosis of Johne's disease.**
A. Wadhwa*[1], K. Yang[1], X. Liu[1], J. Bannantine[2], S. Eda[1], and J. Wu[1], [1]*University of Tennessee Knoxville, Knoxville*, [2]*United States Department of Agriculture, Ames, IA.*

M48 **Immune activation after immunization of neonatal calves with a commercial heat-killed vaccine.**
J. R. Stabel*[1], W. R. Waters[1], J. P. Bannantine[1], and K. Lyashchenko[2], [1]*USDA-ARS-National Animal Disease Center, Ames, IA*, [2]*Chembio Diagnostic Systems, Medford, NY.*

M49 **Phenotype array analysis of *Mycobacterium avium* ssp. *paratuberculosis* K10 phoP mutant and wild-type.**
J.-W. Chang, J. Scaria, and Y.-F. Chang*, *Cornell University, Ithaca, NY.*

M50 **Characterization of monoclonal antibodies specific for molecules uniquely expressed on bovine dendritic cells.**
G. S. Abdellrazeq*[1], S. Tomida[2], and W. C. Davis[2], [1]*Alexandria University, Edfina, Behara Province, Egypt*, [2]*Washington State University, Pullman.*

M51 **Identification of *Mycobacterium avium* ssp. *paratuberculosis* genotypes on Alberta dairy farms with high-resolution melt analysis of multiallelic short sequence repeats.**
J. David, R. Mortier, H. Barkema, and J. De Buck*, *Dept. of Production Animal Health, Fac. Veterinary Medicine, Calgary, Alberta, Canada.*

M52 **Complete genome sequence of a *Mycobacterium avium* subspecies *paratuberculosis* Isolate from a patient with Crohn's disease.**
L. Li*[1], J. P. Bannantine[2], S. Sreevatsan[3], and V. Kapur[1], [1]*Penn State University, University Park*, [2]*National Animal Disease Center USDA-ARS, Ames, IA*, [3]*University of Minnesota, St. Paul.*

M53 ***Salmonella* delivery system to develop an efficient vaccine against *Mycobacterium avium* ssp. *paratuberculosis*.**
S. Chandra, J.-W. Chen, S. M. Faisal, S. P. McDonough, M. A. S. Moreira, C.-F. Chang, and Y.-F. Chang*, *College of Veterinary Medicine, Cornell University, Ithaca, NY.*

M54 **Exploring *M. paratuberculosis* pathogenesis using an in vitro cell culture passage model.**
J. L. Everman*[1] and L. E. Bermudez[2], [1]*Department of Microbiology, College of Science, Oregon State University, Corvallis*, [2]*Department of Biomedical Science, College of Veterinary Medicine, Oregon State University, Corvallis.*

## Beef Species
## Beef Cattle Production

M55 **Effects of *Saccharomyces cerevisiae* fermentation product on ruminal VFA production when supplemented to various beef feedlot diets.**
I. Yoon*, C. Belknap, J. Butler, J. Lin, A. Brainard, and T. Werner, *Diamond V, Cedar Rapids, IA.*

M56 **Body components on finishing crossbred beef heifers of different residual feed intake groups.**
S. F. Reis*[1], P. V. R. Paulino[1], S. R. Medeiros[2], G. L. D. Feijó[2], R. A. A. Torres Júnior[2], D. A. Fausto[3], M. A. Rezende[2], and S. C. Valadares Filho[1], [1]*Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil*, [2]*Embrapa Gado de Corte, Campo Grande, Mato Grosso do Sul, Brazil*, [3]*Universidade de São Paulo, Piracicaba, São Paulo, Brazil.*

M57 **Finishing steers and bulls with high-vitamin E diets: Effect on circulating immune cells and creatine kinase at time of slaughter.**
C. Reyes, C. Fuentes, and R. E. Larraín*, *Pontificia Universidad Catolica de Chile, Santiago, Chile.*

M58 **Vitamin $D_3$ effect on metabolite levels in plasma and longissimus musle of steers fed zilpaterol hydrochloride.**
K. T. Korn*, M. C. Claeys, R. P. Lemenager, and J. P. Schoonmaker, *Purdue University, West Lafayette, IN.*

M59 **Early metabolic imprinting events increase marbling scores in fed cattle.**
M. A. McCann*[1], J. M. Scheffler[1], S. P. Greiner[1], M. D. Hanigan[2], G. A. Bridges[3], S. L. Lake[4], J. M. Stevenson[1], H. Jiang[1], T. L. Scheffler[1], and D. E. Gerrard[1], [1]*Dept. of Animal and Poultry Sciences, Virginia Polytechnic Institute and State University, Blacksburg*, [2]*Dept. of Dairy Science, Virginia Polytechnic Institute and State University, Blacksburg*, [3]*University of Minnesota, North Central ROC, Grand Rapids*, [4]*Dept. of Animal Sciences, University of Wyoming, Laramie.*

M60 **Differences in the production and reproduction traits of embryo transfer full siblings living under different and identical conditions.**
J. Bezdicek*[1] and J. Riha[2], [1]*Agriresearch Rapotin Ltd., Rapotin, Czech Republic*, [2]*Research Institute for Cattle Breeding, Ltd., Rapotin, Czech Republic.*

M61 **Female fertility in a Guzerat dairy herd: Heterogeneity of variance components for calving intervals.**
J. C. C. Panetto*[1,2], J. E. Val[3], C. R. Marcondes[4], M. G. C. D. Peixoto[2], R. S. Verneque[2], J. B. S. Ferraz[5], and B. L. Golden[6], [1]*Curso de Veterinária, Universidade de Uberaba, Uberaba, MG, Brazil*, [2]*Embrapa Gado de Leite, Juiz de Fora, MG, Brazil*, [3]*Faculdade de Medicina de Ribeirão Preto - USP, Ribeirão Preto, SP, Brazil*, [4]*Embrapa Pecuária Sudeste, São Carlos, SP, Brazil*, [5]*Faculdade de Zootecnia e Engenharia de Alimentos - USP, Pirassununga, SP, Brazil*, [6]*Dairy Science Department, California Polytechnic State University, San Luis Obispo.*

M62 **Detection of early pregnancy and embryonic loss in dairy cows using BioPRYN and a NEW PSPB-based ELISA.**
J. R. Branen*[1], J. O. Giordano[2], C. Passavant[1], J. M. Howard[1], P. M. Fricke[2], and R. G. Sasser[1], [1]*BioTracking LLC, Moscow, ID*, [2]*University of Wisconsin, Madison.*

M63 **Comparison of BioPRYN and a new pregnancy-specific protein B (PSPB) enzyme-linked immunosorbent assay (ELISA) for determination of early pregnancy status in dairy cattle.**
J. R. Branen*[1], C. Passavant[1], A. Phatak[2], D. Snider[3], J. Azevedo[4], J. M. Howard[1], D. Pals[1], and R. G. Sasser[1], [1]*BioTracking LLC, Moscow, ID*, [2]*Consulting Veterinarian, Waterford, CA*, [3]*Strategy Lab & Dairy Consulting, Visalia, CA*, [4]*Alta California, Hilmer, CA.*

M64 **Survey of genetic selection practices on pasture-based dairy farms in the United States.**
K. D. Gay*, T. D. Nennich, and M. M. Schutz, *Purdue University, West Lafayette, IN.*

M65 **Estimating field conception rates for Holstein sires in US herds (ACE index) and conception rate correlation from the same sires used for AI after natural estrus and timed AI breedings.**
A. H. Souza*[1,2], H. Rivera[2], P. Crump[1], and V. Cabrera[1], [1]*Department of Dairy Science, University of Wisconsin, Madison*, [2]*Accelerated Genetics, Baraboo, WI.*

M66 **Effects of dam's dry period length on heifer development.**
H. D. Norman and J. L. Hutchison*, *Animal Improvement Programs Laboratory, USDA-ARS, Beltsville, MD.*

M67 **Changes in the use of young bulls.**
K. M. Olson*[1], J. L. Hutchison[2], P. M. VanRaden[2], and H. D. Norman[2], [1]*National Association of Animal Breeders, Columbia, MO*, [2]*Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD.*

M68 **Body condition score comparisons of crossbred Normande-sired cows with herd mates sired by Ayrshire, Holstein, and Jersey.**
D. E. Brown* and C. D. Dechow, *The Pennsylvania State University, University Park.*

M69 **Use of cow culling to help meet compliance for somatic cell standards.**
H. D. Norman and J. R. Wright*, *Animal Improvement Programs Laboratory, USDA-ARS, Beltsville, MD.*

M70 **The association of high and low parent average with performance for yield, somatic cell score, and productive life in individual herds.**
C. D. Dechow*[1], H. D. Norman[2], R. C. Goodling[1], and J. R. Wright[2], [1]*Pennsylvania State University, University Park*, [2]*Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD.*

M71 **Genetic differences between New Zealand and North American dairy cows alter milk production and gluconeogenic enzyme expression.**
H. M. White*[1], S. S. Donkin[1], M. C. Lucy[2], T. M. Grala[3], and J. R. Roche[3], [1]*Purdue University, West Lafayette, IN*, [2]*University of Missouri, Columbia*, [3]*DairyNZ Ltd., Hamilton, New Zealand.*

M72 **Verification of factors to estimate daily milk yield from one milking of cows milked twice daily.**
M. M. Schutz*[1] and H. D. Norman[2], [1]*Purdue University, West Lafayette, IN*, [2]*USDA-ARS Animal Improvement Programs Laboratory, Beltsville, MD.*

M73 **Estimation of daily yield of major fatty acids from single milking.**
V. Arnould[1,2], E. Froidmont[4], H. N. Nguyen[5], F. Dehareng[5], P. Dardenne[5], A. Gillon[2,6], N. Gengler[2,3], and H. Soyeurt*[2,3], [1]*CONVIS, Herdbuch Service Élevage et génétique, Ettelbruck, Luxembourg*, [2]*University of Liège, Gembloux Agro Bio-Tech, Animal Science Unit, Gembloux, Namur, Belgium*, [3]*National Fund for Scientific Research, Brussels, Brussels, Belgium*, [4]*Production and Sectors Department, Walloon Agricultural Research Centre, Gembloux, Namur, Belgium*, [5]*Quality of Agricultural Products Department, Walloon Agricultural Research Centre, Gembloux, Namur, Belgium*, [6]*Walloon Breeding Association, Ciney, Namur, Belgium.*

M74 **Comparison of lactation performance in a panel of genetically diverse inbred mouse strains.**
D. L. Hadsell*[1], W. Olea[1], J. Wei[2], L. A. Hadsell[1], and P. Williamson[2], [1]*Baylor College of Medicine, Houston, TX*, [2]*The University of Sydney, Sydney, NSW, Australia.*

M75 **Statistical comparison of persistency among calving seasons of Iranian Holsteins.**
R. Izadkhah*, H. Farhangfar, M. H. Fathi Nasri, and H. Naeemipour, *Birjand University, Birjand, Iran.*

M76 **Genetic parameters estimates to Colombian buffalo milk yield under random regression models.**
N. Hurtado-Lugo*[1,2], S. Sousa Júnior[1], M. Cerón[2], R. Aspilcuelta[1], E. Acevedo[1], S. Gutierrez[2], L. Albuquerque[1], G. de Camargo[1], D. Santos[1], and H. Tonhati[1], [1]*UNESP Faculty of Agriculture and Veterinary Sciences, State University of São Paulo, Jaboticabal, SP, Brazil*, [2]*Genetics and Animal Improvement Group, Faculty of Agriculture Sciences, University of Antioquia, Medellín, Colombia.*

M77 **Mathematical modeling of the lactation curve of domestic donkey (*Equus asinus*).**
A. M. Guastella*[1], A. Criscione[1], S. Bordonaro[1], D. Marletta[1], R. Steri[2], and N. P. P. Macciotta[1], [1]*Università di Catania, Catania, Italy*, [2]*Università di Sassari, Sassari, Italy.*

## Breeding and Genetics
## Poultry Breeding

M78 **Genetics of immunocompetence traits in Aseel native chicken of India.**
S. Choudhary*[1], S. Kumar[2], and B. Nautiyal[1], [1]*MJP Rohilkhand University, Bareilly, U.P. India*, [2]*Central Avian Research Institute, Bareilly, U.P. India.*

M79 **Study on the diversity of Yunnan original chicken meat using NIR spectroscopy based on principal component analysis and cluster analysis.**
J.-L. Wu[1], X. Gao*[1], Y.-Z. Li[3], Y.-F. Yin[1], and Y. Li[2], [1]*Yunnan Animal Science and Veterinary Institute, Kunming, Yunnan, China*, [2]*Sweden Perten Instruments Representative Office in China, Beijing, China*, [3]*University of Minnesota, Morris.*

M80 **Breed and egg size effects on weight loss during incubation of Broiler eggs.**
O. T. F. Abanikannda*, A. O. Leigh, and A. O. Giwa, *Lagos State University, Ojo-Lagos, Nigeria.*

M81 **Estimation of genetic parameters for body weight traits in Mazandaran indigenous chicken.**
S. Niknafs*, A. Nejati Javaremi, H. Mehrabani Yeganeh, and A. Fatemi, *Agricultural Faculty, University of Tehran, Karaj, Alborz, Iran.*

M82 **Genetic and phenotypic trends for body weight and egg production in Mazandaran indigenous chicken.**
S. Niknafs*, A. Nejati Javaremi, H. Mehrabani Yeganeh, and A. Fatemi, *Agricultural Faculty, University of Tehran, Karaj, Alborz, Iran.*

M83 **Heritability and genetic correlation estimates for egg production related traits in Mazandaran indigenous chicken.**
S. Niknafs*, A. Nejati Javaremi, H. Mehrabani Yeganeh, and A. Fatemi, *Agricultural Faculty, University of Tehran, Karaj, Alborz, Iran.*

## Dairy Foods
## Chemistry, Processing, and Analysis

M84 **Effects of salts on foaming properties of milk protein concentrate at neutral pH.**
J. Han* and B. Vardhanabhuti, *University of Missouri, Columbia.*

M85 **Microencapsulation of probiotic cultures using polymerized whey proteins as wall material.**
Z. Zheng[1], Y. Jiang[1], X. Chen[2], J. Wang[2], J. Cheng[1], H. Zhang[2], and M. Guo*[1], [1]*University of Vermont, Burlington*, [2]*Inner Mongolia Agricultural University, Hohhot, Inner Mongolia, China.*

M86 **Proteolysis in UHT milk produced with $CO_2$ added raw milk.**
P. C. B. Vianna[1], E. H. M. Walter[2], M. E. F. Dias*[3], J. A. Faria[3], F. M. Netto[3], and M. L. Gigante[3], [1]*Universidade Norte do Paraná, Londrina, SP, Brazil*, [2]*Universidade Federal do Pampa, Bagé, SP, Brazil*, [3]*Universidade Estadual de Campinas, Campinas, SP, Brazil.*

M87 **The effect of commercial sterilization regimes on micellar casein concentrates (MCC).**
C. M. Beliciu, A. Sauer*, and C. I. Moraru, *Cornell University, Ithaca, NY.*

M88 **The crystallization of large lactose crystals in skim milk concentrate.**
B. Toledo* and F. X. Milani, *University of Wisconsin-Madison, Madison.*

M89 **Investigation of twin-screw extrusion puffing of non-fat dry milk powder and starch to produce puffs and crisps for snack and ingredient uses.**
A. J. Tremaine* and T. C. Schoenfuss, *University of Minnesota, Department of Food Science and Nutrition, St. Paul.*

M90 **Browning and pH of UHT whole milk as influenced by time and temperature of storage.**
M. E. F. Dias*[1], P. C. B. Vianna[2], and M. L. Gigante[1], [1]*Universidade Estadual de Campinas, Campinas, SP/Brazil*, [2]*Universidade Norte do Paraná, Londrina, PR/Brazil.*

M91 **Evaluation of vacuum packaging on physical properties and solubility of dry dairy ingredients.**
H. Eshpari* and P. Tong, *California Polytechnic State University, San Luis Obispo.*

M92 **Hydrophobic aroma encapsulation in whey protein nanoparticles.**
H. J. Giroux and M. Britten*, *Food Research and Development Centre, Agriculture and Agri-Food Canada, St-Hyacinthe, (QC), Canada.*

M93 **Formation of β-lactoglobulin/alginate nanoemulsion containing coenzyme Q10.**
H. N. Choi*, M. R. Lee, and W. J. Lee, *Division of Applied and Life Science (Institute of Agriculture & Life Science), Jinju-si, South Korea.*

M94 **Homogenization and lipase addition influence methyl ketone generation.**
M. Cao*, E. L. Anderson, and S. A. Rankin, *University of Wisconsin-Madison, Madison.*

M95 **Use of fluorescence spectroscopy for monitoring vitamin D fortification of skim milk.**
J. K. Amamcharla* and L. E. Metzger, *Midwest Dairy Foods Research Center, Dairy Science Department, South Dakota State University, Brookings.*

M96 **Milk composition evaluation as screening criteria to investigate fraudulent addition of cheese whey to milk.**
M. M. Falcão, F. A. P. Paula, M. O. Leite*, C. F. A. M. Penna, L. M. Fonseca, M. M. O. P. Cerqueira, and M. R. Souza, *Universidade Federal de Minas Gerais.*

M97 **Measuring milk treatments and storage temperature effects on fat globules aggregation.**
N. Fucà[1], G. Impoco[1], M. Caccamo*[1], and G. Licitra[1,2], [1]*CoRFiLaC, Regione Siciliana, Ragusa, Italy*, [2]*DISPA, Catania University, Catania, Italy.*

M98 **Effects of residual lactose and galactose on cheese moisture determination.**
H. Lee*, F. X. Milani, and S. A. Rankin, *University of Wisconsin-Madison, Madison.*

M99 **Quantification of textural properties of composite milk gels using laser-scanning fluorescence confocal microscopy and image texture analysis.**
R. Hennessy*[1], L. Laiho[1], A. Laubscher[2], and R. Jimenez-Flores[2], [1]*Cal Poly Biomedical Engineering, San Luis Obispo*, [2]*Cal Poly, DPTC, San Luis Obispo.*

M100 **Evaluation of two kits based on microbial inhibition for detection of antimicrobial residues in milk.**
A. D. Lage, L. P. Freire, N. M. A. Silva, M. M. P. Araújo, R. D. P. Santos, G. M. Resende, A. F. Cunha, M. R. Souza, C. F. A. M. Penna, L. M. Fonseca, M. O. Leite, and M. M. O. P. Cerqueira*, *Universidade Federal de Minas Gerais, Belo Horizonte, Minas Gerais, Brazil.*

M101 **Validation of CombiScope FTIR for milk urea evaluation in raw milk.**
M. C. P. P. Oliveira*, N. M. A. Silva, L. P. F. Bastos, R. S. Conrrado, L. M. Fonseca, M. M. O. P. Cerqueira, R. Rodrigues, and M. O. Leite, *Veterinary School/Universidade Federal de Minas Gerais, Belo Horizonte, Minas Gerais, Brazil.*

M102 **Identification of starch in cheese using laser scanning confocal microscopy.**
W. R. McManus, E. N. Oberg, R. Wadhwani, K. M. Brown, and D. J. McMahon*, *Western Dairy Center, Utah State University, Logan.*



## Extension Education

M103 **Assessing a comprehensive udder health and mastitis control program for practicing dairy veterinarians.**
G. M. Schuenemann*, P. Rajala-Schultz, E. Gordon, S. Bas, and J. D. Workman, *Department of Veterinary Preventive Medicine, The Ohio State University, Columbus.*

M104 **The relationships between weight, age, and average daily gain of Georgia 4-H & FFA commercial dairy heifers.**
M. L. London, J. K. Bernard, M. A. Froetschel, J. K. Bertrand, and W. M. Graves*, *University of Georgia, Athens.*

M105 **Advising and technical support for the formulation and evaluation of diets for dairy cows and goats: The extension experience of Antonio Narro Agricultural University in north Mexico.**
P. A. Robles-Trillo*[1], F. G. Veliz-Deras[1], R. Rodriguez-Martinez[1], M. A. De Santiago-Miramontes[1], and C. A. Meza-Herrera[2], [1]*Universidad Autonoma Agraria Antonio Narro, Torreón, Coahuila, México*, [2]*Universidad Autónoma Chapingo, Unidad Regional Universitaria de Zonas Áridas, Bermejillo, Durango, Mexico.*

M106 **An extension tool to assess forage production and utilization on dairy farms.**
M.-C. Coulombe*[1], D. Pellerin[1], R. Roy[2], G. Allard[1], P. Savoie[3], D. Parent[1], and E. Charbonneau[1], [1]*Université Laval, Quebec, Quebec, Canada*, [2]*Valacta, Dairy production centre of expertise, Ste-Anne-de-Bellevue, Quebec, Canada*, [3]*Agriculture and Agri-Food Canada, Soils and Crops Research and Development Centre, Quebec, Quebec, Canada.*

M107 **Fiber production and fiber characteristics of alpacas farmed in United States.**
T. Wuliji*, *Lincoln University, Jefferson City, MO.*

M108 **Advice from the experts: Processor assessment of planning considerations for an on-farm dairy processing enterprise.**
E. A. Chaney* and J. M. Bewley, *University of Kentucky, Lexington.*

M109 **Using whole farm assessment tools to identify strategies for change to increase dairy farm profitability.**
R. A. White*, L. A. Holden, A. Ishler, G. A. Varga, and M. B. Douglass, *The Pennsylvania State University, University Park.*

M110 **Evaluation of the use of pasture pork demonstration sites for on-farm educational programming.**
N. C. Whitley* and M. L. Eley, *North Carolina A&T State University, Greensboro.*

M111 **Summary of Texas Panhandle dairy producer forage use.**
K. J. Lager* and E. R. Jordan, *Texas AgriLife Extension Service, Texas A&M System, College Station.*

M112 **An overview of compost bedded pack management in Kentucky.**
R. A. Black*, J. L. Taraba, G. B. Day, F. A. Damasceno, and J. M. Bewley, *University of Kentucky, Lexington, KY, United States.*

M113 **Weighted cost of capital on dairy farms in Florida.**
K. Kaniyamattam*[1], A. De Vries[1], and D. T. Galligan[2], [1]*University of Florida, Gainesville*, [2]*University of Pennsylvania, Kennett Square.*

M114 **Current situation and further training needs: A case of Master Goat Producers.**
U. Karki*[1], N. K. Gurung[1], O. Bolden-Tiller[1], and L. B. Karki[2], [1]*Tuskegee University, Tuskegee, AL*, [2]*PadmaDal Memorial Foundation, Auburn, AL.*

M115 **Judging Pro: A dynamic software program for scoring judging contests.**
M. L. Eastridge*, B. Cobanov, A. Moffett, L. A. Winkelman, and A. E. Radunz, *The Ohio State University, Columbus.*

## Forages and Pastures
## Antinutritive Compounds in Forages

M116 **Fermentation and microbial protein synthesis from anthocyanidin accumulating Lc-alfalfa in rumen liquid.**
A. Jonker[1,2], M. Y. Gruber[2], Y. Wang[3], D. A. Christensen[1], J. J. McKinnon[1], and P. Yu*[1], [1]*Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, Saskatchewan, Canada*, [2]*Saskatoon Research Station, Agriculture and Agri-Food Canada, Saskatoon, Saskatchewan, Canada*, [3]*Lethbridge Research Station, Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada.*

M117 **How tannin deactivation can affect nutrient digestibility and metabolizable energy contents 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.*

M118 **Effects of sainfoin (*Onobrychis viciifolia*) processing for tannin deactivation on nitrogen content of cell wall and available nitrogen.**
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.*

M119 **Effects of tannin deactivation with different chemicals on protein fractions of sainfoin (*Onobrychis viciifolia* Scop.) in Cornell Net Carbohydrate and Protein System (CNCPS).**
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.*

M120 **Effects of chemical treatments for tannin deactivation on in situ organic matter degradability of sainfoin (*Onobrychis vicifolia*).**
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.*

M121 **Chemical compositions and anti-nutritive factors of *Acacia mangium*.**
T. Clavero* and R. Razz, *Centro de Transferencia de Tecnologia en Pastos y Forrajes, Universidad del Zulia, Maracaibo, Estado Zulia, Venezuela.*

M122 **Nutrient composition, polyphenolic compound content, in situ degradation and in vitro rumen fermentation characteristics of leaves from three mulberry species.**
H. J. Yang* and W. X. Wang, *State Key Laboratory of Animal Nutrition, College of Animal Science and Technology, China Agricultural University, Beijing 100193, China.*

M123 **Fluoride content of leaves and stems of alfalfa hay at different stages of maturity.**
C. Arzola*[1], M. R. Murphy[2], J. Salinas[3], R. Copado[1], A. Corral[1], O. Ruiz[1], C. Rodriguez[1], E. Santellano[1], and H. Gaytan[1], [1]*Universidad Autonoma de Chihuahua, Chihuahua, Chihuahua, Mexico*, [2]*University of Illinois, Urbana-Champaign*, [3]*Universidad Autonoma de Tamaulipas, Cd. Victoria, Tamaulipas, Mexico.*

M124 **Distribution of antiherbivory compounds in *Flourensia cernua*.**
R. E. Estell*, E. L. Fredrickson, D. K. James, and D. M. Anderson, *USDA-ARS, Jornada Experimental Range, Las Cruces, NM.*

M125 **Degradation kinetics of calcium caseinate incubated *in vitro* with increasing levels of tannin extract from *Acacia mearnsii* with or without polyethylene glycol addition.**
D. Zeni*, A. C. Fluck, G. V. Kozloski, A. A. Martins, F. Zanferari, and S. Stefanello, *Universidade Federal de Santa Maria, Santa Maria, RS, Brazil.*

M126 **Degradation kinetics of cellulose incubated in vitro with increasing levels of tannin extract from *Acacia mearnsii* with or without polyethylene glycol addition.**
D. Zeni*, A. C. Fluck, G. V. Kozloski, A. A. Martins, F. Zanferari, and T. R. Longo, *Universidade Federal de Santa Maria, Santa Maria, RS, Brazil.*

M127 **Nutrient and tannin contents of purple prairie clover (*Petalostemon purpureum*) harvested at different growth stages.**
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]*Agriculture and Agri-Food Canada, Lethbridge Reserach Centre, Lethbridge, AB, Canada*, [2]*Department of Animal Science, Northeast Agricultural University, China*, [3]*SPARC-AAFC, Swift Current, SK, Canada.*

M128 **Evaluation of tannins in indigenous forage plants of the Brazilian semi-arid.**
M. L. Chizzotti*[1,2], F. R. B. Oliveira[2], R. T. S. Rodrigues[2], K. C. Busato[2], T. S. Silva[2], J. A. Siqueira[2], and F. H. M. Chizzotti[1], [1]*Universidade Federal de Lavras, Lavras, MG, Brazil*, [2]*Universidade Federal do Vale do São Francisco, Petrolina, PE, Brazil.*

M129 **Effect of grazing toxic tall fescue prior to or immediately following insemination on beef cattle reproductive performance.**
M. G. Burns*[1], J. G. Andrae[1], S. L. Pratt[1], W. C. Bridges[1], and F. N. Schrick[2], [1]*Clemson University, Clemson, SC*, [2]*University of Tennessee, Knoxville.*

M130 **Endophyte-infected tall fescue seed extract induces constriction of bovine vasculature.**
A. P. Foote*[1], D. L. Harmon[1], K. R. Brown[2], J. R. Strickland[2], K. R. McLeod[1], L. P. Bush[1], and J. L. Klotz[2], [1]*University of Kentucky, Lexington*, [2]*USDA-ARS, FAPRU, Lexington, KY.*

M131 **Contractile response of bovine lateral saphenous vein to ergovaline, serotonin, $\alpha_{2A}$-, and $\alpha_{2C}$-adrenergic receptor agonists relative to time off endophyte-infected tall fescue.**
J. L. Klotz[1], G. E. Aiken[1], A. P. Foote*[2], L. P. Bush[2], K. R. Brown[1], B. M. Goff[2], and J. R. Strickland[1], [1]*USDA-ARS-FAPRU, Lexington, KY*, [2]*University of Kentucky, Lexington.*

M132 **Differences in chemical composition 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], F. G. Ríos-Rincón[3,4], E. Gutiérrez-Ornelas[1,4], M. Guerrero-Cervantes[2,4], N. C. Vásquez-Aguilar[1], and J. E. Treviño-Ramírez[1], [1]*Facultad de Agronomía UANL, Escobedo, N.L., México*, [2]*Facultad de Medicina Veterinaria y Zootecnia UJED, Durango, Dgo., México*, [3]*Facultad de Medicina Veterinaria y Zootecnia UAS, Culiacán, Sin., México*, [4]*Red Internacional de Nutrición y Alimentación en Rumiantes, México.*



## Forages and Pastures
## Forage Production and Quality

M133 **Dry matter yield and chemical composition of twenty-eight alfalfa cultivars grown in Brazil.**
P. R. Meirelles*, C. Costa, M. A. Q. Vieira, M. A. Factori, and E. A. R. Santana, *College of Veterinary Medicine and Animal Science, UNESP, Botucatu, Sao Paulo, Brasil.*

M134 **Tillering pattern and dry matter production of Mombasa grass submitted to nitrogen fertilization during regrowth.**
A. F. Garcez Neto*[1,3], K. F. Gobbi[2,3], T. M. Dos Santos[1], E. E. B. Baldasso[1], and J. Da Silva[1], [1]*Federal University of Parana, Palotina, Parana, Brazil*, [2]*Agronomic Institute of Parana, Paranavai, Parana, Brazil*, [3]*Federal University of Vicosa, Vicosa, Minas Gerais, Brazil.*

M135 **Effects of growing conditions on alfalfa hay quality and production.**
A. Palmonari*, M. Fustini, G. Canestrari, and A. Formigoni, *Dipartimento Scienze Mediche Veterinarie, Universita degli Studi di Bologna, Bologna, Italy.*

M136 **Nutritional value and silage fermentation parameters of elder (*Sambucus nigra*) as a supplement for dairy cattle in the Colombian Tropics.**
L. Reyes, L. C. Bernal*, and A. Conde, *Universidad de La Salle, Bogotá, Colombia.*

M137 **Organic fertilization improves growth of *Paulownia* spp.**
V. M. Llamas-Rodríguez*, R. Luevano-Escobedo, V. Gallardo-Santillan, A. S. Juárez-Reyes, and M. A. Cerrillo-Soto, *Universidad Juárez del Estado de Durango, Durango, México.*

M138 **Ruminal degradability of crude protein of Marandu grasses.**
A. J. D. Pacheco Junior*[1], F. A. P. Santos[1], C. M. M. Bittar[1], L. R. D. Agostinho Neto[1], R. A. M. Vieira[2], L. O. Tedeschi[3], B. C. Matos[1], and G. B. Mourão[1], [1]*University of São Paulo, University of Sao Paulo, USP/ESALQ, Piracicaba, SP, Brazil*, [2]*State University of North Fluminense Darcy Ribeiro, State University of North Fluminense Darcy Ribeiro, Campos dos Goytacazes, RJ, Brazil*, [3]*Texas A&M University, Texas A&M University, College Station.*

M139 **Effect of stage of maturity of alfalfa hay upon in vitro dry matter and crude protein digestibility.**
R. Copado-Garcia*[1], O. Serna[2], C. Arzola[1], O. Ruiz[1], C. Rodriguez[1], A. Corral[1], and H. Gaytan[1], [1]*Universidad Autonoma de Chihuahua, Chihuahua, Chihuahua, Mexico*, [2]*INIFAP, Chihuahua, Chihuahua, Mexico.*

M140 **Nutrient composition, metabolizable energy, in situ rumen degradation and in vitro fermentation characteristics of linted cottonseed hulls, delinted cottonseed hulls and cottonseed linter waste.**
H. J. Yang* and Y. K. Bo, *State Key Laboratory of Animal Nutrition, College of Animal Science and Technology, China Agricultural University, Beijing 100193, China.* M141 **Chemical composition and nutritional value of *Prosopis laevigata* harvested at three differents maturation stage.**
R. Rojo*, E. Castelán, A. Z. M. Salem, J. F. Vázquez, B. Encarnación-Elizalde, M. Palma-González, and J. Cedillo-Monrroy, *Centro Universitario UAEM-Temascaltepec, Universidad Autónoma del Estado de México, Temascaltepec, Estado de México, México.*

## Graduate Student Competition: ADSA Dairy Foods Poster Competition
## Chair: Rafael Jimenez-Flores, California Polytechnic State University

M142 **The influence of process time and heat treatment on bleaching efficacy of liquid whey and retentate.**
X. Li* and M. A. Drake, *North Carolina State University, Raleigh.*

M143 **Impact of bleaching on flavor of 34% whey protein concentrate and benzoic acid concentration in dried whey proteins.**
M. A. Listiyani*, R. E. Campbell, R. E. Miracle, L. O. Dean, and M. A. Drake, *North Carolina State University, Raleigh.*

M144 **The influence of bleaching agent, solids concentration and temperature on bleaching efficacy and volatile components of fluid whey.**
A. J. Fox* and M. A. Drake, *North Carolina State University, Raleigh.*

M145 **Activation of lactoperoxidase for the bleaching of fluid whey.**
R. E. Campbell*[1], E. J. Kang[1], E. Bastian[2], and M. A. Drake[1], [1]*North Carolina State University, Raleigh*, [2]*Glanbia Nutritionals Inc., Twin Falls, ID.*

M146 **Bleaching efficacy of ozone gas in liquid whey and its effects on flavor of 80% whey protein concentrate.**
T. J. Smith* and M. A. Drake, *North Carolina State University, Raleigh.*

M147 **The impact of sodium reduction on the flavor, texture and flavor chemistry of full fat and low fat Cheddar cheese.**
M. K. Kim*[1], R. E. Miracle[1], D. J. McMahon[2], and M. A. Drake[1], [1]*North Carolina State University, Raleigh*, [2]*Utah State University, Logan.*

M148 **Fortification of milk for Cheddar cheese manufacture using skim milk powder.**
A. C. Moynihan* and P. L. H. McSweeney, *University College Cork, Cork, Ireland.*

M149 **Rapid measurement of lactose concentration in cheese whey by using handheld blood glucose meter.**
A. C. Biswas*, J. K. Amamcharla, and L. E. Metzger, *Midwest Dairy Foods Research Center, Dairy Science Department, South Dakota State University, Brookings.*

M150 **Organic acid identification and quantification in low-fat Cheddar cheese by capillary zone electrophoresis.**
R. Kumar* and T. C. Schoenfuss, *University of Minnesota, Department of Food Science and Nutrition, St. Paul.*

M151 **Stability of sterilized micellar casein concentrates (MCC) during storage.**
A. Sauer* and C. I. Moraru, *Cornell University, Ithaca, NY.*

M152 **Use of capillary gel electrophoresis for quantification of individual milk proteins in ultra- and microfiltration retentate.**
P. Salunke*, C. Marella, and L. E. Metzger, *Midwest Dairy Foods Research Centre, South Dakota State University, Brookings.*

M153 **Incorporation of whey:buttermilk heat-denatured protein aggregates in model set-type yogurt.**
M. Saffon*[1], V. Richard[1], S. F. Gauthier[1], M. Britten[2], and Y. Pouliot[1], [1]*STELA Dairy Research Center, Institute of Nutraceuticals and Functional Foods (INAF), Université Laval, Québec, QC, Canada*, [2]*Food Research and Development Center (FRDC), Agriculture and Agri-Food Canada, St-Hyacinthe, QC, Canada.*

M154 **Linking environmental and sensory qualities of a Vermont artisan cheese.**
A. Greenbaum*[1], S. Carpino[2], M. Almena[1], S. Bosworth[1], P. Kindstedt[1], and A. Trubek[1], [1]*University of Vermont, Burlington*, [2]*CoRFiLaC, Ragusa, Italy.*

## Graduate Student Competition:
## ADSA Production Division Graduate Student Poster Competition - MS Division
## Chair: Adam Lock

M155 **Chewing activities of dairy heifers precision-fed a low or high forage ration at four levels of dry distillers grain.**
F. X. Suarez-Mena*, G. J. Lascano, and A. J. Heinrichs, *The Pennsylvania State University, University Park.*

M156 **Effect of one or two treatments of prostaglandin $F_{2\alpha}$ prior to Cosynch in lactating dairy cattle.**
K. D. Baldock*[1], M. E. Wilson[2], and D. L. Smith[1], [1]*Eastern New Mexico University, Portales*, [2]*West Virginia University, Morgantown.*

M157 **The effects of extruding wheat dried distillers grains with solubles with peas or canola meal on ruminal fermentation, nutrient digestion and milk production in lactating Holstein dairy cows.**
R. M. Claassen*, D. A. Christensen, and T. Mutsvangwa, *University of Saskatchewan, Saskatoon, Saskatchewan, Canada.*

M158 **Ruminal degradation and intestinal protein digestion of steam-flaked soybeans.**
H. R. Bruns*[1], K. J. Herrick[1], K. F. Kalscheur[1], D. J. Schingoethe[1], R. Rosenboom[2], G. Doppenberg[2], and A. R. Hippen[1], [1]*South Dakota State University, Brookings*, [2]*Deluxe Feeds, Sheldon, IA.*

M159 **A simulation assessment of long-term nitrogen runoff reduction from dairy pastures.**
R. White* and J. L. Capper, *Washington State University, Pullman.*

M160 **Characterization of management practices utilized by low somatic cell count Kentucky dairy herds.**
A. E. Sterrett* and J. M. Bewley, *University of Kentucky, Lexington.*

M161 **Evaluation of an electronic cow-side glucose meter for diagnosing insulin resistance in Holstein dairy cows.**
J. A. M. Wittrock*[1], T. F. Duffield[1], S. Riuzzi[2], and S. J. LeBlanc[1], [1]*University of Guelph, Guelph, Ontario, Canada*, [2]*University of Padua, Padova, Italy.*

M162 **Effect of treatment with human chorionic gonadotropin (hCG) on day 5 after timed artificial insemination (TAI) on fertility in lactating Holstein cows.**
R. W. Bender*, A. B. Nascimento, A. H. Souza, H. Ayres, R. R. Araujo, J. N. Guenther, and M. C. Wiltbank, *Department of Dairy Science, University of Wisconsin - Madison, Madison.*

M163 **Evaluation of three-dimensional accelerometers to monitor motion changes relative to estrus behavior.**
W. A. Smith*, J. M. Bewley, and W. J. Silvia, *University of Kentucky, Lexington.*

M164 **Effects of hutches and fortified waste milk on growth and health in preweaned Holstein dairy calves. .**
K. L. Machado*[1], R. E. James[1], M. L. McGilliard[1], and T. J. Earleywine[2], [1]*Department of Dairy Science, Virginia Polytechnic Institute and State University, Blacksburg*, [2]*Land O Lakes Animal Milk Products, Shoreview, MN.*

M165 **Effect of postpartum diseases on reproduction of grazing dairy cows.**
E. S. Ribeiro*, F. S. Lima, H. Ayres, L. F. Greco, R. S. Bisinotto, M. Favoreto, R. S. Marsola, A. P. A. Monteiro, W. W. Thatcher, and J. E. P. Santos, *University of Florida, Gainesville.*

## Graduate Student Competition:
## ADSA Production Division Graduate Student Poster Competition - PhD Division
## Chair: Adam Lock

M166 **Effects of using protective cover sheaths at the time of AI on fertility of lactating dairy cows.**
S. Bas*, G. M. Schuenemann, A. Hoet, E. Gordon, D. Sanders, and K. N. Galvao, *Department of Veterinary Preventive Medicine, The Ohio State University, Columbus.*

M167 **Metabolism of ruminally dosed butyrate and lactose in lactating dairy cows.**
K. J. Herrick*[1], A. R. Hippen[1], K. F. Kalscheur[1], D. J. Schingoethe[1], S. C. Moreland[2], and J. E. van Eys[2], [1]*South Dakota State University, Brookings*, [2]*Nutriad Inc., Elgin, IL.*

M168 **Antioxidant activity of calf milk replacers.**
M. A. Soberon*, D. J. R. Cherney, and R. H. Liu, *Cornell University, Ithaca, NY.*

M169 **In situ ruminal degradability of diets, dried distillers grains with solubles and soybean meal under different rumen conditions.**
S. D. Ranathunga*, K. F. Kalscheur, A. R. Hippen, and D. J. Schingoethe, *South Dakota State University, Brookings.*

M170 **Effect of air-flow controlled chambers and cows of contrasting feed efficiency on methane emission.**
C. Arndt*[1], M. A. Wattiaux[1], J. M. Powell[2], and M. J. Aguerre[1], [1]*Department of Dairy Science, University of Wisconsin, Madison*, [2]*USDA-ARS U.S. Dairy Forage Research Center, Madison, WI.*

M171 **Comparison of two resynchronization protocols initiated at different intervals after insemination on fertility in lactating dairy cows.**
R. G. S. Bruno*[1,2], J. G. N. Moraes[3], J. A. Hernández-Rivera[1,2], K. J. Lager[1,2], P. R. B. Silva[3], A. L. A. Scanavez[3], L. G. D. Mendonça[3], R. C. Chebel[3], and T. R. Bilby[1], [1]*Texas AgriLife Research and Extension Service, Texas A&M System, College Station*, [2]*Department of Agricultural Science, West Texas A&M University, Canyon*, [3]*Department of Veterinary Population, University of Minnesota, St. Paul.*

M172 **Antimicrobial usage on large herds in Wisconsin.**
L. Oliveira* and P. L. Ruegg, *University of Wisconsin, Madison.*

M173 **Milk production, milk composition and first service pregnancy rate in lactating Holstein cows fed a lipid-encapsulated supplement containing *trans*-10, *cis*-12 and *cis*-9, *trans*-11 conjugated linoleic acids.**
C. L. Bailey*, R. G. Morell, B. L. Fisher, B. F. Jenny, G. T. Gentry, K. R. Bondioli, R. A. Godke, and C. F. Hutchison, *Louisiana State University Agricultural Center, Baton Rouge.*

M174 **A hoof biopsy procedure of front and rear claws for gene expression analysis and its relation to locomotion in dairy cows.**
J. S. Osorio*, E. F. Garrett, B. C. Fraser, D. E. Graugnard, J. K. Drackley, and J. J. Loor, *University of Illinois, Urbana.*

M175 **Variation in failure of passive transfer and growth rates of calves on 38 farms in British Columbia.**
G. B. Bond, M. A. G. von Keyserlingk, G. Zobel*, and D. M. Weary, *Animal Welfare Program, University of British Columbia, Vancouver, BC, Canada.*

M176 **Comparisons of udder health and milk quality in North Carolina organic and conventional pasture-based dairy herds.**
K. Mullen*, L. Gentry, R. Lyman, S. Washburn, and K. Anderson, *North Carolina State University, Raleigh.*

M177 **Effect of conjugated linoleic acid supplementation on in vitro bovine embryo production and cryopreservation.**
V. A. Absalón Medina*[1], S. J. Bedford Guaus[1], R. O. Gilbert[1], L. C. Siqueira[2], G. Esposito[3], A. Schneider[4], S. H. Cheong[1], and W. R. Butler[1], [1]*Cornell University, Ithaca, NY*, [2]*Universidade Federal de Santa Maria, Santa Maria, RS, Brasil*, [3]*Università degli Studi di Napoli Federico II, Portici, Napoli, Italia*, [4]*Universidade Federal de Pelotas, Pelotas, RS, Brasil.*

## Growth and Development I

M178 **Net requirements of calcium and phosphorus for gain of Nellore and Nellore x *Bos taurus* crossbreds.**
M. P. Gionbelli*[1], M. I. Marcondes[1,3], S. C. Valadares Filho[1,3], L. F. Prados[1], and M. L. Chizzotti[2], [1]*Universidade Federal de Viçosa, Viçosa, MG, Brazil*, [2]*Universidade Federal de Lavras, Lavras, MG, Brazil*, [3]*Instituto Nacional de Ciência e Tecnologia - Ciência Animal, Brazil.*

M179 **Effects of maternal body condition and breeding season forage type on beef heifer growth.**
J. D. Patterson*[1], M. L. Looper[2], B. C. Williamson[1], and C. F. Rosenkrans[1], [1]*University of Arkansas, Fayetteville*, [2]*USDA/ARS DBSFRC, Booneville, AR.*

M180 **Effects of colostrum intake and pre-weaning nutrient intake on post-weaning feed efficiency and voluntary feed intake.**
F. Soberon* and M. E. Van Amburgh, *Cornell University, Ithaca, NY.*

M181 **Interactions of residual feed intake and other performance parameters of Japanese Black (Wagyu) bulls.**
M. McGee*[1], C. M. Welch[1], J. B. Hall[2], and W. Small[3], [1]*University of Idaho, Moscow*, [2]*University of Idaho Nancy M. Cummings Research, Education, and Extension Center, Carmen*, [3]*AgriBeef Snake River Farms, American Falls, ID.*

M182 **Feeding or passive transfer of Anti-IL-10 peptide antibodies suppresses growth and feed efficiency in chicks.**
J. M. Sand*, J. Abazi, T. Fullmer, and M. E. Cook, *University of Wisconsin-Madison, Madison.*

M183 **Empty body composition of Nellore bulls classified for residual feed intake.**
E. F. M. Bonilha[1], F. L. Araújo[2], S. F. M. Bonilha*[1], and R. H. Branco[1], [1]*Instituto de Zootecnia, Sertãozinho, São Paulo, Brazil*, [2]*Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil.*

M184 **Body and carcass fat of Nellore bulls classified for residual feed intake.**
S. F. M. Bonilha*[1], R. H. Branco[1], K. Zorzi[2], M. E. Z. Mercadante[1], J. N. S. G. Cyrillo[1], and L. A. Figueiredo[1], [1]*Instituto de Zootecnia, Sertãozinho, São Paulo, Brazil*, [2]*Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil.*

M185 **Describing DMI and growth patterns in beef steers during the finishing period.**
N. Vargas Jurado*[1], G. Scaglia[2], W. S. Swecker[1], D. A. Fiske[1], J. P. S. Neel[3], J. P. Fontenot[1], and R. M. Lewis[1], [1]*Virginia Tech, Blacksburg,* [2]*Louisiana State University, Iberia Research Station, Jeanerette,* [3]*USDA-ARS, Beaver, WV.*

M186 **Effects of heat stress on proliferation, protein turnover, and levels of heat shock protein mRNAs in cultured porcine muscle satellite cells.**
E. Kamanga-Sollo, M. Pampusch, M. White, M. Hathaway*, and W. Dayton, *University of Minnesota, St. Paul.*

M187 **Effects of increased protein and energy fed in milk replacer and heat stress on growth parameters of neonatal holstein bull calves.**
A. J. Krenek*[1], G. A. Holub[1], T. A. Tomaszewski[1], and C. C. Stanley[2], [1]*Texas A&M University, College Station*, [2]*Land O Lakes Purina Feed, Amarillo, TX.*

M188 **Indirect methods for estimation BW of crossbreed Holstein-Jersey heifers.**
B. C. Matos*, C. M. M. Bittar, W. R. S. Mattos, and L. F. Silveira, *University Of São Paulo, University of Sao Paulo, USP/ESALQ, Piracicaba, SP, Brazil.*

M189 **Effects of rice or wheat straw as ingredients in a TMR on Holstein heifer growth.**
R. E. Rauch*[1,2], G. A. Nader[2], P. H. Robinson[2], and L. J. Erasmus[1], [1]*University of Pretoria, Pretoria, South Africa*, [2]*University of California, Davis.*

M190 **Effects of pre-weaning nutrient intake in the developing mammary parenchymal tissue and fat pad.**
F. Soberon* and M. E. Van Amburgh, *Cornell University, Ithaca, NY.*

M191 **Effect of diet metabolizable protein:metabolizable energy ratio on growth parameters and mammary gland development of crossbred Holstein-Jersey heifers reared on an accelerated growth program.**
B. C. Matos*, C. M. M. Bittar, W. R. S. Mattos, G. B. Mourao, and L. F. Silveira, *University of Sao Paulo, USP/ESALQ, Piracicaba, SP, Brazil.*

M192 **Milk diet affects glucose transporters in skeletal muscle of neonatal calves.**
U. Schönhusen, C. Rehfeldt, J. Steinhoff-Wagner, and H. M. Hammon*, *Leibniz Institute for Farm Animal Biology (FBN), Dummerstorf, Germany.*



## Lactation Biology 1

M193 **Essential amino acids significantly contribute to the energy status in short-term MAC-T cell cultures.**
V. S. Lyman[1], M. L. Bell[1], W. A. D. Nayananjalie*[1], E. M. England[1], J. A. D. R. N. Appuhamy[2], and M. D. Hanigan[1], [1]*Virginia Polytechnic Institute and State University, Blacksburg*, [2]*University of Guelph, Guelph, ON, Canada.*

M194 **Mammary uptake of fatty acids varying in chain length and unsaturation supplied by intravenous triglyceride infusion.**
J. A. Stamey*, J. K. Suagee, C. Caldari-Torres, and B. A. Corl, *Virginia Tech, Blacksburg.*

M195 **Conjugated linoleic acid-induced milk fat depression in lactating ewes is accompanied by reduced expression of genes involved in mammary lipid synthesis.**
M. Hussein*[1], K. H. Harvatine[2], W. M. P. B. Weerasinghe[3], L. A. Sinclair[3], and D. E. Bauman[1], [1]*Cornell University, Ithaca, NY*, [2]*Pennsylvania State University, University Park*, [3]*Harper Adams University College, Newport, Shropshire, UK.*

M196 **Characterization of a novel bovine mammary epithelial cell line.**
P. Bernier-Dodier*[1,2], G. Tremblay[1], and P. Lacasse[2], [1]*Université de Sherbrooke, Sherbrooke, QC, Canada*, [2]*AAFC-Dairy and Swine Research and Development Centre, Sherbrooke, QC, Canada.*

M197 **Further study on the role of SREBP-1 in lipogenesis in bovine mammary epithelial cells.**
L. Ma* and B. A. Corl, *Virginia Tech, Blacksburg.*

M198 **Capturing circadian mammary gene expression of cows using RNA from milk fat globule.**
J. Crodian*, T. Casey, and K. Plaut, *Purdue University, West Lafayette, IN.*

M199 **Expression of PEPCK isoforms in the mammary gland of dairy goats is regulated by insulin status.**
S. J. Mabjeesh*[1], A. Sahmay[2], N. Argov-Agrman[1], C. Sabastian[1], and B. J. Bequette[3], [1]*The Robert H. Smith Faculty of Agriculture, Food and environment, The Hebrew University of Jerusalem, Rehovot, Israel*, [2]*Institute of Animal Science, The Volcani Center, Bet Dagan, Israel*, [3]*University of Maryland.*

## Nonruminant Nutrition
## DDGS
Sponsor: BASF

M200 **Amino acids and energy utilization in zero tannin faba bean and co-fermented wheat and corn distillers dried grains with solubles (DDGS) fed to growing pigs.**
E. Kiarie*[1], R. K. Kahindi[1], P. Lopez[2], C. Furedi[2], and C. M. Nyachoti[1], [1]*University of Manitoba, Winnipeg, MB, Canada*, [2]*The Puratone Corporation, Niverville, MB, Canada.*

M201 **Glucanase, xylanase and microbial inoculants improve feeding value of DDGS for liquid-fed finishing pigs.**
C. L. Zhu*, M. Rudar, D. Wey, and C. F. M. de Lange, *University of Guelph, Guelph, ON, Canada.*

M202 **Determination of dry matter content in feces of pigs fed three different sources of DDGS.**
K. Kock* and C. Hostetler, *South Dakota State University, Brookings.*

## Nonruminant Nutrition
## Enzymes
Sponsor: BASF

M203 **Effects of dietary enzymed fermented wheat on growth performance, nutrient digestibility, blood characteristics, and fecal noxious gas emission in growing pigs.**
X. Y. Guo*, H. Y. Baek, and I. H. Kim, *Dankook University, Cheonan, Choognam, South Korea.*

M204 **The effect of enzyme fermented corn on growth performance, nutrient digestibility, blood profile, and fecal gas emission in growing pigs.**
P. Y. Zhao*, S. C. Kim, and I. H. Kim, *Dankook University, Cheonan, Choongnam, South Korea.*

M205 **Effects of enzyme fermented oat on growth performance, digestibility, blood profile, and fecal gas emission of growing pigs.**
S. Zhang*, J. M. Lee, and I. H. Kim, *Dankook University, Cheonan, Choongnam, South Korea.*

M206 **Effects of emulsifier and multi-enzyme on growth performance, organ weight, meat quality and blood characteristics in broilers.**
S. C. Kim*, H. J. Kim, and I. H. Kim, *Dankook University, Cheonan, Choongnam, South Korea.*

M207 **Hydrolysis of native starches by gastric enzymes in vitro: 1. Relationship between starch hydrolysis and organic matter digestibility.**
O. O. Adeleye*[1], A. D. Ologhobo[1], P. A. Iji[2], and O. A. Adebiyi[1], [1]*Department of Animal Science, University of Ibadan, Department of Animal Science, University of Ibadan Ibadan, Oyo State, Nigeria*, [2]*School of Environmental and Rural Sciences, University of New England, School of Environmental and Rural Sciences, University of New England Armidale, NSW, Australia.*

M208 **Performance of 1- to 42-day-old broilers fed diets containing multienzyme complex and lipid sources.**
G. do Valle Polycarpo*[1], A. C. Pezzato[1], V. C. da Cruz[2], J. R. Sartori[1], V. B. Fascina[1], F. B. de Carvalho[1], F. Vercese[1], N. C. Alexandre[1], L. P. Centenaro[1], I. M. G. P. de Souza[1], P. G. Castelo[1], E. M. Muro[1], W. T. da Silva[1], V. C. Pelícia[1], P. C. de Araujo[1], [1]*São Paulo State University, Botucatu Campus, Botucatu, São Paulo, Brazil*, [2]*São Paulo State University, Dracena Campus, Dracena, São Paulo, Brazil.*

M209 **Carcass and cuts yield, and abdominal fat level in 42-day-old broilers subjected to diets containing multienzyme complex and lipid sources.**
A. C. Pezzato*[1], G. do Valle Polycarpo[1], V. C. da Cruz[2], J. R. Sartori[1], V. B. Fascina[1], F. Vercese[1], N. C. Alexandre[1], L. P. Centenaro[1], I. M. G. P. de Souza[1], P. G. Castelo[1], E. M. Muro[1], W. T. da Silva[1], A. C. Stradiotti[1], M. K. Maruno[1], F. Barros de Carvalho[1], [1]*São Paulo State University, Botucatu Campus, Botucatu, São Paulo, Brazil*, [2]*São Paulo State University, Dracena Campus, Dracena, São Paulo, Brazil.*

M210 **Effect of dietary phytase on performance, digestive enzymes and intestinal morphology in weaned pigs.**
M. C. Shields*[1], E. van Heugten[1], C. H. Stahl[1], A. J. Moeser[2], P. W. Plumstead[3], and M. H. Borgmann[1], [1]*Department of Animal Science, North Carolina State University, Raleigh*, [2]*Department of Clinical Sciences and Molecular, Biomedical Sciences, College of Veterinary Medicine, North Carolina State University, Raleigh*, [3]*Danisco Animal Nutrition, Marlborough, Wiltshire, UK.*

M211 **Effect of carbohydrolase complex and phytase combined in corn-soybean meal diet for pigs.**
M. Ceccantini*[1], B. V. Freitas[2], M. M. Mota[3], N. B. Petroli[3], C. C. Silva[3], C. S. S. Araujo[2], and L. F. Araujo[3], [1]*Adisseo, Sao Paulo, SP, Brazil*, [2]*FMVZ/USP, Pirassununga, SP, Brazil*, [3]*FZEA/USP, Pirassununga, SP, Brazil.*

## Nonruminant Nutrition
## Feed Additives

M212 **Effects of β-glucan and probiotics (*Bacillus subtilis* and Kefir) supplementation on growth performance, blood profile, relative organ weight and meat quality in broiler chickens.**
J. H. Jang*, L. Yan, and I. H. Kim, *Dankook University, Cheonan, Choongnam, South Korea.*

M213 **Effects of caprylic acid and *Yucca schidigera* extract supplementation on growth performance, nutrient digestibility, fecal microflora and blood profiles in growing pigs.**
B. U. Yang*, S. Zhang, and I. H. Kim, *Dankook University, Cheonan, Choongnam, South Korea.*

M214 **Effect of fructooligosaccharide and levan on growth performance, nutrient digestibility, blood characteristic and diarrhea in growing pigs.**
L. Yan*, X. Y. Guo, and I. H. Kim, *Dankook University, Cheonan, Choongnam, South Korea.*

M215 **Effects of dietary sodium stearoyl-2-lactylate supplementation on growth performance, nutrient digestibility, and blood profiles in growing pigs.**
B. U. Yang*, H. Y. Baek, and I. H. Kim, *Dankook University, Cheonan, Choongnam, South Korea.*

M216 **Effect of dietary zootechnical feed additive supplementation on sow and litter performance.**
D. Solà-Oriol*[1], P. S. Agostini[1], S. L. Vinokurovas[1], B. T. Lund[2], and J. Gasa[1], [1]*Universitat Autònoma de Barcelona, Bellaterra, Spain*, [2]*Chr. Hansen, Hørsholm, Denmark.*

M217 **Effect of a wheat dextrin and a fructoologosaccharide as prebiotics on nursery pig performance.**
V. G. Perez*, H. Yang, T. R. Radke, and D. P. Holzgraefe, *ADM Alliance Nutrition Inc., Quincy, IL.*

M218 **Effects of ractopamine feeding duration on performance and carcass traits of finishing pigs.**
V. V. Almeida*[1], A. J. C. Nuñez[2], C. Andrade[1], J. C. C. Balieiro[2], and V. S. Miyada[1], [1]*USP/ESALQ, Piracicaba, SP, Brazil*, [2]*USP/FZEA, Pirassununga, SP, Brazil.*

M219 **Effect of zilpaterol hydrochloride supplementation on growth performance in male Japanese Quails.**
M. Mohammadi*, A. Towhidi, H. Moravej, and A. Z. Shahneh, *Department of Animal Science, university of Tehran, Karj, Karaj, Alborz, Iran.*

M220 **Safety and efficacy of *Moringa oleifera* powder for growing poultry.**
J. O. Ashong* and D. L. Brown, *Cornell University, Ithaca, NY.*

M221 **Singular consumption of either *Lactobacillus plantarum* or inulin reduces manure odor from finishing pigs; however, this is negated when offered in combination.**
C. J. O'Shea, T. Sweeney, B. Bahar, M. Ryan, and J. V. O'Doherty*, *University College Dublin, Dublin, Ireland.*

M222 **Standardized total tract digestibility of P in Dried Fermentation Biomass, Peptone 50, and P.E.P. 2 Plus fed to weanling pigs.**
J. K. Mathai*[1], R. C. Sulabo[1], J. L. Usry[2], B. W. Ratliff[3], D. M. McKilligan[3], and H. H. Stein[1], [1]*University of Illinois, Urbana*, [2]*Ajinomoto Heartland, LLC, Chicago, IL*, [3]*TechMix, LLC, Stewart, MN.*

M223 **Digestibility of green banana flour (*Musa cavendishi*) in roosters.**
E. Toledo*[1], F. Martínez–Bustos[2], and A. G. Borbolla[1], [1]*Department of Swine Medicine and Production, School of Veterinary Medicine, Universidad Nacional Autónoma de México, Mexico City, Mexico*, [2]*CINVESTAV, IPN, Unidad Queretarétaro, Querétaro, Qro. Mexico.*

M224 **Effects of increasing levels of dietary turmeric on growth performance and immune response of nursery pigs.**
M. R. Bible*[1], S. D. Carter[1], H. J. Kim[1], T. M. Walraven[1], C. Houchen[2], S. Anant[3], and R. Ramanujum[4,5], [1]*Oklahoma State University, Stillwater*, [2]*University of Oklahoma Health Sciences Center, Oklahoma City*, [3]*University of Kansas Medical Center, Kansas City, KS*, [4]*Swaath Inc., Oklahoma City, OK*, [5]*ADNA Inc., Dublin, OH.*

M225 **Evaluation the effect of inositol monophosphate supplementation on growth performance, blood profiles and nutrient digestibility in weaning pigs.**
H. Y. Baek*, H. W. Cho, and I. H Kim, *Dankook University, Cheonan, Choongnam, South Korea.*

M226 **Effects of probiotics and probiotics mix on growth performance and blood characteristics.**
J. M. Lee*, S. M. Hong, and I. H. Kim, *Dankook University, Cheonan, Choongnam, South Korea.*



## Physiology and Endocrinology I

M227 **ACTH-induced stress impairs the expression of genes involved in steroidogenesis and angiogenesis in dairy cow preovulatory follicles.**
D. Biran[1], R. Braw-Tal[2], Y. Lavon[1], and Z. Roth*[1], [1]*Department of Animal Sciences, The Robert H. Smith Faculty of Agriculture, Food and Environment, The Hebrew University, Rehovot, Israel*, [2]*Institute of Animal Science, Agricultural Research Organization, Bet Dagan, Israel.*

M228 **Comparison of different staining methods on sperm from Holstein bulls.**
A. Ata, M. E. Inanc, O. Kankavi, O. Yildiz Gulay*, and M. S. Gulay, *Mehmet Akif Ersoy University, Faculty of Veterinery Medicine, Burdur, Turkiye.*

M229 **Insulin sensitivity correlates with parameters of hepatic lipid metabolism, and is lower in older dairy cows.**
H. A. van Dorland[1], M. Graber[1,2], S. Kohler[2], T. Kaufmann[3], and R. M. Bruckmaier*[1], [1]*Veterinary Physiology, Vetsuisse Faculty, University of Bern, Bern, Bern, Switzerland*, [2]*Department of Animal Science, Swiss College of Agriculture, Zollikofen, Bern, Switzerland*, [3]*Clinic for Ruminants, Vetsuisse Faculty, University of Bern, Bern, Bern, Switzerland.*

M230 **Intrauterine position and adjacent fetal sex status influences fetal and placental growth but not embryonic viability under crowded uterine conditions in pigs.**
B. A. Freking* and C. A. Lents, *USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE.*

M231 **The effect of teasing rams with a ewe stimulus prior to semen collection.**
A. G. Fahey*[1], P. Duffy[1], and S. Fair[2], [1]*University College Dublin, Belfield, Dublin, Ireland*, [2]*University of Limerick, Limerick, Ireland.*

M232 **Effects of supplemental progesterone and timing of initiation of resynchronization on fertility in lactating dairy cows.**
T. R. Bilby*[1], R. G. S. Bruno[1], K. J. Lager[1], R. C. Chebel[2], J. G. N. Moraes[2], P. M. Fricke[3], G. Lopes[3], J. O. Giordano[3], J. E. P. Santos[4], F. S. Lima[4], J. S. Stevenson[5], and S. L. Pulley[5], [1]*Texas AgriLife Research and Extension, Texas A&M System, Stephenville*, [2]*Department of Veterinary Population Medicine, University of Minnesota, St. Paul*, [3]*Department of Dairy Science, University of Wisconsin, Madison*, [4]*Department of Animal Sciences, University of Florida, Gainesville*, [5]*Department of Animal Sciences and Industry, Kansas State University, Manhattan.*

M233 **Effect of circulating progesterone (P4) and two different GnRH doses on LH secretion in lactating dairy cows.**
J. O. Giordano*, P. M. Fricke, J. N. Guenther, G. Lopes, M. M. Herlihy, and M. C. Wiltbank, *Department of Dairy Science, University of Wisconsin-Madison, Madison.*

M234 **Assessment of an accelerometer system (Heatime) for detection of estrus and timing of insemination in lactating dairy cows.**
A. Valenza, G. Lopes*, J. O. Giordano, J. N. Guenther, and P. M. Fricke, *Department of Dairy Science University of Wisconsin-Madison, Madison.*

M235 **Presynchronization with double-Ovsynch improves conception at first postpartum AI in primiparous lactating dairy cows.**
M. M. Herlihy*[2,3], J. O. Giordano[1], A. H. Souza[1], A. Keskin[1], A. B. Nascimento[1], J. N. Guenther[1], M. A. Crowe[3], S. T. Butler[2], and M. C. Wiltbank[1], [1]*Department of Dairy Science, University of Wisconsin-Madison, Madison*, [2]*Animal and Bioscience Research Department, Teagasc, Moorepark, Cork, Ireland*, [3]*School of Agriculture, Food Science and Veterinary Medicine, University College Dublin, Ireland.*

M236 **Effect of GnRH and double AI (24h apart) on fertility of high-producing cows detected in estrus by professional tail chalk service.**
D. Cunningham[1], A. Fisher[1], A. H. Souza*[2,1], H. Rivera[1], A. Skidmore[3], and M. C. Wiltbank[2], [1]*Accelerated Genetics, Baraboo, WI*, [2]*Department of Dairy Science, University of Wisconsin, Madison*, [3]*Intervet/Schering-Plough Animal Health, Summit, NJ.*

M237 **Paraoxonase expression and activity in bovine granulosa cells and follicular fluid.**
A. Schneider[1,2], V. A. Absalon-Medina[2], G. Esposito[3,2], M. N. Corrêa[1], and W. R. Butler*[2], [1]*Universidade Federal de Pelotas, Pelotas, RS, Brazil*, [2]*Cornell University, Ithaca, NY*, [3]*University of Naples Federico II, Naples, Italy.*

M238 **Development of a lentiviral RNA interference (RNAi) system for interleukin–1 beta (IL1B) expressed in elongating porcine embryos.**
D. J. Mathew*, E. M. Newsom, R. D. Geisert, and M. C. Lucy, *University of Missouri, Columbia.*

M239 **Differential gene expression in liver of lactating (L) and non-lactating (NL) primiparous Holstein cows during early pregnancy.**
J. Green*, E. Newsom, C. Okamura, and M. Lucy, *University of Missouri, Division of Animal Science, Columbia.*

M240 **Immunohistochemical evidence for the presence of G protein-coupled receptor 43 in cattle rumen epithelium but not in the pancreatic islets of Langerhans.**
A. Wang[1], R. M. Akers[2], and H. Jiang*[1], [1]*Department of Animal and Poultry Sciences, Virginia Tech, Blacksburg*, [2]*Department of Dairy Science, Virginia Tech, Blacksburg.*

M241 **Effects of protein supplementation during heifer development on reproductive characteristics and success in beef heifers.**
A. S. Summers*[1], R. A. Cushman[2], S. P. Weber[1], M. L. Spangler[1], and A. S. Cupp[1], [1]*University of Nebraska-Lincoln, Lincoln*, [2]*USDA-ARS Roman L. Hruska U.S. Meat Animal Research Center, Clay Center, NE.*

M242 **Effect of parity on thermal response and energy balance (EB) of sows housed at 24-27°C during lactation.**
W. R. Martin*, T. J. Safranski, D. E. Spiers, and M. C. Lucy, *University of Missouri, Columbia.*

M243 **Effects of progesterone concentrations at the end of a fixed-time AI protocol and time of administration of PGF2α in fixed-time AI and ET protocols in lactating dairy cows.**
M. Pereira[1], A. Rodrigues[1], T. Martins[1], F. Aono[1], P. Borges[2], T. Guzella[1], C. Sanchez[1], M. Veras[2], F. Aragon[2], and J. L. M. Vasconcelos*[1], [1]*FMVZ-UNESP, Botucatu, SP, Brazil*, [2]*Pioneiros Veterinary Clinic, Carambei, PR, Brazil.*

M244 **Period of dominance of the ovulatory follicle influences conception rates in Nelore pubertal heifers detected in estrus.**
T. Martins[1], A. Rodrigues[1], F. Aono[1], M. Pereira[1], R. Peres[2], H. Graff[2], E. Carvalho[2], and J. L.M. Vasconcelos*[1], [1]*FMVZ-UNESP, Botucatu, SP, Brazil*, [2]*Agropecuaria Fazenda Brasil, Nova Xavantina, MT, Brazil.*

M245 **Impacts of L-arginine on ovarian function and reproductive performance at the time of maternal recognition of pregnancy in ewes.**
C. Schauer*[1], C. Saevre[1,2], A. Meyer[2], M. VanEmon[1,2], J. Kirsch[2], M. Kapphahn[2], J. Luther[3], J. Caton[2], and D. Redmer[2], [1]*Hettinger Research Extension Center, North Dakota State University, Hettinger*, [2]*Department of Animal Sciences, North Dakota State University, Fargo*, [3]*Department of Animal and Food Science, University of Wisconsin-River Falls, River Falls.*

M246 **Failure of differences in prepubertal dietary intake to affect ovarian development in pubertal beef heifers.**
S. E. Echternkamp*, D. R. Eborn, and R. A. Cushman, *USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE.*

M247 **Follicular fluid composition of the preovulatory follicle in beef cows grazing different forage allowances of native pastures.**
M. Carriquiry*[1], P. Soca[1], A. C. Espasandín[1], A. Meikle[2], and C. Viñoles[3], [1]*School of Agronomy, UdelaR, Montevideo, Uruguay*, [2]*School of Veterinary Sciences, UdelaR, Montevideo, Uruguay*, [3]*National Research Institute for Agriculture, Tacuarembó, Uruguay.*

M248 **Longitudinal assessment of the somatotropic axis in free-ranging, juvenile Steller sea lions.**
K. D. Hebert*[1], J. P. Richmond[1,2], L. D. Rea[3], and S. A. Zinn[1], [1]*University of Connecticut, Storrs*, [2]*University of North Florida, Jacksonville*, [3]*Alaska Department of Fish and Game, Fairbanks, AK.*

M249 **Analysis of bovine liver transcriptomics data due to level of prepartal dietary energy using two bioinformatics approaches.**
K. Shahzad*, M. Bionaz, and J. J. Loor, *University of Illinois, Urbana.*

M250 **Follicle-stimulating hormone induces the canonical WNT/beta-catenin pathway in bovine granulosa cells.**
B. I. Castañon*, A. D. Stapp, L. J. Spicer, C. A. Gifford, and J. A. Hernandez Gifford, *Oklahoma State University, Stillwater.*

M251 **Effects of organic versus inorganic trace mineral supplementation on bull semen quality before and after freezing.**
M. P. Rowe*, C. L. Williams, R. J. Page, T. D. Lester, C. F. Rosenkrans, E. B. Kegley, J. G. Powell, and R. W. Rorie, *University of Arkansas, Fayetteville.*

M252 **Exposure of beef females to the biostimulatory effects of bulls prior to AI.**
K. E. Pfeiffer*[1], J. A. Binversie[1], J. D. Rhinehart[2], and J. E. Larson[1], [1]*Mississippi State University, Mississippi State*, [2]*University of Tennessee, Nashville.*

M253 **Effect of selenium and a glucogenic precursor on fertility in Creole Rodeo cows synchronized with CIDR, PGF2α, eCG, and GnRH.**
C. Sanchez-Arcineiga*, J. A. Ramirez-Godinez, D. Dominguez-Diaz, A. Flores-Mariñelarena, E. Santellano-Estrada, J. A. Grado-Ahuir, G. Corral-Flores, and L. A. Borunda-Pacot, *Universidad Autonoma de Chihuahua, Chihuahua, Chihuahua, Mexico.*

M254 **Effects of heat stress on skeletal muscle insulin responsiveness in lactating Holstein cows.**
L. C. Cole[1], M. V. Skrzypek[1], S. R. Sanders[1], M. R. Waldron[3], L. H. Baumgard[2], and R. P. Rhoads*[1], [1]*University of Arizona, Tucson*, [2]*Iowa State University, Ames*, [3]*University of Missouri, Columbia.*

M255 **Withdrawn**

M256 **Effects of heat-stress and fresh or frozen semen on reproductive efficiency in dairy cows treated with rbST throughout lactation.**
E. Sepúlveda*[1], O. Ange-García[1], CA Meza-Herrera[2], FG Veliz[1], and M. Mellado[1], [1]*Universidad Autonoma Agraria Antonio Narro, Torreón, Coahuila, México*, [2]*Universidad Autonoma Chapingo, Bermejillo, Durango, México.*

M257 **Expression patterns of eNOS in 13 different tissues shows a new isoform in bovine brain stem.**
M. De Donato*[1], M. A. Adefenwa[1,2], and I. G. Imumorin[1], [1]*Dept of Animal Science, Cornell University, Ithaca, NY.*, [2]*Dept of Cell Biology and Genetics, University of Lagos, Lagos, Nigeria.*

M258 **Analysis of bovine adipose transcriptomics data during the transition from pregnancy to early lactation using two bioinformatics approaches.**
K. Shahzad*[1], J. Sumner-Thomson[2], J. P. McNamara[2], and J. J. Loor[1], [1]*University of Illinois, Urbana*, [2]*Washington State University, Pullman.*

M259 **Reproduction of dairy cows receiving 1 vs. 3 timed AI (TAI) when not observed for estrus and subjected to natural service (NS).**
F. S. Lima*[1], R. S. Bisinotto[1], E. S. Ribeiro[1], H. Ayres[1], L. F. Greco[1], C. A. Risco[2], W. W. Thatcher[1], and J. E. P. Santos[1], [1]*Animal Sciences Department, University of Florida, Gainesville*, [2]*Large Animal Clinical Sciences, University of Florida, Gainesville.*

M260 **Effect of intravaginal progesterone insert on GnRH-induced GnRH-induced LH release, follicle growth, and plasma progesterone, estradiol, and inhibin concentrations.**
L. G. D. Mendonça*[1], M. Amstalden[2], and R. C. Chebel[1], [1]*Department of Veterinary Population Medicine, University of Minnesota, St. Paul*, [2]*Department of Animal Science, Texas A&M, College Station.*

M261 **Environmental effects on semen quality of beef bulls used for artificial insemination.**
D. O. Stepp*, K. J. Stutts, M. M. Beverly, and S. F. Kelley, *Sam Houston State University, Huntsville, TX.*

M262 **Plasma progesterone concentration and follicle dynamics of lactating Jersey cows treated with 1 or 2 intra-vaginal progesterone insert.**
J. G. N. Moraes*, P. R. B. Silva, N. Bortoletto, A. L. A. Scanavez, and R. C. Chebel, *Department of Veterinary Population Medicine, University of Minnesota, St. Paul.*

## Production, Management and the Environment
## Dairy Production

M263 **Effect of a rumen-protected niacin product on lactation performance by dairy cows during summer in Wisconsin.**
K. Yuan*, R. Shaver, M. Espineira, and S. Bertics, *Department of Dairy Science, University of Wisconsin-Madison, Madison.*

M264 **Body condition score at calving affected milk yield and blood metabolites in Holstein dairy cows.**
Y. Moharrami[1], G. R. Ghorbani[1], H. R. Rahmani[1], S. M. Nasrollahi[1], and C. Li*[2], [1]*Department of Animal Sciences, Isfahan University of Technology, Isfahan, Iran*, [2]*Agriculture and Agri-Food Canada, Research Centre, Lethbridge, AB, Canada.*

M265 **Body condition score at calving affected reproductive performance and metabolic disorders in Holstein dairy cows.**
Y. Moharami[1], G. Ghorbani[1], H. Rahmani[1], S. M. Nasrollahi[1], and C. Li*[2], [1]*Department of Animal Sciences, Isfahan University of Technology, Isfahan, Iran*, [2]*Agriculture and Agri-Food Canada, Research Centre, Lethbridge, AB, Canada.*

M266 **Effects of bovine somatotropin (rbST) at 250 mg or 500 mg administered to crossbred cows (*Bos taurus* x *Bos indicus*).**
B. G. Campos*[1,2], S. G. Coelho[1], A. M. Q. Lana[1], E. Rabelo[3], E. A. Alvarenga[1], and B. F. Silper[1], [1]*Escola de Veterinária da Universidade Federal de Minas Gerais, Belo Horizonte, Minas Gerais, Brasil*, [2]*Fundação de Amparo à Pesquisa do Estado de Minas Gerais, Belo Horizonte, Minas Gerais, Brasil*, [3]*Recursos Humanos no Agronegócio, Belo Horizonte, Minas Gerais, Brasil.*

M267 **Effect of pen change on daily milk yield of dairy cows.**
A. Zwald* and R. D. Shaver, *University of Wisconsin-Madison, Madison.*

M268 **Milking management of crossbred Holstein x Gyr (F1) cows without calf on production performance.**
L. H. Oliveira[1], J. M. S. Filho[1], F. L. B. Toral[1], and R. B. Reis*[1,2], [1]*Federal University of Minas Gerais (UFMG), Belo Horizonte, Minas Gerais, Brazil*, [2]*FAPEMIG, Belo Horizonte, Minas Gerais, Brazil.*

M269 **Risk management practices by Idaho dairy producers.**
R. J. Norell*[1], C. W. Gray[2], and M. Chahine[2], [1]*University of Idaho, Idaho Falls*, [2]*University of Idaho, Twin Falls.*

M270 **High diurnal fluctuations of ambient temperature do not improve the adaptation of dairy cows to heat stress.**
H. Khelil[1,2], P. Faverdin[1,2], and A. Boudon*[1,2], [1]*INRA, Saint-Gilles, France*, [2]*Agrocampus Ouest, Rennes, France.*

M271 **Assessment of long-term nitrogen runoff reduction from dairy pastures.**
R. White* and J. L. Capper, *Washington State University, Pullman.*

M272 **Milk, fat, and protein production in relationship to herd linear somatic cell score in Minnesota.**
R. F. Leuer* and J. K. Reneau, *University of Minnesota, St. Paul.*

M273 **Effects of water total dissolved solids on milk-fed calves weight gain, feed intake and weaning age in winter.**
R. Ramezankhani[1], A. Alizadeh[1], A. Nasserian[2], M. Chehrazi[3], and B. Saremi*[4], [1]*Department of Animal Science, Islamic Azad University, Saveh Branch, Saveh, Iran*, [2]*Department of Animal Science (Excellent Center of Animal Nutrition), Faculty of Agriculture, Ferdowsi University of Mashhad, Mashhad, Iran*, [3]*Epidemiology and Reproductive Health Department, Royan Institute for Reproductive Biomedicine, ACECR, Tehran, Iran*, [4]*Institute of Animal Science, Physiology and Hygiene unit, University of Bonn, Bonn, Germany.*

M274 **Occurrence of milk unstable protein in dairy farms from southeastern region of Brazil.**
L. C. Roma Junior*[1], A. C. O. Rodrigues[2], T. G. R. Amaral[2], F. Cardoso[2,3], and P. F. Machado[2], [1]*APTA Centro Leste, Ribeirao Preto, Sao Paulo, Brazil*, [2]*Clinica do Leite/ESALQ/USP, Piracicaba, Sao Paulo, Brazil*, [3]*Department of Animal Science, University of Illinois, Urbana.*

M275 **Alternative cooling of dairy cows by wetting the udder.**
J. A. Binversie*[1], J. D. Davis[1], K. G. Gebremedhin[2], C. N. Lee[3], and J. E. Larson[1], [1]*Mississippi State University, Mississippi State*, [2]*Cornell University, Ithaca, NY*, [3]*University of Hawaii, Honolulu.*

M276 **Effect of essential oils on production and reproduction in early lactating cows during heat exposure.**
U. Serbester[1], M. Çmar[1], A. Ceyhan[1], H. Erdem[2], M. Görgülü[3], H. R. Kutlu[3], L. Baykal Çelik[3], Ö. Yücelt[4], P. W. Cardozo*[5], and M. Blanch[5], [1]*Bor Vocational School, University of Nigde, Turkiye*, [2]*Department of Obstetrics and Gynecology, Faculty of Veterinary Medicine, University of Selcuk, Turkiye*, [3]*Department of Animal Science, Faculty of Agricultural, University of Cukurova, Turkiye*, [4]*Ekol Company, Turkiye*, [5]*Novus International Inc., St. Charles, MO.*

M277 **The relationship between milk urea nitrogen with milk yield and protein percentage categories for Iranian Holstein cows.**
F. Fatehi*[1], M. Honarvar[2], M. Dehghan-Banadaky[1], A. Zali[1], and A. Young[3], [1]*1Department of Animal Science, Campus of Agriculture and Natural Resource, University of Tehran, Karaj, Iran*, [2]*Islamic Azad University, Shahriar_Shahr_e_Qods Branch, Shahriar, Iran*, [3]*Department of Animal, Dairy, and Veterinary Sciences, Utah State, Logan.*

M278 **Stage of lactation is associated with differences in the metabolic profiles and innate immunity in dairy cows transitioning to an organic management system.**
J. F. Odhiambo*, Q. Zebeli, S. Iqbal, D. A. Mansmann, U. Farooq, S. Sharma, S. M. Dunn, and B. N. Ametaj, *University of Alberta, Edmonton, AB, Canada.*

M279 **Delayed effect of heat stress on dry matter intake and milk yield in dairy cows.**
A. S. Atzori* and A. Cannas, *Dipartimento di Scienze Zootecniche, Università di Sassari, Sassari 07100, Italy.*

M280 **Effect of feed-line soaking and Niashure (NI) on heat–stressed lactating Holsteins housed in an evaporative tunnel ventilated barn in Thailand.**
S. Rungruang*, J. Collier, and R. Collier, *University of Arizona, Tucson.*

M281 **Economic assessment of postpartum milking frequencies on dairy farms.**
F. Soberon*, D. M. Galton, and T. R. Overton, *Cornell University, Ithaca, NY.*

M282 **Milk fat and protein:fat ratio in California dairies.**
N. Silva-del-Río*[1], A. Lago[2], B. Verboort[3], and H. Selvaraj[3], [1]*University of California Cooperative Extension, Tulare*, [2]*APC Inc., Ankeny, IA*, [3]*AgriTech Analytics, Visalia, CA.*

M283 **Performance of post-weaned Holstein heifers fed a grain mix with free choice hay or a total mixed ration (TMR) containing sweet corn cannery waste, hay and dried distillers grains.**
D. Schimek*[1], D. Ziegler[2], B. Ziegler[1], H. Chester-Jones[2], M. Raeth-Knight[3], and G. Golombeski[3], [1]*Hubbard Feeds Inc., Mankato, MN*, [2]*University of Minnesota Southern Research and Outreach Center, Waseca*, [3]*University of Minnesota, St. Paul.*

M284 **Effect of feeding duration on growth of group fed dairy calves during transition to an organic production system.**
B. J. Heins*, D. G. Johnson, and E. A. Bjorklund, *University of Minnesota, St. Paul.*

M285 **Pre- and post-weaning performance and health of dairy heifer calves fed calf starters and grain mixes with glycerol as a replacement for corn.**
D. Ziegler*[1], H. Chester-Jones[1], A. Doering[2], D. Timmerman[2], M. Raeth-Knight[3], and G. Golombeski[3], [1]*University of Minnesota Southern Research and Outreach Center, Waseca*, [2]*Agricultural Utilization Research Institute, Waseca, MN*, [3]*Unversity of Minnesota, St. Paul.*

M286 **Effect of lactation number, year and season of initiation of lactation on milk yield of rbST-treated cows hormonally induced into lactation.**
M. Mellado*[1], E. Antonio-Chirino[2], C. Meza-Herrera[3], F. G. Veliz[2], and J. R. Arevalo[4], [1]*Autonomous Agrarian University Antonio Narro, Department of Animal Nutrition, Saltillo, México*, [2]*Autonomous Agrarian University Antonio Narro, Faculty of Veterinary Medicine, Torreon, Mexico*, [3]*Universidad Autónoma Chapingo, Unidad Regional Universitaria de Zonas Áridas, Bermejillo, México*, [4]*University of La Laguna, Department of Parasitology, Ecology and Genetics, La Laguna, Spain.*

## Ruminant Nutrition
## Beef Cattle



M287 **Impact of corn processing method and soy glycerin on fecal shedding from cattle inoculated with *Escherichia coli* O157:H7.**
D. Paulus*, R. Fink, F. Diez-Gonzalez, J. Jaderborg, G. Crawford, and A. DiCostanzo, *University of Minnesota, St. Paul.*

M288 **Different levels of urea in concentrate supplementation of grazing cattle during the transition period of dry to rainy seasons under tropical conditions.**
A. G. Silva[1], H. J. Fernandes*[2], L. O. Tedeschi[3], M. F. Paulino[1], S. A. Lopes[1], and A. A. Rocha[1], [1]*Federal University of Viçosa, Viçosa, MG, Brazil*, [2]*State University of Mato Grosso do Sul, Aquidauana, MS, Brazil*, [3]*Texas A&M University, College Station.*

M289 **Effects of monensin on rumen metabolism of steers fed 60% dried distillers grains diets.**
T. L. Felix*[1], N. A. Pyatt[2], and S. C. Loerch[1], [1]*The Ohio State University, Wooster*, [2]*Elanco Animal Health, Greenfield, IN.*

M290 **Carcass composition of mature cows subjected to a nutritional restriction and two levels of compensatory growth.**
K. O. Barros[1], H. J. Fernandes*[1], G. L. D. Feijó[2], M. A. Rezende[2,3], H. O. A. Santana[1], E. Rosa[1], L. M. Paiva[1], and J. C. Souza[4], [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]*Federal University of Mato Grosso do Sul, Aquidauana, MS. Brazil.*

M291 **Combined use of ionophore and virginiamycin on feeding behavior of Nellore steers fed high concentrate diets.**
A. J. C. Nuñez*[1], V. V. Almeida[2], R. C. Gomes[1], F. T. Mercado[1], I. E. Borges[1], J. Guerra[1], F. Pinese[1], P. R. Leme[1], and J. C. M. Nogueira Filho[1], [1]*USP/FZEA, Pirassununga, SP, Brazil*, [2]*USP/ESALQ, Piracicaba, SP, Brazil.*

M292 **Performance and carcass traits of beef bulls fed crude glycerin in the diet.**
J. P. I. S. Monnerat, P. V. R. Paulino*, S. C. Valadares Filho, I. M. De Oliveira, L. H. P. Da Silva, R. Mezzomo, M. S. Duarte, and S. F. Dos Reis, *Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil.*

M293 **Effect of dietary urea-N levels on growth performance and blood biochemical indexes of growth-finishing cattle.**
L. Jiang*, Y. L. Huo, L. P. Ren, Z. M. Zhou, and Q. X. Meng, *State Key Laboratory of Animal Nutrition, College of Animal Science and Technology, China Agricultural University, Beijing 100193, China.*

M294 **In situ ruminal protein degradability of distiller's grain varying grain source and milling process in beef cattle.**
C. Li*[1,2], W. Z. Yang[1], J. Q. Li[2], Y. L. Li[3], and A. Furtado[1], [1]*Agriculture and Agri-Food Canada, Research Centre, Lethbridge, AB, Canada*, [2]*College of Animal Science, Inner Mongolia Agricultural University, Hohhot, Inner Mongolia, China*, [3]*Feed Research Institute, Chinese Academy of Agricultural Sciences, Beijing, China.*

M295 **Effects of monensin and probiotics on finishing Nellore bulls performance, carcass characteristics, and liver abscesses.**
C. Sitta[1], A. M. Pedroso[2], G. B. Mourão[1], R. Carareto[1], J. R. R. Dórea[1], T. G. Neri[1], D. A. Rodrigues[1], W. F. Angolini[1], and F. A. P. Santos*[1], [1]*University of São Paulo, Piracicaba, SP, Brazil*, [2]*Embrapa Catle Southeast, São Carlos, SP, Brazil.*

M296 **Effect of feeding alfalfa hay and starter concentrate containing two different levels of fiber on feed intake, body weight gain and feed efficiency.**
A. Salary Neya*, M. H. Fathi, H. Naeemipour, and H. Farhangfar, *Birjand University, Birjand, Southern Khorasan, Iran.*

M297 **Effects of supplementation of organic, inorganic or a 50/50 mix of selenium on gene expression profiles in the longissimus dorsi muscle of maturing Angus beef heifers.**
K. M. Brennan*[1], J. A. Boling[2], R. Xiao[1], D. Mallonee[1], R. F. Power[1], and J. C. Matthews[2], [1]*Alltech Center for Animal Nutrigenomics and Applied Animal Nutrition, Nicholasville, KY*, [2]*Department of Animal and Food Sciences, University of Kentucky, Lexington.*

M298 **Effect of zilpaterol hydrochloride supplementation feeding duration on growth performance and carcass characteristics of feedlot heifers.**
J. C. Robles-Estrada*[1], H. Dávila-Ramos[1], A. Estrada-Angulo[1], A. Plascencia[2], F. G. Ríos[1], and R. A. Zinn[3], [1]*Universidad Autónoma de Sinaloa, Culiacán, Sinaloa, México*, [2]*Universidad Autónoma de Baja California, Mexicali, B.C., México*, [3]*University of California-Davis, El Centro.*

M299 **Feeding tannins to reduce nitrogen losses from feedlot cattle fed high protein diets containing distillers grains 1. Animal performance and plasma urea nitrogen.**
K. M. Koenig*, K. A. Beauchemin, and S. M. McGinn, *Agriculture and Agri-Food Canada, Research Centre, Lethbridge, Alberta, Canada.*

M300 **Feeding tannins to reduce nitrogen losses from feedlot cattle fed high protein diets containing distillers grains 2. Nutrient digestibility and route of nitrogen excretion.**
K. M. Koenig*, K. A. Beauchemin, and S. M. McGinn, *Agriculture and Agri-Food Canada, Research Centre, Lethbridge, Alberta, Canada.*

M301 **Potential modulation of the inflammatory response associated with enteropathogenic *Escherichia coli* infections in young calves using Actigen.**
A. Aris[1], E. Rodriguez*[1], A. Tort[1], M. Terré[1], F. Fàbregas[1], K. A. Jacques[3], and A. Bach[1,2], [1]*Ruminant Production, Institut de Recerca i Tecnologia Agroalimentàries (IRTA), Caldes de Montbui, Barcelona, Spain*, [2]*Institució Catalana de Recerca i Estudis Avançats (ICREA), Barcelona, Barcelona, Spain*, [3]*Center for Animal Nutrigenomics and Applied Animal Nutrition, Alltech, Nicholasville, KY.*

M302 **Effects of crude protein levels on the concentrate supplement on gas production from carbohydrate in vitro degradation of Elephant grass.**
M. A. C. Danes*, J. R. R. Dorea, and F. A. P. Santos, *University of Sao Paulo/Esalq, Piracicaba, SP, Brazil.*

M303 **Effect of 2,4-thiazolidinedione in finishing beef cattle growth performance and carcass traits.**
M. Arévalo*, L. González-Dávalos, A. Kunio, J. D. Garza, J. L. Dávalos, O. Mora, and A. Shimada, *Universidad Nacional Autónoma de México, Querétaro, Querétaro, México.*

M304 **Evaluation of rumen protozoa counting under influence of a polyclonal antibody preparation against lactate-producing and proteolytic bacteria in cows fed different energy sources.**
C. Marino*[2], W. Otero[1], C. Barreto[3], V. Pellizari[3], F. Ferreira[1], M. Arrigoni[2], and P. Rodrigues[1], [1]*University of Sao Paulo, FMVZ-USP, Pirassununga, Sao Paulo, Brazil*, [2]*University of Sao Paulo State, FMVZ-UNESP, Botucatu, Sao Paulo, Brazil*, [3]*University of Sao Paulo, ICB II-USP, Sao Paulo, Sao Paulo, Brazil.*

M305 **Inclusion of triticale dried distiller grains with or without oilseeds reduces growth performance but increase alpha-linolenic acid and lowers *trans* 10 C18:1 fatty acid of subcutaneous fat in finishing beef cattle.**
M. L. He*[1,2], T. A. McAllister[1], H. Sultana[1], M. Oba[3], M. E. R. Dugan[4], J. P. Kastelic[1], 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]*University of Alberta, Edmonton, AB, Canada*, [4]*Lacombe Research Centre, Agriculture and Agri-Food Canada, Lacombe, AB, Canada.*

M306 **Substitution of wheat dried distiller grains with solubles for barley silage in a barley based finishing diet increases beef alpha-linolenic acid.**
M. L. He*[1,3], W. Z. Yang[1], T. A. McAllister[1], M. E. R. Dugan[2], K. A. Beauchemin[1], and J. J. McKinnon[3], [1]*Lethbridge Research Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada*, [2]*Lacombe Research Centre, Agriculture and Agri-Food Canada, Lacombe, AB, Canada*, [3]*University of Saskatchewan, Saskatoon, SK, Canada.*

M307 **Effect of early grain feeding on ADG and signaling proteins for protein synthesis in the muscle tissues of beef animals.**
W. A. D. Nayananjalie*, M. Bell, J. M. Scheffler, H. Jiang, M. A. McCann, D. E. Gerrard, J. Escobar, and M. D. Hanigan, *Virginia Polytechnic Institute and State University, Blacksburg.*

M308 **Slow release urea can replace nitrogen from soybean meal in dry-rolled corn-based finishing diets for yearling steers.**
B. P. Holland*[1] and J. S. Jennings[2], [1]*Department of Animal and Range Sciences, South Dakota State University, Brookings*, [2]*Alltech Inc., Brookings, SD.*

M309 **Acetate clearance rates and postabsorptive capacity to utilize acetate by beef steers.**
W. A. D. Nayananjalie*, T. R. Wiles, S. Arriola, M. Aguliar, J. Escobar, M. A. McCann, D. E. Gerrard, M. L. McGilliard, and M. D. Hanigan, *Virginia Polytechnic Institute and State University, Blacksburg.*

M310 **Blood profile of bulls fed different levels of crude glycerin.**
J. R. R. Carvalho, M. M. Ladeira*, M. L. Chizzotti, T. M. Gonçalves, D. M. Oliveira, P. D. Teixeira, A. Nogueira Neto, and P. T. Silva, *Federal University of Lavras, Lavras, MG, Brazil.*

M311 **Effect of specific polyclonal antibody preparation doses on ruminal variables in cattle fed high concentrate diets.**
J. Bastos*[2], C. Marino[1], D. Millen[2], R. Pacheco[2], J. Magalhaes[1], J. Carvalho[3], M. Arrigoni[2], and P. Rodrigues[1], [1]*University of Sao Paulo, FMVZ-USP, Pirassununga, Sao Paulo, Brazil*, [2]*University of Sao Paulo State, FMVZ-UNESP, Botucatu, Sao Paulo, Brazil*, [3]*Nutribeef Consultancy, Botucatu, Sao Paulo, Brazil.*

M312 **Corn grain processing methods and forage levels in finishing diets for Nellore bulls.**
R. Carareto[1], F. A. P. Santos*[1], G. Mourão[1], A. M. Pedroso[2], C. Sitta[1], M. P. Soares[1], M. R. Paula[1], R. S. Marques[1], and M. C. Soares[1], [1]*University of Sao Paulo, Piracicaba, São Paulo, Brazil*, [2]*Embrapa Cattle Southeast, Sao Carlos, São Paulo, Brazil.*

M313 **Effect of sugar and sodium propionate for barley grain in dairy calves starter on weaning and performance.**
H. Beiranvand, M. Khorvash, G. R. Ghorbani*, A. Homayouni, M. Mirzaei, and S. Kargar, *Isfahan University of Technology, Isfahan, Iran.*

M314 **Evaluation of content and epithelial attached bacterial community in the rumen of steers differing in susceptibility to rumen acidosis.**
Y. Chen*, M. Oba, and L. L. Guan, *Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, Alberta, Canada.*

M315 **Supplementing rumen-protected Met and Lys in alfalfa and red clover silage diets fed to lactating dairy cows.**
G. A. Broderick*[1], R. P. Walgenbach[1], M. J. de Veth[2], and N. D. Luchini[3], [1]*U.S. Dairy Forage Research Center, Madison, WI*, [2]*Balchem Corporation, New Hampton, NY*, [3]*Adisseo, Alpharetta, GA.*

M316 **Steam-flaked soybeans in lactating dairy cow diets.**
H. R. Bruns*[1], K. F. Kalscheur[1], D. J. Schingoethe[1], R. Rosenboom[2], G. Doppenberg[2], and A. R. Hippen[1], [1]*South Dakota State University, Brookings*, [2]*Deluxe Feeds, Estherville, IA.*

M317 **Effects of different amounts of dietary protected and unprotected niacin on intake and milk production.**
F. C. Cardoso*[1], J. Garrett[2], and J. K. Drackley[1], [1]*University of Illinois, Urbana*, [2]*QualiTech, Chaska, MN.*

M318 **Effect of malate supplementation to dairy cows on milk production: A meta-analysis.**
J. Alcañiz*[1], J. J. Mallo[1], M. Puyalto[1], M. I. Gracia[2], and J. Sánchez[2], [1]*Norel, S.A., Madrid, Spain*, [2]*Imasde Agroalimentaria, S.L., Madrid, Spain.*

M319 **Independent effects of diet chemical fiber and physical measurements on dairy cows.**
D. Sauvant*[1], W. Z. Yang[2], D. R. Mertens[3], and K. A. Beauchemin[2], [1]*AgroParisTech-INRA, Paris, France*, [2]*Agriculture and Agri-Food Canada, Lethbridge, AB, Canada*, [3]*Innovation & Research, Belleville, WI.*

M320 **Effect of feeding *Camelina sativa* seeds or meal on lactation performance and milk fatty acid composition in lactating dairy cows.**
J. P. Sarramone*[1,2], C. Benchaar[3], Y. Lebeuf[1,2], R. Gervais[1], and P. Y. Chouinard[1,2], [1]*Département des sciences animales, Université Laval, Québec, QC, Canada*, [2]*Institute of Nutraceuticals and Functional Foods (INAF), Québec, QC, Canada*, [3]*Agriculture and Agri-Food Canada, Dairy and Swine R&D Centre, Sherbrooke, QC, Canada.*

M321 **Milk fatty acid profile of dairy goats fed increasing levels of an unprotected conjugated linoleic acid (UCLA) supplement.**
D. Fernandes[1], J. Souza[2], M. M. Almeida[3], M. Baldin[1], R. Dresch[1], F. Batistel[2], E. Ticiani[2], M. A. S. Gama[4], and D. E. Oliveira*[2,1], [1]*Centro de Ciências Agroveterinárias, UDESC, Lages, SC, Brasil*, [2]*Centro de Educação Superior do Oeste, UDESC, Chapecó, SC, Brasil*, [3]*Universidade Federal de Juiz de Fora, Juiz de Fora, MG, Brasil*, [4]*Embrapa, CNPGL, Juiz de Fora, MG, Brasil.*

M322 **Performance and milk fatty acid profile of dairy goats fed a total mixed ration (TMR) containing an unprotected conjugated linoleic acid (UCLA) supplement.**
M. Baldin[1], J. Souza[2], M. M. Almeida[3], R. Dresch[1], D. Fernandes[1], F. Batistel[2], E. Ticiani[2], F. C. F. Lopes[4], M. A. S. Gama[4], and D. E. Oliveira*[2,1], [1]*Centro de Ciências Agroveterinárias, UDESC, Lages, SC, Brasil*, [2]*Centro de Educação Superior do Oeste, UDESC, Chapecó, SC, Brasil*, [3]*Universidade Federal de Juiz de Fora, Juiz de Fora, MG, Brasil*, [4]*Embrapa, CNPGL, Juiz de Fora, MG, Brasil.*

M323 **Effects of feeding levels of a milk replacer on growth performance, digestion and metabolism of nutrients, and serum biochemical markers in calves.**
X. Xu, J. Wang, Y. Tu*, N. Zhang, C.-G. Jiang, and Q. Diao, *Key Laboratory of Feed Biotechnology of Ministry of Agriculture/Feed Research Institute, Chinese Academy of Agricultural Sciences, Beijing, P. R. China.*

M324 **Effect of dietary starch content on response to an intravenous glucose tolerance test in early lactation dairy cows.**
B. H. Nelson*, K. W. Cotanch, R. J. Grant, and H. M. Dann, *William H. Miner Agricultural Research Institute, Chazy, NY.*

M325 **Effect of milk feeding level on pre- and post-weaning performance of dairy calves.**
E. K. Miller-Cushon[1], R. Bergeron[2], K. E. Leslie[3], and T. J. DeVries*[1], [1]*Dept. Animal and Poultry Science, University of Guelph, Kemptville Campus, Kemptville, ON, Canada*, [2]*Dept. Animal and Poultry Science, University of Guelph, Campus d'Alfred, Alfred, ON, Canada*, [3]*Dept. Population Medicine, Ontario Veterinary College, University of Guelph, Guelph, ON, Canada.*

M326 **Effects of methionine hydroxy copper supplementation on lactation performance, fertility, nutrients digestibility and some metabolic indices in dairy cows.**
F. Wang[1], S. L. Li*[1], Y. J. Wang[1], X. Jin[1], H. Cao[2], F. C. Guo[2], and Y. M. Wan[2], [1]*State Key Laboratory of Animal Nutrition, College of Animal Science and Technology, China Agricultural University, Beijing, China*, [2]*Novus International Research Center, Beijing, China.*

M327 **Effects of methionine hydroxy zinc supplementation on lactation performance, fertility, nutrients digestibility and some metabolic indices in dairy cows.**
F. Wang[1], S. L. Li*[1], H. Cao[2], F. C. Cao[2], and Y. M. Wang[2], [1]*State Key Laboratory of Animal Nutrition, College of Animal Science and Technology, China Agricultural University, Beijing, China*, [2]*Novus International Research Center, Beijing, China.*

M328 **Effect of metabolizable protein level on milk production and composition of early lactating Holstein cows.**
A. Laki, K. Rezayazdi, and M. Dehghan-Banadaky*, *Animal Science Department, Campus of Agricultural and Natural Resources, University of Tehran, Karaj, Tehran, Iran.*

M329 **The effect of reducing dietary phosphorus on bone metabolism in lactating dairy cows.**
L. Puggaard[1], A. Liesegang[2], J. Sehested*[1], and P. Lund[1], [1]*Department of Animal Health and Bioscience, Aarhus University, Tjele, Denmark*, [2]*Vetsuisse Faculty, University of Zurich, Zurich, Switzerland.*

M330 **Evaluation of rumen microbial diversity population under influence of a polyclonal antibody preparation against lactate-producing and proteolytic bacteria in cows fed different energy sources.**
C. Marino*[2], W. Otero[1], C. Barreto[3], V. Pellizari[3], F. Ferreira[1], M. Arrigoni[2], and P. Rodrigues[1], [1]*University of Sao Paulo, FMVZ-USP, Pirassununga, Sao Paulo, Brazil*, [2]*University of Sao Paulo State, FMVZ-UNESP, Botucatu, Sao Paulo, Brazil*, [3]*University of Sao Paulo, ICB II-USP, Sao Paulo, Sao Paulo, Brazil.*

M331 **Effect of poly-unsaturated fatty acid on plasma and milk fatty acid composition in early lactating dairy cows.**
B. Vlaeminck*[1], M. Hostens[2], E. Colman[1], S. De Campeneere[3], G. Opsomer[2], and V. Fievez[1], [1]*Laboratory for Animal Nutrition and Animal Product Quality, Ghent University, Melle, Belgium*, [2]*Department of Reproduction, Obstetrics and Herd Health, Ghent University, Merelbeke, Belgium*, [3]*Department of Animal Sciences, Institute for Agricultural and Fisheries Research, Melle, Belgium.*

M332 **Effect of extruded flaxseed or alfalfa protein concentrate in interaction with two levels of concentrate on milk protein and Ca synthesis.**
C. Hurtaud*[1], G. Chesneau[2], D. Coumier[3], and J. L. Peyraud[1], [1]*INRA-Agrocampus Ouest, Saint-Gilles, France*, [2]*Valorex, Combourtillé, France*, [3]*Desialis, Paris, France.*

M333 **Effect of cow variation on the efficiency of nitrogen recycling to the rumen in dairy cattle.**
M. Aguilar*[1], M. E. Van Amburgh[2], W. A. D. Nayananjalie[1], and M. D. Hanigan[1], [1]*Virginia Polytechnic Institute and State University, Blacksburg*, [2]*Cornell University, Ithaca, NY.*

M334 **Effect of enhanced feeding rates of conventional milk replacer on pre- and post-weaning performance and health of dairy calves.**
D. Carlson*[1], B. Ziegler[2], D. Schimek[2], M. Raeth-Knight[3], G. Golombeski[3], J. Linn[3], N. Litherland[3], D. Ziegler[4], and H. Chester-Jones[4], [1]*Milk Products, Chilton, WI*, [2]*Hubbard Feeds Inc., Mankato, MN*, [3]*University of Minnesota, St. Paul*, [4]*University of Minnesota, Southern Research and Outreach Center, Waseca.*

M335 **Form of trace mineral supplementation on complete lactation performance, reproduction, and locomotion in Holstein cows.**
G. I. Zanton*[1], D. E. Diaz[1], M. Vazquez-Anon[1], and J. E. Nocek[2], [1]*Novus International Inc., St. Charles, MO*, [2]*Spruce Haven Farm and Research Center, Auburn, NY.*

M336 **Effect of replacing corn grain and soybean meal with a treated wheat grain on the performance of dairy cows.**
J. Benninghoff*[1], G. Hamann[2], H. Steingaß[3], F.-J. Romberg[2], K. Landfried[2], and K.-H. Südekum[1], [1]*University of Bonn, Bonn, Germany*, [2]*DLR Westpfalz, Münchweiler/Alsenz, Germany*, [3]*University of Hohenheim, Stuttgart, Germany.*

M337 **Comparison of models to predict ruminal methane from milk fatty acids.**
J. M. Castro-Montoya, V. Fievez, and B. Vlaeminck*, *Laboratory of Animal Nutrition and Animal Product Quality, Gent University, Gent, Belgium.*

M338 **Effects of methionine analog supplementation on milk yield and composition of primiparous dairy cows in a Brazilian dairy herd.**
L. Alegransi[1], V. L. Souza[1], M. C. Doska[1], G. F. Zanetti[1], E. M. Ribas[2], A. Ostrensky[3], and R. Almeida*[1], [1]*Universidade Federal do Paraná, Curitiba, PR, Brazil*, [2]*Nutron Alimentos, Brazil*, [3]*Pontifícia Universidade Católica do Paraná, Curitiba, PR, Brazil.*

M339 **Dry matter digestibility of dairy goats diets during pregnancy.**
A. R. Rivera*, I. A. M. A. Teixeira, C. J. Härter, L. D. Lima, D. S. Castagnino, T. R. Delphino, H. G. O. Silva, T. T. Berchielli, and K. T. Resende, *Universidade Estadual Paulista, Jaboticabal, SP, Brasil.*

M340 **Effect of different levels of a mycotoxin deactivating feed additive on Holstein crossbred dairy cows in Southeast Asia fed rations naturally contaminated with mycotoxins.**
U. Hofstetter*[1], I. Rodrigues[1], and K. Kiyothong[2], [1]*Biomin Holding GmbH, Herzogenburg, Austria*, [2]*School of Agriculture, Food and Rural Development, University of Newcastle, Newcastle, UK.*

M341 **Voluntary selection of starter ingredients offered separately to nursing calves.**
C. Montoro*[1] and A. Bach[1,2], [1]*Ruminant Production, IRTA, Caldes de Montbui, Barcelona, Spain*, [2]*ICREA, Barcelona, Spain.*

M342 **Duodenal flows and milk yields of odd- and branched-chain fatty acids in response to N underfeeding and energy source in dairy cows.**
R. Gervais*[1], B. Vlaeminck[2], A. Fanchone[3], P. Nozière[4], M. Doreau[4], and V. Fievez[2], [1]*Département des sciences animales, Université Laval, Québec, Québec, Canada*, [2]*Lanupro, Ghent University, Melle, Belgium*, [3]*Unité de Recherches Zootechniques, INRA, Petit Bourg, Guadeloupe, France*, [4]*Unité de Recherche sur les Herbivores, INRA, Theix, St-Genès-Champanelle, France.*

M343 **Effects of a direct-fed microbial and fibrolytic enzyme product on somatic cell counts in milk produced by crossbred dairy cows in the Brazilian Cerrado.**
R. D. Sainz*[1,2], C. U. Magnabosco[3,4], E. A. Filgueiras[5], R. Guimarães[3], F. M. C. Freitas[4,6], and L. R. Mattos[4,6], [1]*University of California, Davis*, [2]*Embrapa, Brasilia, DF, Brazil*, [3]*Embrapa Cerrados, Planaltina, DF. Brazil*, [4]*Embrapa Arroz e Feijão, Santo Antonio de Goiá, GO, Brazil*, [5]*Biofórmula, Goiânia, GO, Brazil*, [6]*Embrapa Gado de Leite, Juiz de Fora, MG, Brazil.*

M344 **Effects of abomasal dosing of ferrous lactate in lactating dairy cows.**
O. N. Genther*, J. A. Zyskowski, T. H. Herdt, and D. K. Beede, *Michigan State University, East Lansing.*

M345 **Glycerin as a replacement for corn in dairy Holstein cows diets.**
J. B. D. Sancanari*[1,2], J. M. B. Ezequiel[1], E. H. C. B. van Cleef[1,2], V. R. Fávaro[1], A. P. D'Áurea[1,2], A. C. Homem[1], Z. F. Silva[1], D. A. V. Silva[1,2], and J. W. Cattelan[1], [1]*São Paulo State University, Jaboticabal, São Paulo, Brazil*, [2]*FAPESP, São Paulo, São Paulo, Brazil.*

M346 **Rolled barley grain treated with lactic acid and heat altered postprandial rumen mineral availability in lactating dairy cows.**
U. Farooq*, A. Mazzolari, S. M. Dunn, and B. N. Ametaj, *University of Alberta, Edmonton, Alberta, Canada.*

M347 **Phosphorus feeding for second lactation dairy cows.**
V. R. Moreira*[1], L. K. Zeringue[1], C. Leonardi[2], and M. E. McCormick[1], [1]*Louisiana State University Agricultural Center, Franklinton*, [2]*Louisiana State University - Health Sciences Center, New Orleans.*

M348 **Biochemical blood parameters of dairy cows fed with increasing concentration of glycerin.**
J. B. D. Sancanari*[1,2], J. M. B. Ezequiel[1], E. H. C. B. van Cleef[1,2], V. R. Fávaro[1], A. P. D'Áurea[1,2], A. C. Homem[1], Z. F. Silva[1], D. A. V. Silva[1,2], and J. W. Cattelan[1], [1]*São Paulo State University, Jaboticabal, São Paulo, Brazil*, [2]*FAPESP, São Paulo, São Paulo, Brazil.*

M349 **Treating barely grain with lactic acid and heat modulated pre-prandial rumen calcium and magnesium availability in lactating dairy cows.**
U. Farooq*, A. Mazzolari, S. M. Dunn, and B. N. Ametaj, *University of Alberta, Edmonton, AB, Canada.*

M350 **Performance variables of dairy cattle fed a commercial micronutrient supplement during the peripartum period.**
N. Barkley*, A. Kenny, E. Adkins, X. Revelo, and M. Waldron, *University of Missouri, Columbia.*

M351 **Effect of whole versus chopped sugar cane on dry matter intake in dry dairy cows.**
J. E. Pérez-De La Ossa[1] and R. P. Lana*[1,2], [1]*Univesidade Federal de Viçosa, MG, Brazil*, [2]*CNPq and INCT-CA, Brasília, DF, Brazil and Viçosa, MG, Brazil.*

M352 **On-farm dry matter testing to improve feed delivery precision on dairy farms.**
K. R. French* and R. A. Kohn, *University of Maryland, College Park.*

M353 **Effects of the source and amount of sulfur in prepartum diets on plasma metabolites of periparturient Holstein cows.**
E. Manidari, H. Amanlou, M. Frozanmehr, H. Mirzaei Alamouti*, and M. Shahir, *Department of Animal Science, University of Zanjan, Iran.*

M354 **Intake, digestibility and metabolism of nitrogen compounds of dairy cows fed with different urea levels in diets based on sugar cane.**
A. M. F. Santiago*[1], J. M. de S. Campos[2], A. S. Oliveira[3], S. A. Santos[4], and S. M. Souza[4], [1]*Instituto Federal de Tecnologia, Rio Pomba, MG, Brazil*, [2]*Universidade Federal de Pernambuco, Guaranhus, PE, Brazil*, [3]*Universidade Federal de Mato Grosso, Sinop, MT, Brazil*, [4]*Universidade Federal de Viçosa, Viçosa, MG, Brazil.*

M355 **Effects of barley grain processing on milk yield and composition of early lactating Holstein cows.**
H. Amanlou, H. Mirzaei Alamouti*, and A. Aslani, *Department of Animal Science, University of Zanjan, Iran.*

M356 **Fate of phosphorus in large intestine of dairy heifers.**
P. P. Ray*, M. D. Hanigan, and K. F. Knowlton, *Virginia Polytechnic Institute and State University, Blacksburg.*

M357 **Peripheral blood leukocyte population dynamics during the peripartum period in dairy cattle fed a commercial micronutrient supplement.**
A. Kenny*, N. Barkley, X. Revelo, and M. Waldron, *University of Missouri, Columbia.*

M358 **Peripheral blood leukocyte population dynamics in peripartum dairy cattle managed under different dry period nutritional strategies.**
A. Kenny*, N. Barkley, X. Revelo, and M. Waldron, *University of Missouri, Columbia.*

M359 **Digestion and rumen fermentation in precision-fed dairy heifers on low or high forage rations at four levels of dry distillers grain.**
F. X. Suarez-Mena*, G. J. Lascano, and A. J. Heinrichs, *The Pennsylvania State University, University Park.*

M360 **Effect of live-cell yeast at two dosages on lactation performance by dairy cows.**
L. F. Ferraretto*, R. D. Shaver, and S. J. Bertics, *Department of Dairy Science, University of Wisconsin, Madison.*

M361 **Differences in nutrients formulated and nutrients supplied on three California dairies.**
H. A. Rossow[1], R. J. van Hoeij[2], and G. Acetoze*[1], [1]*University of California, Davis*, [2]*Utrecht University, Utrecht, the Netherlands.*

M362 **Effect of dietary protein level and rumen-protected amino acids supplementation on ruminal fermentation and nitrogen utilization in lactating dairy cows.**
C. Lee*[1], A. N. Hristov[1], K. Heyler[1], T. Cassidy[1], H. Lapierre[2], G. A. Varga[1], and C. Parys[3], [1]*Pennsylvania State University, University Park*, [2]*Agriculture and Agri–Food Canada, Sherbrooke, QC, Canada*, [3]*Evonik Degussa GmbH, Hanau, Germany.*

M363 **Effects of additive treatment and glycerol supplementation on in vitro digestibility and fermentation of a total mixed ration.**
J. H. Han*[1,2], S. C. Kim[2], D. H. Kim[1,2], J. J. Romero[1], H. J. Lee[1,2], J. H. Shin[1], O. C. M. Queiroz[1], K. G. Arriola[1], C. R. Staples[1], and A. T. Adesogan[1], [1]*Department of Animal Sciences, Institute of Food and Agricultural Sciences, University of Florida, Gainesville*, [2]*Department of Animal Sciences, Institute of Agricultre and Life Sciences, Gyeongsang National University, Gyeongnam, Jinju South Korea.*

M364 **Use of an anti-inflammatory additive in preweaning Holstein calves.**
L. A. Borunda*[1], D. Domínguez[1], G. Villalobos[1], I. Arteaga[1], E. Santellano[1], M. Cook[2], and M. Yang[2], [1]*Universidad Autónoma de Chihuahua, Chihuahua, Chihuahua, México*, [2]*Aova Technologies Inc., Madison, WI.*

M365 **Effect of dietary *trans* fatty acids on milk yield and milk composition of early lactating dairy cows.**
J. S. Watts*, D. L. Sevier, S. M. Clark, M. A. McGuire, and P. Rezamand, *Department of Animal and Veterinary Science, University of Idaho, Moscow.*

M366 **Effect of nicotinamide on milk yield and retention of cows on commercial California dairies.**
P. D. French*[1], M. A. DeGroot[2], and J. C. Woodworth[3], [1]*French Consulting, Bon Air, VA*, [2]*DeGroot Dairy Consulting, Visalia, CA*, [3]*Lonza Inc., Enterprise, KS.*

M367 **Periparturient supplementation of saturated and unsaturated fat sources differentially alters the fatty acid profile of colostrum and milk fat of Holstein cows.**
M. Garcia*[1], L. F. Greco[1], A. Lock[1,2], J. E. P. Santos[1], and C. R. Staples[1], [1]*University of Florida, Gainesville*, [2]*Michigan State University, East Lansing.*

M368 **Effects of reduced dietary protein and supplementing rumen protected amino acids on the nitrogen efficiency of dairy cows.**
A. L. Bell*[1], M. J. de Veth[2], T. R. Wiles[1], O. Becvar[3], and M. D. Hanigan[1], [1]*Virginia Polytechnic Institute and State University, Blacksburg*, [2]*Balchem Corporation, New Hampton, NY*, [3]*Virginia-Maryland Regional College of Veterinary Medicine, Blacksburg, VA.*

M369 **The effect of direct-fed microbial supplementation on reproductive and production performance of primiparous Holstein heifers.**
M. B. Cattell[1], A. J. Nelson[1], J. E. Nocek[2], and L. C. Solórzano*[3], [1]*Dairy Research and Technology LLC, Windsor, CO*, [2]*Spruce Haven Farm and Research Center, Union Springs, NY*, [3]*Chr. Hansen Inc., Milwaukee, WI.*

M370 **Rumination behavior and its relationship to feeding behavior in Holstein dairy cows prepartum.**
K. Schirmann*[1,2], N. Chapinal[1], D. M. Weary[1], W. Heuwieser[2], and M. A. G. von Keyserlingk[1], [1]*Animal Welfare Program, Faculty of Land and Food Systems, The University of British Columbia, Vancouver, BC, Canada*, [2]*Clinic for Animal Reproduction, Faculty of Veterinary Medicine, Freie Universität Berlin, Berlin, Germany.*

M371 **Performance of dairy calves offered alternative pre-weaning feeding programs.**
S. L. Gelsinger*, P. C. Hoffman, and D. K. Combs, *University of Wisconsin, Madison.*

M372 **Effect of *Origanum vulgare* L. leaves on production and milk fatty acid composition in lactating dairy cows.**
A. N. Hristov*[1], C. Lee[1], T. Cassidy[1], K. Heyler[1], J. A. Tekippe[1], G. A. Varga[1], and B. Corl[2], [1]*Pennsylvania State University, University Park*, [2]*Virginia Polytechnic Institute and State University, Blacksburg.*

## Ruminant Nutrition
## Ruminal Metabolism

M373 **Evaluation of algae as livestock feed.**
C. P. Payne*, J. E. Sawyer, and T. A. Wickersham, *Texas A&M University.*

M374 **Hourly changes in fatty acid profile of ruminal contents in continuous cultures as soybean oil is added and removed from the diet.**
C. M. Klein*, S. K. Thurmond, P. H. Morris, and T. C. Jenkins, *Clemson University, Clemson, SC.*

M375 **Effects of tannin extracts on in vitro growth of selected food-borne pathogenic bacteria.**
B. J. Min[1], B. R. Min[1], J. M. Sieg[2], J.-S. Eun*[2], D. R. ZoBell[2], and D. C. Tice[1], [1]*Department of Agricultural and Environmental Sciences, Tuskegee University, Tuskegee, AL*, [2]*Department of Animal, Dairy, and Veterinary Sciences, Utah State University, Logan.*

M376 **Tannin extracts decrease in vitro growth of ruminal acidosis-causing bacteria in pure culture.**
J.-S. Eun*[1], B. R. Min[2], J. M. Sieg[1], D. R. ZoBell[1], and A. J. Young[1], [1]*Department of Animal, Dairy, and Veterinary Sciences, Utah State University, Logan*, [2]*Department of Agricultural and Environmental Sciences, Tuskegee University, Tuskegee, AL.*

M377 **Effects of wheat dried distillers grains with solubles (DDGS) and cinnamaldehyde (CIN) on fermentation and protein degradation in Rusitec.**
Y. L. Li[1,2], M. L. He[1], K. A. Beauchemin[1], and W. Z. Yang*[1], [1]*Research Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada*, [2]*Feed Research Institute, Chinese Academy of Agricultural Sciences, Beijing, China.*

M378 **In vitro digestion and gas production of wheat grain varying processing.**
W. Z. Yang*[1], T. A. McAllister[1], and M. Oba[2], [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.*

M379 **The effect of DDGS when replacing corn or soybean meal on rumen microbial growth in vitro as measured using real-time PCR.**
E. Castillo-Lopez* and P. J. Kononoff, *University of Nebraska-Lincoln, Lincoln.*

M380 **Effects of semi-arid medicinal herb essential oils on growth of pure culture of *Butyrivibrio fibrisolvens* SH13.**
H. Jahani-Azizabadi*[1], M. Danesh Mesgaran[1], A. R. Vakili[1], and K. Rezayazdi[2], [1]*Dept. of Animal Science, Excellence Center for Animal Science, Faculty of Agriculture, Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran*, [2]*Dept. of Animal Science, Faculty of Agriculture, University of Tehran, Karaj, Tehran, Iran.*

M381 **Effects of microbial contamination on in situ estimates of ruminal degradability of fiber fractions.**
J. M. Arroyo, J. Guevara-González, F. Díaz-Royon*, and J. González, *Universidad Politécnica de Madrid, Madrid, Spain.*

M382 **Measurement of dry matter degradation of sugar cane molasses in rumen of bovine using nylon bag technique.**
J. J. Lomeli*[1], L. R. Flores[1], R. H. Ley[1], J. E. Guerra[2], I. Quintero[1], J. E. Borbolla[1], and R. Barajas[1], [1]*FMVZ-Universidad Autonóma de Sinaloa, Culiacán, Sinaloa, México*, [2]*FA-Universidad Autónoma de Sinaloa, Culiacán, Sinaloa, México.*

M383 **Ruminal degradation of the dry matter of the sugar cane silage.**
J. A. Reyes-Gutierez[1,2], O. D. Montañez-Valdez*[1], R. Rodríguez Macías[2], E. Salcedo Pérez[2], M. A. Ruiz López[2], and M. R. Rodriguez-Ramirez[3], [1]*Centro Universitario del Sur de la Universidad de Guadalajara, Ciudad Guzmán, Jalisco, México*, [2]*Centro Universitario de Ciencias Biológicas y Agropecuarias de la Universidad de Guadalajara, Las Agujas, Zapopan, Jalisco, México*, [3]*Instituto Nacional de Investigaciones Agricolas y Pecuarias, Tecomán, Colima,México.*

M384 **A novel method to measure rumen stability of three rumen protected products.**
M. Sakkers*[1], P. H. Robinson[2], L. J. Erasmus[1], J. Garrett[3], and R. Meeske[4], [1]*University of Pretoria, Pretoria, South Africa*, [2]*University of California, Davis, Davis*, [3]*Quali Tech Inc., Chaska, MN*, [4]*Western Cape Department of Agriculture, Western Cape, South Africa.*

M385 **Biohydrogenation of docosahexaenoic acid into unsaturated 22-carbon fatty acid intermediates in ruminal batch cultures.**
C. M. Klein*, W. C. Bridges, and T. C. Jenkins, *Clemson University, Clemson, SC.*

M386 **Effect of a handmade inoculum and additive on in vitro dry matter digestibility of sugar cane silage.**
O. D. Montañez-Valdez*[1], J. A. Reyes-Gutierrez[1], G. Rocha-Chavez[1], J. M. Tapia-Gonzalez[1], J. A. Martinez-Ibarra[1], C. E. Guerra-Medina[2], J. J. Tinajero-Martinez[4], J. H. Avellaneda-Cevallos[3], and R. Santibañez-Escobar[1], [1]*Centro Universitario del Sur, Ciudad Guzmán, Jalisco, México.*, [2]*Centro Universitario del la Costa Sur, Autlán de la Grana, Jalsico, México.*, [3]*Universidad Técnica Estatal de Quevedo, Los Ríos, Ecuador.*, [4]*Facultad de Ciencias Agrícolas, Universidad Autónoma de Chiapas, México.*

M387 **Effects of dietary probiotics on growth performance, nutrient digestibility, blood profiles, fecal gas emission, fecal microflora and diarrhea index in weanling pigs.**
S. M. Hong*[1], T. X. Zhou[1], I. H. Kim[1], and Y. H. Park[2], [1]*Dankook University, Cheonan, Choongnam, South Korea*, [2]*Yeungnam university, Daedong, Gyeongsang, South Korea.*

M388 **The response of urea-$N^{15}$ in ruminal content influenced by essential oils.**
S. Zhao, J. Wang*, D. Bu, and Y. Zhang, *State Key Laboratory of Animal Nutrition, Institute of Animal Sciences, Chinese Academy of Agriculture Sciences, Beijing, China.*

M389 **Effects of polyclonal antibody against urease on ruminal fermentation and microbiota diversity in vitro.**
S. Zhao, J. Wang*, D. Bu, and Y. Zhang, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China.*

M390 **Effects of nitrate on microbial communities and rumen fermentation characteristic by using consecutive culture system.**
Z. Zhou*[1], Z. Yu[2], and Q. Meng[1], [1]*College of Animal Science and Technology and State Key Laboratory of Animal Nutrition, China Agricultural University, Beijing, 100193, China*, [2]*The MAPLE Research Initiative, Department of Animal Sciences, The Ohio State University, Columbus.*

M391 **Effects of lipid sources on performance and carcass traits of beef cattle finished at pasture.**
T. T. Berchielli*[1,2], I. P. C. Carvalho[1,2], G. Fiorentini[1,2], and J. F. Lage[1,2], [1]*São Paulo State University, Jaboticabal, São Paulo, Brazil*, [2]*FAPESP– Fundação de Amparo á Pesquisa do Estado de São Paulo, São Paulo, SÃo Paulo, Brazil.*

M392 **Effect of the different lipid sources on the carcass traits of the steers finished in a feedlot.**
T. T. Berchielli*[1,2], G. Fiorentini[1,2], I. P. C. Carvalho[1,2], J. F. Lage[1,2], and R. C. Canesin[1,2], [1]*São Paulo State University, Jaboticabal, São Paulo, Brazil*, [2]*FAPESP– Fundação de Amparo á Pesquisa do Estado de São Paulo, São Paulo, São Paulo, Brazil.*

## Ruminant Nutrition
## Small Ruminant

M393 **Blood biochemical constituents in growing lambs fed on orange pulp ensiled with exogenous enzymes.**
A. Z. M. Salem*[1,4], H. M. Gado[2], N. E. Odongo[3], and B. E. Borhami[1], [1]*Department of Animal Production, Faculty of Agriculture (El-Shatby), Alexandria University, Alexandria, Egypt*, [2]*Department of Animal Production, 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]*Centro Universitario UAEM-Temascaltepec, Universidad Autónoma del Estado de México, Estado de México, México.*

M394 **Effect of propionate on urea and glucose kinetics in sheep.**
U. Agarwal*, K. Somers, K. Bailey, Q. Hu, and B. J. Bequette, *University of Maryland, College Park.*

M395 **Duodenal flow of nitrogenous compounds by wethers fed a fresh ryegrass-based diet intraruminally infused with *Acacia mearnsii* tannins.**
F. Hentz*[1], C. J. Härter[2], G. V. Kozloski[1], M. P. Mezzomo[1], and A. C. Fluck[1], [1]*Universidade Federal de Santa Maria, Santa Maria, RS, Brazil*, [2]*Universidade Estadual Paulista, Jaboticabal, SP, Brazil.*

M396 **Effect of germinated and ensiling sorghum grain on digestion and ruminal fermentation by sheep.**
D. García[1], F. Castrejón[1], G. Mendoza[2], and L. Corona*[1], [1]*Universidad Nacional Autónoma de México, Cd. Universitaria, DF, México*, [2]*Universidad Autónoma Metropolitana, Xochimilco, DF, México.*

M397 **Concentration of some elements in blood serum of nonlactating goats in a subtropical region of Southwest of México State.**
A. Olmedo, R. Rojo, A. Z. M. Salem, J. Cedillo-Monrroy*, J. Morales-Diaz, J. L. Tinoco-Jaramillo, J. L. Martínez-Benitez, and F. Vázquez-Armijo, *Centro Universitario UAEM-Temascaltepec, Universidad Autónoma del Estado de México, Temascaltepec, Estado de México, México.*

M398 **Exogenous phytase effects on performance of weaned Dorper x Pelibuey lambs.**
G. Buendía-Rodríguez[1], S. S. González-Muñoz*[2], G. D. Mendoza-Martínez[3], L. Y. Bernal-Zamora[3], R. Basurto-Gutiérrez[1], M. M. Crosby-Galván[2], and J. J. A. Méndez-Romero[4], [1]*CENIDFyMA INIFAP, Ajuchitlán, Querétaro, México*, [2]*Colegio de Postgraduados, Montecillo, Estado de México, México*, [3]*Universidad Autónoma Metropolitana–Xochimilco, México DF*, [4]*Universidad La Salle Bajío, Guanajuato, México.*

M399 **Calcium propionate and grain level effects on performance, ruminal variables and plasma glucose of finishing lambs.**
H. A. Lee-Rangel[1], S. S. González-Muñoz*[1], G. D. Mendoza-Martínez[2], A. Hernández-Garay[1], and M. M. Crosby-Galván[1], [1]*Colegio de Postgraduados, Montecillo, Estado de México, México*, [2]*Universidad Autónoma Metropolitana–Xochimilco, México DF, México.*

M400 **Effects of zilpaterol hydrochloride and genotype on performance of finishing lambs.**
F. Montoya[1], R. Castañeda[1], S. S. González-Muñoz*[2], G. Buendía-Rodríguez[1], R. Basurto[1], P. Partida[1], and H. Jiménez-Severiano[1], [1]*CENIDFyMA INIFAP, Ajuchitlán, Qerétaro, México*, [2]*Colegio de Postgraduados, Montecillo, Estado de México, México.*

## Small Ruminant
## Small Ruminant Nutrition

M401 **Feed intake and performance by yearling Boer goat doelings consuming deep-stacked or ensiled broiler litter.**
A. L. Goetsch*, G. D. Detweiler, B. Bah, T. Sahlu, and J. Hayes, *American Institute for Goat Research, Langston University, Langston, OK.*

M402 **Effects of night-locking on intake, digestion, behavior, and energy use by meat goat does grazing grass/legume pasture.**
I. Tovar-Luna[1,2], R. Puchala*[1], T. A. Gipson[1], G. D. Detweiler[1], L. J. Dawson[3], T. Sahlu[1], A. Keli[4], and A. L. Goetsch[1], [1]*American Institute for Goat Research, Langston University, Langston, OK*, [2]*Universidad Autonoma Chapingo, Unidad Regional Universitaria de Zonas Aridas, Bermejillo, Durango, Mexico*, [3]*College of Veterinary Medicine, Oklahoma State University, Stillwater*, [4]*Department of Animal Production and Pastoralism, National School of Agriculture, Meknes, Morocco.*

M403 **Effects of replacing different levels of alfalfa hay and corn silage with sunflower residue silage on feed intake and nutrient digestibility in Mohabadi dairy goats.**
A. Gholami-Yangije[1], R. Pirmohammadi[1], J. Amini Jabal Kandi[2], and H. Khalilvandi-Behroozyar*[1,3], [1]*Department of Animal Science, Urmia University, Urmia, West Azerbahjan, I. R. Iran*, [2]*Department of Animal Science, West Azerbaijan Agriculture and Natural Resource Research Center, Urmia, West Azerbahjan, I. R. Iran*, [3]*Department of Animal Science, University of Tehran, Karaj, Tehran, I. R. Iran.*

M404 **Effects of inclusion of different levels of sunflower residue silage in dairy goat diets on milk production and composition.**
A. Gholami-Yangije[1], R. Pirmohammadi[1], J. Amini Jabal Kandi[2], and H. Khalilvandi-Behroozyar*[1,3], [1]*Department of Animal Science, Urmia University, Urmia, West Azerbahjan, I. R. Iran*, [2]*Department of Animal Science, West Azerbaijan Agriculture and Natural Resource Research Center, Urmia, West Azerbahjan, I. R. Iran*, [3]*Department of Animal Science, University of Tehran, Karaj, Tehran, I. R. Iran.*

M405 **Effect of protein restriction on body characteristics and fat storage in Awassi sheep.**
S. F. Abi Saab[1,2], F. T. Sleiman[3], F. Ayoub[2], and P. Y. Aad*[4], [1]*Lebanese University, Faculty of Agricultural & Veterinary Sci., Dekwaneh, Lebanon*, [2]*Holy Spirit University of Kaslik, Faculty of Agricutural Sci., Kaslik, Lebanon*, [3]*American University of Beirut, Faculty of Agricultural &Food Sci., Beirut, Lebanon*, [4]*Notre Dame University, Faculty of Natural & Applied Sci., Louaizeh, Lebanon.*

M406 **Nutrient intake and performance of lambs fed diets with different levels of inactive dry yeast.**
L. D. A. Rufino[1], O. G. Pereira*[1], K. G. Ribeiro[2], S. C. V. Filho[1], and L. L. Cardoso[1], [1]*Federal University of Viçosa, Viçosa, Minas Gerais, Brazil*, [2]*Universidade Federal dos Vales do Jequitinhonha e Mucuri, Diamantina, Minas Gerais, Brazil.*

M407 **Effect of low and high oil corn distillers grain on rumen fermentation, growth performance and carcass characteristics of lambs.**
A. S. O'Hara*[1], A. V. Chaves[1], A. Tanner[2], T. A. McAllister[3,1], D. J. Gibb[3], F. van Herk[3], and R. D. Bush[1], [1]*Faculty of Veterinary Science, The University of Sydney, Sydney, NSW, Australia*, [2]*Faculty of Agriculture, Food and Natural Resources, University of Sydney, Sydney, NSW, Australia*, [3]*Agriculture and Agri-Food Canada, Lethbridge Research Centre, Lethbridge, Alberta, Canada.*

M408 **Nutrient intake and performance of lambs fed diets containing different levels of rumen degradable protein.**
J. L. Silva[1], K. G. Ribeiro*[1], O. G. Pereira[2], S. C. V. Filho[2], D. S. Pina[3], and P. V. R. Paulino[2], [1]*Federal University of Jequitinhonha and Mucuri Valleys, Diamantina, Minas Gerais, Brazil*, [2]*Federal University of Viçosa, Viçosa, Minas Gerais, Brazil*, [3]*Federal University of Mato Grosso, Sinop, Mato Grosso, Brazil.*

M409 **Diet preference of lambs offered a choice of concentrate diets containing different proportions of wheat dried distillers grain with solubles.**
E. K. R. Charles, A. V. Chaves, E. Jonas, and A. S. O'Hara*, *Faculty of Veterinary Science, The University of Sydney, Sydney, NSW, Australia.*

M410 **Effect of inclusion of dried citrus pulp on in vitro ruminal fermentation kinetics of a total mixed ration for goats.**
J. Hernández*[1,2], R. Rojo[1], A. González[2], A. Z. M. Salem[1], F. Lucero[2], J. L. Tinoco[1], A. Carreón[2], and J. F. Vázquez[1], [1]*Centro Universitario UAEM-Temascaltepec, Universidad Autónoma del Estado de México, Temascaltepec, Estado de México, México*, [2]*Unidad Académica Multidisciplinaria Agronomía y Ciencias, Centro Universitario Victoria, Universidad Autónoma de Tamaulipas, Ciudad Victoria, Tamaulipas, México.*

M411 **The under-nourishment of the Alpine-French goats does not diminish reproductive outcomes, but does affect dynamics of the offspring-growth.**
R. Rivas-Muñoz[1], E. Carrillo[1], C. A. Meza-Herrera[2], C. Leyva[3], H. Zermeño-González[1], R. Rodríguez-Martínez[3], M. Mellado[3], F. G. Véliz[3], and G. Arellano-Rodriguez*[3], [1]*Instituto Tecnológico de Torreón, Torreón, Coahuila, México*, [2]*Universidad Autónoma Chapingo, Unidad Regional Universitaria de Zonas Áridas, Bermejillo, Durango, México*, [3]*Universidad Autónoma Agraria Antonio Narro, Torreón, Coahuila, México.*

M412 **Evaluation of crude glycerin on performance and carcass characteristics of growing meat goats.**
K. B. Tuoho*[1], N. K. Gurung[1], S. G. Solaiman[1], B. R. Min[1], J.-S. Eun[2], and W. H. McElhenney[1], [1]*Tuskegee University, Tuskegee, AL*, [2]*Utah State University, Logan.*

M413 **A meta-analysis for comparing dry matter intake prediction models in dairy goats.**
G. Caja, X. Roca, A. K. K. Salama, and M. Rovai*, *G2R, Universitat Autònoma de Barcelona, Bellaterra, Barcelona, Spain.*

M414 **Intake and digestibility of rations containing dry yeast in Saanen goats during peripartum.**
C. R. Alcalde*, B. S. L. Molina, L. R. Lima, L. C. Gomes, and R. Souza, *Universidade Estadual de Maringá, Maringá, Paraná, Brazil.*

M415 **Net protein requirements for growth of female Saanen goat kids.**
F. O. M. Figueiredo*, I. A. M. A. Teixeira, K. T. Resende, T. T. Berchielli, L. D. Lima, O. Boaventura Neto, B. Biagioli, and A. R. Rivera, *UNESP - São Paulo State University, Jaboticabal, São Paulo, Brazil.*

M416 **Net energy requirements for growth of female Saanen goat kids.**
F. O. M. Figueiredo*, I. A. M. A. Teixeira, K. T. Resende, T. T. Berchielli, C. J. Harter, A. N. Mendonça, S. F. Souza, R. A. Gomes, D. S. Castagnino, and T. F. V. Bompadre, *UNESP - São Paulo State University, Jaboticabal, São Paulo, Brazil.*

M417 **Effect of Clinoptilolite (zeolite) substituting for corn-soybean meal on productive performance and carcass characteristics of Pelibuey sheep.**
A. Estrada-Angulo*, J. D. Urías-Estrada, J. A. Aguilar, J. L. Bolado, H. Davila-Ramos, J. J. Portillo, J. C. Robles, and F. G. Rios, *FMVZ-UAS, Culiacan, Sinaloa, Mexico.*

M418 **Effect of live yeast *Saccharomyces cerevisiae* (strain Sc 47) on fattening efficiency and blood parameters of growing Mehraban lambs.**
N. Baleghi[1], A. Taghizadeh[2], A. FarahAvar[3], and H. Khalilvandi-Behroozyar*[3,4], [1]*Islamic Azad University, Maragheh Branch*, [2]*Department of Animal Science,University of Tabriz*, [3]*Department of Animal Science, University of Tehran*, [4]*Department of Animal Science, Urmia University.*

M419 **Relationship of blood enzymes and metabolites to residual feed intake of lambs.**
F. A. Rodriguez-Almeida*, C. Arzola, J. A. Grado-Ahuir, A. Corral, P. I. Ochoa, and G. Jasso-Diaz, *Universidad Autonoma de Chihuahua, Chihuahua, Chihuahua, Mexico.*

M420 **Nutritive value of *Vicia panonica* forage and its effect on ram Kurdish lamb performance.**
F. Fatahnia[1], M. Moeini[1], F. Moradi[1], R. Ebnabasi[1], and H. Mirzaei Alamouti*[2], [1]*Department of Animal Science, University of Ilam, Iran*, [2]*Department of Animal Science, University of Zanjan, Iran.*

M421 **Daily supplementation of *Saccharomyces cerevisiae* (strain Sc 47) can cause reduction of blood cholesterol.**
N. Baleghi[1], A. Taghizadeh[2], A. FarahAvar[3], and H. Khalilvandi-Behroozyar*[3,4], [1]*Islamic Azad University, Maragheh Branch*, [2]*Department of Animal Science,University of Tabriz*, [3]*Department of Animal Science, University of Tehran*, [4]*Department of Animal Science, Urmia University.*

M422 **Cull pinto bean as a supplement to pregnant-lactating hair ewes.**
F. Castillo*, G. Villalobos, D. Dominguez, J. E. Cruz, A. Anchondo, and J. A. Ortega, *Facultad de Zootecnia y Ecología. Universidad Autonoma de Chihuahua., Chihuahua, Chihuahua, México.*

M423 **Effect of different sources of lipid on blood parameters of sheep.**
E. H. C. B. van Cleef*, D. A. V. Silva, A. C. Homem Júnior, and J. M. B. Ezequiel, *São Paulo State University, Jaboticabal, São Paulo, Brazil.*

M424 **Use of ionophores in Santa Inês lambs diet for meat production.**
P. M. França[1], J. R. O. Pérez[1], V. A. A. Reis[1], I. F. Furuscho-Garcia*[1], R. F. Leite[2], F. Oliveira[3], S. P. Greca[1], and I. Leopoldino Junior[1], [1]*Universidade Federal de Lavras, Lavras, Minas Gerais, Brasil*, [2]*Universidade Paulista JÚlio de Mesquita Filho, Jaboticabal, SÃo Paulo, Brasil*, [3]*Universidade Paulista JÚlio de Mesquita Filho, Botucatu, SÃo Paulo, Brasil.*

M425 **Evaluation of behavior and apparent dry matter intake of sheep in tropical pasture.**
F. P. Portilho*[1,2], J. M. S. Diogo[1], and S. L. S. Cabral Filho[1], [1]*University of Brasilia, Brasilia, DF, Brazil*, [2]*Agrodefesa, Rio Verde, GO, Brazil.*

M426 **Palatability of sainfoin (*Onobrychis viciifolia* Scop.) in sheep.**
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.*

M427 **Effect of feeding tannin-containing pine bark on fecal bacterial population and methane gas production in Kiko-cross goats.**
B. R. Min*, S. Solaiman, R. Shange, and R. Ankumah, *Tuskegee University, Tuskegee, AL.*

## Animal Behavior and Well-Being Symposium
## Novel Techniques for Euthanasia
## Chair: Anna K. Johnson, Department of Animal Science, Iowa State University

Sponsor: AAALAC

**298-299**

9:30 AM **Welcome and Introduction**
A. Johnson.

9:40 AM 8 **Euthanasia—An overview of the AVMA's criteria and recommendations.**
G. C. Golab*, *American Veterinary Medical Association, Schaumburg, IL.*

10:10 AM 9 **Euthanasia of livestock: Public perception and influence.**
S. R. Niekamp*, *National Pork Board, Clive, IA.*

10:30 AM 10 **The signs of unconsciousness and death: How can we recognize them on the farm?**
T. M. Widowski*[1], T. M. Casey-Trott[1], and M. A. Erasmus[2], [1]*Campbell Centre for the Study of Animal Welfare, University of Guelph, Guelph, Ontario, Canada*, [2]*Michigan State University, Lansing.*

11:00 AM **Break**

11:15 AM 11 **Novel euthanasia technologies for the pig.**
S. T. Millman*, *Veterinary Diagnostic & Production Animal Medicine, Iowa State University, Ames.*

11:45 AM 12 **Euthanasia techniques for dairy and beef cattle.**
J. K. Shearer*[1], J. P. Reynolds[2], D. D. Griffin[3], and G. Johnson[4], [1]*Iowa State University, Ames*, [2]*Western Veterinary College, Pomona, CA*, [3]*University of Nebraska, Lincoln*, [4]*Reedsburg, Wisconsin.*

12:15 PM **Open floor wrap-up**
A. Johnson.

MONDAY ORALS

## Animal Health
## Beef
## Chair: Holly Neibergs, Washington State University

Sponsor: Pfizer Animal Health

**297**

9:30 AM 13 **Weaning management of newly received beef calves with or without continuous exposure to a persistently infected bovine viral diarrhea virus pen mate: Effects on rectal temperature, peripheral blood leukocytes and serum proinflammatory cytokine concentrations**.
J. T. Richeson*[1], E. B. Kegley[1], J. G. Powell[1], R. G. Schaut[2], R. E. Sacco[3], and J. F. Ridpath[3], [1]*University of Arkansas, Fayetteville*, [2]*Iowa State University, Ames*, [3]*USDA-ARS, National Animal Disease Center, Ames, IA.*

9:45 AM 14 **Effect of oral meloxicam on performance and health of stocker calves after castration.**
J. F. Coetzee*[1], L. N. Edwards[1], R. A. Mosher[1], A. M. O'Connor[2], B. Wang[2], B. KuKanich[1], and D. A. Blasi[1], [1]*Kansas State University, Department of Animal Science and Industry, Manhattan*, [2]*Iowa State University, Ames.*

10:00 AM 15 **Characterization and antibiotic susceptibility of *Mycoplasma* isolates from mastitic buffaloes.**
I. Hussain*[1], S. ur Rahman[2], F. A. Atif[1], and M. Arif[1], [1]*University College of Agriculture, University of Sargodha., Sargodha, Punjab, Pakistan*, [2]*University of Agriculture Faisalabad, Faisalabad, Punjab, Pakistan.*

10:15 AM 16 **Development of detecting kit for bovine myeloperoxidase using enzyme-linked immunosorbent assay.**
J. Shi, Q.-Z. Li*, Y. Yang, Y. Lv, and X.-J. Gao, *Key Laboratory of Dairy Science of Ministry of Education, Northeast Agricultural University, P.R. China.*

10:30 AM 17 **The identification of candidate genes and candidate gene structural variation for bovine spongiform encephalopathy.**
J. Thomson*, V. Bowles, J. Choi, P. Stothard, and S. Moore, *University of Alberta, Edmonton, AB, Canada.*

10:45 AM 18 **Genomic regions associated with incidence of disease in cattle using DNA pooling and a high-density single nucleotide polymorphism array.**
E. Casas*, L. A. Kuehn, T. G. McDaneld, T. P. L. Smith, and J. W. Keele, *USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE.*

11:00 AM 19 **In vitro and in vivo anthelmintic activity of *Amomum subulatum* Roxb. seeds.**
Z. Iqbal*, N. Badar, M. Khan, and Z. Sindhu, *Department of Parasitology, University of Agriculture, Faisalabad, Punjab-Pakistan.*

11:15 AM 20 **Lentisk (*Pistacia lentiscus* L.) browse prevents gastro-intestinal nematode infection in goats.**
S. Y. Landau*[1], A. H. Azaizeh[2], H. Muklada[1], T. A. Glasser[3], E. D. Ungar[1], and A. Marcovics[4], [1]*Agricultural Research Organization, the Volcani Center, Department of Agronomy and Natural Resources, Bet Dagan, Israel*, [2]*Institute of Applied Research, The Galilee Society (Affiliated with University of Haifa), Shefa-Amr, Israel*, [3]*The Ramat Hanadiv Nature Park, Zikhron Ya'akov, Israel*, [4]*Department of Parasitology, Kimron Veterinary Institute, Bet Dagan, Israel.*

21 **Withdrawn**

11:30 AM 22 **Occurrence of paratuberculosis in the hilly regions of Himachal Pradesh, India.**
J. S. Sohal*, S. V. Singh, P. K. Singh, and A. V. Singh, *Central Institute for Research on Goats, Mathura, UP, India.*

11:45 AM 23 **Status of *Mycobacterium avium* subspecies *paratuberculosis* Infection in the Cow Shelters (Goshalas/Pinjarapoles) in India.**
S. V. Singh*[1], A. V. Singh[1], P. K. Singh[1], B. Singh[1], A. Kumar[1], B. S. Chandel[3], A. Srivastav[2], S. Gupta[1], H. Singh[1], A. Mittal[1], and S. Yadav[2], [1]*Central Institute for Research on Goats, Mathura, Uttar Pradesh, India*, [2]*College of Veterinary Sciences, Mathura, Uttar Pradesh, India*, [3]*College of Veterinary Science, Dantiwada, Gujarat, India.*

12:00 PM 24 **Finishing performance and carcass traits of heifers previously managed with three respiratory disease protocols.**
J. L. Wahrmund*[1], D. B. Burken[1], B. K. Wilson[1], S. J. Terrill[1], C. R. Krehbiel[1], D. L. Step[2], S. M. Trost[3], C. L. Goad[4], and C. J. Richards[1], [1]*Oklahoma State University, Department of Animal Sciences, Stillwater*, [2]*Oklahoma State University, Department of Veterinary Clinical Sciences, Stillwater*, [3]*Strategic Solutions International, Stillwater, OK*, [4]*Oklahoma State University, Department of Statistics, Stillwater.*

## Beef Species & Ruminant Nutrition Joint Symposium
## Cow Size, Genetics, Management and The Beef Industry
## Chair: Jason Rowntree, Michigan State University
Sponsor: Cargill Animal Nutrition
## 291-292

9:30 AM 25 **Management and genetic factors affecting efficiency of cattle in a grazing environment.**
A. J. Roberts*, J. T. Mulliniks, R. C. Waterman, T. W. Geary, L. J. Alexander, M. K. Petersen, and M. D. MacNeil, *USDA-ARS, Fort Keogh Livestock and Range Research Laboratory, Miles City, MT.*

10:15 AM 26 **Genetics of postweaning performance of beef cattle on forage.**
M. A. Brown*[1], J. W. Holloway[2], D. L. Lalman[3], C. Dobbs[3], and S. M. Clifton[4], [1]*USDA-ARS, Grazinglands Research Laboratory, El Reno, OK*, [2]*Texas AgriLife Research, San Angelo*, [3]*Oklahoma State University, Stillwater*, [4]*Redlands Community College, El Reno, OK.*

11:00 AM 27 **A historical perspective on the influence of the beef industry on mature cow size.**
B. McMurry*, *Cargill Animal Nutrition, Minneapolis, MN.*

11:45 AM 28 **Conclusion: Cow size and keeping perspective.**
R. H. Pritchard*, *South Dakota State University, Brookings.*

## Breeding and Genetics
## Genomic Selection and Whole-Genome Association I
## Chair: Selma Forni, Genus Plc
## 288-289

9:30 AM 29 **Effect of different genomic relationship matrices on accuracy and scale.**
I. Misztal*[1], C. Y. Chen[2], I. Aguilar[5], Z. G. Vitezica[3], A. Legarra[3], and W. M. Muir[4], [1]*University of Georgia, Athens*, [2]*Newsham Choice Genetics, Chesterfield, MO*, [3]*INRA, Castanet-Tolosan, France*, [4]*Purdue University, West Lafayette, IN*, [5]*INIA, Las Brujas, Uruguay.*

9:45 AM 30 **Comparisons of numerator and genomic and relationship matrices.**
H. Wang* and I. Misztal, *University of Georgia, Athens, GA.*

10:00 AM 31 **A recursive method of approximation of the inverse of genomic relationships matrix.**
P. Faux*[1], N. Gengler[1,2], and I. Misztal[3], [1]*University of Liege, Gembloux Agro-Bio Tech, Animal Science Unit, Gembloux, Belgium*, [2]*National Fund for Scientific Research, Brussels, Belgium*, [3]*University of Georgia, Animal and Dairy Science Department, Athens.*

10:15 AM 32 **Adapting Bayesian mixture model algorithms to estimate hyperparameters that characterize genetic architecture in genomic selection models.**
R. J. Tempelman*[1], W. Yang[1], J. P. Steibel[1], and N. M. Bello[2], [1]*Michigan State University, East Lansing*, [2]*Kansas State University, Manhattan.*

10:30 AM 33 **Improving accuracy of genomic selection by hierarchical Bayesian modeling of spatially correlated chromosomal effects.**
W. Yang* and R. J. Tempelman, *Michigan State University, East Lansing.*

10:45 AM 34 **Incorporating molecular breeding values with variable call rates into genetic evaluations.**
S. D. Kachman*[1], G. L. Bennett[2], K. J. Hanford[1], L. A. Kuehn[2], E. J. Pollak[2], W. M. Snelling[2], M. L. Spangler[1], and R. M. Thallman[2], [1]*University of Nebraska, Lincoln*, [2]*U.S. Meat Animal Research Center, Clay Center, NE.*

11:00 AM 35 **Impacts of inclusion of foreign data in genomic evaluation of dairy cattle.**
K. M. Olson*[1], P. M. VanRaden[2], and D. J. Null[2], [1]*National Association of Animal Breeders, Columbia, MO*, [2]*Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD.*

11:15 AM 36 **Optimization of principal component extraction for direct genomic value prediction in a multibreed population.**
N. P. P. Macciotta*[1], M. A. Pintus[1], R. Steri[1], G. Gaspa[1], D. Vicario[2], E. Santus[3], J. T. H. Van Kaam[4], and P. Ajmone Marsan[5], [1]*Università di Sassari, Sassari, Italy*, [2]*ANAPRI, Udine, Italy*, [3]*ANARB, Bussolengo, Italy*, [4]*ANAFI, Cremona, Italy*, [5]*Università Cattolica del Sacro Cuore, Piancenza, Italy.*

11:30 AM 37 **Adjustment of deregressed values from cow evaluations to have the similar mean and variance as bull deregressed values.**
G. R. Wiggans*, P. M. VanRaden, and T. A. Cooper, *Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD.*

11:45 AM 38 **Effectiveness of genomic selection on milk flow traits in dairy cattle.**
K. A. Gray*[1], J. P. Cassady[1], A. Rossoni[2], and C. Maltecca[1], [1]*North Carolina State University, Raleigh*, [2]*Italian Brown Breeders Association, Bussolengo, VR, Italy.*

12:00 PM 39 **Visualization of associations between single nucleotide polymorphisms and economically important dairy traits using biplot analysis.**
A. I. Vazquez[1], K. A. Weigel*[2], G. J. M. Rosa[2], D. Gianola[2], and D. B. Allison[1], [1]*University of Alabama, Birmingham*, [2]*University of Wisconsin, Madison.*

12:15 PM 40 **Using single nucleotide polymorphism to detect selection signature in Hereford beef cattle.**
Y. Huang*[1], C. Maltecca[1], M. D. MacNeil[2], and J. P. Cassady[1], [1]*Department of Animal Science, North Carolina State University, Raleigh*, [2]*USDA-ARS, Fort Keogh Livestock and Range Research Laboratory, Miles City, MT.*



## Extension Education Symposium
## Reinventing Extension as a Resource – What does the Future Hold?
## Chair: Vanessa Corriher, Texas A&M University
## 290

9:30 AM **Introduction**
V. Corriher, *Texas A&M University*.

9:35 AM 41 **National Institute of Food and Agriculture (NIFA) grants and extension: Expectations for integrated projects.**
M. A. Mirando* and K. M. Whittet, *National Institute of Food and Agriculture, U.S. Department of Agriculture, Washington, DC.*

10:20 AM 42 **Integrating extension and research projects.**
D. J. Patterson*, *University of Missouri, Columbia.*

11:00 AM 43 **The role of eXtension in delivering research results to producers and allied industry partners through a national platform.**
D. M. Amaral-Phillips* and N. L. McGill, *University of Kentucky.*

11:15 AM 44 **How can extension use media to connect to and maintain connections and conversations with farmers, ranchers, and producers?**
J. Blue* and N. Arthur, *Truffle Media Networks, Indianapolis, IN.*

11:55 AM 45 **Opportunities and challenges associated with the use of technology in extension programming.**
J. M. Bewley*, *University of Kentucky, Lexington.*

## Food Safety Symposium
## Safe Food Production: Zoonotic Disease-Control, Responsibility, and Liability
## Chair: Kristi Smedley, Center for Regulatory Services Inc.
## 296

9:30 AM 46 **Safe food production: Zoonotic disease-control, responsibility, and liability**.
C. Custer*, *Independent Consultant.*

9:40 AM **FDA Authority and Food Production Controls to Protect the Public from Zoonotic Diseases**.
T. Schell, *FDA/CVM* .

10:00 AM **Authority and Food Production Controls to Protect the Public from Zoonotic Diseases**.
D. Engeljohn, *USDA*.

10:20 AM **Animal Traceability—a part of the solution.**
S. Larsen, *National Pork Board* .

10:30 AM 47 **Fundamentals of foodborne illness litigation – Are you at risk?**
P. Waller*, *Epidemiologist, Marler Clark Law Firm.*

11:00 AM **Panel Discussion/Questions**

## Forages and Pastures
## Improving Silage Conservation, Utilization and Performance of Grazing Ruminants
## Chair: Limin Kung and Jamie Foster
## 389

9:30 AM 48 **Effect of microbial inoculants on the quality and stability of bermudagrass haylage.**
K. G. Arriola*[1], O. C. M. Queiroz[1], J. J. Romero[1], J. Kivipelto[1], E. N. Muniz[1,2], J. C. Hamie[1], M. A. Zarate[1], L. G. Paranhos[1], and A. T. Adesogan[1], [1]*Department of Animal Sciences, Institute of Food and Agricultural Sciences, University of Florida, Gainesville*, [2]*Embrapa Tabuleiros Costeiros, Aracaju, SE Brazil.*

9:45 AM 49 **The impact of aerobic deterioration of corn silage on feed intake by goats.**
K. Gerlach*, F. Roß, W. Büscher, and K.-H. Südekum, *University of Bonn, Bonn, Germany.*

10:00 AM 50 **Caloric content of brown midrib sorghum silage harvested at two maturities, fed with concentrate at two levels of intake using in vivo, in vitro and prediction equation methods as related to rumen fermentation and fractional passage.**
J. Lim, M. A. Froetschel*, and L. O. Ely, *The University of Georgia, Athens.*

10:15 AM 51 **Intake and digestibility in steers fed sugarcane ensiled with different levels of calcium oxide.**
F. H. M. Chizzotti*[1], O. G. Pereira[2], S. C. Valadares Filho[2], M. L. Chizzotti[1], and R. T. S. Rodrigues[3], [1]*Universidade Federal de Lavras, Lavras, MG, Brazil*, [2]*Universidade Federal de Viçosa, Viçosa, MG, Brazil*, [3]*Universidade Federal do Vale do São Francisco, Petrolina, PE, Brazil.*

10:30 AM 52 **Effects of co-grazing dairy heifers with goats on animal performance, pasture composition, and dry matter yield.**
T. S. Dennis*, M. K. Neary, L. J. Unruh-Snyder, J. E. Tower, and T. D. Nennich, *Purdue University, West Lafayette, IN.*

10:45 AM 53 **Forage mineral concentrations and mineral status of beef cattle grazing cool season pastures in northwestern Florida, emphasizing magnesium.**
J. N. Carter[2], L. R. McDowell*[1], R. O. Myer[2], M. K. Maddox[2], and M. Brennan[2], [1]*University of Florida, Gainesville*, [2]*University of Florida, Marianna.*

11:00 AM 54 **In vitro rumen fluid digestion activity of grazing cows as related to productivity and days postpartum.**
E. G. Tesfaye, M. A. Froetschel*, L. O. Ely, N. S. Hill, and M. J. Mathis, *The University of Georgia, Athens.*

11:15 AM 55 **Forage characteristics and animal performance of beef heifers grazing 'Mulato II' brachiariagrass in North-Central Florida.**
J. M. B. Vendramini*[1], G. C. Lamb[2], L. E. Sollenberger[3], J. L. Foster[4], and M. Maddox[2], [1]*UF/IFAS Range Cattle Research and Education Center, Ona*, [2]*UF/IFAS North Florida Research and Education Center, Marianna*, [3]*Agronomy Department, Gainesville, FL*, [4]*Texas Agrilife Research and Education Center, Beeville.*

11:30 AM 56 **Bermudagrass–legume forage systems for summer stockers.**
B. M. Nichols[1], C. A. Moffet[1], J. T. Biermacher[1], T. J. Butler[1], R. R. Reuter[1], J. K. Rogers[1], J. A. Guretzky[2], and J. R. Blanton*[1], [1]*The Samuel Roberts Noble Foundation, Ardmore, OK*, [2]*University of Nebraska, Lincoln.*

11:45 AM 57 **Stocker production systems utilizing warm-season perennial grass pasture: Cattle performance and nitrogen use efficiency.**
B. W. Wallis*, P. A. Lancaster, E. D. Sharman, D. B. Arnall, J. G. Warren, T. E. Ochsner, S. R. Lancaster, and G. W. Horn, *Oklahoma Agricultural Experiment Station, Stillwater.*

12:00 PM 58 **Effect of protein supplementation on intake and digestion of three bermudagrass hays of divergent quality by beef cattle.**
C. P. Payne*, T. M. Warnock, J. E. Sawyer, and T. A. Wickersham, *Texas A&M University, College Station.*

12:15 PM 59 **Effect of level and frequency of protein supplementation on utilization of South Texas grass hay.**
G. R. Monson[1], J. E. Sawyer[1], R. O. Dittmar[1], M. L. Drewery[1], C. P. Payne[1], K. C. McCuistion[2], and T. A. Wickersham*[1], [1]*Texas A&M University, College Station*, [2]*Texas A&M University-Kingsville, Kingsville.*



## Graduate Student Competition: ADSA Dairy Foods Oral Competition
## Chair: Stephanie Clark, Iowa State University
## 295

9:30 AM 60 **Effect of salt replacers and flavor enhancers to reduce sodium in Cheddar cheese on aging and sensory properties.**
J. E. Grummer* and T. C. Schoenfuss, *University of Minnesota, Department of Food Science and Nutrition, St. Paul.*

9:45 AM 61 **The influence of NaCl reduction on the properties of cheddar cheese where moisture contents were kept constant.**
K. V. Grant*[1], S. Govindasamy-Lucey[2], J. J. Jaeggi[2], M. E. Johnson[2], and J. A. Lucey[1], [1]*University of Wisconsin, Madison*, [2]*Wisconsin Center for Dairy Research, Madison.*

10:00 AM 62 **Concentration of casein micelles: Changes in renneting functionality in the presence of sodium caseinate.**
P. Krishnankutty Nair*[1,2] and M. Corredig[1], [1]*Department of Food Science, University of Guelph, Guelph, Ont., Canada*, [2]*Department of Dairy Development, Government of Kerala, India.*

10:15 AM 63 **Impact of transglutaminase on the functionality of micellar casein concentrate in process cheese product applications.**
P. Salunke* and L. E. Metzger, *Midwest Dairy Foods Research Centre, South Dakota State University, Brookings.*

10:30 AM 64 **Production of a high concentration liquid micellar casein concentrate (18% protein) with a long refrigerated shelf-life.**
I. Amelia* and D. M. Barbano, *Cornell University, Ithaca, NY.*

10:45 AM 65 **Serum protein removal from skim milk with a 3-stage, 3X ceramic Isoflux membrane process at 50°C.**
M. Adams* and D. M. Barbano, *Cornell University, Ithaca, NY.*

11:00 AM 66 **The manufacture of linoleic acid-modified chitosan/β-lactoglobulin nanoparticles as a delivery system of quercetin.**
H.-K. Ha*, M.-R. Lee, and W.-J. Lee, *Division of Applied Life Sciences (Institute of Agriculture and Life Science), Gyeongsang National University, Jinju, Korea.*

11:15 AM 67 **Alternative bleaching methods for 80% whey protein concentrate.**
E. J. Kang* and M. A. Drake, *North Carolina State University, Raleigh.*

11:30 AM 68 **Impact of bleaching whey on the sensory and functional properties of 80% whey protein concentrate.**
S. M. Jervis*[1], R. E. Campbell[1], K. Wojciechowski[2], D. M. Barbano[2], and M. A. Drake[1], [1]*North Carolina State University, Raleigh*, [2]*Cornell University, Ithaca, NY.*

11:45 AM 69 **The complete genome sequence of *Bifidobacterium animalis* ssp. *animalis* ATCC 25527$^T$ and analysis of growth in milk.**
J. R. Loquasto*[1], R. Barrangou[2,1], E. G. Dudley[1], and R. F. Roberts[1], [1]*The Pennsylvania State University, University Park*, [2]*Danisco USA Inc., Madison, WI.*

## Graduate Student Competition: ADSA Graduate Paper Competition - Production Division - PhD Students
## Chair: Benjamin Corl, Virginia Tech
## 390

9:30 AM 70 **Ruminal fermentation characteristics and lactational performance of Holstein dairy cows fed whole safflower seeds.**
C. M. Dschaak*[1], C. T. Noviandi[1], J.-S. Eun[1], V. Fellner[2], A. J. Young[1], D. R. ZoBell[1], and C. E. Israelsen[3], [1]*Department of Animal, Dairy, and Veterinary Sciences, Utah State University, Logan*, [2]*Department of Animal Science, North Carolina State University, Raleigh*, [3]*Cooperative Extension, Utah State University, Logan.*

9:45 AM 71 **The effects of NPH insulin and insulin glargine on milk yield and composition by lactating dairy cows.**
L. A. Winkelman* and T. R. Overton, *Cornell University, Ithaca, NY.*

10:00 AM 72 **The effects of degradable nitrogen level and degradation rate on nitrogen balance and urea kinetics in Holstein steers.**
V. B. Holder*[1], J. Tricarico[2], D. H. Kim[1], N. B. Kristensen[3], and D. L. Harmon[1], [1]*University of Kentucky, Lexington*, [2]*Alltech, Brookings, SD*, [3]*Aarhus University, Tjele, Denmark.*

10:15 AM 73 **Effects of monensin on metabolic parameters, feeding behavior, and productivity of transition dairy cows.**
C. R. Mullins*[1], L. K. Mamedova[1], M. J. Brouk[1], C. E. Moore[2], H. B. Green[2], K. L. Perfield[2], J. F. Smith[1], J. P. Harner[1], and B. J. Bradford[1], [1]*Kansas State University, Manhattan*, [2]*Elanco Animal Health, Greenfield, IN.*

10:30 AM 74 **The effect of ketoprofen following left displaced abomasum surgery on lying behaviour and ketosis.**
N. C. Newby*[1], S. J. LeBlanc[1], K. E. Leslie[1], D. L. Pearl[1], M. A. G. von Keyserlingk[2], and T. F. Duffield[1], [1]*University of Guelph, Guelph, Ontario, Canada*, [2]*University of British Columbia, Vancouver, British Columbia, Canada.*

10:45 AM 75 **Ruminal fermentation and nutrient digestion by dairy cows fed different concentrations of forage and dried distillers grains with solubles.**
S. D. Ranathunga*, K. F. Kalscheur, A. R. Hippen, and D. J. Schingoethe, *South Dakota State University, Brookings.*

11:00 AM **Break**

11:15 AM 76 **On-farm validation of two rapid methods to estimate IgG in bovine colostrum.**
K. M. Morrill*[1], E. Conrad[1], A. Lago[2], J. D. Quigley[2], and H. D. Tyler[1], [1]*Iowa State University, Ames*, [2]*APC Inc., Ankeny, IA.*

11:30 AM 77 **Physiological and transcriptional adaptations in adipose tissue of dairy cows in response to prepartal plane of dietary energy.**
P. Ji*, J. S. Osorio, J. K. Drackley, and J. J. Loor, *University of Illinois, Urbana.*

11:45 AM 78 **Expression of novel, putative stem cell markers in prepubertal and lactating bovine mammary glands.**
R. K. Choudhary*[1], C. M. Evock-Clover[2], and A. V. Capuco[2,1], [1]*Department of Animal Sciences, University of Maryland, College Park*, [2]*Bovine Functional Genomics Lab, USDA-ARS, Beltsville, MD.*

12:00 PM 79 **Effect of dietary protein level and rumen-protected methionine supplementation on performance of lactating dairy cows.**
C. Lee*[1], A. N. Hristov[1], T. Cassidy[1], H. Heyler[1], H. Lapierre[2], G. A. Varga[1], and C. Parys[3], [1]*Pennsylvania State University, University Park*, [2]*Agriculture and Agri–Food Canada, Sherbrooke, QC, Canada*, [3]*Evonik Degussa GmbH, Hanau, Germany.*

12:15 PM 80 **Summer assessment and validation of metabolic profile reference values for transition Holstein dairy cattle.**
K. J. Lager*[1,2], E. R. Jordan[1], and D. R. Topliff[2], [1]*Texas AgriLife Extension Service, Texas A&M System, College Station*, [2]*West Texas A&M University, Canyon.*

12:30 PM 81 **Effect of follicular wave and progesterone (P4) concentration during follicle growth on fertility of dairy cows.**
R. S. Bisinotto*[1], H. Ayres[1], M. R. Carvalho[1], E. S. Ribeiro[1], R. L. A. Cerri[2], L. F. Greco[1], F. S. Lima[1], M. G. Favoreto[1], A. P. Monteiro[1], M. C. Perdomo[1], W. W. Thatcher[1], and J. E. P. Santos[1], [1]*University of Florida, Gainesville*, [2]*University of British Columbia, Vancouver, BC, Canada.*

## Graduate Student Competition: ADSA Southern Section
## Chair: Christie Stanley, Land O'Lakes Purina Feed
## 388

9:30 AM 82 **Production response to corn silage produced from normal, brown midrib, or waxy corn hybrids.**
J. S. Barlow*, J. K. Bernard, and N. A. Mullis, *The University of Georgia, Tifton.*

9:45 AM 83 **Ruminal escape and intestinal digestibility of experimental ruminal protected lysine supplements.**
Z. Wu*[1], J. K. Bernard[1], R. B. Eggleston[2], and T. C. Jenkins[3], [1]*University of Georgia, Tifton*, [2]*University of Georgia, Athens*, [3]*Clemson University, Clemson, SC.*

10:00 AM 84 **Effect of sample processing on in situ protein degradability of distillers grains.**
M. L. Drewery*[1], J. E. Sawyer[1], N. M. Kenney[1], W. E. Pinchak[2], and T. A. Wickersham[1], [1]*Texas A&M University, College Station*, [2]*Texas AgriLife Research, Vernon.*

10:15 AM 85 **Effects of heat stress and increased protein and energy fed in milk replacers on health parameters of neonatal Holstein bull calves.**
A. J. Krenek*[1], G. A. Holub[1], T. A. Tomaszewski[1], and C. C. Stanley[2], [1]*Texas A&M University, College Station*, [2]*Land O Lakes Purina Feed, Amarillo, TX.*

10:30 AM 86 **Effects of resistant starch in milk replacer on health and performance of neonatal Holstein heifer calves.**
B. L. Fisher*, B. F. Jenny, C. C. Williams, C. F. Hutchison, A. H. Dolejsiova, and R. G. Morell, *LSU AgCenter, Baton Rouge, LA.*

10:45 AM 87 **Potential for estrus detection in dairy cattle using reticular temperature monitors.**
W. A. Smith*, W. J. Silvia, and J. M. Bewley, *University of Kentucky, Lexington.*

## Lactation Biology Symposium
## Circadian Clocks and Photoperiod in Mammary Development and Lactation
## Chair: Darryl Hadsell, Baylor College of Medicine
## 286-287



9:30 AM **Welcom and Introduction**
D. Hadsell, *Baylor College of Medicine, Houston, TX*.

9:35 AM 88 **Circadian timekeeping mechanisms.**
P. Hardin*, *Texas A&M University, College Station.*

10:15 AM 89 **Circadian clocks in mammary gland development and differentiation.**
W. Porter*, *Texas A&M University, College Station.*

10:55 AM **Break**

11:10 AM 90 **Circadian clocks as mediators of the homeorhetic response to lactation.**
T. Casey* and K. Plaut, *Purdue University, West Lafayette, IN.*

11:50 AM 91 **Effects of photoperiod on mammary gland development and lactation.**
G. E. Dahl*, S. Tao, and I. M. Thompson, *University of Florida, Gainesville.*

## Nonruminant Nutrition
## Enzymes & Minerals
## Chairs: Mark Whitney, University of Minnesota, and Rommel Sulabo, University of Illinois
Sponsors: BASF, Archer Daniels Midland
## 383-385

9:30 AM 92 **Supplemental dietary phytase alters gut microbiota of weanling pigs.**
L. Wang and X. G. Lei*, *Cornell University, Ithaca, NY.*

9:45 AM 93 **Effects of phytase on standardized total tract digestibility of P in copra expellers, palm kernel expellers, and palm kernel meal fed to growing pigs.**
B. L. Almaguer*[1], R. C. Sulabo[2], and H. H. Stein[2], [1]*Universidad Autónoma de Querétaro, Mexico*, [2]*University of Illinois, Urbana.*

10:00 AM 94 **Supplementing a xylanase alone or a combination of xylanase and β-glucanase on growth performance, health, and nutrient digestibility of nursery pigs.**
Y. Han* and A. Ludger, *Nutreco R & D, Boxmeer, the Netherlands.*

10:15 AM 95 **Effect of different dietary calcium concentrations on the digestive and metabolic response of growing pigs to microbial phytase.**
X. Rousseau*[1,2], M. P. Letourneau-Montminy[3], M. Magnin[2], A. Narcy[1], and C. Pomar[3], [1]*INRA UR83 Poultry Research, Nouzilly, France*, [2]*BNA Animal Nutrition, Chateau-Gontier, France*, [3]*Agriculture and Agrifood, Lennoxville, QC, Canada.*

10:30 AM 96 **Effects of supplemented NSP-degrading enzymes on nutrient digestibility of diets containing wheat and wheat millrun fed to grower pigs.**
D. Shrestha*[1], J. Broz[2], and R. T. Zijlstra[1], [1]*University of Alberta, Edmonton, AB, Canada*, [2]*DSM Nutritional Products, Animal Nutrition and Health R&D, Basel, Switzerland.*

10:45 AM 97 **Capillary electrophoresis coupled with inductively coupled plasma mass spectrometry (CE-ICP-MS) enables identification and quantification of copper and manganese glycinate complexes in enriched feed samples and the study of their bioavailability.**
C. Ionescu*[1], V. Vacchina[2], R. Lobinski[3], and D. Bravo[1], [1]*Pancosma, Geneva, Switzerland*, [2]*UT2A, Pau, France*, [3]*CNRS, Pau, France.*

11:00 AM 98 **Effects of feeding tribasic copper chloride or copper sulfate on growth and efficiency of nursery pigs.**
E. A. Koutsos*[1], G. L. Allee[2], and T. J. Prince[3], [1]*Micronutrients, Indianapolis, IN*, [2]*PorkTech LLC, Columbia, MO*, [3]*Prince Nutrition Service LLC, Auburn, AL.*

11:15 AM 99 **Intestinal, liver, kidney, serum and biliary Cu concentrations in piglets fed Cu proteinate or $CuSO_4$.**
B. Aldridge*[1], R. F. Power[2], K. A. Dawson[2], and S. Radcliffe[1], [1]*Purdue University, Department of Animal Science, West Lafayette, IN*, [2]*Center for Animal Nutrigenomics and Applied Animal Nutrition, Alltech, Nicholasville, KY.*

11:30 AM 100 **Effect of dietary calcium on gastric ulceration in yearling horses.**
C. W. Waters*[1], D. H. Sigler[1], N. D. Cohen[2], and P. G. Gibbs[1], [1]*Texas A&M University Department of Animal Science, College Station*, [2]*Texas A&M University College of Veterinary Medicine, College Station.*

## Physiology and Endocrinology
## Estrous Cycle Manipulation - Dairy
## Chair: Paul Fricke, University of Wisconsin
## 393

9:30 AM 101 **Ovarian follicular development, luteal function, and fertility in lactating Holstein cows treated with 14dCIDR_PGF or 2xPGF_Ovsynch56 for first insemination timed AI (TAI).**
R. C. Escalante*, S. E. Poock, D. J. Mathew, W. R. Martin, E. M. Newsom, J. L. Denbigh, E. C. Adkins, and M. C. Lucy, *University of Missouri-Columbia, Columbia.*

9:45 AM 102 **Prostaglandin $F_{2\alpha}$ and GnRH administration increase progesterone, luteal number, and proportion of dairy cows with corpora lutea before a timed AI program.**
J. S. Stevenson*, S. L. Pulley, and H. I. Mellieon, *Kansas State University, Manhattan.*

10:00 AM 103 **Evaluation of LH release after the intrauterine administration of gnrh in lactating dairy cattle.**
S. Bas*, C. G. Pinto, M. L. Day, and G. M. Schuenemann, *The Ohio State University, Columbus.*

10:15 AM **Break**

10:30 AM 104 **Effect of presynchronization strategy prior to ovsynch on fertility at first service in lactating dairy cows.**
A. Keskin[1], G. Yilmazbas-Mecitoglu*[1], E. Karakaya[1], A. Alkan[2], H. Okut[3], A. Gumen[2], and M. C. Wiltbank[4], [1]*Department of Obstetrics and Gynecology, Faculty of Veterinary Medicine, University of Uludag, Bursa, Turkey*, [2]*Tarfas Company, Bursa, Turkey*, [3]*Biometry and Genetics, Faculty of Agriculture, University of Yuzuncu Yil, Van, Turkey*, [4]*Department of Dairy Science, University of Wisconsin-Madison, Madison.*

10:45 AM 105 **Effects of presynchronization (PRE) and length of proestrus (LP) on pregnancy per AI (P/AI) of grazing dairy cows subjected to the 5d-Cosynch protocol.**
E. S. Ribeiro*, A. P. A. Monteiro, F. S. Lima, R. S. Bisinotto, H. Ayres, L. F. Greco, M. Favoreto, R. S. Marsola, W. W. Thatcher, and J. E. P. Santos, *University of Florida, Gainesville.*

11:00 AM 106 **Two- and three-wave estrous cycles in dairy cows, investigated with a mechanistic mathematical model**.
M. Boer*[1,3], S. Röblitz[2], C. Stötzel[2], R. Veerkamp[1], B. Kemp[3], and H. Woelders[1], [1]*Animal Breeding and Genomics Centre, Wageningen UR Livestock Research, Lelystad, the Netherlands*, [2]*Computational Systems Biology Group, Zuse Institute Berlin, Berlin, Germany*, [3]*Adaptation Physiology Group, Department of Animal Sciences, Wageningen University, Wageningen, the Netherlands.*

## Production, Management and the Environment
## Dairy Production I
## Chair: Marcia Endres, University of Minnesota
## 386-387

9:30 AM 107 **A meta-analysis of the impact of stocking rate on the productivity of pasture-based milk production systems.**
B. McCarthy*[1,2], L. Delaby[3], K. M. Pierce[2], F. Journot[1], and B. Horan[1], [1]*Animal and Grassland Research and Innovation Centre, Teagasc Moorepark, Fermoy, Co. Cork, Ireland*, [2]*School of Agriculture, Food Science and Veterinary Medicine, University College Dublin, Belfield, Dublin, Ireland*, [3]*INRA, AgroCampus Ouest, Saint-Gilles, France.*

9:45 AM 108 **Claw length and angle in lactating Jersey cattle, field measurements.**
D. J. Tomlinson*[1], L. Rodriguez[1], M. L. McGilliard[2], and K. Burgi[3], [1]*Zinpro Performance Minerals, Eden Prairie, MN*, [2]*Virginia Tech, Blacksburg*, [3]*Dairyland Hoof Care Institute Inc., Baraboo, WI.*

10:00 AM 109 **A ranking system based on stochastic modeling to identify efficient dairy farms using farm-level inputs.**
A. S. Atzori*[1], A. Cannas[1], and L. O. Tedeschi[2], [1]*Dipartimento di Scienze Zootecniche, Università di Sassari, Sassari, Italy*, [2]*Department of Animal Science, Texas A&M University, College Station.*

10:15 AM 110 **Predictors of primiparous and multiparous transition cow success from an automatic milking system.**
R. F. Leuer*, J. K. Reneau, J. M. Lukas, and M. I. Endres, *University of Minnesota, St. Paul.*

10:30 AM 111 **Effects of sodium bicarbonate or calcium magnesium carbonate on intake, digestibility and milk yield and composition of high producing dairy cows.**
R. E. Rauch*[1,2], P. H. Robinson[2], D. D. Simms[3], and L. J. Erasmus[1], [1]*University of Pretoria, Pretoria, South Africa*, [2]*University of California, Davis*, [3]*MIN-AD, Amarillo, TX.*

112 **Withdrawn**

10:45 AM 113 **Quantification of phytate in dairy digesta and feces using alkaline extraction and high performance ion chromatography.**
P. P. Ray*, C. Shang, J. P. Jarrett, and K. F. Knowlton, *Virginia Polytechnic Institute and State University, Blacksburg.*

11:00 AM 114 **Use of rumen fluid to inoculate dairy excrement for bio-fuel production by anaerobic digestion.**
C. L. Ross*, K. C. Das, and M. A. Froetschel, *University of Georgia, Athens.*



## Ruminant Nutrition
## Beef: By-Product Feeds
## Chair: Aimee Wertz, South Dakota State University
## 294

9:30 AM 115 **Effects of corn processing method and dietary inclusion of wet distillers grain with solubles on carbon-nitrogen balance of finishing cattle**.
K. E. Hales*[1], N. A. Cole[1], and J. C. MacDonald[2], [1]*USDA-ARS-CPRL, Bushland, TX*, [2]*Texas Agrilife Research Center, Amarillo.*

9:45 AM 116 **Effects of corn processing method and dietary inclusion of wet distillers grain with solubles on energy metabolism and enteric methane emissions of finishing cattle.**
K. E. Hales*[1], N. A. Cole[1], and J. C. MacDonald[2], [1]*USDA-ARS-CPRL, Bushland, TX*, [2]*Texas Agrilife Research Center, Amarillo.*

10:00 AM 117 **Effects of spoilage of wet distillers grains plus solubles on feedlot performance.**
J. L. Harding*, B. N. Nuttleman, K. R. Rolfe, T. J. Klopfenstein, and G. E. Erickson, *University of Nebraska-Lincoln.*

10:15 AM 118 **Effect of partially replacing barley grain with wheat bran alone or in combination with condensed liquid whey on performance of backgrounding steers.**
A. D. Friedt*[1], T. A. McAllister[2], B. Wildeman[3], and J. J. McKinnon[1], [1]*University of Saskatchewan, Saskatoon, SK, Canada*, [2]*Agriculture and Agri-Food Canada, Lethbridge Research Centre, AB, Canada*, [3]*Pound-Maker Agventures Ltd., Lanigan, SK, Canada.*

10:30 AM 119 **Effects of wet distillers grains plus solubles on health and performance of high-risk calves.**
J. J. Wagner*, C. R. Krehbiel, D. B. Burken, B. K. Wilson, D. L. Step, and C. J. Richards, *Oklahoma State University, Stillwater.*

10:45 AM 120 **Effect of feeding crude glycerin on prevalence of *E. coli* O157:H7 in growing cattle**.
C. Aperce*, J. Heidenreich, C. J. Schneider, and J. S. Drouillard, *Kansas State University, Manhattan, Kansas.*

11:00 AM 121 **Effects of distillers grain with soluble and supplemental copper and molybdenum on ammonia emissions and nitrogen retention.**
L. D. Cross*, S. R. Rust, and W. J. Powers, *Michigan State University.*

11:15 AM 122 **Effect of adding rumen degradable protein to a dried distillers grain supplement on growth performance and body composition in yearling Angus and Brangus heifers**.
E. N. Alava*, A. M. Monari, M. J. Hersom, and J. V. Yelich, *University of Florida, Gainesville.*

11:30 AM 123 **Feeding distillers grains containing elevated sulfur concentration depresses performance of feedlot steers.**
S. Uwituze[1], C. L. Van Bibber*[1], K. A. Miller[1], K. K. Karges[2], L. C. Hollis[1], J. J. Higgins[3], and J. S. Drouillard[1], [1]*Department of Animal Sciences and Industry Kansas State University, Manhattan*, [2]*Poet Nutrition, Sioux Falls, SD*, [3]*Department of Statistics Kansas State University, Manhattan.*

11:45 AM 124 **Effects of crude glycerin in byproducts diets on performance and carcass characteristics of feedlot cattle.**
E. H. C. B. van Cleef*[2], S. Uwituze[1], C. L. Van Bibber[1], K. A. Miller[1], C. C. Aperce[1], K. L. Blaine[1], J. J. Higgins[1], and J. S. Drouillard[1], [1]*Kansas State University, Manhattan*, [2]*São Paulo State University, Jaboticabal, São Paulo, Brazil.*

12:00 PM 125 **Use of corn or crude glycerol as energy source to supplement holstein calves fed with sorghum silage ad-libitum**.
P. Chilibroste*[1], A. Elías[2], and J. P. Marchelli[1], [1]*Agronomy Faculty, EEMAC, Paysandu, Uruguay*, [2]*Instituto de Ciencia Animal, San Jospe de las Lajas, La Habana, Cuba.*

12:15 PM 126 **Substitution of distillers grains and glycerin for steam-flaked corn in finishing cattle diets on performance and carcass characteristics.**
J. Jaderborg*, D. M. Paulus, G. I. Crawford, and A. DiCostanzo, *University of Minnesota, St. Paul.*

## Ruminant Nutrition
## Dairy: Protein and Fats
## Chair: Alex Bach, IRTA, Spain
## 293

9:30 AM 127 **Effect of linoleic acid supplementation to Holstein dams and calves on immune measures of calves.**
M. Garcia*, L. F. Greco, J. E. P. Santos, and C. R. Staples, *University of Florida, Gainesville.*

9:45 AM 128 **Effect of replacing solvent-extracted canola meal with high-oil traditional canola, high-oleic acid canola, or high-erucic acid rapeseed meals on milk production and milk fatty acid composition in lactating dairy cows.**
A. N. Hristov*[1], C. Domitrovich[1], A. Wachter[1], T. Cassidy[1], C. Lee[1], K. J. Shingfield[2], P. Kairenius[2], J. Davis[3], and J. Brown[3], [1]*Pennsylvania State University, University Park*, [2]*MTT Agrifood Research Finland, Jokioinen, Finland*, [3]*University of Idaho, Moscow.*

10:00 AM 129 **Chain length of dietary saturated fatty acids affects meal patterns and plasma metabolite and hormone concentrations of cows varying in milk yield.**
M. Hollmann*, M. S. Allen, and D. K. Beede, *Department of Animal Science, Michigan State University, East Lansing.*

10:15 AM 130 **Effects of different amounts of dietary protected and unprotected niacin on responses of blood metabolites to an epinephrine challenge in dairy cows.**
F. C. Cardoso*[1], J. Garrett[2], and J. K. Drackley[1], [1]*University of Illinois, Urbana*, [2]*QualiTech, Chaska, MN.*

10:30 AM 131 **Chain length of saturated fatty acids affects intake and ruminal turnover of NDF and chewing activity in lactating cows varying in milk yield.**
M. Hollmann*, M. S. Allen, and D. K. Beede, *Department of Animal Science, Michigan State University, East Lansing.*

10:45 AM 132 **Performance and milk fatty acid profile of Holstein dairy cows in response to dietary fat supplements and forage:concentrate ratio.**
S. Kargar[1], M. Khorvash[1], G. R. Ghorbani*[1], M. Alikhani[1], and D. J. Schingoethe[2], [1]*Isfahan University of Technology, Isfahan, Iran*, [2]*South Dakota State University, Brookings.*

11:00 AM 133 **Effect of a high palmitic acid fat supplement on ruminal fermentation and milk production in high- and low-producing dairy cows.**
D. E. Rico* and K. J. Harvatine, *The Pennsylvania State University, University Park.*

11:15 AM 134 **Effect of extruded flaxseed or alfalfa protein concentrate in interaction with two levels of concentrate on milk fat production.**
C. Hurtaud*[1], G. Chesneau[2], D. Coulmier[3], and J. L. Peyraud[1], [1]*INRA-Agrocampus Ouest, Saint-Gilles, France*, [2]*Valorex, Combourtillé, France*, [3]*Desialis, Paris, France.*

11:30 AM 135 **Abomasal infusion of butterfat during CLA induced milk fat depression in lactating dairy cows.**
D. Vyas*[1], U. Moallem[2], B. B. Teter[1], P. Delmonte[3], and R. A. Erdman[1], [1]*Department of Animal and Avian Sciences, University of Maryland, College Park*, [2]*Agriculture Research Organization, Bet Dagan, Israel*, [3]*U.S. Food and Drug Administration, Center for Food Safety and Applied Nutrition, College Park, MD.*

11:45 AM 136 **The partial replacement of soya and rapeseed meal with urea or a slow release urea source (Optigen) and its effect on intake, performance and metabolism in dairy cows.**
L. A. Sinclair*, P. Griffin, G. H. Jones, and C. W. Blake, *Harper Adams University College, Newport, Shropshire, UK.*

12:00 PM 137 **Effect of added fat to diets for dairy cattle on production performance and dry matter intake.**
A. R. Rabiee[1], K. Brienhild[1], W. Scott[1], H. M. Golder[1], E. Block[2], and I. J. Lean*[1], [1]*SBScibus, Camden, New South Wales, Australia*, [2]*Church & Dwight Co. Inc., Princeton, NJ.*

12:15 PM 138 **Effect of dietary fat blend and monensin supplementation on dairy cattle performance, milk fatty acid profiles and milk fat depression.**
M. He[1], K. L. Perfield[2], H. B. Green[2], and L. E. Armentano*[1], [1]*Department of Dairy Science, University of Wisconsin-Madison, Madison*, [2]*Elanco Animal Health, Greenfield, IN.*

## ADSA-SAD Dairy Foods Undergraduate Competition
## Chair: Elizabeth Karcher, Michigan State University
## 397

11:00 AM 139 **Milk fats in the American diet.**
R. Pomeroy*, *North Carolina State University, Raleigh.*

11:15 AM 140 **Fortification of omega-3 milk.**
K. C. Smith*, D. R. Winston, B. A. Corl, and K. M. Waterman, *Virginia Polytechnic Institute and State University, Blacksburg.*

11:30 AM 141 **The promise of bovine lactoferrin for breast cancer prevention.**
E. Schaffel* and J. Fain, *Clemson University, Clemson, SC.*

11:45 AM 142 **Market research to boost dairy product demand.**
A. N. Waldeck*, *University of Kentucky, Lexington.*

12:00 PM 143 **Dairy super foods: Antioxidants could make the difference.**
S. B. Weimer* and D. R. Olver, *Pennsylvania State University, University Park.*

12:15 PM 144 **What you don't know can hurt you: Unlocking the secrets of milk.**
T. Hippman*, *Louisiana State University, Baton Rouge.*

## Graduate Student Competition: ADSA-ASAS Northeast Section
## Chair: Kristen Govoni, University of Connecticut
Sponsor: ASAS Foundation
## 388

11:00 AM 145 **The effect of an exogenous amylase on performance and total tract digestibility in lactating dairy cows.**
M. M. McCarthy*[1], M. A. Engstrom[2], E. Azem[3], and T. F. Gressley[1], [1]*University of Delaware, Newark*, [2]*DSM Nutritional Products Inc., Parsippany, NJ*, [3]*DSM Nutritional Products, Ltd., 4002 Basel, Switzerland.*

11:15 AM 146 **Spoilage yeasts in silage have the potential to directly impact rumen fermentation.**
M. C. Santos*[1], A. L. Lock[2], G. D. Mechor[3], and L. Kung[1], [1]*University of Delaware, Newark*, [2]*Michigan State University, East Lansing*, [3]*Elanco Animal Health, Greenfield, IN.*

11:30 AM 147 **The effects of PPAR-gamma agonist and conjugated linoleic acid on mammary and hepatic lipid metabolism in lactating mice.**
D. Vyas*[1], B. B. Teter[1], P. Delmonte[2], and R. A. Erdman[1], [1]*Department of Animal and Avian Sciences, University of Maryland, College Park*, [2]*U.S. Food and Drug Administration, Center for Food Safety and Applied Nutrition, College Park, MD.*

11:45 AM 148 **Expression of T-box (Tbx) 3 in bovine mammary epithelial cells.**
M. L. Procopio*, A. C. Lopez, K. M. McFadden, T. A. Hoagland, G. W. Kazmer, and K. E. Govoni, *Department of Animal Science, University of Connecticut, Storrs.*

## ADSA-SAD Dairy Production Undergraduate Competition
## Chair: Elizabeth Karcher, Michigan State University
## 397

1:00 PM 149 **Colostrum replacers in neonatal dairy calf management.**
E. Eckelkamp*, *Louisiana State University, Baton Rouge.*

1:15 PM 150 **Genomics: A tool for commercial dairy producers.**
L. Ellison*, *University of Florida, Gainesville.*

1:30 PM 151 **Implementing an accelerated heifer program: Is it worth the risk?**
S. E. Fraley* and E. L. Karcher, *Michigan State University, East Lansing.*

1:45 PM 152 **Genomic testing as a tool for herd development.**
L. Krueger* and J. Robison, *California State University-Fresno, Fresno.*

2:00 PM 154 **Bacteriophages as a potential treatment for mastitis.**
E. G. Sumners*, D. R. Winston, and I. K. Mullarky, *Virginia Polytechnic Institute and State University, Blacksburg.*

2:15 PM 155 **Heat.**
C. Hoffner*, *North Carolina State University, Raleigh.*

2:30 PM 156 **Direct-fed microbials: Decreasing scrutiny and increasing productivity.**
A. Sassard* and J. Fain, *Clemson University, Clemson, SC.*

2:45 PM 157 **Genetic selection for feed efficiency in dairy cows.**
A. M. Yeiser* and C. D. Dechow, *Pennsylvania State University, University Park.*

3:00 PM 153 **Impact and control of claw lesions in dairy cattle.**
T. A. Reiter* and J. M. Bewley, *University of Kentucky, Lexington.*

## ADSA-SAD Original Research Undergraduate Competition
## Chair: Elizabeth Karcher, Michigan State University
## 399

1:00 PM 158 **Assessment of ruminal fermentation characteristics under normal or high fermentative temperature in continuous cultures.**
C. C. King*[1], C. M. Dschaak[1], J.-S. Eun[1], V. Fellner[2], and A. J. Young[1], [1]*Department of Animal, Dairy, and Veterinary Sciences, Utah State University, Logan*, [2]*Department of Animal Science, North Carolina State University, Raleigh.*

1:15 PM 159 **Supplemental butyrate does not enhance selective permeability of ruminal epithelia in sheep.**
D. J. Wilson*, T. Mutsvangwa, and G. B. Penner, *University of Saskatchewan, Saskatoon, SK, Canada.*

1:30 PM 160 **Effect of feeding a C16:0-enriched fat supplement on milk fatty acid composition.**
K. E. DeLand*, C. L. Preseault, M. S. Allen, and A. L. Lock, *Michigan State University, East Lansing.*

1:45 PM 161 **Impact of water intake on dairy cattle reticulorumen temperature.**
M. Cornett*, D. Ray, and J. Bewley, *University of Kentucky.*

2:00 PM 162 **Genotype and breed trend influences on citric acid and coagulation times of raw milk.**
M. Looney*[1], A. Laubscher[1], J. Medrano[2], R. Jimenez-Flores[1], and G. Rincon[2], [1]*California Polytechnic State University, San Luis Obispo*, [2]*University of California, Davis, Davis.*

2:15 PM 163 **Effects of different flooring options in outside pens of hutches on dairy calf growth.**
K. A. Hoeing*[1], M. A. Laws[1], T. S. Dennis[1], M. M. Schutz[1], S. D. Eicher[2], and T. D. Nennich[1], [1]*Purdue University, West Lafayette, IN*, [2]*USDA-ARS, West Lafayette, IN.*

2:30 PM **Break**

2:45 PM 164 **Alterations in the rate of progesterone clearance induced by insulin-like growth factor-I in the mouse hepatocyte.**
C. L. Varela*, K.D. Baldock, W. G. Squire, and D. L. Smith, *Eastern New Mexico University, Portales.*

3:00 PM 165 **The effects of protease enzymes and storage on the ensiling and nutritive value of corn silage.**
K. M. Young*, M. C. Der Bedrosian, J. M. Lim, A. P. T. P. Roth, S. A. Santos, and L. Kung, *The University of Delaware.*

3:15 PM 166 **Differences in the rumen methanogen population exist between Jerseys and Holsteins.**
E. King*, R. Smith, and A-D. Wright, *University of Vermont, Burlington.*

3:30 PM 167 **The association of electrical conductivities and California Mastitis Tests on a robotic dairy farm.**
A. M. Brigham*[1], C. D. Dechow[1], and B. Carter[2], [1]*Pennsylvania State University, University Park*, [2]*Keseca Veterinary Clinic, Geneva, NY.*

3:45 PM 168 **Effects of shade on heat stress reduction in Holstein dairy calves.**
S. S. Thibeau*[1], L. B. Sage[1], C. C. Williams[2], B. F. Jenny[2], and A. H. Dolejsiova[2], [1]*Louisiana State University, Baton Rouge*, [2]*LSU AgCenter, Baton Rouge, LA.*

4:00 PM 169 **Xylose absorption in dairy calves supplemented with sodium butyrate in milk replacer.**
N. M. Larson*[1], S. I. Kehoe[1], S. Moreland[2], and D. Shields[3], [1]*University of Wisconsin-River Falls, River Falls*, [2]*Nutriad, Inc., Elgin, IL*, [3]*Merrick's, Inc., Union Center, WI.*

## ADSA Southern Section Symposium
## Producing Quality Milk in Hot, Humid Climates
## Chair: Patrick D. French, The Old Mill-Troy, Inc.
## 388

2:00 PM 170 **Extension programming in Kentucky to address somatic cell count challenges and opportunities.**
J. M. Bewley*, *University of Kentucky, Lexington.*

2:30 PM 171 **Dairy producer adoption of mastitis control technologies for reducing herd somatic cell counts.**
S. C. Nickerson*, *University of Georgia, Athens.*

3:00 PM 172 **Effect of micronutrients on the regulation of the immune system and its role in milk quality.**
W. Weiss*, *OARDC/The Ohio State University, Wooster.*

3:30 PM 173 **Use of records to investigate and monitor mastitis in dairies.**
M. W. Overton*, *University of Georgia, Athens.*

4:00 PM 174 **Advancing mastitis research: Using proteomics to identify biomarkers and evaluate adjunctive therapies.**
J. L. Boehmer*, *U.S. Food and Drug Administration Center for Veterinary Medicine, Laurel, MD.*

4:30 PM **Break**

4:45 PM **Southern Branch Business Meeting**

## Animal Behavior and Well-Being 1
## Chair: Janice Siegford, Department of Animal Science, Michigan State University
## 290

2:00 PM 175 **Effects of oxytocin administration in early life on the behavioral and physiological stress response of swine.**
J. L. Rault*[1], C. S. Carter[2], J. P. Garner[1], J. N. Marchant-Forde[3], B. T. Richert[1], and D. C. Lay[3], [1]*Department of Animal Sciences, Purdue University, West Lafayette, IN*, [2]*Department of Psychiatry, University of Illinois at Chicago, Chicago*, [3]*USDA-ARS-Livestock Behavior Research Unit, West Lafayette, IN.*

2:15 PM 176 **Flavor preferences in sucking piglets conditioned by prenatal flavor exposure through the maternal gestation diet.**
J. Figueroa*, D. Solà-Oriol, R. Davin, X. Manteca, and J. F. Pérez, *Universitat Autònoma de Barcelona, Bellaterra, Barcelona, Spain.*

2:30 PM 177 **Preference in weanling pigs for sweet or umami taste after in utero exposure.**
S. J. Chavez*[1], E. van Heugten[1], I. Ipharraguerre[2], and G. B. Huntington[1], [1]*North Carolina State University, Raleigh*, [2]*R&D Feed Additives, Lucta S.A., Barcelona, Spain.*

178 **Withdrawn**

2:45 PM **Break**

3:00 PM 179 **Glucosamine:chondroitin or ginger root extract have little effect on articular cartilage in swine.**
D. C. Lay*[1], J. N. Marchant-Forde[1], B. T. Richert[2], and K. A. McMunn[1], [1]*Livestock Behavior Research Unit; Agricultural Research Service-USDA, West Lafayette, IN*, [2]*Purdue University, West Lafayette, IN.*

3:15 PM 180 **Market pig transport losses, surface temperatures and trailer air temperatures with medium or heavy bedding on the trailer.**
A. Sapkota*[1], B. L. Davis[1], A. Butters-Johnson[2], and J. J. McGlone[1], [1]*Texas Tech University, Lubbock*, [2]*Iowa State University, Ames.*

3:30 PM 181 **Brain lesions and time to death resulting from application of a non-penetrating captive bolt to anaesthetized nursery piglets.**
T. M. Casey-Trott[1], R. Brooks[2], P. V. Turner[1], S. G. Nykamp[1], M. Litman[1], S. T. Millman[2], and T. M. Widowski*[1], [1]*University of Guelph, Guelph, Ontario, Canada*, [2]*Iowa State University, Ames.*

## Animal Health
## Johne's Disease
## Chair: K. E. Olson
Sponsor: Johne's Disease Integrated Program
## 286-287

2:00 PM 182 **Bayesian analysis of longitudinal Johne's disease diagnostic data without a gold standard test.**
C. Wang*[1], B. Turnbull[2], S. Nielsen[3], and Y. Gröhn[2], [1]*Iowa State University, Ames*, [2]*Cornell University, Ithaca, NY*, [3]*University of Copenhagen, Frederiksberg, Denmark.*

2:15 PM 183 **Environmental contamination with *Mycobacterium avium* ssp. *paratuberculosis* in endemically infected dairy herds.**
R. L. Smith*[1], Y. H. Schukken[1], A. K. Pradhan[1], J. M. Smith[2], R. H. Whitlock[3], J. S. Van Kessel[4], D. R. Wolfgang[5], and Y. T. Grohn[1], [1]*Department of Population Medicine and Diagnostic Sciences, College of Veterinary Medicine, Cornell University, Ithaca, NY*, [2]*Department of Animal Science, University of Vermont, Burlington*, [3]*Department of Clinical Studies, New Bolton Center, School of Veterinary Medicine, University of Pennsylvania, Kennett Square*, [4]*Environmental Microbial and Food Safety Laboratory, ANRI, USDA-ARS, Beltsville, MD*, [5]*Department of Veterinary and Biomedical Science, Penn State University, University Park.*

2:30 PM 184 ***Mycobacterium avium* ssp. *paratuberculosis* promotes rapid IL-1β release and macropahge transepithelial migration.**
E. Lamont*[1], S. O'Grady[1], W. Davis[2], T. Eckstein[3], and S. Sreevatsan[1], [1]*University of Minnesota*, [2]*Washington State University*, [3]*Colorado State University.*

2:45 PM 185 **Real-time estimation of the lacto-presence of *Mycobacterium avium* subspecies *paratuberculosis* in milk and milk products originating from goat and cattle herds endemic for Johne's disease.**
S. V. Singh*[1], T. Raghuvanshi[1], R. B. Sharma[1], B. Singh[1], A. V. Singh[1], P. K. Singh[1], A. Kumar[1], and A. Srivastav[2], [1]*Central Institute for Research on Goats, Mathura, Uttar Pradesh, India*, [2]*College of Veterinary Sciences, Mathura, Uttar Pradesh, India.*

3:00 PM 186 **Association of Bsa I polymorphism of MHC Class II DRB gene with *Mycobacterium avium* ssp.*paratuberculosis* bacterimia in Jamunapari breed of goats.**
S.V. Singh, P. Rai, P. K. Singh*, A. V. Singh, M. K. Singh, and J. S. Sohal, *Central Institute for Research on Goats, Mathura, Uttar Pradesh, India.*

3:15 PM 187 **Johne's program—Impact on education and outreach activities.**
K. E. Olson*, *KEO Consulting, Schaumburg, IL.*

3:30 PM 188 **Mathematical modeling of *Mycobacterium avium* subspecies *paratuberculosis* infection transmission in dairy cattle: Current status and future directions.**
Z. Lu*[1], R. Mitchell[1], R. Smith[1], Y. Schukken[1], Y. Gröhn[1], K. Ahmadizadeh[2], M. Teose[2,3], T. Damoulas[2], and C. Gomes[2], [1]*Department of Population Medicine and Diagnostic Sciences, College of Veterinary Medicine, Cornell University, Ithaca, NY*, [2]*Department of Computer Science, Cornell University, Ithaca, NY*, [3]*Center for Applied Mathematics, Cornell University, Ithaca, NY.*

3:45 PM 189 **Vertical transmission or increased susceptibility to MAP?**
E. Knupfer[1], R. M. Mitchell*[2], A. K. Pradhan[2,3], A. Kramer[1], J. Dieguez[4], R. H. Whitlock[5], T. Fyock[5], and Y. H. Schukken[2], [1]*Utrecht University, Utrecht, the Netherlands*, [2]*Cornell University, Ithaca, NY*, [3]*University of Maryland, College Park*, [4]*Universidade de Santiago de Compostela, Spain*, [5]*University of Pennsylvania, New Bolton Center.*

4:00 PM 190 **MAP co-infection or evolution?**
R. M. Mitchell*[1], E. Knupfer[2], A. K. Pradhan[1,3], A. Kramer[2], J. Dieguez[4], R. H. Whitlock[5], T. Fyock[5], and Y. H. Schukken[1], [1]*Cornell University, Ithaca, NY*, [2]*Utrecht University, Utrecht, the Netherlands*, [3]*University of Maryland, College Park, MD*, [4]*Universidade de Santiago de Compostela, Spain*, [5]*University of Pennsylvania, New Bolton Center.*

4:15 PM 191 **Towards understanding endemicity of MAP infection in dairy herds.**
R. M. Mitchell*[1], G. F. Medley[2], and Y. H. Schukken[1], [1]*Cornell University, Ithaca, NY*, [2]*Warwick University, Coventry, UK.*

4:30 PM 192 ***Mycobacterium avium* subspecies *paratuberculosis*-infected macrophages have different protein and transcriptome profiles than control or uninfected culture mates.**
E. Kabara* and P. Coussens, *Michigan State University, East Lansing.*

4:45 PM 193 **Effect of changes in management practices on the risk of Johne's disease in Minnesota Johne's disease demonstration dairy herds.**
L. A. Espejo*, S. Godden, and S. J. Wells, *University of Minnesota, Department of Veterinary Population Medicine, St. Paul.*

## Cell Biology Symposium
## Novel Technologies and Novel Insights
## Chair: Deb Hamernik, University of Nebraska, Lincoln
Sponsors: ADSA, ASAS, USDA-NIFA, EAAP
**288-289**

2:00 PM 194 **Zinc-finger nucleases: Innovations in custom-designed modification of the swine genome.**
J. J. Whyte*, J. Zhao, K. D. Wells, M. S. Samuel, K. M. Whitworth, E. M. Walters, M. H. Laughlin, and R. S. Prather, *University of Missouri, Columbia.*

2:45 PM **DNA Sequencing Technologies: New Methods & New Opportunities.**
J. Rogers*, *Director TGAC (The Genome Analysis Centre), Norwich, England, United Kingdom*.

3:30 PM 195 **Improved RNA quantitation and applications to animal science.**
C. D. Haudenschild*, *Illumina Inc., Hayward, CA.*

4:15 PM 196 **Informatics-driven biological research: Infectious diseases as an example.**
B. Sobral*, *Virginia Bioinformatics Institute at Virginia Tech, Blacksburg.*

## Breeding and Genetics Symposium
## Really Big Data: Processing and Analysis of Very Large Datasets
## Chairs: Scott Newman, Genus Plc, and Catherine Ernst, Michigan State University
Sponsors: EAAP, Genus Plc
**291-292**

2:00 PM **Introduction - Why is this topic important and relevant?**
S. Newman, *Genus Plc, Hendersonville, TN*.

2:10 PM 197 **High performance computing and really big datasets: Overview and best practices.**
F. Foertter*, *Genus plc, Hendersonville, TN*.

2:50 PM 198 **Data structures and visualization.**
J. B. Cole*, *Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD.*

3:30 PM 199 **Computational challenges in genetic evaluation with really big datasets**.
I. Aguilar*[1] and I. Misztal[2], [1]*Instituto Nacional de Investigación Agropecuaria, INIA Las Brujas, Canelones, Uruguay*, [2]*Animal & Dairy Science Department, University of Georgia, Athens.*

4:10 PM 200 **The implementation of analysis of large data.**
M. Coffey*, *Scottish Agricultural College, Penicuik, Midlothian, UK.*

## Dairy Foods
## Filtration and Drying
## Chair: Phillip Tong, Cal Poly State University
## 295

2:00 PM 201 **Impact of annatto color and bleaching of whey and microfiltration permeate on ultrafiltration processing characteristics during production of 80% protein concentrates.**
M. Adams[1], J. Zulewska*[2], and D. M. Barbano[1], [1]*Cornell University, Ithaca, NY*, [2]*University of Warmia and Mazury, Olsztyn, Poland.*

2:15 PM 202 **Functional properties of milk serum protein concentrates with varying levels of β-casein.**
L. Coppola*[1], S. Rankin[1], M. Molitor[2], and J. Lucey[1], [1]*University of Wisconsin-Madison, Madison*, [2]*Wisconsin Center for Dairy Research, Madison.*

2:30 PM 203 **Impact of microfiltration temperature on the composition and functionality of casein concentrates.**
J. R. Koch*[1], J. A. Lucey[1], K. J. Burrington[2], and M. Molitor[2], [1]*University of Wisconsin, Madison*, [2]*Wisconsin Center for Dairy Research, Madison.*

2:45 PM 204 **Spiral wound microfiltration process for production of micellar casein concentrate.**
C. Marella*, P. Salunke, and L. E. Metzger, *Midwest Dairy Foods Research Center, South Dakota State University, Brookings*.

3:00 PM 205 **Characterization of α-lactalbumin and β-lactoglobulin powders obtained from serum whey.**
C. Marella*, P. Salunke, L. E. Metzger, and K. Muthukumarappan, *Midwest Dairy Foods Research Center, South Dakota State University, Brookings.*

3:15 PM 206 **Effects of washing/diafiltration on milk protein concentrate (MPC) functionality.**
J. Du* and J. A. Lucey, *University of Wisconsin-Madison, Madison.*

3:30 PM 207 **Effect of adding NaCl or KCl during manufacture of MPC80 on its physico-chemical properties.**
V. Sikand*[1], P. S. Tong[1], S. Vink[1], and J. Walker[2], [1]*Dairy Products Technology Center, Cal Poly State University, San Luis Obispo*, [2]*Dept. of Statistics, Cal Poly State University, San Luis Obispo.*

3:45 PM 208 **Determination of the drying behavior of dairy products to improve the process, energy costs and the quality of the dairy powders.**
P. Schuck[1,2], A. Dolivet[1,2], S. Mejean[1,2], P. Zhu*[1,3], E. Blanchard[3], and R. Jeantet[2,1], [1]*INRA, UMR1253, Rennes, France*, [2]*Agrocampus Rennes, UMR1253, Rennes, France*, [3]*Laiterie de Montaigu, F-8560 Montaigu, France.*

## Dairy Foods Symposium
## Technological Advancements in the Reduction of Pathogens and Spoilage Organisms in Milk
## Chair: David McCoy, Dairy Research Institute
Sponsor: Dairy Research Institute/Innovation Center for U.S. Dairy
## 296

2:00 PM 209 **Technological advancements in the reduction of pathogens and spoilage organisms in milk—Introduction and challenges.**
D. R. McCoy*, *Dairy Research Institute, Rosemont, IL.*

2:10 PM 210 **Reduction of cooked and oxidized flavors in UHT milk.**
D. G. Peterson*, *University of Minnesota, St. Paul.*

2:40 PM 211 **CHIEF/pulse electric field technology—A unique processing system.**
R. Ruan*[1,3], S. Deng[1], Y. Cheng[1], X. Lin[2,3], P. Chen[1], and L. Metzger[4], [1]*University of Minnesota, St. Paul*, [2]*Fuzhou University, Fuzhou, Fujian, China*, [3]*Nanchang University, Nanchang, Jiangxi, China*, [4]*South Dakota State University, Brookings.*

3:10 PM 212 **UV light inactivation of bacteria and spores in milk to enhance shelf-life.**
J. S. Cullor*, P. V. Rossitto, J. Crook, and J. Parko, *University of California at Davis, Tulare.*

3:40 PM 213 **Electrical resistive heating versus conventional UHT technologies.**
D. J. McMahon*[1], B. Ganesan[1], M. Qian[2], and C. Brothersen[1], [1]*Western Dairy Center, Utah State University, Logan*, [2]*Food Science and Technology Department, Oregon State University, Corvallis.*

4:10 PM 214 **Continuous flow microwave heating for pasteurization and sterilization of dairy products.**
J. Simunovic*, *North Carolina State University, Raleigh.*

## Forages and Pastures
## Alternative Forages and Improving Forage Quality and Characterization
## Chairs: Adegbola Adesogan, University of Florida, and Steven Washburn, North Carolina State University
## 389

2:00 PM 215 **Gain from selection for 16- and 96-h in vitro ndf digestibility of alfalfa stems.**
H. G. Jung* and J. F. S. Lamb, *USDA-Agricultural Research Service, St. Paul, MN.*

2:15 PM 216 **The nutritive value of mature corn silage from BMR, non-BMR and a 50:50 mix ensiled for varying lengths of time.**
J. M. Lim*[1], M. C. Santos[1], J. P. Riguera[1], M. C. Der Bedrosian[1], K. E. Nestor[2], and L. Kung[1], [1]*University of Delaware, Newark*, [2]*Mycogen Seeds, Indianapolis, IN.*

2:30 PM 217 **Concentrations and apparent digestibility of lignin and carbohydrate fractions in cell walls of whole-crop cereal silages.**
J. Wallsten* and R. Hatfield, *US Dairy Forage Research Center, Madison, WI.*

2:45 PM 218 **Construction of a recombinant *Pichia pastoris* integrating a two-copy xylanase gene from *Thermomonospora fusca* and characterization of its secreted protein.**
Q. Wang*[1], M. Z. Ma[1], X. Y. Weng[2], J. Y. Sun[1], and J. X. Liu[1], [1]*MOE Key Laboratory of Molecular Animal Nutrition, College of Animal Sciences, Zhejiang University, Hangzhou, P.R. China*, [2]*College of Life Science, Zhejiang University, Hangzhou, P.R. China.*

3:00 PM 219 **Screening exogenous fibrolytic enzyme products for improved in vitro ruminal fiber digestibility of bermudagrass.**
J. J. Romero*, K. G. Arriola, M. A. Zarate, and A. T. Adesogan, *Department of Animal Sciences, IFAS, University of Florida, Gainesville.*

3:15 PM 220 **Relationships between exogenous fibrolytic enzyme product activities and in vitro ruminal digestibility of bermudagrass.**
J. J. Romero*, K. G. Arriola, M. A. Zarate, and A. T. Adesogan, *University of Florida, IFAS, Department of Animal Sciences, Gainesville.*

3:30 PM 221 **Effect of rate of application of various exogenous fibrolytic enzyme products on in vitro ruminal fiber digestibility of bermudagrass.**
J. J. Romero*, K. G. Arriola, M. A. Zarate, and A. T. Adesogan, *Department of Animal Sciences, IFAS, University of Florida, Gainesville.*

3:45 PM 222 **Alternative approaches of replication for estimating in vitro starch disappearance.**
D. R. Mertens*[1] and R. Ward[2], [1]*Mertens Innovation & Research LLC, Belleville, WI*, [2]*Cumberland Valley Analytical Services Inc., Maugansville, MD.*

4:00 PM 223 **Microbial protein synthesis and partitioning of nutrients of native species from semiarid regions of North Mexico.**
M. Guerrero-Cervantes[1,3], M. A. Cerrillo-Soto*[1,3], A. S. Juárez-Reyes[1,3], H. Bernal-Barragán[2,3], and R. G. Ramírez[2], [1]*Universidad Juárez del Estado de Durango, Durango, México*, [2]*Universidad Autónoma de Nuevo León, Nuevo León, México*, [3]*Red Internacional de Nutrición y Alimentación en Rumiantes.*

4:15 PM 224 **Effects of species and season on chemical composition and ruminal crude protein and organic matter degradability of some multi-purpose tree species by West African Dwarf rams.**
O. M. Arigbede*[1,2], U. Y. Anele[1,2], K.-H. Südekum[2], J. Hummel[2], A. O. Oni[1], J. A. Olanite[1], and A. O. Isah[1], [1]*University of Agriculture, Abeokuta, Nigeria*, [2]*University of Bonn, Bonn, Germany.*

4:30 PM 225 **Effect of land clearing and tillage methods on growth and yield of maize-cassava intercrop.**
A. H. Ekeocha*, *University of Ibadan, Ibadan, Oyo, Nigeria.*

## Graduate Student Competition: ADSA Graduate Paper Competition - Production Division - MS Students
## Chair: Benjamin Corl, Virginia Tech
## 390

2:00 PM 226 **Toll-like receptors expression in the gastro-intestinal tract of dairy calves.**
N. Malmuthuge*[1], M. Li[1], P. Fries[2], P. Griebel[2], and L. L. Guan[1], [1]*University of Alberta, Edmonton, Alberta, Canada*, [2]*Vaccine and Infectiuos Disease Organization, University of Saskatchewan, Saskatchewan, Saskatoon, Canada.*

2:15 PM 227 **Soybean meal substitution by a microbial protein source in dairy cattle diets.**
J. A. Sabbia*[1], K. F. Kalscheur[1], A. Garcia[1], A. Gehman[2], and J. M. Tricarico[2], [1]*South Dakota State University, Brookings*, [2]*Alltech Inc., Brookings, SD.*

2:30 PM 228 **Effect of timing of initiation of Resynch and presynchronization with GnRH on fertility of resynchronized inseminations in lactating dairy cows.**
G. Lopes*, J. O. Giordano, A. Valenza, M. M. Herlihy, J. N. Guenther, M. C. Wiltbank, and P. M. Fricke, *Department of Dairy Science, University of Wisconsin-Madison, Madison.*

2:45 PM 229 **Somatic cell count and management benchmarks in Minnesota dairy herds.**
R. F. Leuer* and J. K. Reneau, *University of Minnesota, St. Paul.*

3:00 PM 230 **Effect of dietary trans fatty acids on selected inflammatory mediators in early lactating dairy cows.**
J. S. Watts*, D. L. Sevier, J. K. Kinch, S. M. Clark, M. A. McGuire, and P. Rezamand, *Department of Animal and Veterinary Science, University of Idaho, Moscow.*

3:15 PM 231 **Effects of physical preparation of diets and level of modified wet distillers grains with solubles on production and rumen measurements of lactating dairy cows.**
J. C. Ploetz*[1], W. C. Hornback[1], D. E. Beever[2], P. H. Doane[3], M. J. Cecava[3], M. R. Murphy[1], and J. K. Drackley[1], [1]*University of Illinois, Urbana*, [2]*Keenan Systems, Borris, Ireland*, [3]*Archer Daniels Midland Company, Decatur, IL.*

3:30 PM 232 **Modifying the double-Ovsynch protocol to include human chorionic gonadotropin to synchronize estrus in lactating dairy cows.**
J. A. Binversie*, K. E. Pfeiffer, and J. E. Larson, *Mississippi State University, Mississippi State.*

3:45 PM **Break**

4:00 PM 233 **Fibroblast growth factor 9 influences steroidogenesis and gene expression in ovarian granulosa and theca cells of cattle.**
N. B. Schreiber* and L. J. Spicer, *Oklahoma State University, Stillwater.*

4:15 PM 234 **Relationships among temperature, moisture, bacterial counts, and animal hygiene in compost bedded pack barns.**
R. A. Black*, J. L. Taraba, G. B. Day, F. A. Damasceno, M. C. Newman, K. A. Akers, and J. M. Bewley, *University of Kentucky, Lexington.*

4:30 PM 235 **Objective assessment of pain in dairy cattle with clinical mastitis.**
C. E. Fitzpatrick*[1], N. Chapinal[1,2], C. S. Petersson-Wolfe[3], and K. E. Leslie[1], [1]*University of Guelph, Guelph, Ontario, Canada*, [2]*University of British Columbia, Vancouver, British Columbia, Canada*, [3]*Virginia Polytechnic Institute and State University, Blacksburg.*

4:45 PM 236 **Herd reproductive performance with an automated activity monitoring system versus a synchronized breeding program in 3 commercial dairy herds.**
R. C. Neves*, K. E. Leslie, J. S. Walton, and S. J. LeBlanc, *University of Guelph, Guelph, ON, Canada.*

5:00 PM 237 **Effects of time and storage conditions on Johne's disease milk ELISA test results.**
C. M. Innes*, D. F. Kelton, D. L. Pearl, and T. F. Duffield, *University of Guelph, Guelph, Ontario, Canada.*

5:15 PM 238 **The evaluation of bulk tank tests for the surveillance of Johne's disease.**
C. M. Innes*, D. F. Kelton, D. L. Pearl, and T. F. Duffield, *University of Guelph, Guelph, Ontario, Canada.*

## Graduate Student Symposium
## Becoming Your Own Best Advocate: How to Expand and Communicate Your Skills and Qualifications
## Chair: Heather M. White, Indiana University School of Medicine
Sponsors: ADSA, ASAS, Elanco Animal Health
**297**

2:00 PM **Introduction.**
H. M. White, *Indiana University School of Medicine*.

2:05 PM 239 **Preparing an effective CV for an academic position.**
M. T. See*, *North Carolina State University, Raleigh.*

2:45 PM 240 **Grantsmanship—How to write a successful grant proposal.**
T. Davis*, *Baylor College of Medicine, Children's Nutrition Research Center, Houston, TX.*

3:25 PM **Break**

3:35 PM **ASAS National Graduate Student Update.**
C. Jones, *Iowa State University, Ames*.

3:40 PM 241 **Maximizing your graduate experience.**
N. C. Whitley*, *North Carolina A&T State University, Greensboro.*

4:20 PM 242 **Becoming your own personal brand: How to market your talents and experiences for maximum results.**
C. Johnson*[1] and C. Luhman[2], [1]*Director Talent Acquisition & Diversity, Land O' Lakes, Inc, Arden Hills, MN*, [2]*Land O' Lakes Purina Feed, LLC, Gray Summit, MO.*

## Growth and Development
## Growth and Development: Adipose and Body Composition in Ruminants
## Chairs: Tom Welsh, Texas A&M University, and Erin Connor, USDA-ARS, Beltsville
Sponsor: BASF
**298-299**

2:00 PM 243 **Plane of dietary protein during late gestation in beef cows alters longissimus lumborum adipogenic gene expression in the offspring.**
S. Moisa*, D. Shike, D. B. Faulkner, and J. J. Loor, *University of Illinois, Urbana.*

2:15 PM 244 **Oleic acid enhances G protein-coupled receptor 43 (GPR43) in cultured bovine intramuscular adipocytes**.
K. Y. Chung*[1], S. B. Smith[2], and B. J. Johnson[1], [1]*Texas Tech University, Lubbock*, [2]*Texas A&M University, College Station.*

2:30 PM 245 **Effect of stearoyl-CoA desaturase 1 inhibiters on lipid metabolism and cellular proliferation in primary bovine adipocytes**.
A. K. G. Kadegowda*, T. A. Burns, S. L. Pratt, and S. K. Duckett, *Clemson University, Clemson, SC.*

2:45 PM 246 **Palmitoleic acid (C16:1), not an elongation product, decreases lipogenesis and desaturation in bovine adipocyte cultures**.
T. A. Burns*, C. M. Klein, S. K. Duckett, S. L. Pratt, and T. C. Jenkins, *Clemson University, Clemson, SC.*

3:00 PM 247 **Palmitic and stearic acids induce adipogenic gene expression in single- or co-cultures of bovine intramuscular preadipocyte and satellite cells**.
S. H. Choi*[1], K. Y. Chung[2], B. J. Johnson[2], K. H. Kim[3], and S. B. Smith[1], [1]*Texas A&M University, College Station*, [2]*Texas Tech University, Lubbock*, [3]*National Institute of Animal Science, Suwon, Gyunggi, Korea.*

3:15 PM 248 **The effect of chromium propionate on bovine intramuscular and subcutaneous preadipocytes and muscle satellite cells.**
R. J. Tokach*[1], W. Rounds[2], K. Y. Chung[1], and B. J. Johnson[1], [1]*Texas Tech University, Lubbock*, [2]*Kemin Industries Inc., Des Moines, IA.*

3:30 PM 249 **Effect of rate of gain during grazing on gene expression of adipose tissue in growing beef cattle.**
P. A. Lancaster*, E. D. Sharman, G. W. Horn, C. R. Krehbiel, and U. DeSilva, *Oklahoma Agricultural Experiment Station, Stillwater.*

3:45 PM 250 **Effect of ewe body condition during mid to late gestation on mammary growth and composition of female progeny.**
K. E. Boesche*, A. L. Hunter, K. M. O'Diam, S. C. Loerch, and K. M. Daniels, *The Ohio State University, Ohio Agricultural Research and Development Center, Wooster.*

4:00 PM 251 **Defining maturity of Nellore cattle based on growth and body composition.**
M. Marcondes*[1,3], L. Tedeschi[2], S. V. Filho[1,3], M. Gionbelli[1], and L. F. Silva[1], [1]*Universidade Federal de Viçosa/INCT-CA, Viçosa, MG, Brazil*, [2]*Texas A&M University, College Station*, [3]*INCT - Ciência Animal, Viçosa, MG, Brazil.*

## Nonruminant Nutrition
## Health/Management
## Chair: Ryan Dilger, University of Illinois, Urbana
Sponsor: BASF
**383-385**

2:00 PM 252 **Population dynamics of leukocytes during immune activation of the chicken immune system by *E. coli*.**
V. Arias* and K. Klasing, *University of California, Davis.*

2:15 PM 253 **Effects of dietary seaweed extract supplementation in sows and post-weaned pigs on performance, intestinal morphology, intestinal microflora and immune status**.
S. G. Leonard, T. Sweeney, B. Bahar, and J. V. O'Doherty*, *University College Dublin, Dublin, Ireland.*

2:30 PM 254 **Effect of maternal seaweed extract supplementation on suckling piglet growth, humoral immunity, selected microflora, and immune response after an ex vivo lipopolysaccharide challenge**.
S. G. Leonard, T. Sweeney, B. Bahar, and J. V. O'Doherty*, *University College Dublin, Dublin, Ireland.*

2:45 PM 255 **Plant extracts for weaned pigs experimentally infected with porcine reproductive and respiratory syndrome virus. 1: Effect on growth performance and immune responses.**
Y. Liu*[1], J. J. Lee[1], M. Song[1], T. M. Che[1], J. A. Soares[1], D. Bravo[2], W. G. Van Alstine[3], and J. E. Pettigrew[1], [1]*University of Illinois, Urbana*, [2]*Pancosma SA, Geneva, Switzerland*, [3]*Purdue University, West Lafayette, IN.*

3:00 PM 256 **Plant extracts for weaned pigs experimentally infected with porcine reproductive and respiratory syndrome virus. 2: Effect on peripheral blood immune cells and inflammatory mediators.**
Y. Liu*[1], J. J. Lee[1], M. Song[1], T. M. Che[1], J. A. Soares[1], D. Bravo[2], W. G. Van Alstine[3], and J. E. Pettigrew[1], [1]*University of Illinois, Urbana*, [2]*Pancosma SA, Geneva, Switzerland*, [3]*Purdue University, West Lafayette, IN.*

3:15 PM 257 **Effects of spray-dried plasma on pregnancy rate and growth performance of mated female mice after transport as a model for stressed sows.**
M. Song*[1], T. M. Che[1], Y. Liu[1], J. A. Soares[1], J. J. Lee[1], J. M. Campbell[2], J. Polo[2], J. C. O'Connor[3], and J. E. Pettigrew[1], [1]*University of Illinois, Urbana*, [2]*APC Inc., Ankeny, IA*, [3]*University of Texas Health Science Center, San Antonio.*

3:30 PM **Break**

3:45 PM 258 **Dietary phosphate supplementation to neonatal pigs affects satellite cell proliferation and progression through their myogenic lineage.**
L. S. Alexander*, B. S. Seabolt, and C. H. Stahl, *North Carolina State University, Raleigh.*

4:00 PM 259 **Flavour preferences conditioned by the effects of porcine digestible peptides (PDP) and soybean concentrate in post-weaned piglets.**
J. Figueroa*[1], D. Solà-Oriol[1], S. L. Vinokurovas[1], E. Borda[2], and J. F. Pérez[1], [1]*Universitat Autònoma de Barcelona, Bellaterra, Barcelona, Spain*, [2]*Bioibérica, Barcelona, Spain.*

4:15 PM 260 **Influence of length of storage on parameters used to measure the quality of soybean meal.**
S. Sueiro[1], M. P. Serrano[2], M. González[1], M. Hermida[1], P. G. Rebollar[2], and G. G. Mateos*[2], [1]*Laboratorio de Mouriscade, Pontevedra, Spain*, [2]*Universidad Politécnica de Madrid, Madrid, Spain.*

4:30 PM 261 **Effects of an abrupt change from mash to pellets and vice-versa on growth performance in finishing pigs.**
C. B. Paulk*[1], J. D. Hancock[1], J. C. Ebert[2], and J. J. Ohlde[2], [1]*Kansas State University, Manhattan*, [2]*Key Feeds, Clay Center, KS.*

4:45 PM 262 **The effect of weaning group-housed calves over a different length of time fed by automatic feeding machine.**
K. Shore* and A. Roy, *Grober Nutrition, Cambridge, Ontario, Canada.*

## Physiology and Endocrinology
## Estrous Cycle Manipulation - Beef
## Chair: Robert Cushman, USDA MARC, Clay Center, NE
## 393

2:00 PM 263 **Effect of 72 h temporary calf removal and/or equine chorionic gonadotropin (eCG) before timed AI on follicle development, concentrations of LH and estradiol, and ovulation rate in suckled beef cows.**
G. H. L. Marquezini*[1], V. R. G. Mercadante[1], J. S. Stevenson[2], G. A. Perry[3], and G. C. Lamb[1], [1]*North Florida Research and Education Center, University of Florida, Marianna*, [2]*Department of Animal Sciences and Industry, Kansas State University, Manhattan*, [3]*Department of Animal and Range Sciences, South Dakota State University, Brookings.*

2:15 PM 264 **Evidence that prostaglandin administration at the onset of a 5-day CO-Synch + CIDR synchronization protocol markedly improves fixed-time AI pregnancy rates in *Bos indicus*-influenced cattle.**
G. Williams*[1,2], R. Stanko[1,3], C. Allen[1,2], R. Cardoso[1,2], L. Prezotto[1,2], J. Thorson[1,2], and M. Amstalden[2], [1]*Texas AgriLife Research, Beeville*, [2]*Texas A&M University, College Station*, [3]*Texas A&M University-Kingsville, Kingsville.*

2:30 PM 265 **Determination of appropriate delivery of $PGF_{2\alpha}$ in the 5-day Co-Synch + CIDR protocol in lactating beef cows.**
G. A. Bridges*[1], L. H. Cruppe[2], J. F. Currin[3], M. L. Day[2], P. J. Gunn[4], J. R. Jaeger[5], G. C. Lamb[6], A. E. Radunz[7], P. Repenning[8], J. S. Stevenson[5], J. C. Whittier[8], and W. D. Whittier[3], [1]*University of Minnesota*, [2]*The Ohio State University*, [3]*Virginia Tech*, [4]*Purdue University*, [5]*Kansas State University*, [6]*University of Florida, Marianna*, [7]*University of Wisconsin, Madison*, [8]*Colorado State University.*

2:45 PM 266 **Comparison of long-term progestin-based protocols to synchronize estrus and ovulation prior to fixed-time AI in postpartum beef cows.**
J. M. Nash*, D. A. Mallory, C. C. Selby, T. M. Taxis, M. R. Ellersieck, S. E. Poock, M. F. Smith, and D. J. Patterson, *University of Missouri, Columbia.*

3:00 PM 267 **Comparison of long- versus short-term progestin-based protocols to synchronize estrus and ovulation prior to fixed-time AI in postpartum beef cows.**
J. M. Nash*, D. A. Mallory, M. R. Ellersieck, S. E. Poock, M. F. Smith, and D. J. Patterson, *University of Missouri, Columbia.*

3:15 PM 897 **Estrogenicity of sugar beet by-products used as animal feeds.**
N. W. Shappell*[1], E. M. Lenneman[1,2], and M. S. Mostrom[2], [1]*USDA-ARS*, *Fargo, ND*, [2]*North Dakota State University*, *Fargo*.

3:30 PM **Break**

3:45 PM 268 **Effect of length of the preovulatory period on estradiol, progesterone, ISG-15 and Mx2 in cows.**
L. H. Cruppe*[1], L. A. Souto[1], M. Maquivar[1], F. M. Abreu[1], M. L. Mussard[1], T. L. Ott[2], J. L. Pate[2], and M. L. Day[1], [1]*The Ohio State University, Columbus*, [2]*The Penn State University, State College.*

4:00 PM 269 **Effect of follicle age on conception rate in beef heifers.**
F. M. Abreu*[1,2], L. H. Cruppe[1], M. Maquivar[1], M. D. Utt[1], C. A. Roberts[2], M. L. Mussard[1], M. L. Day[1], and T. W. Geary[2], [1]*The Ohio State University, Columbus*, [2]*USDA-ARS Fort Keogh LARRL, Miles City, MT.*

4:15 PM 270 **Effect of various doses of prostaglandin $F_{2\alpha}$ on estrous behavior and blood progesterone in beef cows**.
A. Ahmadzadeh*, K. Carnahan, T. Robison, and C. Autran, *University of Idaho, Moscow.*

4:30 PM 271 **The use of ruminal temperature for the prediction of estrus in beef cows**.
B. H. Boehmer*, T. A. Pye, and R. P. Wettemann, *Oklahoma Agricultural Experiment Station, Stillwater.*

4:45 PM 272 **Effect of acetylsalicylic acid on vasodilatation of uterine arteries, right external iliac arterial blood flow, and pregnancy in beef cows.**
H. L. Sanchez-Rodriguez*, R. C. Vann, E. Baravik-Munsell, S. T. Willard, and P. L. Ryan, *Mississippi State University, Mississippi State.*



## Production, Management and the Environment
## Dairy Production II
## Chair: William Platter, Eli Lilly and Co.
## 386-387

2:00 PM 273 **Antimicrobial resistance and prevalence of virulence factor genes in fecal *Escherichia coli* of Holstein calves fed milk with and without antimicrobials.**
R. V. V. Pereira*, T. M. A. Santos, M. L. Bicalho, S. Machado, R. C. Bicalho, and L. S. Caixeta, *Department of Population Medicine and Diagnostic Science, College of Veterinary Medicine, Cornell University, Ithaca, NY.*

2:15 PM 274 **Somatic cell count and management benchmarks in Minnesota dairy herds**.
R. F. Leuer* and J. K. Reneau, *University of Minnesota, St. Paul.*

2:30 PM 275 **Heritability of rectal temperature and genetic correlations with production and reproduction traits in dairy 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 Agricultural Research Service, USDA, Beltsville, MD*, [3]*Department of Animal Sciences, University of Florida, Gainesville.*

2:45 PM 276 **Analysis of twinning, abortion and calf mortality in Irish Holstein and Friesian populations.**
A. M. Doyle[1], R. D. Evans[2], and A. G. Fahey*[1], [1]*University College Dublin, Belfield, Dublin 4, Ireland*, [2]*Irish Cattle Breeding Federation, Bandon, Co. Cork, Ireland.*

3:00 PM 277 **Nation-wide evaluation of quality and composition of colostrum fed to dairy calves in the United States.**
K. M. Morrill*[1], E. Conrad[1], A. Lago[2], J. D. Quigley[2], and H. D. Tyler[1], [1]*Iowa State University, Ames*, [2]*APC Inc., Ankeny, IA.*

3:15 PM 278 **Milk production and somatic cell counts: A cow level analysis**.
K. J. Hand*[1], A. Godkin[2], and D. F. Kelton[3], [1]*Strategic Solutions Group, Puslinch, ON, Canada*, [2]*Ontario Ministry of Agriculture, Food and Rural Affairs, Elora, ON, Canada*, [3]*University of Guelph, Guelph, ON, Canada.*

3:30 PM 279 **Daily Markov-chain simulation model for selection of reproductive management programs in dairy herds.**
J. O. Giordano*, P. M. Fricke, M. C. Wiltbank, and V. E. Cabrera, *Department of Dairy Science, University of Wisconsin-Madison, Madison.*

3:45 PM 280 **Timing to reach the new level of pregnancy and milk yield after an improvement in reproductive management in dairy herds**.
G. M. Schuenemann*[1], P. Federico[2], A. De Vries[3], and K. N. Galvão[3], [1]*The Ohio State University, Columbus*, [2]*Capital University, Columbus*, [3]*University of Florida, Gainesville.*

4:00 PM 281 **Economic comparison of reproductive programs for dairy herds using estrus detection (ED), Ovsynch, or a combination of both.**
K. N. Galvao*[1], P. Federico[3], A. De Vries[1], and G. M. Schuenemann[2], [1]*University of Florida, Gainesville*, [2]*The Ohio State University, Columbus*, [3]*Capital University, Columbus, OH.*

## Ruminant Nutrition
## Beef: Additives and Supplements
## Chair: Stacey Gunter, USDA-ARS, Woodward, OK
## 294

2:00 PM 282 **The effect of Bovamine on feedlot performance of finishing cattle: A meta-analysis.**
K. J. Hanford*[1], W. M. Kreikemeier[2], and D. R. Ware[2], [1]*Department of Statistics - UNL, Lincoln, NE*, [2]*Nutrition Physiology Co. LLC, Overland Park, KS.*

2:15 PM 283 **Effects of Min-Ad on growth performance and carcass characteristics of finishing steers.**
J. O. Wallace*[1], M. S. Brown[1], D. D. Simms[2], C. W. Coufal[1], C. L. Maxwell[1], J. C. Simroth-Rodriguez[1], K. J. Kraich[1], and S. L. Thomas[1], [1]*West Texas A&M University, Canyon*, [2]*Min-Ad Inc., Amarillo, TX.*

2:30 PM 284 **Ractopamine hydrochloride reduces urinary nitrogen excretion of both implanted and non-implanted finishing beef cattle.**
M. M. Kappen*, J. Ham, H. Han, and S. L. Archibeque, *Colorado State University, Ft. Collins.*

2:45 PM 285 **Impact of sorting prior to feeding zilpaterol hydrochloride on feedlot performance and carcass characteristics of yearling steers.**
E. M. Hussey*[1], G. E. Erickson[1], W. A. Griffin[1], B. L. Nuttleman[1], T. J. Klopfenstein[1], and K. J. Vander Pol[2], [1]*University of Nebraska-Lincoln, Lincoln*, [2]*Intervet/Schering-Plough Animal Health, De Soto, KS.*

3:00 PM 286 **Effect of feeding Micro-Aid in diets containing wet distillers grains plus solubles to finishing cattle on performance and nutrient mass balance fed during the summer.**
A. J. Doerr*[1], B. L. Nuttelman[1], G. E. Erickson[1], T. J. Klopfenstein[1], W. A. Griffin[1], and M. J. Rincker[2], [1]*University of Nebraska-Lincoln*, [2]*DPI Global, Porterville, CA.*

3:15 PM 287 **Rumen-protected arginine supplementation alters vascular hemodynamics in forage-fed steers.**
A. M. Meyer*[1], C. B. Saevre[1], D. V. Dhuyvetter[2], R. E. Musser[3], and J. S. Caton[1], [1]*Center for Nutrition and Pregnancy, Department of Animal Science, North Dakota State University, Fargo*, [2]*Ridley Block Operations, Mankato, MN*, [3]*SODA Feed Ingredients LLC, Mankato, MN.*

3:30 PM 288 **Effect of supplemental vitamin C on performance and antioxidant capacity of cattle fed varying concentrations of dietary sulfur.**
D. J. Pogge* and S. L. Hansen, *Iowa State University, Ames.*

3:45 PM 289 **Use of MTB-100, provided through a mineral mix, to reduce toxicity when lactating beef cows graze endophyte-infected tall fescue.**
M. E. Hoar*, D. K. Aaron, D. G. Ely, M. M. Simpson, and A. K. Lunsford, *University of Kentucky, Lexington.*

4:00 PM 290 **In vitro mitigation of rumen hydrogen sulfide.**
M. Ruiz-Moreno*, E. Seitz, and M. D. Stern, *University of Minnesota, St. Paul.*

4:15 PM 291 **Utilizing crop residues in winter feeding systems for beef cows.**
A. D. Krause*[1] and H. A. Lardner[1,2], [1]*University of Saskatchewan, Saskatoon, Saskatchewan, Canada*, [2]*Western Beef Development Centre, Humbolt, Saskatchewan, Canada.*

4:30 PM 292 **Effect of supplementing dried distillers grains to cattle consuming low-quality South Texas forage.**
M. C. Briggs*[1], K. C. McCuistion[1], R. O. Dittmar[2], J. E. Zradicka[1], D. Kinkel[1], and T. A. Wickersham[2], [1]*Texas A&M University, Kingsville, Kingsville*, [2]*Texas A&M University, College Station.*

4:45 PM 293 **A mechanistic model of enteric methane emissions from ruminants.**
R. A. Kohn* and S.-W. Kim, *University of Maryland, College Park.*

## Ruminant Nutrition
## Dairy: Calves
## Chair: Keith Cummins, Auburn University
## 293

2:00 PM 294 **Impact of free-choice or restricted water intake during the pre-weaning and early post-weaning period on calf performance and health.**
A. Manthey*[1], D. Ziegler[2], H. Chester-Jones[2], M. Raeth-Knight[3], G. Golombeski[3], and J. Linn[3], [1]*University of Wisconsin-River Falls, River Falls*, [2]*University of Minnesota, Southern Research and Outreach Center, Waseca*, [3]*University of Minnesota, St. Paul.*

2:15 PM 295 **Effects of free-access feeding of acidified milk replacer on the performance and general health of veal calves.**
C. G. Todd*[1], T. J. DeVries[2], K. E. Leslie[1], J. M. Sargeant[1], N. G. Anderson[3], K. Shore[4], and S. T. Millman[5], [1]*Department of Population Medicine, University of Guelph, Guelph, ON, Canada*, [2]*Department of Animal Poultry Science, University of Guelph, Kemptville Campus, Kemptville, ON, Canada*, [3]*Ontario Ministry of Agriculture, Food and Rural Affairs, Elora, ON, Canada*, [4]*Grober Nutrition, Cambridge, ON, Canada*, [5]*Veterinary Diagnostic and Production Animal Medicine, Iowa State University, Ames.*

2:30 PM 296 **Effect of Celmanax SCP on calf performance when fed in the milk replacer and grower phase.**
R. J. Dennis[1] and S. Jalukar*[2], [1]*Kent Nutrition Group Product Development Center, Muscatine, IA*, [2]*Varied Industries Corporation, Mason City, IA.*

2:45 PM 297 **Effect of different forage sources on performance and feeding behavior of Holstein calves.**
L. l. Castells*[1], A. Bach[1,2], G. Araujo[1], and M. Terré[1], [1]*Department of Ruminant Production, IRTA, Caldes de Montbui, Spain*, [2]*ICREA, Barcelona, Spain.*

3:00 PM 298 **Effect of fatty acid intake by dairy calves on performance, health, and markers of immunity.**
T. M. Hill*[1], M. J. VandeHaar[2], L. M. Sordillo[2], H. G. Bateman[1], and R. L. Schlotterbeck[1], [1]*Nurture Research Center, Provimi North America, Lewisburg, OH*, [2]*Department of Animal Science, Michigan State University, East Lansing*, [3]*Department of Large Animal Clinical Sciences, Michigan State University, East Lansing.*

3:15 PM 299 **Impact of feeding various fats and fatty acids on dairy calf performance, health, and markers of immunity.**
T. M. Hill*, H. G. Bateman, J. M. Aldrich, and R. L. Schlotterbeck, *Nurture Research Center, Provimi North America, Lewisburg, OH.*

3:30 PM 300 **Impact of three times versus twice a day milk replacer feeding on calf performance, likelihood to reach lactation and future milk production in a commercial dairy herd.**
D. C. Sockett*[1], C. E. Sorenson[2], N. K. Betzold[3], J. T. Meronek[3], and T. J. Earleywine[4], [1]*Wisconsin Veterinary Diagnostic Laboratory, University of Wisconsin, Madison*, [2]*United Cooperative, Sauk City, WI*, [3]*University of Wisconsin-Madison, College of Agricultural & Life Sciences, Madison*, [4]*Land O'Lakes Inc., Cottage Grove, WI.*

3:45 PM 301 **Effects of a modified intensive milk replacer program fed two or four times daily on nursery calf performance.**
A. D. Kmicikewycz*, D. N. da Silva, and N. B. Litherland, *University of Minnesota, St. Paul.*

4:00 PM 302 **Effect of different levels of alfalfa hay and sodium-propionate supplementation on performance and rumen development of dairy calves.**
H. Beiranvand, M. Khorvash, G. R. Ghorbani*, A. Riasi, S. Kargar, and M. Mirzaei, *Isfahan University of Technology, Isfahan, Iran.*

4:15 PM 303 **Effect of pre-weaning feeding regimens on post-weaning growth performance of Sahiwal calves.**
S. A. Bhatti*[1], A. Ali[1], D. McGill[2], M. Sarwar[1], H. Nawaz[1], M. Afzal[3], M. S. Khan[1], M. A. Amer[4], R. D. Bush[5], P. C. Wynn[2], H. M. Warriach[2], and H. Nawaz[1], [1]*Institute of Animal Nutrition and Feed Technology, University of Agriculture, Faisalabad, Pakistan*, [2]*E H Graham Centre (NSW Industry and Investment and Charles Sturt University), Wagga Wagga, Australia*, [3]*Pakistan Agricultural Research Council, Islamabad, Pakistan*, [4]*Livestock Production Research Institute, Bahadurnagar, Okara, Pakistan*, [5]*Faculty of Veterinary Science, University of Sydney, Camden, Australia.*

# Tuesday, July 12

## POSTER PRESENTATIONS

### Animal Health II

Sponsor: Elanco Animal Health

T1 **Development of kit for bovine myeloperoxidase using enzyme-linked immunosorbent assay.**
J. Shi*, Y. Yang, Q. Li, and Y. Lv, *Key Laboratory of Dairy Science*, *Ministry of EducationNortheast Agricultural UniversityHarbin, China*.

T2 **Development of kit for bovine haptoglobin using enzyme-linked immunosorbent assay.**
Y. Yang*, J. Shi, Q. Li, and Y. Lv, *Key Laboratory of Dairy Science, Ministry of Education, Northeast Agricultural University*, *Harbin, China*.

T3 **Transcriptional factors SP1 and SP3 influence differentially the regulating sequence of the bovine osteopontin gene depending on promoter haplotype.**
N. Bissonnette* and C. Thibault, *Agriculture and Agri-Food Canada, Dairy Cattle and Swine Research and Development Center*, *Sherbrooke, Quebec, Canada*.

T4 **Evaluation of interleukin 5 as a biomarker for parasite resistance in goats pasture exposed to *Haemonchus contortus*.**
M. M. Corley* and A. A. Saeed, *Virginia State University*, *Petersburg*.

T5 **Influence of latency to collect blood samples from beef calves on ex vivo innate immune responses.**
L. E. Hulbert*[1,2], C. J. Cobb[1], M. D. Sellers[1], D. L. Hanson[1], M. L. Galyean[1], and M. A. Ballou[1], [1]*Department of Animal and Food Sciences, Texas Tech University*, *Lubbock*, [2]*Department of Animal Sciences, University of California-Davis*, *Davis*.

T6 **Characterization of bovine leukocyte differentiation molecules in Egyptian cattle using flow cytometry.**
G. S. Abdellrazeq*[1], M. M. El-Naggar[1], and W. C. Davis[2], [1]*Alexandria University*, *Edfina, Behara province, Egypt*, [2]*Washington State University*, *Pullman*.

T7 **Comparative evaluation of gene expression in bovine and caprine neutrophils.**
M. Worku*, N. Mikiashvili, and H. Ishamel, *North Carolina A&T State University*, *Greensboro*.

T8 **Detection and expression of the gene encoding low density lipoprotein receptor-related proteins 6 (LRP6) in goat peripheral blood.**
M. Worku*, H. Mukhtar, and N. Mikiashvilli, *North Carolina Agricultural and Technical State University*, *Greensboro*.

T9 **Comparison of commercially available enzyme-linked immunosorbent assay with serum neutralization for measuring bovine viral diarrhea virus specific antibodies.**
M. Gonda*[1], X. Fang[1], G. Perry[1], and C. Maltecca[2], [1]*South Dakota State University*, *Brookings*, [2]*North Carolina State University*, *Raleigh*.

T10 **Effects of *Camellia* L. plant extract and mannan-oligosaccharide on growth performance, gut health, blood parameters, cecal microflora and immunity of broiler chicks.**
K. Hatami and M. Zaghari*, *Department of Animal Science, College of Agriculture and Natural Resource, University of Tehran, Karaj*, *Karaj, Alborz, Iran*.

T11 **Gastrointestinal nematode infection in Nelore and crossbred cattle.**
M. C. S. Oliveira*[1], M. C. D. Beraldo[2], E. Nakandakari[3], L. Boschini[1], M. M. Alencar[1], R. Giglioti[4], A. C. S. Chagas[1], B. Rubert[5], S. C. Bogni[2], and A. M. G. Ibelli[5], [1]*Embrapa Pecuaria Sudeste*, *São Carlos, SP, Brazil*, [2]*Unicep*, *São Carlos, SP, Brazil*, [3]*Uniara*, *Araraquara, SP, Brazil*, [4]*unesp*, *Jaboticabal, SP, Brazil*, [5]*UFSCar*, *São Carlos, SP, Brasil*.

T12 **Concentrations of haptoglobin in bovine plasma determined by ELISA or a colorimetric method based on peroxidase activity.**
R. F. Cooke*[1], B. I. Cappellozza[1], F. N. T. Cooke[1], D. W. Bohnert[1], and J. D. Arthington[2], [1]*Oregon State University–Eastern Oregon Agricultural Research Center*, *Burns*, [2]*University of Florida–Range Cattle Research and Education Center*, *Ona*.

T13 **Feed and water restriction elicits an acute-phase protein response in beef cattle.**
B. I. Cappellozza*, R. F. Cooke, C. Trevisanuto, V. D. Tabacow, F. N. T. Cooke, and D. W. Bohnert, *Oregon State University–Eastern Oregon Agricultural Research Center*, *Burns*.

T14 **Natural infestation by external parasites in beef cattle in southern Brazil.**
M. C. S. Oliveira*[1], E. Nakandakari[2], M. C. D. Beraldo[3], M. M. Alencar[1], A. C. S. Chagas[1], L. Boschini[1], R. Giglioti[4], and A. M. G. Ibelli[5], [1]*Embrapa Pecuaria Sudeste*, *São Carlos, SP, Brazil*, [2]*Uniara*, *Araraquara, SP, Brazil*, [3]*Unicep*, *São Carlos, SP, Brazil*, [4]*Unesp*, *Jaboticabal, SP, Brazil*, [5]*UFSCar*, *São Carlos, SP, Brasil*.

T15 **Cinnamaldehyde enhances in vitro parameters of immunity and reduces severity of in vivo infection against avian coccidiosis.**
S.-H. Lee[1], H. Lillehoj*[1], S. Jang[1], K. Lee[1], and D. Bravo[2], [1]*Animal and Natural Resources Institute, ARS USDA*, *Beltsville, MD*, [2]*Pancosma S.A.*, *Le Grand Saconnex, Geneva, Switzerland*.

T16 **Comparison of different levels of vitamin premix on chicken meat quality in floor and battery cage broiler raising.**
M. A. Shahrasb, H. Moravej, and M. Shivazad*, *Department of Animal Science, Faculty of Agriculture and Natural Resources, Tehran University*.

T17 **Effects of feeding OmniGen-AF to rats on gastrointestinal gene expression: Microarray analysis.**
B. R. Ou[2], Y. Q. Wang[1], and N. E. Forsberg*[1], [1]*OmniGen Research*, *Corvallis, OR*, [2]*Tunghai University*, *Taichung, Taiwan, ROC*.

T18 **Inhibition of inflammatory processes in Caco-2 intestinal epithelial cells by an ethanolic extract of a polyphenol-rich grape seed meal.**
R. Ringseis[1], M. Siebers[1], J. Keller[1], A. Steinbeck[2], B. Eckel*[2], and K. Eder[1], [1]*Institute of Animal Nutrition and Nutrition Physiology*, *Justus-Liebig-University Giessen, Heinrich-Buff-Ring 26-32, 35390 Giessen, Germany*, [2]*Dr. Eckel GmbH*, *Im Stiefelfeld 10, 56651 Niederzissen, Germany*.

## Beef Species
## Beef Cattle Production

T19 **Association of slaughter and dressing traits with ultrasound and computed tomography data in cattle.**
G. Hollo*[1], J. Tőzsér[2], A. Szentléleki[2], F. Szabo[3], I. Anton[4], T. Somogyi[1], I. Repa[1], and I. Hollo[1], [1]*Kaposvár University*, *Kaposvár, Hungary*, [2]*St. István University*, *Gödöllö, Hungary*, [3]*Pannon University*, *Keszthely, Hungary*, [4]*Research Institute for Animal Breeding and Nutrition*, *Herceghalom, Hungary*.

T20 **Effect of arrival health risk status of steer calves on feedlot performance and health during a 61-d preconditioning program.**
C. Flaig[1], L. Clark[1], O. C. Schunicht[1], M. L. May[1], R. E. Peterson[1], C. W. Booker[1], R. Krehbiel[2], G. K. Jim[1], B. P. Holland[3], and L. O. Burciaga-Robles*[1], [1]*Feedlot Health Management Services Ltd.*, *Okotoks, Alberta, Canada*, [2]*Department of Animal Science, Oklahoma State University*, *Stillwater*, [3]*Department of Animal and Range Sciences, South Dakota State University*, *Brookings*.

T21 **Effect of residual feed intake on blood urea nitrogen concentration in growing heifers from an Angus-Brahman multi-breed herd.**
R. O. Myer[1], M. A. Elzo[2], G. C. Lamb[1], and N. DiLorenzo*[1], [1]*University of Florida, NFREC*, *Marianna*, [2]*University of Florida*, *Gainesville*.

T22 **Post-weaning feed efficiency of tropically adapted purebred and crossbred calves when fed in either winter or spring.**
S. W. Coleman*[1], C. C. Chase[1], W. A. Phillips[2], and D. G. Riliey[1], [1]*USDA ARS Subtropical Agricultural Research Station*, *Brooksville, FL*, [2]*USDA, ARS, Grazinglands Research Laboratory*, *El Reno, OK*.

T23 **Finishing steers and bulls with high-vitamin E diets: Effect on circulating immune cells and creatine kinase after a mild stress.**
C. Reyes, C. Fuentes, and R. E. Larraín*, *Pontificia Universidad Catolica de Chile*, *Santiago, Chile*.

## Breeding and Genetics
## Molecular Genetics

T24 **Quantitative genetics and differential performance and gene expression of half-sib families of hybrid striped bass in communal ponds.**
S. A. Fuller*, B. H. Beck, M. McEntire, and D. Freeman, *USDA ARS Stuttgart National Aquaculture Research Center*, *Stuttgart, AR*.

T25 **Effects of transgenic myostatin depression on reproductive parameters and placental superoxide dismutases in mice**.
S. Yarlagadda, C. N. Lee*, Y. S. Kim, J. Yang, and W. Y. Ho, *University of Hawaii-Manoa*, *Honolulu*.

T26 **Study of polymorphism at CSD gene in Apis mellifera meda.**
S. Karimi*[1], A. Nejati Javaremi[1], S. R. Miraei Ashtiani[1], and H. Alizadeh[2], [1]*University of Tehran, University College of Agriculture and Natural Resource, Department of Animal Science*, *Tehran, Karaj, Iran*, [2]*University of Tehran, University College of Agriculture and Natural Resource, Agronomy & Plant Breeding Department*, *Tehran, Karaj, Iran*.

T27 **Growth-related differential gene expression in the longissimus thoracis muscle of Iberian × Landrace back-crossed pigs.**
J. Casellas*[1,2], J. L. Noguera[2], R. N. Pena[2,3], J. M. Folch[1], M. Muñoz[4], and N. Ibáñez-Escriche[2], [1]*Departament de Ciència Animal i dels Aliments, Universitat Autònoma de Barcelona*, *Bellaterra, Spain*, [2]*Genètica i Millora Animal, IRTA-Lleida*, *Lleida, Spain*, [3]*Departament de Producció Animal, Universitat de Lleida*, *Lleida, Spain*, [4]*Departamento de Mejora Genética Animal, SGIT-INIA*, *Madrid, Spain*.

T28 **Path analysis of candidate genes for intramuscular fat in pigs.**
N. V. L. Serão*[1,3], J. Braccini Neto[2], A. M. F. Ribeiro[3], P. V. Silva[3], S. L. Rodríguez-Zas[1], and S. E. F. Guimarães[3], [1]*University of Illinois at Urbana-Champaign*, *Urbana*, [2]*Universidade Federal do Rio Grande do Sul*, *Porto Alegre, RS, Brazil*, [3]*Universidade Federal de Viçosa*, *Viçosa, MG, Brazil*.

T29 **Evaluating statistical models to assess differential gene expression in PRRSV infected pigs using plasmode datasets.**
M. E. Arceo*[1], C. W. Ernst[1], M. Wysocki[2], J. K. Lunney[3], and J. P. Steibel[1], [1]*Department of Animal Science, Michigan State University*, *East Lansing*, [2]*Lehrstuhl für Tierzucht, Technische Universität München*, *Munich, Germany*, [3]*Animal Parasitic Diseases Laboratory, ARS, USDA, BARC*, *Beltsville, MD.*

T30 **Structural changes at bovine IgE as related to variation at the DNA level.**
I. Rivera, M. Pagan*, E. Jimenez, and G. Ortiz, *Department of Animal Industry, University of Puerto Rico at Mayaguez*, *Mayaguez, PR*.

T31 **Association between SNPs in candidate genes and residual feed intake in Angus cattle.**
A. I. Trujillo*, A. Casal, P. Grignola, J. P. Marchelli, and P. Chilibroste, *Departamento de Produccion Animal y Pasturas, Facultad de Agronomia, Universidad de la Republica*, *Montevideo, Uruguay*.

T32 **Identification of a JY-1 gene variant in Nellore cattle.**
G. M. F. de Camargo*[1], A. C. de Freitas[1], A. C. Andrade[1], F. M. M. Gil[1], D. F. Cardoso[1], P. D. S. Fonseca[1], F. R. P. Souza[1], M. Cervini[1], F. Baldi[1], L. G. de Albuquerque[1], L. C. A. Regitano[2], and H. Tonhati[1], [1]*Sao Paulo State University*, *Jaboticabal, Sao Paulo, Brazil*, [2]*Brazilian Agricultural Research Corporation - Southeast Cattle Center*, *Sao Carlos, Sao Paulo, Brazil*.

T33 **Novel associations between a SNP in the bovine DDEF1 gene and production traits in Nellore breed.**
P. C. Tizioto*[1], S. L. Meirelles[1], G. B. Veneroni[1], M. M. de Souza[1], F. Siqueira[2], A. do Nascimento Rosa[2], L. O. Campos da Silva[2], R. de Almeida Torres[2], S. R. Medeiros[2], R. R. Tullio[3], M. M. de Alencar[3], G. Feijó[2], and L. C. de Almeida Regitano[3], [1]*Federal Universidade of São Carlos*, *São Carlos, São Paulo, Brazil*, [2]*Embrapa Beef Cattle National Center*, *Campo Grande, Mato Grosso do Sul, Brazil*, [3]*Embrapa Southeast Cattle Research Center*, *São Carlos, São Paulo, Brazil*.

T34 **CAPN4751 and UOGCAST effects on feed efficiency, carcass traits and feedlot performance in Nellore (Bos indicus) cattle.**
R. C. Gomes*[1], M. E. Carvalho[2], M. H. A. Santana[1], S. L. Silva[1], P. R. Leme[1], P. Rossi[3], and J. B. S. Ferraz[1], [1]*Faculdade de Zootecnia e Engenharia de Alimentos, Universidade de São Paulo (FZEA/USP)*, *Pirassununga, SP, Brazil*, [2]*Escola Superior de Agricultura Luiz de Queiroz, Universidade de São Paulo (Esalq/USP)*, *Piracicaba, SP, Brazil*, [3]*Departamento de Zootecnia, Universidade Federal do Paraná (UFPR)*, *Curitiba, PR, Brazil*.

T35 **Bialellic expression studies of CAST gene in bovine muscle.**
M. M. de Souza[1], S. C. M. Niciura[2], A. M. G. Ibelli[1], S. L. Meirelles[1], M. I. Rocha[1], P. C. Tizioto*[1], G. Gasparin[3], M. E. Carvalho[3], G. B. Veneroni[1], F. A. Bressani[2], P. S. N. de Oliveira[1], F. Siqueira[4], L. L. Coutinho[3], and L. C. de Almeida Regitano[2], [1]*Federal University of São Carlos*, *São Carlos, São Paulo, Brazil*, [2]*Embrapa Southeast Cattle Research Center*, *São Carlos, São Paulo, Brazil*, [3]*University of São Paulo*, *Piracicaba, São Paulo, Brazil*, [4]*Embrapa Beef Cattle National Center*, *Campo Grande, Mato Grosso do Sul, Brazil*.

T36 **The polymorphism Msp I in intron 3 of the growth hormone gene in Nellore cattle (Bos taurus indicus).**
D. F. Cardoso[1], G. M. F. de Camargo*[1], P. D. S. Fonseca[1], F. M. M. Gil[1], M. G. Chiquitelli[1], F. R. P. de Souza[1], L. G. de Albuquerque[1], M. E. Z. Mercadante[2], and H. Tonhati[1], [1]*Department of Animal Sciences, Sao Paulo State University*, *Jaboticabal, SP, Brazil*, [2]*Animal Science Experimental Station*, *Sertãozinho, SP, Brazil.*

T37 **Polymorphisms of the IGF1 and MSTN genes in Nellore beef cattle (Bos indicus) and in their crosses with Bos taurus.**
R. A. Curi[1], M. R. S. Fortes[2], D. M. Vankan[2], J. A. V. Silva*[1], H. N. Oliveira[3], M. D. S. Mota[1], and A. C. Silveira[1], [1]*Faculdade de Medicina Veterinária e Zootecnia, Unesp*, *Botucatu, São Paulo, Brasil*, [2]*School of Veterinary Science, University of Queensland*, *St. Lucia, Queensland, Australia*, [3]*Faculdade de Ciências Agrárias e Veterinárias, Unesp*, *Jaboticabal, São Paulo, Brasil*.

T38 **Characterization of polymorphism in the ORL1 gene in Nellore cattle (Bos taurus indicus) by PCR-RFLP.**
P. D. da Silva Fonseca[1], F. R. P. de Souza[1], G. M. F. de Camargo*[1], F. M. Gil[1], D. F. Cardoso[1], M. G. Chiquitelli[1], L. G. Albuquerque[1], M. E. Z. Mercadante[2], and H. Tonhati[1], [1]*São Paulo State University*, *São Paulo State University, Jaboticabal, Brazil*, [2]*Animal Science Experimental Station*, *Animal Science Experimental Station, Sertaozinho, Brazil*.

T39 **Analysis of MUC1 alleles in Nellore cattle using single-allele and multi-allele models.**
F. R. P. Souza[1], S. Sartore[2], S. Maione[2], D. Soglia[2], V. Spalenza[2], G. M. F. de Camargo*[1], P. Sacchi[2], R. Rasero[2], and M. E. Z. Mercadante[3], [1]*Sao Paulo State University*, *Jaboticabal, SP, Brazil*, [2]*University of Torino*, *Grugliasco, TO, Italy*, [3]*Instituto de Zootecnia*, *Sertãozinho, SP, Brazil*.

T40 **Association between a SNP in intron 1 of the ghrelin gene with milk production traits in Murrah buffaloes (Bubalus bubalis).**
F. M. M. Gil, F. R. P. Souza, G. M. F. de Camargo*, P. D. S. Fonseca, D. F. Cardoso, R. R. Aspilcueta-Borquis, G. Stefani, and H. Tonhati, *São Paulo State University*, *Jaboticabal, São Paulo, Brazil*.

T41 **Identification of polymorphism in leptin gene in Bubalus bubalis.**
V. A. Ferreira Junior[1], G. M. F. de Camargo*[1], A. L. F. Lima[2], F. M. M. Gil[1], and H. Tonhati[1], [1]*Sao Paulo State University*, *Jaboticabal, SP, Brazil*, [2]*Santa Catarina Federal University*, *Florianopolis, SC, Brazil*.

T42 **Relationship between kappa-casein genotype in inseminated bulls and the milk composition of their daughters.**
J. Bezdicek*[1] and J. Riha[2], [1]*Agriresearch Rapotin, Ltd.*, *Rapotin, Czech Republic*, [2]*Research Institute for Cattle Breeding, Ltd.*, *Rapotin, Czech Republic*.

T43 **Effect of DGAT1, TG and leptin gene polymorphisms on milk production traits in Holstein-Friesian cows in Hungary.**
I. Anton*[1], K. Kovács[1], G. Holló[2], V. Farkas[3], F. Szabó[3], and A. Zsolnai[1], [1]*Research Institute for Animal Breeding and Nutrition*, *Herceghalom, Hungary*, [2]*University of Kaposvár, Faculty of Animal Science*, *Kaposvár, Hungary*, [3]*University of Pannonia, Georgikon Faculty of Agriculture*, *Keszthely, Hungary*.

T44 **Correlation analysis of hepatic transcript abundance and lactational performance in postpubertal Holstein dairy heifers.**
J. Doelman, J. M. Kim*, H. Cao, N. G. Purdie, and J. P. Cant, *University of Guelph*, *Ontario, Canada*.

T45 **Identification of a SNP in the gene IL2 and its association with resistance against gastrointestinal infection by nematodes in goat.**
F. A. Bressani[1,5], P. C. Tizioto*[2], S. L. Meirelles[2], W Malagó Junior[1,2], R. Giglioti[3], A. M. G. Ibelli[2], J. G. G. Gromboni[4], E. Carrilho[5], L. G. Zaros[6], L. da Silva Vieira[7], and L. Correia de Almeida Regitano[1], [1]*Embrapa Southeast Embrapa Southeast Cattle Research Center*, *São Carlos, São Paulo, Brazil*, [2]*Federal University of São Carlos - UFSCar*, *São Carlos, São Paulo, Brazil*, [3]*State University of São Paulo - UNESP*, *Jaboticabal, São Paulo, Brazil*, [4]*UNICEP*, *São Carlos, São Paulo, Brazil*, [5]*University of Sao Paulo*, *São Carlos, São Paulo, Brazil*, [6]*Federal University of Rio Grande do Norte*, *Natal, Rio Grande do Norte, Brazil*, [7]*Embrapa Goats and Sheep*, *Sobral, Ceará, Brazil*.

T46 **Effect of the DGAT1 gene polymorphism on the backfat thickness and fat-tailed weight in Iranian Lori-Bakhtiari sheep.**
H. Mohammadi*, M. Moradi Shahrebabak, and M. Sadeghi, *Department of Animal Science, University College of Agriculture and Natural Resources, University of Tehran*, *Karaj, Tehran, Iran.*

T47 **Identification and evaluation of an IGF-I gene polymorphism in a Zel sheep population using RFLP/HaeII.**
S. M. Kazemi*[1], C. Amirinia[2], S. Gharaveysi[1], H. Emrani[2], and A. Yilmaz[3], [1]*Department of animal Science, Islamic Azad University, Qaemshahr Branch*, *Qaemshahr, Mazandaran, Iran*, [2]*Department of Animal Biotechnology, Animal Science Research Institute of Iran*, *Karaj, Alborz, Iran*, [3]*Department of Animal Sciences, The Ohio State University*, *Columbus*.

T48 **Haplotype structure of telomerase reverse transcriptase (turTERT) gene in the turkey, Meleagris gallopavo.**
A. M. J. B. Adikari*, J. Xu, X. Guan, and E. Smith, *Virginia Polytechnic Institute and State University*, *Blacksburg*.

T49 **Changes in the proteome and metabolic profiles of broiler chickens during adipose tissue accretion.**
G. Kelley*, X. Wang, F. Chen, and S. Nahashon, *Tennessee State University*, *Nashville*.

T50 **PCR-RFLP analysis of promoter region of Interferon gamma gene in high and low immunocompetent Aseel native chicken.**
S. Choudhary*[1], S. Kumar[2], and B. Nautiyal[1], [1]*MJP Rohilkhand University*, *Bareilly, U.P. India*, [2]*Central Avian Research Institute*, *Bareilly, U.P. India*.

T51 **Association of BMPR–IB gene polymorphism with breeding value of growth and reproductive traits in Mazandaran native chicken.**
Sh. Niknafs*, A. Nejati Javaremi, and M. Sadeghi, *Agricultural Faculty, University of Tehran*, *Karaj, Alborz, Iran*.

T52 **Association of a single nucleotide polymorphism in NPY gene with growth and reproductive traits in Mazandaran native chicken.**
S. Niknafs*, A. Fatemi, H. Mehrabani Yeganeh, and A. Nejati Javaremi, *Agricultural Faculty, University of Tehran*, *Karaj, Alborz, Iran*.

T53 **Association of a single nucleotide polymorphism from GnRHR gene with growth and egg production traits in Mazandaran native chicken.**
S. Niknafs*, A. Fatemi, H. Mehrabani Yeganeh, and A. Nejati Javaremi, *Agricultural Faculty, University of Tehran*, *Karaj, Alborz, Iran*.

T54 **Investigation of three single nucleotide polymorphisms of STAT5B gene and their association with growth and reproductive traits in Mazandaran native chicken.**
S. Niknafs*, A. Nejati Javaremi, M. Sadeghi, and A. Fatemi, *Agricultural Faculty, University of Tehran*, *Karaj, Alborz, Iran*.

## Companion Animals

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T55 **Effect of feeding a combination of galacto-oligosaccharides and a *Bifidobacterium* sp. strain on feline intestinal ecosystem.**
G. Biagi*[1], I. Cipollini[1], M. Grandi[1], C. Pinna[1], A. Pompei[2], M. Zini[3], and G. Zaghini[1], [1]*Department of Veterinary Medical Sciences, University of Bologna*, *Ozzano Emilia, Italy*, [2]*Department of Pharmaceutical Sciences, University of Bologna*, *Bologna, Italy*, [3]*Department of Biochemistry, University of Bologna*, *Bologna, Italy*.

T56 **Dietary fiber viscosity may affect insulin and GLP-1 secretion, but does not appear to contribute to the "second meal effect" in healthy adult dogs.**
P. Deng*[1], A. Wolff[1], A. N. Beloshapka[1], B. M. Vester Boler[1], and K. S. Swanson[1,2], [1]*Department of Animal Sciences, University of Illinois*, *Urbana*, [2]*Division of Nutritional Sciences, University of Illinois*, *Urbana*.

T57 **Comparison of fecal microbial communities of healthy adult dogs fed raw meat-based or extruded diets using 454 pyrosequencing.**
A. N. Beloshapka*[1], S. E. Dowd[3], L. Duclos[4], and K. S. Swanson[1,2], [1]*Department of Animal Sciences, University of Illinois*, *Urbana*, [2]*Division of Nutritional Sciences, University of Illinois*, *Urbana*, [3]*Research and Testing Laboratory*, *Lubbock, TX*, [4]*Nature's Variety Inc.*, *Lincoln, NE*.

T58 **Processing techniques to maintain low glycemic index of peas.**
J. Fouhse*[1], J. Adolphe[2], L. Weber[2], and M. Drew[1], [1]*University of Saskatchewan*, *Saskatoon, Saskatchewan, Canada*, [2]*Western College of Veterinary Medicine*, *Saskatoon, Saskatchewan, Canada*.

T59 **Acute effects of carbohydrates in dogs.**
J. L. Adolphe*[1], J. M. Fouhse[2], M. D. Drew[2], and L. P. Weber[1], [1]*Department of Veterinary Biomedical Sciences, Western College of Veterinary Medicine, University of Saskatchewan*, *Saskatoon, Saskatchewan, Canada*, [2]*Department of Animal and Poultry Science, College of Agriculture and Bioresources, University of Saskatchewan*, *Saskatoon, Saskatchewan, Canada*.

T60 **Effects of protease enzyme on diets for growing mink (*Mustela vison*).**
E. S. Dierenfeld*[1], E. Keith[1], R. Johnson[2], C. Falco[2], B. Roeder[3], and N. Odetallah[1], [1]*Novus International, Inc.*, *St. Charles, MO*, [2]*FBAC*, *Sandy, UT*, [3]*Brigham Young University*, *Provo, UT*.

T61 **Influence of feeding a fish oil containing diet to mature overweight dogs: Effects on lipid and protein metabolism, postprandial glycemia, and body weight.**
M. R. C. de Godoy*, K. R. McLeod, and D. L. Harmon, *University of Kentucky, Lexington*.

T62 **Influence of feeding a fish oil containing diet to adult lean dogs: Effects on lipid and protein metabolism, postprandial glycemia, and body weight.**
M. R. C. de Godoy*, C. E. Conway, K. R. McLeod, and D. L. Harmon, *University of Kentucky, Lexington*.

T63 **In vivo and in vitro procedures for measuring coat quality after dietary manipulation in dogs.**
G. González-Ortiz[1], L. Castillejos*[1], R. Franco-Rosselló[1], J. J. Mallo[3], J. Alcañiz[3], M. A. Calvo[2], and M. D. Baucells[1], [1]*Nutrition and Welfare Service, Department of Animal and Food Science (UAB)*, *Bellaterra, Spain*, [2]*Departament de Sanitat i d'Anatomia Animals (UAB)*, *Bellaterra, Spain*, [3]*Norel, S.A.*, *Spain*.

T64 **Evaluation of a mixture of *Bacillus amyloliquefaciens* CECT 5940 and *Enterococcus faecium* CECT4515 in adult healthy dogs.**
G. González-Ortiz[1], L. Castillejos*[1], J. J. Mallo[3], J. Alcañiz[3], M. A. Calvo[2], and M. D. Baucells[1], [1]*Nutrition and Welfare Service, Department of Animal and Food Science (UAB)*, *Bellaterra, Spain*, [2]*Departament de Sanitat i d'Anatomia Animals (UAB)*, *Bellaterra, Spain*, [3]*Norel, S.A.*, *Spain*.

T65 **Effect of increasing levels of mannoprotein in humoral immunity in dogs.**
A. F. Chizzotti*, F. M. O. B. Saad, F. S. Ebina, R. C. Silva, J. S. R. Reis, and M. C. Kadri, *Universidade Federal de Lavras*, *Lavras, MG, Brazil*.

T66 **Effect of dietary starch level on protein metabolism in domestic cats.**
T. J. Wester*[1], K. Weidgraaf[1], M. Hekman[1], N. J. Cave[2], and M. H. Tavendale[3], [1]*Institute of Food, Nutrition and Human Health, Massey University*, *Palmerston North, New Zealand*, [2]*Institute of Veterinary, Animal and Biomedical Sciences*, *Palmerston North, New Zealand*, [3]*AgResearch Ltd.*, *Palmerston North, New Zealand*.

T67 **Effect of glucose infusion and dietary protein level on urea production in the domestic cat.**
T. J. Wester*[1], K. Weidgraaf[1], M. Hekman[1], N. J. Cave[2], and M. H. Tavendale[3], [1]*Institute of Food, Nutrition and Human Health, Massey University*, *Palmerston North, New Zealand*, [2]*Institute of Veterinary, Animal and Biomedical Sciences*, *Palmerston North, New Zealand*, [3]*AgResearch Ltd.*, *Palmerston North, New Zealand*.

## Contemporary and Emerging Issues

T68 **Effects of sow stocking rate and season on bermudagrass (*Cynodon dactylon*) ground cover.**
S. Pietrosemoli*[1], J. C. Guevara[2], and J. T. Green[3], [1]*Animal Science Department, North Carolina State University*, *Raleigh*, [2]*Alternative Swine Research and Extension Project*, *Raleigh, NC*, [3]*Crop Science Department, North Carolina State University*, *Raleigh.*

T69 **Cradle-to-farm gate analysis of milk carbon footprint. A critical review.**
G. Pirlo*, *Consiglio per la ricerca e sperimentazione in agricoltura, Centro di ricerca per le produzioni foraggere e lattiero-casearie (CRA-FLC)*, *Cremona, Italy*.

## Dairy Foods
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T70 **Fluid milk quality survey.**
C. Boeneke*, J. Vargas, and K. Aryana, *Louisiana State University Agricultural Center*, *Baton Rouge.*

T71 **Seasonal variation of psychrotrophic bacteria isolated from raw milk in South Korea.**
H. A. Lee*, J. H. Myung, Y. H. Park, and Y. K. Shin, *Institute of Dairy Food Research, Seoul Dairy Cooperative*, *Ansan, Kyunggi, South Korea*.

T72 **Influence of multilayer packaging on pasteurized milk quality.**
M. da Silva Pinto, A. F. Carvalho*, J. Y. Suda, A. C. P. Silveira, and A. C. dos Santos Pires, *Food Science Department, Federal University of Viçosa*, *Viçosa, MG, Brazil*.

T73 **Microbiological quality of UHT dairy products analyzed by rapid, reference, and ATP bioluminescence methods.**
A. F. Cunha[1], A. D. Lage[1], M. M. P. Araújo[1], C. F. Abreu[2], A. R. Tassinari[2], M. R. Souza[1], C. F. A. M. Penna[1], L. M. Fonseca[1], M. O. Leite[1], and M. M. O. P. Cerqueira*[1], [1]*Universidade Federal de Minas Gerais*, *Belo Horizonte, Minas Gerais, Brazil*, [2]*3M do Brazil*, *Sumaré, São Paulo, Brazil*.

T74 **Phylogenic analysis and characterization of bacterial sporeformer isolates obtained from raw milk, pasteurized milk, and dairy farm environments.**
R. A. Ivy*, M. L. Ranieri, N. H. Martin, H. C. den Bakker, B. M. Xavier, M. Wiedmann, and K. J. Boor, *Cornell University*, *Ithaca, NY*.

T75 **Spores in dairy products: Characterization and destruction by pulsed light.**
A. Laubscher* and R. Jimenez-Flores, *California Polytechnic State University, Dairy Products Technology Center*, *San Luis Obispo*.

T76 **The effect of different sweeteners on growth and survival of *Lactobacillus rhamnosus* GR-1 in milk.**
S. Hekmat*[1,2] and G. Reid[2], [1]*Brescia University College*, *London, Ontario, Canada*, [2]*Canadian Research and Development Center for Probiotics*, *London, Ontario, Canada*.

T77 **Detection and transfer of the glutamate decarboxylase gene in *Streptococcus thermophilus*.**
G. Somkuti*, J. Renye, and D. Steinberg, *Eastern Regional Research Center/USDA*, *Wyndmoor, PA*.

T78 **Development of a real-time PCR assay for rapid detection of spoilage *Paenibacillus* spp. in fluid milk.**
M. L. Ranieri*, W. R. Mitchell, R. A. Ivy, N. Martin, M. Wiedmann, and K. J. Boor, *Cornell University, Ithaca, NY.*

T79 **Genetic analysis of a novel plasmid encoded durancin locus in *Enterococcus durans* 41D.**
L. Du[1], G. Somkuti*[2], and J. Renye[2], [1]*Nanjing University of Finance and Economics*, *Nanjing, China*, [2]*Eastern Regional Research Center/USDA*, *Wyndmoor, PA*.

T80 **Development of a qPCR method for monitoring strain dynamics during yogurt manufacture.**
D. Miller*, E. G. Dudley, and R. F. Roberts, *The Pennsylvania State University*, *University Park*.

T81 **Binding and efficacy of a natural biopreservative (nisin) in different food matrices.**
R. Niewohner*, S. Anand, and R. Nauth, *South Dakota State University*, *Brookings*.

T82 **Resistance of membrane biofilms to cleaning and sanitation treatments.**
D. Singh* and S. K. Anand, *Midwest Dairy Foods Research Center, Dairy Science Department, South Dakota State University*, *Brookings*.

T83 **Effect of low sonication intensities on the growth of *Streptococcus salivarius* ssp. *thermophilus* ST-M5 subjected to different temperatures.**
M. Moncada* and K. Aryana, *School of Animal Sciences, Louisiana State University Agricultural Center*, *Baton Rouge*.

T84 **Low sonication intensity influences on the protease activity of *Lactobacillus delbrueckii* ssp. *bulgaricus* LB-12 at different temperatures.**
M. Moncada* and K. Aryana, *School of Animal Sciences, Louisiana State University Agricultural Center*, *Baton Rouge*.

T85 **Influence of low sonication intensities at different temperatures on the bile tolerance of *Streptococcus salivarius* spp. *thermophilus* ST-M5.**
M. Moncada* and K. Aryana, *School of Animal Sciences, Louisiana State University Agricultural Center*, *Baton Rouge*.

T86 **Screening of mild pulsed electric field parameters for enhancing acid tolerance of *Streptococcus salivarius* spp. *thermophilus* ST-M5.**
N. Najim and K. Aryana*, *School of Animal Sciences, Louisiana State University Agricultural Center*, *Baton Rouge*.

T87 **Mild pulsed electric field conditions identified for improving growth, protease activity and acid tolerance of *Lactobacillus delbrueckii* ssp. *bulgaricus* LB-12 and *Lactobacillus acidophilus* LA-K.**
N. Najim and K. Aryana*, *School of Animal Sciences, Louisiana State University Agricultural Center*, *Baton Rouge*.

T88 **Impact of mild pulsed electric field conditions on improving bile tolerance, protease activity and growth of *Streptococcus salivarius* ssp. *thermophilus* ST-M5.**
N. Najim and K. Aryana*, *School of Animal Sciences, Louisiana State University Agricultural Center*, *Baton Rouge*.

T89 **Resistance of *E. coli* and *L. rhamnosus* to acid stress is affected by the presence of pepsin-treated caseinomacropeptide.**
G. Robitaille, C. Lapointe, D. Leclerc, and M. Britten*, *Food Research and Development Centre, Agriculture and Agri-Food Canada*, *St Hyacinthe, Quebec, Canada*.

T90 **Effect of microencapsulation on survival of *Lactobacillus acidophilus* La5 during simulated gastrointestinal conditions of stirred yoghurt after refrigerated storage.**
M. C. E. Ribeiro, K. S. Chaves, C. G. M. S.C. Tenório, F. N. Souza, C. R. F. Grosso, and M. L. Gigante*, *State University of Campinas*, *Campinas, SP/Brazil*.

T91 **Viability of free and microencapsulated *Lactobacillus acidophilus* La5 in stirred yoghurt during refrigerated storage.**
M. C. E. Ribeiro, C. G. M. S.C. Tenório, K. S. Chaves, F. N. Souza, C. R. F. Grosso, and M. L. Gigante*, *State University of Campinas*, *Campinas, SP/Brazil*.

T92 **In vitro property evaluation of *Propionibacterium* cultures for probiotic applications.**
W. Y. Yang*, A. Hostetler, C. Nolan, and H. S. Kim, *Culture Systems Inc.*, *Mishawaka, IN*.

T93 **Can high quality raw milk have enough microbial load to show a reduction of organisms in a pasteurization adjunct?**
J. A. Zonneveld*, A. M. Lammert, and R. Jimenez-Flores, *California Polytechnic University*, *San Luis Obispo*.

## Dairy Foods
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T94 **Effects of prolactin on the expression of genes related to milk protein synthesis in bovine mammary epithelial cells.**
X. Y. Li, J. Q. Wang*, H. Y. Wei, X. M. Nan, 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*.

T95 **The best ratio between lysine and methionine on milk protein synthesis in bovine mammary epithelial cells.**
X. Y. Li, J. Q. Wang*, H. Y. Wei, X. M. Nan, 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*.

T96 **Development of safe glue sticks containing whey protein.**
G. Wang and M. Guo*, *The University of Vermont*, *Burlington*.

T97 **Isolation and characterization of prosaposin from milk from four goat breeds.**
A. Robertson-Byers*, M. Worku, and S. Ibrahim, *North Carolina A&T State University*, *Greensboro*.

## Food Safety

T98 **Poultry offal meal traceability in meat quail tissues using the technique of stable carbon-13 and nitrogen-15 Isotopes.**
C. Mori*[2], E. A. Garcia[1], C. Ducatti[1], J. C. Denadai[1], and K. Pelicia[1], [1]*São Paulo State University*, *Botucatu, São Paulo, Brazil*, [2]*São Paulo State University*, *Registro, São Paulo, Brazil*.

T99 **Use of stable isotopes of carbon-13 and nitrogen-15 in quail eggs.**
C. Mori*[2], C. Ducatti[1], C. C. Pizzolante[3], S. K. Kakimoto[3], and J. C. Denadai[1], [1]*São Paulo State University*, *Botucatu, São Paulo, Brazil*, [2]*São Paulo State University*, *Registro, São Paulo, Brazil*, [3]*São Paulo Agency of Agribusiness Tecnology*, *Brotas, São Paulo, Brazil.*

T100 **Adsorption capacity and efficacy assessment of bamboo charcoal an alternative adsorbent for aflatoxin B1 in a ruminal batch culture.**
H. J. Yang* and Y. H. Jiang, *State Key Laboratory of Animal Nutrition, College of Animal Science and Technology, China Agricultural University*, *Beijing, China*.

T101 **Occurrence of mycotoxins in feedstuffs and feed samples from 2009-2010.**
U. Hofstetter*, K. Naehrer, and I. Rodrigues, *Biomin Holding GmbH*, *Herzogenburg, Austria*.

T102 **Horizontal transfer of Stx2 gene from *E. coli* O157:H7 to non-pathogenic *E. coli* occurred under feedlot conditions.**
W. F. Yue, M. Du, W. J. Means, and M. J. Zhu*, *Department of Animal Science, University of Wyoming*, *Laramie*.

T103 **Antagonistic intestinal microflora produces antimicrobial substance inhibitory to *Pseudomonas* species and other spoilage organisms.**
B. Hatew*[1,2], T. Delessa[1,3], V. Zakin[1], and N. Gollop[1], [1]*Agricultural Research Organization of Israel*, *Bet-Degan, Israel*, [2]*Wageningen University*, *Wageningen, the Netherlands*, [3]*Swiss Federal Institute of Technology*, *Zurich, Switzerland*.

T104 **Microencapsulated feed additives to reduce *Salmonella* shedding.**
E. Grilli*[1], R. Bari[1], A. Piva[1], B. Tugnoli[1], and T. R. Callaway[2], [1]*University of Bologna*, *Ozzano Emilia, BO, Italy*, [2]*Food and Feed Safety Research Unit, ARS/USDA*, *College Station, TX*.

T105 **Improving voluntary oral interaction of dairy cattle with manila ropes to facilitate *E. coli* O157:H7 monitoring on dairies.**
A. F. Pedroso*[2,1], O. C. M. Queiroz[1], and A. T. Adesogan[1], [1]*Department of Animal Sciences, Institute of Food and Agricultural Sciences, University of Florida, Gainesville*, [2]*Brazilian Agricultural Research Corporation, Embrapa Cattle-Southeast, 13560-970, São Carlos, SP, Brazil*.

T106 **Effects of predipping practices on milk iodine concentrations.**
S. I. Borucki-Castro[1], R. Berthiaume[1], A. Robichaud[2], and P. Lacasse*[1], [1]*AAFC-Dairy and Swine Research and Development Centre*, *Sherbrooke, QC, Canada*, [2]*Food Directorate, Health Canada*, *Longueuil, QC, Canada*.

T107 **Effects of natural beta-acids extracted from hops on *Salmonella* and *Campylobacter* pure culture.**
N.A. Krueger*[1], R. C. Anderson[1], J. A. Byrd[1], M. D. Flythe[1], and D. J. Nisbet[1], [1]*Food and Feed Safety Research Unit, United States Department of Agriculture, Agriculture Research Service*, *College Station, TX*, [2]*Forage Animal Production Research Unit, United States Department of Agriculture, Agriculture Research Service*, *Lexington, KY*.

T108 ***Staphylococcus aureus* virulence and metabolism are dramatically affected by *Lactococcus lactis* in cheese matrix.**
M. Cretenet[1,2], S. Nouaille[3,4], J. Thouin[1,2], L. Rault[1,2], L. Stenz[5], P. François[5], J. A. Hennekinne[6], M. B. Maillard[1,2], J. Fauquant[1,2], P. Loubière[3,4], S. Lortal*[1,2], Y. Le Loir[1,2], and S. Even[1,2], [1]*INRA, STLO*, *Rennes, France*, [2]*Agrocampus Ouest, STLO*, *Rennes, France*, [3]*Université de Toulouse; INSA*, *Toulouse, France*, [4]*INRA, UMR792*, *Toulouse, France*, [5]*University of Geneva Hospitals*, *Geneva–Switzerland*, [6]*ANSES, LERQAP*, *Maisons-Alfort, France*.

T109 **Characterization of risk of food pathogens in Minas Frescal cheese.**
R. Freitas[1], A. F. Carvalho*[1], L. A. Nero[1], G. G. Netto[1], and M. A. V. Brito[2], [1]*Federal University of Viçosa*, *Viçosa, MG, Brazil*, [2]*EMBRAPA CNPGL*, *Juiz de Fora, MG, Brazil*.

T110 **Inhibition of *Listeria monocytogenes* growth in cheddar cheese by nanofiltration retentate of tryptic extract of whey proteins.**
V. Demers-Mathieu[1,2], G. Robitaille[1], D. St-Gelais[1], S. Gauthier[2], and M. Britten*[1], [1]*Food Research and Development Centre, Agriculture and Agri-Food Canada*, *St Hyacinthe, QC, Canada*, [2]*Centre de recherche STELA & INAF, Département de Sciences des Aliments et de Nutrition*, *Québec, QC, Canada*.

T111 **Investigating contamination of bulk tank milk with *Listeria monocytogenes* on a dairy farm.**
J. C. F. Pantoja*, A. C. O. Rodrigues, C. Hulland, D. J. Reinemann, and P. L. Ruegg, *University of Wisconsin*, *Madison*.

T112 **Prediction the growth of *Staphylococcus aureus* in raw milk using modified Gompertz and Logistic models.**
B. Li[2], C. Man[1], M. Guo*[3], Y. Shan[1], F. Zhao[2], S. Yang[2], Y. Jiang[2], Y. Lang[2], 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*.

T113 **Rapid detection of viable *Listeria monocytogenes* in milk by loop-mediated isothermal amplification coupled with propidium monoazide treatment.**
Y. Jiang[2], C. Man[1], M. Guo*[3], Y. Lu[1], F. Zhao[2], Y. Liu[2], B. Li[2], S. Yang[2], 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*.

T114 **Simultaneous analysis of anions $Cl^-$, $NO_2^-$, $SO_4^{2-}$, $NO_3^-$ and $PO_4^{3-}$ in milk with ion chromatography.**
D. Liu and Z. Chen*, *Analysis and Testing Center, Shandong University of Technology*, *Zibo, Shandong Province, China*.

T115 **Evaluation of a screening test for detecting antimicrobial residues in milk by visual reading and by reader equipment.**
M. M. P. Araújo, M. A. Guerra, A. D. Lage, A. F. Cunha, L. M. Fonseca, M. O. Leite, M. R. Souza, C. F. A. M. Penna, and M. M. O. P. Cerqueira*, *Universidade Federal de Minas Gerais*, *Belo Horizonte, Minas Gerais, Brazil*.

## Forages and Pastures
## Enhancing Forage Characterization Methods

T116 **Descriptive statistics for surface and core temperatures measured with infrared imaging and a digital thermometer on commercial Midwestern US silages.**
J. P. Goeser*, C. Heuer, and C. M. Wacek-Driver, *Vita Plus Corp.*, *Madison, WI*.

T117 **Intake, digestibility, and internal marker recovery of bermudagrass fed to cattle.**
J. Kanani*, D. Philipp, K. P. Coffey, E. Kegley, C. West, S. Gadberry, A. Young, and R. Rhein, *University of Arkansas*, *Fayetteville*.

T118 **In vitro gas production and microbial efficiency of *Paulownia tomentosa*.**
V. Gallardo-Santillan[1], R. Luevano-Escobedo[1], V. M. Llamas-Rodriguez*[1], M. Guerrero-Cervantes[1], H. Bernal-Barragán[2], A. S. Juárez-Reyes[1], and M. A. Cerrillo-Soto[1], [1]*Universidad Juárez del Estado de Durango*, *Durango,México*, [2]*Universidad Autónoma de Nuevo León*, *Nuevo León, México*.

T119 **Relationships between chemical composition, in vitro dry matter, neutral detergent fiber digestibility, and in vitro gas production of corn and sorghum silages.**
A. Corral-Luna*[1], D. Domínguez-Díaz[1], M. R. Murphy[2], F. A. Rodríguez-Almeida[1], C. Arzola[1], G. Villalobos[1], and J. A. Ortega-Gutierrez[1], [1]*Facultad de Zootecnia y Ecología, Universidad Autónoma de Chihuahua*, *Chihuahua, Chihuahua, México*, [2]*Department of Animal Science, University of Illinois*, *Urbana-Champaign*.

T120 **Effect of blending ruminal digesta, and filtration procedure on in vitro gas production.**
M. de J. Marichal*, R. Crespi, M. de los A. Bruni, S. Furtado, and G. Arias, *Departamento de Producción Animal y Pasturas, Facultad de Agronomia, Universidad de la Republica*, *Montevideo, Uruguay*.

T121 **Predictive accuracy of near-infrared reflectance (NIR) technology for fat and fatty acids in randomly selected TMR samples.**
R. T. Ward*[1], S. Weaver[1], and R. A. Patton[2], [1]*Cumberland Valley Analytical Services*, *Maugansville, MD*, [2]*Nittany Dairy Nutrition Inc.*, *Mifflinburg, PA*.

T122 **Relationships of fermentation characteristics in corn forage.**
R. Ward*[1] and D. R. Mertens[2], [1]*Cumberland Valley Analytical Services Inc*, *Maugansville, MD*, [2]*Mertens Innovation & Research LLC*, *Belleville, WI*.

T123 **Factors affecting estimation of spoilage indices in silage. 1: Effects of culture media, temperature, and duration.**
J. Leite[1,2], K. G. Arriola[1], N. Cavalcanti[1,2], O. C. M. Queiroz[1], E. N. Muniz*[1,3], and A. T. Adesogan[1], [1]*Department of Animal Sciences, IFAS, University of Florida*, *Gainesville*, [2]*Universidade Federal Rural de Pernambuco*, *Recife, PE, Brazil*, [3]*Embrapa Tabuleiros Costeiros*, *Aracaju, SE, Brazil*.

T124 **Relationship between residual feed intake, performance, and carcass parameters of pasture finished cattle.**
J. P. S. Neel*[1], E. E. D. Felton[2], S. K. Duckett[3], and W. S. Swecker[4], [1]*USDA-ARS-AFSRC*, *Beaver, WV*, [2]*West Virginia University*, *Morgantown*, [3]*Clemson University*, *Clemson, SC*, [4]*Virginia Tech University*, *Blacksburg*.

## Forages and Pastures
## Improving Pasture Quality and Utilization and Animal Performance

T125 **Herbage accumulation in *Brachiaria humidicola* subjected to different frequencies and intensities of defoliation.**
H. H. Vilela[1], D. Nascimento Junior*[1], A. L. Santos[1], D. L. R. Henriques[1], B. D. Faria[1], C. A. S. Freitas[1], and A. F. Sbrissia[2], [1]*Universidade Federal de Vicosa*, *Vicosa, MG, Brazil*, [2]*Universidade do Estado de Santa Catarina*, *Lages, SC, Brazil*.

T126 **Sward bulk density in *Brachiaria humidicola* subjected to frequencies and intensities of defoliation.**
D. Nascimento Junior*[1], H. H. Vilela[1], A. L. Santos[1], B. D. Faria[1], B. M. L. Sousa[1], G. O. Rocha[1], and A. F. Sbrissia[2], [1]*Universidade Federal de Vicosa*, *Vicosa, MG, Brazil*, [2]*Universidade do Estado de Santa Catarina*, *Lages, SC, Brazil*.

T127 **Herbage accumulation dynamics in pastures of *Pennisetum purpureum* submitted to grazing severities.**
D. Nascimento Junior*[1], B. M. L. Sousa[1], H. C. F. Monteiro[1], H. H. Vilela[1], M. C. T. Silveira[1], A. F. Sbrissia[2], and S. C. Da Silva[3], [1]*Universidade Federal de Vicosa*, *Vicosa, MG, Brazil*, [2]*Universidade do Estado de Santa Catarina*, *Lages, SC, Brazil*, [3]*Escola Superior de Agicultura Luis de Queiroz*, *Piracicaba, SP, Brazil*.

T128 **Pre-and post-grazing targets for mulato grass subjected to rotational stocking management.**
M. C. T. Silveira[1], D. Nascimento Junior*[1], S. C. Da Silva[2], K. S. Pena[1], C. S. Rodrigues[1], S. J. Souza[2], V. A. Limao[2], L. M. Barbero[2], and B. M. L. Sousa[1], [1]*Universidade Federal de Vicosa*, *Vicosa, MG, Brazil*, [2]*Escola Superior de Agricultura Luiz de Queiroz*, *Piracicaba, SP, Brazil*.

T129 **Balance between the emergence and mortality of tiller in *Brachiaria decumbens* pastures under continuous stocking.**
M. E. R. Santos[1], V. M. Gomes[2], D. M. Fonseca[2], D. Nascimento Junior*[2], and A. F. Sbrissia[3], [1]*Universidade Federal de Uberlandia*, *Uberlandia, MG, Brazil*, [2]*Universidade Federal de Vicosa*, *Vicosa, MG, Brazil*, [3]*Universidade do Estado de Santa Catarina*, *Lages, SC, Brazil*.

T130 **Forage utilization efficiency estimated in *Pennisetum purpureum* submitted to grazing severities.**
D. Nascimento Junior*[1], B. M. L. Sousa[1], H. C. F. Monteiro[1], F. C. Gomes[1], C. Z. Assis[1], H. H. Vilela[1], A. F. Sbrissia[2], A. L. Santos[1], and M. C. T. Silveira[1], [1]*Universidade Federal de Vicosa*, *Vicosa, MG, Brazil*, [2]*Universidade do Estado de Santa Catarina*, *Lages, SC, Brazil*, [3]*Escola Superior de Agicultura Luis de Queiroz*, *Piracicaba, SP, Brazil*.

T131 **Grazing losses and grazing efficiency on mulato grass subjected to strategies of rotational stocking management.**
M. C. T. Silveira[1], D. Nascimento Junior*[1], S. C. Da Silva[2], C. S. Rodrigues[1], V. A. Limao[2], L. M. Barbero[2], S. J. Sousa[2], K. S. Pena[1], and B. M. L. Sousa[1], [1]*Universidade Federal de Vicosa*, *Vicosa, MG, Brazil*, [2]*Escola Superior de Agricultura Luiz de Queiroz*, *Piracicaba, SP, Brazil*.

T132 **Relationship between canopy light interception and pre-grazing sward height in *Brachiaria humidicola* pastures subjected to frequencies and intensities of defoliation.**
H. H. Vilela[1], D. Nascimento Junior*[1], A. L. Santos[1], B. M. L. Sousa[1], G. O. Rocha[1], C. A. S. Feitas[1], and A. F. Sbrissia[2], [1]*Universidade Federal de Vicosa*, *Vicosa, MG, Brazil*, [2]*Universidade do Estado de Santa Catarina*, *Lages, SC, Brazil*.

T133 **Tiller population density in *Brachiaria humidicola* pastures subjected to frequencies and intensities of defoliation.**
H. H. Vilela[1], D. Nascimento Junior*[1], A. L. Santos[1], B. M. L. Sousa[1], G. O. Rocha[1], C. A. S. Feitas[1], and A. F. Sbrissia[2], [1]*Universidade Federal de Vicosa*, *Vicosa, MG, Brazil*, [2]*Universidade do Estado de Santa Catarina*, *Lages, SC, Brazil*.

T134 **Forage production and leaf area index of tropical grass cultivars under irrigation in the cerrado region of Minas Gerais, Brazil.**
E. A. da Silva*[1,6], W. J. da Silva[1], J. R. M. Ruas[2,5], D. S. Queiroz[3], M. C. M. Viana[4,6], J. M. V. Paes[1,6], and L. C. da Silva Júnior[7,8], [1]*EPAMIG, Uberaba, Minas Gerais, Brazil*, [2]*EPAMIG, Janaúba, Minas Gerais, Brazil*, [3]*EPAMIG, Viçosa, Minas Gerais, Brazil*, [4]*EPAMIG, Prudente de Morais, Minas Gerais, Brazil*, [5]*CNPq, Brasília, Federal District, Brazil*, [6]*FAPEMIG, Belo Horizonte, Minas Gerais, Brasil*, [7]*FAZU, Uberaba, Minas Gerais, Brazil*, [8]*FAPEMIG, Belo Horizonte, Minas Gerais, Brazil*.

T135 **Morphogenic characteristics of tropical grass cultivars under irrigation in the cerrado region of Minas Gerais, Brazil.**
E. A. da Silva*[1,5], W. J. da Silva[1], J. R. M. Ruas[2,6], M. C. M. Viana[3,5], D. S. Queiroz[4], J. M. V. Paes[1,5], and L. C. da Silva Júnior[7,8], [1]*EPAMIG, Uberaba, Minas Gerais, Brazil*, [2]*EPAMIG, Janaúba, Minas Gerais, Brazil*, [3]*EPAMIG, Prudente de Morais, Minas Gerais, Brazil*, [4]*EPAMIG, Viçosa, Minas Gerais, Brazil*, [5]*FAPEMIG, Belo Horizonte, Minas Gerais, Brazil*, [6]*CNPq, Brasília, Federal District, Brazil*, [7]*FAZU, Uberaba, Minas Gerais, Brazil*, [8]*FAPEMIG, Belo Horizonte, Minas Gerais, Brazil*.

T136 **Effect of patch-burning mixed-grass prairie rangeland on cattle performance.**
S. A. Gunter*[1], T. L. Springer[1], E. T. Thacker[1], and R. L. Gillen[2], [1]*USDA-ARS, Southern Plains Range Research Station*, *Woodward, OK*, [2]*Western Kansas Agricultural Research Centers, Kansas State University*, *Hays*.

T137 **Estimating pasture growth rates using local weather data.**
E. B. Rayburn and W. L. Shockey*, *West Virginia University*, *Morgantown*.

T138 **Impact of feeding strategies on milk production and income over feed cost: A case study of organic, grazing and conventional Wisconsin dairy farms.**
M. Dutreuil*, M. Wattiaux, R. Gildersleeve, B. L. Barham, and V. E. Cabrera, *University of Wisconsin*, *Madison*.

T139 **Performance of automatic milking during a whole herd transition to grazing.**
S. Utsumi*, M. Haan, R. Ashley, and J. Bronson, *Kellogg Biological Station, Michigan State University*, *Hickory Corners*.

T140 **Corn and forage yield on degraded pasture recovered by integrated crop-livestock-forest system in the central region of Minas Gerais, Brazil.**
M. C. M. Viana*[1], M. H. T. Mascarenhas[1], W. M. Albernaz[2], F. M. Freire[1], R. C. Alvarenga[3], E. A. Silva[1], M. M. Gontijo Neto[3], and M. F. F. Teixeira[4,5], [1]*EPAMIG - Minas Gerais Agricultural Research Corporation*, *Belo Horizonte, Minas Gerais, Brazil*, [2]*EMATER MG - Minas Gerais Agricultural Assistance and Rural Extension*, *Belo Horizonte, Minas Gerais, Brazil*, [3]*Embrapa Maize and Sorghum*, *Sete Lagoas, Minas Gerais, Brazil*, [4]*FEAD*, *Belo Horizonte, Minas Gerais, Brazil*, [5]*FAPEMIG*, *Belo Horizonte, Minas Gerais, Brazil*.

T141 **Supplement and stocking strategies for heavy-weight fall-born calves backgrounded on Tifton 85 bermudagrass.**
F. Rouquette*, J. Kerby, G. Nimr, and K. Norman, *Texas AgriLife Research*, *Overton*.

T142 **Production of wheat and oats overseeded into Tifton-85 grass at different forage allowances.**
F. F. Simili*[1], A. C. Ruggieri[2], T. V. Bertolino[2], D. R. Casagrande[3], R. A. Reis[2], and R. Godoy[4], [1]*APTA*, *Ribeirao Preto, Sao Paulo, Brazil*, [2]*UNESP*, *Jaboticabal, Sao Paulo, Brazil*, [3]*UFAM*, *Parintins, Amazonas, Brazil*, [4]*EMBRAPA*, *Sao Carlos, Sao Paulo, Brazil*.

T143 **Effects of lack of shade on Wye Angus brood cows.**
M. S. Updike* and R. M. Harrell, *University of Maryland*, *College Park*.

T144 **Effect of stocking rate on forage production, soil compaction and root numbers in a swine pasture system.**
B. Renner*[1], S. Pietrosemoli[1], J.-M. Luginbuhl[1], C. Raczkowski[2], J. T. Green[1], and J. Grossman[1], [1]*North Carolina State University*, *Raleigh*, [2]*North Carolina Agricultural and Technical State University*, *Greensboro*.

T145 **Average annual weight prediction of cows kept four years in a tough regime using a model of simulation.**
J. M. Tapia[1], J.C. Martinez[2], H. Diaz[3], A. Moreno[4], J. A. Martinez[1], O. D. Montañez*[1], J. A. Ochoa[1], and G. Rocha-Chavez[1], [1]*CUSUR, U de G*, *Cd. Guzman, Jalisco, Mexico*, [2]*Univ Autonom de Tamaulipas*, *Cd. Victoria, Tamps, Mexico*, [3]*Univ Auton Agr Antonio Narro*, *Saltillo, Cohahuila, Mexico*, [4]*Instituto Tecnologico de Cd Victoria*, *Cd. Victoria Tamps, Mexico*.

T146 **Effects of stocking rate and supplementation on carcass traits of beef cattle grazing winter annual forages.**
B. C. Williamson*[1], M. L. Looper[2], F. M. Rouquette[3], G. E. Aiken[4], S. F. Tabler[2], J. B. Wolley[2], and C. F. Rosenkrans[1], [1]*University of Arkansas*, *Fayetteville*, [2]*USDA/ARS, DBSFRC*, *Booneville, AR*, [3]*Texas AgriLife Research*, *Overton*, [4]*USDA/ARS, FAPRU*, *Lexington, KY*.

T147 **Matching hay composition to cow requirements during the winter.**
W. M. Backus[1], B. T. Campbell[1], A. M. Saxton[1], D. K. Joines[2], and J. C. Waller*[1], [1]*The University of Tennessee*, *Knoxville*, [2]*Soil, Plant, and Pest Center*, *Nashville, TN*.

T148 **Total fat and fatty acid composition of steaks from steers finished on three different forage systems in the Gulf Coast Region.**
G. Scaglia*[1], J. Rodriguez[2], K. McMillin[2], G. Gentry[2], and H. Boland[3], [1]*LSU AgCenter Iberia Research Station*, *Jeanerette, LA*, [2]*LSU AgCenter School of Animal Sciences*, *Baton Rouge, LA*, [3]*Prairie Unit Mississippi State University*, *Prairie.*

T149 **Effect of molasses or cornmeal on milk production and nitrogen utilization of grazing organic dairy cows.**
S. Ross*[1], A. F. Brito[1], K. J. Soder[2], K. Greene[1], A. Green[1], and P. Y. Chouinard[3], [1]*University of New Hampshire*, *Durham*, [2]*USDA-Agricultural Research Service-Pasture Systems and Watershed Management Research Unit*, *University Park, PA*, [3]*Université Laval*, *Quebec City, Quebec, Canada*.

T150 **Sensory properties and abundance of selected volatile compounds in milk from cows fed timothy grass as hay, silage or pasture.**
M. P. Villeneuve*[1,2], Y. Lebeuf[1,2], R. Gervais[1], G. F. Tremblay[3], J. C. Vuillemard[2,4], and P. Y. Chouinard[1,2], [1]*Département des sciences animales, Université Laval*, *Québec, QC, Canada*, [2]*Institute of Nutraceuticals and Functional Foods (INAF)*, *Québec, QC, Canada*, [3]*Agriculture and Agri-Food Canada*, *Québec, QC, Canada*, [4]*Département des sciences des aliments et de nutrition, Université Laval*, *Québec, QC, Canada*.

## Horse Species
## Equine Advancements I

T151 **Is horse harvesting and processing plants a horse owner solution to the United States unwanted horse population?**
S. Lindsey and M. Nicodemus*, *Mississippi State University*, *Mississippi State*.

T152 **Selenium status declines in horses fed NRC adequate and low selenium diets.**
M. Brummer*, S. Hayes, J. E. Earing, S. M. McCown, and L. M. Lawrence, *University of Kentucky*, *Lexington*.

T153 **Round-bale feeder design affects hay waste and intake during horse feeding.**
K. Martinson*, K. Cleary, K. Ross, J. Wilson, W. Lazarus, W. Thomas, and M. Hathaway, *University of Minnesota*, *St. Paul*.

T154 **Glycemic and insulinemic responses of weanling horses to high and low protein diets.**
A. L. Wagner*[1], R. N. Digianantonio[1], S. L. Tanner[1], R. B. Ennis[1], P. A. Harris[2], J. T. Sylvester[3], and K. L. Urschel[1], [1]*University of Kentucky*, *Lexington*, [2]*WALTHAM Centre For Pet Nutrition*, *Melton Mowbray, UK*, [3]*Buckeye Nutrition*, *Dalton, OH*.

T155 **The development, evaluation and implementation of an online safety course for youth working on equine facilities.**
E. A. Greene*[1], K. L. Waite[2], G. Heyboer[2], J. Whittle[3], C. D. Skelly[2], and K. Vignare[2], [1]*University of Vermont*, *Burlington*, [2]*Michigan State University*, *East Lansing*, [3]*University of Kentucky*, *Lexington*.

T156 **Greener pastures, stable footing, and seeking balance: An easy-to-use land stewardship series for all horse owners.**
E. A. Greene*[1], R. Gilker[1], and K. Martinson[2], [1]*University of Vermont*, *Burlington*, [2]*University of Minnesota*, *St Paul*.

T157 **Genetic evaluation of annual earnings in Quarter Horses.**
J. A. V. Silva*[1], A. P. A. Silva[1], B. Langlois[2], C. B. Cyrino[1], and M. D. S. Mota[1], [1]*Faculdade de Medicina Veterinária e Zootecnia, Unesp*, *Botucatu, São Paulo, Brasil*, [2]*Institut National de la Recherche Agronomique*, *Jouy en Josas, France*.

T158 **Genetic correlation between racing performance traits in Quarter Horses.**
M. D. S. Mota[1], B. Langlois[2], R. A. Curi[1], M. C. L. Dal Coleto[1], and J. A. V. Silva*[1], [1]*Faculdade de Medicina Veterinária e Zootecnia, Unesp*, *Botucatu, São Paulo, Brasil*, [2]*Institut National de la Recherche Agronomique*, *Jouy en Josas, France*.

T159 **Genome-wide association of polymorphic gait in the horse.**
E. A. Staiger*[1], R. R. Bellone[2], N. B. Sutter[3], and S. A. Brooks[1], [1]*Department of Animal Science, Cornell University*, *Ithaca, NY*, [2]*Department of Biology, University of Tampa*, *Tampa, FL*, [3]*Department of Clinical Science, College of Veterinary Medicine Cornell University*, *Ithaca, NY*.

T160 **Aromatherapy treatment in horses.**
C. E. Ferguson*, H. Klienman, A. L. Browning, J. Browning, and E. L. Ferguson, *McNeese State University*, *Lake Charles, LA*.

T161 **L-Arginine supplementation increases ovarian blood flow in postpartum mares.**
D. E. Kelley*, L. K. Warren, and C. J. Mortensen, *University of Florida*, *Gainesville*.

T162 **Using glycerol-$^3$H to evaluate equine blastocyst capsule permeability.**
B. R. Scott*[1], D. B. Carwell[1], R. A. Hill[1], K. R. Bondioli[1,2], R. A. Godke[1,2], and G. T. Gentry[1,2], [1]*School of Animal Sciences, Louisiana State University AgCenter*, *Baton Rouge*, [2]*Reproductive Biology Center, Louisiana State University AgCenter*, *St. Gabriel*.

T163 **Effect of centrifugation/freezing extenders and sperm concentrations on post-thaw motility and membrane integrity of frozen-thawed stallion spermatozoa.**
C. S. Ballard*[1], C. G. Loretan[2], and J. B. Davis[2], [1]*William H. Miner Agricultural Research Institute*, *Chazy, NY*, [2]*University of Vermont*, *Burlington*.

T164 **Evaluation of hCG or Deslorelin for enhancing ovulation and subsequent pregnancy rate in mares in a commercial setting.**
M. M. Tondre[1], M. M. Vogelsang*[1], C. A. Cavinder[1], C. M. Honnas[2], and S. G. Vogelsang[3], [1]*Texas A&M University*, *College Station*, [2]*Texas Equine Hospital*, *Bryan, TX*, [3]*Equine Reproductive Consultant*, *Hearne, TX*.

T165 **Endoscope-guided insemination for off-season mares.**
G. Rocha-Chavez[1], J. C. Franco[1], E. O. Garcia[2], A. Sepulveda[1], J. G. Gonzalez[1], J. Torres[1], J. M. Tapia[1], and O. Montañez*[1], [1]*CUSUR Univ de Guadalajara*, *Guadalajara Jalisco Mexico*, [2]*CUCOSTA SUR*, *Autlan Jalisco Mexico*.

## International Animal Agriculture

T166 **Milk and plasma iodine in Isfahan Holstein dairy cows.**
A. Nikkhah*[1] and G. Ghorbani[2], [1]*University of Zanjan*, *Zanjan, Iran*, [2]*Isfahan University of Technology*, *Isfahan, Iran*.

T167 **The effect of stocking rate and calving date on reproductive performance, body state, metabolic, health and welfare parameters of Holstein-Friesian dairy cows.**
B. McCarthy*[1,2], K. M. Pierce[2], L. Delaby[3], A. Brennan[1], and B. Horan[1], [1]*Animal and Grassland Research and Innovation Centre, Teagasc Moorepark*, *Fermoy, Co. Cork, Ireland*, [2]*School of Agriculture, Food Science and Veterinary Medicine, University College Dublin*, *Belfield, Dublin , Ireland*, [3]*INRA, AgroCampus Ouest, Saint-Gilles, France*.

T168 **Evolution of raw bovine milk quality: the Hungarian experience (1984-2009).**
G. Császár[1], A. Unger[1], and L. Varga*[2], [1]*Hungarian Dairy Research Institute, Inc.*, *Mosonmagyarovar, Hungary*, [2]*Department of Dairy Science, Institute of Food Science, Faculty of Agricultural and Food Sciences, University of West Hungary*, *Mosonmagyarovar, Hungary*.

T169 **Bulk tank somatic cells and its relationship to milk production, milk composition, and revenue in dairy farms located in central Thailand.**
D. Jatawa[1], S. Koonawootrittriron[1], M. A. Elzo*[2], and T. Suwanasopee[1], [1]*Kasetsart University*, *Bangkok, Thailand*, [2]*University of Florida*, *Gainesville*.

T170 **Factors affecting carcass weight, dressing percent, and marbling score of crossbred beef cattle in tropical Thailand.**
S. Koonawootrittriron[1], M. A. Elzo*[2], C. Kankaew[1], and M. Osothongs[3], [1]*Kasetsart University*, *Bangkok, Thailand*, [2]*University of Florida*, *Gainesville*, [3]*Pon Yang Khram Livestock Breeding Cooperative NSC Ltd.*, *Sakon Nakhon, Thailand*.

T171 **Forage yield and quality of two genetic materials of corn (*Zea mays*) harvested at two different cutting heights in Costa Rica.**
J. A. Elizondo-Salazar*[1], J. A. Vargas-Elizondo[1], and E. E. Corea-Guillén[2], [1]*Estación Experimental Alfredo Volio Mata*, *Facultad de Ciencias Agroalimentarias, Universidad de Costa Rica*, [2]*Departamento de Zootecnia*, *Facultad de Ciencias Agronómicas, Universidad de El Salvador.*

T172 **Comparison of chemical composition, in situ degradability and in vitro gas production of ensiled and sun-dried mulberry pomaces.**
Z. Bo*, Q. Meng, L. Ren, F. Shi, and Z. Zhou, *State Key Laboratory of Animal Nutrition, Beef Cattle Research Center, College of Animal Science and Technology, China Agricultural University*, *Beijing, China*.

T173 **Immune status of water buffalo calves allowed to nurse their dams.**
J. A. Elizondo-Salazar*[1], B. Cáseres-Alvarez[1], and A. J. Heinrichs[2], [1]*Estación Experimental Alfredo Volio Mata*, *Facultad de Ciencias Agroalimentarias, Universidad de Costa Rica*, [2]*The Pennsylvania State University*, *University Park*.

T174 **Milk composition, blood cellular and chemical components of Saanen and local Lebanese goats.**
F. T. Sleiman*, H. H. Itani, E. K. Barbour, M. T. Farran, and Z. G. Kassaify, *American University of Beirut*, *Beirut, Lebanon*.

T175 **Assessment nutrient matrix values of three xylanase and β-glucanase on broilers performance fed wheat-based diet.**
S. A. Moftakharzadeh*, H. Moravej, and M. Shivazad, *Department of Animal Science, Agriculture and Natural Source Pardis, University of Tehran*, *KarajIran*

T176 **Evaluation of nutrient matrix values for different kinds of NSP enzymes on performance, water intake, litter moisture and jejunal digesta viscosity of broilers fed barley-based diet.**
S. A. Moftakharzadeh*, H. Moravej, and M. Shivazad, *Department of Animal Science, Agriculture and Natural Source Pardis, University of Tehran*, *KarajIran.*

T177 **The effects of albusin B (bacteriocins) of *Ruminococcus albus* 7 expressed by yeast on the lipid metabolism of mice.**
Y. H. Hsieh*[1], H. T. Wang[2], J. T. Hsu[1], and C. Y. Chen[1], [1]*National Taiwan University*, *Taipei, Taiwan*, [2]*Chinese Culture University*, *Taipei, Taiwan*.

## Nonruminant Nutrition
## Amino Acids
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T178 **Fermentation biomass can replace protein from fish and soybean meals in nursery diets.**
V. G. Perez*[1], H. Yang[1], T. R. Radke[1], J. Less[2], and D. P. Holzgraefe[1], [1]*ADM Alliance Nutrition Inc.*, *Quincy, IL*, [2]*ADM Specialty Feed Ingredients*, *Decatur, IL*.

T179 **The digestibility marker used and their inclusion level influence the magnitude of ileal amino acid digestibility response to phytase supplementation of a swine diet.**
O. A. Olukosi[1], O. Bolarinwa[2], A. J. Cowieson[3], and O. Adeola*[2], [1]*Avian Science Research Centre, Scottish Agricultural College*, *Ayr, Ayrshire, United Kingdom*, [2]*Department of Animal Sciences, Purdue University*, *West Lafayette, IN*, [3]*Poultry Research Foundation, Faculty of Veterinary Science, The University of Sydney*, *Camden, Sydney*.

T180 **Evaluation of different lysine to threonine ratios on growth performance, relative organ weight, meat quality and blood profiles in broilers.**
H. W. Cho*, L. Yan, and I. H. Kim, *Dankook University*, *Cheonan, Choongnam, South Korea*.

T181 **Essential amino acids to crude protein ratio in placenta and uterus during gestation.**
Y. L. Ma*[1], N. Trottier[2], J. Liesman[2], R. L. Payne[3], and M. D. Lindemann[1], [1]*University of Kentucky*, *Lexington*, [2]*Michigan State University*, *East Lansing*, [3]*Evonik-Degussa Corp.*, *Kennesaw, GA*.

T182 **Estimating fermentative amino acid catabolism in the upper gut of growing pigs.**
D. Columbus*, J. P. Cant, and C. F. M. de Lange, *Department of Animal and Poultry Science, University of Guelph*, *Guelph, Ontario, Canada*.

T183 **Serum amino acid concentration and expression of amino acid transporter bo,+ in pigs fed diets with different protein and amino acid levels.**
H. García[1], A. Morales[1], A. B. Araiza[1], M. Cervantes*[1], J. Yáñez[2], and P. Carrillo[1], [1]*ICA, Universidad Autónoma de Baja California*, *Mexicali, BC, México*, [2]*Universidad Autónoma de Tlaxcala*, *Tlaxcala, Tlax, México*.

T184 **Effect of dietary leucine and isoleucine on productive performance and myosin expression in growing pigs.**
V. Méndez[1], A. Morales*[1], M. Cervantes[1], B. A. Araiza[1], and M. A. Barrera[2], [1]*ICA, Universidad Autónoma de Baja California*, *Mexicali, B.C., México*, [2]*Universidad de Sonora*, *Hermosillo, Son., México*.

T185 **Preference for diets with free L-tryptophan in pigs with different tryptophan status.**
J. Suárez[1], E. Roura[2,3], I. Ipharraguerre*[2], and D. Torrallardona[1], [1]*IRTA-Mas de Bover*, *Constantí, Spain*, [2]*Lucta S.A.*, *Barcelona, Spain*, [3]*Current address: University of Queensland*, *Brisbane, Australia*.

T186 **Effects of dietary inclusion of bioactive grape seed extract on protein and amino acid digestibility in broiler chicks.**
S. Chamorro[1], A. Viveros[2], C. Centeno[1], C. Romero*[3], I. Arija[2], and A. Brenes[1], [1]*Instituto de Ciencia y Tecnología de Alimentos y Nutrición, ICTAN, CSIC*, *Madrid, Spain*, [2]*Facultad de Veterinaria, Universidad Complutense de Madrid*, *Spain*, [3]*Escuela de Ingenieros Agrónomos, Universidad Politécnica de Madrid*, *Spain*.

T187 **Effect of levels of lysine and ractopamine on the performance of immunocastrated pigs from 97 to 124 kg.**
D. O. Fontes*[1], B. O. Rosa[1], U. A. D. Orlando[2], M. A. e Silva[1], and P. C. Silva[1], [1]*Department of Animal Science, Veterinary School of UFMG, Brazil*, [2]*BRF Foods, Brazil*.

T188 **Effect of L-tryptophan supplementation on hypothalamic serotonin level and aggression of nursery pigs fed diets varying large neutral amino acid concentrations.**
Y. B. Shen, G. Voilqué*, and S. W. Kim, *North Carolina State University*, *Raleigh*.

## Nonruminant Nutrition
## Energy

T189 **Importance of sampling diets on the precision of ME studies with swine.**
G. J. M. M. Lima*, L. C. Ajala, and C. M. Marques, *Embrapa*, *Brazil*.

T190 **Influence of dietary net energy concentration provided during the finishing period on carcass, meat and fat characteristics of heavy gilts.**
M. A. Latorre*[1,2], J. Suárez[1], M. A. Sanz[2], G. Ripoll[2], and M. Joy[2], [1]*Universidad de Zaragoza*, *Spain*, [2]*Centro de Investigación y Tecnología Agroalimentaria de Aragón*, *Zaragoza, Spain*.

T191 **Metabolizable energy and digestibility of carbohydrates in cereal grains fed to growing pigs.**
S. K. Cervantes-Pahm* and H. H. Stein, *University of Illinois*, *Urbana*.

T192 **Nutritional value of acerola meal for broiler chickens.**
L. H. Zanetti*[1], V. C. da Cruz[1], G. do Valle Polycarpo[2], A. C. Pezzato[2], J. R. Sartori[2], V. B. Fascina[2], R. F. de Oliveira[1], A. L. C. Brichi[1], M. L. Poiatti[1], O. J. Sabbag[1], F. Vercese[2], and F. B. de Carvalho[2], [1]*São Paulo State University, Dracena Campus*, *Dracena, São Paulo, Brazil*, [2]*São Paulo State University, Botucatu Campus*, *Botucatu, São Paulo, Brazil*.

T193 **Concentration of DE and ME in fermented soybean meal, conventional soybean meal, and fish meal fed to weanling pigs.**
O. J. Rojas* and H. H. Stein, *University of Illinois*, *Urbana*. T194 **The effect of n-3 fatty acid supplementation on growth performance, nutrient digestibility, blood profiles, meat quality and lean and adipose tissue fatty acid profiles in finishing pigs.**
J. P. Wang*, B. U. Yang, and I. H. Kim, *Dankook University*, *Cheonan, Choongnam, South Korea*.

## Nonruminant Nutrition
## Feed Ingredients

T195 **The granulated barley provided during growing or finishing period improves the major fatty acid composition in the intramuscular fat of longissimus dorsi muscle and of dry-cured ham from heavy pigs.**
A. Daza[1], M. A. Latorre*[2], and C. J. López-Bote[3], [1]*Universidad Politécnica de Madrid*, *Spain*, [2]*Universidad de Zaragoza*, *Spain*, [3]*Universidad Complutense de Madrid*, *Spain*.

T196 **Sulfur addition in corn-soybean meal diets reduced nursery pig performance.**
V. G. Perez*, H. Yang, T. R. Radke, and D. P. Holzgraefe, *ADM Alliance Nutrition Inc.*, *Quincy, IL*.

T197 **The effect of Kapok seed meal supplementation on growth performance, nutrient digestibility, blood characteristics, meat quality, and fatty acids profile in finishing pigs.**
H. J. Kim*, T. X. Zhou, and I. H. Kim, *Dankook University*, *Cheonan, Choongnam, South Korea*.

T198 **Performance of 1-d-old to 42-d-old broiler chicks fed with increasing levels of acerola meal replacing corn in diet.**
V. C. da Cruz*[1], L. H. Zanetti[1], G. do Valle Polycarpo[2], R. F. de Oliveira[1], A. L. C. Brichi[1], D. D. Millen[1], L. C. Carvalho[1], D. O. dos Santos Gomes[1], O. J. Sabbag[1], and M. L. Poiatti[1], [1]*São Paulo State University, Dracena Campus*, *Dracena, São Paulo, Brazil*, [2]*São Paulo State University, Botucatu Campus*, *Botucatu, São Paulo, Brazil*.

T199 **Inclusion of acerola meal replacing corn in the diet of broilers of 1-d-old to 21-d-old.**
L. H. Zanetti*[1], V. C. da Cruz[1], G. do Valle Polycarpo[2], R. F. de Oliveira[1], A. L. C. Brichi[1], D. D. Millen[1], V. B. Fascina[2], M. L. Poiatti[1], and O. J. Sabbag[1], [1]*São Paulo State University, Dracena Campus*, *Dracena, São Paulo, Brazil*, [2]*São Paulo State University, Botucatu Campus*, *Botucatu, São Paulo, Brazil*.

T200 **Fatty acid content and sensory evaluation of trimmed loins as influenced by timing of feeding flaxseed or fish oil to pigs.**
H. R. Martínez-Ramírez*[1], L. M. Pivotto[1], I. B. Mandell[1], J. K. G. Kramer[2], and C. F. M. de Lange[1], [1]*Centre for Nutritional Modelling, Department of Animal and Poultry Science, University of Guelph*, *Guelph, ON, Canada*, [2]*Agriculture and Agri-Food Canada*, *Guelph, ON, Canada*.

## Nonruminant Nutrition
## Gastrointestinal Physiology

T201 **Intestinal short-chain fatty acid sensors, FFA2 and FFA3, and control of food intake.**
M. Al-Rammahi*, K. Daly, A. Moran, and S. Shirazi-Beechey, *University of Liverpool*, *Liverpool, UK*.

T202 **Gene expression of the L–amino acid–sensing receptor T1R1/T1R3 changes in gut tissues of pigs in response to dietary protein.**
G. Tedo[1], E. Roura[1,3], I. Ipharraguerre*[1], and X. Manteca[2], [1]*Lucta SA, Feed Additives Division*, *Montornes del Vallés, Barcelona, Spain*, [2]*Autonomous University of Barcelona*, *Bellaterra, Barcelona, Spain*, [3]*Current address: University of Queensland*, *Brisbane, Australia*.

T203 **Gene expression of the porcine sweet taste receptor in tongue and gut tissues changes after weaning.**
G. Tedo[1], X. Manteca[2], I. Ipharraguerre*[1], M. Reina[3], D. Torrallardona[4], and E. Roura[1,5], [1]*Lucta SA, Feed Additives Division*, *Montornes del Valles, Barcelona, Spain*, [2]*Autonomous University of Barcelona, Veterinary School*, *Bellaterra, Barcelona, Spain*, [3]*University of BarcelonaCell Biology Dpt., Celltec-UB*, *Barcelona, Spain*, [4]*IRTA -Mas de Bover*, *Constanti, Tarragona, Spain*, [5]*Current address: University of Queensland*, *Brisbane, Australia*.

T204 **Evaluation of seaweed-derived polysaccharides on indices of gastrointestinal fermentation and selected populations of microbiota in newly weaned pigs challenged with *Salmonella* Typhimurium.**
S. Dillon[1], J. Fanning[2], T. Sweeney[1], J. Egan[2], C. J. O'Shea[1], M. Gutierrez[2], C. Mannion[2], F. Leonard[1], and J. V. O'Doherty*[1], [1]*University College Dublin*, *Dublin, Ireland*, [2]*Central Veterinary Research Laboratories, Backweston*, *Celbridge, Co. Kildare, Ireland*.

T205 **Fermentation activity of colonic microbiota from piglets fed diets including alfalfa, citrus pulp or inulin.**
S. Brambillasca*[1], M. Hernández[1], A. Britos[1], L. Reyes[1], P. Zunino[2], and C. Cajarville[1], [1]*Departamento de Nutrición Animal, Facultad de Veterinaria, UdelaR*, *Montevideo, Montevideo, Uruguay*, [2]*Departamento de Microbiología, Instituto de Investigaciones Biológicas Clemente Estable, MEC*, *Montevideo, Montevideo, Uruguay*.

## Physiology and Endocrinology II

T206 **Quantitative bioluminescence imaging of functional estrogen receptor activity within intact porcine ovarian follicles in vitro.**
S. Jung* and S. T. Willard, *Mississippi State University*, *Mississippi State*.

T207 **Propionate increases mitochondrial phosphoenolpyruvate carboxykinase mRNA in Madin-Darby bovine kidney epithelial cells.**
S. I. Tindell*, S. L. Koser, and S. S. Donkin, *Purdue University*, *West Lafayette, IN*.

T208 **Staining bovine sperm for sex-sorting: Concentration effects of seminal plasma, sperm and Hoechst 33342.**
C. A. Burroughs*[1], J. K. Graham[1], R. W. Lenz[2], and G. E. Seidel[1], [1]*Colorado State University*, *Fort Collins, CO*, [2]*Sexing Technologies Inc.*, *Navasota, TX*.

T209 **Effect of feed restriction on reproductive and metabolic hormones in dairy cows.**
H. Gencoglu[1,2], A. Nascimento[1], K. Hackbart[1], L. F. Ferraretto*[1], F. Dalla Costa[1], J. Guenther[1], R. Meyer[1], R. D. Shaver[1], and M. C. Wiltbank[1], [1]*Department of Dairy Science, University of Wisconsin-Madison*, *Madison*, [2]*Department of Animal Nutrition and Nutritional Diseases, Faculty of Veterinary Medicine, University of Uludag*, *Bursa, Turkey*.

T210 **Fetal growth and maternal body condition following melatonin supplementation in adequately fed or nutrient restricted ewes.**
C. O. Lemley*, A. M. Meyer, L. E. Camacho, T. L. Neville, D. J. Newman, J. S. Caton, and K. A. Vonnahme, *North Dakota State University*, *Fargo*.

T211 **Effects of realimentation after nutrient restriction during early to mid-gestation on uterine blood flow in pregnant beef cows.**
L. E. Camacho*[1,2], C. O. Lemley[1,2], B. W. Neville[1,2], C. R. Dahlen[1,2], G. P. Lardy[1,2], and K. A. Vonnahme[1,2], [1]*Center for Nutrition and Pregnancy; Department of Animal Sciences*, *Fargo, ND*, [2]*North Dakota State University*, *Fargo*.

T212 **Effects of propiogenic supplements on serum concentration of insulin and progesterone in nonlactating cows: I. Monensin.**
T. Leiva[1], M. Barbosa[1], R. O. Rodrigues[1], R. F. Cooke[2], and J. L. M. Vasconcelos*[1], [1]*UNESP – Faculdade de Medicina Veterinária e Zootecnia*, *Botucatu, SP, Brazil*, [2]*Oregon State University – Eastern Oregon Agricultural Research Center*, *Burns*.

T213 **Effects of propiogenic supplements on serum concentration of insulin and progesterone in nonlactating cows: II. Propylene glycol.**
A. M. L. Madureira[1], M. A. S. Borges[1], R. O. Rodrigues[1], R. F. Cooke[2], and J. L. M. Vasconcelos*[1], [1]*UNESP – Faculdade de Medicina Veterinária e Zootecnia*, *Botucatu, SP, Brazil*, [2]*Oregon State University – Eastern Oregon Agricultural Research Center*, *Burns, OR*.

T214 **Follicular fluid composition in cyclic Hereford cows supplemented with rice bran in grazing conditions.**
L. Veloz[1,2], M. E. Trobo[1,2], C. García Pintos[1,2], C. Viñoles[2], and M. Carriquiry*[1], [1]*School of Agronomy, UdelaR*, *Montevideo, Uruguay*, [2]*National Research Institute for Agriculture*, *Tracuarembó, Uruguay*.

T215 **Capability of a new or once-used CIDR to develop persistent follicles and the capability of additional progesterone for persistent follicle turnover in replacement beef heifers.**
G. H. L. Marquezini*, T. E. Black, K. M. Bischoff, V. R. G. Mercadante, and G. C. Lamb, *North Florida Research and Education Center, University of Florida*, *Marianna*.

T216 **Influence of CIDR-based protocols associated with supplementation of calcium soap on reproductive performance of Nellore cows.**
M. V. Biehl*[1], A. V. Pires[1,2], I. Susin[2], D. D. Nepomuceno[2], J. R. S. Gonçalves[4], L. H. Cruppe[3], F. M. Da Rocha[1], and M. L. Day[3], [1]*University of Sao Paulo*, *Pirassununga, SP, Brazil*, [2]*University of Sao Paulo*, *Piracicaba, SP, Brazil*, [3]*Ohio State University*, *Columbus*, [4]*Experimental Station Georgina Hildegard von Pritzelwitz*, *Londrina, PR, Brazil*.

T217 **Effect of dietary conjugated linoleic acid on reproduction and tissue responses in dairy cows.**
G. Esposito*[1,2], A. Schneider[3], V. A. Absalón Medina[2], S. H. Pelton[2], and W. R. Butler[2], [1]*University of Naples Federico II*, *Naples, Italy*, [2]*Cornell University*, *Ithaca, NY*, [3]*Universidade Federal de Pelotas*, *Pelotas, RS, Brazil*.

T218 **Effect of timing of initiation of Resynch and presynchronization with GnRH on fertility of resynchronized inseminations in lactating dairy cows. (see Abstract 228).**
G. Lopes Jr*, J. O. Giordano, A. Valenza, M. M. Herlihy, J. N. Guenther, M. C. Wiltbank, and P. M. Fricke, *Department of Dairy Science - University of Wisconsin-Madison, Madison*.

T219 **Endocrine and ovarian parameters associated with increased fertility after resynchronized timed artificial inseminations in lactating dairy cows.**
J. O. Giordano*, M.C. Wiltbank, and P. M. Fricke, *Department of Dairy Science, University of Wisconsin*, *Madison*.

T220 **Use of the CIDR+EB synchronization program in prepubertal Nellore heifers.**
M. V. Biehl*[1], A. V. Pires[1,2], I. Susin[2], L. H. Cruppe[3], D. D. Nepomuceno[2], J. R. S. Gonçalves[4], F. M. Da Rocha[1], and M. L. Day[3], [1]*University of Sao Paulo*, *Pirassununga, SP, Brazil*, [2]*University of Sao Paulo*, *Piracicaba, SP, Brazil*, [3]*Ohio State University*, *Columbus*, [4]*Experimental Station Georgina Hildegard von Pritzelwitz*, *Londrina, PR, Brazil*.

T221 **Effects of ethanol and acetic acid fed to high-producing dairy cows on blood parameters.**
J. L. P. Daniel*, L. G. Nussio, R. C. Amaral, E. H. C. Garcia, A. W. Bispo, F. C. L. Oliveira, I. F. Silva, and M. Zopollatto, *University of Sao Paulo, College of Agriculture "Luiz de Queiroz"*, *Piracicaba, SP, Brazil*.

T222 **Estrous response in yearling and multiparous ewes during reduction on the synchronized luteal phase and eCG injection.**
J. L. Cordero[1], T. Sánchez[1], P. Molina[2], R. Nieto[1], J. Peralta[2], O. Mejía[3], L. Olivares[4], E. García*[5], and J. L. Figueroa[1], [1]*Colegio de Postgraduados*, *Texcoco, Estado de México*, [2]*Universidad Autónoma del Estado de Hidalgo*, *Tulancingo, Hidalgo, México*, [3]*FMVZ, Universidad Autónoma de México*, *Tres Marías, México*, [4]*Universidad Autónoma del Estado de México*, *Toluca, Estado de México*, [5]*CUCSUR, Universidad Autónoma de Guadalajara*, *Jalisco, México*.

T223 **Fertility following fixed-time AI in infertile CIDR-treated dairy cows given rbST throughout extended (>500 d) lactations.**
A. Zúñiga-Serrano*, F. G. Véliz-Deras, J. Méndez-Lara, L. M. Tejada-Ugarte, and M. Mellado-Bosque, *Universidad Autónoma Agraria Antonio Narro*, *Torreón, Coahuila, México*.

T224 **Adiponectin system and peroxisome proliferator-activated receptor gamma2 (PPARγ2) mRNA abundance in different bovine fat depots considering conjugated linoleic acids (CLA) or lactation stage related changes.**
B. Saremi*[1], H. Sauerwein[1], D. von Soosten[2], S. Dänicke[2], and M. Mielenz[1], [1]*Institute of Animal Science, Physiology and 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*.

T225 **Relationship between follicular and ovulatory responses with embryo production during superovulatory treatment in cattle.**
H. Kohram[1,2] and M. Poorhamdollah*[1], [1]*Department of Animal Science, Faculty College of Agriculture and Natural Resources, University of Tehran*, *Karaj, Iran*, [2]*Department of Clinical Sciences, Faculty of Veterinary Medicine, Shahid Chamran University*, *Ahvaz, Iran*.

T226 **Differentiation of estrus versus nonestrus cow cervix morphology: Verification of a cost-effective methodology.**
A. Nikkhah*, M. A. Sirjani, A. A. Assadzadeh, and H. Amanloo, *University of Zanjan*, *Zanjan, Iran*.

T227 **Metabolic characteristics of pregnant gilts fed low and excess protein diets associated to intrauterine growth retardation (IUGR).**
C. C. Metges*[1], I. S. Lang[1], U. Hennig[1], M. Peters[1], K.-P. Brüssow[1], E. Kanitz[1], M. Tuchscherer[1], F. Schneider[1], J. Weitzel[1], A. Ooster[2], H. Sauerwein[2], G. Nürnberg[1], C. Rehfeldt[1], and W. Otten[1], [1]*Leibniz Institute for Farm Animal Biology (FBN)*, *Dummerstorf, Germany*, [2]*Institute of Animal Science, Rheinische Friedrich-Wilhelms-Universität*, *Bonn, Germany*.

T228 **Induction of luteal tissue in $PGF_{2a}$-treated sows.**
D. Gandy*, A. L. Greathouse, H. Klienman, F. M. LeMieux, and C. E. Ferguson, *McNeese State University*, *Lake Charles, LA*.

T229 **Effects of increased GnRH dose post–TAI in Brahman influenced cattle.**
B. Pousson*[1], D. J. Kesler[2], M. Poole[1], W. Storer[1], and C. E. Ferguson[1], [1]*McNeese State University*, *Lake Charles, LA*, [2]*University of Illinois*, *Urbana-Champaign*.

T230 **Dynamics of fat cell turnover in visceral and subcutaneous fat tissue in dairy cows.**
S. Häussler*[1], S. Dänicke[2], K. Friedauer[1], D. Germeroth[1], D. von Soosten[2], and H. Sauerwein[1], [1]*University of Bonn*, *Germany*, [2]*Federal Research Institute*, *Braunschweig, Germany*.

T231 **Insulin sensitivity in obese (Iberian) and lean (Landrace) 50-kg barrows.**
I. Fernandez-Figares*, L. Gonzalez-Valero, J. M. Rodriguez-Lopez, and M. Lachica, *EEZ-CSIC*, *Granada, Spain*.

T232 **Reproductive performance of replacement beef heifers when estrus was synchronized with progesterone (CIDR) for 5 or 7 d, GnRH, and $PGF_{2\alpha}$.**
K. M. Bischoff*[1], T. E. Black[1], R. D. Estermann[2], G. A. Bridges[3], G. C. Lamb[1], and J. V. Yelich[2], [1]*North Florida Research and Education Center, University of Florida*, *Marianna*, [2]*Depertment of Animal Sciences, University of Florida*, *Gainesville*, [3]*North Central Research and Outreach Center, University of Minnesota*, *Grand Rapids*.

T233 **Fat mobilization during early lactation: Effects on milk performance, feed intake, body condition and metabolic changes in dairy cows.**
C. Weber*[1], F. Becker[1], C. Hametner[1], B. Losand[2], R. M. Bruckmaier[3], W. Kanitz[1], and H. M. Hammon[1], [1]*Leibniz Institute for Farm Animal Biology (FBN)*, *Dummerstorf, Germany*, [2]*State Institute for Agriculture and Fishery*, *Dummerstorf, Germany*, [3]*Veterinary Physiology, Vetsuisse Faculty*, *Bern, Switzerland*.

T234 **Fat mobilization around calving in high-yielding dairy cows affects hepatic gene expression of gluconeogenic enzymes but not enzymes involved in fatty acid oxidation.**
H. M. Hammon*[1], C. Weber[1], F. Becker[1], C. Hametner[1], B. Losand[2], and W. Kanitz[1], [1]*Leibniz Institute for Farm Animal Biology (FBN)*, *Dummerstorf, Germany*, [2]*State Institute for Agriculture and Fishery*, *Dummerstorf, Germany*.

T235 **Ovarian characteristics, serum estradiol and progesterone concentrations, and fertility in lactating dairy cows in response to equine chorionic gonadotropin (eCG).**
S. L. Pulley*, L. D. Wallace, H. I. Mellieon, and J. S. Stevenson, *Kansas State University*, *Manhattan*.

T236 **A mechanistic metabolic model of regulation of reproductive processes in dairy cattle.**
J. P. McNamara[1], S. L. Shields*[1], and I. Lean[2], [1]*Washington State University*, *Pullman*, [2]*University of Sydney*, *Camden, NSW, Australia*.

T237 **Effect of prostaglandin $F_{2\alpha}$ on growth of *Escherichia coli* and *Streptococcus uberis* associated with bovine mastitis.**
C. Autran*[1], B. Shafii[2], M. McGuire[1], J. Dalton[3], and A. Ahmadzadeh[1], [1]*University of Idaho*, *Moscow*, [2]*Statistical Programs, College of Ag & Life Sci*, *Moscow, ID*, [3]*Caldwell R & E Center*, *Caldwell, ID*.

T238 **Effects of sequential injections of GnRH at 17 and 24 d after AI on progesterone concentration and pregnancy losses.**
A. L. A. Scanavez*[1], J. G. N. Moraes[1], R. G. Bruno[2,3], K. J. Lager[2,3], J. A. H. Rivera[2], P. R. B. Silva[1], L. G. D. Mendonça[1], T. R. Bilby[2], and R. C. Chebel[1], [1]*Department of Veterinary Population Medicine, University of Minnesota*, *St. Paul*, [2]*Texas AgriLife Research and Extension Service, Texas A&M System*, *Stephenville*, [3]*Department of Agricultural Science, West Texas A&M University*, *Canyon*.

T239 **Effect of GnRH treatment at critical stages of estrous cycle following artificial insemination on pregnancy rate in lactating Holstein dairy cows.**
Z. Hakimi, A. Z. Shahne, H. M. Yegane, and R. Masoumi*, *University of Tehran*, *Karaj, Karaj, Iran*.

## Production, Management and the Environment I

T240 **Effect of insemination timing on conception rates of dairy cows having high activity as identified by the Select Detect activity monitor.**
R. L. Nebel*[1], J. M. DeJarnette[1], and E. Harty[2], [1]*Select Sires Inc.*, *Plain City, OH*, [2]*Dairymaster*, *Causeway, Co. Kerry, Ireland*.

T241 **Reproductive performance in Mexican Holstein dairies by geographic region.**
H. Lopez*, F. Cavazos, A. Gonzalez, L. Ruiz, and C. Vergara, *ABS Global Inc.*

T242 **Effects of 2.1 and 10 x $10^6$ dosages of sex-sorted or conventionally processed sperm on conception rates of Holstein heifers.**
J. M. DeJarnette*[1], M. A. Leach[1], R. L. Nebel[1], C. E. Marshall[1], C. R. McCleary[2], and J. F. Moreno[3], [1]*Select Sires Inc.*, *Plain City, OH*, [2]*Sexing Technologies Inc.*, *Plain City, OH*, [3]*Sexing Technologies Inc.*, *Navasota, TX*.

T243 **IGF-I increases in vitro embryo production and protects against deleterious effects of heat stress in Nelore (*Bos indicus*) and Holstein (*Bos taurus*) breeds.**
R. A. Satrapa, E. M. Razza, C. F. Silva, T. Nabhan, R. A. L. Simoes, and C. M. Barros*, *Department of Pharmacology - IBB, University of São Paulo State*, *Botucatu, Sao Paulo, Brazil*.

T244 **Cytological endometritis incidence in crossbred dairy cows.**
R. M. Santos*, L. C. Carneiro, J. P. E. Saut, A. F. Ferreira, M. F. S. Padua, and N. Bortoletto, *FAMEV-UFU*, *Uberlândia, Minas Gerais, Brazil*.

T245 **Effect of simultaneous thawing of multiple semen straws and sequence of insemination on pregnancy rate for timed-AI in suckled multiparous Nelore cows.**
L. Z. Oliveira*[1], V. F. M. Hossepian de Lima[1], R. M. Santos[2], T. Martins[3], R. F. G. Peres[4], H. B. Graff[4], E. R. Carvalho[4], A. F. C. de Andrade[5], and R. P. Arruda[5], [1]*FCAV-UNESP*, *Jaboticabal, SP, Brazil*, [2]*FAMEV-UFU*, *Uberlândia, MG, Brazil*, [3]*FMVZ-UNESP*, *Botucatu, SP, Brazil*, [4]*Agropecuária Fazenda Brasil*, *Nova Xavantina, MT, Brazil*, [5]*FMVZ-USP*, *Pirassununga, SP, Brazil.*

T246 **An individual cow-based model to aid in decision making about reproductive management of dairy cows.**
P. Federico*[1], A. De Vries[2], G. M. Schuenemann[3], and K. N. Galvão[2], [1]*Capital University*, *Columbus*, [2]*University of Florida*, *Gainesville*, [3]*The Ohio State University*, *Columbus*.

T247 **Efficacy of embryo transfer in lactating dairy cows during summer using fresh or vitrified embryos produced in vitro with sex-sorted semen. II. Calving data.**
T. R. Bilby*[1], J. Block[2], B. M. Stewart[1], P. Morelli[1], L. Bonilla[3], and P. J. Hansen[3], [1]*Texas AgriLife Research and Extension, Texas A&M System*, *Stephenville*, [2]*OvaTech LLC*, *Gainesville, FL*, [3]*Department of Animal Sciences, University of Florida*, *Gainesville*.

T248 **Economic evaluation of embryo transfer in dairy cows during the summer using linear programming.**
A. De Vries*[1], T. R. Bilby[2], J. Block[3], and P. J. Hansen[1], [1]*University of Florida*, *Gainesville*, [2]*Texas AgriLife Research and Extension, Texas A&M System*, *Stephenville*, [3]*OvaTech LLC*, *Gainesville, FL*.

T249 **Economic comparison of two resynchronization protocols initiated at different intervals after insemination on fertility in lactating dairy cows.**
J. G. N. Moraes*[1], R. G. S. Bruno[2,3], P. R. B. Silva[1], A. L. A. Scanavez[1], L. G. D. Mendonça[1], J. A. Hernandez-Rivera[2], K. J. Lager[2,3], T. R. Bilby[2], J. Fetrow[1], and R. C. Chebel[1], [1]*Department of Veterinary Population Medicine, University of Minnesota*, *St. Paul*, [2]*Texas AgriLife Research and Extension Service, Texas A&M System*, *Stephenville*, [3]*Department of Agricultural Science, West Texas A&M University*, *Canyon*.

T250 **The effects of probiotic, prebiotic, and plant extract on egg quality in layer hens.**
V. Kalderon[1] and V. Akay*[2], [1]*Cakabey High School*, *Izmir, Turkey*, [2]*Global Nutritech Biyoteknoloji Ltd.*, *Kocaeli, Turkey*.

T251 **The in vitro antibacterial activity of extracts by different extraction of Chinese pulsatilla root, purslane herb, dyers woad leaf, and ash barks—traditional Chinese medicine.**
F. Rejun*[1], W. Xiangrong[1], H. Jianghua[1], Y. Yulong[2], and C. Caihui[1], [1]*Department of Animal Science and Technology*, *Hunan Agricultural University, Changsha, Hunan, P. R. China*, [2]*Institute of Subtropical Agriculture*, *Chinese Academy of Sciences, Changsha, Hunan, P. R. China*.

T252 **Effect of season on four categories of fresh and current new mastitis infections in Minnesota.**
R. F. Leuer* and J. K. Reneau, *University of Minnesota*, *Saint Paul*.

T253 **Effect of somatic cells counting on milk composition of Holstein cows.**
J. A. De Freitas*[1], A. F. Garcez Neto[1], J. C. De Souza[2], J. Da Silva[1], V. L. De Souza[1], and T. M. Dos Santos[1], [1]*Federal University of Parana*, *Palotina, Parana, Brazil*, [2]*Federal University of South Mato Grosso*, *Aquidauana, Mato Grosso do Sul, Brazil*.

T254 **Immunoglobulin G1 concentration and bacterial contamination of colostrum fed to newborn Holstein heifers in Central California dairies.**
I. Z. Zhelev*[1], N. D. Spiro[1], J. D. Robison[1], J. Quigley[2], and A. Lago[2], [1]*California State University, Fresno*, [2]*APC Inc.*, *Ankeny, IA*.

T255 **Use of a blood glucose meter compared with laboratory analysis in dairy calves .**
M. R. Stafne* and S. I. Kehoe, *University of Wisconsin-River Falls*, *River Falls*.

T256 **Study on the metabolic mechanism of melamine in dairy cattle.**
X. Jin, Y. Zhang, S. Li*, H. Zhang, Q. Zhang, and Z. Cao, *State Key Laboratory of Animal Nutrition, College of Animal Science and Technology, China Agricultural University*, *Beijing, China*.

T257 **Association between milk urea nitrogen and fertility of Brazilian dairy cows.**
M. C. Doska[1], J. A. Horst[2], A. A. Valloto[2], and R. Almeida*[1], [1]*Universidade Federal do Paraná*, *Curitiba, PR, Brazil*, [2]*Associação Paranaense de Criadores de Bovinos da Raça Holandesa*, *Curitiba, PR, Brazil*.

T258 **Metabolic profiles and immune status of periparturient dairy cows transitioning from conventional to organic management system.**
J. F. Odhiambo*, Q. Zebeli, S. Iqbal, D. A. Mansmann, U. Farooq, S. Sharma, S. M. Dunn, and B. N. Ametaj, *University of Alberta*, *Edmonton, AB, Canada*.

T259 **Season and stage of lactation affected metabolic profiles and innate immunity of periparturient dairy cows.**
J. F. Odhiambo*, Q. Zebeli, S. Iqbal, D. A. Mansmann, U. Farooq, S. Sharma, S. M. Dunn, and B. N. Ametaj, *University of Alberta*, *Edmonton, AB, Canada*.

T260 **Management factors affecting microbial contamination of bovine colostrum.**
E. Conrad*[1], K. Morrill[1], J. Quigley[2], and H. Tyler[1], [1]*Iowa State University*, *Ames*, [2]*APC Inc.*, *Ankeny, IA*.

T261 **Effect of short-term treatment with bovine somatotropin on milk yield of Brazilian dairy cows.**
R. Almeida*[1] and S. L. Viechnieski[2], [1]*Universidade Federal do Paraná*, *Curitiba, PR, Brazil*, [2]*StarMilk Farm*, *Céu Azul, PR, Brazil*.

T262 **Chop length, dry matter and density of corn and wheat silage structures in California dairies.**
N. Silva-del-Río*[1] and C. Heiman[2], [1]*University of California Cooperative Extension*, *Tulare*, [2]*Alltech*, *Lexington, KY*.

T263 **Molecular aspect of laying hens feed cottonseed meal supplemented with lysine and enzyme.**
K. Pournia*, H. Kermanshahi, and A. Golian, *Ferdowsi University of Mashhad*, *Mashhad, Iran*.

T264 **Performance evaluation of Santa Ines ewes and lambs weaned at 60 days of lactation.**
M. M. Stradiotto*[1], A. D. Rodrigues[2], and J. A. Negrão[1], [1]*University of Sao Paulo – USP; Faculty of Animal Science and Feed Engineering – FZEA*, *Pirassununga, SP, Brazil*, [2]*University of Sao Paulo State – UNESP; Faculty of Agronomy and Veterinary Sciences – FCAV*, *Jaboticabal, SP, Brazil*.

T265 **Comparison of pork characteristics of antibiotic free Yorkshire crossbreds raised in the hoop barn.**
S.-H. Oh*[1], D. Bautista[2], D. Hanson[2], M. Morrow[2], and T. See[2], [1]*North Carolina A&T State University*, *Greensboro*, [2]*North Carolina State University*, *Raleigh*.

T266 **Comparison of body weights in Berkshire and Large Black crossbreds produced by the use of antibiotic-free Yorkshire sows.**
S.-H. Oh*[1], M. Morrow[2], and T. See[2], [1]*North Carolina A&T State University*, *Greensboro*, [2]*1North Carolina State University*, *Raleigh*.

T267 **Evidence that maternal conjugated linoleic acid alters secondary metabolites in plasma of late-stage chick embryos that may lead to increased embryonic mortality.**
V. A. Leone*[1], D. Haughey[2], E. A. Bobeck[2], M. E. Cook[2], and F. M. Assadi-Porter[2], [1]*University of Chicago*, *Chicago, IL*, [2]*University of Wisconsin-Madison*, *Madison*.

T268 **Suitability of visual ear tags, electronic boluses and retinal images for tracing and auditing lamb traceability.**
M. A. Rojas-Olivares, G. Caja, S. Carné, A. Costa-Castro, A. K. K. Salama, A. Ait-Saidi, and M. Rovai*, *G2R, Universitat Autònoma de Barcelona*, *Bellaterra, Barcelona, Spain*.

T269 **Retrospective analysis of the effects of feeding pelleted versus meal diets on growth performance of 12- to 30-kg nursery pigs over a 5-year period.**
E. D. Frugé*[1], E. L. Hansen[1], S. A. Hansen[1], K. A. Frerichs[1], and C. W. Hastad[2], [1]*Hubbard Feeds*, *Mankato, MN*, [2]*New Fashion Pork*, *Jackson, MN*.

T270 **Comparative assessment of boar spermatozoa having different cryopreservation potential.**
J. M. Feugang*[1], M. M. Ferraz[2,1], J. C. Rodriguez-Munõz[1], B. S. Grillis[1], S. T. Willard[3], and P. L. Ryan[1,4], [1]*Department of Animal and Dairy Sciences*, *Mississippi State University, Mississippi State*, [2]*Faculdade de Medicina Veterinariae Zootecnia*, *Universidade de Sao Paulo, Brasil*, [3]*Department of Biochemistry and Molecular Biology*, *Mississippi State University, Mississippi State*, [4]*Department of Pathobiology and Population Medicine*, *Mississippi State University, Mississippi State.*

## Ruminant Nutrition
## Beef Cattle

T271 **Performance and carcass traits of bulls fed different levels of crude glycerin.**
J. R. R. Carvalho, M. M. Ladeira*, M. L. Chizzotti, T. M. Gonçalves, P. D. Teixeira, J. S. F. Hostalácio, P. T. Silva, and O. R. Machado Neto, *Federal University of Lavras*, *Lavras, MG, Brazil*.

T272 **Effects of distillers grain supplementation on beef cow performance.**
M. J. Faulkner*[1], P. M. Walker[1], R. L. Atkinson[2], J. L. Veracini[1], L. A. Forster[3], J. M. Carmack[1], and K. L. Jones[2], [1]*Illinois State University*, *Normal*, [2]*Southern Illinois University*, *Carbondale*, [3]*Archer Daniels Midland Co*, *Decatur, IL*.

T273 **Effect of a mixture of cinnamaldehyde, carvacrol and capsicum oleoresin on performance and rumen development of weaning calves.**
C. Oguey*[1], J. Trautwein[2], H. Hendrik Kuhrmann[2], G. Dusel[2], and D. Bravo[1], [1]*Pancosma*, *Geneva, Switzerland*, [2]*University of Applied Sciences*, *Bingen, Germany*.

T274 **Effect of fescue toxicosis on the expression of selected hepatic genes in Angus cattle.**
J. Bryant*, J. Johnson, B. Scharf, D. Kishore, E. Coate, P. A. Eichen, K. Wells, J. Green, and D. E. Spiers, *University of Missouri-Columbia*, *Columbia*.

T275 **Evaluation of Nellore steers' performance supplemented with two levels of concentrate and sugar cane in feedlot.**
R. M. Silva*[1,2], J. T. Pádua[2], J. Restle[2], R. Z. Taveira[1], B. A. S. R. Leite[1], and D. A. Lima[2], [1]*Universidade Estadual de Goiás*, *São Luís de Montes Belos, Goiás, Brazil*, [2]*Universidade Federal de Goiás*, *Goiânia, Goiás, Brazil*, [3]*FAPEG*, *Goiânia, Goiás, Brazil*.

T276 **The influence of glycerol supplementation during late gestation on beef cow performance and dietary digestibility.**
S. J. Winterholler*, N. L. Hojer, R. H. Pritchard, and K. VanderWal, *South Dakota State University*, *Brookings*.

T277 **The effect of feed additive and sulfur intake on rumen fluid pH and rumen gas cap hydrogen sulfide concentration in feedlot steers.**
K. L. Neuhold*[1], J. J. Wagner[1], T. E. Engle[1], E. M. Domby[1], and M. Branine[2], [1]*Colorado State University*, *Fort Collins*, [2]*Alpharma Animal Health*, *Canon City, CO*.

T278 **The effect of feed additive program and dietary sulfur concentration in steam-flaked corn diets containing wet distillers grains on feedlot performance and carcass merit in yearling feedlot steers.**
E. M. Domby*[1], K. L. Neuhold[1], J. J. Wagner[1], T. E. Engle[1], and M. Branine[2], [1]*Colorado State University*, *Fort Collins*, [2]*Alpharma Animal Health*, *Canon City, CO*.

T279 **Effects of dietary chromium propionate on performance traits of stocker/growing cattle.**
J. L. Veracini*[1], P. M. Walker[1], M. J. Faulkner[1], and R. E. Hall[2], [1]*Illinois State University*, *Normal*, [2]*Cooperative Research Farms*, *Richmond, VA*.

T280 **Nutrient digestibility and residual feed intake in Nellore heifers.**
R. H. Branco[1], E. Magnani[1], T. L. Sobrinho[2], S. F. M. Bonilha[1], L. T. Egawa[1], M. E. Z. Mercadante*[1], and F. M. Monteiro[1], [1]*Instituto de Zootecnia*, *Sertãozinho, São Paulo, Brasil*, [2]*Faculdade de Ciências Agrárias e Veterinárias*, *Jaboticabal, São Paulo, Brasil*.

T281 **Potential of calcium oxide-treated corn stover and modified distillers grains as a partial replacement for corn grain in feedlot diets.**
J. R. Russell*[1], D. D. Loy[1], and M. Cecava[2], [1]*Iowa State University*, *Ames*, [2]*Archer Daniels Midland Company*, *Decatur, IL.*

T282 **Performance of Nellore steers from a genetic improvement program in feedlot.**
M. D. Freitas Neto[1,2], J. J. R. Fernandes*[1,2], D. A. Lima[1,2], P. L. P. Rezende[1,2], G. A. B. Queiroz[1], L. F. N. Souza[3], J. M. C. Silva[1], E. G. Moraes[3], and M. L. R. Pereira[1], [1]*Universidade Federal De Goias*, *Goiania, Goias, Brasil*, [2]*Conselho Nacional De Desenvolvimento Cientifico e Tecnologico*, *Brasilia, Distrito Federal, Brasil*, [3]*Nelore Qualitas*, *Goiania, Goias, Brasil*.

T283 **Effect of partial or complete replacement of barley grain with wheat bran on voluntary intake, apparent nutrient digestibility and rumen pH of beef heifers fed backgrounding rations.**
A. D. Friedt*[1], T. A. McAllister[2], B. Wildeman[3], and J. McKinnon[1, 1]*University of Saskatchewan*, *Saskatoon, SK, Canada*, [2]*Agriculture and Agri-Food Canada*, *Lethbridge Research Centre, AB, Canada*, [3]*Pound-Maker Agventures Ltd.*, *Lanigan, SK, Canada*.

T284 **Effect of different doses of chitosans to modulate ruminal fermentation in Nelore steers.**
F. P. Renno*[1,2], A. P. C. Araujo[1], J. E. Freitas Junior[2], J. R. Gandra[1], R. Gardinal[1], G. D. Calomeni[1], L. N. Renno[3], M. C. B. Santos[1], and R. T. Trimboli[1], [1]*University of Sao Paulo*, *Sao Paulo, Sao Paulo, Brazil*, [2]*State University Julio de Mesquita*, *Jaboticabal, Sao Paulo, Brazil*, [3]*Vicosa Faculty of Life Sciences and Health*, *Vicosa, Minas Gerais, Brazil*.

T285 **Evaluation of residual feed intake of Nelore bulls from a genetic improvement program.**
M. D. Freitas Neto[1,2], J. J. R. Fernandes*[1,2], D. A. Lima[1,2], P. L. P. Rezende[1], L. F. N. Souza[3], E. G. Moraes[3], R. A. Nogueira[1], and M. L. R. Pereira[1], [1]*Univerdidade Federal de Goias*, *Goiania, Goias, Brasil*, [2]*Conselho Nacional de Desenvolvimento Cientifico e Tecnologico*, *Brasilia, Distrito Federal, Brasil*, [3]*Nelore Qualitas*, *Goiania, Goias, Brasil*.

T286 **Effect of different doses of chitosans on ruminal microbial protein synthesis in Nelore steers.**
F. P. Rennó*[1], A. P. C. Araujo[1], J. E. Freitas Junior[2], J. R. Gandra[1], G. D. Calomeni[1], R. Gardinal[1], L. N. Rennó[3], B. C. Venturelli[1], T. H. A. Vendramini[1], and F. G. Vilela[1], [1]*São Paulo University*, *São Paulo, São Paulo, Brazil*, [2]*State University Julio de Mesquita*, *São Paulo, Jaboticabal, Brazil*, [3]*Faculty of Life Sciences and Health, Facis*, *Viçosa, Minas Gerais, Brazil*.

T287 **Effect of crude glycerin on nutrient intakes and apparent digestibility in Nellore feedlot steers.**
E. H. C. B. van Cleef*, J. M. B. Ezequiel, A. C. Homem Júnior, A. P. D'Áurea, J. B. D. Sancanari, F. B. O. Scarpino, D. A. V. Silva, and V. R. Fávaro, *São Paulo State University*, *Jaboticabal, São Paulo, Brazil*.

T288 **Performance and carcass traits of bulls fed lipids sources and ionophore.**
L. C. Santarosa, M. M. Ladeira*, O. R. Machado Neto, M. L. Chizzotti, T. M. Gonçalves, D. M. Oliveira, L. S. Lopes, J. S. F. Hostalácio, and M. C. L. Alves, *Federal University of Lavras*, *Lavras, MG, Brazil*.

T289 **Effect of post-ruminal *Saccharomyces boulardii* on fecal parameters and nutrient digestibility in Holstein steers given abomasal oligofructose.**
K. Davison*, R. L. Hougentogler, C. Leonardi, M. M. McCarthy, L. M. Nemec, and T. F. Gressley, *University of Delaware*, *Newark*.

T290 **Can forage-based nutritional strategies offset weaning stress in calves?**
S. R. Blevins*, A. E. Tanner, W. S. Swecker, B. F. Tracy, D. A. Fiske, J. P. Fontenot, and R. M. Lewis, *Virginia Tech*, *Blacksburg*.

T291 **Urea supplements for beef steers grazing on marandugrass pastures during dry season in the Brazilian savannas.**
D. G. de Quadros*[1], H. N. de Souza[2], G. L. Franco[3], R. G. de Almeida[1], and D. N. de Oliveira[1], [1]*Universidade do Estado da Bahia (UNEB)*, *Barreiras, Bahia, Brazil*, [2]*PETROBRAS*, *Rio de Janeiro, Rio de Janeiro, Brazil*, [3]*Universidade Federal do Mato Grosso do Sul (UFMS)*, *Campo Grande, Mato Grosso do Sul, Brazil*.

T292 **Influence of nonmedicated additives as alternatives to antibiotics on calf plasma and intestinal measurements.**
S. M. Katzman*[1], S. I. Kehoe[1], and D. B. Carlson[2], [1]*University of Wisconsin-River Falls*, *River Falls*, [2]*Milk Products LLC*, *Chilton, WI*.

T293 **Effects of using near infrared spectroscopy to segregate and feed high and low energy barley on feedlot cattle performance, animal health, and carcass characteristics.**
E. M. Hussey[1], R. E. Peterson[1], D. Plett[2], C. W. Booker[1], G. K. Jim[1], L. O. Burciaga-Robles[1], and M. L. May*[1], [1]*Feedlot Health Management Services*, *Okotoks, AB, Canada*, [2]*Western Feedlots*, *High River, AB, Canada*.

T294 **Supplementation of methionine hydroxy analog, chelated trace mineral and dietary antioxidants in the diet of beef bulls for color stability.**
I. Castillo*, G. I. Zanton, and M. Vazquez-Anon, *Novus International Inc.*, *St. Charles, MO*.

T295 **Evaluation of bimodal distributions to determine meal criterion in heifers fed a high-grain diet.**
J. C. Bailey*, L. O. Tedeschi, E. D. Mendes, and G. E. Carstens, *Texas A&M University*, *College Station*.

T296 **Effects of temperament classification and breed type on feed efficiency and feeding behavior traits in heifers fed a high-grain diet.**
J. C. Bailey*, G. E. Carstens, J. T. Walter, A. N. Hafla, E. D. Mendes, L. O. Tedeschi, and R. K. Miller, *Texas A&M University*, *College Station*.



## Ruminant Nutrition
## Dairy Cattle

T297 **Effect of concentration of flax hulls in the diet on intake, digestion, milk production, and milk composition of dairy cows.**
H. V. Petit*, *Dairy and Swine R&D Centre, Agriculture and Agri-Food Canada*, *Sherbrooke, QC, Canada*.

T298 **Body condition score at the initiation of bST supplementation does not affect milk response in dairy cows of Chile.**
F. Bargo[1], S. Follert*[1], A. Hinostroza[1], L. Lastra[2], and R. Navarrete[2], [1]*Elanco Animal Health*, *Southern Cone (Argentina & Chile)*, [2]*Ancali Dairy*, *Los Angeles, Chile*.

T299 **Associations among digestive tract lesions and abnormal serum chemistries in cull dairy cattle.**
M. B. Hall*[1], G. R. Oetzel[2], G. B. Huntington[3], F. M. Moore[4], and D. M. Hertzke[4], [1]*U.S. Dairy Forage Research Center, USDA-ARS*, *Madison, WI*, [2]*School of Veterinary Medicine, Univ. of Wisconsin*, *Madison*, [3]*Dept. of Animal Science, Univ. of North Carolina*, *Raleigh*, [4]*Marshfield Labs Veterinary Services*, *Marshfield, WI*.

T300 **Influence of a reduced-starch diet with or without exogenous amylase on lactation performance by dairy cows.**
L. F. Ferraretto*[1], R. D. Shaver[1], M. Espineira[1], H. Gencoglu[2], and S. J. Bertics[1], [1]*Department of Dairy Science, University of Wisconsin-Madison*, *Madison*, [2]*Department of Animal Nutrition and Nutritional Diseases, Faculty of Veterinary Medicine, University of Uludag*, *Bursa, Turkey*.

T301 **Effects of different ratios of extruded soybeans and whole cottonseeds on production performance of cows and conjugated linoleic acids (CLA) in milk fat.**
R. Yan*[1,2], S. Y. Chen[2], C. Jiang[1], Y. J. Zhang[1], and J. G. Han[1], [1]*Department of Grassland Science, China Agricultural University*, *Beijing, China*, [2]*Department of Agronomy, University of Wisconsin-Madison*, *Madison*.

T302 **Effects of supplemental whole cotton seeds on production performance and milk fatty acids of dairy cows fed diets with different ratios of corn silage and alfalfa hay.**
R. Yan*[1,2], S. Y. Chen[2], R. Z. Zhang[1], Y. J. Zhang[1], and J. G. Han[1], [1]*Department of Grassland Science, China Agricultural University*, *Beijing, China*, [2]*Department of Agronomy, University of Wisconsin-Madison*, *Madison*.

T303 **Energy expenditure, feeding behavior and locomotion of grazed versus zero-grazed dairy cows throughout the lactation period.**
F. Dohme-Meier*[1], L. D. Kaufmann[1], S. Görs[2], P. Junghans[2], C. C. Metges[2], and A. Münger[1], [1]*Agroscope Liebefeld-Posieux, Research Station ALP*, *Posieux, Switzerland*, [2]*Research Leibniz Institute for Farm Animal Biology (FBN)*, *Dummerstorf, Germany*.

T304 **Effects of combinations of probiotics on growth and blood biochemical parameters in preruminant calves.**
Y.-Q. Fu, Q.-Y. Diao, Y. Tu*, N.-F. Zhang, and C.-G. Jiang, *Key Laboratory of Feed Biotechnology of Ministry of Agriculture/Feed Research Institute, Chinese Academy of Agricultural Sciences*, *Beijing, P.R. China*.

T305 **The limiting sequence and proper ratio of lysine, methionine and threonine for calves fed milk replacers containing soy protein.**
J.-H. Wang, Y. Tu*, N.-F. Zhang, X.-C. Xu, and Q.-Y. Diao, *Key Laboratory of Feed Biotechnology of Ministry of Agriculture/Feed Research Institute, Chinese Academy of Agricultural Sciences*, *Beijing, P.R. China*.

T306 **Feeding frequency for individually fed early lactation cows: enlightening the perplexing strategy.**
A. Nikkhah*, S. M. Karimzadeh, B. Sorkhroo, S. Asghari, M. Avaz Khanloo, and L. Bahramkhani Zarrin Goli, *University of Zanjan*, *Zanjan, Iran*.

T307 **Prolonged provision of protected methionine improves milk contents and yields of fat and protein in lactating cows.**
A. Nikkhah*[1], D. Kianzad[2], A. Haj Hosseini[2], A. Zalbeik[2], and G. Ghorbani[3], [1]*University of Zanjan*, *Zanjan, Iran*, [2]*Animal Breeding Center*, *Karaj, Iran*, [3]*Isfahan University of Technology*, *Isfahan, Iran*.

T308 **Rumen degradation patterns of ground and steam-processed broomcorn and ground barley.**
A. Nikkhah*, *University of Zanjan*, *Zanjan, Iran*.

T309 **Steam-flaking of broom sorghum improves effective rumen degradation of DM while Controlling that of CP.**
A. Nikkhah*, *University of Zanjan*, *Zanjan, Iran*.

T310 **Steam-flaked broom sorghum a viable substitute for ground barley in midlactation dairy rations.**
A. Nikkhah*, *University of Zanjan*, *Zanjan, Iran*.

T311 **Effect of dietary nitrogen levels and yeast supplementation on apparent diet digestibility and microbial population in the rumen content of dairy lactating cows.**
D. R. Ouellet* and J. Chiquette, *Dairy and Swine R&D Centre, Agriculture and Agri-Food Canada*, *Sherbrooke (QC) Canada*.

T312 **Ground broomcorn in dairy rations.**
A. Nikkhah*, *University of Zanjan*, *Zanjan, Iran*.

T313 **Effect of naturally extracted vitamin E (RRR-α-tocopheryl acetate) vs. synthetic vitamin E on blood and milk levels of vitamin E in lactating dairy cows.**
M. B. de Ondarza*[1], K. Daniels[2], and D. Bunting[2], [1]*Paradox Nutrition LLC*, *West Chazy, NY*, [2]*ADM Alliance Nutrition Inc.*, *Quincy, IL.*

T314 **Large-scale production effects of an intestinally releasable methionine product in dairy cows.**
A. Nikkhah*[1], R. Kowsar[2], and G. Ghorbani[2], [1]*University of Zanjan*, *Zanjan, Iran*, [2]*Isfahan University of Technology*, *Isfahan, Iran*.

T315 **Study on the metabolic mechanism of melamine in dairy cattle.**
X. Jin*, Y. Zhang, S. Li, H. Zhang, and Q. Zhang, *College of Animal Science and Technology, China Agricultural University*, *Beijing, China*.

T316 **Conjugated linoleic acid (CLA) supplementation around calving affects glucose metabolism in dairy cows.**
H. M. Hammon*[1], K. Hötger[1], S. Görs[1], M. Becker[1], C. Weber[1], A. Tröscher[2], and C. C. Metges[1], [1]*Leibniz Institute for Farm Animal Biology (FBN)*, *Dummerstorf, Germany*, [2]*BASF*, *Limburgerhof, Germany*.

T317 **Lactation performance and milk fatty acid profile in dairy cows fed linseed oil in diets with different forage to concentrate ratios.**
L. Saliba*[1,2], R. Gervais[1], Y. Lebeuf[1,2], J.-C. Vuillemard[1], and P. Y. Chouinard[1,2], [1]*Département des sciences animales, Université Laval*, *Québec, Québec, Canada*, [2]*Institute of Nutraceuticals and Functional Foods (INAF)*, *Québec, Québec, Canada*.

T318 **Rumen volume and passage kinetics depend on feeding time (0900 vs. 2100 h).**
A. Nikkhah*[1], J. C. Plaizier[2], and A. D. Kennedy[2], [1]*University of Zanjan*, *Zanjan, Iran*, [2]*University of Manitoba*, *Winnipeg, MB, Canada*.

T319 **Influence of method of surfactant supplementation on characteristics of digestion and feeding value of fat in Holstein steers fed a high-energy finishing diet.**
H. Dávila-Ramos*[1], A. Gonzalez-Castellon[1], A. Barreras-Serrano[1], A. Estrada-Angulo[2], M. A. López-Soto[1], J. V. Macias-Zamora[1], A. Plascencia[1], S. H. Vega[1], and R. A. Zinn[3], [1]*IICV - Universidad Autónoma de Baja California*, *México*, [2]*FMVZ - Universidad Autónoma de Sinaloa*, *México*, [3]*Department of Animal Science, University of California, Davis*, *El Centro*.

T320 **Evaluation of limit feeding and bunk management strategies for gravid dairy replacement heifers.**
N. M. Esser[1], J. Larson[1], P. C. Hoffman*[1], C. L. Liu[2], and W. K. Coblentz[3], [1]*University of Wisconsin*, *Madison*, [2]*Northeast Institute of Geography and Agricultural Ecology, CAS*, *Harbin, Heilongjiang, China*, [3]*USDA-ARS Dairy Forage Research Center*, *Marshfield, WI*.

T321 **Effects of cinnamon essential oil, cinnamaldehyde and monensin on milk fatty acid profile of dairy cows.**
C. Benchaar*[1] and P. Y. Chouinard[2], [1]*Agriculture and Agri-Food Canada, Dairy and Swine R&D Centre*, *Sherbrooke, QC, Canada*, [2]*Université Laval, Département des Sciences Animales*, *Québec, QC, Canada*.

T322 **Fatty acids in milk of dairy cows fed diets containing propolis-based products.**
S. C. de Aguiar[1], S. M. Cottica[1], R. B. Samensari[1], E. M. de Paula[1], S. L. Franco[1], L. P. P. de Moura[1], G. T. dos Santos[1], J. V. Visentainer[1], W. B. R. dos Santos[2], E. H. Yoshimura[1], M. V. Valero[1], and L. M. Zeoula*[1], [1]*Universidade Estadual de Maringá*, *Maringá, Paraná, Brazil*, [2]*Instituto Federal do Amazonas*, *Maués, Amazonas, Brazil*.

T323 **Varying dietary dry matter concentration through water addition: Effect on nutrient intake of dairy cows in late lactation.**
J. A. Fish and T. J. DeVries*, *University of Guelph, Kemptville Campus*, *Kemptville, ON, Canada*.

T324 **Effect of parity and stage of lactation on feed sorting behavior of lactating dairy cows.**
T. J. DeVries*[1], L. Holtshausen[2], M. Oba[3], and K. A. Beauchemin[2], [1]*University of Guelph, Kemptville Campus*, *Kemptville, ON, Canada*, [2]*Agriculture and Agri-Food Canada*, *Lethbridge, AB, Canada*, [3]*University of Alberta*, *Edmonton, AB, Canada*.

T325 **Effects of different physical processing of corn starter on performance of newborn Holstein dairy calves.**
A. Soltani[1], G. R. Ghorbani*[1], B. Omidian[3], M. Khorvash[1], S. Zaree-Shamsabadi[1], H. Beiranvand[1], M. Kazemi-Bonchenari[2], and M. Mirzaee[1], [1]*Department of Animal Sciences, Isfahan University of Technology, Isfahan, Iran*, [2]*Department of Animal Sciences, Arak University, Arak, Iran*, [3]*Department of Animal Sciences, Shahrekord University, Shahrekord, Iran*.

T326 **Comparison of dairy cattle performance in Nebraska when fed silage and grain produced from second-generation insect protected (*B.t.*) corn (MON 89034), parental line, or reference corn grown during 2009.**
H. A. Paz*[1], E. Castillo-Lopez[1], K. Clark[1], T. H. Klusmeyer[2], G. F. Hartnell[2], and P. J. Kononoff[1], [1]*University of Nebraska-Lincoln*, *Lincoln*, [2]*Monsanto Company*, *St. Louis, MO*.

T327 **Morphology of the omasum of dairy cows fed of high or low grain content diet before parturition.**
D. de O. R. B. Santoro, J. C. de Resende Júnior*, T. da S. Teófilo, R. F. de Lima, J. L. P. Daniel, M. B. Moreira, P. P. Bueno, T. A. Dell Vale, G. P. Lenzi, T. M. França, and S. de F. Costa, *Universidade Federal de Lavras*, *Lavras, Minas Gerais, Brazil*.

T328 **Enteric methane production from dairy cows fed different silages with and without rapeseed supplementation.**
M. Johannes*, A. L. F. Hellwing, P. Lund, M. R. Weisbjerg, and T. Hvelplund, *Faculty of Agricultural Sciences, Aarhus University*, *Denmark*.

T329 **Particle size and endosperm type of dry ground corn alter apparent ruminal synthesis of B-vitamins in lactating dairy cows.**
M. Seck*[1,3], M. S. Allen[2], P. Y. Chouinard[3], and C. L. Girard[1], [1]*Agriculture and Agri-Food Canada*, *Sherbrooke, Quebec, Canada*, [2]*Department of Animal Science, Michigan State University*, *East Lansing*, [3]*Departement de sciences animales, Universite Laval*, *Quebec, Quebec, Canada*.

T330 **Abrupt changes in forage dry matter of one to three days affect intake and milk yield in late lactation dairy cows.**
J. Boyd*[1] and D. R. Mertens[2], [1]*US Dairy Forage Research Center*, *Madison, WI*, [2]*Mertens Innovation & Research LLC*, *Belleville, WI*.

T331 **Effects of adding fibrolytic enzymes to diets containing bermudagrass silage harvested at two maturity stages on the performance of lactating Holstein cattle.**
O. C. M. Queiroz*[1], A.T. Adesogan[1], J. L. P. Daniel[2], J. J. Romero[1], J. H. Shin[1], C.R. Staples[1], and J. E.P. Santos[1], [1]*University of Florida*, *Gainesville*, [2]*University of Sao Paulo*, *Piracicaba, Sao Paulo, Brazil*.

T332 **Effects of *Bacillus subtilis natto* on intestinal morphology in pre and postweaning dairy calves.**
Y. Sun, J. Q. Wang*, P. Sun, D. P. Bu, G. C. Luan, and H. T. Zhang, *Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*.

T333 **Effect of dietary delivery product Force 6 on performances and antioxidant status of high-producing dairy cows.**
D. Éclache, P. Etienne, and V. Noirot*, *Phodé Laboratories*, *Terssac, France*.

T334 **Effects of abomasal infusion of linolenic acid on milk fat synthesis and composition in dairy cows.**
U. Moallem*[1], D. Vyas[2], B. B. Teter[2], P. Delmonte[3], and R. A. Erdman[2], [1]*Agriculture Research Organization*, *Bet Dagan, Israel*, [2]*University of Maryland*, *College Park*, [3]*FDA*.

T335 **The time of access to temperate pasture influences rumen pH and $NH_3$–N concentration in heifers.**
A. Félix[1], N. Hernández[1], N. Figueredo[2], M. Génova[2], M. Ibarra[2], A. Mendoza[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*.

T336 **The time of access to temperate pasture influences intake and feeding behavior in heifers.**
A. Félix[1], N. Hernández[1], N. Torterolo[1], S. Roja[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*.

T337 **Effect of replacement of conventional corn silage with brown midrib corn silage on behavior and performance of lactating dairy cows.**
K. W. Cotanch*, H. M. Dann, C. Whitehouse, C. S. Ballard, and R. J. Grant, *William H. Miner Agricultural Research Institute*, *Chazy, NY*.

T338 **Evaluation of protein supplementation strategies for low-starch diets fed to lactating dairy cows.**
K. W. Cotanch*[1], S. E. Boucher[1], H. M. Dann[1], C. S. Ballard[1], R. J. Grant[1], and K. Fujita[2], [1]*William H. Miner Agricultural Research Institute*, *Chazy, NY*, [2]*ZenNoh National Federation of Agricultural Cooperative Associations*, *Tokyo, Japan*.

T339 **Effect of time of access to food on fermentation capacity of rumen fluid in heifers consuming temperate pastures.**
N. Hernández[1], A. Félix[1], K. Saavedra[1], K. Rosano[1], A. Pérez-Ruchel[2], M. Aguerre[1], S. Brambillasca[2], C. Cajarville[2], and J. L. Repetto*[1], [1]*Departamento de Bovinos, Facultad de Veterinaria, UdelaR*, *Montevideo, Uruguay*, [2]*Departamento de Nutrición Animal, Facultad de Veterinaria, UdelaR*, *Montevideo, Uruguay*.

T340 **Frequency of feed delivery affects 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. Animal and Poultry Science, University of Guelph, Kemptville Campus*, *Kemptville, ON, Canada*, [2]*Dept. Population Medicine, Ontario Veterinary College, University of Guelph*, *Guelph, ON, Canada*, [3]*Dept. Animal and Poultry Science, University of Guelph*, *Guelph, ON, Canada*.

T341 **Effect of feeding brown midrib corn silage and dried distillers grains with solubles on bacterial diversity in rumen fluid of dairy cows using bacterial tag-encoded FLX amplicon pyrosequencing.**
H. A. Ramirez Ramirez*[1], L. O. Tedeschi[2], T. R. Callaway[3], S. E. Dowd[4], K. Nestor[5], and P. J. Kononoff[1], [1]*University of Nebraska-Lincoln*, [2]*Texas A&M University*, *College Station*, [3]*Food and Feed Safety Research Unit, USDA-ARS*, *College Station, TX*, [4]*Medical Biofilm Research Institute and Research Testing Laboratory*, *Lubbock, TX*, [5]*Dow AgroSciences LLC*.

T342 **Optimization for isolating ruminal *trans*-11 18:1 hydrogenating bacteria from dairy cow in vitro.**
D. Jin, J. Wang*, S. Zhao, D. Li, D. Bu, and L. Zhou, *Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*.

T343 **Differential expression of the transcriptome in adipose tissue of first lactation dairy cattle.**
J. P. McNamara[1], J. M. Thomson*[2], and J. Loor[3], [1]*Washington State University*, *Pullman*, [2]*University of Alberta*, *Edmonton, Alberta, Canada*, [3]*University of Illinois*, *Urbana-Champaign*.

T344 **The survival of *Bacillus subtilis natto* in rumen and duodenum of Holstein dairy cows.**
S. H. Dong, J. Q. Wang*, H. Peng, S. Peng, D. P. Bu, L. Y. Zhou, and H. Y. Kang, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*.

T345 **Milk fatty acid composition of lactating dairy cows fed short and medium chain fatty acids.**
H. Cui, D. P. Bu, J. Q. Wang*, X. W. Zhao, X. Y. Xu, Y. Sun, P. Sun, and L. Y. Zhou, *Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*.

T346 **Veal calves deposit nitrogen from solid feed as efficient as nitrogen from milk replacer.**
H. Berends*[1], J. J. G. C. Van den Borne[1], C. G. Van Reenen[2], and W. J. J. Gerrits[1], [1]*Animal Nutrition Group, Wageningen University*, *Wageningen, the Netherlands*, [2]*Livestock Research, Animal Sciences Group*, *Lelystad, the Netherlands*.

T347 **Effect of *B2M* haplotype combinations on the expression of FcRn mRNA in mammary gland of dairy cows.**
X. Hu, J. Wang*, S. Zhao, J. Zhao, and D. Bu, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*.

T348 **Effect of feeding *Bacillus subtilis natto* fermentation production on hindgut fermentation and microbiota of Holstein dairy cows.**
H. Y. Kang, J. Q. Wang*, D. P. Bu, L. Y. Zhou, P. Sun, H. Peng, X. l. Wang, and S. H. Dong, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing,China*.

T349 **Effect of short- and medium-chain fatty acid on milk composition in lactating dairy cows.**
X. W. Zhao, J. Q. Wang*, D. P. Bu, H. Cui, X. Y. Xu, Y. Sun, L. Y. Zhou, and P. Sun, *Chinese Academy of Agricultural Sciences, Beijing, China*.

T350 **Effect of feeding *Bacillus subtilis natto* fermentation production on milk production and composition, blood metabolites and rumen fermentation in early lactation dairy cows.**
H. Peng[1], J. Q. Wang*[1], H. Y. Kang[1,2], S. H. Dong[1,3], P. Sun[1], D. P. Bu[1], and L. Y. Zhou[1], [1]*Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*, [2]*College of Animal Science and technology, Southwest University*, *Chongqing, China*, [3]*Faculty of Animal Sciences and Technology, Gansu Agricultural University*, *Lanzhou, China*.

T351 **Fermentative and nutritional dynamics of bovine colostrum silage for dairy calves liquid feeding.**
L. S. Ferreira[1,2], M. C. Soares[1], M. P. C. Gallo[1], M. R. Paula[1,2], and C. M. M. Bittar*[1,2], [1]*University of São Paulo/ESALQ*, *Piraciacaba, SP, Brazil*, [2]*Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq)*, *Brasília, DF, Brazil*.

T352 **Performance of dairy calves fed "colostrum silage" or milk replacer.**
L. S. Ferreira[1,2], J. T. Silva[1], G. G. O. Nápoles[1], C. E. Oltramari[1], and C. M. M. Bittar*[1,2], [1]*University of São Paulo/ESALQ*, *Piraciacaba, SP, Brazil*, [2]*Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq)*, *Brasília, DF, Brazil*.

T353 **In situ dry matter degradation kinetics of fennel forage in Holstein cow.**
M. Chaji*, T. Mohammadabadi, and H. Eghbali, *Khuzestan Ramin Agricultural and Natural Resources University*, *Molassani, Khuzestan, Iran*.

T354 **The effect of exogenous phytase on ruminal degradation of inositol phosphate in dairy cows.**
J. Sehested*[1], D. N. Braks-Pedersen[1], V. Glitsø[2], L. K. Skov[2], and P. Lund[1], [1]*Department of Animal Health and Bioscience, Aarhus University*, *Tjele, Denmark*, [2]*Department of Feed Applications, Novozymes A/S*, *Bagsvaerd, Denmark*.

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## Ruminal Metabolism

T355 **Effect of sample processing on in situ organic matter degradability of distillers grains.**
M. L. Drewery*[1], J. E. Sawyer[1], N. M. Kenney[1], W. E. Pinchak[2], and T. A. Wickersham[1], [1]*Texas A&M University*, *College Station*, [2]*Texas AgriLife Research*, *Vernon*.

T356 **Effect of tannins on in vitro ruminal degradability of purple prairie clover (*Petalostemon purpureum*) harvested at the two growth stages.**
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]*Agriculture and Agri-Food Canada, Lethbridge Research Centre*, *Lethbridge, AB, Canada*, [2]*Department of Animal Science, Northeast Agricultural University*, *China*, [3]*SPARC-AAFC*, *Swift Current, SK, Canada*.

T357 **Effect of exogenous fibrolytic enzymes on dry matter in situ digestibility of two *Brachiaria* grasses.**
J. H. Avellaneda-Cevallos[1,2], O. D. Montañez-Valdez*[3], D. Romero-Garaicoa[1], R. Luna-Murillo[1], J. Bravo-Loor[1], and M. Peña-Galeas[1], [1]*Unidad de Investigacóin Científica y Tecnológica. Facultad de Ciencias Pecuarias. Universidad Técnica Estatal de Quevedo*, *Quevedo, Ecuador*, [2]*Jefatura de Investigacóin. Carrera de Pecuaria.Escuela Superior Politécnica Agropecuaria de Manabí Manuel Félix López. Campus Politécnico*, *Sitio El Limón, Calceta, Manabí, Ecuador*, [3]*Centro Universitario del Sur de la Universidad de Guadalajara*, *Ciudad Guzmán, Jalisco, México*.

T358 **Method evaluation for determining digestibility of rumen undegraded amino acids in blood meal.**
S. E. Boucher*[1], S. Calsamiglia[2], M. D. Stern[3], C. M. Parsons[4], H. H. Stein[4], C. G. Schwab[5], K. W. Cotanch[6], J. W. Darrah[6], and J. K. Bernard[7], [1]*Kemin AgriFoods North America Inc.*, *Des Moines, IA*, [2]*Universitat Autònoma de Barcelona*, *Bellaterra, Spain*, [3]*University of Minnesota*, *St. Paul*, [4]*University of Illinois*, *Urbana*, [5]*Schwab Consulting LLC*, *Boscobel, WI*, [6]*William H. Miner Agricultural Research Institute*, *Chazy, NY*, [7]*University of Georgia*, *Tifton*.

T359 **In vitro modification of ruminal and post ruminal metabolism by lignosulfonate and polysaccharide protected microminerals.**
M. Ruiz-Moreno*[1], E. Seitz[1], M. D. Stern[1], and J. Garrett[2], [1]*University of Minnesota*, *St. Paul*, [2]*Quali Tech Inc.*, *Chaska, MN*.

T360 **Factors affecting estimation of spoilage indices in silage 2: Effects of amount of silage evaluated and type of container.**
N. Cavalcanti[1,2], J. Leite[1,2], L. G. Paranhos*[1], O. C. M. Queiroz[1], K. G. Arriola[1], and A. T. Adesogan[1], [1]*University of Florida*, *Gainesville*, [2]*Federal University of Pernambuco*, *Recife, Pernambuco, Brazil*.

T361 **Infusion of marker solution into intact digesta for measurement of the ruminal clearance of volatile fatty acids.**
J. C. de Resende Júnior*, J. L. P. Daniel, F. da C. Meireles, M. B. Moreira, and R. F. de Lima, *Universidade Federal de Lavras*.

T362 **Adjustment of in vitro rumen fermentation protocol for testing products based on rumen pH regulation and the impact of Acid Buf.**
S. Taylor*[1], E. Pennala[2], and J. Apajalahti[2], [1]*Celtic Sea Minerals Ltd.*, *Cork, Ireland*, [2]*Alimetrics Ltd.*, *Espoo, Finland*.

T363 **Impact of different sources of hydrolysable and condensed tannins on rumen fermentation and methane production in vitro.**
F. Hassanat* and C. Benchaar, *Agriculture and Agri-Food Canada, Dairy and Swine Research and Development Centre*, *Sherbrooke, Qc, Canada*.

T364 **Changes in ruminal bacterial community composition following feeding of silage inoculated with a commercial silage inoculant.**
R. Mohammed*[1,2], D. M. Stevenson[1], K. A. Beauchemin[2], P. J. Weimer[1], and R. E. Muck[1], [1]*USDA-ARS*, *Madison, WI*, [2]*AAFC*, *Lethbridge, AB, Canada*.

T365 **Effect of a dietary antioxidant with different substrate on rumen fermentation in vitro.**
Y. Wang*[1,2], J. Wang[1], M. Vazquez-Anon[2], H. Cao[2], G. Zanton[2], and J. Liu[1], [1]*Institute of Dairy Science, Zhejiang University*, *Hangzhou, P. R. China*, [2]*Novus International Inc.*, *St. Louis, MO*.

T366 **Effect of dietary roughage and sulfur concentration on hydrogen sulfide production from corn-based diets containing dried distillers grains.**
E. Seitz*, A. Carpenter, M. Ruiz-Moreno, M. D. Stern, and G. I. Crawford, *University of Minnesota*, *St. Paul*.

T367 **Effects of hops on rumen fermentation and bacterial populations using the rumen simulation technique.**
N. Narvaez*[1], Y. Wang[1], Z. Xu[1], T. Alexander[1], S. Garden[2], and T. McAllister[1], [1]*Agriculture and Agri-Food Canada*, *Lethbridge, Alberta, Canada*, [2]*John I. Haas Inc.*, *Washington DC*.

T368 **Effect of nitrate, sulfate, monensin, and corn gluten feed on in vitro ruminal methane production.**
C. Davis[1], S. Ghimire*[1], T. Wiles[1], Z. Wen[2], M. A. McCann[3], and M. D. Hanigan[1], [1]*Department of Dairy Science, Virginia Polytechnic Institute and State University*, *Blacksburg*, [2]*Department of Biological Systems Engineering, Virginia Polytechnic Institute and State University*, *Blacksburg*, [3]*Department of Animal and Poultry Sciences, Virginia Polytechnic Institute and State University*, *Blacksburg*.

T369 **Effects of microwave irradiation on ruminal dry matter degradability of canola and corn gluten meal.**
M. Dehghan-Banadaky[1], H. Khalilvandi-Behroozyar*[1,2], H. R. Khazanehi[3], and N. Vahdani[1], [1]*Department of Animal Science, University of Tehran*, *Karaj, Tehran, Iran*, [2]*Department of Animal Science, University of Urmia*, *Urmia, West Azerbaijan, Iran*, [3]*Department of Animal Science, University of Manitoba*, *Manitoba, Canada*.

T370 **Evaluation of two protein hydrolyzates as a source of soluble protein to foster ruminal microbial growth.**
A. Aris[1], A. Serrano[1], F. Fabregas[1], J. Polo[3], C. Rodriguez[3], and A. Bach*[1,2], [1]*Ruminant Production, Institut de Recerca i Tecnologia Agroalimentàries (IRTA)*, *Caldes de Montbui, Barcelona, Spain*, [2]*Institució Catalana de Recerca i Estudis Avançats (ICREA)*, *Barcelona, Spain*, [3]*APC EUROPE, S.A. R&D department*, *Granollers, Barcelona, Spain*.

T371 **Effects of protein protection with orthophosphoric or malic acid and heat in lamb fattening diets.**
F. Díaz-Royón*, J. M. Arroyo, M. R. Alvir, V. Jimeno, S. Sanchez, and J. González, *University of Politécnica de Madrid*, *Madrid Spain*.

T372 **Identification of several novel fungal species in feed samples from the southeast United States.**
J. D. Chapman*[2], Y. Q. Wang[1], and N. E. Forsberg[1], [1]*OmniGen Research*, *Corvallis, OR*, [2]*Prince Agri Products*, *Quincy, IL*.

T373 **Evaluating the inclusion of Met and Lys to mechanically extracted soybean meal with soy gums on the ruminally-undegraded Met and Lys content.**
C. A. Macgregor*[1], L. O. Tedeschi[2], and T. K. Miller-Webster[3], [1]*Grain States Soya Inc.*, *West Point, NE*, [2]*Texas A&M University*, *College Station*, [3]*West Virginia University*, *Morgantown*.

T374 **Effect of ghrelin on bovine myogenic differentiation.**
D. Montoya-Flores*[1,2], O. Mora[1], E. Tamariz[1], L. González-Dávalos[1], A. González-Gallardo[1], A. Antaramian[1], A. Shimada[1], A. Varela-Echavarría[1], and J. L. Romano-Muñoz[2], [1]*Universidad Nacional Autónoma de México*, *Querétaro, Querétaro, México*, [2]*Instituto Nacional de Investigaciones Forestales, Agrícolas y Pecuarias*, *Colón, Querétaro, México*.

T375 **Essential oil and rumensin affect ruminal fermentation in continuous culture.**
D. Ye*[1], S. K. R. Karnati[1], J. L. Firkins[1], M. L. Eastridge[1], and J. M. Aldrich[2], [1]*Ohio State University*, *Columbus*, [2]*Provimi-North America*, *Lewisburg, OH*.

T376 **Energy value of co-products of bioethanol production: comparison between triticale grain and triticale DDGS.**
B. Liu and P. Yu*, *University of Saskatchewan*, *Saskatoon, Canada*.

T377 **Molecular spectral features of functional groups mainly associated with lipid biopolymer in co-products (DDGS) from bioethanol production.**
P. Yu* and D. Damiran, *University of Saskatchewan*, *Saskatoon, Canada*.

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T378 **Sheep performance on sorghum or sorghum-soybean silage diets.**
A. A. Melin[1] and H. M. Arelovich*[2], [1]*Coronel Suárez-Pasman Experimental Station*, [2]*Departamento de Agronomía-CIC-CERZOS*.

T379 **The effect of sulfuric acid on in vitro gas production parameters of sugarcane top in Arabian sheep.**
S. Mahmoudi, M. Chaji*, M. Eslami, T. Mohammadabadi, and M. Bojarpour, *khuzestan Ramin Agricultural and Natural Resources University*, *Molassani, Khuzestan, Iran*.

T380 **Th effect of urea, molasses and sulfuric acid on in vitro digestibility of sugarcane top by Arabian sheep.**
S. Mahmoudi, M. Chaji*, M. Eslami, T. Mohammadabadi, and M. Bojarpour, *Khuzestan Ramin Agricultural and Natural Resources University*, *Molassani, Khuzestan, Iran*.

T381 **Interactions between nutrient supply and dietary flavors on diet selection by lambs.**
A. Bach*[1], J. J. Villalba[2], and I. R. Ipharraguerre[3], [1]*ICREA and Ruminant Production-IRTA*, *Barcelona, Spain*, [2]*Utah State University*, *Logan*, [3]*Lucta, S.A.*, *Barcelona, Spain*.

T382 **Effect of forage type in the diet on *Ruminococcus flavefaciens*, *Ruminococcus albus* and *Fibrobacter succinogenes* populations in sheep rumen content as determined by real-time PCR.**
C. Saro[1,2], M. J. Ranilla*[1,2], and M. D. Carro[1], [1]*Dpto. Producción Animal, Universidad de León*, *León, Spain*, [2]*IGM (CSIC–ULE), Finca Marzanas s/n*, *Grulleros, León, Spain*.

T383 **The effect of replacing corn bran with water-soaked neem fruit on nutritive value and in vitro gas production characteristics of West African Dwarf sheep.**
M. K. Adewumi*, *Department of Animal Science, University of Ibadan*, *Ibadan, Nigeria*.

## Small Ruminant
## Health, Growth, Extension, and Dairy

T384 **Selected condensed tannin-containing plant extracts and their effects on *Haemonchus contortus* larvae.**
K. J. Stutts*, M. J. Thomas, M. M. Beverly, R. A. Lane, and S. F. Kelley, *Sam Houston State University*, *Huntsville, TX*.

T385 **Effect of subclinical mastitis and stage of lactation on somatic cell count, composition and plasmin activity of goat milk.**
R. Shangguan[1,2], L. Spicer[2], C. DeWitt[2], J. Wang[1], and S. Zeng*[1], [1]*Langston University*, *Langston, OK*, [2]*Oklahoma State University*, *Stillwater*.

T386 **Hematological and spermatological evaluations of Honamli goat in Turkey.**
M. S. Gulay*[1], A. Ata[1], O. Elmaz[1], M. Saatci[1], N. Mamak[1], B. Dag[2], and A. H. Aktas[3], [1]*Mehmet Akif Ersoy University, Faculty of Veterinary Medicine*, *Burdur, Turkiye*, [2]*Selcuk University, Faculty of Agriculture, Department of Animal Science*, *Konya, Turkiye*, [3]*Bahri Dagtas Uluslararasi Hayvacilik Arastirma Enstitusu*, *Konya, Turkiye*.

T387 **Managing seasonal outbreak of foot rot in sheep flocks.**
T. Wuliji* and C. Clifford-Rathert, *Lincoln University*, *Jefferson City, MO*.

T388 **Comparison of nematode parasite-susceptibility and performance of Boer and Spanish goats supplemented with garlic.**
R. Zhong[1,2], Z. Wang*[1], A. Goetsch[1], S. Hart[1], and T. Sahlu[1], [1]*American Institute for Goat Research, Langston University*, *Langston, OK*, [2]*Northeast Institute of Geography and Agroecology, Chinese Academy of Sciences*, *Changchun, Jilin, China*.

T389 **Effect of sericea lespedeza *(Lespedeza cuneata)* leaf meal pellets fed to gastrointestinal nematode infected goats.**
N. C. Whitley*[1], T. H. Terrill[2], J. E. Miller[3], J. M. Burke[4], K. Moulton[1], L. Townsend[5], J. R. Horton[5], J. French[6], A. K. Cooper[1], and D. S. Kommuru[2], [1]*North Carolina A&T State University*, *Greensboro*, [2]*Fort Valley State University*, *Fort Valley, GA*, [3]*Louisiana State University*, *Baton Rouge*, [4]*USDA-ARS*, *Booneville, AR*, [5]*NCDA-UMRS*, *Laurel Springs, NC*, [6]*NCDA-UPRS*, *Reidsville, NC*.

T390 **Influence of type of pasture and transport stress on microbial loads in meat goats.**
A. Mechineni, S. Gujja, D. S. Kommuru, T. H. Terrill, G. Kannan*, B. Kouakou, and J. H. Lee, *Fort Valley State University*, *Fort Valley, GA*.

T391 **Gastro-intestinal parasitic infestation in meat goats and its relationships with production traits under a pasture-based performance test in Western Maryland.**
K. Nadarajah*[1], S. Schoenian[2], D. L. Kuhlers[1], M. D. Carpenter[1], and D. Rankins[1], [1]*Auburn University*, *Auburn, AL*, [2]*University of Maryland Extension*, *Keedysville*.

T392 **Gastro-intestinal parasitic infestation and its relationships with growth performance in meat goats on pasture with supplemental grain feeding test at the Kerr Center in Oklahoma.**
K. Nadarajah*[1], M. Penick[2], D. L. Kuhlers[1], M. D. Carpenter[1], and D. Rankins[1], [1]*Auburn University*, *Auburn, AL*, [2]*Kerr Center*, *Poteau, OK*.

T393 **Lamb immune status (blood IgG, IgM and chitotriosidase activity) during weaning, preliminary results.**
L. E. Hernandez-Castellano*[1], A. Morales-delaNuez[1], I. Moreno-Indias[1], D. Sanchez-Macias[1], A. Torres[2,1], A. Arguello[1], J. Capote[2], and N. Castro[1], [1]*Universidad de Las Palmas de Gran Canaria*, *Arucas, Las Palmas, Spain*, [2]*Instituto Canario de Investigaciones Agrarias*, *La Laguna, Tenerife, Spain*.

T394 **Comparison of FAMACHA scores and need for deworming in hair sheep and meat goats grazed together or sheep grazed alone.**
S. Hart*[1], T. A. Gipson[1], R. Pirtle[2], and W. Cubbage[2], [1]*E (Kika) de la Garza American Institute for Goat Research*, *Langston, OK*, [2]*Oklahoma State University Cooperative Extension*, *Stillwater*.

T395 **Lack of an effect of pelletized diets containing pumpkin seeds on gastrointestinal nematode fecal egg counts in goats.**
M. Gooden*[1], E. N. Escobar[1], N. C. Whitley[2], D. J. Jackson-O'Brien[3], and H. Taylor[1], [1]*University of Maryland Eastern Shore*, *Princess Anne*, [2]*North Carolina A&T State University*, *Greensboro*, [3]*Delaware State University*, *Dover*.

T396 **Comparative efficacies of alternative anthelmintics against natural nematode infection in grazing goats.**
P. B. Collyer* and E. G. Brown, *Stephen F. Austin State University*, *Nacogdoches, TX*.

T397 **Effects of immunomodulatory substances added to milk replacer on white blood cell populations during weaning.**
S. Paez Lama, A. Morales-delaNuez, V. Mendoza-Grimon, L. E. Hernandez-Castellano, D. Sanchez-Macias, N. Castro, and A. Arguello*, *Universidad de Las Palmas de Gran Canaria*, *Arucas, Las Palmas, Spain*.

T398 **Goat browsing for invasive shrub and internal parasite control.**
J. C. Warren*[1], D. J. O'Brien[1], C. Heckscher[1], R. Beaman[2], and N. C. Whitley[3], [1]*Delaware State University*, *Dover*, [2]*Delaware Department of Transportation*, *Dover*, [3]*North Carolina A&T State University*, *Greensboro*.

T399 **Gastrointestinal nematode (GIN) resistance and GIN management on small ruminant farms in the mid-Atlantic U.S.**
D. J. O'Brien[1], K. K. Matthews*[1], E. K. Crook[2], N. C. Whitley[3], B. Storey[4], S. Howell[4], and R. Kaplan[4], [1]*Delaware State University*, *Dover*, [2]*Virginia Maryland Regional College of Veterinary Medicine*, *Blacksburg*, [3]*North Carolina A & T State University*, *Greensboro*, [4]*University of Georgia*, *Athens*.

T400 **Effects of supplemental dried distillers grains on performance and internal parasites of grazing lambs.**
C. L. Pickworth*[1], T. L. Felix[1], I. Susin[2], L. M. Shoup[1], and S. C. Loerch[1], [1]*The Ohio State University*, *Wooster*, [2]*Universidade de São Paulo*, *Piracicaba, São Paulo, Brazil*.

T401 **Feeding North American panicled tick-clover containing condensed tannins to growing goats reduces *Haemonchus contortus* infection.**
N. M. Cherry[1], B. D. Lambert*[1,2], J. P. Muir[1], M. Bullinger[2], J. E. Miller[3], R. M. Kaplan[4], and T. R. Whitney[5], [1]*Texas Agrilife Research*, *Stephenville*, [2]*Tarleton State University*, *Stephenville, TX*, [3]*Louisiana State University*, *Baton Rouge*, [4]*The University of Georgia*, *Athens*, [5]*Texas Agrilife Research*, *San Angelo*.

T402 **Demographic factors of meat goat producers completing an online certification program.**
T. A. Gipson*, R. C. Merkel, and T. Sahlu, *American Institute for Goat Research, Langston Univ.*, *Langston, OK*.

T403 **Variability among enumerators in assigning body condition scores in meat goats.**
R. C. Merkel* and T. A. Gipson, *Langston University*, *Langston, OK*.

T404 **Comparative effect of implants with trenbolone-estradiol or zeranol on feedlot-performance of Katahdin × Pelibuey hair-lambs.**
B. Ortiz*[1], A. Camacho[1], N. E. Villalba[2], L. R. Flores[1], J. J. Lomeli[1], J. A. Romo[1], and R. Barajas[1], [1]*FMVZ-Universidad Autonóma de Sinaloa*, *Culiacán, Sinaloa, México*, [2]*Agricola Ganadera Mojolo*, *Culiacán, Sinaloa, México*.

T405 **Influence of zeranol implant on performance of Dorper × Katahdin feedlot lambs.**
B. Ortiz*[1], A. Camacho[1], N. E. Villalba[2], L. R. Flores[1], J. J. Lomeli[1], J. A. Romo[1], and R. Barajas[1], [1]*FMVZ-Universidad Autonóma de Sinaloa*, *Culiacán, Sinaloa, México*, [2]*Agricola Ganadera Mojolo*, *Culiacán, Sinaloa, México*.

T406 **Seasonal changes in chemical composition of Hungarian raw goat's milk.**
L. Varga*, *Department of Dairy Science, Institute of Food Science, Faculty of Agricultural and Food Sciences, University of West Hungary*, *Mosonmagyarovar, Hungary*.

T407 **Examination of microbiological and physicochemical quality of raw materials and end products during manufacture of cheeses from caprine and ovine milk.**
L. Varga*, *Department of Dairy Science, Institute of Food Science, Faculty of Agricultural and Food Sciences, University of West Hungary*, *Mosonmagyarovar, Hungary*.

T408 **Milk yield and milk composition of ewes fed diets with canola oil or linseed oil.**
C. P. Nolli*, I. Susin, A. V. Pires, M. O. Maia, E. M. Ferreira, R. S. Gentil, and D. Eysink, *University of São Paulo/ESALQ*, *Piracicaba, SP, Brazil*.

T409 **The mammary gland of the Canarian dairy goats undergone two different milking frequencies: morphological characterization of the tissular components.**
A. Suarez-Trujillo[1], J. Capote[2], A. Arguello[1], A. Arencibia[1], N. Castro[1], J. Morales[1], and M. A. Rivero*[1], [1]*Universidad de Las Palmas de Gran Canaria*, *Arucas, Las Palmas, Spain*, [2]*Instituto Canario de Investigaciones Agrarias*, *La Laguna, Tenerife, Spain*.

## Swine Species

Sponsor: JBS United

T410 **Effects of Actigen on peripheral blood immune cells in pigs experimentally infected with porcine reproductive and respiratory syndrome virus (PRRSV).**
T. M. Che*[1], M. Song[1], R. W. Johnson[1], K. W. Kelley[1], W. G. Van Alstine[2], K. A. Dawson[3], and J. E. Pettigrew[1], [1]*Department of Animal Sciences, University of Illinois*, *Urbana*, [2]*Animal Disease and Diagnostic Laboratory, Purdue University*, *West Lafayette, IN*, [3]*Research, Alltech Biotechnology Center*, *Nicholasville, KY*.

T411 **Effects of dietary multi-carbohydrases on growth performance, nutrient digestibility and blood characteristics in finishing pigs.**
J. P. Wang*, X. Y. Guo, and I. H. Kim, *Dankook University*, *Cheonan, Choongnam, South Korea*.

T412 **Effects of a natural feed additive in comparison to an antibiotic treated group to prevent gram-negative associated diseases in pigs.**
S. Schaumberger*[1], S. Masching[2], A. Ganner[1], and G. Schatzmayr[1], [1]*Biomin Research Center*, *Tulln, Austria*, [2]*Biomin Holding*, *Herzogenburg, Austria*.

T413 **Effects of feeding Actigen on ex vivo immune responses of porcine leukocytes.**
T. M. Che*[1], R. W. Johnson[1], K. W. Kelley[1], K. A. Dawson[2], and J. E. Pettigrew[1], [1]*Department of Animal Sciences, University of Illinois*, *Urbana*, [2]*Research, Alltech Biotechnology Center*, *Nicholasville, KY*.

T414 **Effects of multiple sources and levels of dietary fiber on apparent total tract dry matter digestibility, growth performance, and concentration of fermentation indices in pigs.**
A. Woldeghbriel, S. Smith*, T. Barrios, and B. Bishop, *North Carolina Agriculture and Technical State University*, *Greensboro*.

T415 **Addition of bee pollen to the sow feed and effects on body weight of piglets.**
C. H. Casillas-Gómez*, I. J. Ruíz-García, and J. R. Orozco-Hernández, *Departamento de Cienicas Biológicas, Centro Universitario de Los Altos, Universidad de Guadalajara*, *Twepatitlan de Morelos, Jalsico, Mexico*.

T416 **Effects of thermal stress on liver xenobiotic metabolism gene expression in swine.**
J. A. Madden*, S. C. Pearce, N. K. Gabler, L. H. Baumgard, and A. F. Keating, *Department of Animal Science, Iowa State University*, *Ames*.

T417 **Effect of sex and housing density on growth performance, carcass quality, and fatty acid profile of pigs slaughtered at 110 kg BW.**
J. I. Morales[1], M. P. Serrano[1], L. Cámara[1], J. D. Berrocoso[1], C. J. López-Bote[2], J. P. López[3], and G. G. Mateos*[1], [1]*Universidad Politécnica de Madrid*, *Madrid, Spain*, [2]*Universidad Complutense de Madrid*, *Madrid, Spain*, [3]*Copiso S.A.*, *Soria, Spain*.

T418 **Productive performance and carcass quality of gilts and surgically and immune-castrated male pigs from crossbreds of Duroc and Pietrain sire lines.**
J. I. Morales[1], M. P. Serrano[1], L. Cámara[1], J. D. Berrocoso[1], J. P. López[2], and G. G. Mateos*[1], [1]*Universidad Politécnica de Madrid*, *Madrid, Spain*, [2]*Copiso S.A.*, *Soria, Spain*.

T419 **Fatty acid composition of piglet tissues changes during suckling time.**
M. Sini, A. Nudda, G. Pulina, S. P. G. Rassu, and G. Battacone*, *Dipartimento di Scienze Zootecniche, Università Degli Studi di Sassari*, *Sassari, Italy*.

TUESDAY POSTERS

## Teaching/Undergraduate and Graduate Education

T420 **Opinions of farm versus urban freshman college students on issues involving animal agriculture before and after animal science instruction.**
E. A. Bobeck*, D. K. Combs, and M. E. Cook, *University of Wisconsin-Madison*, *Madison*.

T421 **Connecting lecture to the real world in animal sciences.**
J. J. Parrish*, J. R. Schindler, and R. L. Monson, *University of Wisconsin*, *Madison*.

T422 **Enhancing the pool of underrepresented minorities in veterinary medicine.**
O. U. Bolden-Tiller*, *Tuskegee University*, *Tuskegee Institute, AL*.

T423 **Comparison of multiple choice and short essay assessment vehicles on student performance in an upper division animal reproduction course.**
L. J. Spicer* and M. E. Payton, *Oklahoma State University*, *Stillwater*.

T424 **Variables that affect academic performance in undergraduate animal science courses.**
M. M. Beverly, K. J. Stutts, and S. F. Kelley*, *Sam Houston State University*, *Huntsville, TX*.

T425 **CyberSheep: Improving student understanding of animal breeding concepts with a virtual sheep flock.**
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*.

T426 **Academic preferences of freshman college students in the Department of Animal Industry of the University of Puerto Rico at Mayagüez.**
G. Ortiz-Colón*, J. M. Huerta-Jiménez, L. del Valle-Mercado, M. Pagán-Morales, and E. Jiménez-Cabán, *University of Puerto Rico at Mayagüez*, *Mayagüez, PR*.

T427 **Impact of duration of an online animal science nutrition course on student learning assessments.**
K. D. Ange-van Heugten* and A. Renjifo McComb, *North Carolina State University*, *Raleigh*.

T428 **Effectiveness of a university introductory course in developing student confidence in horse handling and riding.**
M. Nicodemus*, *Mississippi State University*, *Mississippi State.*

# SYMPOSIA AND ORAL SESSIONS

## Danisco International Dairy Science Award Lecture
## Chair: Jim Moran, Kraft Foods
## 397

9:30 AM **Introduction**

9:40 AM **Danisco International Dairy Science Award Lecture: Exploring bacterial life in cheese . . .the "in situ."**
S. Lortal, *INRA Technologie du lait et de l'oeuf, Rennes Cedex, France*.

## Animal Behavior and Well-Being 2
## Chair: Marcia Endres, Department of Animal Science, University of Minnesota
Sponsor: ASAS Foundation
## 290

9:30 AM 304 **ASAS Early Career Award Presentation: Working to foster the discovery, sharing, and application of knowledge concerning the well-being of farm animals**.
A. Johnson*, *Iowa State University*, *Ames*.

10:00 AM 305 **The effect of reactive state on the physiology of dairy cows milked in a novel environment.**
M. A. Sutherland*[1] and G. A. Verkerk[2], [1]*AgResearch Ltd.*, *Animal Behaviour and Welfare Group, Hamilton, New Zealand*, [2]*DairyNZ*, *Hamilton, New Zealand*.

10:15 AM 306 **The effect of reactive state and training on the behaviour and milk production of heifers during the first week of lactation.**
M. A. Sutherland*[1] and G. A. Verkerk[2], [1]*AgResearch Ltd.*, *Animal Behaviour and Welfare Group, Hamilton, New Zealand*, [2]*DairyNZ*, *Hamilton, New Zealand*.

10:30 AM 307 **Effect of frequency of feed delivery on the behavioral patterns of dairy cows milked in an automatic system.**
J. A. Deming*[1], R. Bergeron[2], K. E. Leslie[3], and T. J. DeVries[1], [1]*Dept. Animal and Poultry Science, University of Guelph, Kemptville Campus*, *Kemptville, ON, Canada*, [2]*Dept. Animal and Poultry Science, University of Guelph, Campus d'Alfred*, *Alfred, ON, Canada*, [3]*Dept. Population Medicine, Ontario Veterinary College, University of Guelph*, *Guelph, ON, Canada*.

10:45 AM 308 **Effect of yearly climate on milk yield in a sub-tropical environment.**
J. C. Lees* and J. B. Gaughan, *The University of Queensland*, *Gatton, Queensland, Australia*.

11:00 AM 309 **Evaluation of two different cooling systems on a Sicilian dairy farm: Physiological parameters and milk aroma.**
R. Ben Younes[1,3], G. Azzaro[2], I. Schadt[2], G. Belvedere[2], M. Caccamo[2], R. Petriglieri[2], G. Licitra[3,2], and S. Carpino*[2], [1]*INAT*, *Tunis, Tunisia*, [2]*CoRFiLaC, Regione Siciliana*, *Ragusa, Italy*, [3]*DISPA, Catania University*, *Catania, Italy*.

11:15 AM 310 **Assessment of a web camera to evaluate farm management and cow behavior.**
G. Licitra[1,2], G. Azzaro[1], R. Petriglieri[1], M. Caccamo[1], and J. D. Ferguson*[3], [1]*CoRFiLaC, Regione Siciliana*, *Ragusa, Italy*, [2]*DISPA, Catania University*, *Catania, Italy*, [3]*University of Pennsylvania*, *PA*.

11:30 AM 311 **Novel techniques for anesthesia during disbudding of calves.**
K. R. Tapper*[1], J. P. Goff[1], B. L. Leuschen[2], J. K. West[2], and S. T. Millman[1,2], [1]*Iowa State University Department of Biomedical Sciences*, *Ames*, [2]*Iowa State University Veterinary Diagnostic and Production Animal Medicine*, *Ames*.

11:45 AM 312 **The effect of pain relief on the physiology and behavior of calves after castration and/or dehorning.**
M. A. Sutherland*[1,2], B. L. Davis[1], T. A. Brooks[1], and M. A. Ballou[1], [1]*Texas Tech University*, *Animal and Food Sciences Department, Lubbock*, [2]*AgResearch Ltd.*, *Animal Behaviour and Welfare Group, Hamilton, New Zealand*.

12:00 PM 313 **Physiological and immunological effects of surgical castration and amputation dehorning and the influence of anesthetics and analgesics in Holstein calves.**
M. A. Ballou*[1], M. A. Sutherland[1,2], B. L. Davis[1], T. A. Brooks[1], C. J. Cobb[1], and L. E. Hulbert[1,3], [1]*Department of Animal and Food Sciences, Texas Tech University*, *Lubbock*, [2]*Animal Behavior and Welfare Group, AgResearch*, *Hamilton, New Zealand*, [3]*Department of Animal Science, University of California at Davis*, *Davis*.

12:15 PM 314 **Effects of pair housing versus limited social contact on the response of dairy calves to separation.**
L. R. Duve*[1], M. B. Jensen[1], and D. M. Weary[2], [1]*University of Aarhus*, *Tjele, Denmark*, [2]*University of British Columbia*, *Vancouver, British Columbia, Canada*.

12:30 PM 315 **Lameness, leg injuries and lying times on 122 North American freestall farms.**
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, Canada*, [2]*Novus International Inc.*, *St Louis, MO*.

## Animal Health Symposium
## Viral Swine Diseases: Prevalence, Prevention, and Their Impact on Production
## Chair: Ty Schmidt, Mississippi State University

Sponsors: Elanco Animal Health, JBS United, Pfizer Animal Health

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9:30 AM **Swine hepatitis E virus: Zoonosis and pork safety.**
X. J. Meng, *Virginia Tech, Blacksburg*.

10:15 AM **Porcine Circovirus: Update on understanding of the pathogenesis, transmission, impact and best practices for control.**
T. Opriessnig, *Iowa State University, Ames*.

11:00 AM **New technologies for the control and elimination of porcine reproductive and respiratory syndrome.**
R. R. Rowland, *Kansas State University, Manhattan*.

11:45 AM **Influenza A Viruses in Swine – An Update on Surveillance and Research.**
M. Gramer, *University of Minnesota, Saint Paul*.

## ARPAS Symposium
## Understanding Meta-Analysis
## Chair: John Wagner, Colorado State University

Sponsor: ARPAS

**288-289**

9:30 AM **Introduction**

9:40 AM 316 **Unsophisticated "cowboy" methods used traditionally to merge results from multiple experiments**.
F. N. Owens* and A. Hassan, *Pioneer Hi-Bred Int'l*, *Johnston, IA*.

10:10 AM 317 **Meta-analysis: The good, the bad and the ugly.**
I. J. Lean* and A. R. Rabiee, *SBScibus*, *Camden, NSW, Australia*.

10:40 AM **Panel Discussion**

## Beef Species
## Beef Production
## Chair: Andy Herring, Texas A&M University

**389**

9:30 AM 318 **Relationship between postweaning RFI in heifers and intake and productivity of mid-gestation beef females.**
A. N. Hafla*[1], G. E. Carstens[1], T. D. A. Forbes[2], J. C. Bailey[1], J. T. Walter[1], J. W. Holloway[2], and J. G. Moreno[1], [1]*Texas A&M University*, *College Station*, [2]*Texas AgriLife Research*, *Uvalde*.

9:45 AM 319 **Using a mechanistic nutrition model to identify efficient beef cows under grazing conditions.**
B. M. Bourg*[1], L. O. Tedeschi[1], A. D. Aguiar[5], F. R. B. Ribeiro[2], J. Genho[3], R. R. Gomez[1], D. Delaney[4], and S. Moore[4], [1]*Texas A&M University*, *College Station*, [2]*Texas A&M University*, *Commerce*, [3]*Eldon Farms*, *Woodville, VA*, [4]*King Ranch*, *Kingsville, TX*, [5]*University of Florida*, *Gainesville*.

10:00 AM 320 **Relationship among lifetime measures of body weight and frame size in beef cows.**
A. C. Echols*, D. A. Fiske, M. L. Wahlberg, and S. P. Greiner, *Virginia Polytechnic Institute and State University*, *Blacksburg*.

10:15 AM 321 **A mineral survey of Louisiana beef cow/calf production systems.**
J. Rowntree*[1], K. Guidry[2], G. Scaglia[2], G. Gentry[2], and L. Southern[2], [1]*Michigan State University*, *East Lansing*, [2]*LSU Agricultural Center*, *Baton Rouge, LA*.

10:30 AM 322 **Finishing steers and bulls with high-vitamin E diets: Effect on pH and tenderness of beef.**
C. Reyes, C. Fuentes, and R. E. Larraín*, *Pontificia Universidad Catolica de Chile*, *Santiago, Chile*.

10:45 AM 323 **Effect of beef cow age and calf sex on model-predicted energy efficiency.**
M. J. Baker*[1], L. O. Tedeschi[2], D. G. Fox[1], and G. Jacimovski[1], [1]*Cornell University*, *Ithaca, NY*, [2]*Texas A&M University*, *College Station*.

11:00 AM **Break**

11:15 AM 324 **Selling prices of Arkansas beef feeder calves as affected by management practices.**
T. R. Troxel* and B. L. Barham, *University of Arkansas, Department of Animal Science*, *Little Rock*.

11:30 AM 325 **The relationship between climatic conditions and the incidence of calving.**
T. R. Troxel*[1], M. S. Gadberry[1], D. Hubbell[2], and W. Kellogg[3], [1]*University of Arkansas, Department of Animal Science*, *Little Rock*, [2]*University of Arkansas, Department of Animal Science*, *Batesville*, [3]*University of Arkansas, Department of Animal Science*, *Fayetteville*.

11:45 AM 326 **Selling price of Arkansas beef feeder calves as affected by phenotypic expression.**
B. L. Barham* and T. R. Troxel, *University of Arkansas, Department of Animal Science*, *Little Rock*.

12:00 PM 327 **Using ultrasonography to determine reproductive tract development in beef heifers.**
R. A. Cushman*, L. A. Kuehn, R. M. Thallman, W. M. Snelling, and H. C. Freetly, *USDA-ARS U.S. Meat Animal Research Center*, *Clay Center, NE*.

12:15 PM 328 **Characterization of feeding behavior of abrupt-weaned crossbred heifer calves.**
A. N. Loyd*[1,4], R. C. Vann[2], J. P. Banta[3], T. H. Welsh[1], J. A. Carroll[4], and R. D. Randel[5], [1]*Texas AgriLife Research*, *College Station*, [2]*MAFES, Mississippi State University*, *Raymond*, [3]*Texas AgriLife Extension*, *Overton*, [4]*Livestock Issues Research Unit, USDA-ARS*, *Lubbock, TX*, [5]*Texas AgriLife Research*, *Overton, TX*.

## Breeding and Genetics
## Genomic Selection and Whole-Genome Association II
## Chair: John B. Cole, Animal Improvement Programs Laboratory, ARS-USDA, Beltsville, MD
## 298-299



9:30 AM 329 **Use of the Illumina Bovine3K BEAD chip in dairy genomic evaluation.**
G. R. Wiggans[1], T. A. Cooper*[1], K. M. Olson[2], and P. M. VanRaden[1], [1]*Animal Improvement Programs Laboratory, ARS, USDA*, *Beltsville, MD*, [2]*National Association of Animal Breeders*, *Columbia, MO*.

9:45 AM 330 **Properties of different density genotypes used in dairy cattle evaluation.**
P. M. VanRaden[1], M. E. Tooker*[1], K. M. Olson[2], T. A. Cooper[1], G. R. Wiggans[1], and C. P. Van Tassell[3], [1]*Animal Improvement Programs Laboratory, ARS, USDA*, *Beltsville, MD*, [2]*National Association of Animal Breeders*, *Columbia, MO*, [3]*Bovine Functional Genomics Laboratory, ARS, USDA*, *Beltsville, MD.*

10:00 AM 331 **Use of the partial least-squares regression to impute missing markers when some animals are genotyped with low-density SNP platforms.**
C. Dimauro*[1], S. Sorbolini[1], E. Pintus[1], J. T. van Kaam[2], and N. P. P. Macciotta[1], [1]*Università di Sassari*, *Sassari, Italy*, [2]*Associazione Nazionale Allevatori Frisona Italiana*, *Cremona, Italy*.

10:15 AM 332 **Reduced dimensionality in GS models through Lassoed supervised principal components.**
C. Maltecca* and K. A. Gray, *North Carolina State University*, *Raleigh*.

10:30 AM 333 **FImpute - An efficient imputation algorithm for dairy cattle populations.**
M. Sargolzaei*[1,2], J. P. Chesnais[1], and F. S. Schenkel[2], [1]*L'Alliance Boviteq*, *Saint-Hyacinthe, QC, Canada*, [2]*University of Guelph*, *Guelph, ON, Canada*.

10:45 AM 334 **Estimation of linkage disequilibrium in four US pig breeds.**
Y. M. Badke*[1], R. O. Bates[1], C. W. Ernst[1], C. Schwab[2], and J. P. Steibel[1], [1]*Department of Animal Science, Michigan State University*, *East Lansing*, [2]*National Swine Registry*, *West Lafayette, IN*.

11:00 AM 335 **A major QTL for response to porcine reproductive and respiratory syndrome virus in pigs.**
N. Boddicker*[1], D. J. Garrick[1], J. M. Reecy[1], R. Rowland[2], M. F. Rothschild[1], J. P. Steibel[3], J. K. Lunney[4], and J. C. M. Dekkers[1], [1]*Iowa State University*, *Ames*, [2]*Kansas State University*, *Manhattan*, [3]*Michigan State University*, *East Lansing*, [4]*United States Department of Agriculture*, *Beltsville, MD*.

11:15 AM 336 **Use of sample pooling in a genome-wide association study identifies chromosomal regions affecting incidence of bovine respiratory disease.**
L. A. Kuehn*, J. W. Keele, E. Casas, S. A. Jones, D. A. King, T. G. McDaneld, T. P. L. Smith, and T. L. Wheeler, *USDA, ARS, U.S. Meat Animal Research Center*, *Clay Center, NE*.

11:30 AM 337 **Genetic analysis of dry matter intake in Holstein cows.**
D. Spurlock*, A. Wolc, D. Elkins, E. Scalese, J. Dekkers, and R. Fernando, *Iowa State University*, *Ames*.

11:45 AM 338 **Genetic markers in bovine chromosome 14 are significant for residual feed intake in steers.**
A. K. Lindholm-Perry*, L. A. Kuehn, T. P. L. Smith, W. M. Snelling, and H. C. Freetly, *USDA, ARS, U.S. Meat Animal Research Center*, *Clay Center, NE*.

12:00 PM 339 **QTL-by-feeding period interaction for residual feed intake in crossbred steers: a genome selection approach.**
O. N. Durunna*[1], D. J. Nkrumah[2], S. S. Moore[1], and Z. Wang[1], [1]*University of Alberta*, *Edmonton, Alberta, Canada*, [2]*Pfizer Animal Genetics*, *Kalamazoo, MI*.

12:15 PM 340 **Identification of genomic markers for feed efficiency in purebred Simmental, Angus and crossbred steers.**
N. V. L. Serão*[1], A. D. Markey[1], M. Pérez-Enciso[2], D. B. Faulkner[1], J. E. Beever[1], and S. L. Rodríguez-Zas[1], [1]*University of Illinois at Urbana-Champaign*, *Urbana*, [2]*Universitat Autònoma de Barcelona*, *Barcelona, Catalonia, Spain*.

12:30 PM 341 **Prediction of genomic estimated breeding values for temperament at weaning in *Bos indicus* crossbreds using Bayesian Inference.**
L. L. Hulsman*[1], S. O. Peters[2], J. O. Sanders[1], A. D. Herring[1], C. A. Gill[1], and D. G. Riley[1], [1]*Department of Animal Science, Texas A&M University*, *College Station*, [2]*Department of Animal and Range Sciences, New Mexico State University*, *Las Cruces*.

## Companion Animals Symposium
## Promoting Companion Animal Biology and Research in Animal Sciences
## Chair: Cheryl L. Morris, Omaha's Henry Doorly Zoo
Sponsors: Hill's Science Diet, Nestlé Purina, Proctor and Gamble
**390**

9:30 AM 342 **Reaching out: Opportunities for developing companion animal biology**.
C. L. Morris*, *Omaha's Henry Doorly Zoo*, *Omaha, NE*.

9:35 AM 343 **Wants and needs: What students want may not be what the current comparative animal industry needs.**
K. D. Ange-van Heugten*, *North Carolina State University*, *Raleigh*.

10:10 AM 344 **Cat and mouse: Utilizing technology and science to reach students.**
N. A. Dreschel*, *Pennsylvania State University*, *University Park*.

10:45 AM 345 **Research and outreach: Blending the basic and the applied.**
L. K. Karr-Lilienthal*, *University of Nebraska-Lincoln*, *Lincoln*.

11:20 AM 346 **Biodiversity is life: Teaching conservation biology with zoos and aquariums.**
R. L. Krisher*, *National Foundation for Fertility Research*, *Lone Tree, CO*.

11:55 AM 347 **The future of companion animal biology in academics.**
A. Fischer*, *University of Illinois*, *Urbana*.

## Contemporary and Emerging Issues Symposium
## Emerging Animal Welfare Issues
## Chair: Temple Grandin, Colorado State University
Sponsor: Elanco Animal Health, Monsanto Co.
**286-287**

9:30 AM 348 **Does high production increase the occurrence of health problems in dairy cows?**
K. D. Vogel*, *Department of Food and Animal Science, University of Wisconsin-River Falls*, *River Falls*.

10:00 AM 349 **Potential solutions for reducing lameness in dairy cows.**
N. Cook*, *University of Wisconsin*, *Madison*.

10:30 AM 350 **The national shortage of food animal veterinarians: What's being done to address the issue?**
D. G. Bristol*, *North Carolina State University*, *Raleigh*.

11:00 AM 351 **Animal welfare issues: Organic and conventional.**
W. K. Fulwider*, *Cropp Cooperative*, *LaFarge, WI*.

11:30 AM 352 **Consequence of changing standards for somatic cell count on US Dairy Herd Improvement herds.**
H. D. Norman*, J. R. Wright, and R. H. Miller, *Animal Improvement Programs Laboratory, USDA-ARS*, *Beltsville, MD*.

11:45 AM 353 **Current level of compliance with EU bulk tank SCC standards and proposed US standards based on data from four Federal Milk Marketing Orders.**
J. E. Lombard[1], H. D. Norman*[2], C. A. Kopral[1], J. M. Rodriguez[1], and J. R. Wright[2], [1]*USDA-APHIS-VS, Centers for Epidemiology and Animal Health*, *Fort Collins, CO*, [2]*USDA-ARS, Animal Improvement Programs Laboratory*, *Beltsville, MD*.

12:00 PM 354 **Latinos and animal agriculture.**
S. Archibeque-Engle* and I. N. Roman-Muniz, *Colorado State University*, *Fort Collins*.

12:15 PM 355 **Effect of live yeast supplementation on milk production and health status of lactating camels (*Camelus dromedarius*).**
P. Nagy*[1], E. Chevaux[3], M. Khettou[3], O. Marko[2], S. Thomas[2], U. Wernery[2], and J. Juhasz[2], [1]*Industries for Camel Milk and Products*, *Dubai, United Arabic Emirates*, [2]*Central Veterinary Research Institute*, *Dubai, United Arabic Emirates*, [3]*Lallemand SAS*, *Toulouse, France*.

12:30 PM 356 **Why people become vegetarian and/or vegan: Results of a survey of US self-identified vegans.**
S. D. Lukefahr*[1], R. A. Cheeke[2], and P. R. Cheeke[3], [1]*Texas A&M University-Kingsville*, [2]*Corvallis, OR*, [3]*Oregon State University*, *Corvallis*.

## Food Safety
## Chair: Susan K. Duckett, Clemson University
## 297

9:30 AM 357 **Does pre-slaughter stress affect pork safety risk?**
M. H. Rostagno*, S. D. Eicher, and D. C. Lay, *USDA-ARS-LBRU*, *West Lafayette, IN*.

9:45 AM 358 **Salt and nitrite at concentrations relevant to meat processing enhances Shiga toxin II production by *E. coli* O157:H7.**
S. M. Harris*, S. A. Olsen, J. Hu, M. Du, and M. J. Zhu, *Department of Animal Science, University of Wyoming*, *Laramie*.

10:00 AM 359 **Detection of major serotypes of Shiga-toxin producing *E. coli* in bovine feces by multiplex PCR.**
Z. Paddock*, X. Shi, T. G. Nagaraja, and J. Bai, *Kansas State University*, *Manhattan*.

10:15 AM 360 **Microbial contamination rates and antimicrobial resistance patterns in "no antibiotics added" labeled chicken products.**
J. Zhang*[1], A. Massow[1], M. M. Stanley[1], M. Papariella[1], X. Chen[3], B. Kraft[2], and P. D. Ebner[1], [1]*Purdue University Department of Animal Sciences*, *West Lafayette, IN*, [2]*Purdue University College of Veterinary Medicine*, *West Lafayette, IN*, [3]*University of Illinois at Urbana-Champaign Department of Animal Sciences*, *Urbana-Champaign*.

10:30 AM 361 **Antimicrobial activities and comparing bacterial membrane interactions of porcine lactoferricin derived peptides.**
F. Han*, Y. Liu, Y. Xie, Y. Gao, and Y. Wang, *Institute of Feed Science*, *Hangzhou, Zhejiang, China*.

10:45 AM 362 **Nitrate and nitrite partition in cheese and whey during cheesemaking.**
F. F. Pinheiro, L. M. Fonseca*, M. O. Leite, M. M. O. P. Cerqueira, R. Rodrigues, C. F. A. M. Penna, and M. R. Souza, *Veterinary School/Universidade Federal de Minas Gerais*, *Belo Horizonte, MG, Brazil*.

11:00 AM 363 **Prevalence of *Coxiella burnetii* in bulk tank milk and associations with herd characteristics on US dairy operations.**
J. E. Lombard[1], S. N. Gibbons-Burgener[2], and C. P. Fossler*[1], [1]*USDA-APHIS-VS, Centers for Epidemiology and Animal Health*, *Fort Collins, CO*, [2]*University of Wisconsin, Madison*, *Madison*.

11:15 AM 364 **Bulk milk somatic cell penalties in herds enrolled in dairy herd improvement programs.**
K. J. Hand*[1], A. Godkin[2], and D. F. Kelton[3], [1]*Strategic Solutions Group*, *Puslinch, ON, Canada*, [2]*Ontario Ministry of Agriculture, Food and Rural Affairs*, *Elora, ON, Canada*, [3]*University of Guelph*, *Guelph, ON, Canada*.

11:30 AM 365 **A novel analysis strategy of detection hydrolysate protein adulteration in milk.**
Z. Chen[1] and D. M. Barbano*[2], [1]*Analysis and Testing Center, Shandong University of Technology*, *Zibo, Shandong Province, PRC*, [2]*Department of Food Science, Cornell University*, *Ithaca, NY*.

## Lactation Biology 1
## Chair: Mike Van Amburgh, Cornell University
## 399

9:30 AM 366 **Identification of a short isoform of the porcine prolactin receptor and its variants.**
J. F. Trott*, A. Schennink, and R. C. Hovey, *University of California, Davis*.

9:45 AM 367 **Comparative transcriptome analysis of laser microdissected cells from bovine mammary gland.**
K. M. Daniels*[1], R. K. Choudhary[2], C. M. Evock-Clover[3], R. W. Li[3], W. Garrett[3], and A. V. Capuco[3,2], [1]*The Ohio State University*, *Wooster*, [2]*University of Maryland*, *College Park*, [3]*USDA-ARS*, *Beltsville, MD*.

10:00 AM 368 **Acute DNA methylation changes are associated with involution and re-initiation of lactation in dairy cows.**
K. M. Swanson*[1], K. Stelwagen[2], R. A. Erdman[3], and K. Singh[1], [1]*AgResearch Ltd.*, *Ruakura Research Centre, Hamilton, New Zealand*, [2]*Agri-Search*, *Hamilton, New Zealand*, [3]*University of Maryland*, *College Park*.

10:15 AM 369 **Ontogeny of nuclear and cytoplasmic myoepithelial markers during prepubertal bovine mammary development.**
S. Safayi*[1], N. Korn[1], A. Bertram[1], R. M. Akers[2], A. V. Capuco[3], S. L. Pratt[1], S. Calcatera[1], C. Klein[1], and S. Ellis[1], [1]*Clemson University*, *Clemson, SC*, [2]*Virginia Polytechnic Institute and State University*, *Blacksburg*, [3]*USDA-ARS, Beltsville Agricultural Research Center*, *Beltsville, MD*.

10:30 AM 370 **Multispectral analysis of myoepithelial cell development in prepubertal bovine mammary gland.**
S. Safayi*[1], N. Korn[1], A. Bertram[1], R. M. Akers[2], A. V. Capuco[3], S. L. Pratt[1], and S. Ellis[1], [1]*Clemson University*, *Clemson, SC*, [2]*Virginia Polytechnic Institute and State University*, *Blacksburg*, [3]*USDA-ARS, Beltsville Agricultural Research Center*, *Beltsville, MD*.

10:45 AM **Break**

11:15 AM 371 **Lactogenic hormones and IGF-I do not regulate glucose transporter gene expression in the bovine mammary gland during the transition period.**
Y. Shao*[1], E. Wall[1], Y. Misra[1], X. Qian[1], R. Blauwiekel[1], T. McFadden[2], and F.-Q. Zhao[1], [1]*Laboratory of Lactation Physiology, Department of Animal Science, University of Vermont*, *Burlington*, [2]*Department of Agricultural, Food and Nutritional Science, University of Alberta*, *Edmonton, Alberta, Canada*.

11:30 AM 372 **Lactogenic complex-induced mammary epithelial cell differentiation is associated with membrane compositional differences.**
N. Argov-Argaman*, K. Mida, and A. Shamay, *The Robert H. Smith Faculty of Agriculture, Food and Environment, The Hebrew University*, *Jerusalem, Israel*.

11:45 AM 373 **Intravenous supplementation of acetate, glucose or essential amino acids to an energy and protein deficient diet in lactating dairy goats: effects on milk production and mammary nutrient extraction.**
S. Safayi*[1,2] and M. O. Nielsen[1], [1]*University of Copenhagen*, *Frederiksberg, Great Copenhagen, Denmark*, [2]*Clemson University*, *Clemson, SC*.

12:00 PM 374 **Expression profiles of microRNAs from non- and lactating bovine mammary glands.**
Z. Li*[1,2], H. Y. Liu[1,2], and J. X. Liu[1,2], [1]*Institute of Dairy Science, College of Animal Sciences*, *Hangzhou, P.R. China*, [2]*MOE Key Laboratory of Molecular Animal Nutrition*, *Hangzhou, P.R. China*.

12:15 PM 835 **Variations in the mammary uptake of nutrients throughout an extended milking interval in dairy cows.**
J. Guinard-Flament*, C. Hurtaud, and S. Lemosquet, *UMR Production du Lait*, *INRA/Agrocampus Ouest, Saint-Gilles, France*.

## Meat Science and Muscle Biology Symposium
## Meat in the Diet
## Chair: Kasey Carlin, North Dakota State University
## 296

9:30 AM 375 **Meat and human cancer.**
L. R. Ferguson*, *The University of Auckland*, *Auckland, New Zealand*.

10:00 AM 376 **Meat lipids in human health.**
S. McNeill*, *National Cattlemen's Beef Association*, *Centennial, CO*.

10:30 AM 377 **Perspective on IOM report: Strategies to reduce sodium in the United States.**
C. A. Mireles DeWitt*, *OSU Seafood Research & Education Center*.

11:00 AM 378 **Nitrite and nitrate in health and disease: A paradigm shift.**
N. S. Bryan*, *Institute of Molecular Medicine, UT Health Science Center*, *Houston, TX*.

## Milk Protein and Enzymes Symposium
## Milk Proteins and Peptides: Bioactivity and Digestion
## Chair: Rafael Jimenez-Flores, California Polytechnic State University

Sponsor: EAAP

**295**

9:30 AM 379 **Structural bases for the nutritional and biological properties of the caseins.**
H. M. Farrell*[1], E. L. Malin[1], E. M. Brown[2], and A. Mora-Gutierrez[3], [1]*USDA, ERRC, Dairy and Functional Foods RU*, *Wyndmoor, PA*, [2]*USDA, ERRC, Biobased and Other Animal Coproducts RU*, *Wyndmoor, PA*, [3]*Cooperative Agricultural Research Center, Prairie View A&M University*, *Prairie View, TX*.

10:00 AM 380 **Digestibility of whey protein aggregates and fibrils under simulated gastro-intestinal environments.**
H. Singh*, M. Peram, S. Loveday, B. Libby, and Y. Aiqain, *Riddet Institute, Massey University*, *Palmerston North, New Zealand*.

10:30 AM 381 **Peptides derived from whey protein: Endothelium and vascular bioactive function.**
E. D. Bastian* and L. W. Ward, *Glanbia Nutritionals Inc.*, *Twin Falls, ID*.

11:00 AM 382 **The structure of dairy products modifies the kinetics of protein hydrolysis and the release of bioactive peptides in the gut during digestion.**
D. Dupont*[1,2], K. Bouzerzour[1,2], F. Barbe[1,2], Y. Le Gouar[1,2], and O. Menard[1,2], [1]*National Institute for Agricultural Research*, *Rennes, France*, [2]*Agrocampus Ouest*, *Rennes, France*.

11:30 AM 383 **Effects of dietary milk fat globule membrane in the gut and on systemic lipid metabolism.**
R. Ward*[1], R. Jimenez-Flores[2], A. Zhou[1], and K. Hintze[1], [1]*Utah State University*, *Logan*, [2]*California Polytechnic State University*, *San Luis Obispo*.



## Nonruminant Nutrition
## Amino Acids
## Chair: David Bravo, Pancosma SA, Geneva, Switzerland

Sponsor: Archer Daniels Midland

**383-385**

9:30 AM 384 **Effects of creep feeding and supplemental glutamine or glutamine plus glutamate (AminoGut) on pre- and post-weaning growth performance and intestinal health of piglets.**
R. Cabrera*[1], J. Usry[2], E. Nogueira[3], M. Kutschenko[3], A. Moeser[1], and J. Odle[1], [1]*North Carolina State University, Raleigh*, [2]*Ajinomoto Heartland LLC, Chicago, IL*, [3]*Ajinomoto Brazil, Brazil*.

9:45 AM 385 **Metabolomic analysis of the response to weaning and dietary L-glutamine supplementation in piglets using gas chromatography/mass spectrometry.**
Y. Xiao*[1], T. Wu[1], B. Dai[2], S. Luo[1], J. Feng[2], and A. Chen[1], [1]*Zhejiang University*, *Hangzhou, Zhejiang, China*, [2]*Zhejiang Gomore Group*, *Hangzhou, Zhejiang, China*.

10:00 AM 386 **Feed efficiency of 7- to 16-kg pigs is maximized when additional lysine is supplied by L-Lys instead of intact protein, but is not affected when diets are supplemented with differing sources of non-essential amino acid nitrogen.**
C. K. Jones*[1], J. A. Acosta[2], M. D. Tokach[3], J. L. Usry[4], C. R. Neill[5], and J. F. Patience[1], [1]*Iowa State University*, *Ames*, [2]*Universidad Nacional de Colombia*, *Bogotá, Columbia*, [3]*Kansas State University*, *Manhattan*, [4]*Ajinomoto Heartland LLC*, *Chicago, IL*, [5]*Pig Improvement Company*, *Hendersonville, TN*.

10:15 AM 387 **Effect of increasing levels of lysine in the diet on growth performance and carcass and meat quality of growing-finishing pigs.**
L. Cámara[1], M. P. Serrano[1], J. I. Morales[1], E. Alcázar[2], J. L. Sánchez[2], and G. G. Mateos*[1], [1]*Departamento de Producción Animal, UPM*, *Ciudad Universitaria, s/n. 28040, Madrid*, [2]*S.A.T. Vallehermoso*, *Ctra. La Solana a Infantes, km 9. 13248, Alhambra, Ciudad Real*.

10:30 AM 388 **Apparent prececal digestibility of amino acids and performance of broiler chickens fed soybean meal-based diets.**
A. F. Agboola*[1] and E. A. Iyayi[1], [1]*Department of Animal Science, University of Ibadan*, *Ibadan, Oyo, Nigeria*, [2]*University of Ibadan*, *Ibadan, Oyo, Nigeria*.

10:45 AM 389 **Amino acid digestibility and energy content in Dried Fermentation Biomass, Peptone 50, and P.E.P. Two Plus fed to weanling pigs.**
R. C. Sulabo*[1], J. K. Mathai[1], J. L. Usry[2], B. W. Ratliff[3], D. M. McKilligan[3], and H. H. Stein[1], [1]*University of Illinois*, *Urbana*, [2]*Ajinomoto Heartland LLC*, *Chicago, IL*, [3]*TechMix LLC*, *Stewart, MN*.

11:00 AM **Break**

11:15 AM 390 **Digestibility of amino acids in corn, corn co-products, and bakery meal fed to growing pigs.**
F. N. Almeida*, G. I. Petersen, and H. H. Stein, *University of Illinois*, *Urbana*.

11:30 AM 391 **Effect of L-Trp supplementation on growth performance pigs transitioning from nursery to finisher pens in a commercial farm.**
Y. B. Shen*[1], G. Voilqué[1], D. Kendall[2], D. Sykes[2], and S. W. Kim[1], [1]*North Carolina State University*, *Raleigh*, [2]*Murphy-Brown LLC*, *Rose Hill, NC*.

11:45 AM 392 **Effect of L-Trp supplementation on growth and stress responses of nursery pigs fed diets varying large neutral amino acid concentrations.**
Y. B. Shen*, G. Voilqué, and S. W. Kim, *North Carolina State University*, *Raleigh*.

12:00 PM 393 **Feeding modality affects muscle protein deposition by influencing protein synthesis but not degradation in muscle of neonatal pigs.**
S. W. El-Kadi*[1], A. Suryawan[1], M. C. Gazzaneo[1], R. A. Orellana[1], N. Srivastava[1], H. V. Nguyen[1], R. Murgas-Torrazza[1], G. E. Lobley[2], and T. A. Davis[1], [1]*USDA/ARS Children's Nutrition Research Center, Dept. Pediatrics, Baylor College of Medicine*, *Houston, TX*, [2]*Division of Obesity and Metabolic Health, Rowett Institute of Nutrition and Health, University of Aberdeen*, *Aberdeen, UK*.

12:15 PM 394 **Arginine deficiency is responsible for high rates of mortality in low-birth-weight piglets.**
G. Wu*, X. L. Li, R. Rezaei, and D. A. Knabe, *Texas A&M University*, *College Station*.

## Physiology and Endocrinology
## Growth and Metabolism
## Chair: Kelly Lynn Perfield, Elanco Animal Health
## 393

9:30 AM 395 **ASAS Early Career Award Presentation: Placental programming: How the maternal environment can impact placental growth and function.**
K. A. Vonnahme*, C. O. Lemley, L. E. Camacho, L. A. Lekatz, D. A. Redmer, L. P. Reynolds, and J. S. Canton, *Center for Nutrition and Pregnancy, Department of Animal Sciences, NDSU*, *Fargo*.

10:00 AM 396 **Blood metabolites and hormones as potential markers of body reserves dynamic and energetic balance in ruminants.**
E. González-García*[1], N. Debus[1], P. Hassoun[1], S. Camous[2], M.-R. Aurel[3], F. Bocquier[1], and F. Barillet[4], [1]*INRA UMR868, Systèmes d'Èlevage Méditerranées et Tropicaux (SELMET), Montpellier, France*, [2]*INRA UMR1198, Biologie du Développement et Reproduction (BDR), Domaine de Vilvert, Jouy-en-Josas Cedex, France*, [3]*INRA UE0321, Domaine Expérimental de La Fage, Roquefort-Sur-Soulzon, France*, [4]*INRA UR0631, Station d'Amélioration Génétique des Animaux (SAGA), Chemin de Borde Rouge, Auzeville, BP 52627, Castanet-Tolosan Cedex, France*.

10:15 AM 397 **Metabolic gene expression in bovine ruminal tissue in response to age and pre and postweaning plane of nutrition.**
A. Naeem*, J. Stamey, J. K. Drackley, and J. J. Loor, *University of Illinois*, *Urbana.*

10:30 AM 398 **Functional genomics of liver in crossbred beef cows in two forage allowances during gestation and lactation period.**
J. Laporta*[1], G. Greif[2], P. Zorrilla[2], H. Naya[2], G. J. M. Rosa[3], and M. Carriquiry[1], [1]*Facultad de Agronomía, Universidad de la República*, *Montevideo, Uruguay*, [2]*Instituto Pasteur*, *Montevideo, Uruguay*, [3]*University of Wisconsin*, *Madison*.

10:45 AM 399 **Alterations in the somatotropic axis during a dual stress and *M. haemolytica* challenge in beef steers.**
S. M. Falkenberg*[1], J. A. Carroll[2], M. A. Ballou[5], J. L. Sartin[3], J. O. Buntyn[1], T. Elsasser[4], S. Kahl[4], and T. B. Schmidt[1], [1]*Mississippi State University*, *Mississippi State*, [2]*Livestock Issues Research Unit, USDA-ARS*, *Lubbock, TX*, [3]*Auburn University College of Veterinary Medicine*, *Auburn, AL*, [4]*Bovine Functional Genomics Lab, USDA-ARS*, *Beltsville, MD*, [5]*Texas Tech University*, *Lubbock*.

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| 11:00 AM | | **Break** |
| 11:15 AM | 400 | **Effects of plane of nutrition and 2,4-thiazolidinedione on insulin responses and adipose tissue gene expression in dairy cattle during late gestation.**<br>K. M. Schoenberg* and T. R. Overton, *Cornell University*, *Ithaca, NY*. |
| 11:30 AM | 401 | **Effects of overstocking on glucocorticoid production and analytes associated with energy metabolism.**<br>J. M. Huzzey*[1], D. V. Nydam[1], R. J. Grant[2], and T. R. Overton[1], [1]*Cornell University*, *Ithaca, NY*, [2]*W. H. Miner Institute*, *Chazy, NY*. |
| 11:45 AM | 402 | **Effect of milking frequency and feeding level in early lactation on metabolites in grazing dairy cows.**<br>J. K. Kay*, C. V. C. Phyn, A. G. Rius, S. R. Morgan, T. M. Grala, and J. R. Roche, *DairyNZ*, *Hamilton, New Zealand*. |
| 12:00 PM | 403 | **Insulin-glucose clamps and intramammary LPS challenge: cross reactions between metabolism and mammary immune response.**<br>M. C. M. B. Vernay, L. Kreipe, H. A. van Dorland, R. M. Bruckmaier, and O. Wellnitz*, *Veterinary Physiology, Vetsuisse Faculty, University of Bern*, *Bern, Switzerland*. |
| 12:15 PM | 404 | **Insulin sensitivity in tropically adapted cattle selected for residual feed intake.**<br>G. L. Shafer*[1,2], A. W. Lewis[1], L. C. Caldwell[2], A. N. Hafla[2], G. E. Carstens[2], T. D. A. Forbes[3], T. H. Welsh[2], and R. D. Randel[1], [1]*Texas AgriLife Research*, *Overton*, [2]*Texas AgriLife Research*, *College Station*, [3]*Texas AgriLife Research*, *Uvalde*. |

## Production, Management and the Environment & Forages and Pastures Joint Symposium
## Environmental Impact of Beef and Dairy Systems
## Chairs: Juan Tricarico, Innovation Center for U.S. Dairy, and J. W. Schroeder, North Dakota State University

Sponsor: Dairy Research Institute/Innovation Center for U.S. Dairy

**291-292**

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| 9:30 AM | 405 | **An overview of the environmental impact of beef and dairy systems.**<br>J. L. Capper*, *Washington State University*, *Pullman*. |
| 10:15 AM | 406 | **Whole farm assessment—Using precision agriculture to assess, measure, and mitigate environmental impacts of on-farm practices**.<br>Y. Wang*, *Innovation Center for U.S. Dairy*, *Rosemont, IL*. |
| 11:00 AM | 407 | **Measurement strategies for reducing enteric methane from beef and dairy production.**<br>K. A. Beauchemin* and S. M. McGinn, *Agriculture and Agri-Food Canada*, *Lethbridge, AB, Canada*. |
| 11:45 AM | | **Lunch** |
| 2:00 PM | 408 | **Dairy cropping systems and air quality.**<br>F. M. Mitloehner*, *University of California, Davis*. |
| 2:45 PM | 409 | **Cow of the future—A research roadmap for mitigating enteric methane emissions from dairy cattle.**<br>W. R. Wailes*[1], J. R. Knapp[2], and M. D. Welch[3], [1]*Colorado State University*, *Fort Collins*, [2]*Fox Hollow Consulting LLC*, *Columbus, OH*, [3]*Dairy Research Institute*, *Rosemont, IL*. |
| 3:30 PM | 410 | **Diet formulation as an effective tool for mitigating the environmental impact of dairy and beef cattle operations**.<br>A. N. Hristov*, *Pennsylvania State University*, *University Park.* |
| 4:15 PM | 411 | **Managing the environmental impact of pasture production systems**.<br>K. A. Johnson* and C. D. Gambino, *Washington State University*, *Pullman*. |

## Ruminant Nutrition
## Beef: Vitamin and Minerals
## Chair: Jon Schoonmaker, Purdue University

**294**

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| 9:30 AM | 412 | **Ruminal degradable sulfur from organic and inorganic sources in beef cattle finishing diets.**<br>J. O. Sarturi*, G. E. Erickson, T. J. Klopfenstein, and C. D. Buckner, *University of Nebraska*, *Lincoln*. |

9:45 AM 413 **Effects of trace mineral injections on measures of growth and trace mineral status of pre-weaned beef calves.**
J. D. Arthington*[1] and L. J. Havenga[2], [1]*University of Florida, Range Cattle Research and Education Center*, *Ona*, [2]*Multimin USA Inc.*, *Fort Collins, CO*.

10:00 AM 414 **Effect of chromium supplementation on finishing Nellore bulls performance, carcass characteristics, and liver abscesses.**
R. S. Marques[1], A. M. Pedroso*[2], C. T. S. Dias[1], L. R. M. Pinto[1], and F. A. P. Santos[1], [1]*University of Sao Paulo, College of Agricultural Sciences*, *Piracicaba/SP, Brazil*, [2]*Embrapa Cattle Southeast*, *Sao Carlos/SP, Brazil*.

10:15 AM 415 **Meta-analysis of the effect of dietary sulfur on feedlot health.**
C. A. Nichols*[1], V. R. Bremer[1], A. K. Watson[1], C. D. Buckner[1], J. L. Harding[1], D. R. Smith[2], G. E. Erickson[1], and T. J. Klopfenstein[1], [1]*Department of Animal Science, University of Nebraska-Lincoln*, *Lincoln*, [2]*School of Veterinary Medicine and Biomedical Sciences, University of Nebraska-Lincoln*.

10:30 AM 416 **Effect of delaying the feeding of high sulfur diets to feedlot cattle until after adaptation to a finishing diet.**
M. E. Drewnoski* and S. L. Hansen, *Iowa State University*, *Ames*.

10:45 AM 417 **Effects of zinc and copper source and concentration on feedlot performance and carcass characteristics in yearling steers.**
M. G. Dib*[1], J. J. Wagner[1], K. Perryman[2], J. W. Spears[3], and T. E. Engle[2], [1]*Colorado State University*, *Fort Collins*, [2]*Micronutrients*, *Indianapolis, IN*, [3]*North Carolina State University*, *Raleigh*.

11:00 AM 418 **Effects of supplemental copper and Linpro on performance and carcass characteristic of beef heifers.**
C. A. Alvarado*, C. C. Aperce, K. A. Miller, C. L. van Bibber, S. Uwituze, and J. S. Drouillard, *Kansas State University*, *Manhattan*.

11:15 AM 419 **Chromium supplementation alters the performance and health of feedlot cattle during the receiving period.**
B. C. Bernhard*[1], R. J. Rathmann[1], D. N. Finck[1], W. Rounds[2], and B. J. Johnson[1], [1]*Texas Tech University*, *Lubbock*, [2]*Kemin Industries Inc.*, *Des Moines, IA*.

11:30 AM 420 **Chromium supplementation alters the glucose and lipid metabolism of feedlot cattle during the receiving period.**
B. C. Bernhard*[1], N. C. Burdick[2], R. J. Rathmann[1], D. N. Finck[1], J. A. Carroll[2], A. N. Loyd[2], and B. J. Johnson[1], [1]*Texas Tech University*, *Lubbock*, [2]*Livestock Issues Research Unit, USDA-ARS*, *Lubbock, TX*.

## Ruminant Nutrition
## Dairy: Forages and Fiber
## Chair: James Caldwell, Lincoln University
## 293

9:30 AM 421 **Milk production responses to soybean meal and canola meal in dairy cows fed grass silage based diets—A meta-analysis.**
P. Huhtanen*[1], M. Hetta[1], and C. Swensson[2], [1]*Swedish University of Agricultural Sciences*, *Umeå, Sweden*, [2]*Swedish Dairy Association*, *Lund, Sweden*.

9:45 AM 422 **Intake and milk production of dairy cows fed diets including low lignin/high fiber digestibility corn silage.**
N. B. Litherland*[1], H. G. Jung[1,2], and J. G. Linn[1], [1]*University of Minnesota*, *St Paul*, [2]*USDA-ARS*, *St Paul, MN*.

10:00 AM 423 **Effects of supplementing starch or sugar pre-and postpartum to dairy cows fed TMR with wheat straw or grass hay prepartum: Performance, metabolism and health.**
N. B. Litherland*[1], L. Davis[2], S. Emanuele[2], and H. Blalock[2], [1]*University of Minnesota*, *St Paul*, [2]*Quality Liquid Feeds Inc.*, *Dodgeville, WI*.

10:15 AM 424 **Alternative models of kinetics impact indigestible neutral detergent fiber and estimates of ruminal digestibility.**
D. R. Mertens*, *Mertens Innovation & Research LLC*, *Belleville, WI*.

10:30 AM 425 **Comparison of alternative methods, sample grinds, and fermentation times for determining indigestible neutral detergent fiber.**
J. Boyd*[1] and D. R. Mertens[2], [1]*US Dairy Forage Research Center*, *Madison, WI*, [2]*Mertens Innovation & Research LLC*, *Belleville, WI*.

10:45 AM 426 **Effects of daily ingredient dry matter adjustment of total mixed ration using Intelligent Ration Monitoring (IRM) NIR forage analyzer on commercial dairy farm performance.**
D. N. L. da Silva*[1], A. Barbi[2], A. Ghiraldi[2], D. Allen[3], and N. B. Litherland[1], [1]*University of Minnesota*, *St Paul*, [2]*Dinamica Generale*, *Poggio Rusco, Italy*, [3]*Gar-Lin Dairy*, *Eyota, MN*.

11:00 AM 427 **Effects of prepartum supplementation of starch or sugar to dairy cows fed TMR with thirty percent wheat straw or grass hay on colostrum yield and composition.**
N. B. Litherland*[1], L. Davis[2], S. Emanuele[2], and H. Blalock[2], [1]*University of Minnesota*, *St Paul*, [2]*Quality Liquid Feeds Inc.*, *Dodgeville, WI*.

11:15 AM 428 **Effects of corn gluten feed and effective NDF on ruminal pH and productivity of lactating dairy cattle.**
M. L. Sullivan*[1], K. N. Grigsby[2], and B. J. Bradford[1], [1]*Department of Animal Science and Industry, Kansas State University*, *Manhattan*, [2]*Cargill Incorporated*, *Blair, NE*.

11:30 AM 429 **Feeding forage cubes to identify divergence for residual feed intake in dairy cows.**
G. C. Waghorn*[1], K. A. Macdonald[1], S. R. Davis[2], and R. J. Spelman[3], [1]*DairyNZ*, *Hamilton, New Zealand*, [2]*ViaLactia Biosciences*, *Auckland, New Zealand*, [3]*Livestock Improvement Corporation*, *Hamilton, New Zealand*.

11:45 AM 430 **A mathematical model to predict the size and rate of digestion of a fast and slow pool of NDF and the indigestible NDF.**
E. Raffrenato*, C. F. Nicholson, and M. E. Van Amburgh, *Cornell University*, *Ithaca, NY*.

12:00 PM 431 **Rates of particle size reduction and passage are faster for legume compared to C3 grass resulting in lower rumen fill and less effective fiber.**
K. L. Kammes* and M. S. Allen, *Michigan State University*, *East Lansing*.

12:15 PM 432 **Individual variability of NDF intake and feed conversion efficiency in pasture-based systems.**
S. C. Garcia*[1], F. Bargo[2], and R. K. Jhajj[1], [1]*The University of Sydney*, *Camden, NSW, Australia*, [2]*Elanco Animal Health Southern Cone (Argentina & Chile)*, *Buenos Aires, Argentina*.

## Small Ruminant
## Nutrition
## Chair: Sandra Solaiman, Tuskegee University
## 391



9:30 AM 433 **Cereal nutrition of periparturient ewes: Corn versus wheat-barley.**
A. Nikkhah*, M. Karam Babaei, and H. Mirzaei, *University of Zanjan*, *Zanjan, Iran*.

9:45 AM 434 **Effect of replacement of barley grain with oak acorn (*Querqus persica*) on Markhoz kids' performance.**
E. Foroutan*, O. Azizi, G. H. A. Sadeghi, F. Fatehi, and S. H. Karimi, *Department of Animal Science, Faculty of Agriculture, College of Agricultural and Nature Science, University of Kurdistan*, *Sanandaj, Kurdistan, Iran*.

10:00 AM 435 **Performance of pre-weaned WAD lambs fed Mexican sunflower leaf meal (MSLM) based diets.**
A. H. Ekeocha*, A. O. Akinsoyinu, and O. Makinde, *University of Ibadan*, *Ibadan, Oyo, Nigeria*.

10:15 AM 436 **Effects of including okara into the diet of weanling crossbred Boer goats and its impact on growth and performance.**
L. L. Ramsey*, F. R. B. Ribeiro, J. J. Heitholt, J. A. Carter, W. S. Stewart, and D. D. Weir, *Texas A&M University-Commerce*, *Commerce*.

10:30 AM **Break**

10:45 AM 437 **Energy and protein requirements of Canindé, Moxotó and Boer crossbred goats in semi-arid region of Brazil.**
M. L. Chizzotti*[1,2], K. C. Busato[2,1], T. S. Silva[2], R. T. S. Rodrigues[2], C. W. S. Wanderley[2], I. F. Silva[2], and G. G. L. Araújo[3], [1]*Universidade Federal de Lavras*, *Lavras, MG, Brazil*, [2]*Universidade Federal do Vale do São Francisco*, *Petrolina, PE, Brazil*, [3]*Embrapa CPATSA*, *Petrolina, PE, Brazil*.

11:00 AM 438 **Effect of yeast culture and direct-fed microbes on the growth performance of lambs.**
S. P. Doto*, J. K. Wang, and J. X. Liu, *Institute of Dairy Science, College of Animal Sciences, Zhejaing University*, *Hangzhou 310029, P.R. China*.

11:15 AM 439 **Mineral profile of lactating West African Dwarf ewe fed Mexican sunflower leaf meal based diets.**
A. H. Ekeocha*, *University of Ibadan*, *Ibadan, Oyo, Nigeria*.

11:30 AM 440 **Mineral profile of pregnant West African Dwarf ewe fed Mexican sunflower leaf meal based diets.**
A. H. Ekeocha*, *University of Ibadan*, *Ibadan, Oyo, Nigeria*.

## Swine Species
## Chair: Bradley V. Lawrence, Novus International Inc.
## 386-387

9:30 AM 441 **Nutritive value of palm kernel cake-brewers dried grain (PKC-BDG) based diets supplemented with exogenous enzymes for growing-finishing pigs.**
A. O. K. Adesehinwa*[1], O. O. Obi[1], M. A. Adesina[2], B. A. Makanjuola[1], O. O. Oluwole[1], T. O. Olorungbohunmi[1], and O. Fagbiye[3], [1]*Institute of Agricultural Research and Training, Obafemi Awolowo University*, *Ibadan, Oyo State, Nigeria*, [2]*National Agricultural Extension & Research Liaison Services, Ahmadu Bello University*, *Zaria, Kaduna State, Nigeria*, [3]*Federal College of Animal Health & Production Technology*, *Ibadan, Oyo State, Nigeria*.

9:45 AM 442 **The influence of low and standard energy diets on efficiency, carcass value, and pork quality in Berkshire swine.**
M. J. Bishop*[1], H. N. Zerby[1], S. J. Moeller[1], P. S. Kuber[1], J. M. DeRouchey[2], and K. S. Betts[1], [1]*The Ohio State University*, *Columbus*, [2]*Kansas State University*, *Manhattan*.

10:00 AM 443 **Effects of ractopamine on performance, carcass and meat quality in purebred Berkshire swine.**
K. S. Betts*[1], S. J. Moeller[1], H. N. Zerby[1], J. M. DeRouchey[2], M. D. Cressman[1], M. J. Bishop[1], A. S. Gress[1], and F. L. Fluharty[1], [1]*The Ohio State University*, *Columbus*, [2]*Kansas State University*, *Manhattan*.

10:15 AM 444 **The effects of diet ingredients on gastric ulceration and salivary pH in gestating sows.**
S. L. Wisdom*[1], B. T. Richert[1], J. S. Radcliffe[1], D. C. Lay[2], and J. N. Marchant-Forde[2], [1]*Purdue University*, *West Lafayette, IN*, [2]*USDA-ARS-LBRU*, *West Lafayette, IN*.

10:30 AM 445 **Effect of dietary glutamine supplementation on the apparent total tract digestibility of energy and nutrients and jejunal gene expression in weaned piglets.**
A. Chen*, Y. Xiao, T. Wu, Q. Hong, and C. Yang, *Zhejiang University*, *Hangzhou, Zhejiang, China*.

10:45 AM 446 **Effect of feeding Bt (MON810) maize to pigs from 12 days post-weaning for 110 days on growth performance, body composition, carcass characteristics, organ weights and intestinal morphology.**
S. G. Buzoianu*[1,2], M. C. Walsh[1], G. E. Gardiner[2], M. C. Rea[3], R. P. Ross[3], and P. G. Lawlor[1], [1]*Pig Development Department, Moorepark Animal and Grassland Research and Innovation Centre, Teagasc*, *Fermoy, Co. Cork, Ireland*, [2]*Department of Chemical and Life Sciences, Waterford Institute of Technology*, *Waterford, Ireland*, [3]*Moorepark Food Research Centre, Teagasc*, *Fermoy, Co. Cork, Ireland*.

11:00 AM **Break**

11:15 AM 447 **Effect of feeding genetically modified Bt (MON810) maize to pigs from 12 days post-weaning for 110 days on serum and urine biochemistry.**
S. G. Buzoianu*[1,2], M. C. Walsh[1], G. E. Gardiner[2], M. C. Rea[3], R. P. Ross[3], and P. G. Lawlor[1], [1]*Pig Development Department, Moorepark Animal and Grassland Research and Innovation Centre, Teagasc*, *Fermoy, Co. Cork, Ireland*, [2]*Department of Chemical and Life Sciences, Waterford Institute of Technology*, *Waterford, Ireland*, [3]*Moorepark Food Research Centre, Teagasc*, *Fermoy, Co. Cork, Ireland*.

11:30 AM 448 **Supplementation of xylanase to improve DDGS and corn germ meal utilization by finishing pigs as measured by performance and carcass yield in a commercial environment.**
D. D. Hall*[1], M. U. Steidinger[2], J. C. Remus[3], M. Hruby[3], and A. J. Veldkamp[3], [1]*Hall Farms Consulting, LLC*, *Noblesville, IN*, [2]*Swine Nutrition Services*, *Anchor, IL*, [3]*Danisco Animal Nutrition*, *Waukesha, WI*.

11:45 AM 449 **Monitoring muscle proteolysis in pig plasma.**
K. L. Price* and J. Escobar, *Virginia Polytechnic Institute and State University*, *Blacksburg*.

12:00 PM 450 **Effect of independent laboratory assessment, freezing volume, and other factors influencing post-thaw quality of frozen boar sperm.**
J. M. Ringwelski* and R. V. Knox, *Department of Animal Sciences, University of Illinois*, *Champaign-Urbana*.

12:15 PM 451 **Characteristics of the work habits and demographics of caretakers on swine finishing facilities in Ohio.**
S. M. Crawford*[1], S. J. Moeller[1], P. H. Hemsworth[2], C. C. Croney[1], N. A. Botheras[1], and H. N. Zerby[1], [1]*Ohio State University*, *Columbus*, [2]*University of Melbourne*, *Melbourne, Victoria, Australia*.

## ADSA Foundation Scholar Lecture – Dairy Foods
## Chair: Albert DeVries, University of Florida
Sponsor: ADSA Foundation
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10:30 AM **Introduction**

10:40 PM **ADSA Foundation Scholar Lecture: Dairy food quality and safety: Entering the "omics" era.**
M. Yeung*, *California Polytechnic State University, San Luis Obispo.*

## ADSA Foundation Scholar Lecture – Production
## Chair: Albert DeVries, University of Florida
Sponsor: ADSA Foundation
**397**

2:00 PM **Introduction**

2:10 PM **ADSA Foundation Scholar Lecture: The need for applied research and decision support tools in dairy farm management and decision-making.**
V. E. Cabrera*, *University of Wisconsin, Madison.*

## Animal Behavior and Well-Being 3
## Chair: Cassandra Tucker, University of California-Davis
**297**

2:00 PM 452 **Survey of animal welfare and dairy management practices on 91 Organic Valley dairy farms.**
W. K. Fulwider*, *CROPP Cooperative*, *LaFarge, WI*.

2:15 PM 453 **A dairy quality assurance program for New Mexico dairy producers.**
F. A. Rivera*[1], G. R. Hagevoort[1], M. L. Kinsel[2], and M. A. Smith[1], [1]*NMSU Ag Science Center*, *Clovis, NM*, [2]*Agricultural Information Management Inc.*, *Ellensburg, WA*.

2:30 PM 454 **Effect of prior grazing experiences on grazing behavior and performance of lactating cows.**
F. Lopes*[1], N. M. Esser[1], P. C. Hoffman[1], W. K. Coblentz[2], and D. K. Combs[1], [1]*Department of Dairy Science, University of Wisconsin*, *Madison*, [2]*USDA-ARS*, *Marshfield, WI*.

2:45 PM 455 **Effects of acute and chronic stress on immune- and inflammatory-response gene expression in beef calves.**
C. Terrill*, T. Friend, J. Sawyer, P. Riggs, L. Berghman, S. Garey, D. Riley, A. Adams, and M. Carter, *Texas A&M University*.

3:00 PM 456 **Estimation of genetic parameters for gait in Canadian Holstein cows.**
N. Chapinal*[1,2], F. Miglior[3,4], A. Sewalem[3,4], A. M. de Passille[5], J. Rushen[5], M. A. G. von Keyserlingk[2], and D. M. Weary[2], [1]*Department of Population Medicine, University of Guelph*, *Guelph, ON, Canada*, [2]*Animal Welfare Program, University of British Columbia*, *Vancouver, BC, Canada*, [3]*Guelph Food Research Centre, Agriculture and Agri-Food Canada*, *Guelph, ON, Canada*, [4]*Canadian Dairy Network*, *Guelph, ON, Canada*, [5]*Agriculture and Agri-Food Canada*, *Agassiz, BC, Canada*.

3:15 PM 457 **Automatic estimation of body condition score from digital images.**
M. Caccamo*[1], G. Azzaro[1], G. Gallo[2], G. C. Guarnera[2], J. D. Ferguson[3], and G. Licitra[1,4], [1]*CoRFiLaC, Regione Siciliana*, *Ragusa, Italy*, [2]*IPLAB, Catania University*, *Catania, Italy*, [3]*University of Pennsylvania*, *PA*, [4]*DISPA, Catania University*, *Catania, Italy*.

3:30 PM 458 **Use of infrared thermography to identify thermoregulatory differences between heat-sensitive and heat-tolerant breeds of *Bos taurus* cattle.**
R. E. Chaffin[1], K. J. Hoernig[1], J. S. Johnson[1], J. K. Bryant[1], B. Scharf[1], D. K. Kishore[1], P. A. Eichen[1], E. S. Dierenfeld[2], and D. E. Spiers*[1], [1]*University of Missouri*, *Columbia*, [2]*Novus International, Inc.*, *St. Charles, MO*.

3:45 PM 459 **Effect of climatic on body temperature of dairy cows.**
J. C. Lees* and J. B. Gaughan, *The University of Queensland*, *Australia*.

4:00 PM 460 **Repeatability of subjective and objective measures of exit velocity as an indicator of temperament in feedlot cattle.**
M. D. D. Vetters*, T.E. Engle, J.K. Ahola, and T. Grandin, *Colorado State University*, *Fort Collins*.

4:15 PM 461 **Group pasture versus stall housing effects on cortisol and DHEA concentrations in young Quarter Horses.**
S. M. Garey*, T. H. Friend, L. R. Berghman, J. E. Sawyer, M. M. Vogelsang, A. L. Adams, C. L. Terrill, and M. J. Carter, *Texas A&M University*, *College Station*.

4:30 PM 462 **Cortisol and DHEA concentrations in foals identified as high versus low behavioral responders during weaning.**
S. M. Garey*, T. H. Friend, L. R. Berghman, J. E. Sawyer, M. M. Vogelsang, A. L. Adams, C. L. Terrill, and M. J. Carter, *Texas A&M University*, *College Station*.

4:45 PM 463 **Preference for condensed tannins by sheep in resoponse to challenge infection with *Haemonchus contortus*.**
J. Juhnke[1], J. Miller[2], F. Provenza[1], J. Hall[3], and J. Villalba*[1], [1]*Utah State University, Department of Wildland Resources*, *Logan*, [2]*Louisiana State University, Department of Pathobiological Sciences*, *Baton Rouge*, [3]*Utah State University, Department of Animal Dairy and Veterinary Sciences*, *Logan*.

5:00 PM 464 **Lack of acclimation in Holstein calves exposed to repeated transport.**
A. L. Adams*, T. H. Friend, G. A. Holub, S. M. Garey, C. L. Terrill, M. J. Carter, and A. J. Krenek, *Texas A&M University*, *College Station*.

## Bioethics Symposium
## The Ethical Food Movement: What Does it Mean for Animal Agriculture?
## Chair: Candace Croney, The Ohio State University
Sponsors: Elanco Animal Health, Monsanto Co.
**286-287**

2:00 PM **Introduction**
C. Croney, *The Ohio State University*.

2:05 PM 465 **Food production using animals: The roles of media coverage and societal values in shaping opinions about ethics.**
S. Priest*, *University of Nevada, Las Vegas*.

2:40 PM 466 **The (mis)appropriation of science in framing the ethics of animal production: Environmental issues.**
J. L. Capper*, *Washington State University*, *Pullman*.

3:15 PM **Break**

3:25 PM 467 **What did they just say? Science, politics, and animal welfare.**
J. A. Mench*, *University of California*, *Davis*.

4:00 PM 468 **The (mis)appropriation of science in framing the ethics of animal production: The use of antibiotics.**
M. D. Apley*, *Kansas State University*, *Manhattan*.

4:35 PM **Panel Discussion**

## Breeding and Genetics
## Dairy Cattle Breeding I
## Chair: Christian Maltecca, North Carolina State University
Sponsors: BSAS, EAAP
**298-299**

2:00 PM 469 **Assessing accuracy of heat detection in dairy herds.**
H. Seegers*[1], D. Billon[1], E. Bossard-Apper[2], C. Ponsart[3], B. Grimard[4], and N. Bareille[1], [1]*Research Group Epidemiology and Risk Analysis Oniris-INRA*, *Nantes, France*, [2]*Agriculture School*, *Angers, France*, [3]*UNCEIA*, *Maisons-Alfort, France*, [4]*Veterinary School*, *Maisons-Alfort, France*.

2:15 PM 470 **Heritability and repeatability estimates for twinning rate in the Irish dairy and beef cattle.**
A. M. Doyle[1], R. D. Evans[2], and A. G. Fahey*[1], [1]*University College Dublin*, *Belfield, Dublin 4, Ireland*, [2]*Irish Cattle Breeding Federation*, *Bandon, Co. Cork, Ireland*.

2:30 PM 471 **Genetic analysis of ovulatory disorders in Austrian Fleckvieh cows: A comparison between linear models and survival analysis.**
A. Koeck*[1,2], B. Fuerst-Waltl[2], J. Sölkner[2], C. Egger-Danner[3], and G. Meszaros[2], [1]*Department of Animal and Poultry Science, University of Guelph*, *Guelph, ON, Canada*, [2]*Division of Livestock Sciences, University of Natural Resources and Life Sciences*, *Vienna, Austria*, [3]*ZuchtData EDV-Dienstleistungen GmbH*, *Vienna, Austria*.

2:45 PM 472 **Montbeliarde-sired crossbred cows compared to pure Holstein cows for production, SCS, days open, and survival during their first three lactations.**
A. R. Hazel*, L. B. Hansen, B. J. Heins, and J. G. Linn, *University of Minnesota*, *St. Paul*.

3:00 PM 473 **Joint estimation of genetic parameters for test day somatic cell count and mastitis using a random regression model in the United Kingdom.**
R. Mrode*, T. Pritchard, M. Coffey, and E. Wall, *Scottish Agricultural College*, *Penicuik, Midlothian, UK*.

3:15 PM 474 **Estimation of genetic parameters for health and survival in Canadian Holstein calves.**
C. E. McCorquodale*[1], F. Miglior[2,3], A. Sewalem[2,3], D. Kelton[1], A. Robinson[4], and K. E. Leslie[1], [1]*Department of Population Medicine, University of Guelph*, *Guelph, Ontario, Canada*, [2]*Guelph Food Research Centre, Agriculture and Agri-Food Canada*, *Guelph, Ontario, Canada*, [3]*Canadian Dairy Network*, *Guelph, Ontario, Canada*, [4]*Department of Animal and Poultry Science, University of Guelph*, *Guelph, Ontario, Canada*.

3:30 PM 475 **Genetic parameters of lactation yield in the tropical carora breed with random regression test-day models.**
E. Tullo*[1], S. Biffani[2], C. Maltecca[3], and R. Rizzi[1], [1]*University of Milan, Faculty of Veterinary Medicine, Department of Veterinary Science and Technology for Food Safety*, *Milan, Italy*, [2]*Parco Tecnologico Padano*, *Lodi, Italy*, [3]*Department of Animal Science, North Carolina State University*, *Raleigh*.

## Breeding and Genetics
## Quantitative Animal Breeding
## Chair: Scott Newman, Genus Plc
## 296

2:00 PM 476 **Cooperation under directional selection with kinship-based groups.**
F. Siewerdt*[1], A. D. Franklin[1], J. A. Carrillo[1], A. K. Sasikala-Appukuttan[1], A. S. Schierholt[2], T. E. Callicrate[1], M. A. Campbell[1], and H. L. M. Moreira[3], [1]*University of Maryland*, *College Park, MD*, [2]*Universidade Federal Rural da Amazônia*, *Belém, PA, Brazil*, [3]*Universidade Federal de Pelotas*, *Pelotas, RS, Brazil*.

2:15 PM 477 **A recursive binomial model for piglet mortality.**
L. Varona*[1] and D. Sorensen[2], [1]*Unidad de Genetica Cuantitativa y Mejora Animal, Universidad de Zaragoza*, *Zaragoza, Spain*, [2]*Department of Genetics and Biotechnology, University of Aarhus*, *Tjele, Denmark*.

2:30 PM 478 **Genetic correlation between purebred piglet birth weight and crossbred performance.**
C. Y. Chen*[1,2], I. Misztal[1], S. Tsuruta[1], J. Holl[3], W. O. Herring[3], and M. Culbertson[3], [1]*Department of Animal and Dairy Science, University of Georgia*, *Athens*, [2]*Newsham Choice Genetics*, *Chesterfield, MO*, [3]*Smithfield Premium Genetics Group*, *Rose Hill, NC*.

2:45 PM 479 **Construction of individual breeding values for feed intake of Piétrain boars based on mean pen feed intake, weight and weight gain test station records.**
M. Dufrasne*[1], V. Jaspart[2], J. Wavreille[3], and N. Gengler[1,4], [1]*Animal Science Unit, University of Liege, GxABT*, *Gembloux, Belgium*, [2]*Walloon Pig Breeders Association*, *Ciney, Belgium*, [3]*Walloon Agricultural Research Centre*, *Gembloux, Belgium*, [4]*National Fund for Scientific Research*, *Brussels, Belgium*.

3:00 PM 480 **Genetic correlations between purebred Limousin and F1 Limousin*Angus.**
R. Davis*[1], I. Misztal[1], M. Lukaszewicz[1,2], S. Tsuruta[1], and J. K. Bertrand[1], [1]*University of Georgia*, *Athens*, [2]*Polish Academy of Sciences, Institute of Genetics and Animal Breeding, Jastrzebiec*, *Poland*.

3:15 PM 481 **The heritability of lean color and its influence on beef tenderness.**
P. Johnson*[1], D. Moser[2], and M. Miller[1], [1]*Texas Tech University*, *Lubbock*, [2]*Kansas State University*, *Manhattan*.

3:30 PM 482 **Multivariate characterization of morphological traits in Nigerian sheep.**
A. Yakubu[1], M. Okpeku[2], M. Wheto[3], S. Amusan[3], B. O. Agaviezor[4], M. A. Adefenwa[5], B. M. Ilori[3], O. Ajayi[3], G. O. Onasanya[3], J. Ekundayo[3], T. Sanni[3], C. O. N. Ikeobi[3], M. I. Takeet[6], and I. G. Imumorin*[7], [1]*Dept of Animal Science, Nasarawa State University*, *Lafia, Nigeria*, [2]*Department of Livestock Production, Niger Delta University*, *Amassoma, Nigeria*, [3]*Department of Animal Breeding and Genetics, University of Agriculture*, *Abeokuta, Nigeria*, [4]*Dept of Animal Science and Fisheries, University of Port-Harcourt*, *Port-Harcourt, Nigeria*, [5]*Dept of Cell Biology and Genetics, University of Lagos*, *Lagos, Nigeria*, [6]*Dept of Veterinary Microbiology and Parasitology, University of Agriculture*, *Abeokuta, Nigeria*, [7]*Dept of Animal Science, Cornell University*, *Ithaca, NY*.

3:45 PM 483 **Multivariate analysis of morphological differentiation in Nigerian goats.**
A. Yakubu*[1], M. Okpeku[2], M. Wheto[3], S. Amusan[3], B. O. Agaviezor[4], M. A. Adefenwa[5], B. M. Ilori[3], O. Ajayi[3], G. O. Onasanya[3], J. Ekundayo[3], T. Sanni[3], C. O. N. Ikeobi[3], M. I. Takeet[6], and I. G. Imumorin[7], [1]*Dept of Animal Science, Nasarawa State University*, *Lafia, Nigeria*, [2]*Department of Livestock Production, Niger Delta University*, *Amassoma, Nigeria*, [3]*Department of Animal Breeding and Genetics, University of Agriculture*, *Abeokuta, Nigeria*, [4]*Department of Animal Science and Fisheries, University of Port-Harcourt*, *Port-Harcourt, Nigeria*, [5]*Dept of Cell Biology and Genetics, University of Lagos*, *Lagos, Nigeria*, [6]*Dept of Veterinary Microbiology and Parasitology*, *Abeokuta, Nigeria*, [7]*Dept of Animal Science, Cornell University*, *Ithaca, NY.*

4:00 PM 484 **Searching for causal relationships among five traits of European quails.**
B. D. Valente*[1,2], G. J. M. Rosa[1,3], M. A. Silva[2], R. B. Teixeira[4], and R. A. Torres[4], [1]*Department of Animal Sciences, University of Wisconsin*, *Madison*, [2]*Departamento de Zootecnia, Universidade Federal de Minas Gerais*, *Belo Horizonte, Minas Gerais, Brazil*, [3]*Department of Biostatistics and Medical Informatics, University of Wisconsin*, *Madison*, [4]*Departamento de Zootecnia, Universidade Federal de Viçosa*, *Viçosa, Minas Gerais, Brazil*.

485 **Withdrawn**

## Companion Animals Symposium
## Living Beyond 20: Discoveries in Geriatric Companion Animal Biology
## Chair: Cheryl L. Morris, Omaha's Henry Doorly Zoo

Sponsors: Hill's Science Diet, Nestlé Purina, Proctor and Gamble

**390**

2:00 PM 486 **Living beyond 20: Discoveries in geriatric companion animal management, nutrition and behavior.**
C. L. Morris*, *Omaha's Henry Doorly Zoo*, *Omaha, NE*.

2:05 PM 487 **Longevity, not production: When rate of gain is not the focus**.
T. A. Faber and G. C. Fahey*, *University of Illinois*, *Urbana.*

2:40 PM 488 **Obesity: What is wrong with being fat?**
D. P. Laflamme*, *Nestle Purina PetCare Research*, *St. Louis, MO*.

3:15 PM 489 **Cognition and behavior in geriatric animals: If they had Sudoku what would it look like?**
K. L. Overall*, *University of Pennsylvania*, *Philadelphia*.

3:50 PM 490 **Skinny old critters: Managing diet and expectations.**
C. L. Morris[1] and J. Cline*[2], [1]*Omaha's Henry Doorly Zoo*, *Omaha, NE*, [2]*Nestle Purina Petcare Product Technology Center*, *St. Louis, MO*.

4:25 PM 491 **Bones and joints: Improving mobility in senior years.**
B. Lussier*[1,2], [1]*Department of Clinical Sciences, Faculty of Veterinary Medicine, University of Montreal*, *St-Hyacinthe, Quebec, Canada*, [2]*University Hospital Research Center, University of Montreal*, *Montreal, Quebec, Canada*.

## Dairy Foods Symposium
## Innovations in Dairy Processing Unit Operations
## Chair: Brandon Nelson, Daisy Brand
## 288-289

2:00 PM 492 **Plate heat exchangers.**
J. C. Bohn*, *AGC Heat Transfer Inc.*, *Bristow, VA*.

2:40 PM 493 **Dairy processing efficiency and safety gains from double-seat valve technology.**
L. W. Clem*, *Electrol Specialties Company*, *South Beloit, IL*.

3:20 PM 494 **Innovations in homogenizer and separator technology for the modern dairy plant.**
W. Rowlands*, *Rowlands Sales Co. Inc.*

4:00 PM 495 **Filtration systems.**
D. Weber*, *Parker Hannifin Process Advanced Filtration*, *Oxnard, CA*.

## Dairy Foods
## Microbiology and Probiotics
## Chair: Tony Schoenfuss, University of Minnesota
## 295

2:00 PM 496 **Use of high pressure processing to control *Listeria monocytogenes* in packaged Queso Fresco.**
P. Tomasula*[1], L. Leggett[1], R. Kwoczak[1], D. Van Hekken[1], M. Tunick[1], J. Renye[1], M. Toht[1], S. Mukhopadhyay[2], A. Porto-Fett[3], and J. Luchansky[3], [1]*USDA/ARS/ERRC/Dairy and Functional Foods Research Unit*, *Wyndmoor, PA*, [2]*USDA/ARS/ERRC/Residue Chemistry and Predictive Microbiology Research Unit*, *Wyndmoor, PA*, [3]*USDA/ARS/ERRC/Food Safety Interventions Research Unit*, *Wyndmoor, PA*.

2:15 PM 497 **High-pressure processing of lowfat Cheddar cheese.**
M. Ozturk*[1], S. Govindasamy-Lucey[2], J. J. Jaeggi[2], K. Houck[2], M. E. Johnson[2], and J. A. Lucey[1], [1]*University of Wisconsin*, *Madison*, [2]*Wisconsin Center for Dairy Research*, *Madison*.

2:30 PM 498 **The effect of UV light treatment and processing method on the microbial reduction of pasteurized whole milk.**
J. Tharani*, A. Laubscher, A. M. Lammert, and R. Jimenez-Flores, *Dairy Products Technology Center, California Polytechnic State University, San Luis Obispo*.

2:45 PM 499 **Tina wooden vat biofilms used in Sicilian PDO Ragusano cheese provide a new cluster of *Streptococcus thermophilus* strains.**
V. Florence[1,2], C. Delorme[3], C. Pediliggieri[4], M.-N. Madec[1,2], V. Chuat[1,2], S. Parayre[1,2], S. Carpino[4], P. Campo[4], P. Renault[3], S. Lortal*[1,2], and G. Licitra[4], [1]*INRA, UMR1253, STLO*, *Rennes, France*, [2]*Agrocampus Ouest, UMR1253, STLO*, *Rennes, France*, [3]*INRA, Micalis*, *Jouy en Josas*, *France*, [4]*CoRFiLaC, Ragusa, Sicily, Italy*.

3:00 PM 500 **Molecular identification and characterization of *Lactococcus lactis* ssp. *lactis* and *Lactococcus lactis* ssp. *cremoris* by FTIR and its utilization for Cheddar cheese production.**
H. U. Rehman*[1], M. Nasir[1], S. U. Rehman[2], M. A. Jabbar[1], and M. A. Ali[1], [1]*University of Veterinary & Animal Sciences*, *Lahore, Punjab, Pakistan*, [2]*University of Agriculture Faisalabad*, *Faisalabad, Punjab, Pakistan*.

3:15 PM 501 **Transcriptional and physiological responses of *Bifidobacterium animalis* ssp. *lactis* strains to hydrogen peroxide stress.**
T. S. Oberg*[1], R. E. Ward[1], J. L. Steele[2], and J. R. Broadbent[1], [1]*Utah State University*, *Logan*, [2]*University of Wisconsin*, *Madison*.

3:30 PM 502 **Fresh cheese containing higher inoculation of *L. acidophilus* and its effect on the functionality and metabolism of probiotic culture.**
A. Cruz, J. Faria*, W. Castro, R. Cadena, and H. Bolini, *University of Campinas (UNICAMP)*.

3:45 PM 503 **Microbiological and physico-chemical properties of probiotic whey beverages processed with different whey concentrations.**
W. Castro, A. Cruz, J. Faria*, M. Bisinotto, and R. Celeghini, *University of Campinas (UNICAMP)*.

## Extension Education
## Dairy and Livestock
## Chair: Brett Barham, University of Arkansas
## 389

2:00 PM 504 **A dairy safety program: Considering human and animal safety.**
M. A. Smith*, G. R. Hagevoort, and F. A. Rivera, *NMSU Ag Science Center*, *Clovis*.

2:15 PM 505 **Assessing a comprehensive dairy cattle economic program for practicing dairy veterinarians.**
G. M. Schuenemann*, D. Shoemaker, D. Breece, S. Bas, and J. D. Workman, *Department of Veterinary Preventive Medicine, The Ohio State University*, *Columbus*.

2:30 PM 506 **III. Dairy calving management: Assessment of a comprehensive program for dairy personnel.**
G. M. Schuenemann*, S. Bas, E. Gordon, and J. Workman, *Department of Veterinary Preventive Medicine, The Ohio State University*, *Columbus*.

2:45 PM 507 **Virtual town hall meetings as a method for engaging the public and dairy industry on contentious topics: The case of tail docking.**
D. M. Weary*, C. Schuppli, and M. A. G. von Keyserlingk, *University of British Columbia*.

3:00 PM 508 **The Missouri Show-Me-Select Replacement Heifer Program.**
D. A. Mallory*, J. M. Nash, M. F. Smith, S. E. Poock, and D. J. Patterson, *University of Missouri*, *Columbia*.

3:15 PM 509 **Enhancing knowledge and technology adoption in a misunderstood discipline: The weight trait project.**
M. L. Spangler*[1], E. J. Pollak[2], G. L. Bennett[2], K. J. Hanford[1], S. D. Kachman[1], L. A. Kuehn[2], W. M. Snelling[2], and R. M. Thallman[2], [1]*University of Nebraska-Lincoln*, *Lincoln*, [2]*US Meat Animal Research Center*, *Clay Center, NE*.

3:30 PM 510 **Evaluating cow efficiency at the producer level: The Northwest Minnesota Beef Improvement Program.**
R. S. Walker*[1], S. L. Bird[2], G. I. Crawford[3], and A. DiCostanzo[4], [1]*LSU AgCenter*, *Homer, LA*, [2]*University of Minnesota North Central Research & Outreach Center*, *Grand Rapids*, [3]*University of Minnesota Extension*, *Hutchinson, MN*, [4]*University of Minnesota*, *St. Paul*.

3:45 PM 511 **The benefits of using StockPlan to assist producers make management decisions before and during dry spells or drought.**
M. J. McPhee*[1], M. B. Whelan[2], B. L. Davies[3], G. P. Meaker[4], P. Grahman[5], and P. M. Carberry[6], [1]*Industry and Investment NSW*, *Armidale, NSW, Australia*, [2]*Southern Cross University*, *Lismore, NSW, Australia*, [3]*Industry and Investment NSW*, *Paterson, NSW, Australia*, [4]*Industry and Investment NSW*, *Goulburn, NSW, Australia*, [5]*Industry and Investment NSW*, *Yass, NSW, Australia*, [6]*Formerly Industry and Investment*, *Cala, NSW, Australia*.

4:00 PM 512 **Carcass and meat quality characteristics of exhibition swine.**
S. J. Moeller*, H. N. Zerby, K. S. Betts, M. J. Bishop, S. M. Crawford, M. D. Cressman, and A. S. Gress, *The Ohio State University*, *Columbus*.

4:15 PM 513 **SowBridge: A breeding herd distance education program allowing on-farm delivery.**
M. H. Whitney*, *University of Minnesota Extension*, *Mankato*.

4:30 PM 514 **Content appraisal: A tool for analyzing web content and its effectiveness.**
J. Nadeau*[1], N. Heidorn[2], and N. Broady[3], [1]*University of Connecticut*, *Storrs*, [2]*Louisiana State University*, *Baton Rouge*, [3]*University of Kentucky*, *Lexington*.

4:45 PM 515 **Challenges and benefits of the participation of youth in creating youth-friendly material: Horses and Humans for a Healthy Habitat.**
M. Philbrick, J. Nadeau*, and T. Hoagland, *University of Connecticut*, *Storrs*.

## Growth and Development Symposium
## Understanding and Mitigating the Impacts of Inflammation on Animal Growth and Development
## Chairs: Sally Johnson, University of Florida, and Erin Connor, USDA-ARS, Beltsville, MD
Sponsors: Elanco Animal Health, Pfizer Animal Health
## 392

2:00 PM **Introduction**

2:05 PM 516 **Containing inflammation is essential for animal growth and health.**
T. A. Niewold*, *Nutrition and Health Unit, Department of Biosystems, Faculty of Bioscience Engineering, Katholieke Universiteit Leuven*, *Heverlee, Belgium*.

2:40 PM 517 **Impacts of inflammation on cattle growth and carcass merit.**
C. R. Krehbiel*, C. L. Maxwell, C. A. Gifford, and R. L. Mills, *Oklahoma State University*, *Stillwater.*

3:15 PM 518 **Endotoxin, inflammation, and intestinal function in swine.**
N. K. Gabler*, L. H. Baumgard, and V. Mani, *Iowa State University*, *Ames*.

3:50 PM 519 **The role inflammation plays during clinical mastitis on the performance and health of dairy cows.**
M. A. Ballou*, *Department of Animal and Food Sciences, Texas Tech University*, *Lubbock*.

4:25 PM 520 **Nutritional costs of inflammation and consequences for animal growth and production.**
K. C. Klasing*, *University of California at Davis*, *Davis*.

## Meat Science and Muscle Biology
## Beef Quality and Muscle Biology
## Chair: Steven Lonergan, Iowa State University
## 388

2:00 PM 521 **Warner-Bratzler and slice shear force measurements of three beef muscles in response to various aging periods following anabolic implant and zilpaterol hydrochloride supplementation of finishing beef steers.**
A. J. Garmyn*[1], L. F. Hightower[1], J. C. Brooks[1], B. J. Johnson[1], S. L. Parr[1], R. J. Rathmann[1], J. D. Starkey[1], D. A. Yates[2], J. M. Hodgen[2], J. P. Hutcheson[2], and M. F. Miller[1], [1]*Texas Tech University*, *Lubbock*, [2]*Intervet/Schering-Plough Animal Health*, *DeSoto, KS*.

2:15 PM 522 **The effects of anabolic growth implant and restricted feed intake on proliferation of bovine primary skeletal muscle cells.**
T. L. Lee*, D. U. Thomson, B. W. Wileman, L. K. Mamedova, B. J. Bradford, and C. D. Reinhardt, *Kansas State University*, *Manhattan*.

2:30 PM 523 **Identification of tough beef carcasses from epigenetic changes detectable in blood.**
M. S. Updike*, C. Zhao, Y. Yu, F. Tian, and J. Song, *University of Maryland*, *College Park*.

2:45 PM 524 **Carcass and production characteristics of grass-fed Angus cattle through spring, summer, winter and fall.**
C. Zhao, J. Song, B. Bequette, and M. S. Updike*, *University of Maryland*, *College Park*.

525 **Withdrawn**

3:00 PM 526 **Effect of castration and slaughter ages on animal performance and meat quality of Holstein bulls fed high-concentrate diets.**
S. Marti*[1], C. E. Realini[2], A. Bach[3,1], M. Perez-Juan[2], and M. Devant[1], [1]*Department Ruminant Production, IRTA, Barcelona, Spain*, [2]*Carcass Quality Subprogram, IRTA, Girona, Spain*, [3]*ICREA, Barcelona, Spain*.

3:15 PM 527 **Establishing a molecular fingerprint of high versus low-quality beef carcasses.**
K. J. Thornton*, K. Chapalamadugu, and G. K. Murdoch, *University of Idaho, Moscow*.

3:30 PM 528 **Localization and abundance of DLK1 in skeletal muscle of cattle.**
E. Albrecht*[1], J. Kuzinski[1], T. Gotoh[2], and S. Maak[1], [1]*Leibniz Institute for Farm Animal Biology, Muscle Biology and Growth, Dummerstorf, Germany*, [2]*Kyushu University, Kuju Agricultural Research Center, Kuju-cho, Oita, Japan*.

## Nonruminant Nutrition Symposium
## Nutrient and Neuroendocrine Regulation of Gastrointestinal Function
## Chair: Soraya P. Shirazi-Beechey, University of Liverpool, UK
Sponsors: EAAP, Pancosma
## 383-385

2:00 PM 529 **Involvement of gut neural and endocrine systems in pathological disorders.**
J. B. Furness*, *Department of Anatomy and Cell Biology, University of Melbourne, Melbourne, Australia*.

2:40 PM 530 **Neurogastroenterology and food allergies.**
J. D. Wood*, *Department of Physiology & Cell Biology and Internal Medicine The Ohio State University, Columbus*.

3:20 PM **Break**

3:30 PM 531 **Nutrient and neuroendocrine regulation of intestinal glucose absorption.**
S. P. Shirazi-Beechey*[1], A. W. Moran[1], D. M. Bravo[2], and M. Al-Rammahi[1], [1]*University of Liverpool, Liverpool, United Kingdom*, [2]*Pancosma, Geneva, Switzerland*.

4:10 PM 532 **The role of GLP-2 in controlling intestinal function in human infants: Regulator or bystander?**
D. Sigalet*, *Alberta Children's Hospital / University of Calgary, Calgary, AB, Canada*.

4:50 PM **Questions**



## Physiology and Endocrinology Symposium
## Factors Controlling Puberty in Beef Heifers
## Chair: Paul Fricke, University of Wisconsin
## 290

2:00 PM **Introduction**

2:05 PM 533 **Management implications associated with the onset of puberty and persistence of estrous cycles in beef heifers.**
G. C. Lamb*[1], K. M. Bischoff[1], T. E. Black[1], V. R. G. Mercadante[1], G. H. L. Marquezini[1], R. F. Cooke[2], and N. DiLorenzo[1], [1]*North Florida Research and Education Center, University of Florida, Marianna*, [2]*Eastern Oregon Agricultural Research Center, Oregon State University, Burns*.

2:45 PM 534 **How SNP chips will advance our knowledge of factors controlling puberty and aid in selecting replacement females.**
W. M. Snelling*[1], R. A. Cushman[1], G. L. Bennett[1], J. W. Keele[1], L. A. Kuehn[1], T. G. McDaneld[1], R. M. Thallman[1], and M. G. Thomas[2], [1]*USMARC, USDA-ARS U.S. Meat Animal Research Center, Clay Center, NE*, [2]*New Mexico State University, Las Cruces*.

3:25 PM **Break**

3:40 PM 535 **Nutritional aspects of developing replacement heifers.**
R. N. Funston*, *University of Nebraska West Central Research and Extension Center, North Platte*.

4:20 PM 536 **Harnessing basic knowledge of factors controlling puberty to improve synchronization of estrus and fertility in heifers.**
G. A. Perry*, *South Dakota State University, Department of Animal and Range Sciences, Brookings*.

## Physiology and Endocrinology I
## Chair: Kristi Kammack, University of Wyoming
## 393

2:00 PM 537 **Estimation of heritability and non-genetic factors influencing calf temperament.**
A. N. Loyd*[1,2], D. G. Riley[1], D. A. Neuendorff[2], A. W. Lewis[2], R. C. Vann[3], T. H. Welsh[1], and R. D. Randel[2], [1]*Texas AgriLife Research*, *College Station*, [2]*Texas AgriLife Research*, *Overton* [3]*MAFES, Mississippi State University*, *Raymond*.

2:15 PM 538 **Effects of transportation and lipopolysaccharide (LPS) challenge on vaginal temperature in crossbred heifer calves.**
A. N. Loyd*[1,4], R. C. Vann[2], J. P. Banta[3], T. H. Welsh[1], J. A. Carroll[4], and R. D. Randel[5], [1]*Texas AgriLife Research*, *College Station*, [2]*MAFES, Mississippi State University*, *Raymond*, [3]*Texas AgriLife Extension*, *Overton*, [4]*Livestock Issues Research Unit, USDA-ARS*, *Lubbock, TX*, [5]*Texas AgriLife Research*, *Overton*.

2:30 PM 539 **Chromium supplementation enhances the metabolic response of steers to lipopolysaccharide (LPS) challenge.**
N. C. Burdick*[1], B. C. Bernhard[2], J. A. Carroll[1], A. N. Loyd[1], D. N. Finck[2], R. J. Rathmann[2], and B. J. Johnson[2], [1]*Livestock Issues Research Unit, USDA-ARS*, *Lubbock, TX*, [2]*Department of Animal and Food Sciences, Texas Tech University*, *Lubbock*.

2:45 PM 540 **Effects of transportation and lipopolysaccharide (LPS) challenge on body weight and feed intake of crossbred heifers.**
A. N. Loyd*[1,4], R. C. Vann[2], J. P. Banta[3], T. H. Welsh[1], J. A. Carroll[4], and R. D. Randel[5], [1]*Texas AgriLife Research*, *College Station*, [2]*MAFES, Mississippi State University*, *Raymond*, [3]*Texas AgriLife Extension*, *Overton*, [4]*Livestock Issues Research Unit, USDA-ARS*, *Lubbock, TX*, [5]*Texas AgriLife Research*, *Overton*.

3:00 PM **Break**

3:15 PM 541 **Microbial diversity in bovine papillomatous digital dermatitis in Holstein dairy cows from upstate New York.**
T. Santos and R. Bicalho*, *Cornell University, Ithaca, NY.*

3:30 PM 542 **Non-steroidal anti-inflammatory drug administration and repeated muscle biopsies affect the phosphorylation of translation initiation factors.**
A. L. Wagner*, R. B. Ennis, and K. L. Urschel, *University of Kentucky*, *Lexington*.

3:45 PM 543 **Infusion of interferon-τ into the uterine vein protects the corpus luteum from prostaglandin F2α induced down-regulation of cell survival genes.**
A. Q. Antoniazzi* and T. R. Hansen, *Animal Reproduction and Biotechnology Laboratory, Department of Biomedical Sciences, Colorado State University*, *Fort Collins*.

4:00 PM 544 **The influence of the addition of heparin binding protein and tissue inhibitors of metalloproteinases-2 to sexed bovine semen on conception rate and pregnancy rate.**
B. J. Agado*[1,2], D. A. Neuendorff[2], G. L. Shafer[1,2], M. E. Kjelland[4], J. Moreno[4], M. A. Lammoglia[5], S. Romo[6], A. W. Lewis[2], T. H. Welsh[1,3], and R. D. Randel[2], [1]*Texas A&M University*, *College Station*, [2]*Texas AgriLife Research-Overton*, *Overton*, [3]*Texas AgriLife Research, College Station*, *College Station*, [4]*Sexing Technologies*, *Navasota, TX*, [5]*Universidad Autonoma de Veracruz*, *Tuxpan, Veracruz, Mexico*, [6]*Universidad Nacional Autonoma de Mexico*, *Cuautitlan, Estado de Mexico, Mexico*.

4:15 PM 545 **Effects of acclimation to handling on performance, reproductive, and physiological responses of *Bos taurus* beef heifers.**
B. I. Cappellozza*, R. F. Cooke, F. N. T. Cooke, and D. W. Bohnert, *Oregon State University–Eastern Oregon Agricultural Research Center*, *Burns*.

4:30 PM 546 **Effects of temperament on reproductive and physiological responses of beef cows.**
R. F. Cooke*[1], D. W. Bohnert[1], F. N. T. Cooke[1], C. Mueller[2], and T. DelCurto[2], [1]*Oregon State University–Eastern Oregon Agricultural Research Center*, *Burns*, [2]*Oregon State University–Eastern Oregon Agricultural Research Center*, *Union*.

## Production, Management and the Environment
## Beef Production I
## Chair: Shane Gadberry, University of Arkansas
## 386-387

2:00 PM 547 **Relationships between feedlot morbidity, performance, and carcass quality in Angus steers.**
M. L. Hands[1], L. R. Corah[2], T. T. Marston[3], D. W. Moser[1], and C. D. Reinhardt*[1], [1]*Kansas State University*, *Manhattan*, [2]*Certified Angus Beef*, *Manhattan, KS*, [3]*University of Nebraska*, *Norfolk*.

2:15 PM 548 **Impact of beef heifer development systems on ADG, reproduction, and feed efficiency.**
S. P. Weber*, A. F. Summers, T. L. Meyer, and R. N. Funston, *University of Nebraska, West Central Research and Extension Center*, *North Platte*.

2:30 PM 549 **Late gestation supplementation impacts primiparous beef heifers and progeny.**
A. F. Summers*, S. P. Weber, T. L. Meyer, and R. N. Funston, *University of Nebraska, West Central Research and Extension Center*, *North Platte*.

2:45 PM 550 **Cattle performance comparison in three feedlot facility designs in South Dakota.**
B. P. Holland*, E. R. Loe, and R. H. Pritchard, *Department of Animal and Range Sciences, South Dakota State University*, *Brookings*.

3:00 PM 551 **Season of arrival affects feedlot performance, health, and carcass traits of Angus steers.**
M. L. Hands[1], T. T. Marston[2], L. R. Corah[3], D. W. Moser[1], and C. D. Reinhardt*[1], [1]*Kansas State University*, *Manhattan*, [2]*University of Nebraska*, *Norfolk*, [3]*Certified Angus Beef*, *Manhattan, KS*.

3:15 PM 552 **Relationships between feedlot performance, yield grade, and quality grade in Angus steers.**
M. L. Hands[1], T. T. Marston[2], L. R. Corah[3], D. W. Moser[1], and C. D. Reinhardt*[1], [1]*Kansas State University*, *Manhattan*, [2]*University of Nebraska*, *Norfolk*, [3]*Certified Angus Beef LLC*, *Manhattan, KS*.

3:30 PM 553 **Relationship of feed efficiency of replacement beef heifers to subsequent feed efficiency as 3-year old suckled beef cows.**
T. E. Black*[1], K. M. Bischoff[1], V. R. G. Mercadante[1], G. H. L. Marquezini[1], C. C. Chase[2], S. W. Coleman[2], and G. C. Lamb[1], [1]*North Florida Research and Education Center, University of Florida*, *Marianna*, [2]*USDA-ARS, SubTropical Agricultural Research Station*, *Brooksville, FL*.

3:45 PM 554 **Effect of injectable trace minerals on the humoral immune response to multivalent vaccine administration in beef calves.**
J. D. Arthington*[1] and L. J. Havenga[2], [1]*University of Florida, Range Cattle Research and Education Center*, *Ona*, [2]*Multimin USA Inc.*, *Fort Collins, CO*.

4:00 PM 555 **The effect of beta-agonists on feedlot performance and carcass merit in yearling steers.**
R. K. Peterson*[1], J. J. Wagner[1], T. E. Engle[1], and T. C. Bryant[2], [1]*Colorado State University*, *Fort Collins*, [2]*JBS Five Rivers Cattle Feeding*, *Greeley, CO*.

4:15 PM 556 **Moderate exercise alters blood constituents, growth performance, and carcass characteristics in finishing heifers.**
A. D. Stickel[1], L. N. Edwards[1], T. A. Houser[1], J. R. Jaeger[2], T. G. Rozell[1], L. D. Hollis[1], S. Uwituze[1], C. L. Van Bibber[1], K. A. Miller[1], J. J. Higgins[1], and J. S. Drouillard*[1], [1]*Kansas State University*, *Manhattan*, [2]*Kansas State University*, *Hays*.



## Ruminant Nutrition
## Beef: Proteins and Carbohydrates
## Chair: Sara Winterholler, South Dakota State University
## 294

2:00 PM 557 **Acidosis challenge effects on ruminal pH and temperature in beef cattle.**
D. L. Christensen*, J. L. Wahrmund, A. K. Sexten, C. L. Goad, C. R. Krehbiel, and C. J. Richards, *Oklahoma State University*, *Stillwater*.

2:15 PM 558 **Fatty acid profile of muscle and subcutaneous fat of Red Norte bulls fed ionophores and lipids sources.**
M. M. Ladeira, L. C. Santarosa, O. R. Machado Neto, M. L. Chizzotti*, T. M. Gonçalves, E. M. Ramos, L. S. Lopes, J. S. F. Hostalácio, D. M. Oliveira, and M. C. L. Alves, *Federal University of Lavras*, *Lavras, MG, Brazil*.

2:30 PM 559 **Effects of energetic supplementation strategies on performance of growing cattle grazing tropical forage and on animal performance during the feedlot finishing phase.**
L. R. D. Agostinho Neto, J. R. R. Dorea, V. N. Gouvea, A. L. Marra, and F. A. P. Santos*, *University of Sao Paulo/ ESALQ*, *Piracicaba, São Paulo, Brazil*.

2:45 PM 560 **Effect of rate of gain on fat deposition during grazing and final carcass characteristics in growing beef cattle.**
E. D. Sharman*, P. A. Lancaster, C. P. McMurphy, G. G. Hilton, C. R. Krehbiel, and G. W. Horn, *Oklahoma Agricultural Experiment Station*, *Stillwater*.

3:00 PM 561 **Nutrient mass balance and performance of feedlot cattle fed barley based diets with and without dried distillers grains plus solubles.**
E. M. Hussey*[1], G. E. Erickson[1], R. E. Peterson[3], and L. O. Burciaga-Robles[2], [1]*University of Nebraska-Lincoln*, *Lincoln*, [2]*Feedlot Health Management Services Ltd.*, *Okotoks, AB, Canada*, [3]*Western Feedlots Ltd.*, *High River, AB, Canada*.

3:15 PM 562 **Effects of levels of energetic supplementation on forage intake and ruminal fermentation in beef cattle grazing tropical pastures.**
J. R. R. Dórea[1], L. R. D. Agostinho Neto[1], V. N. Gouvêa[1], M. A. C. Danés[1], L. G. R. Pereira[2], J. A. G. Azevêdo[3], and F. A. P. Santos*[1], [1]*University of Sao Paulo/ESALQ*, *Piracicaba, São Paulo, Brazil*, [2]*Embrapa Dairy Cattle*, *Juiz de Fora, Minas Gerais, Brazil*, [3]*State University of Santa Cruz*, *Ilhéus, Bahia, Brazil*.

3:30 PM 563 **The relationship between rumen acidosis resistance and expression of genes involved in regulation of intracellular pH in rumen epithelial cells in steers.**
N. Schlau*, L. L. Guan, and M. Oba, *University of Alberta*, *Edmonton, AB Canada*.

3:45 PM 564 **Evaluation of diet net energy calculations on intake and gain compared to prediction equations for finishing steers.**
M. F. Wilken*, L. L. Berger, G. E. Erickson, and K. J. Hanford, *University of Nebraska-Lincoln*, *Lincoln*.

4:00 PM 565 **Effect of finishing system (feedlot or pasture) on energy requirements of Zebu cattle.**
M. L. Chizzotti*[1], M. I. Marcondes[2], S. C. Valadares Filho[2], M. P. Gionbelli[2], P. V. R. Paulino[2], and M. F. Paulino[2], [1]*Universidade Federal de Lavras*, *Lavras, MG, Brazil*, [2]*Universidade Federal de Viçosa*, *Viçosa, MG, Brazil*.

4:15 PM 566 **A chemical evaluation of the chemical composition of four corn milling co-products with focus on fatty acids.**
C. S. Dose*[1], P. J. Kononoff[1], T. C. Jenkins[2], L. O. Tedeschi[3], and K. Karges[4], [1]*Department of Animal Science, University of Nebraska-Lincoln*, *Lincoln*, [2]*Department of Animal and Veterinary Sciences, Clemson University*, *Clemson, SC*, [3]*Department of Animal Science, Texas A&M University*, *College Station*, [4]*Dakota Gold Research Association*, *Sioux Falls, SD*.

4:30 PM 567 **Evaluation of polyclonal antibodies in cattle adapted or not to highly fermentable carbohydrates diets.**
T. Barros[1], C. Marino*[1], R. Pacheco[2], F. Ferreira[1], F. Perna[1], E. Cassiano[1], M. Martins[1], M. Arrigoni[2], and P. Rodrigues[1], [1]*University of Sao Paulo, FMVZ-USP*, *Pirassununga, Sao Paulo, Brazil*, [2]*University of Sao Paulo State, FMVZ-UNESP*, *Botucatu, Sao Paulo, Brazil*.

4:45 PM 568 **Evaluation of polyclonal antibodies in cattle adapted or not to highly fermentable carbohydrates diets after an acidosis challenge.**
T. Barros[1], C. Marino*[1], R. Pacheco[2], F. Ferreira[1], F. Perna[1], E. Cassiano[1], M. Martins[1], M. Arrigoni[2], and P. Rodrigues[1], [1]*University of Sao Paulo, FMVZ-USP*, *Pirassununga, Sao Paulo, Brazil*, [2]*University of Sao Paulo State, FMVZ-UNESP*, *Botucatu, Sao Paulo, Brazil*.

## Ruminant Nutrition
## Dairy: Ruminal Metabolism
## Chair: Juan Loor, University of Illinois
## 293

2:00 PM 569 **Optimizing barley grain feeding and processing for postmodern dairy cows.**
A. Nikkhah*, *University of Zanjan*, *Zanjan, Iran*.

2:15 PM 570 **Potassium reduces the accumulation of trans-10, cis-12 conjugated linoleic acid and trans-18:1 in continuous cultures of mixed ruminal microorganisms regardless of dietary fat level.**
T. C. Jenkins*[1], E. Block[2], and P. H. Morris[1], [1]*Clemson University*, *Clemson, SC*, [2]*Arm & Hammer Animal Nutrition*, *Princeton, NJ*.

2:30 PM 571 **Metabolic effects of feeding supplemental tallow to lactating Nili-Ravi buffalo.**
H. Nawaz[1], M. Yaqoob*[2], J. I. Sultan[1], M. Sarwar[1], and M. Younas[2], [1]*Institute of Animal Nutrition and Feed Technology, University of Agriculture, Faisalabad, Pakistan*, *Faisalabad, Punjab, Pakistan*, [2]*Faculty of Animal Husbandry, Dept. Livestock Management, University of Agriculture, Faisalabad, Pakistan*, *Faisalabad, Punjab, Pakistan*.

2:45 PM 572 **Use of a mechanistic, dynamic model of metabolism to investigate the biological basis for variation in genetics of feed conversion efficiency in lactating dairy cattle.**
J. Onken[1], G. Hobgood[2], S. L. Sheilds*[1], and J. P. McNamara[1], [1]*Washington State University*, *Pullman*, [2]*North Carolina State University*, *Raleigh*.

3:00 PM 573 **Ruminal Mg transport and assessment of Mg intake in dairy cows: Two sides of one coin.**
H. Martens* and F. Stumpff, *Dept. of Veterinary Physiology/Freie Universitaet Berlin*, *Berlin-Germany*.

3:15 PM 574 **Effects of direct-fed microbes and their combinations with yeast culture on in vitro rumen fermentation characteristics.**
S. P. Doto* and J. X. Liu, *Institute of Dairy Science, College of Animal Sciences, Zhejiang University*, *Hangzhou, P.R. China*.

3:30 PM 575 **Effects of grain, fructose and histidine on ruminal pH, fermentation products and histamine in an induced subacute acidosis protocol.**
H. M. Golder[1,2], P. Celi[1], A. R. Rabiee[1,2], C. Heuer[3], E. Bramley[4], D. W. Miller[4], R. King[5], and I. J. Lean*[1,2], [1]*University of Sydney, Faculty of Veterinary Science*, *Camden, New South Wales, Australia*, [2]*SBScibus*, *Camden, New South Wales, Australia*, [3]*Massey University, Epicentre, Institute of Veterinary, Animal and Biomedical Sciences*, *Palmerston North, New Zealand*, [4]*Murdoch University, School of Veterinary and Biomedical Sciences*, *Murdoch, Western Australia, Australia*, [5]*Dairy Australia*, *Southbank, Victoria, Australia*.

3:45 PM 576 **Dry matter intake, ruminal pH and fermentation capacity of rumen fluid in heifers fed temperate pasture, total mixed rations or both.**
A. Santana*[1], J. Ubilla[1], M. Berrutti[1], T. Konrath[1], M. Aguerre[1], A. Britos[2], C. Cajarville[2], and J. L. Repetto[1], [1]*Facultad de Veterinaria, UdelaR, Depto. Bovinos*, *Montevideo, Uruguay*, [2]*Facultad de Veterinaria, UdelaR, Depto. Nutricion*, *Montevideo, Uruguay*.

4:00 PM 577 **Protein and fertility in lactating dairy cattle: A meta-analysis and meta-regression.**
I. J. Lean*[1,2], P. Celi[1], J. McNamara[3], H. Raadsma[1], and A. Rabiee[1], [1]*Faculty of Veterinary Science, The University of Sydney*, *Camden, New South Wales, Australia*, [2]*SBScibus*, *Camden, New South Wales, Australia*, [3]*Department of Animal Sciences, Washington State University*, *Pullman*.

4:15 PM 578 **Effect of increasing proportions of energy concentrates on in vitro gas production estimates.**
A. Britos*[1], J. L. Repetto[2], and C. Cajarville[1], [1]*Departmento de Nutrición Animal, Facultad de Veterinaria, UdelaR*, *Montevideo, Uruguay*, [2]*Departmento de Bovinos, Facultad de Veterinaria, UdelaR*, *Montevideo, Uruguay*.

4:30 PM 579 **Hypophagic effects of propionate are greater for cows with elevated hepatic acetyl CoA concentration**.
S. E. Stocks* and M. S. Allen, *Michigan State University*, *East Lansing*.

4:45 PM 580 **Effects of added direct-fed microbials on rumen microbial fermentation in continuous culture.**
W. L. Braman* and I. Knap, *Chr. Hansen Animal Health and Nutrition*, *Milwaukee, WI, and Horsholm, Denmark*.



## Small Ruminant
## Small Ruminant Production
## Chair: Govind Kannan, Fort Valley State University
## 391

2:00 PM 581 **Evaluation of weaning hair sheep lambs at 63 or 120 d of age in an accelerated lambing system in the tropics.**
R. W. Godfrey* and A. M. Hogg, *University of the Virgin Islands*, *Agricultural Experiment Station, St. Croix, VI*.

2:15 PM 582 **Comparison of two forage systems for performance of lactating doe and kid meat goats in Kentucky.**
K. Andries* and E. Sherrow, *Kentucky State University*, *Frankfort*.

2:30 PM 583 **Effect of synchronization protocols (Ovsynch vs 2PG) and GnRH on reproductive performance in goats.**
N. Ahmad*, H. Riaz, and M. Abdullah, *University of Veterinary and Animal Sciences*, *Lahore, Punjab, Pakistan*.

2:45 PM **Break**

3:00 PM 584 **Carcass fat and muscle measurements in terminally sired F1 lambs.**
M. R. Mousel*[1], T. D. Leeds[2], D. R. Notter[3], H. N. Zerby[4], S. J. Moeller[4], and G. S. Lewis[1], [1]*USDA, ARS, US Sheep Experiment Station*, *Dubois, ID*, [2]*USDA, ARS, National Center for Cool and Cold Water Aquaculture*, *Leetown, WV*, [3]*Virginia Polytechnic Institute and State University*, *Blacksburg*, [4]*The Ohio State University*, *Columbus*.

3:15 PM 585 **Compositions of volatile compounds in fat tissues from male and female Hu sheep.**
Y. J. Peng*, J. Lin, and J. X. Liu, *Institute of Dairy Science, College of Animal Sciences, Zhejiang University*, *Hangzhou 310029, P. R. China*.

3:30 PM 586 **Chemical composition of milk of West African Dwarf (WAD) ewe fed Mexican sunflower leaf meal based diets during early and late lactation.**
A. H. Ekeocha*, *University of Ibadan*, *Ibadan, Oyo, Nigeria*.

# Wednesday, July 13

## POSTER PRESENTATIONS

### Animal Health III

Sponsor: Elanco Animal Health

W1 **Effects of low doses lipopolysaccharide infusion on plasma proteome in lactating cows using comparative proteomics.**
T. J. Yuan, J. Q. Wang*, Y. X. Yang, D. P. Bu, S. S. Li, and P. Sun, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*.

W2 **Evaluation of endotoxin (LPS) activity in bovine blood using neutrophil dependent chemiluminescence.**
S. Kahl*[1], T. H. Elsasser[1], and C. V. Obiezu-Forster[2], [1]*USDA, Agricultural Research Service*, *Beltsville, MD*, [2]*Spectral Diagnostic Inc.*, *Toronto, ON, Canada*.

W3 **Evaluation of yeast nucleotides on intestinal barrier function in vitro.**
A. Ganner*, M. Werner, S. Henikl, and G. Schatzmayr, *BIOMIN Research Center*, *Tulln, Lower Austria, Austria*.

W4 **Oral treatment of pregnant cows with lipopolysaccharide and lipoteichoic acid modulated selected plasma metabolites and innate immunity in newborn calves.**
S. Iqbal*, Q. Zebeli, D. A. Mansmann, S. M. Dunn, and B. N. Ametaj, *University of Alberta*, *Edmonton, AB, Canada*.

W5 **Repeated oral administration of lipopolysacharide and lipoteichoic acid modulated post-treatment plasma metabolites and innate immunity of prepartal dairy cows.**
S. Iqbal*, Q. Zebeli, D. A. Mansmann, S. M. Dunn, and B. N. Ametaj, *University of Alberta*, *Edmonton, AB, Canada*.

W6 **Diets enriched in barley grain treated with lactic acid and heat lowered rumen endotoxin and improved innate immunity in dairy cows.**
S. Iqbal*, Q. Zebeli, A. Mazzolari, S. M. Dunn, and B. N. Ametaj, *University of Alberta*, *Edmonton, AB, Canada*.

W7 **Oral administration of bacterial lipopolysaccharide and lipoteichoic acid modulated milk composition and efficiency in transition dairy cows.**
S. Iqbal*, Q. Zebeli, D. A. Mansmann, S. M. Dunn, and B. N. Ametaj, *University of Alberta*, *Edmonton, AB, Canada*.

W8 **Oronasal exposure to lipopolysaccharide differentially affected blood metabolites in multiparous dairy cows.**
A. Hosseini*, D. A. Mansmann, Q. Zebeli, S. Iqbal, S. M. Dunn, and B. N. Ametaj, *University of Alberta*, *Edmonton, Alberta, Canada*.

W9 **Oral administration of lipopolysaccharide and lipoteichoic acid modulated plasma metabolites and decreased the risk of metabolic diseases in periparturient dairy cows.**
S. Iqbal*, Q. Zebeli, D. A. Mansmann, S. M. Dunn, and B. N. Ametaj, *University of Alberta*, *Edmonton, AB, Canada*.

W10 **Bovine acute-phase response following different doses of corticotrophin-releasing hormone (CRH) challenge.**
R. F. Cooke*[1], J. A. Carroll[2], F. N. T. Cooke[1], B. I. Cappellozza[1], C. Trevisanuto[1], V. D. Tabacow[1], J. Dailey[2], and D. W. Bohnert[1], [1]*Oregon State University–Eastern Oregon Agricultural Research Center*, *Burns*, [2]*USDA–ARS Livestock Issues Research Unit*, *Lubbock, TX*.

W11 **Feasibility of high immune response technology as a health management tool to characterize immune response profiles of dairy cattle.**
L. C. Wagter*, S. Cartwright, and B. A. Mallard, *Ontario Veterinary College, University of Guelph*, *Guelph, Ontario, Canada*.

W12 **Influence of blood sample storage temperature and latency until analyzed on various ex vivo innate immune response assays in Holstein heifers.**
M. A. Ballou*[1] and L. E. Hulbert[1,2], [1]*Department of Animal and Food Sciences, Texas Tech University*, *Lubbock*, [2]*Department of Animal Science, University of California at Davis*, *Davis*.

W13 **Caprylic acid fractionation of serum followed by refractometry to predict serum IgG in preweaned calves.**
C. Rodríguez[1], N. Saborido[1], L. Castillejos[2], M. Rodríguez[2], A. Lago*[3], J. Campbell[3], J. Quigley[3], and J. Polo[1], [1]*APC Europe, S.A.*, *Granollers, Spain*, [2]*Animal Nutrition and Welfare Service, Autonomous University of Barcelona*, *Barcelona, Spain*, [3]*APC Inc.*, *Ankeny, IA*.

W14 **Development of a rapid method to estimate IgG in bovine colostrum.**
K. M. Morrill*[1], J. D. Quigley[2], A. Lago[2], and H. D. Tyler[1], [1]*Iowa State University*, *Ames*, [2]*APC Inc.*, *Ankeny, IA*.

W15 **The effect of treatment with long-acting antibiotic upon arrival at a custom heifer rearing facility on non-specific fever, otitis media, neonatal calf diarrhea complex and growth.**
A. L. Stanton*[1], S. J. LeBlanc[1], L. K. Fox[2], J. Wormuth[3], D. F. Kelton[1], and K. E. Leslie[1], [1]*University of Guelph*, *Guelph, Ontario, Canada*, [2]*Washington State University*, *Pullman*, [3]*CY Heifer Farm*, *Elba, NY*.

W16 **Immune status of calves that naturally suckle their dams in dairy farms of Costa Rica.**
J. A. Elizondo-Salazar*[1], J. Sánchez-Salas[1], J. Rodríguez-Zamora[1], and A. J. Heinrichs[2], [1]*Estación Experimental Alfredo Volio Mata*, *Facultad de Ciencias Agroalimentarias, Universidad de Costa Rica*, [2]*The Pennsylvania State University*, *University Park.*

W17 **Determining the heritable component of dairy cattle foot lesions.**
A. M. Oberbauer*, S. L. Berry, J. M. Belanger, and T. R. Famula, *Department of Animal Science, University of California, Davis*.

W18 **Effects of cold pasteurizing colostrum with formic acid on bacteria counts and calf IgG absorption.**
L. A. Vickers*[1] and D. M. Veira[2], [1]*Animal Welfare Program, University of British Columbia*, *Vancouver, British Columbia, Canada*, [2]*Agriculture and Agri-Food Canada*, *Agassiz, British Columbia, Canada*.

W19 **Allelic variations in the bovine vitamin D receptor gene: Correlations with periparturient hypocalcemia?**
M. Reiche, C. Deiner, A. Mösch, and H. Martens*, *Institute of Veterinary Physiology, Faculty of Veterinary Medicine, FU Berlin*, *Institute of Veterinary Physiology, Faculty of Veterinary Medicine, FU Berlin, Berlin, Germany*.

W20 **Strategies to control the cattle tick, *Rhipicephalus microplus*, in dairy herds in the Brazilian Southwestern Amazon region: Technical recommendations.**
L. G. Brito*[1], F. da Silva Barbieri[1], and M. C. de Sena Oliveira[2], [1]*Embrapa Rondônia*, *Porto Velho, RO, Brazil*, [2]*Southeast Embrapa*, *Sâo Carlos, SP, Brazil*.

W21 **Ruminal binding characteristics of Mycopurge against various aflatoxins in in vitro.**
M. R. Akkaya[1], M. A. Bal[1], and V. Akay*[2], [1]*Kahramanmaras Sutcu Imam University*, *Turkey*, [2]*Global Nutritech Ltd.*, *Kocaeli, Turkey*.

## Beef Species
## Beef Cattle Production

W22 **Factors affecting the selling price of calves sold in Texas livestock markets.**
K. J. Stutts, M. M. Beverly*, S. F. Kelley, and B. M. Freel, *Sam Houston State University*, *Huntsville, TX*.

W23 **Sources of sire-specific genetic variance for birth weight and weaning weight in the Bruna dels Pirineus beef cattle breed.**
M. Fina*[1], L. Varona[2], J. Piedrafita[1], and J. Casellas[1], [1]*G2R, Departament de Ciència Animal i dels Aliments, Universitat Autònoma de Barcelona*, *Bellaterra, Spain*, [2]*Departamento de Anatomía, Embriología y Genética Animal, Universidad de Zaragoza*, *Zaragoza, Spain*.

W24 **Relationships between feed efficiency traits and body weight, age, backfat, rumpfat and circulating serum metabolites in pregnant beef cows.**
K. M. Wood*[1], Y. R. Montanholi[1], B. W. McBride[1], and K. C. Swanson[2], [1]*Dept. of Animal and Poultry Science, University of Guelph*, *Guelph, Ontario, Canada*, [2]*Dept. of Animal Sciences, North Dakota State University*, *Fargo.*

W25 **Effect of preconditioning days, feeder cattle grade, and sire breed type on growth performance and carcass characteristics of beef cattle participating in a calf to carcass program in southwest Louisiana.**
D. M. Gandy*, D. R. Goodwin, T. H. Shields, W. A. Storer, and F. M. LeMieux, *McNeese State University*, *Lake Charles, LA*.

W26 **Effect of castration status on arrival of ultra-high risk calves on feedlot performance and health during a 61-d preconditioning program.**
L. Clark[1], C. Flaig[1], O. C. Schunicht[1], M. L. May[1], R. E. Peterson[1], C. W. Booker[1], C. R. Krehbiel[2], G. K. Jim[1], and L. O. Burciaga-Robles*[1], [1]*Feedlot Health Management Services Ltd.*, *Okotoks, Alberta, Canada*, [2]*Department of Animal Science, Oklahoma State University*, *Stillwater*.

## Breeding and Genetics
## Beef and Small Ruminant Breeding

W27 **Effects of *Bos indicus* breeding on plasma pregnancy-associated glycoprotein (PAG) concentrations and fetus size in early gestation.**
P. M. Morelli*[1], D. O. Rae[2], S. E. Johnson[1], and A. D. Ealy[1], [1]*University of Florida, Department of Animal Sciences*, *Gainesville*, [2]*University of Florida, Department of Large Animal Clinical Sciences*, *Gainesville*.

W28 **Genetic parameters and genetic trends for growth and reproductive traits in a Colombian multibreed beef cattle population.**
O. D. Vergara[1] and M. A. Elzo*[2], [1]*University of Cordoba*, *Monteria, Colombia*, [2]*University of Florida*, *Gainesville*.

W29 **Combining ability of nine tropically adapted and temperate breeds for growth and ultrasound traits in Colombia.**
C. A. Martinez[1], C. Manrique[1], M. A. Elzo*[2], and A. Jimenez[1], [1]*Universidad Nacional de Colombia*, *Bogota, Colombia*, [2]*University of Florida*, *Gainesville*.

W30 **Genetic parameters and trends for age at first calving in Brahman cows raised in Brazil.**
J. C. DeSouza*[1], M. Silveira[2], M. A. Pereira[3], P. B. Ferraz Filho[4], J. A. DeFreitas[5], R. M. DaSilva[2], C. H. M. Malhado[6,10], C. H. M. Cavalari[3], M. F. Mota[7], H. J. Fernandes[8], and W. R. Lamberson[9], [1]*Mato Grosso do Sul Federal University, CPAQ/Animal Science*, *MS, Brazil*, [2]*Student of MSc. of animal science course, UFMS*, *Campo Grande, Brazil*, [3]*Brazilian Association of Zebu Breeders*, *Uberaba, Brazil*, [4]*Mato Grosso do Sul Federal University*, *Tres Lagoas, Brazil*, [5]*Paraná Federal University*, *Palotina, Brazil*, [6]*South Bahia State University*, *Jequie, Brazil*, [7]*Paranaense University - UNIPAR*, *Umuarama, Brazil*, [8]*State University of Mato Grosso do Sul*, *Aquidauana, MS*, [9]*University of Missouri*, *Columbia*, [10]*Scholarship - CNPQ*, *Brazil*.

W31 **Allometric growth study of Guzerá cattle under a performance test on grazing regimen.**
R. C. Sousa*[1], I. G. Pereira[1], P. V. R. Paulino[2], S. D. J. Villela[1], R. A. M. Oliveira[1], A. P. L. Tonaco[1], F. S. Coelho[1], and F. A. Carvalho Neto[3], [1]*Universidade Federal dos Vales do Jequitinhonha e Mucuri*, *Diamantina, MG, Brazil*, [2]*Universidade Federal de Viçosa*, *Viçosa, MG, Brazil*, [3]*Colorado State University*, *Fort Collins*.

W32 **Growth curves of Guzera bulls on grass regimen under performance test.**
R. C. Sousa[1], I. G. Pereira*[1], P. V. R. Paulino[2], A. V. Pires[1], F. F. Silva[1], R. A. M. Oliveira[1], A. P. L. Tonaco[1], and F. A. Carvalho Neto[3], [1]*Universidade Federal dos Vales do Jequitinhonha e Mucuri*, *Diamantina, MG, Brazil*, [2]*Universidade Federal de Viçosa*, *Viçosa, MG, Brazil*, [3]*Colorado State University*, *Fort Collins*.

W33 **Variance components in growth traits of Guzera cattle breed with different models.**
I. S. Silva*[1], I. U. Packer[2], C. M. R. Melo[3], L. O. C. Silva[4], and R. A. A. Torres Junior[4], [1]*University of Brasília - UnB*, *Brasília /DF, Brazil*, [2]*University of São Paulo - USP/ESALQ*, *Piracicaba/SP, Brazil*, [3]*University of Santa Catarina - UFSC*, *Florianópolis/SC, Brazil*, [4]*Embrapa Gado de Corte*, *Embrapa Gado de Corte, Campo Grande/MS, Brazil*.

W34 **Estimates genetic parameters for growth traits of Guzera cattle breed by single-trait and two-trait analysis.**
I. S. Silva*[1], I. U. Packer[2], C. M. R. Melo[3], L. O. C. Silva[4], and R. A. A. Torres Junior[4], [1]*University of Brasília - UnB*, *Brasília /DF, Brazil*, [2]*University of São Paulo - USP/ESALQ, Piracicaba/SP*, *Piracicaba/SP, Brazil*, [3]*Federal University of Santa Catarina - UFSC*, *Florianópolis/SC, Brazil*, [4]*Embrapa Gado de Corte*, *Campo Grande/MS, Brazil*.

W35 **Real-time ultrasound measurements for the selection of growing animals of Bruna dels Pirineus beef cattle breed.**
M. Fina, J. Tarres, and J. Piedrafita*, *Grup de Recerca en Remugants, Departament de Ciència Animal i dels Aliments, Universitat Autònoma de Barcelona*, *Bellaterra (Barcelona), Spain*.

W36 **Linear B-splines to model longitudinal weight records in Tabapuã cattle.**
G. R. O. Menezes*[1,2], R. A. Torres[2], R. A. A. Torres Júnior[1], L. O. C. Silva[1], A. Gondo[1], and R. F. Euclydes[2], [1]*Embrapa Beef Cattle*, *Campo Grande, MS, Brazil*, [2]*Federal University of Vicosa*, *Vicosa, MG, Brazil*.

W37 **Genetic variability for calf mortality in Nellore cattle.**
L. C. Magalhães Silva*, F. Baldi, L. G. Albuquerque, and M. J. R. Paranhos da Costa, *São Paulo State University, Unesp*, *Jaboticabal, São Paulo, Brazil*.

W38 **Selection effect for growth traits on energy requirements in reproduction females of three production cycles.**
I. D. P. Solar Diaz*[1], F. R. de Araujo Neto[1], G. M. Ferreira de Camargo[1], R. Barbosa Lobo[2], and H. N. de Oliveira[1], [1]*Sao Paulo State University*, *Jaboticabal, Sao Paulo, Brasil*, [2]*Sao Paulo University*, *Ribeirao Preto, Sao Paulo, Brasil*.

W39 **Effect of model structure on direct and maternal (co)variance and heritability estimates for 210 d weight in Nellore cattle.**
L. Pascoa*[1,2], A. de los Reyes[2], M. A. Elzo[3], J. L. Ferreira[4], L. A. F. Bezerra[5], and R. B. Lobo[5], [1]*Federal Institute of Brasilia*, *Planaltina, Distrito Federal, Brazil*, [2]*Federal University of Goias*, *Goiânia, Goiás, Brazil*, [3]*University of Florida*, *Gainesville*, [4]*Federal University of Tocantins*, *Araguaina, Tocantins, Brazil*, [5]*National Association of Farmers and Researchers*, *Ribeirão Preto, São Paulo, Brazil*.

W40 **Age of dam as phenotypic source of variation for body weight in Nellore beef cattle.**
D. A. Lino*[1,2], S. Tsuruta[1], I. Misztal[1], E. N. Martins[2], and L. O. C. Silva[3], [1]*University of Georgia*, *Athens*, [2]*State University of Maringa*, *Maringa, PR, Brazil*, [3]*Embrapa Gado de Corte*, *Campo Grande, MS, Brazil*.

W41 **Additive genetic variation of residual feed intake and its components in Nellore cattle.**
M. E. Zerlotti Mercadante*, A. C. Del Claro, S. F. Martins Bonilha, J. N. dos Santos Gonçalves Cyrillo, and R. H. Branco, *Instituto de Zootecnia*, *Sertãzinho, São Paulo, Brazil*.

W42 **Relationships among beef cattle temperament and tenderness traits using repeated performance records.**
T. T. Taxis*[1], W. R. Shafer[2], L. L. Berger[3], D. B. Faulkner[4], J. E. Beever[4], M. M. Rolf[1], D. L. Dow[1], J. F. Taylor[1], C. L. Lorenzen[1], and R. L. Weaber[1], [1]*University of Missouri*, *Columbia*, [2]*American Simmental Association*, *Bozeman, MT*, [3]*University of Nebraska*, *Lincoln*, [4]*University of Illinois*, *Urbana*.

W43 **Carcass and meat palatability trends in cattle ranging from 100% Angus to 100% Brahman.**
M. A. Elzo*, D. D. Johnson, J. G. Wasdin, and J. D. Driver, *University of Florida*, *Gainesville*.

W44 **Role of cytoplasmic inheritance on preweaning traits in a closed breeding nucleus Angus herd.**
J. A. Carrillo* and F. Siewerdt, *University of Maryland*, *College Park*.

W45 **Heritability and effect of breed and diet on complementary feed utilization traits in Simmental, Angus and crossbred steers.**
N. V. L. Serão*[1], J. E. Beever[1], D. B. Faulkner[1], M. Pérez-Enciso[2], and S. L. Rodríguez-Zas[1], [1]*University of Illinois at Urbana-Champaign*, *Urbana*, [2]*Universitat Autònoma de Barcelona*, *Barcelona, Catalonia, Spain*.

W46 **Comparison of body weight genetic evaluation accuracy by random regression with splines and multi-trait model in Limousins.**
M. Lukaszewicz*[1,2], I. Misztal[1], A. H. Nelson[1], J. P. Sánchez[1], and J. K. Bertrand[1], [1]*University of Georgia*, *Athens*, [2]*Institute of Genetics and Animal Breeding*, *Jastrzebiec, Poland*.

W47 **Growth curves for buffaloes (*Bubalus bubalis*) using random regression mixed models with different structures of residual variances.**
D. M. Bolivar[1,2], M. F. Cerón-Muñoz[2], M. A. Elzo*[3], E. J. Ramirez[2], and D. A. Agudelo[4], [1]*National University of Colombia*, *Medellin, Colombia*, [2]*University of Antioquia*, *Medellin, Colombia*, [3]*University of Florida*, *Gainesville*, [4]*Lasallian University Corporation*, *Caldas, Colombia*.

W48 **Estimates of genetic and phenotypic trends for body weight traits of Zandi sheep obtained by a univariate and multivariate animal model analysis.**
H. Mohammadi* and M. Moradi Shahrebabak, *Department of Animal Science, University College of Agriculture and Natural Resources, University of Tehran*, *Karaj, Tehran, Iran.*

W49 **Genetic and phenotypic correlations between reproduction and production traits in Zandi sheep.**
H. Mohammadi* and M. Moradi Shahrebabak, *Department of Animal Science, University College of Agriculture and Natural Resources, University of Tehran*, *Karaj, Tehran, Iran.*

W50 **Estimation of genetic trend for some reproductive traits in Zandi sheep breed.**
H. Mohammadi* and M. Moradi Shahrebabak, *Department of Animal Science, University College of Agriculture and Natural Resources, University of Tehran*, *Karaj, Tehran, Iran.*

W51 **Estimates of genetic and phenotypic trends for body weight traits of Zel sheep obtained by univariate and multivariate animal model analysis.**
H. Mohammadi* and M. Sadeghi, *Department of Animal Science, University College of Agriculture and Natural Resources, University of Tehran*, *Karaj, Tehran, Iran.*

## Breeding and Genetics
## Genomic Selection and Whole-Genome Association

W52 **Accuracy and bias of multiple-trait genomic evaluations for linear type traits in US Holsteins.**
S. Tsuruta*[1], I. Misztal[1], I. Aguilar[2], and T. Lawlor[3], [1]*University of Georgia*, *Athens*, [2]*Instituto Nacional de Investigación Agropecuaria*, *La Piedras, Canelones, Uruguay*, [3]*Holstein Association USA Inc.*, *Brattleboro, VT*.

W53 **Genomic imputation and evaluation using 342 high-density Holstein genotypes.**
P. M. VanRaden[1], D. J. Null*[1], G. R. Wiggans[1], T. S. Sonstegard[2], and E. E. Connor[2], [1]*Animal Improvement Programs Laboratory, ARS, USDA*, *Beltsville, MD*, [2]*Bovine Functional Genomics Laboratory, ARS, USDA*, *Beltsville, MD*.

W54 **Genomic evaluation of Angus-Brahman multibreed cattle for feed efficiency and postweaning growth using the Illumina 3k chip.**
M. A. Elzo*[1], G. C. Lamb[2], D. D. Johnson[1], M. G. Thomas[3], I. Misztal[4], D. O. Rae[1], J. G. Wasdin[1], and J. D. Driver[1], [1]*University of Florida*, *Gainesville*, [2]*North Florida Research and Education Center*, *Marianna*, [3]*New Mexico State University*, *Las Cruces*, [4]*University of Georgia*, *Athens*.

W55 **A neural network approach for association between a low-density whole genome SNP marker panel for 19 traits in beef cattle.**
E. Hay*[1], H. Wang[1], X. Liu[1], B. Woodward[2], S. Bauck[2], and R. Rekaya[1], [1]*University of Georgia*, *Athens*, [2]*Merial Limited*, *Duluth, GA*.

W56 **Whole genome association analyses for ultrasound and carcass merit traits in beef cattle.**
H. Li*, Z. Wang, P. Stothard, and S. S. Moore, *University of Alberta*, *Edmonton, Alberta, Canada*.

W57 **Large-scale SNP association analyses for somatic cell score in Canadian Holstein cattle.**
H. Li*[1], Z. Wang[1], F. S. Schenkel[2], M. Sargolzaei[3], S. S. Moore[1], and P. Stothard[1], [1]*University of Alberta*, *Edmonton, Alberta, Canada*, [2]*University of Guelph*, *Guelph, Ontario, Canada*, [3]*L'Alliance Boviteq*, *Saint-Hyacinthe, Québec, Canada*.

W58 **Comparison of selective genotyping strategies for prediction of breeding values in a population undergoing selection.**
A. A. Boligon*[1,2], N. Long[2], L. G. Albuquerque[1], K. A. Weigel[3], D. Gianola[2,3], and G. J. M. Rosa[2], [1]*Department of Animal Sciences, Sao Paulo State University*, *Jaboticabal, SP, Brazil*, [2]*Department of Animal Sciences, University of Wisconsin*, *Madison*, [3]*Department of Dairy Science, University of Wisconsin*, *Madison*.

W59 **Estimating genomic breeding values in crossbred animals.**
E. H. Hay*, S. Smith, and R. Rekaya, *University of Georgia*, *Athens*.

W60 **Accounting for new mutations in the genomic relationship matrix.**
J. Casellas*, *G2R, Departament de Ciència Animal i dels Aliments, Universitat Autònoma de Barcelona*, *Bellaterra, Spain*.

## Dairy Foods
## Cheese

W61 **effect of the use of rennet substitute on composition and yield of Minas Padrão cheese.**
J. Camisa[1], S. T. Di Cicco[1], K. Sivieri[2], P. C. B. Vianna*[1], and C. M. V. B. De Rensis[1], [1]*UNOPAR*, *Londrina, PR, Brazil*, [2]*UNESP*, *Araraquara, SP, Brazil*.

W62 **Effects of gelation temperature and cutting time on the rheology and quality of curd made from buffalo milk: A comparison with cows' milk.**
I. Hussain*, J. Yan, A. E. Bell, and A. S. Grandison, *Department of Food and Nutritional Sciences, University of Reading*, *Reading, Berkshire, UK*.

W63 **Cheese making properties of milk protein concentrate powder as affected by storage at high temperature.**
N. Rémillard and M. Britten*, *Food Research and Development Centre, Agriculture and Agri-Food Canada*, *St-Hyacinthe, (QC), Canada*.

W64 **Influence of different cheese matrix structures on lipid digestion in a simulated gastro-intestinal environment.**
S. Lamothe[1], M.-M. Corbeil[1], S. Turgeon[2], and M. Britten*[1], [1]*Food Research and Development Centre, Agriculture and Agri-Food Canada*, *St-Hyacinthe, (QC), Canada*, [2]*Dairy Research Centre STELA, Faculty of Agriculture and Food Science, Université Laval*, *Quebec, (QC), Canada*.

W65 **Effects of high pressure processing on the chemical, functional and rheological properties of fresh Queso Fresco.**
D. L. Van Hekken*, M. H. Tunick, R. Kwoczak, and P. M. Tomasul, *USDA, ARS*, *Wyndmoor, PA*.

W66 **ACE-inhibitory activity of commercial Wisconsin Cheddar cheeses during ripening.**
Y. Lu*, S. Govindasamy-Lucey, and J. Lucey, *University of Wisconsin-Madison*.

W67 **Influence of cooking temperature on the behavior of enterococci and the production of diacetyl in Coalho cheese.**
P. L. Mamede, J. M. Perri, A. Y. Kuaye, and W. H. Viotto*, *UNICAMP*, *Campinas, São Paulo, Brazil*.

W68 **Identification of the main esterase involved in lipolysis by *Propionibacterium freudenreichii*.**
M. C. Abeijón Mukdsi[3,4], H. Falentin[1,2], M.-B. Maillard[1,2], R. B. Medina[3,4], S. Parayre[1,2], S.-M. Deutsch[1,2], S. Lortal*[1,2], and A. Thierry[1,2], [1]*INRA, UMR1253*, *Rennes, France*, [2]*Agrocampus Ouest*, *Rennes, France*, [3]*CERELA-CONICET*, *Tucumán, Argentina*, [4]*Universidad Nacional de Tucumán*, *Tucumán, Argentina*.

W69 **Characteristics of the chemical composition and lipolysis during ripening of Emmental cheese.**
N. S. Oh*, Y. K. Shin, J. P. Ok, and Y. H. Park, *Institute of Dairy Food Research, Seoul Dairy Co-op.*, *Institute of Dairy Food Research, Seoul Dairy Cooperative, Ansansi, Kyunggi, South Korea*.

W70 **Oxidative stability of Prato cheese added with lutein.**
D. Maus, A. A. O. Xavier, M. T. K. Kubo, R. A. Jorge, A. Z. Mercadante, and W. H. Viotto*, *UNICAMP*, *Campinas, São Paulo, Brazil*.

W71 **Comparison of texture and sensory attribute between Gouda cheese and cholesterol-removed Gouda cheese during ripening.**
H. J. Jung*, E. J. Ko, and H. S. Kwak, *Sejong University*, *Seoul, South Korea*.

W72 **Influence of pH on flavor of low fat Cheddar cheese.**
M. M. Motawee*[1] and D. J. McMahon[2], [1]*National Organization for Drug Control and Research*, *Cairo, Egypt*, [2]*Western Dairy Center, Utah State University*, *Logan.*

W73 **Free fatty acid compositions of low-fat and full-fat goat milk cheeses stored under refrigeration for three months.**
W. Nouira[1], Z. Guler[2], and Y. W. Park*[1], [1]*Fort Valley State University*, *Fort Valley, GA*, [2]*Mustafa Kemal University*, *Hatay, Turkey*.

W74 **Increasing functionality of low fat mozzarella cheese using polysaccharides.**
E. N. Oberg*, W. R. McManus, and D. J. McMahon, *Utah State University, Logan.*

## Dairy Foods
## Products

W75 **The effects of incorporating sweet potato and peanut flours on sensory properties of probiotic yogurt in Mwanza, Tanzania.**
S. Hekmat* and S. Varriano, *Brescia University College*, *London, Ontario, Canada*.

W76 **Riboflavin photodegradation in yogurt with added lutein.**
L. D. Domingos, A. A. O. Xavier, R. A. Jorge, A. Z. Mercadante, A. J. Petenate, and W. H. Viotto*, *UNICAMP*, *Campinas, São Paulo, Brazil*.

W77 **The physicochemical and sensory properties of milk supplemented with dispersable nanoginseng during storage.**
Y. J. Ahn* and H. S. Kwak, *Sejong University*, *Seoul, Korea*.

W78 **Optimum condition for crosslinked β-cyclodextrin and recycling for cholesterol removal in milk and cream.**
Y. K. Lee* and H. S. Kwak, *Sejong University*, *Seoul, South Korea*.

W79 **Optimization of water in oil in water (W/O/W)-microencapsulated iron for milk fortification (I).**
S. Y. Lee*, S. I. Ahn, and H. S. Kwak, *Sejong University*, *Seoul, South Korea*.

W80 **Water in oil in water (W/O/W)-microencapsulation iron for milk fortification (II).**
S. Y. Lee*, S. I. Ahn, and H. S. Kwak, *Sejong University*, *Seoul, South Korea*.

W81 **Development and characterization of synbiotic quark cheese.**
A. F. Carvalho*[1], M. M. Gonçalves[1], G. M. Tavares[1], J. Y. Suda[1], N. F. Nogueira Silva[2], and J. B. P. Chaves[1], [1]*Federal University of Viçosa*, *Viçosa, MG, Brazil*, [2]*Institut National de la Recherche Agronomique STLO*, *Rennes, Bretagne, France*.

W82 **Comparison of quantitative neutral volatile compounds in regular cream cheese and cholesterol-removed cream cheese.**
S. S. Jeon*, S. J. Lee, and H. S. Kwak, *Sejong University*, *Seoul, Korea*.

W83 **Comparison of lipolytic and proteolytic changes between commercial bovine milk and caprine milk yogurts stored under refrigeration.**
J. Oglesby and Y. W. Park*, *Fort Valley State University*, *Fort Valley, GA*.

W84 **impact of protein content, total solids, and milk protein solids on the functionality of nonfat yogurt.**
K. N. Shah* and L. E. Metzger, *Midwest Dairy Foods Research Center, Dairy Science Department, South Dakota State University*, *Brookings*.

W85 **Sensory evaluation of various probiotic yogurts in Mwanza, Tanzania.**
S. Hekmat*[1,2], J. Hemsworth[1], H. Soltani[1], and G. Reid[2], [1]*Brescia University College*, *London, Ontario, Canada*, [2]*Canadian Research and Development Center for Probiotics*, *London, Ontario, Canada*.

W86 **Effect of pasture feeding and dairy cattle breed on vitamin E and β-carotene content in milk.**
V. M. Marino[1], I. Schadt[1], S. La Terra[1], M. Caccamo[1], G. Licitra[2,1], and S. Carpino*[1], [1]*CoRFiLaC, Regione Siciliana*, *Ragusa, Italy*, [2]*DISPA, Catania University*, *Catania, Italy*.

W87 **The fatty acid composition and properties of summer and winter butter.**
O. Tsisaryk*, *Lviv National University of Veterinary Medicine and Biotechnologies*, *Lviv, Ukraine*.

W88 **Hungarian Trappist (Trapista) cheese production from Holstein and Jersey cows' milk.**
L. Varga*, *Department of Dairy Science, Institute of Food Science, Faculty of Agricultural and Food Sciences, University of West Hungary*, *Mosonmagyarovar, Hungary*.

W89 **Long-term ethanol or acetic acid supplementation do not impair sensory milk quality.**
J. L. P. Daniel*, L. G. Nussio, M. H. F. Spotto, T. L. Cardoso, A. Sá Neto, and M. Zopollatto, *University of Sao Paulo, College of Agriculture "Luiz de Queiroz"*, *Piracicaba, SP, Brazil*.



## Forages and Pastures
## Improving Forage Conservation and Quality

W90 **Dry matter yield and silage nutritive value of winter cereals in the southern High Plains.**
F. E. Contreras-Govea*[1], H. Gonzalez Garcia[2], D. M. VanLeeuwen[3], and J. Idowu[4], [1]*New Mexico State University, Plant and Environmental Sciences Department*, *Artesia*, [2]*Universidad Autonoma de Ciudad Juarez, Departamento de Ciencias Veterinarias*, *Ciudad Juarez, Chihuahua, Mexico*, [3]*New Mexico State University, Agricultural Biometrics Service*, *Las Cruces*, [4]*New Mexico State University, Extension Plant Sciences Department*, *Las Cruces*.

W91 **The effects of substituting corn silage and alfalfa hay with Master Graze on feed intake, milk yield and milk composition.**
A. Salamone*[1], A. A. AbuGhazaleh[1], C. Stuemke[1], R. Atkinson[1], and B. Dodd[2], [1]*Southern Illinois University*, *Carbondale*, [2]*Masterschoice*, *Anna, IL*.

W92 **Ruminal degradability of *Albizia lebbeck* silage.**
T. Clavero*, R. Razz, and O. Araujo-Febres, *Centro de Transferencia de Tecnologia en Pastos y Forrajes. Universidad del Zulia*, *Maracaibo, Estado Zulia, Venezuela*.

W93 **Characterization and identification of *Lactobacilli* stains from tropical grasses.**
J. P. S. Rigueira[1], O. G. Pereira*[1], K. G. Ribeiro[2], A. S. Cezário[1], and W. F. Souza[1], [1]*Federal University of Viçosa*, *Viçosa, Minas Gerais, Brazil*, [2]*Universidade Federal dos Vales do Jequitinhonha e Mucuri*, *Diamantina, Minas Gerais, Brazil*.

W94 **Milk production response to feeding alfalfa silage inoculated with *Lactobacillus plantarum*.**
R. E. Muck*[1], G. A. Broderick[1], A. P. Faciola[2], and U. C. Hymes-Fecht[1], [1]*USDA, ARS, US Dairy Forage Research Center*, *Madison, WI*, [2]*University of Wisconsin-Madison*, *Madison*.

W95 **Biomin BioStabil Plus enhances the fermentation characteristics, aerobic stability, and intake by rams of native tropical grass silage.**
C. Rosario[1], A. A. Rodriguez*[1], and Y. Acosta-Aragon[2], [1]*University of Puerto Rico*, *Mayaguez, PR*, [2]*Biomin Holding GmbH2*, *Herzogenburg, Austria*.

W96 **Fermentation characteristics and aerobic stability of tropical corn ensiled with additives containing homo-fermentative or hetero-fermentative bacterial strains.**
V. Rivera[1], L. Solorzano[2], and A. Rodriguez*[1], [1]*University of Puerto Rico*, *Mayaguez, PR*, [2]*Chr. Hansen*, *Fitchburg, WI*.

W97 **The aerobic stability and dry matter losses of high moisture corn ensiled as whole or ground grain using *Lactobacillus buchneri* alone or in association with *Lactobacillus plantarum*.**
R. Coudure[1], J. G. Cazaux[1], F. Skiba[1], E. Chevaux*[2], V. Demey[2], and J. Sindou[2], [1]*Arvalis - Institut du végétal*, *Montardon, France*, [2]*Lallemand SAS*, *Blagnac, France*.

W98 **Effect of dry matter density on fermentation and nutrient preservation in brown mid-rib (BMR) corn silage within bunker silos.**
K. Griswold[1], P. Craig[2], J. Graybill[1], and R. Ward*[3], [1]*Penn State Cooperative Extension*, *Lancaster*, [2]*Penn State Cooperative Extension*, *Dauphin*, [3]*Cumberland Valley Analytical Services*, *Maugansville, MD*.

W99 **Effects of the levels of silage additives on the fermentation quality and in situ digestibility of reed (*Phragmites australis* Cav.) silage harvested at different maturity stages.**
B. W. Kim*, K. I. Sung, and J. S. Shin, *College of Animal Life Sciences, Kangwon National University*, *Chuncheon, Kangwon-Do, South Korea*.

W100 **Ruminal parameters of sheep fed corn silage inoculated with *Lactobacillus buchneri* and *L. buchneri* associated with *L. plantarum*.**
F. C. Basso*, P. A. R. Salvo, F. H. Kamada, J. P. R. Costas, W. L. da Silva, and R. A. Reis, *Animal Science Departament, College Agricultural and Veterinary Sciences, São Paulo State University*, *Jaboticabal, São Paulo, Jaboticabal*.

W101 **In vitro fermentation on cactus forage (*Opuntia* spp.) inoculated with *Kluyveromices lactis* yeast.**
C. Rodríguez-Muela*[1], D. Díaz-Plascencia[1], P. Mancillas-Flores[1], O. Ruiz-Barrera[1], F. Salvador-Torres[1], G. Corral[1], S. Mena[2], R. Copado-García[1], and L. Duran[1], [1]*Universidad Autónoma de Chihuahua*, *Chihuahua, México*, [2]*Universidad de Guadalajara*, *Jalisco, México*.

W102 **Comparison of an inoculant and enzymes, separate and in combination, on the fermentation of alfalfa silage.**
S. J. Z. Hansen* and A. H. Smith, *Danisco*, *Waukesha, WI*.

W103 **Effects of sodium bisulfate on alfalfa silage preservation.**
M. Terré[1], D. Seale[2], C. Knueven[3], and A. Bach*[4,1], [1]*Institut de Recerca i Tecnologia Agroalimentàries*, *Caldes de Montbui, Barcelona, Spain*, [2]*DS AgriTech Ltd.*, *Reading, Berkshire, UK*, [3]*Jones-Hamilton, Co*, *Walbridge, OH*, [4]*Institució Catalana de Recerca i Estudis Avançats*, *Barcelona, Spain*.

W104 **Nutritive value and fermentation parameters of 'Tifton 85' bermudagrass and 'Mulato II' brachiariagrass silage in Florida.**
A. D. Aguiar*[1], J. M. B. Vendramini[1], A. T. Adesogan[2], L. E. Sollenberger[2], L. Galzerano[1], L. Custodio[1], E. Alves[1], and G. R. Manarim[1], [1]*Range Cattle Research Education Center*, *Ona, FL*, [2]*University of Florida*, *Gainesville*.

W105 **Effect of new mixtures of silage additives in grass and maize on fermentation quality and aerobic stability.**
J. Jatkauskas[1], V. Vrotniakiene[1], C. Ohlsson[2], and B. Lund*[2], [1]*Institute of Animal Science of Lithuanian University of Health Sciences*, *Baisogala, Lithuania*, [2]*Chr Hansen A/S*, *Hoersholm, Denmark*.

W106 **Identification and characterization of spoilage yeasts from high moisture corn and corn silages.**
M. C. Santos*[1], C. Golt[1], R. D. Joerger[1], G. D. Mechor[2], and L. Kung[1], [1]*University of Delaware*, *Newark*, [2]*Elanco Animal Health*, *Greenfield, IN*.

W107 **Ruminal parameters of cattle fed corn silage inoculated with microbial additive.**
P. A. R. Salvo*, F. C. Basso, F. H. Kamada, J. V. Yamaguchi, V. V. Naves, and R. A. Reis, *Animal Science Departament, College Agricultural and Veterinary Sciences, São Paulo State University*, *Jaboticabal, São Paulo, Brazil*.

W108 **Investigation of microbial additives on fermentation quality of alfalfa silage.**
F. Kazemi, M. Dehghan-Banadaky*, A. Zali, and K. Rezayazdi, *Animal Science Department, Campus of Agricultural and Natural Resources, University of Tehran*, *Karaj, Tehran, Iran*.

W109 **Volatile organic compounds emissions from different silages and cattle feed.**
I. L. Malkina[1], R. B. Franco*[1], A. Kumar[2], P. G. Green[3], and F. M. Mitloehner[1], [1]*Department of Animal Science, University of California-Davis*, [2]*Crocker Nuclear Laboratory, University of California-Davis*, *Davis*, [3]*Department of Civil and Environmental Engineering, University of California-Davis*, *Davis*.

W110 **Production and quality of corn silage cultivated on integrated crop-livestock-forest system in a Cerrado region of Minas Gerais, Brazil.**
M. C. M. Viana*[1], W. Botelho[1], P. A. Viana[2], D. S. Queiroz[1], E. A. Silva[1], M. S. Viana[4], and C. G. Guimarães[3], [1]*EPAMIG - Minas Gerais Agricultural Research Corporation*, *Belo Horizonte, Minas Gerais, Brazil*, [2]*Embrapa Maize and Sorghum*, *Sete Lagoas, Minas Gerais, Brazil*, [3]*UFVJM University, Diamantina, Minas Gerais, Brazil*, [4]*FEAD University*, *Belo Horizonte, Minas Gerais, Brazil*.

W111 **Effect of molasses, starch and enzyme enrichment of sorghum and corn silage on chemical composition and rumen degradability.**
M. Dehghan-Banadaky*, M. Ghiasvand, and S. Sadeghi, *Animal Science Department, Campus of Agricultural and Natural Resources, University of Tehran*, *Karaj, Tehran, Iran*.

W112 **Effect of processed and unprocessed canola straw on growth performance, feeding behavior and rumen metabolites in Holstein feedlot calves.**
M. Ghiasvand, M. Dehghan-Banadaky*, and K. Rezayazdi, *Animal Science Department, Campus of Agricultural and Natural Resources, University of Tehran*, *Karaj, Tehran, Iran*.

W113 **Kinetics of solid-state fermentation of waste peach (*Prunus persica*) to be used as animal feed.**
Y. Castillo[1], O. Ruiz*[2], J. C. Gomez[1], E. Peru[1], H. Gonzalez[3], A. Orozco[3], C. Angulo[2], I. Ramos[3], and M. R. Murphy[4], [1]*División multidisciplinaria, UACJ*, *Nuevo Casas Grandes, Chihuahua, Mexico*, [2]*Facultad de Zootecnia y Ecologia, UACH*, *Chihuahua, Chih., Mexico*, [3]*Instituto de Ciencia Biológicas, UACJ*, *Ciudad Juárez, Chihuahua, Mexico*, [4]*Animal Science Department, University of Illinois*, *Urbana.*

W114 **Chemical additives on sugarcane ensilage: Fermentation parameters, digestibility and intake by sheep.**
A. F. Pedroso*[1], S. N. Esteves[1], W. Barioni[1], G. B. Souza[1], C. Carbello[2], and G. G. Chiquitin[2], [1]*Brazilian Agricultural Research Corporation - Embrapa*, *São Carlos, SP, Brazil*, [2]*Fund. Educacional de Andradina*, *Andradina, SP, Brazil*.

W115 **Effects of the form of applying virgin lime and the treatments duration on the temperature and pH of sugarcane.**
E. Z. Ramos*, M. D. S. Oliveira, A. C. Rego, M. P. R. Sforcini, and V. B. Ferrari, *UNESP*, *Jaboticabal, São Paulo, Brazil*.

W116 **Effect of calcium chloride fertilization on the dietary cation-anion difference of forage crops in northern New York.**
E. O. Young[1], C. S. Ballard*[1], and S. Mishra[2], [1]*William H. Miner Agricultural Research Institute*, *Chazy, NY*, [2]*TETRA Technologies, Inc.*, *The Woodlands, TX*.

W117 **In vitro ruminal fermentation of dairy cows diets with eight yeast strains isolated from apple byproducts.**
D. Díaz-Plascencia*[1], C. Rodríguez-Muela[1], P. Mancillas-Flores[1], F. Salvador-Torres[1], C. Arzola[1], L. Durán[1], J. Jiménez[1], and S. Mena[2], [1]*Universidad Autónoma de Chihuahua*, *Chihuahua, México*, [2]*Universidad de Guadalajara*, *Jalisco, México*.

W118 **Effect of exogenous fibrolytic enzymes on in vitro ruminal fermentation kinetics and energy utilization of three Mexican tree fodder species.**
D. López[1], R. Rojo*[1], A. Z. M. Salem[1], J. Cedillo-Monrroy[1], B. Albarrán[1], A. González[2], J. L. Martínez-Benites[1], J. Morales-Diaz[1], and J. Tinoco-Jaramillo[1], [1]*Centro Universitario UAEM-Temascaltepec, Universidad Autónoma del Estado de México*, *Temascaltepec, Estado de México, México*, [2]*Universidad Autónoma de Tamaulipas*, *Cd. Victoria, Tamaulipas México*.

W119 **Effects of pH and temperature on fibrolytic enzyme activities of various commercial exogenous enzyme preparations.**
K. G. Arriola*, J. J. Romero Gomez, and A. T. Adesogan, *Department of Animal Sciences, Institute of Food and Agricultural Sciences, University of Florida*, *Gainesville*.

W120 **Fiber digestibility of cool-season grasses.**
T. W. Downing*, *Oregon State University*, *Corvallis*.

W121 **Comparison of chemical composition and digestibility among wheat straws treated with *Pleurotus djamur*.**
O. D. Montañez-Valdez*[1], J. A. Reyes-Gutierrez[1], J. A. Martínez-Ibarra[1], G. Rocha-Chavez[1], J. M. Tapia-Gonzalez[1], C. E. Guerra-Medina[2], J. J. Martínez-Tinajero[3], and J. H. Avellaneda-Cevallos[4], [1]*Centro Universitario del Sur*, *Ciudad Guzmán, Jalisco, México*, [2]*Centro Universiario de la Costa Sur*, *Autlán de la Grana, Jalisco, México*, [3]*Facultad de Ciencias Agrícolas*, *Universidad Autónoma de Chiapas, México*, [4]*Universidad Técnica de Estatal de Quevedo*, *Quevedo, Los Rios, Ecuador*.

W122 **Effect of crude protein content on intake and digestion of coastal bermudagrass hays by horses.**
C. L. Spurgin, J. A. Coverdale, K. N. Winsco*, and T. A. Wickersham, *Texas A&M University*, *College Station*.

W123 **The effect of silage nutrient variations on milk prediction outcomes of the Cornell Net Carbohydrate and Protein System.**
C. T. Hill*[1], M. J. Tetreault[1], and H. M. Dann[2], [1]*Poulin Grain Inc.*, *Newport, VT*, [2]*William H. Miner Agricultural Institute*, *Chazy, NY*.

W124 **Partially replacing alfalfa and corn silages with fescue silages maintained fat corrected milk production.**
W. D. Verbeten*, D. K. Combs, and D. J. Undersander, *University of Wisconsin Madison*, *Madison*.

W125 **Processed and unprocessed canola straw in Holstein male calves diets changed blood parameters and carcass characteristics.**
M. Ghiasvand, K. Rezayazdi, and M. Dehghan-Banadaky*, *Animal Science Department, Campus of Agricultural and Natural Resources, University of Tehran*, *Karaj, Tehran, Iran*.

## Growth and Development II

W126 **Chromium acetate induces adipogenesis of bovine intramuscular adipocytes through reduced phosphorylation of adenosine monophosphate–activated protein kinase α.**
K. Y. Chung*, R. T. Tokach, and B. J. Johnson, *Texas Tech University*, *Lubbock*.

W127 **Palmitoleic acid regulation of lipid metabolism in primary bovine adipocytes could involve genes associated with fatty acid oxidation.**
A. K. G. Kadegowda*, T. A. Burns, S. L. Pratt, and S. K. Duckett, *Clemson University*, *Clemson, SC*.

W128 **Effect of anabolic implant and quality grade on lipogenic gene expression in subcutaneous adipose tissue.**
S. K. Duckett*, S. L. Pratt, and J. W. Long, *Clemson University*, *Clemson, SC*.

W129 **Signaling pathways mediating the effects of insulin-like growth factor-I on proliferation, protein synthesis, and protein degradation in bovine satellite cells.**
X. Ge and H. Jiang*, *Department of Animal and Poultry Sciences, Virginia Tech*, *Blacksburg*.

W130 **Effects of energy intake and age on the expression of adipogenic genes in subcutaneous and intramuscular fat in bovine Spanish Pirenaica breed.**
B. Soret*, P. Tiberio, A. Arana, JA Mendizabal, and L. Alfonso, *Universidad Publica de Navarra*, *Pamplona, Navarra, Spain*.

W131 **Age post weaning but not birth weight and sex affects the small intestinal glutathione redox status of piglets.**
J. Michiels*[1,2], E. Claeys[2], A. Ovyn[2], and S. De Smet[2], [1]*Faculty of Biosciences and Landscape Architecture, University College Ghent*, *Ghent, Belgium*, [2]*Laboratory for Animal Nutrition and Animal Product Quality, Department of Animal Production, Ghent University*, *Melle, Belgium*.

W132 **Feed restriction alters reactivity of body fat after catabolic stimulation in growing pigs.**
B. U. Metzler-Zebeli, S. Görs, K. Giggel, R. Krüger, H. M. Hammon, and C. C. Metges*, *Leibniz Institute for Farm Animal Biology (FBN)*, *Dummerstorf, Germany*.

W133 **The effect of different methods of using zilpaterol hydrochloride on growth performance in Japanese quail.**
M. Mohammadi*, A. Towhidi, H. Moravej, and A. Zareh Shahne, *Department of Animal Science, University of Tehran, Karaj*, *Alborz, Iran*.

W134 **Effects of dietary supplementation of sodium stearoyl-2-lactylate in a low-energy density diet on growth performance, blood profiles, and relative organ weight in broilers.**
S. M. Hong*, J. P. Wang, and I. H. Kim, *Dankook University*, *Cheonan, Choongnam, South Korea*.

W135 **Insulin-like growth factor-I (IGFI), IGF binding proteins (IGFBP), and growth hormone receptor (GHR) mRNA concentration in fetal liver and duodenum in response to variable maternal nutrition during gestation.**
M. Field*, R. Anthony, T. Engle, S. Archibeque, and H. Han, *Colorado State University*, *Fort Collins*.

W136 **Effects of variable maternal undernutrition on uterine and umbilical IGF-I, insulin, and ghrelin concentrations in near-term sheep twin pregnancies.**
M. Field*, R. Anthony, T. Engle, S. Archibeque, and H. Han, *Colorado State University*, *Fort Collins*.

W137 **Transfer of omega-3 fatty acids from dams to calves in dairy cows.**
M. Zachut*[1,2], A. Romanenco[1,2], H. Lehrer[1], A. Arieli[2], and U. Moallem[1], [1]*Agriculture Research Organization*, *Bet Dagan, Israel*, [2]*Faculty of Agriculture*, *Hebrew University, Rehovot, Israel*.

W138 **Temporal changes in the proteome of the uterine histotroph in cattle.**
M. P. Mullen*[1], A. C. O. Evans[2], G. Elia[3], M. Hilliard[3], N. Forde[2], M. H. Parr[1], M. G. Diskin[1], and M. A. Crowe[2], [1]*Animal and Bioscience Research Department, Animal and Grassland Research and Innovation Centre, Teagasc*, *Athenry, Co. Galway, Ireland*, [2]*School of Agriculture, Food Science and Veterinary Medicine, University College Dublin*, *Belfield, Dublin , Ireland*, [3]*Conway Mass Spectrometry Resource, University College Dublin*, *Belfield, Dublin , Ireland*.

W139 **Effect of maternal diet on the ontogenetic development of the hepatic proteome in intrauterine growth-restricted porcine offspring.**
M. Peters, B. Kuhla, I. S. Lang, E. P. Rudolph, and C. C. Metges*, *Leibniz Institute for Farm Animal Biology (FBN)*, *Dummerstorf, Germany*.

W140 **Changes in plasma amino acid concentrations in preterm and term born calves.**
J. Steinhoff-Wagner*, S. Görs, J. Flor, C. C. Metges, and H. M. Hammon, *Leibniz Institute for Farm Animal Biology (FBN)*, *Dummerstorf, Germany*.

W141 **Placental and fetal plasma amino acid uptake and release in mid and late pregnancy of gilts fed limited- and excess-protein diets associated with intrauterine growth retardation (IUGR).**
C. C. Metges*, S. Görs, I. S. Lang, K.-P. Brüssow, G. Nürnberg, C. Rehfeldt, W. Otten, and B. U. Metzler-Zebeli, *Leibniz Institute for Farm Animal Biology (FBN)*, *Dummerstorf, Germany*.

## Lactation Biology 2

W142 **Hormonal regulation of suspected components of bovine IgG1 transcytosis mechanism in primary bovine mammary cells in vitro.**
A. Stark[1], E. Vaschkova[2], O. Wellnitz*[1], R. M. Bruckmaier[1], and C. R. Baumrucker[3], [1]*Veterinary Physiology, Vetsuisse Faculty, University of Bern*, *Switzerland*, [2]*Trakia University*, *Stara Zagora, Bulgaria*, [3]*Penn State University*, *State College*.

W143 **Reducing metabolic stress of dairy cows during the transition period by partial milking or nursing.**
É. Carbonneau*[1], A.-M. De Passillé[2], J. Rushen[2], B. G. Talbot[1], and P. Lacasse[3], [1]*Université de Sherbrooke*, *Sherbrooke, QC, Canada*, [2]*AAFC-Pacific Agri-Food Research Centre*, *Agassiz, BC, Canada*, [3]*AAFC-Dairy and Swine Research and Development Centre*, *Sherbrooke, QC, Canada*.

W144 **Analysis of the bovine milk transcriptome by RNA sequencing.**
S. Wickramasinghe, G. Rincon, A. Islas-Trejo, and J. F. Medrano*, *Dept. of Animal Science, University of California-Davis*, *Davis*.

W145 **The effects of NPH insulin and insulin glargine on milk yield and composition by lactating dairy cows. (see Abstract 71).**
L. A. Winkelman* and T. R. Overton, *Cornell University, Ithaca, NY.*

W146 **Residual effects of incomplete udder emptying during milking in dairy cows.**
J. Guinard-Flament*, A. Albaaj, P.-G. Marnet, and C. Hurtaud, *UMR Production du Lait*, *INRA/Agrocampus OUest, Saint-Gilles, France*.

W147 **Effect of prolactin-release inhibition on milk production and mammary gland involution at drying-off.**
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*.

W148 **Expression of novel, putative stem cell markers in prepubertal and lactating bovine mammary glands. (see Abstract 78).**
R. K. Choudhary*[1], C. M. Evock-Clover[2], and A. V. Capuco[2,1], [1]*Department of Animal Sciences, University of Maryland, College Park,* [2]*Bovine Functional Genomics Lab, USDA-ARS, Beltsville, MD.*

W149 **Putative stem/progenitor cell markers in lactating and re-developing bovine mammary glands.**
E. Brijs*, K. Singh, and A. Molenaar, *AgResearch Ltd., Ruakura Research Centre*, *Hamilton, New Zealand*.

W150 **Responses to steroidal doses and growth hormone treatment of nulliparous dairy ewes induced to lactate.**
M. Ben Khedim, G. Caja, A. K. K. Salama, A. Schalageter, E. Albanell, and M. Rovai*, *G2R, Universitat Autònoma de Barcelona*, *Bellaterra, Barcelona, Spain*.

## Meat Science and Muscle Biology

W151 **Traceability of animal byproducts in quail (*Coturnix coturnix japonica*) tissues using carbon-13 and nitrogen-15 stable isotopes.**
C. Mori*[2], E. A. Garcia[1], C. Ducatti[1], J. C. Denadai[1], and K. Pelicia[1], [1]*São Paulo State University*, *Botucatu, São Paulo, Brazil*, [2]*São Paulo State University*, *Registro, São Paulo, Brazil*.

W152 **Meat quality of Pelibuey sheep finished with different levels of alfalfa.**
V. Resendiz-Cruz[1], O. Hernadez-Mendo[1], J. Gallegos-Sanchez[1], I. Guerrero-Legarreta[2], P. A. Martinez-Hernandez[3], and G. Aranda-Osorio*[3], [1]*Colegio de Postgraduados*, *Montecillos, Estado de Mexico, Mexico*, [2]*Universidad Autonoma Metropolitana-Iztapalapa*, *Mexico D.F., Mexico*, [3]*Universidad Autonoma Chapingo*, *Chapingo, Estado de Mexico, Mexico*.

W153 **Meat quality of lambs fed fresh or dehydrated spineless cactus (Opuntia ficus-indica).**
M. I. Aguilar-Yañez[1], O. Hernadez-Mendo[1], G. Aranda-Osorio*[2], J. E. Ramirez-Bribiesca[1], I. Guerrero-Legarreta[3], and M. M. Crosby-Galvan[1], [1]*Colegio de Postgraduados*, *Montecillos, Estado de Mexico, Mexico*, [2]*Universidad Autonoma Chapingo*, *Chapingo, Estado de Mexico, Mexico*, [3]*Universidad Autonoma Metropolitana-Iztapalapa*, *Mexico D.F., Mexico*.

W154 **Qualitative characteristics of meat from lambs fed with sunflower seeds and vitamin E.**
F. A. Almeida*, A. G. Silva Sobrinho, G. M. Manzi, N. L. L. Lima, N. M. B. L. Zeola, V. Endo, and J. C. Barbosa, *Universidade Estadual Paulista - Unesp/ Campus de Jaboticabal*, *Jaboticabal, São Paulo, Brasil*.

W155 **Effects of nutritional plane and selenium supply during gestation in primiparous ewes on offspring skeletal muscle development.**
C. A. Schwartz*, W. L. Keller, T. L. Neville, L. P. Reynolds, D. A. Redmer, A. M. Meyer, C. J. Hammer, K. A. Vonnahme, J. S. Caton, and K. R. Maddock-Carlin, *Department of Animal Sciences, North Dakota State University*, *Fargo*.

W156 **Maternal dietary protein affects transcriptional regulation of myostatin gene distinctively at weaning and finishing stages in skeletal muscle of Meishan pigs.**
X. Liu, J. Wang, R. Li, X. Yang, Q. Sun, and R. Zhao*, *Nanjing Agricultural University*, *Nanjing, P. R. China*.

W157 **Linear mixed models built with the stepAIC function in the R environment for evaluation of TPA and WBSF.**
A. Dufek*[1,2], J. Subrt[3], and J. Simeonovova[3], [1]*Research Institute for Cattle Breeding, Ltd.*, *Vikyrovice, Czech Republic*, [2]*Agriresearch Rapotin Ltd.*, *Vikyrovice, Czech Republic*, [3]*Mendel University in Brno*, *Brno, Czech Republic*.

W158 **Effect of kidney matrix on the detection of β-lactam and tetracycline residues by UPLC-MS/MS.**
M. P. Almeida[1,2], M. O. Leite*[2], S. V. Cançado[2], M. R. Souza[2], and M. M. O. P. Cerqueira[2], [1]*Lanagro-MG/Ministério da Agricultura, Pecuária e Abastecimento*, [2]*Escola de Veterinária - Universidade Federal de Minas Gerais*.

W159 **Extent of μ-calpain autolysis differs depending on the extent of destructered tissue in the ham.**
M. Müller[2], C. Biolley[1], P. Silacci[1], and G. Bee*[1], [1]*Agroscope Liebefeld Posieux Research Station (ALP)*, *Posieux, Switzerland*, [2]*Swiss College of Agriculture, SHL*, *Zollikofen, Switzerland*.

W160 **Early adaptation of sarcoplasmic reticulum $Ca^{2+}$ pump in bovine myofiber under chronic low-frequency electrical stimulation.**
T. Sakurada*[1], E. Kitagawa[1], M. Miyake[1,2], S. Ohwada[1], H. Aso[1], and K. Watanabe[1], [1]*Tohoku University*, *Sendai, Japan*, [2]*The University of Tokushima*, *Tokushima, Japan*.

W161 **Effects of temperament classification on carcass characteristics, tenderness and value in Angus-based composite steers.**
J. W. Behrens*[1], R. K. Miller[1], D. S. Hale[1], J. T. Walter[1], J. C. Bailey[1], A. N. Hafla[1], T. Machado[2], L. O. Tedeschi[1], and G. E. Carstens[1], [1]*Texas A&M University*, *College Station*, [2]*Texas A&M University at Kingsville*, *Kingsville*.

W162 **Rump measurements as related to others carcass traits.**
M. N. Bonin*[1], S. L. Silva[1], J. B. S. Ferraz[1], D. P. D. Lanna[2], F. Manicardi[1], R. C. Gomes[1], M. H. A. Santana[1], V. N. Barbosa[1], F. Novais[1], J. H. A. Campo[1], and F. Syuffi[1], [1]*University of Sao Paulo, College of Animal Science and Food Engineering*, *Pirassununga, Sao Paulo, Brazil*, [2]*University of Sao Paulo, College of Agricultural Sciences*, *Piracicaba, Sao Paulo, Brazil*.

W163 **Effect of finishing heifers on tall fescue, tall fescue with grain, or alfalfa on: I. carcass and LM quality.**
S. K. Duckett*[1], M. C. Miller[1], T. A. Burns[1], and M. L. Wahlberg[2], [1]*Clemson University*, *Clemson, SC*, [2]*Virginia Tech University*, *Blacksburg*.

W164 **Effect of finishing heifers on tall fescue, tall fescue with grain, or alfalfa on: II. fatty acid composition and lipid oxidation in ground beef.**
S. K. Duckett*[1], M. C. Miller[1], T. A. Burns[1], and M. L. Wahlberg[2], [1]*Clemson University*, *Clemson, SC*, [2]*Virginia Tech University*, *Blacksburg*.

W165 **Gene expression profile of M. longissimus in Japanese Black, Holstein, and Charolais steers fed a high-energy diet.**
E. Albrecht*[1], S. Ponsuksili[1], K. Wimmers[1], T. Gotoh[2], and S. Maak[1], [1]*Leibniz Institute for Farm Animal Biology*, *Dummerstorf, Germany*, [2]*Kyushu University, Kuju Agricultural Research Center*, *Kuju-cho, Oita, Japan*.

W166 **Effect of genotype on fatty acid composition of bovine muscles fattened with maize silage and flaxseed supplemented concentrate.**
G. Hollo*[1], T. Somogyi[1], K. Loki[1], I. Anton[2], and I. Hollo[1], [1]*Kaposvár University*, [2]*Research Institute for Animal Breeding and Nutrition*.

W167 **Quality characteristics of dried meat laver made from different beef muscle types.**
G. D. Kim*[1], E. Y. Jung[1], H. U. Seo[1], J. Y. Jeong[2], S. J. Hur[3,1], H. S. Yang[1], and S. T. Joo[1], [1]*Division of Applied Life Science (BK21 Program), Gyeongsang National University*, *Jinju, Republic of Korea*, [2]*Swine Scientic and Technology Center, Gyeongnam National University of Science and Technology*, *Jinju, Republic of Korea*, [3]*College of Biomedical and Health Science, Department of Applied Biochemistry, Konkuk University*, *Chungju, Republic of Korea*.

W168 **Carcass characteristics of bullocks of different genotype finished under feedlot conditions.**
O. V. Vazquez-Mendoza, G. Aranda-Osorio*, M. Huerta-Bravo, E. J. Maldonado-Siman, and J. C. Garcia-Ortiz, *Universidad Autonoma Chapingo*, *Chapingo, Estado de Mexico, Mexico*.

W169 **Relationship between meat quality and the expression of related genes in the muscle of two different genetic groups of cattle.**
J. Giusti[1], E. P. Castan[1], S. R. Baldin[2], M. D. B. Arrigoni[2], M. Dal Pai-Silva[2], and H. N. Oliveira*[1], [1]*State University of Sao Paulo*, *Jaboticabal, Sao Paulo, Brazil*, [2]*State University of Sao Paulo*, *Botucatu, Sao Paulo, Brazil*.

W170 **Measurement of loin muscle in the carcass of Nellore breed on *Brachiaria brizantha* 'Marandu' with two levels of concentrate supplementation.**
S. L. S. Cabral Filho*[1], R. V. Oliveira[1], J. M. S. Diogo[1,2], R. A. Mandarino[1], C. F. Lobo[1], F. A. Oliveira[1], and G. S. Firmino[1], [1]*Universidade de Brasília*, *Brasilia, Distrito Federal, Brasil*, [2]*Fazenda Experimental Agua Limpa*, *Brasilia, Distrito Federal, Brasil*.

W171 **Frame size and sex effects on meat quality characteristics of Nellore cattle.**
S. L. Silva*, R. C. Gomes, A. F. Rosa, M. D. Poleti, M. N. Bonin, T. M. C. Leme, J. L. F. Souza, L. M. Zoppa, and P. R. Leme, *Universidde de São Paulo (FZEA/USP)*, *Pirassununga, SP, Brazil*.

W172 **Carcass traits obtained at the fifth rib level to predict retail cuts in Nellore (*B. indicus*) cattle.**
J. L. F. Souza*, S. L. Silva, R. C. Gomes, M. N. Bonim, P. Z. Silva Neto, and P. R. Leme, *Universidade de São Paulo/ Faculdade de Zootecnia e Engenharia de Alimentos*, *Pirassununga, São Paulo, Brazil*.

W173 **The influence of two levels of supplementation on the yield of hindquarter cuts of Nellore in *Brachiaria brizantha* 'Marandu'.**
R. V. Oliveira*[1], F. A. Barbosa[2], J. M. S. Diogo[1], G. S. Firmino[1], J. F. A. Oliveira[1], J. F. B. Guedes[1], I. S. Silva[1], and G. A. Carneiro[1], [1]*Faculty of Agronomy and Veterinary Medicine, University of Brasília - UnB*, *Brasília, DF, Brazil*, [2]*School of Veterinary Medicine, Federal University of Minas Gerais - UFMG*, *Belo Horizonte, MG, Brazil*.

W174 **Influence of two levels of supplements on the characteristics of cuts yields of carcass in Nellore cattle grazing *Brachiaria brizantha* 'Marandu'.**
R. V. Oliveira*[1], J. F. A. Oliveira[1], F. A. Barbosa[2], F. F. Gouveia[1], G. A. Carneiro[1], J. M. S. Diogo[1], J. F. B. Guedes[1], and R. A. Mandarino[1], [1]*Faculty of Agronomy and Veterinary Medicine, University of Brasília - UnB*, *Brasília, DF, Brazil*, [2]*School of Veterinary Medicine, Federal University of Minas Gerais - UFMG*, *Belo Horizonte, MG, Brazil*.

W175 **Effect of different levels of whole raw soybean grain on performance and meat characteristics of feedlot finished Nelore steers.**
N. R. B. Consolo*, A. S. C. Pereira, J. R. Gandra, R. Gardinal, C. S. Takiya, P. Barros J. Carvalho, F. P. Renno, J. E. Freitas Junior, G. D. Calomeni, and R. D. Mingoti, *Universidade de Sao Paulo*, *Pirassununga, Sao Paulo, Brasil*.

W176 **Genetic group and slaughter weight influence on meat color of feedlot cattle.**
R. Mello*[1], A. C. de Queiroz[2], F. D. de Resende[3], L. A. de Miranda Gomide[2], P. B. Costa[2], and W. da Silva Cotrim[2], [1]*Universidade Federal de Santa Maria*, *Santa Maria, Rio Grande do Sul, Brazil*, [2]*Universidade Federal de Viçosa*, *Viçosa, Minas Gerais, Brazil*, [3]*Agência Paulista de Tecnologia dos Agronegócios*, *Colina, São Paulo, Brazil*.

W177 **C18:1,2,3 fatty acid isomers from intramuscular fat influenced by genetic group and slaughter weight.**
R. Mello*[1], A. C. de Queiroz[2], F. D. de Resende[3], D. P. D. Lanna[4], M. H. de Faria[3], and E. da Costa Eifert[4], [1]*Universidade Federal de Santa Maria*, *Santa Maria, Rio Grande do Sul, Brazil*, [2]*Universidade Federal de Viçosa*, *Viçosa, Minas Gerais, Brazil*, [3]*Agência Paulista de Tecnologia dos Agronegócios*, *Colina, São Paulo, Brazil*, [4]*Universidade de São Paulo – Escola Superior de Agricultura 'Luiz de Queiroz'*, *Piracicaba, São Paulo, Brazil*.

W178 **Fatty acids profile of intramuscular fat from crossbreed young bulls slaughtered at different body weights.**
R. Mello*[1], A. C. de Queiroz[2], F. Dutra de Resende[3], D. P. D. Lanna[4], M. H. de Faria[3], and E. da Costa Eifert[4], [1]*Universidade Federal de Santa Maria*, *Santa Maria, Rio Grande do Sul, Brazil*, [2]*Universidade Federal de Viçosa*, *Viçosa, Minas Gerais, Brazil*, [3]*Agência Paulista de Tecnologia dos Agronegócios*, *Colina, São Paulo, Brazil*, [4]*Universidade de São Paulo – Escola Superior de Agricultura 'Luiz de Queiroz'*, *Piracicaba, São Paulo, Brazil*.

W179 **Effects of modified wet corn distillers grains containing 6.7% fat on beef quality and rib fat composition.**
J. L. Veracini*[1], P. M. Walker[1], B. R. Wiegand[2], H. L. Evans[2], R. L. Atkinson[3], M. J. Faulkner[1], and L. A. Forster[4], [1]*Illinois State University*, *Normal*, [2]*University of Missouri*, *Columbia*, [3]*Southern Illinois University*, *Carbondale*, [4]*Archer Daniels Midland Co.*, *Decatur, IL*.

W180 **Diet and genotype effects on the quality index of beef Nellore and F1 Nellore × Brahman produced in feedlot.**
R. A. Mandarino*[1], F. A. Barbosa[2,1], I. S. Silva[1], S. L. S. Cabral Filho[1], J. L. Vilela[1], and C. F. Lobo[1], [1]*University of Brasília*, *Brasília, DF, Brazil*, [2]*Federal University of Minas Gerais*, *Belo Horizonte, MG, Brazil*.

W181 **Beef quality parameters of Nellore bulls finished with cottonseed cake as fat source.**
A. P. Neto*[1,2], R. H. Branco[3], S. F. M. Bonilha[3], T. L. S. Corvino[3], E. N. Andrade[2], and R. de Oliveira Roça[2], [1]*Universidade Federal do Mato Grosso*, *Sinop - Mato Grosso/Brazil*, [2]*Universidade Estadual Paulista*, *Botucatu - São Paulo/Brazil*, [3]*CAPTA Bovinos de Corte - Instituto de Zootecnia*, *Sertãozinho - São Paulo/Brazil*.

W182 **Meat tenderness of Nellore cattle classified for residual feed intake.**
T. L. Sobrinho[1], K. Zorzi[2], R. H. Branco[3], S. F. M. Bonilha[3], L. T. Egawa[3], E. Magnani[3], and M. E. Z. Mercadante*[3], [1]*Faculdade de Ciências Agrárias e Veterinárias*, *Jaboticabal, São Paulo, Brasil*, [2]*Universidade Federal de Viçosa*, *Viçosa, Minas Gerais, Brasil*, [3]*Instituto de Zootecnia*, *Sertãozinho, São Paulo, Brasil*.



## Nonruminant Nutrition
## Health

W183 **Effects of purified zearalenone on serum reproductive hormone, immunoglobulin, antibody titer and spleen pro-inflammatory cytokines mRNA in young gilts**.
S. Z. Jiang*[1], Z. B. Yang[1], W. R. Yang[1], S. L. Johnston[2], and F. Chi[2], [1]*Department of Animal Sciences and Technology, Shandong Agricultural University*, *Taian, Shandong, China*, [2]*Amlan International*, *Chicago, IL*.

W184 **Ameliorate effect of Calibrin Z enterosorbent on serum reproductive hormone, immunoglobulin, antibody titer in young pigs fed purified zearalenone.**
S. Z. Jiang*[1], Z. B. Yang[1], S. L. Johnston[2], and F. Chi[2], [1]*Department of Animal Sciences and Technology, Shandong Agricultural University*, *Taian, Shandong, China*, [2]*Amlan International*, *Chicago, IL*.

W185 **Dietary effect of short-chain organic acids on growth performance, mortality, and development of intestinal lymphoid tissues in young non-medicated rabbits.**
C. Romero*[1], P. G. Rebollar[1], A. Dal Bosco[2], C. Castellini[2], and R. Cardinali[2], [1]*Universidad Politécnica de Madrid*, *Spain*, [2]*Università degli Studi di Perugia*, *Italy*.

W186 **Casein glycomacropeptide and mannan-oligosaccharides reduce the enterotoxigenic E. coli (ETEC K88) adhesion to IPEC-J2 cell line.**
R. G. Hermes*[1], E. G. Manzanilla[1], S. Martin-Orue[1], J. F. Perez[1], and K. C. Klasing[2], [1]*Universitat Autonoma de Barcelona*, *Barcelona, Catalonia, Spain*, [2]*University of California, Davis*, *Davis*.

W187 **The effects of a galactoglucomannan-arabinoxylan complex on eimeria acervulina infection in broiler chicks.**
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*, *Peoria, IL*.

W188 **The effects of feed-borne Fusarium mycotoxins on performance, serum chemistry, and hematology of fryer rabbits.**
M. A. Hewitt*, M. Brash, and T. K. Smith, *University of Guelph*, *Guelph, Ontario, Canada*.

W189 **Effects of plant extracts on peripheral blood immune cells and inflammatory mediators of weaned pigs experimentally infected with a pathogenic E. coli.**
Y. Liu*[1], M. Song[1], T. M. Che[1], J. A. Soares[1], D. Bravo[2], C. W. Maddox[1], and J. E. Pettigrew[1], [1]*University of Illinois*, *Urbana*, [2]*Pancosma SA*, *Geneva, Switzerland*.

W190 **Acute toxicity of aqueous extract of Moringa oleifera leaf in growing poultry.**
J. O. Ashong* and D. L. Brown, *Cornell University*, *Ithaca, NY*.

W191 **Effects of spray-dried plasma on growth and reproductive responses of pregnant mice to lipopolysaccharide as a model for inflammation in sows.**
M. Song*[1], Y. Liu[1], J. A. Soares[1], J. J. Lee[1], T. M. Che[1], J. M. Campbell[2], J. Polo[2], J. C. O'Connor[3], and J. E. Pettigrew[1], [1]*University of Illinois*, *Urbana*, [2]*APC Inc.*, *Ankeny, IA*, [3]*University of Texas Health Science Center*, *San Antonio*.

W192 **Effects of spray-dried plasma on immune responses of pregnant mice to lipopolysaccharide as a model for inflammation in sows.**
M. Song*[1], Y. Liu[1], J. J. Lee[1], J. A. Soares[1], T. M. Che[1], J. M. Campbell[2], J. Polo[2], J. C. O'Connor[3], and J. E. Pettigrew[1], [1]*University of Illinois*, *Urbana*, [2]*APC Inc.*, *Ankeny, IA*, [3]*University of Texas Health Science Center*, *San Antonio*.

W193 **Wheat bran and casein glycomacropeptide may regulate the immune response of IPEC-J2 cells challenged with enterotoxigenic E. coli (ETEC K88).**
R. G. Hermes*[1], E. G. Manzanilla[1], S. Martin-Orue[1], J. F. Perez[1], and K. C. Klasing[2], [1]*Universitat Autonoma de Barcelona*, *Barcelona, Catalonia, Spain*, [2]*University of California, Davis*, *Davis*.

## Nonruminant Nutrition
## Management

W194 **Importance of evaluating piglet daily weight gain during the first week after weaning.**
G. J. M. M. Lima* and L. S. Lopes, *Embrapa*, *Brazil*.

W195 **Acquisition of garlic conditioned preference enhances the flavor hedonic power of porcine digestive peptides (PDP) in post-weaned piglets.**
J. Figueroa*[1], D. Solà-Oriol[1], S. L. Vinokurovas[1], E. Borda[2], and J. F. Pérez[1], [1]*Universitat Autònoma de Barcelona*, *Bellaterra, Barcelona, Spain*, [2]*Bioibérica*, *Barcelona, Spain*.

W196 **Nutrient composition changes in pigs and associated liver from birth to 21 days of age.**
Y. L. Ma*[1], M. D. Lindemann[1], J. L. Pierce[2], and G. L. Cromwell[1], [1]*University of Kentucky*, *Lexington*, [2]*Alltech Inc.*, *Nicholasville KY*.

W197 **Evaluating performance of dairy replacement calves housed in different group numbers with the same space/calf.**
K. Shore* and A. Roy, *Grober Nutrition*, *Cambridge, Ontario, Canada*.

W198 **Comparison of moisture determination methods for feed ingredients.**
J. Y. Ahn*, D. Y. Kil, and B. G. Kim, *Department of Animal Science and Environment, Konkuk University*, *Seoul, Republic of Korea*.

W199 **The effect of diet and creep feed on feed intake by weanling pigs.**
J. Shea, D. A. Gillis, and A. D. Beaulieu*, *Prairie Swine Centre, Inc.*, *Saskatoon, SK, Canada*.

W200 **Effects of creep feed frequency on pre-weaning and post-weaning growth performance and behavior of piglet and sow.**
J. H. Cho*, S. Zhang, and I. H. Kim, *Dankook University*, *Cheonan, Choongnam, South Korea*.

## Nonruminant Nutrition
## Mineral

W201 **Effect of a partial replacement of limestone by a $CaSO_4$-zeolite mixture combined with a slight protein reduction on production indices, egg quality and excreta pH in laying hens.**
C. Romero*[1], E. M. Onyango[2], W. Powers[3], R. Angel[4], and T. J. Applegate[5], [1]*Universidad Politécnica de Madrid*, *Spain*, [2]*East Tennessee State University*, [3]*Michigan State University*, *East Lansing*, [4]*University of Maryland*, [5]*Purdue University*, *IN*.

W202 **Dietary sources of selenium in nulliparous sows: The importance of vitamin $B_6$ status for some aspects of antioxidant status and ovulation during the peri-estrus period.**
M. Roy*[1,2], I. Audet[1], M.-F. Palin[1], H. Quesnel[3], F. Guay[2], and J. J. Matte[2], [1]*Agriculture and Agri-Food Canada*, *Sherbrooke, QC, Canada*, [2]*Laval University*, *Québec, QC, Canada*, [3]*Institut National de la Recherche Agronomique*, *St-Gilles, France*.

W203 **Effects of high dietary selenium supplementation on fasting plasma glucose and lipid profiles of young pigs.**
E. Isaacs*, K. Roneker, and X. G. Lei, *Cornell University*, *Ithaca, NY*.

W204 **Bioavailability of zinc from zinc propionate in chicks.**
M. A. Brooks*, J. L. Grimes, S. Verissimo, K. L. Murphy, and J. W. Spears, *North Carolina State University*, *Raleigh*.

W205 **Effects of copper concentration and source on performance, bile components, copper metabolism and gastrointestinal microbial distribution in nursery swine.**
M. A. Arnold*[1], J. S. Schutz[1], K. Sellins[1], R. J. Harrell[2], and T. E. Engle[1], [1]*Department of Animal Science, Colorado State University*, *Fort Collins*, [2]*Novus International Inc.*, *St. Charles, MO*.

W206 **Different levels of chelated selenium (Se) addition on the performance, and internal and external quality of Japanese quail eggs.**
V. C. da Cruz*[1], L. C. Carvalho[1], G. do Valle Polycarpo[2], L. H. Zanetti[1], R. F. de Oliveira[1], D. D. Millen[1], R. G. A. Cardoso[1], A. L. C. Brichi[1], M. L. Poiatti[1], and O. J. Sabbag[1], [1]*São Paulo State University, Dracena Campus*, *Dracena, São Paulo, Brazil*, [2]*São Paulo State University, Botucatu Campus*, *Botucatu, São Paulo, Brazil*.

W207 **Recovery of bone mineralization and strength after a marginal dietary calcium deficiency in growing pigs.**
L. A. Iwicki*, J. L. Reichert, J. R. Booth, D. K. Schneider, and T. D. Crenshaw, *University of Wisconsin*, *Madison*.

W208 **Ionomic profile changes in the intestine, liver, kidney, serum and gall bladder contents due to Cu source and concentration.**
B. Aldridge*[1], R. F. Power[2], K. A. Dawson[2], and S. Radcliffe[1], [1]*Purdue University, Department of Animal Science*, *West Lafayette, IN*, [2]*Center for Animal Nutrigenomics and Applied Animal Nutrition*, *Nicholasville, KY*.

W209 **Microarray analysis of commonly regulated genes in the jejunum of weanling pigs given dietary Cu proteinate or $CuSO_4$.**
B. Aldridge*[1], R. Xiao[2], D. Mallonee[2], R. F. Power[2], K. A. Dawson[2], and S. Radcliffe[1], [1]*Purdue University, Department of Animal Sciences*, *West Lafayette, IN*, [2]*Center for Animal Nutrigenomics and Applied Animal Nutrition*, *Nicholasville, KY*.

## Nonruminant Nutrition
## Mineral and Sow Nutrition

W210 **A lactation curve model in sows.**
A. V. Hansen*[1,2], A. B. Strathe[1], E. Kebreab[1], and P. K. Theil[2], [1]*Department of Animal Science, University of California*, *Davis*, [2]*Department of Animal Health and Bioscience, Faculty of Agricultural Sciences, Aarhus University*, *Blichers Allé 20, 8830 Tjele, Denmark*.

W211 **Impact of ergot infested sorghum on the reproductive performance of sows.**
G. M. Abdelrahim*[1], R. C. Richardson[2], and A. Gueye[3], [1]*Alabama A&M University*, *Normal*, [2]*Texas State University*, *San Marcos*, [3]*Mt. Ida College*, *Newton, MA*.

W212 **Improved retention rates and reduced culling for lameness for sows fed a chelated trace mineral blend.**
J. Zhao*[1], L. Greiner[2], G. Allee[3], M. Vazquez-Anon[1], C. D. Knight[1], and R. J. Harrell[1], [1]*Novus International Inc*, *St Charles, MO*, [2]*Innovative Swine Solutions*, *Carthage, IL*, [3]*University of Missouri*, *Columbia, MO*.

W213 **A blend of chelated trace minerals improved sow cumulative reproduction and farrowing rate.**
J. Zhao*[1], L. Greiner[2], G. Allee[3], M. Vazquez-Anon[1], C. D. Knight[1], and R. J. Harrell[1], [1]*Novus International Inc.*, *St Charles, MO*, [2]*Innovative Swine Solutions*, *Carthage, IL*, [3]*University of Missouri*, *Columbia*.

W214 **Improved progeny performance from sows fed a chelated trace mineral blend.**
J. Zhao*, M. Vazquez-Anon, C. D. Knight, and R. J. Harrell, *Novus International Inc*, *St Charles, MO*.

## Physiology and Endocrinology III

W215 **Comparison of serum progesterone concentrations from new and used CIDR in Holstein heifers.**
J. T. Whitley* and C. S. Whisnant, *North Carolina State University*, *Raleigh*.

W216 **Correlation between residual feed intake and metabolic parameters of Nellore heifers.**
R. H. Branco[1], E. Magnani[1], L. T. Egawa[1], T. L. Sobrinho[2], S. F. M. Bonilha[1], M. E. Z. Mercadante*[1], J. N. S. G. Cyrillo[1], and L. A. Figueiredo[1], [1]*Instituto de Zootecnia*, *Sertãozinho, São Paulo, Brasil*, [2]*Faculdade de Ciências Agrárias e Veterinárias*, *Jaboticabal, São Paulo, Brasil*.

W217 **Follicular and ovulatory responses following superovulation treatment with rFSH and HMG in dairy cattle.**
M. Poorhamdollah*[1], H. Kohram[1,2], and A. Nejati-Javaremi[1], [1]*Department of Animal Science, Faculty College of Agriculture and Natural Resources, University of Tehran*, *Karaj, Iran*, [2]*Department of Clinical Sciences, Faculty of Veterinary Medicine, Shahid Chamran University*, *Ahvaz, Iran*.

W218 **Adipocyte cell turnover in subcutaneous fat of heifers related to adipocyte cell size.**
D. Germeroth, S. Häussler*, H. Akter, and H. Sauerwein, *University of Bonn*, *Germany*.

W219 **Effect of short-term supplementation and temporary weaning on follicular liquid composition in first-calved Hereford cows.**
L. Veloz[1,2], M. E. Trobo[1,2], C. García Pintos[1,2], C. Viñoles[2], and M. Carriquiry*[1], [1]*School of Agronomy, UdelaR*, *Montevideo, Uruguay*, [2]*National Research Institute for Agriculture*, *Tracuarembó, Uruguay*.

W220 **Estrus quantification of early lactation cow cervix physiology: An economical farm innovation.**
A. Nikkhah*, M. A. Sirjani, and A. A. Assadzadeh, *University of Zanjan*, *Zanjan, Iran*.

W221 **Effects of maternal metabolizable protein level in late gestation on circulating amino acid concentrations in the ewe and the fetus.**
L. A. Lekatz*[1], M. L. Van Emon[2], C. S. Schauer[2], K. R. Maddock Carlin[1], and K. A. Vonnahme[1], [1]*Center for Nutrition and Pregnancy, Department of Animal Sciences, North Dakota State University*, *Fargo*, [2]*Hettinger Research Extension Center, North Dakota State University*, *Hettinger*.

W222 **Functional genomics and role of integrin beta 5 in cattle fertility.**
L. Koenig[1], X. Wang[1], A. Kaya[2], S. Bridges[1], and E. Memili*[1], [1]*Mississippi State University*, *Mississippi State*, [2]*Alta Genetics, Inc.*, *Watertown, WI*.

W223 **Male goat vocalizations stimulate LH secretion and estrous behavior in sexually experienced but not in sexually inexperienced goats.**
J. A. Delgadillo*, J. Vielma, H. Hernández, J. A. Flores, G. Duarte, I. G. Fernández, and G. Fitz-Rodríguez, *Centro de Investigación en Reproducción Caprina, Universidad Autónoma Agraria Antonio Narro, Torreón, Coahuila, Mexico*.

W224 **Profiling bioenergetics and metabolic stress in cells derived from commercially important fish species.**
B. Beck* and A. Fuller, *Stuttgart National Aquaculture Research Center*, *Stuttgart, AR*.

W225 **Conjugated linoleic acid and rosiglitazone attenuate lipopolysaccharide-induced TNF-α production by bovine immune cells.**
M. C. Perdomo and L. Badinga*, *University of Florida*, *Gainesville*.

W226 **Influence of nitrogen and sulfur intake on bovine uterine pH.**
J. K. Grant*[1], P. Steichen[2], C. L. Wright[1], K. A. Vonnahme[2], M. L. Bauer[2], J. S. Jennings[3], and G. A. Perry[1], [1]*Department of Animal and Range Sciences, South Dakota State University*, *Brookings*, [2]*Department of Animal Science, North Dakota State University*, *Fargo*, [3]*Alltech Animal Nutrition*, *Brookings, SD*.

W227 **Influence of sperm fertility-associated antigen status on nulliparous Nelore heifer fertility at first-service timed AI.**
J. C. Dalton*[1], L. Deragon[2], J. L. M. Vasconcelos[3], A. Ahmadzadeh[4], and R. F.G. Peres[5], [1]*University of Idaho*, *Caldwell*, [2]*Alta Genetics Brazil*, *Uberaba, MG, Brazil*, [3]*FMVZ-UNESP*, *Botucatu, SP, Brazil*, [4]*University of Idaho*, *Moscow*, [5]*Agropecuária Fazenda Brazil*, *Barra do Garças, MT, Brazil*.

W228 **Feeding rumen-protected polyunsaturated fatty acids (PUFA) to high-producing dairy cows: II. Effects on serum concentrations of progesterone and insulin.**
M. M. Reis[1], R. F. Cooke[2], B. I. Cappellozza[2], and J. L. M. Vasconcelos*[1], [1]*UNESP – Faculdade de Medicina Veterinária e Zootecnia*, *Botucatu, SP, Brazil*, [2]*Oregon State University–Eastern Oregon Agricultural Research Center*, *Burns*.

W229 **Feeding rumen-protected polyunsaturated fatty acids (PUFA) to high-producing dairy cows: I. Effects on milk production and reproductive performance.**
M. M. Reis[1], R. F. Cooke[2], S. Soriano[4], F. L. Aragon[3], M. B. Veras[3], and J. L. M. Vasconcelos*[1], [1]*UNESP – Faculdade de Medicina Veterinária e Zootecnia*, *Botucatu, SP, Brazil*, [2]*Oregon State University–Eastern Oregon Agricultural Research Center*, *Burns*, [3]*Pioneiros Veterinary Clinic*, *Carambei, PR, Brazil*, [4]*Colorado Dairies*, *Araras, SP, Brazil*.

W230 **Puberty induction in Nelore heifers receiving eCG and/or estradiol cypionate at the end of the estrus synchronization protocol.**
A. Rodrigues[1], R. Peres*[3], A. Lemes[2], T. Martins[1], F. Aono[1], M. Pereira[1], H. Graff[3], E. Carvalho[3], and J. L. M. Vasconcelos[1], [1]*FMVZ-UNESP*, *Botucatu, SP, Brazil*, [2]*ESALQ-USP*, *Piracicaba, SP, Brazil*, [3]*Agropecuaria Fazenda Brasil*, *Barra do Garça, MT, Brazil*.

W231 **Repeated exposure to human chorionic gonadotropin causes development of antibodies in some lactating dairy cows.**
J. O. Giordano*, M. C. Wiltbank, and P. M. Fricke, *Department of Dairy Science, University of Wisconsin-Madison*, *Madison*.

W232 **Synchronization of dairy heifers with a modified 5-day CIDR-$PGF_{2\alpha}$-GnRH timed AI protocol.**
J. Howard*[1,2], K. Carnahan[1], C. Autran[1], J. Branen[2], 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*.

W233 **Prepartum 2,4-thiazolidinedione administration increases plasma tumor necrosis factor alpha in transition dairy cows.**
K. M. Schoenberg*[1], K. L. Perfield[2], J. K. Farney[3], B. J. Bradford[3], and T. R. Overton[1], [1]*Cornell University*, *Ithaca, NY*, [2]*Elanco Animal Health*, *Greenfield, IN*, [3]*Kansas State University*, *Manhattan*.

W234 **Effect of dietary β-glucan on growth performance, fecal microbial shedding and immunological responses after lipopolysaccharide challenge in weaned pigs.**
T. X. Zhou*, B. U. Yang, and I. H. Kim, *Dankook University*, *Cheonan, Choongnam, South Korea*.

W235 **Difference in the expression of components of the GHR/IGF-I axis in follicular granulosa cells and corpus luteum in cows.**
A. Schneider[1,2], L. F. M. Pfeifer[1], M. N. Corrêa[1], and W. R. Butler*[2], [1]*Universidade Federal de Pelotas*, *Pelotas, RS, Brazil*, [2]*Cornell University*, *Ithaca, NY*.

W236 **Functional genomics of liver in purebred beef cows in two forage allowances during gestation and lactation period.**
J. Laporta*[1], G. Greif[2], P. Zorrilla[2], H. Naya[2], G. J. M. Rosa[3], and M. Carriquiry[1], [1]*Facultad de Agronomía, Universidad de la República*, *Montevideo, Uruguay*, [2]*Instituto Pasteur*, *Montevideo, Uruguay*, [3]*University of Wisconsin*, *Madison*.

W237 **Conjugated linoleic acids (CLA) and lactation related changes of serum amyloid A3 (SAA3) and IL-6 mRNA abundance in different bovine tissues with a focus on different adipose depots.**
B. Saremi*[1], M. Mielenz[1], D. von Soosten[2], S. Dänicke[2], and H. Sauerwein[1], [1]*Institute of Animal Science, Physiology and 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*.

W238 **Role of nuclear receptors in the metabolism of boar taint compounds in Leydig cells.**
M. A. Gray* and E. J. Squires, *University of Guelph*, *Guelph, Ontario, Canada*.

W239 **Effects of heat stress on $Na^+/K^+$ATPase activity in growing pigs.**
S. C. Pearce*, A. J. Harris, N. K. Gabler, and L. H. Baumgard, *Iowa State University*, *Ames*.

W240 **Serum shock did not synchronize clock gene expression in primary bovine hepatocyte cultures.**
C. A. Kurman*, M. M. McCarthy, L. M. Nemec, and T. F. Gressley, *University of Delaware*, *Newark*.

W241 **Effect of short-term supplementation in hepatic gene expression in cycling Hereford cows grazing native pastures.**
F. Bialade[1], A. L. Astessiano*[1], M. P. Grignola[1], J. Laporta[1], C. Viñoles[2], and M. Carriquiry[1], [1]*School of Agronomy, UDELAR*, *Montevideo, Uruguay*, [2]*Research Institute for Agriculture*, *Tacuarembo, Uruguay*.

W242 **Effect of charcoal extracted bovine follicular and testicular fluids on testes and endocrine organ weights of pre-pubertal male rabbits.**
A. H. Ekeocha*, *University of Ibadan*, *Ibadan, Oyo, Nigeria*.

W243 ***Caspase* 3 is upregulated in murine spermatogonia and Leydig cells treated with aflatoxin $B_1$.**
K. J. Austin*, R. R. Cockrum, K. L. Speiser, and K. M. Cammack, *University of Wyoming*, *Laramie*.

W244 **Muscle resident adipogenic progenitors are fiber type specific, Pax3/Myf5-independent and form white adipocytes by default.**
Y. Q. Liu* and S. H. Kuang, *Purdue University*, *West Lafayette, IN*.

W245 **Effect of urea on interferon-tau response in the bovine endometrium.**
A. Ahmadzadeh*, T. Davis, and K. Carnahan, *University of Idaho*, *Moscow*.

W246 **Short-term supplementation and temporary weaning on metabolic and endocrine parameters in anestrous and cyclic Hereford cows grazing native pasture.**
A. L. Astessiano*[1], L. Veloz[1,2], C. García Pintos[1,2], M. E. Trobo[1,2], F. Bialade[1], C. Viñoles[2], and M. Carriquiry[1], [1]*School of Agronomy, UDELAR*, *Montevideo, Uruguay*, [2]*National Research Institute for Agriculture*, *Tacuarembo, Uruguay*.

W247 **Liver gene expression of GH-IGF1 axis and fatty acid metabolism genes of beef cows on grazing conditions. I: Winter-gestational period.**
J. Laporta*, A. L. Astessiano, V. Gutierrez, A. C. Espasandín, P. Soca, and M. Carriquiry, *Facultad de Agronomía, Universidad de la República*, *Montevideo, Uruguay*.

W248 **Liver gene expression of GH-IGF1 axis and fatty acid metabolism genes in beef cows on grazing conditions. II: Peripartum and lactation period.**
J. Laporta*, A. L. Astessiano, V. Gutierrez, A. C. Espasandín, P. Soca, and M. Carriquiry, *Facultad de Agronomía, Universidad de la República*, *Montevideo, Uruguay*.

W249 **Uterine gene expression in beef cows grazing different forage allowances of native pastures.**
M. Carriquiry*[1], F. Bialade[1], M. P. Grignola[1], P. Soca[1], A. C. Espasandín[1], C. Viñoles[2], and A. Meikle[3], [1]*School of Agronomy, UdelaR*, *Montevideo, Uruguay*, [2]*National Research Institute for Agriculture*, *Tracuarembó, Uruguay*, [3]*School of Veterinary Sciences, UdelaR*, *Montevideo, Uruguay*.

W250 **The effect of leptin on primary cultured adipocytes of pigs.**
J. Liang, X. Zhang, Y. Zheng, S. Pan, R. Zhao, and X. Yang*, *Nanjing Agricultural University*, *Nanjing, P. R. China*.

W251 **Injection of 100µg of GnRH 31 d after AI does not reduce pregnancy loss in lactating dairy cows.**
A. L. A. Scanavez*, L. G. D. Mendonça, P. R. B. Silva, J. G. N. Moraes, and R. C. Chebel, *Department of Veterinary Population Medicine, University of Minnesota*, *St. Paul*.

## Production, Management and the Environment II

W252 **Replacing grain and silage with wheat distiller grains affects feeding behavior of finishing beef cattle.**
W. Z. Yang*[1], T. A. McAllister[1], J. J. McKinnon[2], and K. A. Beauchemin[1], [1]*Agriculture and Agri-Food Canada, Research Centre*, *Lethbridge, AB, Canada*, [2]*Department of Animal & Poultry Science, University of Saskatchewan*, *Saskatoon, SK, Canada*.

W253 **Inclusion of anti-phospholipase A2 antibody (aPLA2) to backgrounding diet enhanced feed efficiency in growing beef calves.**
V. R. G. Mercadante*, K. M. Bischoff, T. E. Black, G. H. L. Marquezini, N. DiLorenzo, and G. C. Lamb, *North Florida Research and Education Center, University of Florida*, *Marianna*.

W254 **Productive performance during fattening phase of Nelore fed diets with two concentrate levels.**
G. S. Firmino*[1], I. S. Silva[1], F. A. Barbosa[2], S. L. S. Cabral Filho[1], J. F. B. Guedes[1], G. A. Carneiro[1], F. F. Gouveia[1], and J. F. A. Oliveira[1], [1]*University of Brasília - UnB*, *Brasília, DF, Brazil*, [2]*Federal University of Minas Gerais - UFMG*, *Belo Horizonte, MG, Brazil*.

W255 **Effect of maternal feed efficiency as growing heifers and lactating cows on feed intake and performance of their suckling offspring.**
K. M. Bischoff*[1], T. E. Black[1], V. R. G. Mercadante[1], G. H. L. Marquezini[1], C. C. Chase[2], S. W. Coleman[2], and G. C. Lamb[1], [1]*North Florida Research and Education Center, University of Florida*, *Marianna*, [2]*USDA-ARS, SubTropical Agricultural Research Station*, *Brooksville, FL*.

W256 **Temperament evaluation of Nelore (Bos indicus) cattle in Brazilian commercial cow-calf operations.**
M. Meneghetti*[2], R. F. Cooke[1], B. I. Cappellozza[1], D. W. Bohnert[1], and T. C. Losi[3], [1]*Oregon State University–Eastern Oregon Agricultural Research Center*, *Burns*, [2]*Pfizer Animal Health*, *São Paulo, SP, Brazil*, [3]*Lageado Consultoria Agropecuária*, *Mineiros, GO, Brazil*.

W257 **Influence of propionate salt levels on young cow reproductive performance.**
J. A. Walker*, G. A. Perry, and K. C. Olson, *South Dakota State University*, *Brookings*.

W258 **Methane emission potential and nutritional composition of four Panicum sp. forage genotypes in the Brazilian Cerrado region.**
L. Bezerra da Silva*[1], S. L. S. Cabral Filho[1], R. Guimarães Júnior[2], A. L. Abdalla[3], A. K. B. Ramos[2], and F. D. Fernandes[2], [1]*Universidade de Brasília*, *Brasília, Distrito Federal, Brasil*, [2]*Embrapa Cerrados*, *Planaltina, Distrito Federal, Brasil*, [3]*Universidade de São Paulo*, *Piracicaba, São Paulo, Brasil*.

W259 **Methodology for estimating intermuscular, subcutaneous, and intramuscular fat in primal cuts.**
M. J. McPhee*[1,2], J. P. Siddell[1,2], B. J. Walmsley[1,2], W. H. Johns[1,2], and P. L. Greenwood[1,2], [1]*Cooperative Research Centre for Beef Genetic Technologies*, *Armidale, NSW, Australia*, [2]*Industry and Investment NSW*, *Armidale, NSW, Australia*.

W260 **The influence of two levels of concentrate on the performance characteristics and carcass yield in Nellore cattle in Brachiaria brizantha compared to Marandu pastures.**
G. A. Carneiro*[1], F. A. Barbosa[2], S. L. S. Cabral Filho[1], R. V. Oliveira[1], G. S. Firmino[1], C. E. Souza[1], F. F. Gouveia[1], and J. F. A. Oliveira[1], [1]*University of Brasilia*, *Brasilia, DF, Brazil*, [2]*Federal University of Minas Gerais*, *Minas gerais, MG, Brazil*.

W261 **Two methods to estimate milk yield in beef cattle grazing systems.**
A. C. Espasandin*, A. Casal, V. Gutierrez, M. Cadenazzi, and M. Carriquiry, *School of Agronomy, UdelaR*, *Uruguay*.

W262 **Comparison of spring and fall calving beef herds grazing endophyte-infected tall fescue.**
B. T. Campbell*[1], W. M. Backus[1], M. C. Dixon[2], R. J. Carlisle[2], and J. C. Waller[1], [1]*The University of Tennessee*, *Knoxville*, [2]*Research and Education Center at Ames Plantation*, *Grand Junction, TN*.

W263 **Influence of winter and spring pasture allowance on growth and reproductive performance on beef replacement heifers.**
B. L. Bailey*, K. M. Krause, and T. C. Griggs, *West Virginia University*, *Morgantown*.

W264 **Cow and calf separation to improve reproductive performance of first-calf Nellore beef cows under tropical conditions.**
P. G. M. A. Martins*[1,2], C. A. A. Torres[1], A. B. Mancio[1], W. F. Souza[1], G. C. Lamb[3], and J. D. Arthington[2], [1]*Universidade Federal de Viçosa, Departamento de Zootecnia*, *Viçosa, Minas Gerais, Brazil*, [2]*University of Florida, Range Cattle Research and Education Center*, *Ona*, [3]*University of Florida, North Florida Research and Education Center*, *Marianna*.

W265 **Relationships between performance and residual feed intake in Bonsmara heifers when confinement fed or on pasture.**
L. M. Wiley*[1,2], T. D. A. Forbes[1], A. N. Hafla[2], C. M. Hensarling[1], B. G. Warrington[1], and G. E. Carstens[2], [1]*Texas AgriLife Research*, *Uvalde*, [2]*Texas A&M University*, *College Station*.

W266 **Effect of birth weight, early feed intake, and average daily gain of calves before weaning on their performance after weaning and during first lactation.**
C. M. Matuk*[1], M. Chahine[1], A. Bach[2,3], B. Ozer[1], M. E. de Haro Marti[4], J. B. Glaze[1], and T. Fife[1], [1]*University of Idaho*, *Twin Falls*, [2]*IRTA*, *Caldes de Montbui, Spain*, [3]*ICREA*, *Barcelona, Spain*, [4]*University of Idaho*, *Gooding*.

W267 **Different periods offering chromium oxide ($Cr_2O_3$) as external marker to evaluate the intake of cattle treated with different diets under feedlot.**
R. A. Mandarino*[1], F. A. Barbosa[2], I. S. Silva[1], C. F. Lobo[1], S. L. S. Cabral Filho[1], G. A. Carneiro[1], and G. S. Firmino[1], [1]*University of Brasilia*, *Brasilia, DF, Brazil*, [2]*Federal University of Minas Gerais*, *Minas Gerais, MG, Brazil*.

W268 **Total and inorganic phosphorus content of an array of feedstuffs.**
J. P. Jarrett*[1], M. D. Hanigan[1], R. Ward[2], P. Sirois[3], and K. F. Knowlton[1], [1]*Virginia Polytechnic Institute and State University*, *Blacksburg*, [2]*Cumberland Valley Analytical Services, Inc.*, *Maugansville, MD*, [3]*Dairy One*, *Ithaca, NY*.

W269 **Protein-energy mineral supplementation of Nellore bulls in the growing phase at Brachiaria brizantha 'Marandu' during the rainy season.**
C. F. Lobo*[1], F. A. Barbosa[2], R. A. Mandarino[1], G. A. Carneiro[1], and S. L. S. Cabral Filho1[1], [1]*University of Brasilia*, *Brasilia, DF, Brazil*, [2]*Federal University of Minas Gerais*, *Minas Gerais, MG, Brazil*.

W270 **Requirements for continuous ammonia-$NH_3$ sampling when using relaxed eddy accumulation from concentrated animal feeding operations.**
C. D. Gambino*[1], J. M. Ham[2], E. Allwine[1], P. O'Keeffe[1], S. N. Pressley[1], B. K. Lamb[1], and K. A. Johnson[1], [1]*Washington State University*, *Pullman*, [2]*Colorado State University*, *Fort Collins*.

W271 **Effects of weaning strategy on growth and stress in beef calves.**
M. E. Howe*, L. B. Krebs, and E. G. Brown, *Stephen F. Austin State University*, *Nacogdoches, TX*..

W272 **Whole herd enteric methane emission estimates in three contrasting dairy systems.**
S. Utsumi*[1], D. Beede[1], S. Zimmerman[2], and P. Zimmerman[2], [1]*Michigan State University*, *East Lansing*, [2]*C-Lock Technology Inc.*, *Rapid City, SD*.

W273 **Withdrawn**

W274 **Effect of feeding frequency and protein supplementation on methane production by Holstein cows.**
P. C. Aikman*, J. A. N. Mills, C. K. Reynolds, and L. A. Crompton, *School of Agriculture, Policy and Development, University of Reading*, *UK*.

W275 **Withdrawn**

W276 **Effect of Quebracho-chestnut tannin extracts at two forage levels on dairy cow lactation performance and emission of methane and ammonia.**
M. J. Aguerre*[1], M. C. Capozzolo[1], M. A. Wattiaux[1], and J. M. Powell[2], [1]*University of Wisconsin-Madison*, *Madison*, [2]*U.S. Dairy Forage Research Center*, *Madison, WI*.

W277 **Effect of fiber on greenhouse gas emissions from stored manure.**
Q. Huang[1], K. Perano*[2], M. Tenuta[1], C. M. Nyachoti[1], A. Strathe[2], and E. Kebreab[2], [1]*University of Manitoba*, *Winnipeg, MB, Canada*, [2]*University of California, Davis*, *Davis*.

W278 **Evaluation of $SF_6$ emission for determination of methane in ruminants.**
A. C. Ruggieri*, N. C. Meister, I. P. Carvalho de Carvalho, N. L. Santos, V. Costa e Silva, F. de Oliveira Alari, and K. T. de Resende, *UNESP-Universidade Estadual Paulista*, *Jaboticabal, São Paulo, Brazil*.

W279 **Effect of dietary protein level on ammonia and greenhouse gas emissions from dairy manure.**
C. Lee*[1], A. N. Hristov[1], C. J. Dell[2], G. W. Feyereisen[3], J. Kaye[1], and D. Beegle[1], [1]*Pennsylvania State University*, *University Park*, [2]*USDA-ARS-PSWMRU*, *University Park, PA*, [3]*USDA-ARS-SWMRU*, *St. Paul, MN.*

W280 **Use of an activity monitoring system as part of the Cal Poly dairy breeding protocol.**
T. Nutcher* and S. Henderson, *Department of Dairy Science, California Polytechnic State University*, *San Luis Obispo*.

W281 **Seasonal and diel changes of air emissions from cross-ventilated dairy freestall barns in Midwestern United States.**
F. Y. Ayadi*[1], E. L. Cortus[1], L. D. Jacobsen[2], B. P. Hetchler[2], and A. J. Heber[3], [1]*South Dakota State University*, *Brookings*, [2]*University of Minnesota*, *St. Paul*, [3]*Purdue University*, *West Lafayette, IN*.

W282 **Effect of oat maturity and variety on yield and nutritive value for grazing cattle.**
M. L. Drewery*[1], L. A. Redmon[2], and T. A. Wickersham[1], [1]*Texas A&M University*, *College Station*, [2]*Texas AgriLife Extension*, *College Station*.

W283 **Replacing grain and silage with wheat distiller grains: effects on feed intake, daily gain, carcass characteristics, and blood metabolites in finishing beef cattle.**
W. Z. Yang*[1], T. A. McAllister[1], J. J. McKinnon[2], and K. A. Beauchemin[1], [1]*Agriculture and Agri-Food Canada, Research Centre*, *Lethbridge, AB, Canada*, [2]*Department of Animal & Poultry Science, University of Saskatchewan*, *Saskatoon, SK, Canada*.

W284 **Effects of restricted versus conventional dietary adaptation over periods of 14 and 21 days on feedlot performance and carcass characteristics of Nellore cattle.**
D. D. Millen*[2,3], F. S. Parra[1], J. R. Ronchesel[1], M. D. B. Arrigoni[1], C. L. Martins[1], R. S. Barducci[1], L. M. N. Sarti[1], R. D. L. Pacheco[1], L. C. Vieira Júnior[1], M. C. S. Franzói[1], R. Espigolan[1], J. M. P. Silva[1], M. F. Val[1], F. P. Luiz[1], E. A. Chacon Filho[1], [1]*São Paulo State University (UNESP)*, *Botucatu, São Paulo, Brazil*, [2]*São Paulo State University (UNESP)*, *Dracena, São Paulo, Brazil*, [3]*Supported by FAPESP*, *São Paulo, São Paulo, Brazil*.

W285 **Effect of three diets on carcass quantitative traits in cattle Nellore and crossbreed F1 Nellore × Brahman.**
I. S. Silva*, F. A. Barbosa, S. L. S. Cabral Filho, R. A. Mandarino, and P. C. A. C. Alves, *Faculty of Agronomy and Veterinary Medicine, University of Brasília-UnB*, *Brasília/DF, Brazil.*

W286 **Effects of supplementing an exogenous proteolytic enzyme on growth performance in finishing beef steers.**
J. M. Vera*[1], C. T. Noviandi[1], A.-H. Smith[2], D. R. ZoBell[1], and J.-S. Eun[1], [1]*Department of Animal, Dairy, and Veterinary Sciences, Utah State University*, *Logan*, [2]*Danisco USA, Inc.*, *Waukesha, WI*.

W287 **Effects of supplementing an exogenous proteolytic enzyme in beef finishing diets on ruminal fermentation in continuous cultures.**
J. M. Vera[1], T. Astuti[2], A.-H. Smith[3], D. R. ZoBell[1], and J.-S. Eun*[1], [1]*Department of Animal, Dairy, and Veterinary Sciences, Utah State University*, *Logan*, [2]*Faculty of Animal Science, Andalas University*, *Padang, West Sumatra, Indonesia*, [3]*Danisco USA, Inc.*, *Waukesha, WI*.

W288 **Fecal and urinary excretion of N, P and S with increasing feeding wheat distillers dried grains with solubles (DDGS) in finishing beef heifers.**
Y. L. Li[1,2], C. Li*[1,3], W. Z. Yang[1], T. A. McAllister[1], and K. A. Beauchemin[1], [1]*Agriculture and Agri-Food Canada, Research Centre*, *Lethbridge, AB, Canada*, [2]*Feed Research Institute, Chinese Academy of Agricultural Sciences*, *Beijing, China*, [3]*College of Animal Science, Inner Mongolia Agricultural University*, *Hohhot, Inner Mongolia, China*.

W289 **Effect of Optaflexx when fed as a topdress on performance and carcass traits of finishing steers.**
G. J. Vogel*, R. L. Botts, J. W. Homm, N. A. Pyatt, and G. D. Hufstedler, *Elanco Animal Health*, *Greenfield, IN*.

W290 **Effects of crude glycerin on in vitro gas production dry matter disappearance, VFA profiles, and composition of fermentative gasses.**
E. H. C. B. van Cleef*[2], S. Uwituze[1], and J. S. Drouillard[1], [1]*Kansas State University*, *Manhattan*, [2]*São Paulo State University*, *Jaboticabal, São Paulo, Brazil*.

W291 **Effects of ginger root (Zingiber officinale) on blood oxidative stability of beef cattle.**
M. J. Liu*, Z. B. Yang, and W. R. Yang, *Shandong Agricultural University*, *Shandong, Taian, China*.

W292 **Oro-sensorial preferences for mixtures of protein and energetic ingredients in weaned calves.**
C. Montoro*[1], I. Ipharraguerre[2], and A. Bach[1,3], [1]*Ruminant Production, IRTA*, *Caldes de Montbui, Barcelona, Spain*, [2]*Lucta S.A.*, *Montornés del Vallés, Barcelona, Spain*, [3]*ICREA*, *Barcelona, Spain*.

W293 **Evaluation of cotton ginning by-product value added feed as a supplement for grazing beef cattle.**
J. D. Rivera*, L. W. Fitzgerald, M. L. Gipson, K. L. Odom, and R. G. Gipson, *South MS Branch Experiment Station*, *Poplarville, MS*.

W294 **Influence of addition of tannins-extract in low concentration of dietary dry matter on feedlot-performance of bulls.**
R. Barajas*[1], B. J. Cervantes[2], A. Camacho[1], M. Verdugo[1], M. A. Espino[1], L. R. Flores[1], J. A. Romo[1], E. A. Velazquez[1], and J. J. Lomeli[1], [1]*FMVZ-Universidad Autonóma de Sinaloa*, *Culiacán, Sinaloa, México*, [2]*Ganadera Los Migueles S.A. de C.V.*, *Culiacán, Sinaloa, México*.

W295 **Influence of addition of tannins-extract in low concentration of dietary dry matter on carcass characteristics of bull-calves.**
A. Camacho*[1], B. J. Cervantes[2], M. A. Espino[1], M. Verdugo[1], L. R. Flores[1], J. A. Romo[1], and R. Barajas[1], [1]*FMVZ-Universidad Autonóma de Sinaloa*, *Culiacán, Sinaloa, México*, [2]*Ganadera Los Migueles S.A. de C.V.*, *Culiacán, Sinaloa, México*.

W296 **Effect of length feeding additional tannins-extract on feedlot-performance of finishing-bulls.**
R. Barajas*[1], B. J. Cervantes[2], S. C. Arechiga[1], M. A. Espino[1], L. R. Flores[1], A. Camacho[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*.

W297 **Effect of length feeding additional tannins-extract on carcass traits of finishing-bulls.**
S. C. Arechiga*[1], B. J. Cervantes[2], M. A. Espino[1], L. R. Flores[1], A. Camacho[1], J. A. Romo[1], and R. Barajas[1], [1]*FMVZ-Universidad Autonóma de Sinaloa*, *Culiacán, Sinaloa, México*, [2]*Ganadera Los Migueles S.A. de C.V.*, *Culiacán, Sinaloa, México*.

W298 **Meta-analysis of the effects of the interaction between copper and molybdenum on weight gain and gain:feed ratio in growing cattle.**
R. Dias*[1], S. Lopez[2], Y. Montanholi[1], B. Smith[1], L. Haas[1], S. Miller[1], and J. France[1], [1]*University of Guelph*, *Guelph, Ontario, Canada*, [2]*Instituto de Ganadería de Montaña (IGM), Universidad de León*, *León, Spain*.

W299 **Effects of restricted versus conventional dietary adaptation over periods of 14 and 21 days on rumen papillae of feedlot Nellore cattle.**
F. S. Parra[1,3], J. R. Ronchesel[1], M. D. B. Arrigoni[1], C. L. Martins[1], D. D. Millen*[2], R. D. L. Pacheco[1], R. S. Barducci[1], L. M. N. Sarti[1], L. C. Vieira Júnior[1], M. C. S. Franzói[1], R. Espigolan[1], J. M. P. Silva[1], D. Setten[1], F. P. Luiz[1], E. A. Chacon Filho[1], [1]*São Paulo State University (UNESP)*, *Botucatu, São Paulo, Brazil*, [2]*São Paulo State University (UNESP)*, *Dracena, São Paulo, Brazil*, [3]*Supported by FAPESP*, *São Paulo, São Paulo, Brazil*.

W300 **Feedlot performance and carcass traits of yearling bulls fed polyclonal antibody preparations, yeast or monensin.**
E. Rodrigues[1,3], F. S. Parra[1], M. D. B. Arrigoni[1], C. L. Martins[1], D. D. Millen*[2], R. D. L. Pacheco[1], C. R. M. Andrade[1], R. S. Barducci[1], L. M. N. Sarti[1], J. R. Ronchesel[1], A. L. Campanini[1], and D. Tomazella[1], [1]*São Paulo State University (UNESP)*, *Botucatu, São Paulo, Brazil*, [2]*São Paulo State University (UNESP)*, *Dracena, São Paulo, Brazil*, [3]*Supported by FAPESP*, *São Paulo, São Paulo, Brazil*.

W301 **Rumen papillae alterations of feedlot yearling bulls fed polyclonal antibody preparations, yeast or monensin.**
E. Rodrigues[1,3], F. S. Parra[1], M. D. B. Arrigoni[1], C. L. Martins[1], D. D. Millen*[2], R. D. L. Pacheco[1], R. S. Barducci[1], L. M. N. Sarti[1], J. R. Ronchesel[1], C. R. M. Andrade[1], A. L. Campanini[1], and D. Tomazella[1], [1]*São Paulo State University (UNESP)*, *Botucatu, São Paulo, Brazil*, [2]*São Paulo State University (UNESP)*, *Dracena, São Paulo, Brazil*, [3]*Supported by FAPESP*, *São Paulo, São Paulo, Brazil*.

W302 **Fatty acid profiles in adipose tissue of grazing and feedlot beef steers.**
C. T. Noviandi*[1], R. E. Ward[2], J.-S. Eun[1], D. R. ZoBell[1], R. D. Stott[1], T. Astuti[3], B. L. Waldron[4], and M. D. Peel[4], [1]*Department of Animal, Dairy, and Veterinary Sciences*, [2]*Department of Nutrition, Dietetics, and Food Sciences, Utah State University*, *Logan*, [3]*Faculty of Animal Science, Andalas University*, *Padang, West Sumatra, Indonesia*, [4]*Forage and Range Research Laboratory, USDA-ARS*, *Logan, UT*.

W303 **Chromium propionate supplementation on feedlot performance of bulls.**
M. A. Espino*[1], B. J. Cervantes[2], P. W. Rounds[3], F. Valdez[3], E. A. Velazquez[1], J. A. Romo[1], and R. Barajas[1], [1]*FMVZ-Universidad Autonóma de Sinaloa*, *Culiacán, Sinaloa, México*, [2]*Ganadera Los Migueles S.A. de C.V.*, *Culiacán, Sinaloa, México*, [3]*Kemin Agrifoods*, *Des Moines, IA*.

W304 **Creatinine to estimate the quantity of carcass muscle and crude protein in the empty body weight.**
L. F. Costa e Silva, S. de C. Valadares Filho, P. P. Rotta*, R. F. D. Valadares, and D. Zanetti, *Universidade Federal de Viçosa*, *Viçosa, Minas Gerais, Brazil*.

W305 **Effect of glycerin on intake and digestion of bermudagrass hay in beef cattle.**
T. A. Wickersham*, K. M. Bodensteiner, M. L. Drewery, R. O. Dittmar, and J. E. Sawyer, *Texas A&M University*, *College Station*.

W306 **Effect of methanol on intake and digestion in beef cattle.**
K. N. Winsco*, N. M. Kenney, R. O. Dittmar, J. A. Coverdale, J. E. Sawyer, and T. A. Wickersham, *Texas A&M University*, *College Station*.

W307 **Effects of purified lignin on growth performance of feedlot cattle.**
Y. Wang*[1], J. H. Lora[2], and T. A. McAllister[1], [1]*Agriculture and Agri-Food Canada, Lethbridge Research Centre*, *Lethbridge, Alberta, Canada*, [2]*GreenValue Entrprises LLC*, *Media, PA*.



## Ruminant Nutrition
## Dairy Cattle

W308 **Protein balance alters expression of key genes for protein and lysine catabolism in liver of lactating dairy cattle.**
H. A. Tucker*[1], S. L. Koser[1], P. H. Doane[2], and S. S. Donkin[1], [1]*Purdue University*, *West Lafayette, IN*, [2]*Archer Daniels Midland Company*, *Decatur, IL*.

W309 **Effects of OmniGen-AF on performance and economics of a veal operation.**
O. Bewley*[1], J. D. Chapman[1], K. P. Zanzalari[1], Y. Q. Wang[2], and N. E. Forsberg[2], [1]*Prince Agri Products*, *Quincy, IL*, [2]*OmniGen Research*, *Corvallis, OR*.

W310 **Determining methionine bioavailability in commercial dairy herds.**
D. Stucker[1], J. R. Knapp*[2], and N. R. St-Pierre[3], [1]*Venture Milling*, *Salisbury, MD*, [2]*Fox Hollow Consulting LLC*, *Columbus, OH*, [3]*The Ohio State University*, *Columbus*.

W311 **Effect of returned milk (Nutri-Gold) on performance of veal calves.**
D. Vermeire*, *Nouriche Nutrition Ltd.*, *Lake St. Louis, MO*.

W312 **Antioxidant activity in milk of dairy cows fed diets containing propolis-based products.**
S. M. Cottica[1], S. C. de Aguiar[1], E. M. de Paula[1], R. B. Samensari[1], L. P. P. de Moura[1], S. L. Franco[1], J. V. Visentainer[1], G. T. dos

Santos[1], R. Kazama[2], O. P. P. do Prado[1], F. J. Maia[1], and L. M. Zeoula*[1], [1]*Universidade Estadual de Maringá*, *Maringá, Paraná, Brazil*, [2]*Universidade Federal de Santa Catarina*, *Florianópolis, Santa Catarina, Brazil*.

W313 **Ruminal fermentation of acidosis induced cows treated with monensin or polyclonal antibodies against target ruminal bacteria.**
D. D. Millen*[2,3], R. D. L. Pacheco[1], C. T. Marino[4], J. P. S. T. Bastos[4], T. A. Barros[4], F. A. Ferreira[4], C. L. Martins[1], M. D. B. Arrigoni[1], and P. H. M. Rodrigues[4], [1]*São Paulo State University (UNESP)*, *Botucatu, São Paulo, Brazil*, [2]*São Paulo State University (UNESP)*, *Dracena, São Paulo, Brazil*, [3]*Supported by FAPESP*, *São Paulo, São Paulo, Brazil*, [4]*University of São Paulo (USP)*, *Pirassununga, São Paulo, Brazil*.

W314 **Effect of a combined supplement of vitamin B12 and folic acid on vitamin B12 concentration in milk of dairy cows.**
M. Duplessis*[1], D. Pellerin[1], and C. L. Girard[2], [1]*Université Laval, Département des sciences animales*, *Québec, QC, Canada*, [2]*Agriculture and Agri-Food Canada*, *Sherbrooke, QC, Canada*.

W315 **Effects of cornmeal or molasses supplemented with different protein sources on milk production and nitrogen utilization of organic dairy cows.**
S. Ross*[1], A. F. Brito[1], H. V. Petit[2], and K. J. Soder[3], [1]*University of New Hampshire*, *Durham*, [2]*Agriculture and Agri-Food Canada*, *Sherbrooke, QC, Canada*, [3]*USDA-Agricultural Research Service-Pasture Systems and Watershed Management Research Unit*, *University Park, PA*.

W316 **Antioxidant activity of calf milk replacers.**
M. A. Soberon*, D. J. R. Cherney, and R. H. Liu, *Cornell University, Ithaca, NY.*

W317 **Effects of essential oils, yeast and enzyme additive to milk replacer and starter on dairy calf performance.**
A. D. Kmicikewycz*[1], H. T. Pervis[2], J. Hill[2], and N. B. Litherland[1], [1]*University of Minnesota*, *St. Paul*, [2]*Ralco Nutrition Inc.*, *Marshall, MN*.

W318 **Milk production responses of grazing cows to partial mixed rations.**
M. J. Auldist*, J. L. Jacobs, L. C. Marett, J. S. Greenwood, and W. J. Wales, *Department of Primary Industries*, *Ellinbank, Victoria, Australia*.

W319 **Evaluation of a rumen protected carbohydrate supplement prototype feed with fresh lactation dairy cows.**
J. P. Russi*[1], P. F. Russi[1], J. M. Simondi[2], G. M. Bonetto[2], C. Nasser Marzo[2], J. A. Di Rienzo[3], and A. R. Castillo[4], [1]*Rusitec S.A.*, *Buenos Aires, Argentina*, [2]*INTA, EEA Manfredi*, *Cordoba, Argentina*, [3]*University of Cordoba, School of Agriculture*, *Cordoba, Argentina*, [4]*University of California, Cooperative Extension*, *Merced, CA*.

W320 **Effects of balancing for methionine and lysine in a lactation diet containing high concentrations of wet corn gluten feed.**
C. R. Mullins*[1], D. Weber[2], E. Block[2], J. F. Smith[1], M. J. Brouk[1], and B. J. Bradford[1], [1]*Kansas State University*, *Manhattan*, [2]*Arm & Hammer Animal Nutrition*, *Princeton, NJ*.

W321 **Effects of subacute ruminal acidosis (SARA) challenges on bacteria in the digestive tract of dairy cows.**
S. Li*, J. C. Plaizier, E. Khafipour, and D. O. Krause, *University of Manitoba*, *Winnipeg, MB, Canada*.

W322 **Interactions between mild protein imbalance and taste preference in young ruminants.**
A. Bach*[1], J. J. Villalba[2], and I. R. Ipharraguerre[3], [1]*ICREA and Ruminant Production-IRTA*, *Barcelona, Spain*, [2]*Utah State University*, *Logan*, [3]*Lucta, S.A.*, *Barcelona, Spain*.

W323 **Evaluation of RumeNext-D and monensin in early lactation diets for dairy cattle.**
J. P. McNamara*[1], G. Duncan[1], R. Bose[1], S. Rocco[1], J. Kay[1], P. Doane[2], and K. L. Perfield[3], [1]*Washington State University*, *Pullman*, [2]*ADM Research*, *Des Moines, IA*, [3]*Elanco Animal Health*, *Indianapolis, IN*.

W324 **Comparing a 40-d dry period with a single close-up diet with a 60-d dry period with far-off and close-up diets on glucose, lactate, and calcium in the blood plasma of dairy cows.**
H. Khazanehei*, S. Li, D. O. Krause, M. L. Connor, L. Lippins, and J. C. Plaizier, *University of Manitoba*, *Winnipeg, MB, Canada*.

W325 **A meta-analysis on the effects of supplementing exogenous fibrolytic enzyme products in dairy diets on productive performance in early lactation.**
J.-S. Eun*[1], C. M. Williams[2], and A. J. Young[1], [1]*Department of Animal, Dairy, and Veterinary Sciences, Utah State University*, *Logan*, [2]*Department of Soil and Crop Sciences, Colorado State University*, *Fort Collins*.

W326 **Evaluation of dietary fat from dried distillers grains in the diet Holstein heifers on growth and dry matter intake.**
J. L. Anderson*, K. F. Kalscheur, A. R. Hippen, and D. J. Schingoethe, *South Dakota State University*, *Brookings*.

W327 **Bee pollen and its polysaccharides, the new feed additives in milk replacer of preruminant calves.**
Y. Tu*, G.-F. Zhang, N.-F. Zhang, C.-G. Jiang, and Q.-Y. Diao, *Key Laboratory of Feed Biotechnology of Ministry of Agriculture/Feed Research Institute, Chinese Academy of Agricultural Sciences*, *Beijing, P.R. China*.

W328 **Effect of lipopolysaccharides on immune parameters and nitrogen metabolism in preruminant calves.**
N.-F. Zhang, H. Li, Y. Tu*, C.-G. Jiang, and Q.-Y. Diao, *Feed Research Institute, Chinese Academy of Agricultural Sciences*, *Beijing, P.R. China*.

W329 **Partially replacing barley grain with wheat factory sewage in the dairy cow diets did not affect digestion and milk production.**
M. Khorvash[1], S. Kargar[1], G. R. Ghorbani[1], M. Boroumand-Jari[2], A. Ghaempour[1], and W. Z. Yang*[3], [1]*Isfahan University of Technology*, *Isfahan, Iran*, [2]*Jahad-Agriculture Institute of Scientific-Applied Higher Education*, *Isfahan, Iran*, [3]*Agriculture and Agri-Food Canada, Research Centre, Lethbridge*, *Alberta, Canada*.

W330 **Effects of dietary crude protein level on eating pattern and performance of Holstein calves.**
G. Araujo[1], M. Devant[1], A. Mereu[2,1], I. Ipharraguerre[2], and A. Bach*[3,1], [1]*Deparment of Ruminant Production, Institut de Recerca i Tecnologia Agroalimentàries (IRTA)*, *Barcelona, Spain*, [2]*Lucta, S.A.*, *Barcelona, Spain*, [3]*Institució Catalana de Recerca i Estudis Avançats (ICREA)*, *Barcelona, Spain*.

W331 **Feeding distiller's grains as an energy source to gestating and lactating heifers: Impact on calving and pre-weaning progeny performance.**
P. J. Gunn*[1], J. P. Schoonmaker[1], R. P. Lemenager[1], and G. A. Bridges[2], [1]*Purdue University*, *West Lafayette, IN*, [2]*University of Minnesota*, *Grand Rapids*.

W332 **Feeding distiller's grains as an energy source to gestating and lactating heifers: Impact on milk production, composition, and fatty acid profile.**
P. J. Gunn*[1], J. P. Schoonmaker[1], R. P. Lemenager[1], and G. A. Bridges[2], [1]*Purdue University*, *West Lafayette, IN*, [2]*University of Minnesota*, *Grand Rapids*.

W333 **Effect of extruded flax products on dairy cow milk and steer tissue fatty acid composition.**
D. A. Christensen*, P. Yu, J. J. McKinnon, and A. Foth, *University of Saskatchewan*, *Saskatoon, SK, Canada*.

W334 **Grain source and alfalfa hay particle size effects on fecal fermentability and particle size in midlactation Holsteins.**
A. Nikkhah*[1], S. M. Nasrollahi[2], M. Khorvash[2], and G. R. Ghorbani[2], [1]*University of Zanjan*, *Zanjan, Iran*, [2]*Isfahan University of Technology*, *Isfahan, Iran*.

W335 **Textured versus ground starter effects on Holstein calves chewing behavior.**
A. Nikkhah*[1], S. M. Nasrollahi[2], B. Raad[2], S. Khorsandi[2], M. Forootan[2], and S. P. Emami Panaah[2], [1]*University of Zanjan*, *Zanjan, Iran*, [2]*Foeka Agriculture and Dairy Corporation*, *Isfahan, Iran*.

W336 **Changes in long-chain polyunsaturated fatty acid status of dairy cows during the periparturient period based on erythrocyte-membrane fatty acids.**
C. L. Preseault[1], H. M. Dann[2], and A. L. Lock*[1], [1]*Michigan State University*, *East Lansing*, [2]*William H. Miner Agricultural Research Institute*, *Chazy, NY*.

W337 **A 40-d dry period with a single close-up diet and a 60-d dry period with far-off and close-up diets differ in their effects on lipolysis and liver triacylglycerol.**
H. Khazanehei*, S. Li, D. O. Krause, M. L. Connor, L. Lippins, and J. C. Plaizier, *University of Manitoba*, *Winnipeg, MB, Canada*.

W338 **Reduced protein for late-lactation dairy cows.**
A. B. D. Pereira*[1], L. K. Zeringue[1], C. Leonardi[2], M. E. McCormick[1], and V. R. Moreira[1], [1]*Louisiana State University Agricultural Center*, *Baton Rouge*, [2]*Louisiana State University - Health Sciences Center*, *New Orleans*.

W339 **Comparison of in vivo and in vitro NDF digestibility data in dairy cows.**
S. Colombini*, G. Galassi, L. Rapetti, and G. M. Crovetto, *University of Milan, Department of Animal Science*, *Milano, Italy*.

W340 **Effect of two different non-forage fiber sources on performance and feeding behavior of Holstein calves.**
L. l. Castells*[1], A. Bach[1,2], G. A. Pirisino[1], and M. Terré[1], [1]*Department of Ruminant Production, IRTA*, *Caldes de Montbui, Spain*, [2]*ICREA*, *Barcelona, Spain*.

W341 **Morphology of the rumen of dairy cows fed high or low grain content diets before parturition.**
T. S. Teófilo, J. C. Resende Júnior*, S. F. Costa, M. B. Moreira, R. F. Lima, D. O. R. B. Santoro, G. P. Lenzi, P. P. Bueno, T. M. França, and T. A. Dell Vale, *Universidade Federal de Lavras*.

W342 **Effects of monensin on metabolic parameters, feeding behavior, and productivity of transition dairy cows. (see Abstract 73).**
C. R. Mullins*[1], L. K. Mamedova[1], M. J. Brouk[1], C. E. Moore[2], H. B. Green[2], K. L. Perfield[2], J. F. Smith[1], J. P. Harner[1], and B. J. Bradford[1], [1]*Kansas State University, Manhattan,* [2]*Elanco Animal Health, Greenfield, IN*..

W343 **Energy efficiency and performance of lactating dairy cows fed ethanol and acetic acid.**
J. L. P. Daniel*, L. G. Nussio, R. C. Amaral, A. Sá Neto, E. H. C. Garcia, A. W. Bispo, F. C. L. Oliveira, and I. F. Silva, *University of Sao Paulo, College of Agriculture "Luiz de Queiroz"*, *Piracicaba, SP, Brazil*.

W344 **Effect of an essential oil compound based product on ruminal disappearance of proteins, fiber and starch and fermentation parameters in dairy cow.**
D. Éclache, P. Etienne, and V. Noirot*, *Phodé Laboratories*, *Terssac, France*.

W345 **Milk fatty acid profile from dairy cows fed tropical forage-based TMR containing increasing levels of sunflower oil.**
M. A. S. Gama*[1], C. G. S. Ribeiro[4], F. C. F. Lopes[1], M. M. Almeida[2], E. F. Motta[1], M. T. Ribeiro[1], and J. M. Griinari[3], [1]*Brazilian Agricultural Research Corporation*, *Juiz de Fora, Minas Gerais, Brazil*, [2]*The University of Juiz de Fora*, *Juiz de Fora, Minas Gerais, Brazil*, [3]*Swedish University of Agricultural Sciences*, *Uppsala, Sweden*, [4]*The University of Minas Gerais*, *Belo Horizonte, Minas Gerais, Brazil*.

W346 **Effects of grinding or steam rolling of starter grains on nutrient digestibility of Holstein suckling calves.**
N. Jalali-Farahani, M. Dehghan-Banadaky*, K. Rezayazdi, and M. Ganjkhanlou, *Animal Science Department, Campus of Agriculture and Natural Resources, University of Tehran*, *Karaj, Tehran, Iran*.

W347 **Investigation of grinding or steam rolling of starter grains on growth performance of Holstein suckling calves.**
N. Jalali-Farahani, M. Dehghan-Banadaky*, K. Rezayazdi, and M. Ganjkhanlou, *Animal Science Department, Campus of Agriculture and Natural Resources, University of Tehran*, *Karaj, Tehran, Iran*.

W348 **Investigation of chewing activity in cows fed diet with different ratios of alfalfa hay and corn silage.**
A. Akbai, A. Zali, M. Ganjkhanlou, and M. Dehghan-Banadaky*, *Animal Science Department, Campus of Agriculture and Natural Resources, University of Tehran*, *Karaj, Tehran, Iran*.

W349 **A non activated charcoal reduced diarrhea of calves subject to Escherichia coli compared to a conventional treatment after 9 days of treatment.**
C. Ionescu*[1], P. Ferretti[2], and D. M. Bravo[1], [1]*Pancosma*, *Geneva, Switzerland*, [2]*NanoAgro*, *Buenos Aires, Argentina*.

W350 **A new method for individually feeding a supplement to dairy cows in a free stall.**
E. M. Ramsing*[1], C. M. Shriver-Munsch[1], J. R. Males[1], W. K. Sanchez[2], I. Yoon[2], and G. Bobe[1], [1]*Department of Animal Science, Oregon State University*, *Corvallis*, [2]*Diamond V Mills*, *Cedar Rapids, IA*.

W351 **Effect of quantity and frequency of colostrum feeding on passive transfer, health, and performance of pre-weaned and post-weaned dairy calves.**
B. Ozer*[1], M. Chahine[1], C. M. Matuk[1], and M. E. de Haro Martí[2], [1]*University of Idaho*, *Twin Falls*, [2]*University of Idaho*, *Gooding*.

W352 **Odd- and branched-chain fatty acid (OBCFA) composition of plasma in response to N underfeeding and energy source in dairy cows and their distribution among plasma lipid classes.**
R. Gervais*[1], B. Vlaeminck[2], A. Fanchone[3], P. Nozière[4], M. Doreau[4], and V. Fievez[2], [1]*Département des sciences animales, Université Laval*, *Québec, Québec, Canada*, [2]*Lanupro, Ghent University*, *Melle, Belgium*, [3]*Unité de Recherches Zootechniques, INRA*, *Petit Bourg, Guadeloupe, France*, [4]*Unité de Recherche sur les Herbivores, INRA*, *Theix, St-Genès-Champanelle, France*.

W353 **Effect of dietary escape microbial protein (DEMP) and degradable protein level on fermentation, digestion, and N flow in rumen-simulating fermenters.**
G. A. Harrison*, M. D. Meyer, and K. A. Dawson, *Alltech Biotechnology*, *Nicholasville, KY*.

W354 **Effect of level of dietary escape microbial protein (DEMP) on fermentation, digestion, and N flow in rumen-simulating fermenters.**
G. A. Harrison*, M. D. Meyer, and K. A. Dawson, *Alltech Biotechnology*, *Nicholasville, KY*.

W355 **Effects of abomasal infusion of fish oil, sterculia foetida oil and conjugated linoleic acids on milk yield and composition, and mammary mRNA expression of stearoyl CoA desaturase in dairy cows.**
M.-P. Dallaire*[1,2], L. Ma[3], B. A. Corl[3], R. Gervais[1], Y. Lebeuf[1], F. J. Richard[1], and P. Y. Chouinard[1,2], [1]*Département des sciences animales, Université Laval*, *Québec, QC, G1V 0A6 Canada*, [2]*Institute of Nutraceuticals and Functional Foods (INAF)*, *Québec, QC, Canada*, [3]*Department of Dairy Science, Virginia Tech*, *Blacksburg*.

W356 **Effect of corn silage inoculation with Sil-All and dietary protein on fermentation, digestion, and N flow in rumen-simulating fermenters.**
G. A. Harrison*, M. D. Meyer, M. S. Taylor, and K. A. Dawson, *Alltech Biotechnology*, *Nicholasville, KY*.

W357 **Enhancing antioxidant properties of milk using a programmed, nutritional approach.**
G. A. Harrison*, M. S. Taylor, M. D. Meyer, and K. A. Dawson, *Alltech Biotechnology*, *Nicholasville, KY*.

W358 **Mineral metabolism in pregnant dairy goats.**
C. J. Härter*[1], I. A. M. A. Teixeira[1], L. D. Lima[1], H. G. O. Silva[1], A. R. Rivera[1], D. S. Castagnino[1], K. T. Resende[1], and N. R. St-Pierre[2], [1]*Universidade Estadual Paulista*, *Jaboticabal, SP, Brasil*, [2]*Department of Animal Sciences, The Ohio State University*, *Columbus*.

W359 **Effect of various dosages of Saccharomyces cerevisiae fermentation product on milk production of multiparous dairy cows.**
E. M. Ramsing*[1], C. M. Shriver-Munsch[1], J. R. Males[1], W. K. Sanchez[2], I. Yoon[2], and G. Bobe[1], [1]*Department of Animal Science, Oregon State University*, *Corvallis*, [2]*Diamond V*, *Cedar Rapids, IA*.

W360 **Prediction of enteric methane output from milk fatty acid composition, intake and rumen fermentation parameters.**
R. Mohammed*, S. M. McGinn, and K. A. Beauchemin, *AAFC*, *Lethbridge Research Centre, Lethbridge, AB, Canada*.

W361 **Effect of dietary starch content in early lactation on the lactational performance of dairy cows.**
B. H. Nelson*[1,2], K. W. Cotanch[1], M. P. Carter[1], H. M. Gauthier[1], R. E. Clark[1], P. D. Krawczel[1], R. J. Grant[1], K. Yagi[3], K. Fujita[3], and H. M. Dann[1], [1]*William H. Miner Agricultural Research Institute*, *Chazy, NY*, [2]*Department of Animal Science, The University of Vermont, Burlington*, [3]*ZenNoh National Federation of Agricultural Cooperative Associations*, *Tokyo, Japan*.

W362 **A fibrolytic enzyme additive for lactating dairy cow diets: ruminal fermentation, pH, bacterial populations and enteric methane emissions.**
Y.-H. Chung*[1], L. Holtshausen[1], T. W. Alexander[2], M. Oba[3], and K. A. Beauchemin[1], [1]*Agriculture and Agri-Food Canada, Research Centre*, *Lethbridge, AB, Canada*, [2]*Department of Animal Science, University of Vermont*, *Burlington*, [3]*Department of Agricultural, Food and Nutritional Science, University of Alberta*, *Edmonton, AB, Canada*.

W363 **Nutritional and seasonal factors causes milk fat concentration variability in dairy cows.**
A. S. Atzori*[1], P. Carta[2], G. Gaspa[1], and A. Cannas[1], [1]*Dipartimento di Scienze Zootecniche*, *Università di Sassari, Sassari 07100, Italy*, [2]*Associazione Regionale Allevatori della Sardegna*, *Nuraxinieddu, OR, Italy*.

W364 **Replacing soybean meal with Upland cottonseed, Pima cottonseed or extruded Pima cottonseed cake on production of lactating dairy cows.**
G. A. Broderick*[1], T. M. Kerkman[2], H. M. Sullivan[2], M. K. Dowd[3], and P. A. Funk[4], [1]*U.S. Dairy Forage Research Center*, *Madison, WI*, [2]*EcoSol*, *Tucson, AZ*, [3]*USDA-ARS*, *New Orleans, LA*, [4]*USDA-ARS*, *Mesilla Park, NM*.

W365 **The effects of feeding high-fiber byproduct feedstuff on productivity of dairy cows in early lactation.**
Y. Q. Sun* and M. Oba, *University of Alberta*, *Edmonton, Alberta, Canada*.

## Ruminant Nutrition
## Ruminal Metabolism

W366 **Determination of the metabolizable methionine contributions of three different sources of lipid coated methionine.**
E. Devillard[1], F. Rouffineau[1], and B. Sloan*[2], [1]*Adisseo France*, *Commentry, France*, [2]*Adisseo North and Central America*, *Alpharetta, GA*.

W367 **In vitro degradation of melamine in rumen liquor.**
T. Calitz and C. W. Cruywagen*, *Stellenbosch University*, *Stellenbosch, South Africa*.

W368 **Characterization of lipase-producing bacteria in the presence of varying energy substrates in vitro.**
H. D. Edwards*[1], R. C. Anderson[2], R. K. Miller[1], T. M. Taylor[1], M. D. Hardin[3], S. B. Smith[1], N. A. Krueger[2], and D. J. Nisbet[2], [1]*Texas A&M University*, *College Station*, [2]*United States Department of Agriculture/Agricultural Research Service, Southern Plains Agricultural Research Center*, *College Station, TX*, [3]*IEH Laboratories & Consulting Group*, *Lake Forest Park, WA*.

W369 **Exogenous fibrolytic enzymes: Unlocking nutrients from fiber for ruminant production.**
W. F. J. van de Vyver* and C. W. Cruywagen, *Stellenbosch University*, *Stellenbosch, Western Cape, South Africa*.

W370 **Comparison rumen degradability of *Sedilitzia rosmarinus*, *Halocnemum strobilaceum* and *Kochia scoparia* with wheat straw and alfalfa hay.**
M. Mahmoodi-Abyane*, R. Valizadeh, A. A. Naserian, and A. Koocheki, *Ferdowsi University of Mashhad*.

W371 **Comparison rumen degradability of *Phragmites australis*, *Nitraria schoberi* and *Atriplex canescens* species with wheat straw and alfalfa hay.**
M. Mahmoodi-Abyane*, R. Valizadeh, A. A. Naserian, and A. Koocheki, *Ferdowsi University of Mashhad*, *Mashhad, Khorasan Razavi, Iran*.

W372 **The comparison of chemical composition of *Pragmates australis* ensiled forage by various feed additives.**
R. Valizadeh, M. Mahmoodi-Abyane*, and A. Salahi, *Ferdowsi University of Mashhad*, *Mashhad, Khorasan Razavi, Iran*.

W373 **The comparison of qualitative characteristics of *Pragmates australis* ensiled forage by various feed additives.**
R. Valizadeh, M. Mahmoodi-Abyane*, and A. Salahi, *Ferdowsi University of Mashhad*, *Mashhad, Khorasan Razavi, Iran*.

W374 **A comparison of methods to analyze physical effectiveness fiber.**
R. S. Goulart*, L. G. Nussio, A. V. Pirez, J. L. P. Daniel, R. C. do Amaral, and V. P. Santos, *University of Sao Paulo/ESALQ*, *Piracicaba, Sao Paulo, Brazil*.

W375 **Rumen degradability of sugarcane (*Saccharum* spp.) treated with different hydrolysis agents used in Brazilian farms.**
S. L. S. Cabral Filho*[1,2], D. C. Pinto[1], and R. A. Mandarino[1], [1]*Universidade de Brasília*, *Brasília, Distrito Federal, Brasil*, [2]*Fazenda Experimental Agua Limpa*, *Brasilis, Distrito Federal, Brasil*.

W376 **Effect of dietary fish oil level on selected strains of rumen bacteria in continuous culture fermenters.**
A. Ishlak*, A. A. AbuGhazaleh, P. Gudla, and D. Hastings, *Southern Illinois University*, *Carbondale*.

W377 **Effects of rumen-protected niacin on lipid metabolism, oxidative stress and production of transition dairy cows during summer in Wisconsin.**
K. Yuan*[1], R. Shaver[1], S. Bertics[1], M. Espineira[1], and R. Grummer[2], [1]*Department of Dairy Science, University of Wisconsin-Madison*, *Madison*, [2]*Balchem Corporation*, *New Hampton, NY*.

W378 **Using rumen microbes for consolidated bioprocessing to convert plant fiber to ethanol or other biofuels.**
R. A. Kohn* and S.-W. Kim, *University of Maryland*, *College Park*.

W379 **Fiber-digesting rumen bacteria that predominantly produce propionate or butyrate.**
S.-W. Kim* and R. A. Kohn, *University of Maryland*, *College Park*.

W380 **The combination of garlic oil and cinnamaldehyde modify rumen fermentation profile reducing methane production.**
P. W. Cardozo*[1], M. Blanch[1], M. D. Carro[2], and M. J. Ranilla[2], [1]*Novus International Inc.*, *St. Charles, MO*, [2]*Deptartamento de*

*Producción Animal*, *Universidad de León, León, Spain*.

W381 **Ruminal kinetics of the diets with increasing levels of crude propane-1,2,3-triol.**
R. Mello*[1], C. M. M. Bittar[2], L. A. M. A. da Costa[3], R. C. de Araújo[2], and A. L. Abdalla[2], [1]*Universidade Federal de Santa Maria*, *Santa Maria, Rio Grande do Sul, Brazil*, [2]*Universidade de São Paulo - Escola Superior de Agricultura 'Luiz de Queiroz'*, *Piracicaba, São Paulo, Brazil*, [3]*Universidade Federal de Roraima*, *Boa Vista, Roraima, Brazil*.

W382 **Effect of various semi-arid medicinal plant essential oils on in vitro ruminal methane emission and feed fermentation efficiency.**
H. Jahani-Azizabadi*[1], M. Danesh Mesgaran[1], A. R. Vakili[1], and K. Rezayazdi[2], [1]*Dept. of Animal Science, Excellence Center for Animal Science, Faculty of Agriculture, Ferdowsi University of Mashhad*, *Mashhad, Khorasan Razavi, Iran*, [2]*Dept. of Animal Science, Faculty of Agriculture, University of Tehran*, *Karaj, Tehran, Iran*.

W383 **Rumen parameters and digestibility of diets with different levels of crude propane-1,2,3-triol.**
R. Mello*[1], C. M. M. Bittar[2], L. A. M. A. da Costa[3], P. B. Costa[4], J. K. Kirinus[1], and J. L. Nörnberg[1], [1]*Universidade Federal de Santa Maria*, *Santa Maria, Rio Grande do Sul, Brazil*, [2]*Universidade de São Paulo - Escola Superior de Agricultura 'Luiz de Queiroz'*, *Piracicaba, São Paulo, Brazil*, [3]*Universidade Federal de Roraima*, *Boa Vista, Roraima, Brazil*, [4]*Universidade Estadual do Oeste do Paraná*, *Marechal Cândido Rondon, Paraná, Brazil*.

W384 **Dose response effects of a garlic oil chemical compound propyl-propyl thiosulfate (PTSO) on rumen microbial fermentation in a dual flow continuous culture system.**
A. Foskolos*[1], A. F. De Souza[1], M. Rodriguez-Prado[1], A. Ferret[1], D. Bravo[2], and S. Calsamiglia[1], [1]*Animal Nutrition, Management and Welfare Research Group, Universitat Autònoma de Barcelona*, *Bellaterra, Spain*, [2]*Pancosma*, *Geneva, Switzerland*.

W385 **Estimation of protein fractions of tropical grasses by near infrared reflectance spectroscopy.**
R. G. Basurto[1], G. Buendia-Rodriguez[1], E. R. Ramírez[1], M. A. Barron[2], J. J. G. Bustamante[3], R. E. Santos[4], J. J. M. Maldonado[5], and S. S. Gonzalez-Muñoz*[6], [1]*CENID Fisiologia Animal-INIFAP*, *Queretaro, Mexico*, [2]*CE Huimanguillo-INIFAP*, *Tabasco, Mexico*, [3]*CE Santiago Ixcuintla-INIFAP*, *Nayarit, Mexico*, [4]*CE Iguala-INIFAP*, *Guerrero, Mexico*, [5]*CE Rosario Izapa-INIFAP*, *Chiapas, Mexico*, [6]*Colegio de Postgraduados*, *Montecillo, Estado de Mexico, Mexico*.

W386 **Commodity blood meal variation: digestible RUP and amino acids.**
R. Brown*[1], D. Stucker[1], J. R. Knapp[2], and N. R. St-Pierre[3], [1]*Venture Milling*, *Salisbury, MD*, [2]*Fox Hollow Consulting, LLC*, *Columbus, OH*, [3]*The Ohio State University*, *Columbus*.

W387 **Tannin content and rate of ruminal protein degradation of legume hays.**
S. Colombini*[1], G. A. Broderick[2], J. H. Grabber[2], and W. K. Coblentz[3], [1]*University of Milan*, *Milan, Italy*, [2]*U.S. Dairy Forage Research Center*, *Madison, WI*, [3]*U.S. Dairy Forage Research Center*, *Marshfield, WI*.

W388 **Evaluation of acid-insoluble ash and indigestible neutral-detergent fiber as total tract digestibility markers.**
C. Lee*, A. N. Hristov, T. Cassidy, and K. Heyler, *Pennsylvania State University*, *University Park.*

W389 **Nutritional value of Smallanthus sonchifolius and Moringa oleifera tropic forage as alternative in ruminant feeding.**
L. C. Bernal Bechara*, *Universidad de La Salle*, *Bogotá, Colombia*.

W390 **Postprandial hypoglycemia after feeding of alcohol-fermented apple pomace silage.**
M. Kondo, H. Moriuchi, J. Fang, H. Suzuki, and M. Matsuzaki*, *Hirosaki University*, *Hirosaki, Aomori, Japan*.

W391 **Inclusion of substrate of Pleurotus ostreatus on kinetics of in vitro fermentation of Brachiaria hay.**
S. L. S. Cabral Filho*[1,2], R. S. Oliveira[1], R. A. Mandarino[1], and C. A. Lobo[1], [1]*Universidade de Brasília*, *Brasilia, Distrito Federal, Brasil*, [2]*Fazenda Experimental Agua Limpa*, *Brasilia, Distrito Federal, Brasil*.

W392 **Evaluation of protein fractions of tropical grasses by near infrared reflectance spectroscopy.**
R. G. Basurto[1], G. Buendía-Rodríguez[1], S. S. González-Muñoz*[6], R. E. Ramirez[1], M. A. Barrón[2], G. J. J. Bustamante[3], R. E. Santos[4], M. J. J. Maldonado[5], and C. J. A. Bonilla[3], [1]*CENID Fisiología y Mejoramiento Animal*, *Ajuchitlán, Querétaro*, [2]*CE Huimanguillo–CIRG*, *Huimanguillo, Tabasco*, [3]*CE Santiago Ixcuintla–CIRPAS*, *Nayarit*, [4]*CE Iguala–CIRPAS*, *Iguala, Guerrero*, [5]*CE Rosario Izapa–CIRPAS*, *Tapachula. INIFAP–México*, [6]*Colegio de Postgraduados*, *Montecillo, Estado de México, México*.

W393 **The effect of storage structure on haylage and corn silage fermentation.**
C. Rasmussen*, D. Petri, S. Jens, and A. H. Smith, *Danisco USA*, *Waukesha, WI*.

W394 **The effect of direct fed lactic acid bacteria combined with monensin.**
R. C. de Souza*[1], R. B. Reis[1], J. Holliday[2], E. Rabelo[4], and R. A. Filho[3], [1]*Federal University of Minas Gerais*, *Belo Horizonte, Minas Gerais, Brasil*, [2]*Chr. Hansen - Animal Health and Nutrition*, *Hørsholm, Denmark*, [3]*Chr. Hansen - Animal*, *Valinhos, São Paulo, Brasil*, [4]*Rehagro Team Consultation*, *Belo Horizonte, Minas Gerais, Brasil*.

W395 **Morphological response of the ruminal and omasal mucosae to the variation in the energy of the diet.**
R. F. de Lima, J. C. de Resende Júnior*, J. L. P. Daniel, S. de F. Costa, M. B. Moreira, and M. G. Cardoso, *Universidade Federal de Lavras*.

W396 **Determination of solubility of alternate magnesium sources and their impact on pH with an optimized in vitro rumen fermentation protocol.**
S. J. Taylor*[1], J. Apajalahti[2], E. Pennala[2], C. Murphy[1], and T. Rinttilä[2], [1]*Celtic Sea Minerals Ltd.*, *Cork, Ireland*, [2]*Alimetrics Ltd.*, *Espoo, Finland*.

## Ruminant Nutrition
## Small Ruminant

W397 **Influence of *Salix babylonica* and *Leucaena leucocephala* extracts on ruminal fermentation activities in growing lambs.**
R. P. Hernández[1], A. Z. M. Salem*[1], R. R. Rojo[1], and D. L. Camacho[2], [1]*Universidad Autónoma del Estado de México*, *Centro universitario UAEM – Temascaltepec, Km 67.5 Carr. Toluca – Tejupilco Estado de México CP 51300, México*, [2]*Universidad Autónoma de Guerrero*, *Facultad de Medicina Veterinaria y Zootecnia, Carretera Altamirano – Iguala Km 3 CP 40660 Cd. Altamirano Guerrero, México*.

W398 **Effect of live yeast *Saccharomyces cerevisiae* (strain Sc 47) on ruminal parameters of growing Mehraban lambs.**
N. Baleghi[1], A. Taghizadeh[2], A. FarahAvar[3], and H. Khalilvandi-Behroozyar*[3,4], [1]*Islamic Azad University, Maragheh Branch*, [2]*University of Tabriz*, [3]*University of Tehran*, [4]*Urmia University*.

W399 **Intake and digestibility by wethers fed a fresh ryegrass-based diet intraruminally infused with *Acacia mearnsii* tannins.**
F. Hentz*[1], C. J. Härter[2], G. V. Kozloski[1], S. C. Àvila[1], and D. S. Castagnino[2], [1]*Universidade Federal de Santa Maria*, *Santa Maria, RS, Brazil*, [2]*Universidade Estadual Paulista*, *Jaboticabal, SP, Brazil*.

W400 **Effect of sorghum grain supplementation on glucose metabolism 2: Ovine.**
M. Aguerre*[1], C. Cajarville[2], A. L. Astessiano[3], M. Carriquiry[3], 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*, [3]*Departamento de Producción Animal y Pasturas, Facultad de Agronomía, Universidad de la República*, *Montevideo, Uruguay*.

W401 **Inter-individual variability in in vitro methane production by ruminal microorganisms from sheep fed different diets.**
M. J. Ranilla*[1,2], M. L. Tejido[1,2], C. Saro[1,2], and M. D. Carro[1,2], [1]*Dpto. Producción Animal. Universidad de León*, , *León, Spain*, [2]*IGM (CSIC-ULE), Finca Marzanas s/n*, *Grulleros, León, Spain*.

W402 **Influence of sugar cane molasses levels on apparent digestibility of diets for finishing lambs.**
L. R. Flores*[1], J. J. Lomeli[1], I. A. Vazquez[1], I. Quintero[1], J. E. Borbolla[1], J. E. Guerra[2], and R. Barajas[1], [1]*FMVZ-Universidad Autonóma de Sinaloa*, *Culiacán, Sinaloa, México*, [2]*FA-Universidad Autónoma de Sinaloa*, *Culiacán, Sinaloa, México*.

W403 **Influence of additional tannins-extract level on feedlot-performance of finishing lambs.**
R. Barajas*[1], B. Ortiz[1], A. Camacho[1], N. E. Villalba[2], L. R. Flores[1], J. J. Lomeli[1], and J. A. Romo[1], [1]*FMVZ-Universidad Autonóma de Sinaloa*, *Culiacán, Sinaloa, México*, [2]*Agricola Ganadera Mojolo*, *Culiacán, Sinaloa, México*.

## Small Ruminant
## Carcass, Genetics, Management, and Reproduction

W404 **Carcass evaluations of sheep supplemented with brewer waste (ensiled and dried) grazing under the rainy season in tropics.**
F. P. Portilho*[1,2], S. L. S. Cabral Filho[1], H. Louvandini[1], A. M. Menezes[1], and B. S. L. Dallago[1], [1]*University of Brasilia*, *Brasilia, DF, Brazil*, [2]*Agrodefesa*, *Rio Verde, GO, Brazil*.

W405 **Feed efficiency and carcass traits in crossbred Katahdin lambs supplemented with hydroponic green wheat.**
M. Guerrero-Cervantes*[1,4], M. A. Cerrillo-Soto[1,4], F. G. Ríos-Rincón[2,4], A. Estrada-Angulo[2,4], A. S. Juárez-Reyes[1,4], and H. Bernal-Barragán[3,4], [1]*Universidad Juárez del Estado de Durango*, *Durango, Durango, México*, [2]*Universidad Autónoma de Sinaloa*, *Culiacán, Sinaloa, México*, [3]*Universidad Autónoma de Nuevo León*, *Monterrey, Nuevo León, México*, [4]*Red Internacional de Nutrición y Alimentación en Rumiantes*, *Durango, Durango, México*.

W406 **Effect of diet and finishing weight on performance and carcass traits of meat goat kids.**
A. Gaesser*[1], G. Rentfrow[2], T. K. Hutchens[2], J. Schoonmaker[1], K. Andries[3], J. E. Tower[1], M. E. Einstein[1], and M. K. Neary[1], [1]*Purdue University*, *West Lafayette IN*, [2]*University of Kentucky*, *Lexington*, [3]*Kentucky State University*, *Frankfort*.

W407 **Feedlot productive performance and carcass traits by hybrid lambs.**
M. T. Espinoza[1], M. A. Cerrillo-Soto[2,3], A. Estrada-Angulo[1,3], J. F. Obregon[1,3], J. J. Portillo[1,3], and F. G. Rios*[1,3], [1]*FMVZ-UAS*, *Culiacan, Sinaloa, Mexico*, [2]*FMVZ-UJED*, *Durango, Durango, Mexico*, [3]*Red Internacional de Alimentacion y Nutricion de Rumiantes*, *Durango, Durango, México*.

W408 **Evaluation of carcass characteristics of feedlot lambs receiving repeated doses of zeranol.**
L. Carlos-Valdez*, A. Grado-Ahüir, G. Corral-Flores, L. González-Aguilera, L. Barron-Limón, G. Villalobos-Villalobos, D. Dominguez-Diaz, and I. Anguiano-Cardona, *Universidad Autónoma de Chihuahua, Facultad de Zootecnia y Ecología*, *Chihuahua, Chih., México*.

W409 **Performance and carcass characteristics of lambs fed with diets including protected fat and vitamin E.**
A. P. P. Pinto[1], I. F. Furusho-Garcia*[2], I. Leopoldino Junior[2], J. R. O. Pérez[2], V. A. A. Reis[2], S. P. Greca[2], N. G. Alves[2], and I. G. Pereira[1], [1]*Universidade Federal dos Vales do Jequitinhonha e Mucuri*, *Diamantina, Minas Gerais, Brasil*, [2]*Universidade Federal de Lavras*, *Lavras, Minas Gerais, Brasil*.

W410 **Feeding system and breed affect goat kid growth and carcass composition.**
M.-E. Brassard*[1], L. Tessier[1], R. Gervais[1], E. Pouliot[1], C. Gariepy[2], G. F. Tremblay[3], R. Berthiaume[4], P. Y. Chouinard[1], and D. Cinq-Mars[1], [1]*Département des sciences animales, Université Laval*, *Québec, QC, Canada*, [2]*AAFC, Food Research and Development Centre*, *Saint-Hyacinthe, QC, Canada*, [3]*AAFC, Soils and Crops Research and Development Centre*, *Québec, QC, Canada*, [4]*AAFC, Dairy and Swine Research and Development Centre*, *Sherbrooke, QC, Canada*.

W411 **Molecular survey of *Trypanosoma vivax* infection in Nigerian goats.**
T. Sanni[1], A. Yakubu*[2], M. A. Adefenwa[3], B. O. Agaviezor[4], C. O. N. Ikeobi[1], M. Wheto[1], M. Okpeku[5], M. I. Takeet[6], M. De Donato[7], and I. G. Imumorin[7], [1]*Dept of Animal Breeding and Genetics, University of Agriculture*, *Abeokuta, Nigeria*, [2]*Dept of Animal Science, Nasarawa State University*, *Lafia, Nigeria*, [3]*Dept of Cell Biology and Genetics, University of Lagos*, *Lagos, Nigeria*, [4]*Dept of Animal Science and Fisheries, University of Port Harcourt*, *Port-Harcourt, Nigeria*, [5]*Dept of Livestock Production, Niger Delta University*, *Amassoma, Nigeria.*, [6]*Dept of Veterinary Microbiology and Parasitology, University of Agriculture*, *Abeokuta, Nigeria*, [7]*Dept of Animal Science, Cornell University*, *Ithaca, NY*.

W412 **Gene expression changes in goat testes during development and in sperm during the breeding and nonbreeding seasons.**
A. N. Faucette*[2], P. K. Riggs[2], D. W. Forrest[2], L. Nuti[1], G. R. Newton[1], and N. H. Ing[2], [1]*Prairie View A&M University, Cooperative Agriculture Research Center*, *Prairie View, TX*, [2]*Texas AgriLife Research*, *College Station*.

W413 **Feeding management affect the occurrence of self-suckling in dairy goats.**
J. Martínez-de la Puente, I. Moreno-Indias*, A. Morales-delaNuez, L. E. Hernández-Castellano, M. D. Ruíz-Díaz, N. Castro, and A. Argüello, *Universidad de las Palmas de Gran Canaria*, *Arucas, Las Palmas, Spain*.

W414 **Withdrawn**

W415 **Finishing performance of lambs fed fresh or dehydrated spineless cactus (*Opuntia ficus-indica*).**
M. I. Aguilar-Yañez[1], O. Hernadez-Mendo[1], G. Aranda-Osorio*[2], J. E. Ramirez-Bribiesca[1], S. S. Gonzalez-Muñoz[1], and M. M. Crosby-Galvan[1], [1]*Colegio de Postgraduados*, *Montecillos, Estado de Mexico, Mexico*, [2]*Universidad Autonoma Chapingo*, *Chapingo, Estado de Mexico, Mexico*.

W416 **Finishing performance of Pelibuey sheep fed with different levels of alfalfa.**
V. Resendiz-Cruz[1], O. Hernadez-Mendo[1], J. Gallegos-Sanchez[1], P. A. Martinez-Hernandez[2], G. Aranda-Osorio*[2], C. Sanchez-Del Real[2], and S. S. Gonzalez-Muñoz[1], [1]*Colegio de Postgraduados*, *Montecillos, Estado de Mexico, Mexico*, [2]*Universidad Autonoma Chapingo*, *Chapingo, Estado de Mexico, Mexico*.

W417 **Evaluation of feedlot male lamb performance receiving repeated doses of Zeranol.**
L. Carlos-Valdez*, A. Grado-Ahüir, L. González-Aguilera, D. Barron-Limón, P. García-Montoya, G. Villalobos-Villalobos, and D. Domínguez-Díaz, *Universidad Autónoma de Chihuahua, Facultad de Zootecnia y Ecología*, *Chihuahua, Chih., México*.

W418 **Effect of using different performance traits to estimate residual feed intake.**
R. R. Cockrum*, R. H. Stobart, S. L. Lake, and K. M. Cammack, *University of Wyoming*, *Laramie*.

W419 **Increased nutritional level positively influences the onset of the breeding season and the reproductive performance of native male goats in northern Mexico.**
A. Olán-Sánchez[1], E. Carrillo[2], L. M. Tejeda[1], J. M. Guillén-Muñoz[1], P. A. Robles-Trillo[1], C. A. Meza-Herrera[3], F. G. Véliz[1], R. Rodríguez-Martínez*[1], and M. Mellado[4], [1]*Universidad Autónoma Agraria Antonio Narro*, *Torreón, Coahuila, México*, [2]*Instituto Tecnológico de Torreón*, *Torreón, Coahuila, México*, [3]*Universidad Autónoma Chapingo, Unidad Regional de Zonas Áridas*, *Bermejillo, Dgo., México*, [4]*Universidad Autónoma Agraria Antonio Narro*, *Buenavista, Saltillo, Coahuila, México*.

W420 **Response of sexually inactive French Alpine bucks to the stimulus of estrous goats.**
L. M. Tejada*[1], E. Carrillo[2], R. Rivas-Muñoz[2], M. Guillén-Muñoz[1], C. A. Meza-Herrera[3], G. Arellano-Rodríguez[1], M. Mellado[1], and F. G. Véliz[1], [1]*Universidad Autónoma Agraria Antonio Narro*, *Torreón, Coahuila, México*, [2]*Instituto Tecnológico de Torreón*, *Torreón, Coahuila, México*, [3]*Universidad Autónoma Chapingo, Unidad Regional Universitaria de Zonas Áridas*, *Bermejillo, Durango, México*.

W421 **Contact with estrogenized female goats influences the end of sexual activity of young bucks but not adult bucks in northern Mexico.**
A. Olán-Sánchez*[1], E. Carrillo[2], R. Rivas-Muñoz[2], L. M. Tejeda[1], J. M. Guillen-Muñoz[1], R. Rodríguez-Martínez[1], P. A. Robles[1], C. A. Meza-Herrera[3], F. G. Véliz[1], and G. Arellano-Rodríguez[1], [1]*1Universidad Autónoma Agraria Antonio Narro*, *Torreón, Coahuila, México*, [2]*Instituto Tecnológico de Torreón*, *Torreón, Coahuila, México*, [3]*Universidad Autónoma Chapingo, Unidad Regional Universitaria de Zonas Áridas*, *Bermejillo, Durango, México*.

W422 **NCSynch: A protocol for ovulation synchronization and timed artificial insemination in goats.**
E. C. Bowdridge*, W. B. Knox, C. S. Whisnant, and C. E. Farin, *North Carolina State University*, *Raleigh*.

W423 **Comparison of two ovulation synchronization methods for timed artificial insemination in goats.**
N. C. Whitley*[1], C. E. Farin[2], W. B. Knox[2], L. Townsend[3], J. R. Horton[3], K. Moulton[1], and S. Nusz[4], [1]*North Carolina A&T State University*, *Greensboro*, [2]*North Carolina State University*, *Raleigh*, [3]*NCDA, UMRS*, *Laurel Springs, NC*, [4]*Redlands Community College*, *El Reno, OK*.

W424 **Effect of flushing and (or) exposure to estrogenized does upon reproductive performance of anovulatory range goats exposed to male effect.**
M. A. De Santiago-Miramontes*[1], J. R. Luna-Orozco[1], F. G. Véliz-Deras[1], R. Rodríguez-Martínez[1], P. A. Robles-Trillo[1], C. A. Meza-Herrera[1], and M. Mellado[1], [1]*Universidad Autonoma Agraria Antonio Narro*, [2]*Centro de Bachillerato Tecnologico Agropecuario N° 1*, [3]*Universidad Autonoma Chapingo, Unidad Regional Universitaria de Zonas Aridas*.

W425 **Exposure of does in estrus to bucks subsequently induces estrus in anestrus females.**
S. Marcelino-León*[1], J. R. Luna-Orozco[1], F. G. Véliz-Deras[1], L. Gaytán-Alemán[1], C. A. Meza-Herrera[1], R. Rodríguez-Martínez[1], M. Mellado[1], and M. A. De Santiago-Miramontes[1], [1]*Universidad Autonoma Agraria Antonio Narro*, [2]*Centro de Bachillerato Tecnologico Agropecuario N° 1*, [3]*Universidad Autonoma Chapingo, Unidad Regional Universitaria de Zonas Aridas*.

W426 **Influence of sexually inactive bucks subjected to either long photoperiod or testosterone upon the induction of estrus in anovulatory goats.**
J. M. Guillén-Muñoz*[1], J. R. Luna-Orozco[2], L. M. Tejeda-Ugarte[1], M. A. De Santiago-Miramontes[1], M. Mellado[1], F. G. Véliz[1], R. Rodríguez-Martínez[1], and C. A. Meza-Herrera[3], [1]*Universidad Autónoma Agraria Antonio Narro*, *Torreón, Coahuila, México*, [2]*Centro de Bachillerato Tecnológico Agropecuario No 1*, *Torreón, Coahuila, México*, [3]*Universidad Autónoma Chapingo, Unidad Regional de Zonas Áridas*, *Bermejillo, Dgo., México*.

W427 **Nutritional supplementation before or after the breeding season does not improve the productive and reproductive response of goats managed under a marginal production system in Northern Mexico.**
C. G. Orta-Castillón[1], C. A. Meza-Herrera[2], G. Arellano-Rodríguez[1], P. A. Robles-Trillo[1], M. A. De Santiago-Miramontes[1], R. Rodríguez-Martínez[1], M. Mellado[3], and F. G. Véliz*[1], [1]*Universidad Autónoma Agraria Antonio Narro*, *Torreón, Coahuila, México*, [2]*Universidad Autónoma Chapingo, Unidad Regional Universitaria de Zonas Áridas*, *Bermejillo, Durango, México*, [3]*Universidad Autónoma Agraria Antonio Narro*, *Saltillo, Coahuila, México*.

## Animal Health
## Swine and Other Species
## Chair: Tanya Gressley, University of Delaware
## 288-289

10:30 AM 587 **Comparison of porcine cathelicidin expression between Jinhua and Landrace pigs.**
Y. Gao*, S. An, Y. Xie, Y. Liu, F. Han, C. Luan, and Y. Wang, *Institute of Feed Science, Zhejiang University*, *Hangzhou, Zhejiang Province, China*.

10:45 AM 588 **The effect of prenatal stress and dominance order on immune function in response to a DTH and LPS challenge in pigs.**
B. L. Davis*[1], M. A. Sutherland[1,2], and M. A. Ballou[1], [1]*Texas Tech University*, *Lubbock*, [2]*Ruakura Research Centre, AgResearch*, *Hamilton, New Zealand*.

11:00 AM 589 **Effects of *Lactobacillus fermentum* I5007 on the redox state of healthy and oxidative-stressed piglets.**
C. J. Cai*, A. N. Wang, L. C. Chu, S. Y. Qiao, and D. F. Li, *China Agricultural University*, *Beijing, China*.

11:15 AM 590 **In vitro antibacterial activity, cytotoxicity and mechanisms of cathelicidin peptides against enteric pathogens in weaning piglets.**
Y. Liu*, S. An, C. Luan, and Y. Wang, *Institute of Feed Science, Zhejiang University*, *Hangzhou, Zhejiang Province, China*.

11:30 AM 591 **Microbial transmission and assembly of the gut microbiota in neonatal pigs on day 7 and 14 postfarrowing.**
E. E. Hinkle*, I. Martinez, J. Walters, P. S. Miller, and T. E. Burkey, *University of Nebraska-Lincoln*, *Lincoln*.

11:45 AM 592 **Viability of *Parascaris equorum* eggs intermittently exposed to the interior of a windrow composting system.**
J. C. Gould*, E. T. Lyons, L. M. Lawrence, and M. G. Rossano, *University of Kentucky*, *Lexington*.

12:00 PM 593 **Effect of a yeast nucleotide product on performance and health status of broilers.**
A. Ganner*, S. Schaumberger, J. Uhlik, and G. Schatzmayr, *BIOMIN Research Center*, *3430 Tulln, Lower Austria, Austria*.

12:15 PM 594 **The effect of *Vernonia amygdalina* leaf extract on Alloxan-induced diabetic rats.**
A. H. Ekeocha*, P. C. Ekeocha, and T. Fashola, *University of Ibadan*, *Ibadan,Oyo,Nigeria*.

## Animal Health Symposium
## Lipid Metabolism
## Chair: Pedram Rezamand, University of Idaho
Sponsors: Elanco Animal Health, Pfizer Animal Health
## 298-299

10:30 AM **Introduction**

10:40 AM **Lipid metabolism and inflammation in monogastric animals.**
K. Ajuwon, *Purdue University, West Lafayette, IN.*

11:15 AM **Lipids, antioxidants and longevity.**
R. Hontecillas-Magarzo, *Virginia Bioinformatics Center.*

11:50 AM **Lipids and inflammation related to lactation.**
M. A. McGuire, *University of Idaho, Moscow.*

## Breeding and Genetics Symposium
## Is There Space for Genomic Selection in Small Populations?
## Chairs: Christian Maltecca, North Carolina State University, and Catherine Ernst, Michigan State University

Sponsors: EAAP, Genus Plc, Pfizer Animal Health

**286-287**

10:30 AM 595 **Is genomic selection a one size fits all?**
I. Misztal*, *University of Georgia*, *Athens*.

11:00 AM 596 **Is there value in maintaining small populations? Example of the Dual-Purpose Belgian Blue breed.**
N. Gengler*[1,2], H. Soyeurt[1,2], C. Bastin[1], B. Buske[1], S. Vanderick[1], and F. Colinet[1], [1]*ULg - GxABT*, *Gembloux, Belgium*, [2]*FNRS*, *Brussels, Belgium*.

11:30 AM 597 **Overview of genomic selection in dairy cattle populations.**
P. M. VanRaden*[1] and J. R. O'Connell[2], [1]*Animal Improvement Programs Laboratory, ARS, USDA*, *Beltsville, MD*, [2]*University of Maryland School of Medicine*, *Baltimore*.

11:50 AM 598 **Overview of genomic selection in small populations of beef cattle.**
G. L. Bennett*, W. M. Snelling, R. M. Thallman, J. W. Keele, and L. A. Kuehn, *USDA, ARS, US Meat Animal Research Center*, *Clay Center, NE*.

12:10 PM 599 **Overview of genomic-assisted selection in swine populations.**
S. Forni*, *Genus Plc*, *Hendersonville, TN*.

12:30 PM 600 **Delivering livestock genetic improvement in a genomics era: Evolving roles and responsibilities.**
W. Herring* and K. Andersen, *Pfizer Animal Genetics*, *Kalamazoo, MI.*

## Dairy Foods
## Impact of Salt Reduction on Cheese
## Chair: Donald McMahon, Utah State University

**296**

10:30 AM 601 **Influence of salt-in-moisture of full fat and low fat Cheddar cheese on microflora and flavor.**
D. J. McMahon*[1], C. J. Oberg[2], L. V. Moyes[2], R. E. Miracle[3], and M. A. Drake[3], [1]*Western Dairy Center, Utah State University*, *Logan*, [2]*Department of Microbiology, Weber State University*, *Ogden, UT*, [3]*Southeast Dairy Foods Research Center, North Carolina State University*, *Raleigh*.

10:45 AM 602 **Manufacture and sensory analysis of reduced and low sodium Cheddar cheeses.**
B. Ganesan*, K. Brown, D. Irish, C. Brothersen, and D. J. McMahon, *Western Dairy Center, Department of Nutrition, Dietetics and Food Sciences, Utah State University*, *Logan*.

11:00 AM 603 **Growth and metabolism of *Lactobacillus casei* in a ripening Cheddar cheese model varying salt, lactate, and lactose concentrations.**
J.-H. Oh*[1], M. F. Budinich[1], M. A. Drake[3], R. E. Miracle[3], J. R. Broadbent[2], and J. L. Steele[1], [1]*Department of Food Science, University of Wisconsin-Madison*, *Madison*, [2]*Department of Nutrition, Dietetics, and Food Sciences, Utah State University*, *Logan*, [3]*Department of Food Science, North Carolina State University*, *Raleigh*.

11:15 AM 604 **Manufacture and sensory analysis of reduced and low sodium pasta filata style Mozzarella cheeses.**
B. Ganesan*, K. Brown, D. Irish, C. Brothersen, and D. J. McMahon, *Western Dairy Center, Department of Nutrition, Dietetics and Food Sciences, Utah State University*, *Logan*.

11:30 AM 605 **Informatic prediction of alterations to Cheddar cheese flavor reactions and pathways due to sodium substitution.**
B. Ganesan* and K. Brown, *Western Dairy Center, Department of Nutrition, Dietetics and Food Sciences, Utah State University*, *Logan*.

11:45 AM 606 **The effect of NaCl substitution with KCl on Nabulsi cheese: Chemical composition, total viable count, microstructure and texture profile.**
N. P. Shah* and MM Ayyash, *School of Biomedical and Health Sciences, Victoria University*, *Melbourne, Victoria, Australia*.

12:00 PM 607 **The effect of NaCl substitution with KCl on low moisture mozzarella cheese: Chemical composition, organic acid profile, soluble calcium content, functional properties, proteolysis, lactic acid bacterial population, and ACE-inhibitory peptides.**
N. P. Shah* and M. M. Ayyash, *School of Biomedical and Health Sciences, Victoria University*, *Melbourne, Victoria, Australia*.

## Dairy Foods
## Yogurt and Ice Cream
## Chair: Young Park, Fort Valley State University
## 295

10:30 AM 608 **The impact of pectin types on the rheological and physical properties of yogurt.**
S. S. Mohamed*[1,2] and J. A. Lucey[1], [1]*University of Wisconsin*, *Madison*, [2]*University of Kafrelsheikh*, *Egypt*.

10:45 AM 609 **Engineering yoghurt texture: Interactions between texturing lactic acid bacteria and processing conditions in low fat stirred yoghurt.**
K. B. Qvist*, C. Gilleladen, J. Trihaas, and C. Svane, *Chr. Hansen*, *Hoersholm, Denmark*.

11:00 AM 610 **Yogurts made from milk where heating was performed at different pH values.**
T. Ozcan[1,2] and J. Lucey*[1], [1]*University of Wisconsin-Madison*, *Madison*, [2]*Uludag University*, *Bursa, Turkey*.

11:15 AM 611 **Dextran addition to model acid gels to explore the mechanism by which EPS influence yogurt texture.**
U. Pachekrepapol* and J. A. Lucey, *University of Wisconsin - Madison*, *Madison*.

11:30 AM 612 **Effect of the addition of glucose/glucose oxidase and packagings with different permeability oxygen rates on some characteristics of probiotic yogurts.**
A. Cruz[1], J. Assis*[1], D. Granato[2], S. Bogusz Junior[1], and H. Godoy[1], [1]*University of Campinas (UNICAMP)*, [2]*University of São Paulo (USP)*.

11:45 AM 613 **Effect of increased concentration of glucose oxidase in probiotic stirred yogurt on functionality, proteolytic pattern, and metabolic products.**
A. Cruz, W. Castro, and J. Assis*, *University of Campinas (UNICAMP)*.

12:00 PM 614 **Impact of adding galactooligosaccharides on the physical and optical characteristics and sensory acceptance of vanilla ice cream.**
A. Cruz, J. Faria*, W. Castro, R. Cadena, and H. Bolini, *University of Campinas (UNICAMP)*.

12:15 PM 615 **Physical properties and functionality of probiotic vanilla ice creams manufactured with different overruns levels.**
A. Cruz, J. Faria*, W. Castro, R. Cadena, and H. Bolini, *University of Campinas (UNICAMP)*.

616 **Withdrawn**

## Extension Education Symposium
## Enhancing Educational Approaches for Future Changes in Biosecurity and Antibiotic Use in Animal Agriculture
## Chair: Tamilee Nennich, Purdue University
## 389

10:30 AM 617 **Overview–The importance of biosecurity and animal production.**
E. R. Jordan*, K. J. Lager, and R. G. Bruno, *Texas AgriLife Extension Service*, *College Station*.

11:00 AM 618 **Biosecurity at the farm level: The role of extension in preventing animal disease introduction.**
R. Daly*, *South Dakota State University*, *Brookings*.

11:30 AM **Changes in Antibiotic Use in Europe.**
A. Mathew.

12:00 PM **The Future of Antibiotic Use in the United States.**
S. Clark.

12:30 PM 619 **Extension and outreach programs that address contemporary issues in food animal production.**
P. D. Ebner*, *Purdue University Department of Animal Sciences*, *West Lafayette, IN*.

## Horse Species
## Equine Advancements
## Chair: J. S. McCann, Virginia Tech
## 290

10:30 AM 620 **Novel approach to measuring internal scrotal temperature in stallions utilizing a thermal sensory device.**
J. D. Mawyer*, R. K. Gordon, C. A. Cavinder, M. M. Vogelsang, C. C. Love, S. P. Brinsko, T. L. Blanchard, and S. R. Teague, *Texas A&M University*, *College Station*.

10:45 AM 621 **Electrolyte and pH response to submaximal training in Quarter and Miniature Horses.**
R. M. Legere* and J. S. Pendergraft, *Sul Ross State University*, *Alpine, TX*.

11:00 AM 622 **Effects of intra-articular lipopolysaccharide injection on circulating leukocyte population in yearling horses.**
C. L. Mueller*, D. H. Sigler, J. A. Coverdale, N. D. Cohen, M. M. Vogelsang, C. A. Cavinder, and J. L. Lucia, *Texas A&M University*, *College Station*.

11:15 AM 623 **Role of cellular sodium transport in nonglandular equine gastric ulcer disease.**
F. Andrews*[1], A. Peretich[2], R. Reese[2], L. Abbott[2], and M. Dhar[2], [1]*Louisiana State University*, *Baton Rouge*, [2]*University of Tennessee*, *Knoxville*.

11:30 AM 624 **Effect of concentrate form on gastric ulcer syndrome in horses.**
L. R. Huth*, D. H. Sigler, C. A. Cavinder, and N. D. Cohen, *Texas A&M University*, *College Station*.

11:45 AM 625 **Development of a nutritional model to predict digestible energy requirements for broodmares based on body condition changes.**
V. V. Cordero*, C. A. Cavinder, L. O. Tedeschi, and D. H. Sigler, *Texas A&M University*, *College Station*.

12:00 PM 626 **Equine grazing preferences of twelve cool season grasses.**
K. Martinson*, E. Allen, and C. Sheaffer, *University of Minnesota*, *St. Paul*.

12:15 PM 627 **A comparison of two conventional horse feeders with the Pre-Vent feeder.**
M. Carter*, T. Friend, J. Coverdale, S. Garey, A. Adams, and C. Terrill, *Texas A&M University*, *College Station.*

12:30 PM 628 **Evaluation of a granulated paper waste product as a suitable bedding material for horses.**
A. G. Youngblood*[1], B. J. Rude[1], J. D. Davis[1], D. L. Christiansen[1], C. Mochal[1], P. M. Ward[2], and P. L. Ryan[1], [1]*Mississippi State University*, *Starkville*, [2]*Rutgers University*, *New Brunswick, NJ*.

## International Animal Agriculture
## Chair: Harvey Blackburn, USDA-ARS
## 388

10:30 AM 629 **Evaluating varying dietary energy levels for optimum growth and early puberty in Sahiwal heifers under sub tropical environment**.
M. Abdullah*[1], M. Fiaz[2,1], M. Nasir[1], M. E. Babar[1], J. A. Bhatti[1], T. N. Pasha[1], and M. A. Jabbar[1], [1]*University of Veterinary & Animal Sciences*, *Lahore, Punjab, Pakistan*, [2]*Buffalo Research Institute, Pattoki*, *Pattoki, Punjab, Pakistan*.

10:45 AM 630 **Performance of Sahiwal calves raised on whole milk, blend or milk replacer with or without calf starter supplementation.**
M. Abdullah*[1], J. A. Bhatti[1], Z. Iqbal[1], and K. Hayat[2], [1]*University of Veterinary and Animal Sciences*, *Lahore, Pakistan*, [2]*Livestock Experiment Station*, *Jahangirabad, Khanewal, Pakistan*.

631 **Withdrawn**

11:00 AM 632 **Financial and energy analysis spanning the first decade of the pioneer organic beef enterprise in the Mexican tropics**.
P. Fajersson*[1] and P. Parada[2], [1]*EcoAgroPec*, *Hueytamalco, Puebla, Mexico*, [2]*Carnes La Rumorosa*, *Poza Rica, Veracruz, Mexico*.

11:15 AM 633 **Expansion of meat rabbit projects in disaster-stricken Haiti**.
S. D. Lukefahr*[1], M. Kaplan-Pasternak[2], J. I. McNitt[3], and Benito Migny Jasmin[4], [1]*Texas A&M University, Kingsville*, [2]*Nicasio, CA*, [3]*Southern University Agricultural Research and Extension Center*, *Baton Rouge, LA*, [4]*Cap Haitian, Haiti*.

## Meat Science and Muscle Biology Symposium
## Biochemical Mechanisms influencing Postmortem Proteolysis and the Identification of Protein Markers for Predicting Tenderness
## Chair: Brian Bowker, USDA-ARS, Beltsville, MD

Sponsor: EAAP

**297**

10:30 AM 634 **The role of the muscle cell microenvironment on postmortem proteolysis.**
E. Huff-Lonergan* and S. Lonergan, *Iowa State University*.

11:05 AM 635 **Orchestration of postmortem proteolysis following apoptosis onset.**
B. Yasmine[2], B. Samira[2], G. Mohamed[2], and O. Ahmed*[1], [1]*INRA de Clermont-Theix*, *St Genes Champanelle, France*, [2]*Unversity of Constantine*, *Constantine, Algeria*.

11:40 AM 636 **Understanding postmortem proteolysis and identification of protein markers for tenderness using proteomics approaches.**
E. Veiseth-Kent* and K. Hollung, *Nofima Mat AS*, *Ås, Norway*.

## Nonruminant Nutrition
## DDGS
## Chair: Mike Rincker, DPI Global
**386-387**

10:30 AM 637 **Growth and physiological responses of growing pigs to co-fermented wheat and corn distillers dried grains with solubles.**
D. Ayoade*, E. Kiarie, B. Slominski, and CM Nyachoti, *University of Manitoba*, *Winnipeg, Manitoba, Canada*.

10:45 AM 638 **High-protein distillers dried grains can replace soybean meal in the diets for growing-finishing pigs.**
L. Ma*[1] and G. Allee[2], [1]*Chia Tai Investment Co., Ltd.*, *Beijing, China*, [2]*University of Missouri*, *Columbia*.

11:00 AM 639 **Effects of including tallow, palm kernel oil, corn germ, or glycerol to diets containing distillers dried grains with solubles on pork fat quality of growing-finishing pigs.**
J. W. Lee*, B. D. Keever, J. Killefer, F. K. McKeith, and H. H. Stein, *University of Illinois*, *Urbana*.

11:15 AM 640 **The impact of feeding corn distillers dried grains with solubles to sows on plasma and milk vitamin E and selenium levels.**
S. A. Crowder* and M. E. Johnston, *JBS United Inc.*, *Sheridan, IN*.

11:30 AM 641 **Evaluation of various corn distillers dried grains with solubles (DDGS) feeding strategies in nursery pigs.**
N. L. Horn*, C. R. Little, and J. D. Spencer, *JBS United Inc.*, *Sheridan, IN*.

11:45 AM 642 **Effects of distillers dried grains with solubles in the diet of gestating sows on nutrient excretion.**
H. J. Kim*, S. D. Carter, T. M. Walraven, M. R. Bible, and K. F. Coble, *Oklahoma State University*, *Stillwater*.

## Nonruminant Nutrition Symposium
## Nutrition's Role in Environmental Management and Meeting Government Regulations
## Chair: W. Randy Walker, DPI Global

Sponsor: EAAP

**383-385**

10:30 AM 643 **An update on current environmental regulations and standards for livestock facilities.**
D. Porter*, *Environmental Protection Agency, Region 7*, *Kansas City, KS*.

11:00 AM 644 **Environmental management regulations in Europe.**
N. Penlington*, *BPEX*, *Warwickshire, UK*.

11:30 AM 645 **Nutritional practices that affect the environment-excretion of nitrogen, phosphorus, and sulfur; and emissions of odors and greenhouse gases from swine production facilities**.
B. J. Kerr*, *USDA-ARS-NLAE*, *Ames, IA*.

12:00 PM 646 **Practical application of manure management plans of a swine production system to row crop production agriculture**.
B. S. Borg*, *Murphy Brown LLC*, *Ames, IA*.

## Physiology and Endocrinology II
## Chair: Jason Ross, Iowa State University
## 393

10:30 AM 647 **Can prenatal social stress impact sex characteristics in piglets?**
L. A. Mack*[1], S. D. Eicher[2], A. K. Johnson[3], D. C. Lay[2], B. T. Richert[2], and E. A. Pajor[4], [1]*Purdue University*, *W. Lafayette, IN*, [2]*LBRU, USDA-ARS*, *W. Lafayette, IN*, [3]*Iowa State University*, *Ames*, [4]*University of Calgary*, *Calgary, AB, Canada*.

10:45 AM 648 **Heat stress increases small intestinal permeability and circulating endotoxin in growing pigs.**
S. C. Pearce*, V. Mani, L. H. Baumgard, and N. K. Gabler, *Iowa State University*, *Ames*.

11:00 AM 649 **The effect of naloxone on reproductive behavior and plasma prolactin levels in third lactation sows.**
V. O. Fuentes Hernadez*, R. Orozco Hernandez, and A. Bernal Canseco, *Centro Universitario de los Altos, Universidad de Guadalajara*, *tepatitlan Jalisco, Mexico*.

11:15 AM 650 **Differential expressed proteins in porcine follicular fluid during folliculogenesis.**
J. M. Feugang*[1], K. Pendarvis[2], S. T. Willard[3], and P. L. Ryan[1,4], [1]*Department of Animal and Dairy Sciences*, *Mississippi State University, Mississippi State*, [2]*Life Science Biotechnology Institute*, *Mississippi State University, Mississippi State*, [3]*Department of Biochemistry and Molecular Biology*, *Mississippi State University, Mississippi State*, [4]*Department of Pathobiology and Population Medicine*, *Mississippi State University, Mississippi State.*

11:30 AM 651 **Effects of glucuronic acid supplementation on the in vitro maturation and fertilization of pig oocytes.**
A. R. Clark* and B. D. Whitaker, *The University of Findlay*, *Findlay, OH*.

11:45 AM 652 **Vitrification versus freezing for cryopreserving bovine embryos.**
S. G. Kruse* and G. E. Seidel, *Colorado State University*, *Fort Collins*.

12:00 PM 653 **Effects of cyanocobalamin supplementation on frozen-thawed boar spermatozoa.**
A. M. Hyde, L. E. Elsea*, and B. D. Whitaker, *The University of Findlay*, *Findlay, OH*.

12:15 PM 654 **GnRH therapeutics to advance the timing of pregnancy in the seasonally anovulatory mare.**
J. F. Thorson*[1,2], L. D. Prezotto[1,2], R. D. Cardoso[1,2], B. R. C. Alves[1], M. Amstalden[1], and G. L. Williams[1,2], [1]*Texas AgriLife Research*, *Beeville*, [2]*Texas A&M University*, *College Station*.

## Production, Management and the Environment
## Production
## Chair: John Comerford, Penn State University
## 391

10:30 AM 655 **Adaption of a kinetic chromogen LAL test system to investigate the incidence of endotoxins on pig farms.**
S. Schaumberger*, C. Ratzinger, L. Krüger, and G. Schatzmayr, *BIOMIN Research Center*, *Tulln, Austria*.

10:45 AM 656 **Effect of day of mixing gestating sows on measures of reproduction and animal well-being.**
M. Hopgood*[1], L. Greiner[2], J. Connor[2], J. Salak-Johnson[1], and R. Knox[1], [1]*University of Illinois*, *Urbana*, [2]*Carthage Veterinary Service*, *Carthage, IL*.

11:00 AM 657 **A pig growth model for assessment of environmental footprint from swine operations: Effect of dietary energy and lysine supply.**
A. B. Strathe*[1], A. Danfaer[2], H. Jorgensen[2], and E. Kebreab[1], [1]*Department of Animal Science, University of California*, *Davis*, [2]*Department of Animal Health and Bioscience, Faculty of Agricultural Sciences, Aarhus University*, *Blichers Allé 20, 8830 Tjele, Denmark*.

11:15 AM 658 **Evaluating the biological and economic differences between light- and heavy-birth weight piglets.**
D. A. Widmar*, N. J. Olynk, A. P. Schinckel, B. T. Richert, and K. A. Foster, *Purdue University*, *West Lafayette, IN*.

659 **Withdrawn**

660 **Withdrawn**

11:30 AM 661 **Doe reproductive rates among Boer $F_1$ and four purebred genotypes including Myotonic in the southeastern United States.**
A. Nguluma*[1], R. Browning[1], A. Pellerin[1], J. Groves[1], and M. Leite-Browning[2], [1]*Tennessee State University*, *Nashville*, [2]*Alabama A&M University*, *Huntsville*.

11:45 AM 662 **Survival rates within a breeding population of Boer, Kiko, and Spanish does managed in the southeastern United States.**
A. Pellerin*[1], R. Browning[1], M. Leite-Browning[2], and M. Byars[1], [1]*Tennessee State University*, *Nashville*, [2]*Alabama A&M University*, *Huntsville*.

## Ruminant Nutrition
## Dairy: Fats, Proteins, and Carbohydrates
## Chair: Stephanie Ward, Mississippi State University
## 293

10:30 AM 663 **The effect of increasing the nutrient and amino acid concentration of whole milk diets on dairy heifer individual feed intake, growth, development and lactation performance**.
J. K. Margerison*, *IFNHH Massey University*, *Private Bag 11 222, Palmerston North, New Zealand*.

10:45 AM 664 **Integration of cyclic GMP-dependent protein kinase (PKG) and phosphatidylinositol 3-kinase (PI3K) on rumen protozoal chemotaxis to glucose and soluble peptides.**
H. L. Diaz* and J. L. Firkins, *The Ohio State University, Department of Animal Science*, *Columbus*.

11:00 AM 665 **Evaluation of specificity of hydrolysis methods for separation of water-soluble carbohydrates**.
M. B. Hall*, *US Dairy Forage Research Center, USDA-ARS*, *Madison, WI*.

11:15 AM 666 **Effect of dietary protein level and rumen-protected amino acid supplementation on dietary amino acid apparent digestibility and recovery in milk in lactating dairy cows.**
C. Lee*[1], A. N. Hristov[1], T. Cassidy[1], K. Heyler[1], H. Lapierre[2], G. A. Varga[1], and C. Parys[3], [1]*Pennsylvania State University*, *University Park*, [2]*Agriculture and Agri–Food Canada*, *Sherbrooke, QC, Canada*, [3]*Evonik Degussa GmbH*, *Hanau, Germany*.

11:30 AM 667 **Microbiome analysis of the rumen, cecum, and feces of dairy cows with subacute ruminal acidosis.**
E. Khafipour[1], S. Li*[1], J. C. Plaizier[1], S. E. Dowd[2], and D. O. Krause[1], [1]*University of Manitoba*, *Winnipeg, MB, Canada*, [2]*Medical Biofilm Research Institute*, *Lubbock, TX*.

11:45 AM 668 **The effect of diet on milk fatty-acid profiles in Holstein dairy cattle on commercial dairy farms.**
R. W. Swidan*[1], Y. Chouinard[2], R. Lacroix[1,3], D. Lefebvre[3], and K. M. Wade[1], [1]*McGill University*, *Montreal, QC, Canada*, [2]*Laval University*, *Quebec City, QC, Canada*, [3]*Valacta*, *Ste. Anne de Bellevue, QC, Canada*.

12:00 PM 669 **Effects of close-up dietary energy strategy and prepartal dietary monensin on production and metabolism in Holstein cows.**
J. A. Vasquez*[1], K. L. Perfield[2], H. B. Green[2], and J. K. Drackley[1], [1]*University of Illinois*, *Urbana*, [2]*Elanco Animal Health*, *Greenfield, IN*.

12:15 PM 670 **Effects of close-up dietary energy strategy and prepartal dietary monensin on rumen dynamics and fermentation in Holstein cows.**
B. F. Richards*[1], J. A. Vasquez[1], K. L. Perfield[2], H. B. Green[2], M. R. Murphy[1], and J. K. Drackley[1], [1]*University of Illinois*, *Urbana*, [2]*Elanco Animal Health*, *Greenfield, IN*.

12:30 PM 791 **Feeding a C16:0-enriched fat supplement increased the yield of milk fat and improved feed efficiency.**
A. L. Lock*, C. L. Preseault, K. E. DeLand, and M. S. Allen, *Michigan State University*, *East Lansing*.

## Ruminant Nutrition Symposium
## Modulation of Metabolism Through Nutrition and Management
## Chair: Masahito Oba, University of Alberta
## 291-292

10:30 AM 671 **Optimizing production of the offspring: Nourishing and managing the dam and the calf early in life.**
A. Bach*[1,2], [1]*Department of Ruminant Production, IRTA*, *Barcelona, Spain*, [2]*ICREA*, *Barcelona, Spain*.

11:00 AM 672 **Optimizing production of the dairy cow: Nutrition and management during late pregnancy.**
J. K. Drackley*, *University of Illinois*, *Urbana*.

11:40 AM **Break**

11:50 AM 673 **Optimizing production of the dairy cow: Nutrition and management during early lactation.**
J. P. McNamara*, *Washington State University*, *Pullman*.

12:30 PM 674 **Optimizing production during heat stress: Nutrition and Management.**
L. H. Baumgard*[1] and R. P. Rhoads[2], [1]*Iowa State University*, *Ames*, [2]*University of Arizona*, *Tucson*.

## Ruminant Nutrition
## Small Ruminants
## Chair: Darrell Rankins, Auburn University
## 294

10:30 AM 675 **Toxicokinetic and carry-over of ochratoxin A in lactating goats.**
R. Blank*[1], M. Looff[2], M. Mobashar[2], A. Westphal[1], and K.-H. Südekum[2], [1]*University of Kiel*, *Germany*, [2]*University of Bonn*, *Germany*.

10:45 AM 676 **Effects of replacing rolled barley grain with wheat dried distillers' grains with solubles in Merino sheep rations.**
A. S. O'Hara*[1], A. V. Chaves[1], E. Jonas[1], A. Tanner[2], D. Palmer[1], and R. D. Bush[1], [1]*Faculty of Veterinary Science*, *The University of Sydney, Sydney, NSW, Australia*, [2]*Faculty of Agriculture, Food and Natural Resources*, *The University of Sydney, Sydney, NSW, Australia*.

11:00 AM 677 **Effects of dried distillers grains with solubles on feedlot lamb performance and carcass characteristics.**
T. L. Felix*, H. N. Zerby, S. J. Moeller, and S. C. Loerch, *The Ohio State University*, *Wooster.*

11:15 AM 678 **Estimation of milk yield of West African Dwarf (WAD) ewe fed Mexican sunflower leaf meal (MSLM) based diets.**
A. H. Ekeocha*, K. D. Afolabi, and A. O. Akinsoyinu, *University of Ibadan*.

11:30 AM 679 **Iron carbonate supplementation of lambs administered high-sulfur water.**
A. M. Jons*[1], K. L. Kessler[1], K. J. Austin[1], C. Wright[2], and K. M. Cammack[1], [1]*University of Wyoming*, *Laramie*, [2]*South Dakota State University*, *Brookings*.

11:45 AM 680 **Effect of supplementing ewes during late gestation with metabolizable protein on wether lamb feedlot performance, carcass characteristics, and nitrogen balance.**
M. L. Van Emon*[1,2], K. A. Vonnahme[1], S. E. Eckerman[1], L. A. Lekatz[1], K. R. Maddock Carlin[1], M. M. Thompson[2], and C. S. Schauer[2], [1]*Department of Animal Sciences, North Dakota State University*, *Fargo*, [2]*Hettinger Research Extension Center, North Dakota State University*, *Hettinger*.

12:00 PM 681 **Effect of increasing dietary inclusion of dried distillers grains with solubles on nutrient digestion and retention in growing lambs.**
T. L. Felix* and S. C. Loerch, *The Ohio State University*, *Wooster*.

12:15 PM 682 **Performance of growing West African Dwarf ewe fed Mexican sunflower leaf meal based diets.**
A. H. Ekeocha*, *University of Ibadan*, *Ibadan, Oyo, Nigeria*.

12:30 PM 683 **Use of *Megasphaera elsdenii* NCIMB 41125 during introduction of sheep on corn crop residues and un-harvested corn lands.**
P. H. Henning* and F. M. Hagg, *MS Biotech*, *Centurion, South Africa*.



## Small Ruminant
## Health and Genetics
## Chair: Rebecca Cockrum, University of Wyoming
## 392

10:30 AM 684 **White blood cell populations in goat kids and lambs during the first four days of life, with special reference to CD4 and CD8.**
A. Arguello*[1], L. E. Hernandez-Castellano[1], A. Morales delaNuez[1], I. Moreno-Indias[1], J. Capote[2], and N. Castro[1], [1]*Universidad de Las Palmas de Gran Canaria*, *Arucas, Las Palmas, Spain*, [2]*Instituto Canario de Investigaciones Agrarias*, *La Laguna, Tenerife, Spain*.

10:45 AM 685 **Immune status of goat kids fed cow's milk with an exogenous source of DHA.**
I. Moreno-Indias*[1], L. E. Hernández-Castellano[1], A. Morales delaNuez[1], A. Torres[2], D. Sánchez-Macías[1], N. Castro[1], and A. Argüello[1], [1]*Universidad de las Palmas de Gran Canaria*, *Arucas, Las Palmas, Spain*, [2]*Instituto Canario de Ciencias Agrarias*, *La Laguna, Santa Cruz de Tenerife, Spain*.

11:00 AM 686 **Effects of feeding sericea lespedeza as a natural anthelmintic for *Haemonchus contortus* in lactating does.**
J. L. Vest*[1], M. A. Brown[4], J. D. Kohler[1], M. D. Hudson[1], S. R. Nusz[5], J. M. Burke[3], J. E. Miller[2], C. T. Mackown[4], and E. L. Walker[1], [1]*Missouri State University*, *Springfield*, [2]*Louisiana State University*, *Baton Rouge*, [3]*Dale Bumpers Small Farms Research Center, USDA-ARS*, *Booneville, AR*, [4]*Grazinglands Research Laboratory, USDA-ARS*, *El Reno, OK*, [5]*Redlands Community College*, *El Reno, OK*.

11:15 AM **Break**

11:30 AM 687 **Polymorphisms in the melanocortin-1 receptor (MC1R) gene in Nigerian indigenous goats.**
M. A. Adefenwa[1], B. Oboh[1], G. O. Williams[1], M. Wheto[2], C. O. N. Ikeobi[2], K. Adekoya[1], M. Okpeku[3], M. De Donato*[4], and I. G. Imumorin[4], [1]*Dept of Cell Biology and Genetics, University of Lagos*, *Lagos, Nigeria*, [2]*Dept of Animal Breeding and Genetics, University of Agriculture*, *Abeokuta, Nigeria*, [3]*Dept of Livestock Production, Niger Delta University*, *Amassoma, Nigeria*, [4]*Dept of Animal Science, Cornell University*, *Ithaca, NY*.

11:45 AM 688 **Molecular identification of *Trypanosoma vivax* Infection and physiological indices in Nigerian sheep.**
G. O. Onasanya[1], M. A. Adefenwa[2], B. O. Agaviezor[3], C. O. N. Ikeobi[1], M. Wheto[1], M. Okpeku[4], A. Yakubu*[5], M. I. Takeet[6], M. De Donato[7], and I. G. Imumorin[7], [1]*Dept of Animal Breeding and Genetics, University of Agriculture*, *Abeokuta, Nigeria*, [2]*Dept of Cell Biology and Genetics, University of Lagos*, *Lagos, Nigeria*, [3]*Dept of Animal Science and Fisheries, University of Port Harcourt*, *Port Harcourt, Nigeria*, [4]*Dept of Livestock Production, Niger Delta University*, *Amassoma, Nigeria*, [5]*Department of Animal Science, Nasarawa State University*, *Lafia, Nigeria*, [6]*Dept of Veterinary Microbiology and Parasitology, University of Agriculture*, *Abeokuta, Nigeria*, [7]*Dept of Animal Science, Cornell University*, *Ithaca, NY.*

12:00 PM 689 **Polymorphism in the ovine TNXB gene and association with morphological traits and physiological status in Nigerian Indigenous sheep.**
O. Ajayi[1], M. A. Adefenwa[2,6], B. O. Agaviezor[3,6], C. O. N. Ikeobi[1], M. Wheto[1], M. Okpeku[4], A. Yakubu[5,6], M. De Donato[6], and I. G. Imumorin*[6], [1]*Dept of Animal Breeding and Genetics, University of Agriculture*, *Abeokuta, Nigeria*, [2]*Dept of Cell Biology and Genetics, University of Lagos*, *Lagos, Nigeria*, [3]*Dept of Animal Science and Fisheries, University of Port Harcourt*, *Port Harcourt, Nigeria*, [4]*Dept of Livestock Production, Niger Delta University*, *Amassoma, Nigeria*, [5]*Dept of Animal Science, Nasarawa State University*, *Lafia, Nigeria*, [6]*Dept of Animal Science, Cornell University*, *Ithaca, NY.*

12:15 PM 690 **Lean lamb production during the process of grading up to hair sheep genetics.**
D. K. Aaron*, D. G. Ely, E. Fink, B. T. Burden, M. E. Hoar, M. M. Simpson, and A. K. Lunsford, *University of Kentucky*, *Lexington*.

# OTHER EVENTS

## Mixed Models
## 390
## 10:30 AM - 5:00 PM

The Mixed Models workshop provides a comprehensive exposition of proper statistical data analysis and power determinations of commonly used experimental designs in the animal sciences; our approach is example-driven and primarily based on the various mixed model analysis procedures available in SAS software.

## Alpharma Beef Cattle Nutrition Symposium
## Enhancing Beef Production Efficiency with New Knowledge and Technologies: Building the Bridges for Future Collaboration
## Chair: Darrin L. Boss, Montana State University

Sponsors: Alpharma Animal Health, ASAS Foundation

**291-292**

2:00 PM 691 **Implications of nutritional management for beef cow/calf systems.**
R. N. Funston*, *University of Nebraska, West Central Research and Extension Center*, *North Platte*.

2:35 PM 692 **Altering the ruminal microbiome and its potential impact on animal nutrition and performance.**
S. L. Lodge-Ivey*, *New Mexico State University*, *Las Cruces*.

3:10 PM 693 **Nutrition and the genome.**
H. L. Neibergs*, *Washington State University*, *Pullman*.

3:45 PM 694 **Impacts of health status and disease prevention with nutrition and performance of beef cattle.**
B. P. Holland*[1] and L. O. Burciaga-Robles[2], [1]*Department of Animal and Range Sciences, South Dakota State University*, *Brookings*, [2]*Feedlot Health Management Services Ltd.*, *Okotoks, Alberta, Canada*.

4:20 PM 695 **Interactions with beef cattle nutrition and metabolism: Developing an integrated across discipline approach to research; building the bridges for future collaboration, summary.**
D. L. Boss*, *Montana State University*, *Bozeman*.

## Animal Health
## Dairy I
## Chair: Pedram Rezamand, University of Idaho

**298-299**

2:00 PM 696 **Effect of a micronutrient supplement on the functional capacity of neutrophils harvested from the blood of dairy cows during the periparturient period.**
X. S. Revelo*, A. L. Kenny, N. M. Barkley, and M. R. Waldron, *University of Missouri*, *Columbia*.

2:15 PM 697 **Multiple *Mycoplasma* spp. detected in bulk tank milk samples using real-time PCR and conventional culture, and agreement between test methods.**
D. J. Wilson*[1], A. Justice-Allen[2], J. D. Trujillo[3], and G. Goodell[4], [1]*Utah State University*, *Logan*, [2]*Arizona Game and Fish Department*, *Phoenix*, [3]*Iowa State University*, *Ames*, [4]*The Dairy Authority*, *Greeley, CO*.

2:30 PM 698 **Multiple tests based estimates of *Mycobacterium avium* ssp. *paratuberculosis* prevalence in domestic ruminant population suspected for Johne's disease.**
S. V. Singh*[1], P. K. Singh[1], A.V. Singh[1], B. Singh[1], A. Kumar[1], A. Srivastav[2], S. Gupta[1], H. Singh[1], A. Mittal[1], S. Yadav[2], and J. S. Sohal[1], [1]*Central Institute for Research on Goats*, *Mathura, Uttar Pradesh, India*, [2]*College of Veterinary Sciences*, *Mathura, Uttar Pradesh, India*.

2:45 PM 699 **Evaluation of a BVD milk ELISA test detecting anti-p80 antibody and comparison with ear notch testing for PI cattle.**
D. J. Wilson*[1], K. A. Rood[1], and G. Goodell[2], [1]*Utah State University*, *Logan*, [2]*The Dairy Authority*, *Greeley, CO*.

3:00 PM 700 **Biophotonic imaging as a method to evaluate efficacy of intramammary antibiotics against Staphylococcus aureus in vitro.**
J. Curbelo*, J. Brett, C. Steadman, H. L. Sanchez, T. Rowlison, K. S. Seo, P. L. Ryan, and S. T. Willard, *Mississippi State University*, *Mississippi State*.

3:15 PM 701 **Experimental induction of *Streptococcus uberis* mastitis in bred dairy heifers: A challenge model.**
K. A. Jackson*, D. J. Hurley, F. M. Kautz, L. O. Ely, and S. C. Nickerson, *University of Georgia*, *Athens*.

3:30 PM 702 **Effects of OmniGen-AF on enhancing immunity in dairy heifers vaccinated with a Staphylococcus aureus bacterin.**
V. J. Eubanks*[1], N. E. Forsberg[2], Y. Q. Wang[2], K. Zanzalari[3], J. Chapman[3], D. J. Hurley[1], F. M. Kautz[1], L. O. Ely[1], and S. C. Nickerson[1], [1]*University of Georgia*, *Athens*, [2]*Oregon State University*, *Corvallis*, [3]*Prince Agri Products Inc.*, *Quincy, IL*.

3:45 PM 703 **Genetic parameters of adaptive immune response traits in Canadian Holsteins and implications for health.**
K. Thompson-Crispi*[1], A. Sewalem[2,3], F. Miglior[2,3], and B. Mallard[1], [1]*Dept. Pathobiology, Ontario Veterinary College, University of Guelph*, *Guelph, Ontario, Canada*, [2]*Guelph Food Research Center, Agriculture and Agri-Food Canada*, *Guelph, Ontario, Canada*, [3]*Canadian Dairy Network*, *Guelph, Ontario, Canada*.

4:00 PM 704 **The relationship between measured optical density of uterine lavage samples and clinical endometritis.**
V. S. Machado*, M. L. S. Bicalho, and R. C. Bicalho, *Cornell University*, *Ithaca, NY*.

4:15 PM 705 **Survey of individual cow records to identify factors associated with lameness in dairy cattle in New Zealand.**
C. M. Lira-Diaz[1], J. K. Margerison*[1], and N. Lopez-Villalobos[2], [1]*Massey University*, *IFNHH, Palmerston North, New Zealand*, [2]*Massey University*, *IVABS, Palmerston North, New Zealand*.

4:30 PM 706 **Claw horn disease and claw horn anatomy: A meta-analysis in UK and New Zealand first-lactation dairy cattle.**
L. A. Lethbridge and J. K. Margersion*, *IFNHH Massey University*, *Palmerston North, New Zealand*.

## Breeding and Genetics
## Dairy Cattle Breeding II
## Chair: John B. Cole, Animal Improvement Programs Laboratory, ARS-USDA, Beltsville, MD
## 286-287

2:00 PM 707 **Methods for the assessment of milk coagulation properties: a genetic analysis.**
A. Cecchinato*, M. Penasa, M. De Marchi, C. Cipolat Gotet, I. Bazzoli, N. Cologna, and G. Bittante, *Department of Animal Science, University of Padova*, *Viale dell'Università 16, 35020 Legnaro, Padova, Italy*.

2:15 PM 708 **Genetic relationships between fertility and content of major fatty acids in milk for first-parity Walloon Holstein cows.**
C. Bastin*[1], N. Gengler[1,2], and H. Soyeurt[1,2], [1]*University of Liège, Gembloux Agro-Bio Tech, Animal Science Unit*, *Gembloux, Belgium*, [2]*National Fund for Scientific Research*, *Brussels, Belgium*.

2:30 PM 709 **Relationships between mortality and 305-d milk yield of Holstein cows in three regions in US.**
K. Tokuhisa*, S. Tsuruta, and I. Misztal, *University of Georgia*, *Athens*.

2:45 PM 710 **Genetic parameters of body condition score and other type traits in Canadian Holsteins.**
S. Loker*[1], C. Bastin[2], F. Miglior[3,4], A. Sewalem[3,4], L. R. Schaeffer[1], J. Jamrozik[1], and V. Osborne[5], [1]*CGIL, Dept. of Animal and Poultry Science, University of Guelph*, *Guelph, ON, Canada*, [2]*University of Liège, Gembloux Agro-Bio Tech*, *Gembloux, Belgium*, [3]*Guelph Food Research Centre, Agriculture and Agri-Food Canada*, *Guelph, ON, Canada*, [4]*Canadian Dairy Network*, *Guelph, ON, Canada*, [5]*Centre for Nutrition Modelling, Dept. of Animal and Poultry Science, University of Guelph*, *Guelph, ON, Canada*.

3:00 PM 711 **Relationship between body condition score, locomotion and dairy strength with functional longevity in Canadian Holsteins.**
A. Sewalem*[1,2], F. Miglior[1,2], and G. Kistemaker[2], [1]*Agriculture and Agri-Food Canada*, *Guelph, Ontario, Canada*, [2]*Canadian Dairy Network*, *Guelph, Ontario, Canada*.

3:15 PM 712 **Modeling of residual feed intake for primiparous dairy cow using orthogonal polynomial random regression.**
G. Manafiazar*, T. McFadden, E. Okine, L. Goonewardene, and Z. Wang, *Department of Agricultural, Food and Nutritional Science, University of Alberta*, *Edmonton, Alberta, T6G2P5, Canada*.

3:30 PM 713 **Genetic association of days open with feed intake and efficiency.**
J. E. Vallimont[1], C. D. Dechow*[1], J.M. Daubert[1], M. W. Dekleva[1], and J. W. Blum[2], [1]*Pennsylvania State University*, *University Park*, [2]*University of Bern*, *Bern, Switzerland*.

## Breeding and Genetics
## Molecular Genetics
## Chair: Catherine W. Ernst, Michigan State University
## 290

2:00 PM 714 **A comparison of six protocols for isolation of high quality and quantity ovine genomic DNA suitable for microarray analysis.**
A. Psifidi[1], C. I. Dovas[2], G. Bramis[1], G. Arsenos[1], and G. Banos*[1], [1]*Department of Animal Production, Faculty of Veterinary Medicine, Aristotle University of Thessaloniki*, *GR 54124, Thessaloniki, Greece*, [2]*Laboratory of Microbiology and Infectious Diseases, Faculty of Veterinary Medicine, Aristotle University of Thessaloniki*, *GR 54124, Thessaloniki, Greece*.

2:15 PM 715 **Association between the ghrelin gene with milk production traits in Murrah buffaloes (*Bubalus bubalis*).**
F. M. M. Gil, F. R. P. Souza, G. M. F. de Camargo*, P. D. S. Fonseca, D. F. Cardoso, R. R. Aspilcueta-Borquis, G. Stefani, and H. Tonhati, *São Paulo State University*, *Jaboticabal, São Paulo, Brazil*.

2:30 PM 716 **Relationship between horn fly infestation and polymorphisms in cytochrome P450 and prolactin promoter genes in beef cows.**
A. R. Boyer*[1], M. A. Brown[2], M. L. Looper[3], A. H. Brown[1], C. D. Steelman[1], and C. F. Rosenkrans[1], [1]*University of Arkansas*, *Fayetteville*, [2]*USDA-ARS, Grazinglands Research Laboratory*, *El Reno, OK*, [3]*USDA-ARS, Dale Bumpers Small Farms Research Center*, *Booneville, AR*.

2:45 PM 717 **Gene expression analysis and fatty acid profiling in concentrate and pasture based beef finishing systems.**
J. W. Buchanan*[1], A. J. Garmyn[1], G. G. Hilton[1], D. L. VanOverbeke[1], Q. Duan[2], D. C. Beitz[2], and R. G. Mateescu[1], [1]*Oklahoma State University*, *Stillwater*, [2]*Iowa State University*, *Ames*.

3:00 PM 718 **Expression analysis of key genes of bovine fat metabolism indicated correlated trans regulatory mechanisms in a bovine resource population segregating for two major genes affecting growth and lipid deposition.**
Ch. Kuehn*, C. Kalbe, R. Brunner, T. Goldammer, and R. Weikard, *Leibniz Institute for Farm Animal Biology (FBN)*, *Dummerstorf, Germany*.

3:15 PM 719 **Sound and efficient designs and models for RNA-seq experiments with application in animal genomics.**
J. P. Steibel* and P. Reeb, *Michigan State University*, *East Lansing*.

## Dairy Foods
## Cheese
## Chair: Randy Brandsma, Schreiber Foods
## 295

2:00 PM 720 **Microbial and sensory evaluation of fresh Mozzarella cheese.**
B. Ganesan*, D. Irish, C. Brothersen, and D. J. McMahon, *Western Dairy Center, Department of Nutrition, Dietetics and Food Sciences, Utah State University*, *Logan*.

2:15 PM 721 **CheddarCyc: A database of Cheddar cheese flavor reactions and pathways.**
B. Ganesan* and K. Brown, *Western Dairy Center, Department of Nutrition, Dietetics and Food Sciences, Utah State University*, *Logan*.

2:30 PM 722 **New approaches to understand cheese ripening.**
S. Lortal*[1,2], V. Gagnaire[1,2], S. Jeanson[1,2], J. Floury[1,2], and M.-N. Madec[1,2], [1]*INRA, Rennes, France*, [2]*Agrocampus-Ouest, Rennes, France*.

2:45 PM 723 **In situ proteolytic activity of *Lactobacillus helveticus* and stretchability of Swiss-type cheese.**
L. Sadat-Mekmene[1,2], R. Richoux[3], L. Aubert-Frogerais[3], M.-N. Madec[1,2], C. Corre[1,2], M. Piot[1,2], J. Jardin[1,2], S. Lortal*[1,2], and V. Gagnaire[1,2], [1]*INRA, Rennes, France*, [2]*Agrocampus Ouest, Rennes, France*, [3]*Actilait*, *Rennes, France*.

3:00 PM 724 **Influence of Hofmeister salts on the textural and rheological properties of nonfat process cheese.**
J. A. Stankey* and J. A. Lucey, *University of Wisconsin, Department of Food Science*, *Madison*.

3:15 PM 725 **Impact of reforming on low-fat cheese texture as influenced by pH.**
C. Akbulut* and J. A. Lucey, *Department of Food Science, University of Wisconsin*, *Madison*.

3:30 PM 726 **Recovery of ω-3 fatty acids in Cheddar cheese curd and long-term stability of ω-3 fatty acids in whey powder.**
B. Ganesan*, C. Brothersen, and D. J. McMahon, *Western Dairy Center, Department of Nutrition, Dietetics and Food Sciences, Utah State University*, *Logan*.

3:45 PM 727 **Rheology, microstructure and quality of curd made from buffalo milk: A comparison with ultrafiltered cows' milk.**
I. Hussain*, A.S. Grandison, and A.E. Bell, *Department of Food and Nutritional Sciences, University of Reading*, *Reading, Berkshire, UK*.

## Dairy Foods
## Chemistry and Dairy Product Analysis
## Chair: Kerry Kaylegian, Penn State University
## 296

2:00 PM 728 **Effect of milk processing on the MFGM proteins and phospholipids.**
X. Elías-Argote* and R. Jiménez-Flores, *California Polytechnic State University*, *San Luis Obispo*.

2:15 PM 729 **Focus on milk fat globule membrane proteins from goat milk.**
C. Cebo*[1], C. Henry[2], S. Truchet[3], F. Bouvier[4], H. Caillat[5], and P. Martin[1], [1]*INRA, UMR1313 Unité Génétique Animale et Biologie Intégrative*, *Jouy-en-Josas, France*, [2]*INRA, Plateforme PAPSSO (Plateforme d'Analyse Protéomique Paris Sud Ouest)*, *Jouy-en-Josas, France*, [3]*INRA, Unité Génomique et Physiologie de la Lactation*, *Jouy-en-Josas, France*, [4]*UE332 Domaine de Bourges*, *Osmoy, France*, [5]*INRA, UR631 Station d'Amélioration Génétique des Animaux*, *Castanet-Tolosan, France*.

2:30 PM 730 **Identification of major milk fat globule membrane proteins from pony mare's milk highlights the molecular diversity of lactadherin across species.**
C. Cebo*[1], E. Rebours[1], C. Henry[2], S. Makhzami[1], P. Cosette[3], and P. Martin[1], [1]*UMR1313 Unité Génétique Animale et Biologie Intégrative*, *Jouy-en-Josas, France*, [2]*INRA, Plateforme PAPSSO (Plateforme d'Analyse Protéomique Paris Sud Ouest)*, *Jouy-en-Josas, France*, [3]*UMR6270 CNRS, Université de Rouen, Plateforme Protéomique de l'IFRMP23*, *Mont-Saint-Aignan Cedex, France*.

2:45 PM 731 **Effect of methane emission reducing diet on coagulation properties of bovine milk.**
A. Aprianita*[1], O. N. Donkor[1], P. J. Moate[2], M. J. Auldist[2], J. S. Greenwood[2], W. J. Wales[2], and T. Vasiljevic[1], [1]*School of Biomedical and Health Sciences, Faculty of Health, Engineering and Science, Victoria University*, *Melbourne, Victoria, Australia*, [2]*Department of Primary Industries*, *Ellinbank, Victoria, Australia*.

3:00 PM 732 **Development of a method to determine the susceptibility of raw milk to oxidation.**
J. K. Amamcharla* and L. E. Metzger, *Midwest Dairy Foods Research Center, Dairy Science Department*, *South Dakota State University, Brookings*.

3:15 PM 733 **Measurement of a milk gelation time constant using laser-scanning fluorescence confocal microscopy and image processing techniques.**
R. Hennessy*[1] and R. Jimenez-Flores[2], [1]*Cal Poly Biomedical Engineering*, *San Luis Obispo*, [2]*Cal Poly, DPTC*, *San Luis Obispo*.

3:30 PM 734 **Mid-infrared predictions of lactoferrin content in bovine milk.**
H. Soyeurt*[1,2], C. Bastin[1], F. Colinet[1], V. Arnould[1,3], D. Berry[4], E. Wall[5], N. Gengler[1,2], P. Dardenne[6], and S. McParland[4], [1]*University of Liège, Gembloux Agro-Bio Tech, Animal Science Unit*, *Gembloux, Namur, Belgium*, [2]*National Fund for Scientific Research*, *Brussels, Brussels, Belgium*, [3]*CONVIS Herdbuch*, *Ettelbruck, Luxembourg*, [4]*Animal and Grassland Research and Innovation Centre, Teagasc*, *Fermoy, Cork, Ireland*, [5]*Animal and Grassland Research and Innovation Centre, Teagasc*, *Penicuik, Midlothian, UK*, [6]*Agricultural Walloon Research Centre, Quality Department*, *Gembloux, Namur, Gembloux*.

3:45 PM 735 **First assessment of diffusion coefficients in model cheese by fluorescence recovery after photobleaching (FRAP) analysis.**
J. Floury*[1,2], M. N. Madec[2], M. H. F. Famelart[2], S. Jeanson[2], and S. Lortal[2], [1]*Agrocampus Ouest, UMR1253*, *Rennes, France*, [2]*INRA, UMR1253*, *Rennes, France*.

## Growth and Development
## Animal Performance and Cellular Differentiation
## Chairs: John Blanton, The Samuel Roberts Noble Foundation, and Nicholas Gabler, Iowa State University
## 392

2:00 PM 736 **Repeated transport influences feed intake, but not feed efficiency in Holstein calves.**
A. L. Adams*, G. A. Holub, T. H. Friend, A. J. Krenek, S. M. Garey, C. L. Terrill, and M. J. Carter, *Texas A&M University*, *College Station*.

2:15 PM 737 **Effects of serum protein-based arrival formula and serum protein supplement (Gammulin) on plasma metabolites in transported dairy calves.**
A. Pineda*[1], J. K. Drackley[1], J. M. Campbell[2], and M. A. Ballou[3], [1]*University of Illinois*, *Urbana*, [2]*APC Inc.*, *Ankeny, IA*, [3]*Texas Tech University*, *Lubbock*.

2:30 PM 738 **Digestive function and plasma oxidative status of intra–uterine growth retarded fully weaned piglets.**
J. Michiels*[1,3], M. De Vos[2], J. Missotten[3], A. Ovyn[3], S. De Smet[3], and C. Van Ginneken[2], [1]*Faculty of Biosciences and Landscape Architecture, University College Ghent*, *Ghent, Belgium*, [2]*Laboratory for Veterinary Anatomy, Embryology and Pathology, Department of Veterinary Sciences, University of Antwerp*, *Wilrijk, Belgium*, [3]*Laboratory for Animal Nutrition and Animal Product Quality, Department of Animal Production, Ghent University*, *Melle, Belgium*.

2:45 PM 739 **Effect of dietary energy manipulation on mares and their foals: Glucose and insulin dynamics.**
K. N. Winsco*[1], J. L. Lucia[1], C. J. Hammer[2,3], and J. A. Coverdale[1], [1]*Department of Animal Science, Texas A&M University*, *College Station*, [2]*Department of Animal Sciences, North Dakota State University*, *Fargo*, [3]*Center for Nutrition and Pregnancy, North Dakota State University*, *Fargo*.

3:00 PM 740 **Expression of key transcription factors during differentiation of equine bone marrow mesenchymal stem cells into osteoblast cells.**
E. R. Ackell*[1], A. Sanchez[2], C. Mora[1], S. A. Zinn[1], T. A. Hoagland[1], and K. E. Govoni[1], [1]*Department of Animal Science, University of Connecticut*, *Storrs*, [2]*Cummings School of Veterinary Medicine, Tufts University*, *North Grafton, MA*.

3:15 PM 741 **Inter-relationship of BW with linear body measurements in Hissardale sheep at different stages of the life cycle.**
M. Abdullah*, U. Younas, J. A. Bhatti, T. N. Pasha, M. Nasir, and M. A. Jabbar, *University of Veterinary & Animal Sciences*, *Lahore, Punjab, Pakistan*.

3:30 PM 742 **Gene expression of Red Angus sired steers and heifers evaluated for residual feed intake.**
C. M. Welch*[1], G. K. Murdoch[1], C. S. Schneider[1], K. C. Chapalamadugu[1], K. J. Thornton[1], J. K. Ahola[2], J. B. Hall[1], and R. A. Hill[1], [1]*University of Idaho*, *Moscow*, [2]*Colorado State University*, *Fort Collins*.

3:45 PM 743 **Effects of timing of an initial implant on performance of feedlot heifers.**
M. R. McDaniel*[1], W. C. Murdock[1], K. M. Taylor[1], N. P. Miller[1], B. H. Carter[1], F. Castillo[1], N. A. Elam[3], D. U. Thomson[2], and C. A. Loest[1], [1]*New Mexico State University*, *Las Cruces*, [2]*Kansas State University*, *Manhattan*, [3]*Nutrition Services Associates*, *Hereford, TX*.

4:00 PM 744 **Effect of feeding 25-hydroxycholecalciferol on porcine fetal myoblast proliferation and differentiation.**
E. A. Hines[1], J. D. Coffey[1], M. A. Vaughn[1], C. W. Starkey[1], T. K. Chung[2], and J. D. Starkey*[1], [1]*Texas Tech University*, *Lubbock*, [2]*DSM Nutritional Products Asia Pacific Pte. Ltd.*, *Singapore*.

4:15 PM 745 **Early postnatal myofiber increase in pig muscle results from myofiber elongation and tertiary myofiber formation.**
J. Bérard*[1,3], D. Loesel[1], A. Tuchscherer[2], C. Rehfeldt[1], and C. Kalbe[1], [1]*Leibniz Institute for Farm Animal Biology (FBN), Research Unit Muscle Biology and Growth*, *Dummerstorf, Germany*, [2]*Leibniz Institute for Farm Animal Biology (FBN), Research Unit Genetics and Biometry*, *Dummerstorf, Germany*, [3]*Institut Agricole Régional*, *Aosta, Italy*.

## Meat Science and Muscle Biology
## Lamb and Pork Quality and Muscle Biology and Meat Products
## Chair: Kasey Carlin, North Dakota State University
## 389



2:00 PM 746 **Carcass and meat attributes of Red Sokoto buck goats as influenced by post-slaughter processing methods.**
A. B. Omojola*[1], E. S. Apata[1], and O. O. Olusola[1], [1]*University of Ibadan*, *Ibadan, Oyo State, Nigeria*, [2]*Olabisi Onabanjo University*, *Ago Iwoye, Ogun State, Nigeria*, [3]*University of Ibadan*, *Ibadan, Oyo State, Nigeria*.

2:15 PM 747 **Yield of West African dwarf buck goats slaughtered at different weights.**
A. B. Omojola*[1], S. Attah[2], and O. O. Olusola[1], [1]*University Of Ibadan*, *Ibadan, Nigeria*, [2]*University of Agriculture, Markurdi, Nigeria*, *Markurdi, Nigeria*, [3]*University of Ibadan*, *Ibadan, Nigeria*.

2:30 PM 748 **Fatty acid composition of muscles from Sarda suckling lamb reared indoor and outdoor.**
A. Nudda*, M. G. Manca, G. Battacone, R. Boe, M. Sini, N. Castanares, and G. Pulina, *University of Sassari*, *Dipartimento di Scienze Zootecniche*.

2:45 PM 749 **Nutritive and organoleptic characteristics of kilishi as affected by meat type and ingredient formulation.**
O. O. Olusola*, A. B. Omojola, and A. O. Okubanjo, *University of Ibadan*, *Ibadan, Oyo, Nigeria.*

3:00 PM 750 **Over-nutrition during pregnancy increases collagen content in the skeletal muscle of mature male offspring.**
Y. Huang*, M. J. Zhu, R. J. McCormick, N. M. Nathan, S. P. Ford, and M. Du, *Department of Animal Science, University of Wyoming*, *Laramie*.

3:15 PM 751 **Intrauterine crowding impairs formation as well as growth of secondary myofibers.**
C. E. Pardo[1,2], A. Koller-Bähler[1], M. Kreuzer[2], and G. Bee*[1], [1]*Agroscope Liebefel Posieux*, *Posieux, Switzerland*, [2]*Department of Agricultural and Food Science*, *Zurich, Switzerland*.

3:30 PM 752 **Microarray analysis of the differentially expressed genes in adipose tissues between Jinhua pigs and Landrace pigs.**
T. Wu*, Z. Yuan, Y. Wang, and T. Shan, *Institute of Feed Science, Zhejiang University*, *Hangzhou, Zhejiang province, China*.

3:45 PM 753 **SIFT-MS identifies unique volatile masses in 24 h post-mortem loins from Berkshire- and Landrace-influenced swine.**
S. Taylor*, C. A. Wick, J. Harper, M. Wick, K. Shircliff, and S. J. Moeller, *The Ohio State University*, *Columbus*.

## Nonruminant Nutrition
## Feed Ingredients/Feed Additives
## Chair: Brian Kerr, USDA-ARS-NLAE, Ames, IA
## 386-387

2:00 PM 754 **A partial replacement of soybean meal by whole or defatted algal meal in diet for weanling pigs does not affect their plasma biochemical indicators.**
E. Isaacs*[1], K. Roneker[1], M. Huntley[2], and X. G. Lei[1], [1]*Cornell University*, *Ithaca, NY*, [2]*Cellana*, *Kailua-Kona, HI*.

2:15 PM 755 **Effects of soybean meal of different origins and micronization of high protein soybean meal on nutrient digestibility and productive performance of weanling pigs.**
J. D. Berrocoso, E. A. Monteserín, L. Cámara, M. P. Serrano, R. P. Lázaro, and G. G. Mateos*, *Universidad Politécnica de Madrid*, *Madrid, Spain*.

2:30 PM 756 **Effects of adding cracked corn to a pelleted supplement for nursery and finishing pigs.**
C. B. Paulk*[1], A. C. Fahrenholz[1], J. M. Wilson[1], L. J. McKinney[1], J. D. Hancock[1], K. C. Benhke[1], J. C. Ebert[2], and J. J. Ohlde[2], [1]*Kansas State University*, *Manhattan*, [2]*Key Feeds*, *Clay Center, KS*.

2:45 PM 757 **Inulin, alfalfa and citrus pulp in diets for piglets: Effects on digestibility and metabolism of N.**
S. Brambillasca*[1], E. Menezes[1], P. Zunino[2], and C. Cajarville[1], [1]*Departamento de Nutrición Animal, Facultad de Veterinaria, UdelaR*, *Montevideo, Montevideo, Uruguay*, [2]*Departamento de Microbiología, Instituto de Investigaciones Biológicas Clemente Estable, MEC*, *Montevideo, Montevideo, Uruguay*.

3:00 PM 758 ***Nannochloropsis oculata*** **meal did not alter nutrient usage and had no adverse health effects when fed to rabbits as a protein source.**
B. A. Howe*[1], I. N. Roman-Muniz[1], B. D. Willson[2], and S. L. Archibeque[1], [1]*Colorado State University, Department of Animal Sciences*, *Fort Collins*, [2]*Colorado State University, Department of Mechanical Engineering*, *Fort Collins*.

3:15 PM **Break**

3:30 PM 759 **Comparative efficacy of meal and extracts of *Aspilia africana* leaf in laying quails.**
O. O. K. Oko*, *University of Calabar, Calabar, Cross River State, Nigeria*.

3:45 PM 760 **Effect of mycotoxin inhibitor (sim wall) on mold colonized feed in broiler chicken.**
S. Aikore[1], D. Eruvbetine*[1], R. Bandyopadhyay[2], J. Atehnkeng[2], M. A. Oyekunle[1], and A. M. Bamgbose[1], [1]*University of Agriculture*, *Abeokuta, Ogun State, Nigeria*, [2]*International Institute of Tropical Agriculture*, *Ibadan, Oyo State, Nigeria*.

4:00 PM 761 **Impact of tylosin phosphate and ractopamine hydrochloride alone or in combination on growth performance, feed efficiency and water intake in finishing pigs.**
C. M. Pilcher*[1], R. Arentson[2], and J. F. Patience[1], [1]*Iowa State University*, *Ames*, [2]*Elanco Animal Health*, *Greenfield, IN*.

4:15 PM 762 **Dietary nucleotides as an alternative to antibiotic growth promoters (AGP) for nursery pigs.**
R. Patterson*[1], E. McMillan[2], O. Jones[1], and B. A. Slominski[3], [1]*Canadian Bio-Systems Inc.*, *Calgary, Alberta, Canada*, [2]*Nutreco Canada Agresearch*, *Burford, Ontario, Canada*, [3]*University of Manitoba*, *Winnipeg, Manitoba, Canada*.

4:30 PM 763 **In vitro fermentative characteristics of citrus pulp, apple pomace and inulin combined in increasing levels with a pre-digested dog food.**
S. Brambillasca*, C. Deluca, A. Britos, L. Reyes, and C. Cajarville, *Departamento de Nutrición Animal, Facultad de Veterinaria, UdelaR*, *Montevideo, Montevideo, Uruguay*.

## Nonruminant Nutrition Symposium
## Nutrition and Gut Microbiome
## Chair: James E. Pettigrew, University of Illinois
Sponsors: EAAP, Pancosma
**383-385**

2:00 PM 764 **Whole-body systems approaches for gut microbiota-targeted, preventive healthcare.**
L. Zhao*, *Shanghai Jiao Tong University*, *Shanghai, China*.

2:30 PM 765 **Dietary modulation of the gut microbiota by prebiotics and probiotics.**
G. R. Gibson*, *University of Reading*, *Reading, UK*.

3:00 PM 766 **Effect of dietary change on equine and swine gut microbiota**.
K. Daly*[1], A. Darby[2], N. Hall[2], C. Proudman[3], D. Bravo[4], and S. P. Shirazy-Beechey[1], [1]*Department of Molecular and Cellular Physiology, University of Liverpool*, *Liverpool, UK*, [2]*Department of Functional and Comparative Genomics, University of Liverpool*, *Liverpool, UK*, [3]*Equine Division, Department of Veterinary Clinical Sciences, University of Liverpool*, *Liverpool, UK*, [4]*Pancosma*, *Geneva, Switzerland*.

3:30 PM **Break**

3:45 PM 767 **Dietary manipulation of canine and feline microbiota**.
K. S. Swanson*, *Department of Animal Sciences and Division of Nutritional Sciences, University of Illinois*, *Urbana*.

4:15 PM 768 **Rumen microbiota, assessed by evolving techniques.**
R. J. Wallace*, *Rowett Institute of Nutrition and Health, University of Aberdeen*, *Aberdeen, UK*.

4:45 PM **Questions**

## Physiology and Endocrinology
## Nutritional Physiology
## Chair: Kevin Harvatine, Penn State University
**393**

2:00 PM 769 **Effect of short-term supplementation and temporary weaning in hepatic gene expression in Hereford cows grazing native pasture.**
A.L. Astessiano*[1], F. Bialade[1], M.P. Grignola[1], J. Laporta[1], C. Viñoles[2], and M. Carriquiry[1], [1]*School of Agronomy, UDELAR*, *Montevideo, Uruguay*, [2]*National Research Institute for Agriculture*, *Tacuarembo, Uruguay*.

2:15 PM 770 **Feeding distillers grains as an energy source to gestating and lactating heifers: Impact on ovarian function and reproductive efficiency.**
P. J. Gunn*[1], J. P. Schoonmaker[1], R. P. Lemenager[1], and G. A. Bridges[2], [1]*Purdue University*, *West Lafayette, IN*, [2]*University of Minnesota*, *Grand Rapids*.

2:30 PM 771 **Comparison of Brahman females evaluated for residual feed intake (RFI) as heifers and reevaluated for RFI as gestating cows.**
B. L. Bradbury*[1,2], S. L. Morgan[1,2], A. N. Loyd[1,2], D. A. Neuendorff[1], A. W. Lewis[1], J. P. Banta[1], D. G. Riley[2], T. D. A. Forbes[3], T. H. Welsh[2], and R. D. Randel[1], [1]*Texas AgriLife Research*, *Overton*, [2]*Texas AgriLife Research*, *College Station*, [3]*Texas AgriLife Research*, *Uvalde*.

2:45 PM 772 **Effect of temperament on response to cannulation and glucose challenge in Brahman heifers.**
B. L. Bradbury*[1,2], L. C. Caldwell[2], A. W. Lewis[1], D. A. Neuendorff[1], R. C. Vann[3], T. H. Welsh[2], and R. D. Randel[1], [1]*Texas AgriLife Research*, *Overton*, [2]*Texas AgriLife Research*, *College Station*, [3]*MAFES-Brown Loam Experiment Station*, *Raymond, MS*.

3:00 PM 773 **The role of parathyroid hormone and calcitonin in the prevention of hypocalcemia under induced metabolic acidosis in cattle.**
E. M. Rodríguez*[1], A. Bach[1,2], and A. Arís[1], [1]*Department of Ruminant Production, IRTA*, *Caldes de Montbui, Spain*, [2]*ICREA*, *Barcelona, Spain.*

3:15 PM 774 **Molecular control of puberty as affected by nutrition and leptin infusion in zebu heifers.**
J. Diniz-Magalhães*, M. V. Carvalho, A. B. S. Machado, M. A. V. Silva Júnior, and L. F. P. Silva, *Universidade de São Paulo*, *Pirassununga, São Paulo, Brazil*.

3:30 PM **Break**

3:45 PM 775 **Energy balance alters leptin but not adiponectin mRNA in Holstein cows.**
D. A. Koltes* and D. M. Spurlock, *Iowa State University*, *Ames*.

4:00 PM 776 **Effect of a high-energy diet after weaning on luteinizing hormone secretion in Holstein bulls.**
M. Maquivar*[1], L. A. Helser[2], M. D. Utt[1], L. H. Cruppe[1], F. M. Abreu[1], G. E. Fogle[1], J. M. DeJarnette[2], and M. L. Day[1], [1]*The Ohio State University*, *Columbus*, [2]*Select Sires Inc.*, *Plain City, OH*.

4:15 PM 777 **Effects of volatile fatty acid infusions on angiopoietin-like protein 4 concentration in plasma and ruminal papillae of cattle.**
S. H. Li*, B. J. Bradford, and L. K. Mamedova, *Kansas State University*, *Manhattan*.

4:30 PM 778 **Incorporation of essential and non-essential fatty acid into distinct lipid classes in cultured bovine and porcine small intestine and muscle explants.**
C. Caldari-Torres* and B. A. Corl, *Virginia Polytechnic Institute and State University*, *Blacksburg*.

4:45 PM 779 **Hepatokine, growth hormone, and PPARα-regulated gene network expression in liver of peripartal cows fed two levels of dietary energy prepartum.**
J. Khan*[1], D. Graugnard[1], D. H. Keisler[2], B. J. Bradford[3], L. K. Mamedova[3], J. K. Drackley[1], and J. J. Loor[1], [1]*University of Illinois*, *Urbana*, [2]*University of Missouri*, *Columbia*, [3]*Kansas State University*, *Manhattan*.

## Production, Management and the Environment
## Dairy Facilities
## Chair: Stephanie Hill, Misssissippi State University
## 391

2:00 PM 780 **Herd turnover and mortality in low profile cross-ventilated and naturally ventilated dairy barns in the Upper Midwest.**
K. M. Lobeck*, M. I. Endres, S. M. Godden, and J. Fetrow, *University of Minnesota*, *St. Paul*.

2:15 PM 781 **Mortality and herd turnover rates in dairy herds utilizing recycled manure solids for bedding freestalls.**
A. W. Husfeldt*, M. I. Endres, J. A. Salfer, and J. K. Reneau, *University of Minnesota*, *St. Paul*.

2:30 PM 782 **Effectiveness of fly traps and baits at three primary fly sites on Florida dairy farms.**
M. E. Sowerby*[1] and J. A. Hogsette[2], [1]*University of Florida*, *Gainesville*, [2]*USDA-ARS-CMAVE*, *Gainesville*.

2:45 PM 783 **Chemical and bacteriological characteristics of digested, composted, and separated raw manure solids prior to use as freestall bedding**.
A. W. Husfeldt*, M. I. Endres, K. A. Janni, J. A. Salfer, and J. K. Reneau, *University of Minnesota*, *St. Paul*.

3:00 PM 784 **Chemical and bacteriological characteristics of digested, composted, and separated raw manure solids used as freestall bedding**.
A. W. Husfeldt*, M. I. Endres, K. A. Janni, J. A. Salfer, and J. K. Reneau, *University of Minnesota*, *St. Paul*.

3:15 PM 785 **Temperature and humidity in cross-ventilated and naturally ventilated dairy barns in the upper Midwest.**
K. M. Lobeck*, M. I. Endres, S. M. Godden, and J. Fetrow, *University of Minnesota*, *St. Paul*.

3:30 PM 786 **A one-year comparison of house fly and stable fly populations at three different types of dairy facilities in the Texas Panhandle.**
S. L. Swiger*[1], K. J. Lager[2], T. R. Bilby[1], B. R. Henderson[2], R. G. S. Bruno[2], and E. R. Jordan[3], [1]*Texas AgriLife Extension and Research*, *Stephenville*, [2]*Texas AgriLife Extension*, *Canyon*, [3]*Texas AgriLife Extension and Research*, *Dallas*.

## Ruminant Nutrition
## Dairy: Minerals, Vitamins, and Other Stuff
## Chair: Jose Santos, University of Florida
## 293

2:00 PM 787 **Effect of sodium chloride intake on urea concentration in milk from dairy cows.**
J. W. Spek*[1], J. Dijkstra[1], J. J. G. C. van den Borne[1], and A. Bannink[2], [1]*Wageningen University*, *Wageningen, the Netherlands*, [2]*Wageningen UR Livestock Research*, *Lelystad, the Netherlands*.

2:15 PM 788 **2010 National survey of barriers related to precision phosphorus feeding.**
J. H. Harrison*[1], R. James[2], C. Stallings[2], E. Whitefield[1], M. Hanigan[2], and K. Knowlton[2], [1]*Washington State University*, *Puyallup*, [2]*Virginia Tech*, *Blacksburg*.

2:30 PM 789 **Evaluation of ruminally protected niacin on thermal regulation and productivity of high-producing dairy cows during summer heat stress.**
S. R. Wrinkle*[1], P. H. Robinson[1], and J. E. Garrett[2], [1]*Department of Animal Science, University of California*, *Davis*, [2]*Quali Tech Inc.*, *Chaska, MN*.

2:45 PM 790 **Effects of feeding a rumen protected lysine (AjiPro-L) from calving to the fourth week of lactation on production of high-producing dairy cows.**
J. E. Nocek*[1], T. Takagi[2], and I. Shinzato[2], [1]*Spruce Haven Farm and Research Center*, *Auburn, NY*, [2]*Ajinomoto Co., Inc.*, *Tokyo, Japan*.

3:00 PM 792 **Characterizing the effect of Amaferm on forage NDF digestibility.**
J. E. Nocek*[1] and H. Jensen[2], [1]*Spruce Haven Farm and Res. Ctr*, *Auburn, NY*, [2]*Biozyme Inc.*, *St Joseph, MO*.

3:15 PM 793 **Methionine availability to dairy cows when added to mechanically extracted soybean meal with soy gums.**
D. W. Brake*[1], E. C. Titgemeyer[1], B. J. Bradford[1], J. F. Smith[1], and C. A. Macgregor[2], [1]*Kansas State University*, *Manhattan, KS*, [2]*Grain States Soya Inc.*, *West Point, NE*.

3:30 PM 794 **Effects of chromium propionate fed through the periparturient period and starch source fed postpartum on productive performance and dry matter intake of Holstein cows.**
R. J. Rockwell* and M. S. Allen, *Michigan State University*, *East Lansing*.

## Small Ruminant Symposium
## Advancements in Genetic Selection of Small Ruminants for Performance and Parasite Resistance
## Chair: Kenneth Andries, Kentucky State University
Sponsors: AAPA, AMPA
## 297

2:00 PM 795 **Advancements in genetic selection of small ruminants for performance and parasite resistance: Introduction and purpose**.
K. Andries*, *Kentucky State University*, *Frankfort*.

2:15 PM 796 **Genetic evaluation: Lessons learned in the beef industry.**
J. K. Bertrand*, *University of Georgia*, *Athens*.

2:55 PM 797 **National Sheep Improvement Program's current impact and future potential**.
D. F. Waldron*, *Texas AgriLife Research*, *San Angelo*.

3:35 PM 798 **Advancements in genomics: Application and potential for small ruminant research.**
P. K. Riggs*, *Texas A&M University*, *College Station*.

4:15 PM 799 **Sheep and goat genetic resources: Recent findings and potential for future development**.
H. Blackburn*, *National Animal Germplasm Program, National Center for Genetic Resources Preservation, Agricultural Research Service*, *Ft. Collins, CO*.

4:55 PM **Roundtable Discussion**



## Teaching/Undergraduate and Graduate Education Symposium
## Adapting Our Teaching to Meet Current and Emerging Societal Needs
## Chair: Wesley Greene, Ohio State University, Wooster
## 388

2:00 PM 800 **Effecting change in teaching and learning in the agricultural sciences**.
R. Kirby Barrick*, *University of Florida*.

2:40 PM 801 **Perspectives on using values-based communications as a tool for preparing animal science students to address consumer trust issues challenging the animal industry**.
J. L. Garrett*, *JG Consulting Services LLC*, *Dowling, MI*.

3:00 PM 802 **Course and activities based learning teams: A method of enhancing the first-year university experience.**
M. D. Kenealy*, *Iowa State University*.

3:20 PM **Break**

3:30 PM 803 **Innovative and effective practices for student development—What are the difference makers?**
D. Mulvaney*, *Auburn University*, *Auburn, AL*.

3:50 PM 804 **Best practices in designing undergraduate research experiences in animal science curricula.**
C. Rosenkrans*, *University of Arkansas*, *Fayetteville.*

4:10 PM 805 **Casting a Line—Creating a national Scholarship of Teaching and Learning (SoTL) for animal sciences: Adapting to the gaps through SoTL and networking**.
M. A. Wattiaux*, *University of Wisconsin-Madison*, *Madison*.

4:30 PM 806 **Casting a Line—Multi-institutional collaborations to enhance animal science education**.
D. L. Boggs*, *Kansas State University*, *Manhattan*.

4:50 PM **Discussion**

## ADSA Production Division Symposium
## Current and Future Determinants of Dairy Product Pricing
## Chair: Tony Capuco, USDA, ARS
## 288-289

3:00 PM 807 **Factors that are important in determining US milk prices.**
D. S. Brown*, *Food and Agricultural Policy Research Institute, University of Missouri*, *Columbia*.

3:45 PM 808 **Issues facing US dairy exports: Regulatory coherence and trade barriers.**
J. Castaneda*, *U.S. Dairy Export Council*, *Arlington, VA*.

4:30 PM 809 **Producing for a global export market.**
M. Piper*, *Fonterra (USA) Inc.*, *Rosemont, IL*.

5:15 PM **Discussion**

# Thursday, July 14

## OTHER EVENTS

**ASAS Poster and Oral Presentation Workshop**
**288-289**
**8:00 AM - 5:00 PM**

**Write Winning Grants, conducted by Grant Writer's Seminars and Workshops, LLC, sponsored by ASAS**
**386-387**
**8:00 AM - 3:00 PM**

## SYMPOSIA AND ORAL SESSIONS

### Animal Health
### Dairy II
### Chair: Todd Bilby, Texas AgriLife Research and Extension
### 295

8:30 AM 810 **I. Dairy calving management: Dystocia and timing for intervention.**
G. M. Schuenemann*, I. Nieto, S. Bas, K. N. Galvao, and J. Workman, *Department of Veterinary Preventive Medicine, The Ohio State University*, *Columbus*.

8:45 AM 811 **II. Dairy calving management: Effect of perineal hygiene scores on metritis.**
G. M. Schuenemann*, I. Nieto, S. Bas, K. N. Galvao, and J. Workman, *Department of Veterinary Preventive Medicine, The Ohio State University*, *Columbus*.

9:00 AM 812 **Dam heat load affects neonatal calves' bacterial levels and innate immunity.**
D. Pan*[1,2], C. N. Lee[3], M. H. Rostagno[2], and S. D. Eicher[2], [1]*Purdue University*, *W Lafayette, IN*, [2]*USDA- ARS*, *W Lafayette, IN*, [3]*University of Hawaii*, *Honolulu*.

9:15 AM 813 **Antisecretory factor counteracts calf diarrhea and increases daily weight gain.**
B. E. O. Johansson*[1], E. Johansson[2], and S. Lange[2,3], [1]*Lantmännen Lantbruk*, *Lidköping, Västra Götaland, Sweden*, [2]*Bacteriological Laboratory, Sahlgrenska University Hospital*, *Gothenburg, Västra Götaland, Sweden*, [3]*Institute of Biomedicine, Department of Infectious Diseases, Section of Clinical Bacteriology, University of Gothenburg*, *Gothenburg, Västra Götaland, Sweden*.

9:30 AM 814 **Innate immune function of Holstein calves after commingling.**
L. E. Hulbert*[1,2], C. J. Cobb[1], L. R. Schwertner[1], and M. A. Ballou[1], [1]*Department of Animal and Food Sciences, Texas Tech University*, *Lubbock*, [2]*Department of Animal Sciences, University of California-Davis*, *Davis*.

9:45 AM 815 **Risk factors and impact of postpartum anovulation in dairy cows.**
J. Dubuc*[1], T. F. Duffield[2], K. E. Leslie[2], J. S. Walton[3], and S. J. LeBlanc[2], [1]*Faculté de médecine vétérinaire, Université de Montréal*, *St-Hyacinthe, Québec, Canada*, [2]*Department of Population Medicine, University of Guelph*, *Guelph, Ontario, Canada*, [3]*Department of Animal and Poultry Science, University of Guelph*, *Guelph, Ontario, Canada*.

10:00 AM 816 **Inflammation and infection of the reproductive tract in dairy cows.**
T. Osawa*[2], R. C. Neves[1], and S. J. LeBlanc[1], [1]*University of Guelph*, *Guelph, ON, Canada*, [2]*Iwate University*, *Morioka, Japan*.

10:15 AM 817 **Physiological and behavioral characteristics related to vitality of newborn dairy calves and the efficiency of absorption of immunoglobulins.**
C. Murray*[1], D. Viera[2], A. Nadalin[2], V. Bielmann[1], and K. Leslie[1], [1]*Department of Population Medicine, Universiy of Guelph*, *Guelph, Ontario, Canada*, [2]*Agriculture and Agri-Food Canada*, *Agassiz, British Columbia, Canada*.

10:30 AM 818 **The effect of omega-3 supplementation on the immune response of Holstein calves.**
E. L. Karcher*[1], T. M. Hill[2], N. Vito[1], L. M. Sordillo[1], H. G. Bateman[2], R. L. Schlotterbeck[1], and M. J. VandeHaar[1], [1]*Michigan State University*, *East Lansing*, [2]*Nurture Research Center, Provimi North America*, *Lewisburg, OH*.

10:45 AM 819 **Impact of intrauterine dextrose therapy on conception of lactating dairy cows with clinical endometritis.**
T. A. Brick*, S. Bas, J. B. Daniels, C. Pinto, D. M. Rings, and G. M. Schuenemann, *The Ohio State University*, *Columbus*.

11:00 AM 820 **Effect of propylene glycol in fresh cows diagnosed with subclinical ketosis on milk yield and resolution of ketosis.**
J. A. A. McArt*[1], D. V. Nydam[1], P. A. Ospina[2], and G. R. Oetzel[3], [1]*Cornell University, Department of Population Medicine and Diagnostic Science*, *Ithaca, NY*, [2]*Cornell University, Department of Animal Science*, *Ithaca, NY*, [3]*School of Veterinary Medicine, University of Wisconsin*, *Madison*.

11:15 AM 821 **Association between serum metabolite concentrations in the transition period and milk production in dairy cows.**
N. Chapinal*[1,2], M. E. Carson[1], S. L. Leblanc[1], K. E. Leslie[1], S. Godden[3], M. Capel[4], J. E. P. Santos[5], M. W. Overton[6], and T. F. Duffield[1], [1]*Department of Population Medicine, University of Guelph*, *Guelph, ON, Canada*, [2]*Animal Welfare Program, University of British Columbia*, *Vancouver, BC, Canada*, [3]*Department of Veterinary Population Medicine, University of Minnesota*, *St. Paul*, [4]*Perry Veterinary Clinic*, *Perry, NY*, [5]*Department of Animal Science, University of Florida*, *Gainesville*, [6]*Department of Population Health, University of Georgia*, *Athens*.

## Dairy Foods
## Milk Protein & Enzymes
## Chair: Rafael Jimenez-Flores, Cal Poly, San Luis Obispo
## 298-299

8:30 AM 822 **Whey protein nanoparticles prepared by desolvation: Encapsulation capacity and interfacial activity.**
I. Gülseren* and M. Corredig, *University of Guelph, Dept. of Food Science*, *Guelph, Ontario, Canada*.

8:45 AM 823 **Comparative proteomic analysis of whey proteins between healthy and subclinical mastitic cows.**
J. Bian, Q.-Z. Li*, and X.-J. Gao, *Key Laboratory of Dairy Science of Ministry of Education, Northeast Agricultural University, P.R. China*.

9:00 AM 824 **Controlling whey proteins spontaneous self assembly.**
T. Croguennec*[1], D. Salvatore[2], T. Nicolai[3], V. Forge[2], and S. Bouhallab[1], [1]*UMR 1253, INRA- Agrocampus Ouest, Science et Technologie du Lait et de l'Oeuf*, *F-35000 Rennes, France*, [2]*Laboratoire de Chimie et Biologie des Métaux, CEA-Grenoble*, *F-38057 Grenoble, France*, [3]*UMR CNRS-Université du Maine, Polymères, Colloides, Interfaces*, *F-72085, Le Mans, France*.

9:15 AM 825 **Study of the combined acidification and rennet gelation behaviour of casein micelles using single *Streptococcus thermophilus* strains, with high or very low exopolysaccharide production.**
Z. Miao*, E. Kristo, and M. Corredig, *University of Guelph*, *Guelph, Ontario, Canada*.

9:30 AM 826 **In situ structural investigations of the milk fat globule membrane revealing heterogeneities and sphingomyelin-rich domains.**
C. Lopez*, *INRA-STLO*, *Rennes, France*.

9:45 AM 827 **Fractionation of glycomacropeptide and beta lactoglobulin using positively charged ultrafiltration membranes in staged configurations.**
S. Gemili* and M. R. Etzel, *University of Wisconsin-Madison*, *Madison*.

10:00 AM 828 **Antimicrobial role of serum amyloid A3 in goat milk.**
A. Domènech*[1], J. G. Raynes[2], A. Arís[1], A. Bach[1,3], and A. Serrano[1], [1]*Department of Ruminant Production, IRTA*, *Caldes de Montbui, Spain*, [2]*Immunology Unit, Department of Infectious and Tropical Diseases, London School of Hygiene and Tropical Medicine*, *London, United Kingdom*, [3]*ICREA*, *Barcelona, Spain*.

## Horse Species Symposium
## Disaster Preparedness—Insights to Aid the Equine and Livestock Industries
## Chair: Julia McCann, Virginia Tech
## 297

8:30 AM **Introduction**

8:35 AM **Disaster readiness: Real life in Louisiana.**
R. S. McConnico, *Department of Veterinary Clincal Sciences, School of Veterinary Medicine, Louisiana State University*.

9:10 AM **Reducing the impact of a disaster through planning.**
R. M. Dwyer, *Maxwell H. Gluck Equine Research Center, University of Kentucky*.

9:45 AM **Agricultural extension's role in large animal emergency management assessment and recovery plans.**
D. H. Sigler, *Texas A&M University, College Station*.

10:20 AM **Discussion of case scenarios and question/answer session**

## Lactation Biology 2
## Chair: Darryl Hadsell, Baylor College of Medicine
## 388

8:30 AM 829 **Effects of short- and long-chain fatty acids on expression of lipogenic genes in bovine mammary epithelial cells.**
A. A. A. Jacobs*[1], J. S. Liesman[2], M. J. VandeHaar[2], J. Dijkstra[1], A. M. van Vuuren[1], and J. van Baal[1], [1]*Wageningen University*, *Wageningen, the Netherlands*, [2]*Michigan State University*, *East Lansing*.

8:45 AM 830 **Effect of timing of feed intake on circadian pattern of milk synthesis.**
L. W. Rottman*, Y. Ying, and K. J. Harvatine, *The Pennsylvania State University*, *University Park*.

9:00 AM 831 **Long term effect of feeding rumen protected fish oil or microalgae on mammary gene expression in Holstein cows managed under pasture or confinement systems.**
P. Vahmani*[1], K. Glover[2], L. A. MacLaren[2], J. Green-Johnson[3], and A. Fredeen[2], [1]*Dalhousie University*, *Halifax, NS, Canada*, [2]*Nova Scotia Agricultural College*, *Truro, NS, Canada*, [3]*University of Ontario Institute of Technology*, *Oshawa, ON, Canada*.

9:15 AM 832 **Reduced milking frequency increases the concentration of host-defense proteins in milk.**
K. Stelwagen*[1], M. K. Broadhurst[2], K. Kim[2], A. J. Molenaar[2], D. P. Harris[2], and T. T. Wheeler[2], [1]*Agri-Search Ltd.*, *Hamilton, New Zealand*, [2]*AgResearch Ltd.*, *Hamilton, New Zealand*.

9:30 AM 833 **Effect of milking frequency early post-partum on energy metabolism in grazing dairy cows.**
C. V. C. Phyn[1], T. M. Grala[2], J. K. Kay[1], A. G. Rius[1], S. R. Morgan[1], and J. R. Roche*[1], [1]*DairyNZ Ltd.*, *Hamilton, New Zealand*, [2]*DairyNZ Ltd., C/- ViaLactia Biosciences (NZ) Ltd.*, *Auckland, New Zealand*.

9:45 AM 834 **Regulation of STAT and IGF signaling during reversible and irreversible involution of the bovine mammary gland.**
K. Singh*[1], J. Dobson[1], K. Oden[1], A. Molenaar[1], R. Murney[1], K. Swanson[1], and K. Stelwagen[2], [1]*AgResearch Ltd., Ruakura Research Centre*, *Hamilton, New Zealand*, [2]*Agri-Search Ltd.*, *Hamilton, New Zealand*.

10:00 AM 836 **Effect of heat stress during the dry period on insulin sensitivity of multiparous dairy cows.**
S. Tao*, I. M. Thompson, A. P. Monteiro, M. J. Hayen, and G. E. Dahl, *University of Florida*, *Gainesville*.

10:15 AM 837 **Dry period seasonal effects on the subsequent lactation.**
I. M. Thompson*, A. P. Monteiro, and G. E. Dahl, *University of Florida*, *Gainesville*.

## Meat Science and Muscle Biology Symposium
## Extracellular Matrix in Skeletal Muscle Development and Meat Quality
## Chair: Min Du, University of Wyoming
## 290

8:30 AM 838 **Stem cell niche and postnatal muscle growth.**
S. Kuang*, *Purdue University*, *West Lafayette, IN*.

9:05 AM 839 **Extracellular matrix regulation of skeletal muscle formation and growth.**
S. Velleman*, *The Ohio State University/OARDC*, *Wooster*.

9:40 AM 840 **The influence of extracelluar matrix on intramuscular and extramuscular adipogenesis.**
G. J. Hausman*, *USDA ARS*, *Athens, GA*.

10:15 AM 841 **Connective tissue turnover and meat quality.**
P. P. Purslow*, *Department of Food Science, University of Guelph*, *Guelph, ON, Canada*.

## Nonruminant Nutrition
## Energy and Dietary Fat
## Chair: Mariela Lachmann, Land O'Lakes Purina Feed LLC
## 383-385

8:30 AM 842 **Determining the energy digestibility of mold damaged corn selected for low mycotoxin content in finishing pigs.**
C. M. Pilcher*, A. Greco, C. R. Hurburgh, G. P. Munkvold, C. K. Jones, and J. F. Patience, *Iowa State University*, *Ames*.

8:45 AM 843 **Effects of dietary energy density on performance and lean deposition of growing-finishing pigs raised in a commercial environment.**
L. C. Chu*, C. J. Cai, G. J. Zhang, S. Y. Qiao, and D. F. Li, *China Agricultural University*, *Beijing, China*.

9:00 AM 844 **Effect of feeding soy and sunflower based reconstituted fat or monoestearate as fat sources in piglet diets.**
J. J. Mallo[1], J. Alcañiz*[1], M. I. Gracia[2], and C. Millán[2], [1]*Norel, S.A.*, *Madrid, Spain*, [2]*Imasde Agroalimentaria, S.L.*, *Madrid, Spain*.

9:15 AM 845 **Impact of fat source on nutrient digestibility and performance in nursery pigs.**
S. M. Mendoza* and E. van Heugten, *North Carolina State University*, *Raleigh*.

9:30 AM 846 **Effect of altering the dietary omega-6 to omega-3 fatty acid profile of sow diets on the immune responses of their offspring when challenged with *E. coli* lipopolysaccharide.**
L. Eastwood*[1,2], A. D. Beaulieu[1,2], and P. Leterme[3], [1]*Prairie Swine Centre Inc*, *Saskatoon, SK, Canada*, [2]*Animal and Poultry Science, University of Saskatchewan*, *Saskatoon, SK, Canada*, [3]*Cargill - R & D Centre Europe*, *Havenstraat, Vilvoorde, Belgium*.

9:45 AM 847 **Impact of dietary fat on milk composition, milk output and apparent digestibility is fat source dependent in lactating sows.**
D. S. Rosero*[1], E. van Heughten[1], J. Odle[1], V. Fellner[1], and R. D. Boyd[2], [1]*Department of Animal Sciences, North Carolina State University*, *Raleigh*, [2]*Hanor Company Inc.*, *Franklin, KY*.

## Production, Management and the Environment
## Environmental Quality
## Chair: Julie Wittman, Elanco Animal Health
## 286-287

8:30 AM 848 **Ammonia emissions from a commercial feedyard measured using passive samplers and a box model.**
N. A. Cole*[1], R. W. Todd[1], D. B. Parker[2], M. Rhoades[3], and A. Mason[1], [1]*USDA-ARS, Conservation & Production Research Lab*, *Bushland, TX*, [2]*USDA-ARS-MARC*, *Clay Center, NE*, [3]*West Texas A&M University*, *Canyon*.

8:45 AM 849 **Effects of feeding birdsfoot-trefoil on greenhouse gases emissions from fresh and land incorporated dairy manure.**
Q. Wang*, R. Franco, Y. Zhao, Y. Pan, and F. Mitloehner, *University of California, Davis*, *Davis*.

9:00 AM 850 **Prediction of individual methane emission by dairy cattle from milk mid-infrared spectra.**
A. Vanlierde*[1], C. Delfosse[1], F. Dehareng[1], E. Froidmont[2], H. Soyeurt[3,4], M. Hammida[1], J.-M. Romnee[1], and P. Dardenne[1], [1]*Walloon Agricultural Research Centre, Quality Department*, *Gembloux, Belgium*, [2]*Walloon Agricultural Research Centre, Department of Production and Sectors*, *Gembloux, Belgium*, [3]*University of Liège Gembloux Agro-Bio Tech, Animal Science Unit*, *Gembloux, Belgium*, [4]*National Fund for Scientific Research*, *Brussels, Belgium*.

9:15 AM 851 **Effects of biotechnology on greenhouse gases, volatile organic compounds, and ammonia from feedlot cattle.**
K. R. Stackhouse*, M. S. Calvo, S. E. Place, T. L. Armitage, Y. Pan, Y. Zhao, and F. M. Mitloehner, *University of California*, *Davis*.

9:30 AM 852 **Life cycle assessment of greenhouse gas emissions from beef production systems in California.**
K. R. Stackhouse*[1], C. A. Rotz[2], and F. M. Mitloehner[1], [1]*University of California*, *Davis*, [2]*USDA/Agriculture Research Service, Pasture Systems and Watershed Management Research Unit*, *University Park, PA*.

9:45 AM 853 **Effects of calf hutch flooring on air quality and exposure.**
M. S. Calvo*[1], M. van der Voort[2], J. A. McGarvey[3], J. P. Reynolds[4], T. L. Armitage[1], E. A. M. Bokkers[2], and F. M. Mitloehner[1], [1]*Department of Animal Science, University of California*, *Davis*, [2]*Department of Animal Sciences, Wageningen University*, *Wageningen, the Netherlands*, [3]*USDA Agriculture Research Service, Plant Mycotoxin Reasearch Unit*, *Albany, CA*, [4]*Veterinary Medicine Teaching & Research Center, University of California, Davis*, *Tulare*.

10:00 AM 854 **Feeding saponins to reduce air emissions from steers.**
W. Li* and W. J. Powers, *Department of Animal Science, Michigan State University*, *East Lansing*.

10:15 AM 855 **Supplementary concentrate type affects nitrogen balance in early lactation dairy cows offered grazed pasture.**
S. J. Whelan*, K. M. Pierce, J. J. Callan, B. Flynn, and F. J. Mulligan, *School of Agriculture, Food Science and Veterinary Medicine, University College Dublin*, *Belfield, Dublin 4, Ireland*.

10:30 AM 856 **Development of a user-friendly online system to quantitatively measure metabolic gas fluxes from ruminants.**
P. Zimmerman*[1], S. Zimmerman[1], S. Utsumi[2], and D. Beede[2], [1]*C-Lock Inc*, *Rapid City, SD*, [2]*Michigan State University*, *East Lansing*.

10:45 AM 857 **Effects of oxygenated drinking water on gaseous emissions, rumen microorganisms and milk production in dairy cattle.**
C. J. Neumeier*[1], J. A. McGarvey[2], Y. Pan[1], Y. Zhao[1], and F. M. Mitloehner[1], [1]*Department of Animal Science, University of California-Davis*, *Davis*, [2]*United States Department of Agriculture, Agricultural Research Service*, *Albany, CA.*

## Ruminant Nutrition
## Beef: Supplements
## Chair: Holly Boland, Mississippi State University
## 294

8:30 AM 858 **Effects of residual feed intake classification and breed type on carcass characteristics, tenderness and value in feedlot heifers.**
J. W. Behrens*[1], R. K. Miller[1], J. C. Bailey[1], J. T. Walter[1], A. N. Hafla[1], E. D. Mendes[1], D. S. Hale[1], T. Machado[2], L. O. Tedeschi[1], and G. E. Carstens[1], [1]*Texas A&M University*, *College Station*, [2]*Texas A&M University at Kingsville*, *Kingsville.*

8:45 AM 859 **Effects of residual feed intake classification and breed type on feed efficiency and feeding behavior traits in heifers fed a high-grain diet.**
J. C. Bailey*, G. E. Carstens, J. T. Walter, A. N. Hafla, E. D. Mendes, L. O. Tedeschi, and R. K. Miller, *Texas A&M University*, *College Station*.

9:00 AM 860 **Analysis of the ruminant microbial ecosystem 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, Dunsany, Co. Meath, Ireland*, [2]*School of Agriculture, Food Science and Veterinary Medicine, University College Dublin*, *Belfield, Dublin 4, Ireland*.

9:15 AM 861 **Association of myostatin with weight and carcass traits in crossbred heifers adjusted to different endpoints.**
S. K. Pruitt*, K. M. Rolfe, B. L. Nuttelman, W. A. Griffin, G. E. Erickson, and M. L. Spangler, *University of Nebraska-Lincoln*, *Lincoln*.

9:30 AM 862 **Effects of varying forage levels in diets containing whole flint corn and benefits of steam flaking the corn on finishing Nellore bulls performance, carcass characteristics, and liver abscesses.**
R. S. Marques[1], J. R. R. Dórea[1], A. M. Pedroso[2], A. W. Bispo[1], C. G. Martins[1], W. F. Angolini[1], and F. A. P. Santos*[1], [1]*University of Sao Paulo*, *Piracicaba, SP, Brazil*, [2]*Embrapa Cattle Southeast*, *Sao Carlos SP, Brazil*.

9:45 AM 863 **Evaluation of two complete-feed receiving diets.**
C. J. Schneider*[1], B. L. Nuttelman[1], K. M. Rolfe[1], W. A. Griffin[1], T. J. Klopfenstein[1], R. A. Stock[2], and G. E. Erickson[1], [1]*University of Nebraska, Lincoln*, [2]*Cargill Inc*, *Blair, NE*.

10:00 AM 864 **Rumen degradable protein supply effects microbial efficiency in continuous culture and growth in crossbred Angus steers.**
M. A. Brooks*[1,2], R. M. Harvey[2], N. F. Johnson[2], and M. S. Kerley[2], [1]*North Carolina State University*, *Raleigh*, [2]*University of Missouri - Columbia*, *Columbia*.

10:15 AM 865 **Beef cow performance when fed cotton co-product and distillers grain blocks as a hay replacement.**
G. M. Hill*, A. N. Franklin, G. W. Stone, and B. G. Mullinix, *University of Georgia*, *Tifton*.

10:30 AM 866 **Effects of energy supplementation frequency and forage quality on performance of replacement beef heifers.**
P. Moriel*[2], R. F. Cooke[1], F. N. T. Cooke[1], E. Alves[2], L. Custodio[2], D. W. Bohnert[1], J. M. B. Vendramini[2], and J. D. Arthington[2], [1]*Oregon State University–Eastern Oregon Agricultural Research Center*, *Burns*, [2]*University of Florida–Range Cattle Research and Education Center*, *Ona*.

10:45 AM 867 **Impact of rumen digesta inoculation on feeding value of urea-molasses treated wheat straw.**
M. Sarwar*, M. A. Shahzad, and M. Nisa, *Institute of Animal Nutrition and Feed Technology, University of Agriculture*, *Faisalabad, Punjab, Pakistan*.

11:00 AM 868 **Effect of sorghum grain supplementation on glucose metabolism 1: Bovine.**
M. Aguerre*[1], M. Carriquiry[2], A. L. Astessiano[2], C. Cajarville[3], and J. L. Repetto[1], [1]*Departamento de Bovinos, Facultad de Veterinaria, Universidad de la República*, *Montevideo, Uruguay*, [2]*Departamento de Producción Animal y Pasturas, Facultad de Agronomía, Universidad de la República*, *Montevideo, Uruguay*, [3]*Departamento de Nutrición Animal, Facultad de Veterinaria, Universidad de la República*, *Montevideo, Uruguay*.

11:15 AM 869 **Response to increased sorghum grain supplementation levels: comparison between cattle and sheep.**
M. Aguerre*[1], C. Cajarville[2], 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*.

## Ruminant Nutrition
## Dairy Nutrition
## Chair: Michel Wattiaux, University of Wisconsin
## 293

8:30 AM 870 **A ring test of in vitro neutral detergent fiber digestibility: analytical variability and sample ranking**.
M. B. Hall* and D. R. Mertens, *U. S. Dairy Forage Research Center, USDA-ARS*, *Madison, WI*.

8:45 AM 871 **Effects of supplemental Smartamine or MetaSmart in moderate-energy close-up diets on peripartal liver tissue composition and blood metabolites.**
J. S. Osorio*, P. Ji, J. K. Drackley, and J. J. Loor, *University of Illinois*, *Urbana*.

9:00 AM 872 **Effect of supplemental Smartamine or MetaSmart in moderate-energy close-up diets on peripartal cow performance.**
J. S. Osorio*, P. Ji, J. K. Drackley, and J. J. Loor, *University of Illinois*, *Urbana*.

9:15 AM 873 **Determining the effectiveness of proteases on production variables in lactating Holstein cows.**
E. Sucu*[1,2], A. Nayeri[1], M. V. Sanz-Fernandez[1], N. C. Upah[1], S. C. Pearce[1], and L. H. Baumgard[1], [1]*Department of Animal Science, Iowa State University, Ames*, [2]*Department of Animal Science, Uludag University, Bursa, Turkey*.

9:30 AM 874 **Effects of supplementing a mixture of plant extracts to lactating dairy cows on milk and methane production.**
G. F. Schroeder*[1], D. Bravo[2], M. Jerred[1], and B. D. Strang[1], [1]*Cargill Animal Nutrition*, *Innovation Campus, Elk River, MN*, [2]*Pancosma S.A.*, *Geneva, Switzerland*.

9:45 AM 875 **Effects of feeding hay and baleage on growth and rumen parameters in prepubertal Holstein heifers.**
T. S. Dennis*, J. E. Tower, and T. D. Nennich, *Purdue University*, *West Lafayette, IN*.

10:00 AM 876 **Direct enumeration of metabolically active yeast from the rumens of lactating dairy cows.**
H. C. Bruns*[1], A. R. Hippen[1], M. Witt[2], and J. M. Tricarico[2], [1]*South Dakota State University*, *Brookings*, [2]*Alltech*, *Lexington, KY*.

10:15 AM 877 **Evaluation of dry hay and baleage for transitioning post-weaned, prepubertal dairy heifers to higher forage diets.**
L. N. Pereira*, T. S. Dennis, J. E. Tower, and T. D. Nennich, *Purdue University*, *West Lafayette, IN*.

10:30 AM 878 **Rumen fill score was not related to feed intake response of fresh cows to a less filling diet.**
K. A. Kurtz, S. E. Stocks*, and M. S. Allen, *Michigan State University*, *East Lansing*.

10:45 AM 879 **Effects of abomasal dosing of ferrous or ferric sulfate on short-term iron status of lactating dairy cows.**
O. N. Genther*, J. A. Zyskowski, T. H. Herdt, and D. K. Beede, *Michigan State University*, *East Lansing*.

11:00 AM 880 **Evaluation of total mixed rations fractions retained on the Penn State Particle Separator as additional variables to influence milk production and composition. A meta-analysis.**
I. Schadt*[1], M. Caccamo[1], G. Azzaro[1], and G. Licitra[1,2], [1]*CoRFiLaC, Regione Siciliana*, *Ragusa, Italy*, [2]*DISPA, Catania University*, *Catania, Italy*.

11:15 AM 881 **Effect of supplementary concentrate type on energy balance and blood metabolites in early lactation dairy cows offered grazed pasture.**
K. M. Pierce*, S. J. Whelan, J. J. Callan, and F. M. Mulligan, *School of Agriculture, Food Science and Veterinary Medicine, University College Dublin*, *Belfield, Dublin 4, Ireland*.

11:30 AM 882 **Effect of total mixed rations particle fractions retained on the Penn State Particle Separator on milk yield lactation curves using a random regression animal model.**
M. Caccamo*[1], J. D. Ferguson[2], R. F. Veerkamp[3], I. Schadt[1], R. Petriglieri[1], G. Azzaro[1], A. Pozzebon[1], and G. Licitra[1,4], [1]*CoRFiLaC, Regione Siciliana*, *Ragusa, Italy*, [2]*University of Pennsylvania*, *PA*, [3]*WageningenUR Livestock Research, Animal Breeding and Genomics Centre*, *Lelystad, the Netherlands*, [4]*DISPA, Catania University*, *Catania, Italy*.

## Ruminant Nutrition Symposium
## Mycotoxins – Prevalence, Impact, and Control Strategies in Ruminant Diets
## Chair: Allan Chestnut, Provimi North America
## 291-292

8:30 AM 883 **Major mycotoxins in ruminant diets.**
D. E. Diaz*, *Novus International Inc.*, *St. Charles, MO*.

9:10 AM 884 **Impact of mycotoxins on the immune system.**
T. K. Smith*, *University of Guelph*, *Guelph, ON, Canada*.

9:50 AM **Break**

10:00 AM 885 **Prevalence of mycotoxins in feedstuffs.**
D. Taysom*, *Dairyland Laboratories Inc.*, *Arcadia, WI*.

10:30 AM 886 **Evaluation of feed additives for reducing mycotoxins.**
I. P. Oswald*, *INRA, ToxAlim Reseach Center*, *31027 Toulouse Cedex 03, France*.

## Teaching/Undergraduate and Graduate Education
## Chair: Wesley Greene, Ohio State University, Wooster
## 389

8:30 AM 887 **Perceptions of livestock practices by students entering introductory animal science courses.**
G. A. Holub*[1], C. T. Boleman[2], and S. W. Ramsey[1], [1]*Texas A&M University*, *College Station*, [2]*Texas AgriLife Extension*, *College Station.*

8:45 AM 888 **Demographics and eating habits of students entering introductory animal science courses.**
G. A. Holub*[1], C. T. Boleman[2], and S. W. Ramsey[1], [1]*Texas A&M University*, *College Station*, [2]*Texas AgriLife Extension*, *College Station.*

9:00 AM 889 **Incorporating an issues survey assignment into an introductory animal science course.**
J. A. Sterle*, *Texas A&M University*, *College Station*.

9:15 AM 890 **Improving learning through integration of an upper division class with an introductory class in companion animals.**
J. P. McNamara*, *Washington State University*, *Pullman*.

9:30 AM 891 **Internships and international collaboration in beef cattle reproductive management.**
K. G. Pohler*[1], D. A. Mallory[1], D. J. Patterson[1], M. F. Smith[1], J. L. M. Vasconcelos[2], R. F. G. Peres[3], and E. R. Vilela[4], [1]*University of Missouri*, *Columbia*, [2]*FMVZ - UNESP*, *Botucatu, SP, Brazil*, [3]*Agropecuária Fazenda Brasil*, *Barra do Garças, MT, Brazil*, [4]*Lageado Agricultural Consulting LTD*, *Mineiros, GO, Brazil*.

9:45 AM 892 **Predictors of performance in an Animal Nutrition classroom.**
M. A. Soberon*, D. J. R. Cherney, and R. C. Kiely, *Cornell University*, *Ithaca, NY*.

10:00 AM 893 **Attitudes and knowledge of high school students about the department of animal industry of the University of Puerto Rico at Mayagüez.**
G. Ortiz-Colón*, J. M. Huerta-Jiménez, E. Jiménez-Cabán, and M. Pagán-Morales, *University of Puerto Rico at Mayagüez*, *Mayagüez, PR*.

10:15 AM 894 **Mentoring underrepresented students through agricultural related research projects.**
J. S. Pendergraft*[1], R. M. Legere[1], and A. Rodrĺguez[2], [1]*Sul Ross State University*, *Alpine, TX*, [2]*University of Puerto Rico*, *Mayaguez, PR*.

10:30 AM 895 **Graduate student course curriculum in animal science departments.**
R. F. Leuer*[1] and H. M. White[2], [1]*University of Minnesota*, *St. Paul*, [2]*Indiana University*, *Indianapolis*.

10:45 AM 896 **Increasing awareness of the Multimedia Educational Resource for Learning and Online Teaching (MERLOT) website.**
J. Bertrand*[1] and M. Rieger[2], [1]*University of Georgia*, *Athens*, [2]*University of Florida*, *Gainesville*.

# OTHER EVENTS

## Mixed Models
## 390
## 8:30 AM - 11:30 AM

The Mixed Models workshop provides a comprehensive exposition of proper statistical data analysis and power determinations of commonly used experimental designs in the animal sciences; our approach is example-driven and primarily based on the various mixed model analysis procedures available in SAS software.

# Author Index

Numbers following names refer to abstract numbers; a number alone indicates an oral presentation, an M prior to the number indicates a Monday poster, a T indicates a Tuesday poster, and a W indicates a Wednesday poster.

The author index is created directly and automatically from the submitted abstracts. If an author's name is typed differently on multiple abstracts, the entries in this index will reflect those discrepancies. Efforts have been made to make this index consistent; however, error from author entry contributes to inaccuracies.

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## Future Meeting Dates

**2012**
Phoenix, Arizona
July 15–19

**2013**
Indianapolis, Indiana
July 8–12

**2014**
Kansas City, Missouri
July 20–24