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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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Saturday, July 9

PRECONFERENCE SYMPOSIUM

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


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.
Matthew Waldron, University of Missouri.

8:10 AM
Impact of metabolism on human health, companion animal health and farm health and production.
James Ntambi, University of Wisconsin-Madison.

Development of models of obesity and metabolic syndrome.
Michael Spurlock, Iowa State University.

Integration of molecular biology, cell culture approaches, and whole-organism physiology in lipid metabolism research.
Sean Adams, University of California-Davis, WHNRC.

Panel discussion

10:15 AM
Impact of developmental environment on the risk of chronic disease.
Graham Burdge, University of Southampton, UK.

Fetal origins of adult disease.
Stephen Ford, Department of Animal Science, University of Wyoming.

Gestational nutrition and placental effects on health and productivity.
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.
Mark Lyte, Texas Tech University Health Sciences Center.

Interventions to reduce pathogens in swine and cattle.
Todd Callaway, USDA-Texas A&M University.

Etiology of inflammatory bowel and liver diseases in small animals and humans.
Kenneth Simpson, Cornell University.

Panel discussion

3:55 PM
Nutritional impact of inflammation and infection.
Charles Dinarello, University of Colorado, Denver.

The cost of immune protection—Nutritional accounting and production efficiency.
Kirk Klasing, University of California-Davis.

Sculpting the optimal immune response.
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.

9:00 AM 1
Bovine mammary epithelial cell lineages and parenchymal development.
S. Ellis*, R. M. Akers†, A. V. Capuco†, and S. Safayi†, ¹Clemson University, Clemson, SC, ²Virginia Polytechnic Institute, Blacksburg, VA, ³USDA-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.

10:45 AM 3
The lactocrine hypothesis: Programming reproductive tract development.
F. F. Bartol*, J. C. Chen‡, D. J. Miller‡, A.-L. Frankshun‡, A. A. Wiley‡, A. J. Silva‡, M. E. Camp‡, K. M. Ferio‡, and C. A. Bagnell‡, ¹Auburn University, Auburn, AL, ²Rutgers 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*, J. L. Hutchison‡, K. M. Olson‡, and H. D. Norman‡, ³USDA-ARS, Bovine Functional Genomics Laboratory, Beltsville, MD, ⁴USDA-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*, J. P. Bond‡, and T. B. McFadden‡, ¹Department of Animal Science, University of Vermont, Burlington, ²Vermont Genetics Network Bioinformatics Core, University of Vermont, Burlington, ³Department 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*, L. Doepel†, G. Raggio‡, and S. Lemosquet‡, ¹Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, ²University of Calgary, Calgary, AB, Canada, ³College Alfred, Guelph University, Guelph, ON, Canada, ⁴UMR1080 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

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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.  

**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 Pecuarios, 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. Nelson1,2, H. M. Gauthier1, L. M. Klaiber1, R. E. Clark1, R. J. Grant1, and H. M. Dann1, *William H. Miner Agricultural Research Institute, Chazy, NY,* 2Department of Animal Science, The University of Vermont, Burlington.

**M4** Effects of a high forage prepartum diet on feeding behavior of dairy cows.  

**M5** Diurnal grazing behavior of cattle fed a concentrate supplement during the dry-rainy transition season in tropical conditions.  
H. J. Fernandes*1, V. Siqueira1, L. O. Tedesci1, G. C. Coelho1, L. M. Paiva1, C. Guarálo1, and J. C. Souza1, 2State University of Mato Grosso do Sul, Aquidauana, MS, Brazil, 2Texas A&M University, College Station, 3Federal 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*, D. M. Weary1, N. Chapinal1,2, and M. A. G. von Keyserlingk1, *University of British Columbia, Vancouver, BC,* Canada, 2University of Guelph, Guelph, ON, Canada.

**M7** Effect of residual feed intake in reactivity of Nellore heifers.  
T. L. Sobrinho1, L. T. Egawa1, R. H. Branco1, E. Magnani1, S. F. M. Bonilha2, and M. E. Z. Mercadante*2, 1Faculdade de Ciências Agrárias e Veterinárias, Jaboticabal, São Paulo, Brazil, 2Instituto 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*, D. K. Kishore1, M. R. Waldron1, T. J. Evans1, K. L. Frischke1, and D. E. Spiers1, *University of Missouri, Division of Animal Sciences, Columbia,* 2University 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. Iaira1, M. Rodríguez-Prado2, X. Manteca1, J. L. Ruiz de la Torre1, S. Calsamiglia*1, and A. Ferret1, 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. Gadberry1, W. Whitworth*2, G. Montgomery2, and K. Simon1, 1University of Arkansas, Cooperative Extension Service, Little Rock, 2University 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. Whitworth1, G. Montgomery1, and K. Simon1, 1University of Arkansas, Cooperative Extension Service, Little Rock, 2University 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*, B. Scharf1, J. S. Johnson1, J. K. Bryant1, D. K. Kishore1, P. A. Eichen1, J. A. Carroll3, C. C. Chase3, S. W. Coleman3, N. C. Burdick2, R. L. Weaber1, and D. E. Spiers1, 1University of Missouri, Columbia, 2USDA-ARS, Livestock Issues Research Unit, Lubbock, TX, 3USDA-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. Cronew, and W. S. Bowen, The Ohio State University, Columbus.

**M14** Environmental enrichment influence on feedlot cattle performance.  
B. J. Howell*1, J. R. Brethour2, and J. R. Jaeger3, 1Fort Hays State University, Hays, KS, 2Kansas State University, Hays.

**M15** Lack of the expressive associations between temperament, aggression and weight gain in finishing weight feedlot cattle.  
D. R. Soares*, K. Schwartzkopf-Genswein1, A. P. Sant’anna1, T. da Silva Valente1, P. M. Rueda1, J. N. dos Santos Gonçalves Cyrilo1, and M. J. R. P. da Costa1, 2Sao Paulo State University, Animal Science Postgraduation, Jaboticabal, Sao Paulo, Brazil, 3Agriculture and Agri-Food Canada, Lethbridge Research Centre, Lethbridge, Alberta, Canada, 4Animal Science Institut of Sertãozinho, Sertãozinho, Sao Paulo, Brazil.
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.

Pre-separation behavior of calves being weaned by different methods.
H. T. Boland*1,2, S. T. Willard3, K. Umemura4, G. Scaglia5, J. A. Parish6, and T. F. Best1, Mississippi State University, Prairie Research Unit, Prairies, 1Mississippi State University, Department of Biochemistry and Molecular Biology, Mississippi State, 2National Agricultural Research Center for Hokkaido Region, Toyohira, Sapporo, Japan, 4Louisiana State University Agricultural Center, Iberia Research Station, Jeanerette, 3Mississippi State University, Department of Animal and Dairy Sciences, Mississippi State.

Predictors of body thermal status in heat-tolerant and -sensitive Bos taurus cattle exposed to different temperature loads under controlled conditions.

Behavioral reactivity to psychosocial stress determines the effects of lavender oil on anxiety in sheep.
P. Hawken1, C. Fiol2, and D. B. Blache3, 1University of Western Australia, Perth, Western Australia, Australia, 2Departamento de Bovinos, Facultad de Veterinaria, Universidad de la República, Montevideo, Uruguay.

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.

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

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. Wittsh* and M. J. Estienne, Virginia Polytechnic Institute and State University, Blacksburg.

Castration is no laughing matter, nitrous oxide can’t even help.
J. L. Rault*1 and D. C. Lay2, 1Department of Animal Sciences, Purdue University, West Lafayette, IN, 2USDA-ARS-Livestock Behavior Research Unit, West Lafayette, IN.

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. Sutherland1,2, 1Texas Tech University, Lubbock, 2Ruakura Research Centre, AgResearch, Hamilton, New Zealand.

The effects of group size on aggression when mixing unacquainted sows in outdoor paddocks.
J. N. Marchant-Forde*, J. P. Garner1, A. K. Johnson1, R. M. Marchant-Forde2, and D. C. Lay1, 1USDA-ARS, West Lafayette, IN, 2Purdue University, West Lafayette, IN, 3Iowa State University, Ames.

Association of sow fear with prolactin and cortisol concentrations pre- and post-farrowing.
C. E. Phillips*1, Y. Z. Li1, L. J. Johnston1, G. C. Shurson1, J. Deen1, and C. Farmer2, 1University of Minnesota, St. Paul, 2West Central Research and Outreach Center, Morris, MN, 3University of Minnesota-Morris, Morris, 4College of Veterinary Medicine, St. Paul, MN, 5Agriculture and Agri-Food Canada, Dairy and Swine R & D Centre, Sherbrooke, Quebec, Canada.

Animal Health I
Sponsor: Elanco Animal Health

Molecular basis of virulence in Staphylococcus aureus ovine mastitis.
C. Le Maréchal1,2, N. Seyffert1,4, J. Jardin1,2, D. Hernandez2, G. Jan1,2, V. Azevedo4, P. François5, J. Schrenzel5, S. Even1,2, N. Berkova1,2, R. Thiéry1, J. R. Fitzgerald1, S. Lortal1,2, and Y. Le Loir1,2, 1INRA STLO, Rennes, France, 2AGROCAMPUS OUEST STLO, Rennes, France, 3ANSES, Sophia-Antipolis, France, 4ICB/UFMG, Belo Horizonte, MG, Brazil, 5University of Geneva Hospitals (HUG), Geneva, Switzerland, 6University of Edinburgh, Edinburgh, Scotland, United Kingdom.

Serological proteome analysis of Staphylococcus aureus strains isolated from gangrenous and subclinical ewe mastitis reveals core and accessory seroproteomes.
C. Le Maréchal1,2, J. Jardin1,2, G. Jan1,2, S. Even1,2, D. Hernandez2, P. François5, J. Schrenzel5, D. Demon3, E. Meyer3, N. Berkova1,2, R. Thiéry1, E. Vautrot1, S. Lortal1,2, and Y. Le Loir1,2, 1INRA STLO, Rennes, France, 2AGROCAMPUS OUEST STLO, Rennes, France, 3ANSES, Sophia-Antipolis, France, 4University of Geneva Hospitals (HUG), Geneva, Switzerland, 5Ghent 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. Yang1,2, J. Wang1, S. Li2, D. Bu1, T. Yuan1, L. Zhou1, and P. Sun1, 1State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, 2Institute 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. Byrum*, J. T. Houseman, R. J. Erskine, P. C. Bartlett, C. Render, C. Febvay, D. H. Norman, and J. R. Wright, Antel Biosystems Inc., Lansing, MI, Michigan State University, College of Veterinary Medicine, East Lansing, 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.

M36 Repeated oronasal application of lipopolysaccharide affected milk yield and composition in transition dairy cows.

M37 Mortality patterns in Midwest DHIA herds.

M38 Cost analysis of feeding varying doses of Saccharomyces cerevisiae fermentation product on a commercial dairy.
C. M. Shriver-Munsch*, E. M. Ramsing1, J. R. Males1, W. K. Sanchez2, I. Yoon2, and G. Bobe3, Department of Animal Science, Oregon State University, Corvallis, 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*, T. S. Edrington2, G. R. Hagevoort3, R. F. Farrow2, T. R. Callaway4, N. A. Krueger5, R. C. Anderson6, and D. J. Nisbet7, NMSU Ag Science Center, Clovis, NM, 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*, J. Walter2, G. Cramer1, and D. F. Kelton1, University of Guelph, Guelph, Ontario, Canada, 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.

M43 Peripartal intravaginal application of probiotic bacteria lowered the incidence of uterine infections and improved fertility in dairy cows.

M44 Partitioning innate immune response variation: How much variation is due to the animal?
M. D. Sellers*, L. E. Hultbet1, C. J. Cobb2, and M. A. Ballou1, Department of Animal and Food Sciences, Texas Tech University, Lubbock, 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*, E. M. Ramsing, J. R. Males1, W. K. Sanchez2, I. Yoon2, and G. Bobe3, Department of Animal Science, Oregon State University, Corvallis, Diamond V, Cedar Rapids, IA.

M46 Influence of starch sources in preparrum diet on colostrum quality and blood immunoglobulin concentration of calves.
F. Fatahni, H. Mirzaei Alamouti, and A. Shahsavar, Department of Animal Science, University of Ilam, Iran, Department of Animal Science, University of Zanjan, Iran.
Animal Health

Johne’s Disease

Development of a lab-on-a-chip immunoassay system for diagnosis of Johne’s disease.
A. Wadhwa*, K. Yang1, X. Liu1, J. Bannantine1, S. Eda1, and J. Wu1, 1University of Tennessee Knoxville, Knoxville, 2United States Department of Agriculture, Ames, IA.

Immune activation after immunization of neonatal calves with a commercial heat-killed vaccine.
J. R. Stabel*, W. R. Waters1, J. P. Bannantine1, and K. Lyashchenko2, 1USDA-ARS-National Animal Disease Center, Ames, IA, 2Chembio Diagnostic Systems, Medford, NY.

Phenotype array analysis of Mycobacterium avium ssp. paratuberculosis K10 phoP mutant and wild-type.

Characterization of monoclonal antibodies specific for molecules uniquely expressed on bovine dendritic cells.
G. S. Abdellrazeq*, S. Tomida2, and W. C. Davis1, 1Alexandria University, Edfina, Behara Province, Egypt, 2Washington State University, Pullman.

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.

Complete genome sequence of a Mycobacterium avium subspecies paratuberculosis Isolate from a patient with Crohn’s disease.
L. Li*, J. P. Bannantine1, S. Sreevatsan1, and V. Kapur1, 1Penn State University, University Park, 2National Animal Disease Center USDA-ARS, Ames, IA, 3University of Minnesota, St. Paul.

Salmonella delivery system to develop an efficient vaccine against Mycobacterium avium ssp. paratuberculosis.

Exploring M. paratuberculosis pathogenesis using an in vitro cell culture passage model.
J. L. Everman*1 and L. E. Bermudez2, 1Department of Microbiology, College of Science, Oregon State University, Corvallis, 2Department of Biomedical Science, College of Veterinary Medicine, Oregon State University, Corvallis.

Beef Species

Beef Cattle Production

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.

Body components on finishing crossbred beef heifers of different residual feed intake groups.
S. F. Reis*, P. V. P. Paulino1, S. R. Medeiros1, G. L. D. Feijó2, R. A. A. Torres Júnior2, D. A. Fausto3, M. A. Rezende1, and S. C. Valadares Filho1, 1Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, 2Embrapa Gado de Corte, Campo Grande, Mato Grosso do Sul, Brazil, 3Universidade de São Paulo, Piracicaba, São Paulo, Brazil.

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. Larrain*, Pontificia Universidad Catolica de Chile, Santiago, Chile.

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

Early metabolic imprinting events increase marbling scores in fed cattle.
M. A. McCann*, J. M. Scheffler1, S. P. Greiner1, M. D. Hanigan1, G. A. Bridges1, S. L. Lake4, J. M. Stevenson1, H. Jiang1, T. L. Scheffler1, and D. E. Gerrard1, 1Dept. of Animal and Poultry Sciences, Virginia Polytechnic Institute and State University, Blacksburg, 2Dept. of Dairy Science, Virginia Polytechnic Institute and State University, Blacksburg, 3University of Minnesota, North Central ROC, Grand Rapids, 4Dept. of Animal Sciences, University of Wyoming, Laramie.
Breeding and Genetics
Dairy Cattle Breeding

M60 Differences in the production and reproduction traits of embryo transfer full siblings living under different and identical conditions.
J. Bezdicek*, 1 and J. Riha1, 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. Val1, 3, C. R. Marcondes4, M. G. C. D. Peixoto5, R. S. Verneque6, J. B. S. Ferraz, 6, and B. L. Golden6, 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. Giordano2, C. Passavant3, J. M. Howard4, P. M. Fricke5, and R. G. Sasser6, 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.

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. Rivera3, P. Crump2, and V. Cabrera2, 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*, J. L. Hutchinson, P. M. VanRaden, and H. D. Norman, 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.

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. Norman2, R. C. Goodling3, and J. R. Wright, 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. White1, 1, S. S. Donkin1, M. C. Lucy2, T. M. Grala1, and J. R. Roche3, 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. Norman2, 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. Arnould1, 2, F. Froidmont3, H. N. Nguyen1, F. Dehareng1, P. Dardenne5, A. Gillon6, N. Gengler7, 1, and H. Soyeurt*, 1, 2, CONVIS, Herdbook 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 Wallon Breeding Association, Ciney, Namur, Belgium.

M74 Comparison of lactation performance in a panel of genetically diverse inbred mouse strains.
D. L. Hadsett*, W. Olea1, J. Wei2, L. A. Hadsell1, and P. Williamson3, 1 Baylor College of Medicine, Houston, TX, 2 The University of Sydney, Sydney, NSW, Australia.
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.

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

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

Breeding and Genetics
Poultry Breeding

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

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

Breed and egg size effects on weight loss during incubation of Broiler eggs.

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

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.

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

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

Microencapsulation of probiotic cultures using polymerized whey proteins as wall material.

Proteolysis in UHT milk produced with CO2 added raw milk.
P. C. B. Vianna, E. H. M. Walter, M. E. F. Dias*, J. A. Faria, F. M. Netto, and M. L. Gigante, 1Universidade Norte do Paraná, Londrina, SP, Brazil, 2Universidade Federal do Pampa, Bagé, SP, Brazil, 3Universidade Estadual de Campinas, Campinas, SP, Brazil.

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

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

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

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.

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.

Formation of β-lactoglobulin/alginate nanoemulsion containing coenzyme Q10.  

Homogenization and lipase addition influence methyl ketone generation.  

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.

Milk composition evaluation as screening criteria to investigate fraudulent addition of cheese whey to milk.  

Measuring milk treatments and storage temperature effects on fat globules aggregation.  
N. Fucà¹, G. Impoco¹, M. Caccamo*, and G. Licitra¹, ²CoRFiLaC, Regione Siciliana, Ragusa, Italy, ²DISPA, Catania University, Catania, Italy.

Effects of residual lactose and galactose on cheese moisture determination.  

Quantification of textural properties of composite milk gels using laser-scanning fluorescence confocal microscopy and image texture analysis.  
R. Hennessy*, L. Laiho¹, A. Laubscher², and R. Jimenez-Flores², ¹Cal Poly Biomedical Engineering, San Luis Obispo, ²Cal Poly, DPTC, San Luis Obispo.

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.

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

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.

The relationships between weight, age, and average daily gain of Georgia 4-H & FFA commercial dairy heifers.  

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*, F. G. Veliz-Deras¹, R. Rodriguez-Martinez¹, M. A. De Santiago-Miramontes¹, and C. A. Meza-Herrera¹, ¹Universidad Autonoma Agraria Antonio Narro, Torreón, Coahuila, México, ²Universidad Autónoma Chapingo, Unidad Regional Universitaria de Zonas Áridas, Bermejillo, Durango, Mexico.

An extension tool to assess forage production and utilization on dairy farms.  
M.-C. Coulombe*, D. Pellerin¹, R. Roy¹, G. Allard¹, P. Savoie¹, D. Parent¹, and E. Charbonneau¹, ¹Université Laval, Quebec, Quebec, Canada, ²Valacta, Dairy production centre of expertise, Ste-Anne-de-Bellevue, Quebec, Canada, ³Agriculture and Agri-Food Canada, Soils and Crops Research and Development Centre, Quebec, Quebec, Canada.
Fiber production and fiber characteristics of alpacas farmed in United States.
T. Wuliji*, Lincoln University, Jefferson City, MO.

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.

Using whole farm assessment tools to identify strategies for change to increase dairy farm profitability.

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.

Summary of Texas Panhandle dairy producer forage use.

An overview of compost bedded pack management in Kentucky.

Weighted cost of capital on dairy farms in Florida.

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

Judging Pro: A dynamic software program for scoring judging contests.

Forages and Pastures
Antinutritive Compounds in Forages

Fermentation and microbial protein synthesis from anthocyanin accumulating Lc-alfalfa in rumen liquid.
A. Jonker1,2, M. Y. Gruber1, Y. Wang1, D. A. Christensen1, J. J. McKinnon1, and P. Yu*, 1Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, Saskatchewan, Canada, 2Saskatoon Research Station, Agriculture and Agri-Food Canada, Saskatoon, Saskatchewan, Canada, 3Lethbridge Research Station, Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada.

How tannin deactivation can affect nutrient digestibility and metabolizable energy contents of sainfoin (Onobrychis vicifolia)?
H. Khalilvandi-Behroozyar1,2, M. Dehghan-Banadaky1, and K. Rezayazdi1, 1Department of Animal Science, University of Tehran, Karaj, Tehran, Iran, 2Department of Animal Science, University of Urmia, Urmia, West Azerbaijan, Iran.

Effects of sainfoin (Onobrychis vicifolia) processing for tannin deactivation on nitrogen content of cell wall and available nitrogen.
H. Khalilvandi-Behroozyar1,2, K. Rezayazdi1, and M. Dehghan-Banadaki1, 1Department of Animal Science, University of Tehran, Karaj, Tehran, Iran, 2Department of Animal Science, University of Urmia, Urmia, West Azerbaijan, Iran.

Effects of tannin deactivation with different chemicals on protein fractions of sainfoin (Onobrychis vicifolia Scop.) in Cornell Net Carbohydrate and Protein System (CNCP).
H. Khalilvandi-Behroozyar1,2, M. Dehghan-Banadaky1, and K. Rezayazdi1, 1Department of Animal Science, University of Tehran, Karaj, Tehran, Iran, 2Department of Animal Science, University of Urmia, Urmia, West Azerbaijan, Iran.

Effects of chemical treatments for tannin deactivation on in situ organic matter degradability of sainfoin (Onobrychis vicifolia).
H. Khalilvandi-Behroozyar1,2, K. Rezayazdi1, and M. Dehghan-Banadaki1, 1Department of Animal Science, University of Tehran, Karaj, Tehran, Iran, 2Department of Animal Science, University of Urmia, Urmia, West Azerbaijan, Iran.

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.

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.

Fluoride content of leaves and stems of alfalfa hay at different stages of maturity.
C. Arzola*, M. R. Murphy, J. Salinas1, R. Copado1, A. Corral1, O. Ruiz1, C. Rodriguez1, E. Santellano1, and H. Gaytan1, 1Universidad Autonoma de Chihuahua, Chihuahua, Chihuahua, Mexico, 2University of Illinois, Urbana-Champaign, 3Universidad Autonoma de Tamaulipas, Cd. Victoria, Tamaulipas, Mexico.

Distribution of antinherbivory compounds in Flourensia cernua.
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.*

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.*

Nutrient and tannin contents of purple prairie clover (*Petalostemon purpureum*) harvested at different growth stages.
L. Jin, Z. Xu, A. D. Iwaasa, Y. G. Zhang, M. P. Schellenberg, T. A. McAllister, and Y. Wang, *Agriculture and Agri-Food Canada, Lethbridge Research Centre, Lethbridge, AB, Canada,* 1Department of Animal Science, Northeast Agricultural University, China, 2SPARC-AAFC, Swift Current, SK, Canada.

Evaluation of tannins in indigenous forage plants of the Brazilian semi-arid.

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

Endophyte-infected tall fescue seed extract induces constriction of bovine vasculature.

Contractile response of bovine lateral saphenous vein to ergovaline, serotonin, α1, α2, and α2-adrenergic receptor agonists relative to time off endophyte-infected tall fescue.

Differences in chemical composition of crown rust resistant and susceptible oat cultivars in Northern Mexico.

Forages and Pastures
Forage Production and Quality

Dry matter yield and chemical composition of twenty-eight alfalfa cultivars grown in Brazil.

Tilling pattern and dry matter production of Mombasa grass submitted to nitrogen fertilization during regrowth.
A. F. Garcez Neto, K. F. Gobbi, T. M. Dos Santos, E. B. Baldasso, and I. Da Silva, 2Federal University of Parana, Palotina, Parana, Brazil, 3Agronomic Institute of Parana, Paranavai, Parana, Brazil, 4Federal University of Vicoso, Vicoso, Minas Gerais, Brazil.

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.*

Nutritional value and silage fermentation parameters of elder (*Sambucus nigra*) as a supplement for dairy cattle in the Colombian Tropics.

Organic fertilization improves growth of *Paulownia* spp.

Ruminal degradability of crude protein of Marandu grasses.
A. J. D. Pacheco Junior*, F. A. P. Santos, C. M. M. Bittar, L. R. D. Agostinho Neto, R. A. M. Vieira, L. O. Tedeschi, B. C. Matos, and G. B. Mourão, 1University of São Paulo, University of Sao Paulo, USP/ESALQ, Piracicaba, SP, Brazil, 2State University of North Fluminense Darcy Ribeiro, State University of North Fluminense Darcy Ribeiro, Campos dos Goytacazes, RJ, Brazil, 3Texas A&M University, Texas A&M University, College Station.
Effect of stage of maturity of alfalfa hay upon in vitro dry matter and crude protein digestibility.
R. Copado-Garcia*, O. Serna1, C. Arzola1, O. Ruiz1, C. Rodriguez1, A. Corral1, and H. Gaytan1, 1Universidad Autonoma de Chihuahua, Chihuahua, Mexico, 2INIFAP, Chihuahua, Mexico.

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.

Chemical composition and nutritional value of Prosopis laevigata harvested at three different maturation stages.
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.

M156
Effect of one or two treatments of prostaglandin F2α prior to Cosynch in lactating dairy cattle.
K. D. Baldock*, M. E. Wilson1, and D. L. Smith1, 1Eastern New Mexico University, Portales; 2West 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*, K. J. Herrick, K. F. Kalscheur1, D. J. Schingoethe1, R. Rosenboom2, G. Doppenberg3, and A. R. Hippen1, 1South Dakota State University, Brookings, 2Deluxe 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. Wittrick*, T. F. Duffield, S. Riuszii, and S. J. LeBlanc1, 1University of Guelph, Guelph, Ontario, Canada, 2University 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.

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*, R. E. James1, M. L. McGilliard1, and T. J. Earleywine1, 1Department of Dairy Science, Virginia Polytechnic Institute and State University, Blacksburg, 2Land O Lakes Animal Milk Products, Shoreview, MN.

M165
Effect of postpartum diseases on reproduction of grazing dairy cows.

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*, A. R. Hippen1, K. F. Kalscheur1, D. J. Schingoethe1, S. C. Moreland2, and J. E. van Eys2, 1South Dakota State University, Brookings, 2Nutriad Inc., Elgin, IL.

M168
Antioxidant activity of calf milk replacers.
M. A. Soberon*, D. 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.

M170
Effect of air-flow controlled chambers and cows of contrasting feed efficiency on methane emission.
C. Arndt*, M. A. Wattiaux1, J. M. Powell1, and M. J. Aguerre1, 1Department of Dairy Science, University of Wisconsin, Madison, 2USDA-ARS U.S. Dairy Forage Research Center, Madison, WI.

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


**Growth and Development I**

Net requirements of calcium and phosphorus for gain of Nellore and Nellore x Bos taurus crossbreds. M. P. Gionbelli*, M. I. Marcondes1,2, S. C. Valadares Filho1,2, L. F. Prados3, and M. L. Chizzotti4, 1Universidade Federal de Viçosa, Viçosa, MG, Brazil, 2Universidade Federal de Lavras, Lavras, MG, Brazil, 3Instituto Nacional de Ciência e Tecnologia - Ciência Animal, Brazil.

Effects of maternal body condition and breeding season forage type on beef heifer growth. J. D. Patterson*, M. L. Looper1, B. C. Williamson1, and C. F. Rosenkrans1, 1University of Arkansas, Fayetteville, 2USDA/ARS DBSFRC, Booneville, AR.

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.

Interactions of residual feed intake and other performance parameters of Japanese Black (Wagyu) bulls. M. McGee*, C. M. Welch1, J. B. Hall1, and W. Small1, 1University of Idaho, Moscow, 2University of Idaho Nancy M. Cummings Research, Education, and Extension Center, Carmen, 3AgriBeef Snake River Farms, American Falls, ID.


Empty body composition of Nellore bulls classified for residual feed intake. E. F. M. Bonilha1, F. L. Araújo1, S. F. M. Bonilha*, and R. H. Branco1, 1Instituto de Zootecnia, Sertãozinho, São Paulo, Brazil, 2Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil.

Body and carcass fat of Nellore bulls classified for residual feed intake. S. F. M. Bonilha*, R. H. Branco1, K. Zorsi1, M. E. Z. Mercadante1, J. N. S. G. Cyrillo2, and L. A. Figueiredo1, 1Instituto de Zootecnia, Sertãozinho, São Paulo, Brazil, 2Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil.

Describing DMI and growth patterns in beef steers during the finishing period. N. Vargas Jurado*, G. Scaglia1, W. S. Swecker1, D. A. Fiske1, J. P. S. Neel1, J. P. Fontenot1, and R. M. Lewis1, 1Virginia Tech, Blacksburg, 2Louisiana State University, Iberia Research Station, Jeanerette, 3USDA-ARS, Beaver, WV.


Effects of increased protein and energy fed in milk replacer and heat stress on growth parameters of neonatal holstein bull calves. A. J. Krenek*, G. A. Holub1, T. A. Tomaszewski1, and C. C. Stanley1, 1Texas A&M University, College Station, 2Land 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.

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. Lyman1, M. L. Bell1, W. A. D. Nayananjalie2*, E. M. England3, J. A. D. R. N. Appuhamy4, and M. D. Hanigan1, Virginia Polytechnic Institute and State University, Blacksburg, 2University of Guelph, Guelph, ON, Canada.

M194 Mammary uptake of fatty acids varying in chain length and unsaturation supplied by intravenous triglyceride infusion.

M195 Conjugated linoleic acid-induced milk fat depression in lactating ewes is accompanied by reduced expression of genes involved in mammary lipid synthesis.

M196 Characterization of a novel bovine mammary epithelial cell line.
P. Bernier-Dodier*1,2, G. Tremblay3, and P. Lacasse3, Université de Sherbrooke, Sherbrooke, QC, Canada, 2AAFC-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.

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*, R. K. Kahindi1, P. Lopez2, C. Furedi2, and C. M. Nyachoti1, University of Manitoba, Winnipeg, MB, Canada, 2The 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, Choongnam, 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.

O. O. Aedeleye*1, A. D. Ologhobo2, P. A. Iji3, and O. A. Adebibe1, 1Department of Animal Science, University of Ibadan, Department of Animal Science, University of Ibadan Ibadan, Oyo State, Nigeria, 2School 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*, A. C. Pezzato1, V. C. da Cruz2, J. R. Sartori1, V. B. Fascina1, F. B. de Carvalho1, F. Vercese1, N. C. Alexandre1, L. P. Centenaro1, I. M. G. P. de Souza1, P. G. Castelo1, E. M. Muro1, W. T. da Silva1, V. C. Pelicia1, P. C. de Araujo1, 1São Paulo State University, Botucatu Campus, Botucatu, São Paulo, Brazil, 1São 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*, G. do Valle Polycarpo1, V. C. da Cruz2, J. R. Sartori1, V. B. Fascina1, F. Vercese1, N. C. Alexandre1, L. P. Centenaro1, I. M. G. P. de Souza1, P. G. Castelo1, E. M. Muro1, W. T. da Silva1, A. C. Stradiotti1, M. K. Maruno1, F. Barros de Carvalho1, 1São Paulo State University, Botucatu Campus, Botucatu, São Paulo, Brazil, 1São 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*, E. van Heugten1, C. H. Stahl1, A. J. Moeser2, P. W. Plumstead3, and M. H. Borgmann1, 1Department of Animal Science, North Carolina State University, Raleigh, 2Department of Clinical Sciences and Molecular, Biomedical Sciences, College of Veterinary Medicine, North Carolina State University, Raleigh, 3Danisco Animal Nutrition, Marlborough, Wiltshire, UK.

M211 Effect of carbohydroxylase complex and phytase combined in corn-soybean meal diet for pigs.
M. Ceccantini*, B. V. Freitas1, M. M. Mota1, N. B. Petrolí1, C. C. Silva1, C. S. S. Araujo2, and L. F. Araujo1, 1Adisseo, Sao Paulo, SP, Brazil, 1FMVZ/USP, Pirassununga, SP, Brazil, 1FCEA/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*, P. S. Agostini1, S. L. Vinokurovas1, B. T. Lund2, and J. Gasa1, 1Univeristat Autònoma de Barcelona, Bellaterra, Spain, 2Chr. Hansen, Hørsholm, Denmark.
M217  
Effect of a wheat dextrin and a fructooligosaccharide as prebiotics on nursery pig performance.  

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

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*, R. C. Sulabo†, J. L. Usry†, B. W. Ratliff‡, D. M. McKilligan‡, and H. H. Stein‡, University of Illinois, Urbana, ¹Ajinomoto Heartland, LLC, Chicago, IL, ²TechMix, LLC, St. Paul, MN.

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

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

M225  
Evaluation of 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.

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**Physiology and Endocrinology I**

M227  
ACTH-induced stress impairs the expression of genes involved in steroidogenesis and angiogenesis in dairy cow preovulatory follicles.  

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 Veterinary Medicine, Burdur, Turkiye.

M229  
Insulin sensitivity correlates with parameters of hepatic lipid metabolism, and is lower in older dairy cows.  
H. A. van Dorland¹, D. M. McKilligan², J. O. Giordano³, F. Martínez–Bustos⁴, J. M. Lee⁵, and T. M. Walraven⁵, VetPhys, University of Bern, Bern, Switzerland, ²Department of Animal Science, Swiss College of Agriculture, Zollikofen, Bern, Switzerland, ³Clinic for Ruminants, Vetsuisse Faculty, University of 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*, P. Duffy†, and S. Fair‡, University College Dublin, Belfield, Dublin, Ireland, ²University of Limerick, Limerick, Ireland.

M232  
Effects of supplemental progesterone and timing of initiation of resynchronization on fertility in lactating dairy cows.  
T. R. Bilby*, R. G. S. Bruno⁴, K. J. Lager⁴, R. C. Chebel⁴, J. G. N. Moraes⁴, P. M. Fricke⁵, G. Lopes⁵, J. O. Giordano⁵, J. E. P. Santos⁶, S. D. Carter, and R. M. Bruckmaier*,¹²,³ Oklahoma State University, Stillwater, ²Department of Animal Science, University of Wisconsin, Madison, ³Department of Animal Sciences, University of Florida, Gainesville, ⁴Department of Animal Sciences and Industry, Kansas State University, Manhattan.
Effect of circulating progesterone (P4) and two different GnRH doses on LH secretion in lactating dairy cows.  

Assessment of an accelerometer system (Heatime) for detection of estrus and timing of insemination in lactating dairy cows.  

Presynchronization with double-Ovsynch improves conception at first postpartum AI in primiparous lactating dairy cows.  
M. M. Herlihy*, J. O. Giordano1, A. H. Souza1, A. Keskin1, A. B. Nascimento1, J. N. Guenther1, M. A. Crowe1, S. T. Butler2, and M. C. Wiltbank1, Department of Dairy Science, University of Wisconsin-Madison, Madison; Animal and Bioscience Research Department, Teagasc, Moorepark, Cork, Ireland; School of Agriculture, Food Science and Veterinary Medicine, University College Dublin, Ireland.

Effect of GnRH and double AI (24h apart) on fertility of high-producing cows detected in estrus by professional tail chalk service.  
D. Cunningham1, A. Fisher2, A. H. Souza2, H. Rivera3, A. Skidmore3, and M. C. Wiltbank2, Accelerated Genetics, Baraboo, WI; Department of Dairy Science, University of Wisconsin, Madison; Intervet/Schering-Plough Animal Health, Summit, NJ.

Paraoxonase expression and activity in bovine granulosa cells and follicular fluid.  
A. Schneider1, V. A. Absalon-Medina2, G. Esposito1, M. N. Corrêa2, and W. R. Butler2, Universidad Federal de Pelotas, Pelotas, RS, Brazil; Cornell University, Ithaca, NY; University of Naples Federico II, Naples, Italy.

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.

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. C. Lucy, University of Missouri, Division of Animal Science, Columbia.

Immunohistochemical evidence for the presence of G protein-coupled receptor 43 in cattle rumen epithelium but not in the pancreatic islets of Langerhans.  

Effects of protein supplementation during heifer development on reproductive characteristics and success in beef heifers.  

Effect of parity on thermal response and energy balance (EB) of sows housed at 24-27°C during lactation.  

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. Pereira1, A. Rodrigues1, T. Martins1, F. Aono1, P. Borges2, T. Guzelia1, C. Sanchez1, M. Veras1, F. Aragon2, and J. L. M. Vasconcelos1, FMVZ-UNESP, Botucatu, SP, Brazil; Pioneiros Veterinary Clinic, Carambei, PR, Brazil.

Period of dominance of the ovulatory follicle influences conception rates in Nelore pubertal heifers detected in estrus.  
T. Martins1, A. Rodrigues1, F. Aono1, M. Pereira1, R. Peraes1, H. Graff1, E. Carvalho1, and J. L. M. Vasconcelos1, FMVZ-UNESP, Botucatu, SP, Brazil; Agropecuaria Fazenda Brasil, Nova Xavantina, MT, Brazil.

Impacts of L-arginine on ovarian function and reproductive performance at the time of maternal recognition of pregnancy in ewes.  
C. Schauer1, C. Saevre1, A. Meyer2, M. VanEmon1, J. Kirsch1, M. Kapphahn2, J. Luther1, J. Caton2, and D. Redmer2, Hettinger Research Extension Center, North Dakota State University, Hettinger; Department of Animal Sciences, North Dakota State University, Fargo; Department of Animal and Food Science, University of Wisconsin-River Falls, River Falls.

Failure of differences in prepubertal dietary intake to affect ovarian development in pubertal beef heifers.  

Follicular fluid composition of the preovulatory follicle in beef cows grazing different forage allowances of native pastures.  
M. Carrquiry1, P. Socia1, A. C. Espasandin2, A. Meike1, and C. Viñoles1, School of Agronomy, Udelar, Montevideo, Uruguay; School of Veterinary Sciences, UdelaR, Montevideo, Uruguay; National Research Institute for Agriculture, Tucuarembo, Uruguay.

Longitudinal assessment of the somatotropic axis in free-ranging, juvenile Steller sea lions.  
K. D. Hebert*, J. P. Richmond1, L. D. Rea1, and S. A. Zinn1, University of Connecticut, Storrs; University of North Florida, Jacksonville; Alaska Department of Fish and Game, Fairbanks, AK.

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.

Follicle-stimulating hormone induces the canonical WNT/beta-catenin pathway in bovine granulosa cells.  
M251  Effects of organic versus inorganic trace mineral supplementation on bull semen quality before and after freezing.  

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

M253  Effect of selenium and a glucocorticoid precursor on fertility in Creole Rodeo cows synchronized with CIDR, PGF2α, eCG, and GnRH.  

M254  Effects of heat stress on skeletal muscle insulin responsiveness in lactating Holstein cows.  
L. C. Cole¹, M. V. Skrzypek¹, S. R. Sanders¹, M. R. Waldron¹, L. H. Baumgard², and R. P. Rhoads**, 1University of Arizona, Tucson, 2Iowa State University, Ames, 3University 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*, O. Ange-García¹, CA Meza-Herrera², FG Veliz¹, and M. Mellado¹, ¹Universidad Autónoma Agraria Antonio Narro, Torreón, Coahuila, México, ²Universidad Autónoma Chapingo, Bermejillo, Durango, México.

M257  Expression patterns of eNOS in 13 different tissues shows a new isoform in bovine brain stem.  
M. De Donato*, M. A. Adefewa¹,², and I. G. Immunorin, ¹Dept of Animal Science, Cornell University, Ithaca, NY, ²Dept 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*⁴, J. Sumner-Thomson², J. P. McNamara², and J. J. Loor³, ¹University of Illinois, Urbana, ²Washington 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*, R. S. Bisinotto¹, E. S. Ribeiro¹, H. Ayres¹, L. F. Greco¹, C. A. Risco¹, W. W. Thatcher¹, and J. E. P. Santos¹, Animal Sciences Department, University of Florida, Gainesville, 2Large Animal Clinical Sciences, University of Florida, Gainesville.

L. G. D. Mendonça*, M. Amstalden¹, and R. C. Chebel¹, ¹Department of Veterinary Population Medicine, University of Minnesota, St. Paul, ²Department 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.

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Dairy Production

M263  Effect of a rumen-protected niacin product on lactation performance by dairy cows during summer in Wisconsin.  

M264  Body condition score at calving affected milk yield and blood metabolites in Holstein dairy cows.  
Y. Moharrami¹, G. R. Ghorbani¹, H. R. Rahmani¹, S. M. Nasrollahi¹, and C. Li², ¹Department of Animal Sciences, Isfahan University of Technology, Isfahan, Iran, ²Agriculture 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. Moharrami¹, G. Ghorbani¹, H. Rahmani¹, S. M. Nasrollahi¹, and C. Li², ¹Department of Animal Sciences, Isfahan University of Technology, Isfahan, Iran, ²Agriculture 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. Campos¹*¹,³, S. G. Coelho¹, A. M. Q. Lana¹, E. Rabelo¹, E. A. Alvarenga¹, and B. F. Siliper², ¹Escola de Veterinária da Universidade Federal de Minas Gerais, Belo Horizonte, Minas Gerais, Brasil, ²Fundação de Amparo à Pesquisa do Estado de Minas Gerais, Belo Horizonte, Minas Gerais, Brasil, ³Recursos Humanos no Agronegócio, Belo Horizonte, Minas Gerais, Brasil.
Effect of pen change on daily milk yield of dairy cows.
A. Zwald* and R. D. Shaver, University of Wisconsin-Madison, Madison.

Milking management of crossbred Holstein x Gyr (F1) cows without calf on production performance.
L. H. Oliveira¹, J. M. S. Filho¹, F. L. B. Toral¹, and R. B. Reis²,³,¹Federal University of Minas Gerais (UFMG), Belo Horizonte, Minas Gerais, Brazil, ²FAPEMIG, Belo Horizonte, Minas Gerais, Brazil.

Risk management practices by Idaho dairy producers.
R. J. Norell¹, C. W. Gray³, and M. Chahine³, ¹University of Idaho, Idaho Falls, ²University of Idaho, Twin Falls.

High diurnal fluctuations of ambient temperature do not improve the adaptation of dairy cows to heat stress.
H. Khelii¹,², P. Faverdin¹,², and A. Boudon*¹,², ¹INRA, Saint-Gilles, France, ²Agrocampus Ouest, Rennes, France.

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

Milk, fat, and protein production in relationship to herd linear somatic cell score in Minnesota.

Effects of water total dissolved solids on milk-fed calves weight gain, feed intake and weaning age in winter.
R. Ramezankhani¹, A. Alizadeh¹, A. Nasserian², M. Chehrazi³, and B. Saremi*, ¹Department of Animal Science, Islamic Azad University, Saveh Branch, Saveh, Iran, ²Department of Animal Science (Excellent Center of Animal Nutrition), Faculty of Agriculture, Ferdowsi University of Mashhad, Mashhad, Iran, ³Epidemiology and Reproductive Health Department, Royan Institute for Reproductive Biomedicine, ACECR, Tehran, Iran, ⁴Institute of Animal Science, Physiology and Hygiene unit, University of Bonn, Bonn, Germany.

Occurrence of milk unstable protein in dairy farms from southeastern region of Brazil.
L. C. Roma Junior*, A. C. O. Rodrigues¹, T. G. R. Amaral², F. Cardoso²,³, and P. F. Machado², ¹APTA Centro Leste, Ribeirao Preto, Sao Paulo, Brazil, ²Clinica do Leite/ESALQ/USP, Piracicaba, Sao Paulo, Brazil, ³Department of Animal Science, University of Illinois, Urbana.

Alternative cooling of dairy cows by wetting the udder.
J. A. Binversie*, J. D. Davis¹, K. G. Gebremedhin², C. N. Lee³, and J. E. Larson¹, ¹Mississippi State University, Mississippi State, ²Cornell University, Ithaca, NY, ³University of Hawaii, Honolulu.

Effect of essential oils on production and reproduction in early lactating cows during heat exposure.
U. Serbester¹, M. Çmar¹, A. Ceyhan¹, H. Erdem¹, M. Gürgiül¹, H. R. Kutlu¹, L. Baykal Çelik¹, O. Yucelt¹, F. W. Cardozo*¹, and M. Blanch¹, ¹Bor Vocational School, University of Nigde, Turkey, ²Department of Obstetrics and Gynecology, Faculty of Veterinary Medicine, University of Selcuk, Turkey, ³Department of Animal Science, Faculty of Agricultural, University of Cukurova, Turkey, ⁴Ekoł Company, Turkey, ⁵Novus International Inc., St. Charles, MO.

The relationship between milk urea nitrogen with milk yield and protein percentage categories for Iranian Holstein cows.
F. Fatehi*¹, M. Honavar², M. Dehghan-Banadaky³, A. Zali¹, and A. Young¹, ¹Department of Animal Science, Campus of Agriculture and Natural Resource, University of Tehran, Karaj, Iran, ²Islamic Azad University, Shahrriar_Shahr_e_Qods Branch, Shahrriar, Iran, ³Department of Animal, Dairy, and Veterinary Sciences, Utah State, Logan.

Stage of lactation is associated with differences in the metabolic profiles and innate immunity in dairy cows transitioning to an organic management system.

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.

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.

Economic assessment of postpartum milking frequencies on dairy farms.

Milk fat and protein:fat ratio in California dairies.
N. Silva-del-Rio*, A. Lago¹, B. Verboort¹, and H. Selvaraj¹, ¹University of California Cooperative Extension, Tulare, ²APC Inc., Ankeny, IA, ³Agritech Analytics, Visalia, CA.

Performance of post-weaned Holstein heifers fed a grain mix with free choice hay or a total mixed ration (TMR) containing sweet corn cappenny waste, hay and dried distillers grains.
D. Schimek*¹, D. Ziegler², B. Ziegler¹, H. Chester-Jones¹, M. Raeth-Knight¹, and G. Golombeski¹, ¹Hubbard Feeds Inc., Mankato, MN, ²University of Minnesota Southern Research and Outreach Center, Waseca, ³University of Minnesota, St. Paul.

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.
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-Jones1, A. Doering2, D. Timmerman3, M. Raeth-Knight4, and G. Golombeski5, 1University of Minnesota Southern Research and Outreach Center, Waseca, 2Agricultural Utilization Research Institute, Waseca, MN, 3University of Minnesota, St. Paul.

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-Chirino1, C. Meza-Herrera3, F. G. Veliz2, and J. R. Arevalo6, 1Autonomous Agrarian University Antonio Narro, Department of Animal Nutrition, Saltillo, México, 2Autonomous Agrarian University Antonio Narro, Faculty of Veterinary Medicine, Torreon, Mexico, 3Universidad Autónoma Chapingo, Unidad Regional Universitaria de Zonas Áridas, Bermejillo, México, 4University of La Laguna, Department of Parasitology, Ecology and Genetics, La Laguna, Spain.

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Impact of corn processing method and soy glycerin on fecal shedding from cattle inoculated with Escherichia coli O157:H7.

Different levels of urea in concentrate supplementation of grazing cattle during the transition period of dry to rainy seasons under tropical conditions.
A. G. Silva1, H. J. Fernandes*, 1, L. O. Tedeschi1, M. F. Paulino1, S. A. Lopes1, and A. A. Rocha1, 1Federal University of Viçosa, Viçosa, MG, Brazil, 2State University of Mato Grosso do Sul, Aquidauana, MS, Brazil, 3Texas A&M University, College Station.

Effects of monensin on rumen metabolism of steers fed 60% dried distillers grains diets.
T. L. Felix1, N. A. Pyatt2, and S. C. Loerch3, 1The Ohio State University, Wooster, 2Elanco Animal Health, Greenfield, IN.

Carass composition of mature cows subjected to a nutritional restriction and two levels of compensatory growth.
K. O. Barros1, H. J. Fernandes*, 1, G. L. D. Feijó2, M. A. Rezende3,1, H. O. A. Santana1, E. Rosa1, L. M. Paiva1, and J. C. Souza1, 1State University of Mato Grosso do Sul, Aquidauana, MS, Brazil, 2EMBRAPA Beef Cattle Center, Campo Grande, MS, Brazil, 3Federal University of Grande Dourados, Dourados, MS, Brazil.

Combined use of ionophore and virginiamycin on feeding behavior of Nellore steers fed high concentrate diets.
A. J. C. Nuñez1*1, V. V. Almeida1, R. C. Gomes1, F. T. Mercado2, I. E. Borges3, J. Guerra4, F. Pinede4, P. R. Leme5, and J. C. M. Nogueira Filho6, 1USP/FZEA, Pirassununga, SP, Brazil, 2USP/ESALQ, Piracicaba, SP, Brazil.

Performance and carcass traits of beef bulls fed crude glycerin in the diet.
J. P. I. S. Monnerat1, P. V. R. Paulino*, S. C. Valadares Filho1, I. M. De Oliveira1, L. H. P. Da Silva1, R. Mezzomo1, M. S. Duarte1, and S. F. DOS Reis, Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil.

Effect of dietary urea-N levels on growth performance and blood biochemical indexes of growing-finishing cattle.
L. Jiang1, Y. L. Huo1, L. P. Ren1, Z. M. Zhou1, and Q. X. Meng1, 1State Key Laboratory of Animal Nutrition, College of Animal Science and Technology, China Agricultural University, Beijing 100193, China.

In situ ruminal protein degradability of distiller’s grain varying grain source and milling process in beef cattle.
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Effects of monensin and probiotics on finishing Nellore bulls performance, carcass characteristics, and liver abscesses.
C. Sitta1, A. M. Pedros01, G. B. Moura01, R. Carare01, J. R. R. Dorea1, T. G. Neri1, D. A. Rodrigues1, W. F. Angolini2, and F. A. P. Santos*, 1University of São Paulo, Piracicaba, SP, Brazil, 2Embrapa Cattle Southeast, São Carlos, SP, Brazil.

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. Naemipour, and H. Farhangfar, Birjand University, Birjand, Southern Khorasan, Iran.

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. Boling3, R. Xia0, D. Mallonee1, R. F. Power2, and J. C. Matthews2, 1Alltech Center for Animal Nutrigenomics and Applied Animal Nutrition, Nicholasville, KY, 2Department of Animal and Food Sciences, University of Kentucky, Lexington.

Effect of zilpaterol hydrochloride supplementation feeding duration on growth performance and carcass characteristics of feedlot heifers.
J. C. Robles-Estrada*, H. Dávila-Ramos1, A. Estrada-Angulo1, A. Plascencia5, F. G. Rios5, and R. A. Zinn4, 1Universidad Autónoma de Sinaloa, Culiacán, Sinaloa, México, 2Universidad Autónoma de Baja California, Mexicali, B.C., México, 3University of California-Davis, El Centro.
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*¹, K. A. Beauchemin, and S. M. McGinn, Agriculture and Agri-Food Canada, Research Centre, Lethbridge, Alberta, Canada.

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*¹, K. A. Beauchemin, and S. M. McGinn, Agriculture and Agri-Food Canada, Research Centre, Lethbridge, Alberta, Canada.

Potential modulation of the inflammatory response associated with enteropathogenic Escherichia coli infections in young calves using Actigen.
A. Aris¹, E. Rodriguez*², A. Tort¹, M. Terré¹, F. Fabregas¹, K. A. Jacques¹, and A. Bach¹-², ¹Ruminant Production, Institució de Recerca i Tecnologia Agroalimentàries (IRTA), Caldes de Montbui, Barcelona, Spain, ²Institució Catalana de Recerca i Estudis Avançats (ICREA), Barcelona, Barcelona, Spain, ³Center for Animal Nutrigenomics and Applied Animal Nutrition, Alltech, Nicholasville, KY.

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.

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.

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*¹, W. Otero¹, C. Barreto¹, V. Pellizarli², F. Ferreira¹, M. Arrigoní¹, and P. Rodrigues¹, ¹University of Sao Paulo, FMVZ-USP, Pirassununga, Sao Paulo, Brazil, ²University of Sao Paulo State, FMVZ-UNESP, Botucatu, Sao Paulo, Brazil, ³University of Sao Paulo, ICB II-USP, Sao Paulo, Sao Paulo, Brazil.

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. McAllister¹, H. Sultana¹, M. Oba¹, M. E. R. Dugan², J. P. Kastelic¹, and J. J. McKinnon¹, ¹Lethbridge Research Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, ²University of Saskatchewan, Saskatoon, SK, Canada, ³University of Alberta, Edmonton, AB, Canada, ⁴Lacombe Research Centre, Agriculture and Agri-Food Canada, Lacombe, AB, Canada.

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*¹-², W. Z. Yang¹, T. A. McAllister¹, M. E. R. Dugan², K. A. Beauchemin¹, and J. J. McKinnon³, ¹Lethbridge Research Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, ²University of Saskatchewan, Saskatoon, SK, Canada, ³Lacombe Research Centre, Agriculture and Agri-Food Canada, Lacombe, AB, Canada.

Effect of early grain feeding on ADG and signaling proteins for protein synthesis in the muscle tissues of beef animals.

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. Jennings¹, ¹Department of Animal and Range Sciences, South Dakota State University, Brookings, ²Alltech Inc., Brookings, SD.

Acetate clearance rates and postabsorptive capacity to utilize acetate by beef steers.

Blood profile of bulls fed different levels of crude glycerin.

Effect of specific polyclonal antibody preparation doses on ruminal variables in cattle fed high concentrate diets.
J. Bastos*², C. Marino¹, D. Millen², R. Pacheco², J. Magalhaes¹, J. Carvalho¹, M. Arrigoni¹, and P. Rodrigues¹, ¹University of Sao Paulo, FMVZ-USP, Pirassununga, Sao Paulo, Brazil, ²University of Sao Paulo State, FMVZ-UNESP, Botucatu, Sao Paulo, Brazil, ³Nutribeef Consultancy, Botucatu, Sao Paulo, Brazil.

Corn grain processing methods and forage levels in finishing diets for Nellore bulls.
R. Carareto¹, F. A. P. Santos*², G. Mourão¹, A. M. Pedroso¹, C. Sitta¹, M. P. Soares¹, M. R. Paula¹, R. S. Marques¹, and M. C. Soares¹, ¹University of Sao Paulo, Piracicaba, Sao Paulo, Brazil, ²Embrapa Cattle Southeast, Sao Carlos, Sao Paulo, Brazil.
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M313 Effect of sugar and sodium propionate for barley grain in dairy calves starter on weaning and performance.

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.

M316 Steam-flaked soybeans in lactating dairy cow diets.

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

M318 Effect of malate supplementation to dairy cows on milk production: A meta-analysis.

M319 Independent effects of diet chemical fiber and physical measurements on dairy cows.

M320 Effect of feeding Camelina sativa seeds or meal on lactation performance and milk fatty acid composition in lactating dairy cows.
J. P. Sarramone*, C. Benchaar, Y. Lebeuf*, R. Gervais, and P. Y. Chouinard*, Département des sciences animales, Université Laval, Québec, QC, Canada, Institute of Nutraceuticals and Functional Foods (INAF), Québec, QC, Canada, 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.

M322 Performance and milk fatty acid profile of dairy goats fed a total mixed ration (TMR) containing an unprotected conjugated linoleic acid (UCLA) supplement.

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.

M325 Effect of milk feeding level on pre- and post-weaning performance of dairy calves.
E. K. Miller-Cushon*, R. Bergeron, K. E. Leslie, and T. J. DeVries*, Dept. Animal and Poultry Science, University of Guelph, Kemptville Campus, Kemptville, ON, Canada, Dept. Animal and Poultry Science, University of Guelph, Campus d’Alfred, Alfred, ON, Canada, 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*, S. L. Li*, Y. J. Wang, X. Jin, H. Cao, F. C. Guo*, and Y. M. Wan, State Key Laboratory of Animal Nutrition, College of Animal Science and Technology, China Agricultural University, Beijing, China, 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.
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M328 Effect of metabolizable protein level on milk production and composition of early lactating Holstein cows.
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L. Puggaard1, A. Liesegang2, J. Sehested*, and P. Lund1, 1Department of Animal Health and Bioscience, Aarhus University, Tjele, Denmark, 1Vetsuisse 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. Marino2, W. Otero1, C. Barreto1, V. Pellizzari1, F. Ferreira1, M. Arrigoni1, and P. Rodrigues1, 1University of Sao Paulo, FMVZ-USP, Pirassununga, Sao Paulo, Brazil, 2University of Sao Paulo State, FMVZ-UNESP, Botucatu, Sao Paulo, Brazil, 3University 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*, M. Hostens, E. Colman, S. De Campeneere, G. Opsomer, and V. Fievez, 1Laboratory for Animal Nutrition and Animal Product Quality, Ghent University, Melle, Belgium, 2Department of Reproduction, Obstetrics and Herd Health, Ghent University, Merelbeke, Belgium, 3Department 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.
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M333 Effect of cow variation on the efficiency of nitrogen recycling to the rumen in dairy cattle.
M. Aguilar*, M. E. Van Amburg1, W. A. D. Nayananjali2, and M. D. Hanigan1, 1Virginia Polytechnic Institute and State University, Blacksburg, 2Cornell 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*, B. Ziegler, D. Schimek, M. Raeth-Knight, G. Golombeski1, J. Linn, N. Litherland, D. Ziegler, and H. Chester-Jones, 1Milk Products, Chilton, WI, 2Hubbard Feeds Inc., Mankato, MN, 3University of Minnesota, St. Paul, 4University of Minnesota, Southern Research and Outreach Center, Waseca, MN.

M335 Form of trace mineral supplementation on complete lactation performance, reproduction, and locomotion in Holstein cows.

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

M337 Comparison of models to predict ruminal methane from milk fatty acids.

M338 Effects of methionine analog supplement supplementation on milk yield and composition of primiparous dairy cows in a Brazilian dairy herd.
L. Alegansi1, V. L. Souza1, M. C. Doska1, G. F. Zanetti1, E. M. Ribas2, A. Ostrensky1, and R. Almeida*, 1Universidade Federal do Paraná, Curitiba, PR, Brazil, 2Nutron Alimentos, Brazil, 3Pontificia Universidad Católica do Paraná, Curitiba, PR, Brazil.

M339 Dry matter digestibility of dairy goats diets during pregnancy.

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*, I. Rodrigues, and K. Kiyothong, 1Biomin Holding GmbH, Herzogenburg, Austria, 2School 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. Bach1, 1Ruminant Production, IRTA, Caldes de Montbui, Barcelona, Spain, 2ICREA, 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. Gervais1, B. Vlaeminck2, A. Fanchone1, P. Nozière1, M. Doreau1, and V. Fievez1, 1Département des sciences animales, Université Laval, Québec, Québec, Canada, 2Lanupro, Ghent University, Melle, Belgium, 3Unité de Recherches Zootécchniques, INRA, Petit Bourg, Guadeloupe, France, 4Unité 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*, C. U. Magnabosco1, E. A. Filgueiras1, R. Guimarães1, E. M. C. Freitas1, and L. R. Mattos1, 1University of California, Davis, 2Embrapa, Brasilia, DF, Brazil, 3Embrapa Cerrados, Planaltina, DF, Brazil, 4Embrapa Arroz e Feijão, Santo Antonio de Goiá, GO, Brazil, 5Biofórmula, Goiânia, GO, Brazil, 6Embrapa Gado de Leite, Juiz de Fora, MG, Brazil.
M344 Effects of abomasal dosing of ferrous lactate in lactating dairy cows.

M345 Glycerin as a replacement for corn in dairy Holstein cows diets.
J. B. D. Sancanari*, J. M. B. Ezequiel1, E. H. C. B. van Cleef1,2, V. R. Fávaro1, A. P. D’Aurea1,2, A. C. Homem1, Z. F. Silva1, D. A. V. Silva1,3, and J. W. Cattelan1, 1São Paulo State University, Jaboticabal, São Paulo, Brazil, 2FAPESP, São Paulo, São Paulo, Brazil.

M346 Rolled barley grain treated with lactic acid and heat altered postprandial rumen mineral availability in lactating dairy cows.

M347 Phosphorus feeding for second lactation dairy cows.
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M348 Biochemical blood parameters of dairy cows fed with increasing concentration of glycerin.
J. B. D. Sancanari*, J. M. B. Ezequiel1, E. H. C. B. van Cleef1,2, V. R. Fávaro1, A. P. D’Aurea1,2, A. C. Homem1, Z. F. Silva1, D. A. V. Silva1,3, and J. W. Cattelan1, 1São Paulo State University, Jaboticabal, São Paulo, Brazil, 2FAPESP, 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.

M350 Performance variables of dairy cattle fed a commercial micronutrient supplement during the peripartum period.

M351 Effect of whole versus chopped sugar cane on dry matter intake in dry dairy cows.
J. E. Pérez-De La Ossa1 and R. P. Lana1,2, 1Universidade Federal de Viçosa, MG, Brazil, 2CNPq 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*, J. M. de S. Campos2, A. S. Oliveira1, S. A. Santos4, and S. M. Souza4, 1Instituto Federal de Tecnologia, Rio Pomba, MG, Brazil, 2Universidade Federal de Pernambuco, Guararanaus, PE, Brazil, 3Universidade Federal de Mato Grosso, Sinop, MT, Brazil, 4Universidade 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.

M358 Peripheral blood leukocyte population dynamics in peripartum dairy cattle managed under different dry period nutritional strategies.

M359 Digestion and rumen fermentation in precision-fed dairy heifers on low or high forage rations at four levels of dry distillers grain.

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. Rossov1, R. J. van Hoeij2, and G. Acetoze*, 1University of California, Davis, 2Utrecht University, Utrecht, the Netherlands.

C. Lee*, A. N. Hristov1, K. Heyler1, T. Cassidy1, H. Lapierre2, G. A. Varga1, and G. Parys3, 1Pennsylvania State University, University Park, 2Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, 3Evonik 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*, S. C. Kim2, D. H. Kim1,2, J. J. Romero3, H. J. Lee1,3, J. H. Shin1, O. C. M. Queiroz2, K. G. Arriola1, C. R. Staples1, and A. T. Adesogan1, 1Department of Animal Sciences, University of Florida, Gainesville, 2Department of Animal Sciences, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, 3Department of Animal Sciences, Institute of Agriculture and Life Sciences, Gyeongsang National University, Gyeongnam, Jinju South Korea.
Use of an anti-inflammatory additive in preweaning Holstein calves.
L. A. Borunda1,2, D. Dominguez1, G. Villalobos1, J. Arteaga1, E. Santellano1, M. Cook2, and M. Yang3, 1Universidad Autónoma de Chihuahua, Chihuahua, Chihuahua, México, 2Aova Technologies Inc., Madison, WI.

Effect of dietary trans fatty acids on milk yield and milk composition of early lactating dairy cows.

Effect of nicotinamide on milk yield and retention of cows on commercial California dairies.

Periparturient supplementation of saturated and unsaturated fat sources differentially alters the fatty acid profile of colostrum and milk fat of Holstein cows.
M. Garcia5,6, L. F. Greco1, A. Lock1,2, J. E. P. Santos5, and C. R. Staples1, 1University of Florida, Gainesville, 2Michigan State University, East Lansing.

Effects of reduced dietary protein and supplementing rumen protected amino acids on the nitrogen efficiency of dairy cows.
A. L. Bell7*, M. J. de Veth2, T. R. Wiles1, O. Becvar3, and M. D. Hanigan1, 1Virginia Polytechnic Institute and State University, Blacksburg, 2Balchem Corporation, New Hampton, NY, 3Virginia-Maryland Regional College of Veterinary Medicine, Blacksburg, VA.

The effect of direct-fed microbial supplementation on reproductive and production performance of primiparous Holstein heifers.
M. B. Cattell4, A. J. Nelson1, J. E. Nocek2, and L. C. Solórzano3*, 1Dairy Research and Technology LLC, Windsor, CO, 2Spruce Haven Farm and Research Center, Union Springs, NY, 3Chr. Hansen Inc., Milwaukee, WI.

Rumination behavior and its relationship to feeding behavior in Holstein dairy cows prepartum.
K. Schirmann4,5,6, N. Chapin7, D. M. Weary7, W. Heuwieser2, and M. A. G. von Keyserlingk1, 1Animal Welfare Program, Faculty of Land and Food Systems, The University of British Columbia, Vancouver, BC, Canada, 2Clinic for Animal Reproduction, Faculty of Veterinary Medicine, Freie Universität Berlin, Berlin, Germany.

Performance of dairy calves offered alternative pre-weaning feeding programs.

Effect of Origanum vulgare L. leaves on production and milk fatty acid composition in lactating dairy cows.
A. N. Hristov8, C. Lee9, T. Cassidy1, K. Heyler1, J. A. Tekippe1, G. A. Varga1, and B. Corl2, 1Pennsylvania State University, University Park, 2Virginia Polytechnic Institute and State University, Blacksburg.

Ruminant Nutrition
Ruminal Metabolism

Evaluation of algae as livestock feed.

Hourly changes in fatty acid profile of ruminal contents in continuous cultures as soybean oil is added and removed from the diet.
C. M. Klein4, S. K. Thurmond, P. H. Morris, and T. C. Jenkins, Clemson University, Clemson, SC.

Effects of tannin extracts on in vitro growth of selected food-borne pathogenic bacteria.
B. J. Min1, B. R. Min2, J. M. Sieg3, J.-S. Eun4*, D. R. ZoBell5, and D. C. Tice6, 1Department of Agricultural and Environmental Sciences, Tuskegee University, Tuskegee, AL, 2Department of Animal, Dairy, and Veterinary Sciences, Utah State University, Logan, 3Department of Agricultural and Environmental Sciences, Tuskegee University, Tuskegee, AL.

Tannin extracts decrease in vitro growth of ruminal acidosis-causing bacteria in pure culture.
J.-S. Eun4*, B. R. Min2, J. M. Sieg3, D. R. ZoBell5, and A. J. Young1, 1Department of Animal, Dairy, and Veterinary Sciences, Utah State University, Logan, 2Department of Agricultural and Environmental Sciences, Tuskegee University, Tuskegee, AL.

Effects of wheat dried distillers grains with solubles (DDGS) and cinnamaldehyde (CIN) on fermentation and protein degradation in Ruscitec.
Y. L. Li3,4, M. L. He5, K. A. Beauchemin1, and W. Z. Yang6*, 1Research Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, 2Feed Research Institute, Chinese Academy of Agricultural Sciences, Beijing, China.

In vitro digestion and gas production of wheat grain varying processing.
W. Z. Yang*1, T. A. McCAllister1, and M. Oba7, 1Research Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, 2Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada.

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-Arizabad†, M. Danesh Megsaran, A. R. Vakili, and K. Rezayazdi, †Dept. of Animal Science, Excellence Center for Animal Science, Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran, †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.

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

M383  Ruminal degradation of the dry matter of the sugar cane silage.

M384  A novel method to measure rumen stability of three ruminant protected products.
S. Zhao, J. Wang*, D. Bu, and Y. Zhang, 1State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China.

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, 1Clemson University, Clemson, SC.

M386  Effect of a handmade inoculum and additive on in vitro dry matter digestibility of sugar cane silage.

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

M388  The response of urea-N 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*, Z. Yu, and Q. Meng†, †College of Animal Science and Technology and State Key Laboratory of Animal Nutrition, China Agricultural University, Beijing, 100193, China, †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*,‡, I. P. C. Carvalho‡, G. Fiorentini‡, and J. F. Lage‡, 1São Paulo State University, Jaboticabal, São Paulo, Brazil, 1FAPESP– Fundação de Amparo à 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*†, G. Fiorentini§, I. P. C. Carvalho‡, J. F. Lage‡, and R. C. Canesín§, 1São Paulo State University, Jaboticabal, São Paulo, Brazil, 1FAPESP– Fundação de Amparo à Pesquisa do Estado de São Paulo, São Paulo, São Paulo, Brazil.

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**Ruminant Nutrition**

**Small Ruminant**

M393  Blood biochemical constituents in growing lambs fed on orange pulp ensiled with exogenous enzymes.
A. Z. M. Salem*, Z. H. M. Gado, N. E. Odongo, and B. E. Borhami, 1Department of Animal Production, Faculty of Agriculture (EI-Shatby), Alexandria University, Alexandria, Egypt, 1Department of Animal Production, Faculty of Agriculture, Ain Shams University, Cairo, Egypt, 1Animal Production and Health Section, Joint FAO/IAEA Division of Nuclear Techniques in Food and Agriculture, International Atomic Energy Agency, Vienna, Austria, 1Centro Universitario UAEM-Temascaltepec, Universidad Autónoma del Estado de México, Estado de México, México.
**Small Ruminant Nutrition**

**Small Ruminant Nutrition**

**M401**

**Feed intake and performance by yearling Boer goat doelings consuming deep-stacked or ensiled broiler litter.**


**M402**

**Effects of night-locking on intake, digestion, behavior, and energy use by meat goat does grazing grass/legume pasture.**


**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-Yangije1, R. Pirmohammadi1, J. Amini Jabal Kandi1, and H. Khalilvandi-Behroozyar1,2,3, 1Department of Animal Science, Urmia University, Urmia, West Azerbaijan, I. R. Iran, 2Department of Animal Science, West Azerbaijan Agriculture and Natural Resource Research Center, Urmia, West Azerbaijan, I. R. Iran, 3Department 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-Yangije1, R. Pirmohammadi1, J. Amini Jabal Kandi1, and H. Khalilvandi-Behroozyar1,2,3, 1Department of Animal Science, Urmia University, Urmia, West Azerbaijan, I. R. Iran, 2Department of Animal Science, West Azerbaijan Agriculture and Natural Resource Research Center, Urmia, West Azerbaijan, I. R. Iran, 3Department 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 Saab1,2, F. T. Sleiman1, F. Ayoub, and P. Y. Aad3, *Lebanese University, Faculty of Agricultural & Veterinary Sci., Bekwaneh, Lebanon, 1Holy Spirit University of Kaslik, Faculty of Agricultural Sci., Kaslik, Lebanon, 2American University of Beirut, Faculty of Agricultural & Food Sci., Beirut, Lebanon, 3Notre Dame University, Faculty of Natural & Applied Sci., Louaizeb, Lebanon.*

**M406**

**Nutrient intake and performance of lambs fed diets with different levels of inactive dry yeast.**

L. D. A. Rufino1, O. G. Pereira1, K. G. Ribeiro, S. C. V. Filho1, and L. L. Cardoso1, *Federal University of Viçosa, Viçosa, Minas Gerais, Brazil, 1Universidade 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*, A. V. Chaves1, A. Tanner2, T. A. McAllister2,3, D. J. Gibb, F. van Herk, and R. D. Bush1, 1Faculty of Veterinary Science, The University of Sydney, Sydney, NSW, Australia, 2Faculty of Agriculture, Food and Natural Resources, University of Sydney, Sydney, NSW, Australia, 3Agriculture 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. Silva1, K. G. Ribeiro4, O. G. Pereira2, S. C. V. Filho3, D. S. Pina2, and P. V. R. Paulino2, 1Federal University of Jequitiinhonha and Mucuri Valleys, Diamantina, Minas Gerais, Brazil, 2Federal University of Viçosa, Viçosa, Minas Gerais, Brazil, 3Federal 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. Hernández1,2, R. Rojo1, A. González2, A. Z. M. Salemi1, F. Lucero2, J. L. Tinoco1, A. Carreón2, and J. F. Vázquez1, 1Centro Universitario UAEM-Temascaltepec, Universidad Autónoma del Estado de México, Temascaltepec, Estado de México, México, 2Unidad Académica Multidisciplinar 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-Muñoz1, E. Carrillo1, C. A. Meza-Herrera1, C. Leyva1, H. Zermeño-González1, R. Rodríguez-Martínez1, M. Mellado1, F. G. Véliz1, and G. Arellano-Rodriguez2, 1Instituto Tecnológico de Torreón, Torreón, Coahuila, México, 2Universidad Autónoma Chapingo, Unidad Regional Universitaria de Zonas Áridas, Bermejillo, Durango, México, 3Universidad Autónoma Agraria Antonio Narro, Torreón, Coahuila, México.

M412

Evaluation of crude glycerin on performance and carcass characteristics of growing meat goats.
K. B. Tuoho*, N. K. Gurung3, S. G. Solaiman1, B. R. Min1, J.-S. Eun2, and W. H. McElhenney3, 1Tuskegee University, Tuskegee, AL, 2Utah State University, Logan.

M413

A meta-analysis for comparing dry matter intake prediction models in dairy goats.

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.

M416

Net energy requirements for growth of female Saanen goat kids.

M417

Effect of Clinoptilolite (zeolite) substituting for corn-soybean meal on productive performance and carcass characteristics of Pelibuey sheep.

M418

Effect of live yeast Saccharomyces cerevisiae (strain Sc 47) on fattening efficiency and blood parameters of growing Mehraban lambs.
N. Baleghi1, A. Taghizadeh2, A. FarahAvarg, and H. Khalivandi-Behroozyar*1, 1Islamic Azad University, Maragheh Branch, 2Department of Animal Science, University of Tabriz, 3Department of Animal Science, University of Tehran, 4Department of Animal Science, Urmia University.

M419

Relationship of blood enzymes and metabolites to residual feed intake of lambs.

M420

Nutritive value of Vicia pannonica forage and its effect on ram Kurdish lamb performance.
F. Fatahnia1, M. Moeini2, F. Moradi2, R. Ebnabasi3, and H. Mirzaei Alamouti*, 1Department of Animal Science, University of Ilam, Iran, 2Department of Animal Science, University of Zanjan, Iran.

M421

Daily supplementation of Saccharomyces cerevisiae (strain Sc 47) can cause reduction of blood cholesterol.
N. Baleghi1, A. Taghizadeh2, A. FarahAvarg, and H. Khalivandi-Behroozyar*1, 1Islamic Azad University, Maragheh Branch, 2Department of Animal Science, University of Tabriz, 3Department of Animal Science, University of Tehran, 4Department of Animal Science, Urmia University.
Cull pinto bean as a supplement to pregnant-lactating hair ewes.

Effect of different sources of lipid on blood parameters of sheep.

Use of ionophores in Santa Inês lambs diet for meat production.
P. M. França1, J. R. O. Pérez1, V. A. A. Reis1, I. F. Furuscho-Garcia*, R. F. Leite2, F. Oliveira3, S. P. Greca1, and I. Leopoldino Junior1, 1Universidade Federal de Lavras, Lavras, Minas Gerais, Brasil, 2Universidade Paulista Júlio de Mesquita Filho, Jaboticabal, São Paulo, Brasil, 3Universidade Paulista Júlio de Mesquita Filho, Botucatu, São Paulo, Brasil.

Evaluation of behavior and apparent dry matter intake of sheep in tropical pasture.
F. P. Portilho*, J. M. S. Diogo1, and S. L. S. Cabral Filho1, 1University of Brasília, Brasilia, DF, Brazil, 2Agrodefesa, Rio Verde, GO, Brazil.

Palatability of sainfoin (Onobrychis vicifolia Scop.) in sheep.
H. Khalilvandi-Behroozyar*, M. Dehghan-Banadaky1, and K. Rezayazdi3, 1Department of Animal Science, University of Tehran, Karaj, Tehran, Iran, 2Department of Animal Science, University of Urmia, Urmia, West Azerbaijan, Iran.

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.
SYMPOSIA AND ORAL SESSIONS

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*, T. M. Casey-Trott1, and M. A. Erasmus2, 1Campbell Centre for the Study of Animal Welfare, University of Guelph, Guelph, Ontario, Canada; 2Michigan 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*, J. P. Reynolds1, D. D. Griffin3, and G. Johnson4, 1Iowa State University, Ames; 2Western Veterinary College, Pomona, CA; 3University of Nebraska, Lincoln; 4Reedsburg, Wisconsin.

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

Animal Health
Beef
Chair: Holly Neibergs, Washington State University
Sponsor: Pfizer Animal Health
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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*, E. B. Kegley1, J. G. Powell1, R. G. Schaut2, R. E. Sacco3, and J. F. Ridpath4, 1University of Arkansas, Fayetteville, 2Iowa State University, Ames, 3USDA-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*, L. N. Edwards, R. A. Mosher1, A. M. O’Connor2, B. Wang1, B. KuKanich1, and D. A. Blasi2, 1Kansas State University, Department of Animal Science and Industry, Manhattan; 2Iowa State University, Ames.

10:00 AM  15  Characterization and antibiotic susceptibility of Mycoplasma isolates from mastitic buffaloes.
I. Hussain*, S. ur Rahman1, F. A. Atif1, and M. Arif1, 1University College of Agriculture, University of Sargodha, Sargodha, Punjab, Pakistan; 2University 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.

10:45 AM  18  Genomic regions associated with incidence of disease in cattle using DNA pooling and a high-density single nucleotide polymorphism array.
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.

Lentisk (*Pistacia lentiscus* L.) browse prevents gastro-intestinal nematode infection in goats.

Occurrence of paratuberculosis in the hilly regions of Himachal Pradesh, India.

Status of *Mycobacterium avium* subspecies *paratuberculosis* Infection in the Cow Shelters (Goshalas/Pinjarapoles) in India.

Finishing performance and carcass traits of heifers previously managed with three respiratory disease protocols.
J. L. Wahrmund*, D. B. Burken, B. K. Wilson, S. J. Terrill, C. R. Krehbiel, D. L. Step, S. M. Trost, C. L. Goad, and C. J. Richards, Oklahoma State University, Department of Animal Sciences, Stillwater, Oklahoma State University, Department of Veterinary Clinical Sciences, Stillwater, Strategic Solutions International, Stillwater, 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

Management and genetic factors affecting efficiency of cattle in a grazing environment.

Genetics of postweaning performance of beef cattle on forage.

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

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

Effect of different genomic relationship matrices on accuracy and scale.
I. Misztal*, C. Y. Chen, I. Aguilar, Z. G. Vitezica, A. Legarra, and W. M. Muir, University of Georgia, Athens, Newsham Choice Genetics, Chesterfield, MO, INRA, Castanet-Tolosan, France, Purdue University, West Lafayette, IN, 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*, N. Gengler1,2, and I. Misztal, 1University of Liege, Gembloux Agro-Bio Tech, Animal Science Unit, Gembloux, Belgium, 2National Fund for Scientific Research, Brussels, Belgium, *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*, W. Yang*, J. P. Steibel, and N. M. Bello, 1Michigan State University, East Lansing, 2Kansas State University, Manhattan.

10:30 AM 33  Improving accuracy of genomic selection by hierarchical Bayesian modeling of spatially correlated chromosomal effects.  

10:45 AM 34  Incorporating molecular breeding values with variable call rates into genetic evaluations.  
S. D. Kachman*, G. L. Bennett, K. J. Hanford, L. A. Kuehn, E. J. Pollak, W. M. Snelling, M. L. Spangler, and R. M. Thallman, *University of Nebraska, Lincoln, 1University of Nebraska, Omaha, 2Kansas State University, Manhattan, 3University of Georgia, Athens.

11:00 AM 35  Impacts of inclusion of foreign data in genomic evaluation of dairy cattle.  
K. M. Olson*, P. M. VanRaden, and D. J. Null, 1National Association of Animal Breeders, Columbia, MO, 2Animal 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*, M. A. Pintus, R. Steri, G. Gaspa, D. Vicario, E. Santus, J. T. H. Van Kaam, and P. Ajmone Marsan, 1Università di Sassari, Sassari, Italy, 2ANAPRI, Udine, Italy, 3ANARB, Bussolengo, Italy, 4ANAFI, Cremona, Italy, 5Università 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*, J. P. Cassady, A. Rossoni, and C. Maltecca, 1North Carolina State University, Raleigh, 2Italian 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.  

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

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**Extension Education Symposium**

Reinventing Extension as a Resource — What does the Future Hold?

*Chair: Vanessa Corriher, Texas A&M University*

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9:30 AM  41  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. Miranda* 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.
Food Safety Symposium
Safe Food Production: Zoonotic Disease-Control, Responsibility, and Liability
Chair: Kristi Smedley, Center for Regulatory Services Inc.

9:30 AM
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
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

9:30 AM
Effect of microbial inoculants on the quality and stability of bermudagrass haylage.
K. G. Arriola*, O. C. M. Queiroz1, J. J. Romero1, J. Kivipelto1, E. N. Muniz2, J. C. Hamie1, M. A. Zarate1, L. G. Paranhos1, and A. T. Adesogan1, 1Department of Animal Sciences, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, 2Embrapa Tabuleiros Costeiros, Aracaju, SE Brazil.

9:45 AM
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
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.

10:15 AM
Intake and digestibility in steers fed sugarcane ensiled with different levels of calcium oxide.

10:30 AM
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
Forage mineral concentrations and mineral status of beef cattle grazing cool season pastures in northwestern Florida, emphasizing magnesium.

11:00 AM
In vitro rumen fluid digestion activity of grazing cows as related to productivity and days postpartum.
Forage characteristics and animal performance of beef heifers grazing ‘Mulato II’ brachiariagrass in North-Central Florida. 
J. M. B. Vendramini*, G. C. Lamb§, L. E. Sollenberger*, J. L. Foster, and M. Maddox. 1UF/IFAS Range Cattle Research and Education Center, Ona, 2UF/IFAS North Florida Research and Education Center, Marianna, 3Agronomy Department, Gainesville, FL, 4Texas A&I AgLife Research and Education Center, Beeville.

Bermudagrass–legume forage systems for summer stockers. 
B. M. Nichols¹, C. A. Moffet¹, J. T. Biermacher¹, T. J. Butler¹, R. R. Reuter¹, J. K. Rogers¹, J. A. Guretzky², and J. R. Blanton*. ¹The Samuel Roberts Noble Foundation, Ardmore, OK, 2University of Nebraska, Lincoln.

Stocker production systems utilizing warm-season perennial grass pasture: Cattle performance and nitrogen use efficiency. 

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.

Effect of level and frequency of protein supplementation on utilization of South Texas grass hay. 
G. R. Monson¹, J. E. Sawyer¹, R. O. Dittmar¹, M. L. Drewery¹, C. P. Payne¹, K. C. McCuistion², and T. A. Wickersham*. ¹Texas A&M University, College Station, ²Texas A&M University-Kingsville, Kingsville.

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

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.

The influence of NaCl reduction on the properties of cheddar cheese where moisture contents were kept constant. 
K. V. Grant*, S. Govindasamy-Lucey², J. J. Jaeggi², M. E. Johnson², and J. A. Lucey¹, ¹University of Wisconsin, Madison, ²Wisconsin Center for Dairy Research, Madison.

Concentration of casein micelles: Changes in renneting functionality in the presence of sodium caseinate. 
P. Krishnakutty Nair*, and M. Corredig¹, ¹Department of Food Science, University of Guelph, Guelph, Ont., Canada, ²Department of Dairy Development, Government of Kerala, India.

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.

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.

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.

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.

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

Impact of bleaching whey on the sensory and functional properties of 80% whey protein concentrate. 
S. M. Jervis*, R. E. Campbell¹, K. Wojciechowski¹, D. M. Barbano², and M. A. Drake¹, ¹North Carolina State University, Raleigh, ²Cornell University, Ithaca, NY.

The complete genome sequence of Bifidobacterium animalis ssp. animalis ATCC 25527 and analysis of growth in milk. 
J. R. Loquasto*, R. Barrangou², E. G. Dudley¹, and R. F. Roberts¹, ¹The Pennsylvania State University, University Park, ²Danisco USA Inc., Madison, WI.
9:30 AM  70  Ruminal fermentation characteristics and lactational performance of Holstein dairy cows fed whole safflower seeds. C. M. Dschaak*, C. T. Noviandi, J.-S. Eun, V. Fellerer, A. J. Young, D. R. ZoBell, and C. E. Israelsen, 1Department of Animal, Dairy, and Veterinary Sciences, Utah State University, Logan, 2Department of Animal Science, North Carolina State University, Raleigh, 3Cooperative Extension, Utah State University, Logan.


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*, J. Tricarico, D. H. Kim, N. B. Kristensen, and D. L. Harmon, 1University of Kentucky, Lexington, 2Alltech, Brookings, SD, 3Aarhus University, Tjele, Denmark.


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*, E. Conrad, A. Lago, D. Quigley, and H. D. Tyler, 1Iowa State University, Ames, 2APC Inc., Ankeny, IA.


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


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*, J. K. Bernard, R. B. Eggleston, and T. C. Jenkins, 1University of Georgia, Tifton, 2University of Georgia, Athens, 3Clemson 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. Sawyer1, N. M. Kenney1, W. E. Pinchak2, and T. A. Wickersham3, 1Texas A&M University, College Station, 2Texas 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. Holub1, T. A. Tomaszewski1, and C. C. Stanley2, 1Texas A&M University, College Station, 2Land 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*1, 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*1, W. J. Silvia, and J. M. Bewley, University of Kentucky, Lexington.

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**Lactation Biology Symposium**
**Circadian Clocks and Photoperiod in Mammary Development and Lactation**
Chair: Darryl Hadsell, Baylor College of Medicine

**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.**

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**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. Sulabo2, and H. H. Stein2, 1Universidad Autónoma de Querétaro, Mexico, 2University 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-Montminy1, M. Magnin1, A. Narcy2, and C. Pomar3, 1INRA UR83 Poultry Research, Nouzilly, France, 2BNA Animal Nutrition, Chateau-Gontier, France, 3Agriculture and Agrifood, Lennoxville, QC, Canada.
Effects of supplemented NSP-degrading enzymes on nutrient digestibility of diets containing wheat and wheat millrun fed to grower pigs.
D. Shrestha*, J. Broz, and R. T. Zijlstra, 1University of Alberta, Edmonton, AB, Canada, 2DSM Nutritional Products, Animal Nutrition and Health R&D, Basel, Switzerland.

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.

Effects of feeding tribasic copper chloride or copper sulfate on growth and efficiency of nursery pigs.

Intestinal, liver, kidney, serum and biliary Cu concentrations in piglets fed Cu proteinate or CuSO4.
B. Aldridge*, R. F. Power, K. A. Dawson, and S. Radcliffe, 1Purdue University, Department of Animal Science, West Lafayette, IN, 2Center for Animal Nutrigenomics and Applied Animal Nutrition, Alltech, Nicholasville, KY.

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

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

Ovarian follicular development, luteal function, and fertility in lactating Holstein cows treated with 14dCIDR_PGF or 2xPGF_Ovsynch56 for first insemination timed AI (TAI).

Prostaglandin F2 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.

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.

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

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.

Two- and three-wave estrous cycles in dairy cows, investigated with a mechanistic mathematical model.
M. Boer*1, S. Röblitz, C. Stötzel, R. Veerkamp, B. Kemp, and H. Woelders, 1Animal Breeding and Genomics Centre, Wageningen UR Livestock Research, Lelystad, the Netherlands, 2Computational Systems Biology Group, Zuse Institute Berlin, Berlin, Germany, 3Adaptation Physiology Group, Department of Animal Sciences, Wageningen University, Wageningen, the Netherlands.
A meta-analysis of the impact of stocking rate on the productivity of pasture-based milk production systems.
Animal and Grassland Research and Innovation Centre, Teagasc Moorepark, Fermoy, Co. Cork, Ireland, School of Agriculture, Food Science and Veterinary Medicine, University College Dublin, Belfield, Dublin, Ireland, INRA, AgroCampus Ouest, Saint-Gilles, France.

Claw length and angle in lactating Jersey cattle, field measurements.
Zinpro Performance Minerals, Eden Prairie, MN, Virginia Tech, Blacksburg, Dairyland Hoof Care Institute Inc., Baraboo, WI.

A ranking system based on stochastic modeling to identify efficient dairy farms using farm-level inputs.
Department of Sciences Zootechniche, Università di Sassari, Sassari, Italy, Department of Animal Science, Texas A&M University, College Station.

Predictors of primiparous and multiparous transition cow success from an automatic milking system.
University of Minnesota, St. Paul.

Effects of sodium bicarbonate or calcium magnesium carbonate on intake, digestibility and milk yield and composition of high producing dairy cows.
University of Pretoria, Pretoria, South Africa, University of California, Davis, MIN-AD, Amarillo, TX.

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

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*, N. A. Cole, and J. C. MacDonald.
USDA-ARS-CPRL, Bushland, TX, Texas Agrilife Research Center, Amarillo.

Effects of spoilage of wet distillers grains plus solubles on feedlot performance.
University of Nebraska-Lincoln.

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*, T. A. McAllister, B. Wildeman, and J. J. McKinnon.
University of Saskatchewan, Saskatoon, SK, Agriculture and Agri-Food Canada, Lethbridge Research Centre, AB, Canada, Pound-Maker Agventures Ltd., Lainigon, SK, Canada.

Effects of wet distillers grains plus solubles on health and performance of high-risk calves.
Oklahoma State University, Stillwater.

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.

Effects of distillers grain with soluble and supplemental copper and molybdenum on ammonia emissions and nitrogen retention.
Michigan State University.
Effect of adding rumen degradable protein to a dried distillers grain supplement on growth performance and body composition in yearling Angus and Brangus heifers.

Feeding distillers grains containing elevated sulfur concentration depresses performance of feedlot steers.
S. Uwituzé1, C. L. Van Bibber2*, K. A. Miller1, K. K. Karges1, L. C. Hollis1, J. J. Higgins1, and J. S. Drouillard1, 1Department of Animal Sciences and Industry Kansas State University, Manhattan, 2Poet Nutrition, Sioux Falls, SD, 3Department of Statistics Kansas State University, Manhattan.

Effects of crude glycerin in byproducts diets on performance and carcass characteristics of feedlot cattle.
E. H. C. van Cleef*, S. Uwituzé1, C. L. Van Bibber1, K. A. Miller1, C. C. Aperce1, K. L. Blaine1, J. J. Higgins1, and J. S. Drouillard1, 1Kansas State University, Manhattan, 2Department of Animal Sciences and Industry Kansas State University, Manhattan, 3São Paulo State University, Jaboticabal, São Paulo, Brazil.

Use of corn or crude glycerol as energy source to supplement holstein calves fed with sorghum silage ad-libitum.
P. Chilibroste*1, A. Elias2, and J. P. Marchelli1, 1Agronomy Faculty, EEMAC, Paysandu, Uruguay, 2Instituto de Ciencia Animal, San Jose de las Lajas, La Habana, Cuba.

Substitution of distillers grains and glycerin for steam-flaked corn in finishing cattle diets on performance and carcass characteristics.

Effect of linoleic acid supplementation to Holstein dams and calves on immune measures of calves.
M. Garcia1, L. F. Greco, J. E. P. Santos, and C. R. Staples, University of Florida, Gainesville.

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. Hristov1, C. Domitrovich1, A. Wachter1, T. Cassidy1, C. Lee1, K. J. Shingfield1, P. Kairenius2, J. Davis1, and J. Brown1, 1Pennsylvania State University, University Park, 2MTT Agrifood Research Finland, Jokioinen, Finland, 3University of Idaho, Moscow.

Chain length of dietary saturated fatty acids affects meal patterns and plasma metabolite and hormone concentrations of cows varying in milk yield.
M. Hollmann1*, M. S. Allen, and D. K. Beede, Department of Animal Science, Michigan State University, East Lansing.

Effects of different amounts of dietary protected and unprotected niacin on responses of blood metabolites to an epinephrine challenge in dairy cows.
F. C. Cardoso1*, F. Garrett1, and J. K. Drackley1, 1University of Illinois, Urbana, 2QualiTech, Chaska, MN.

Chain length of saturated fatty acids affects intake and ruminal turnover of NDF and chewing activity in lactating cows varying in milk yield.
M. Hollmann1*, M. S. Allen, and D. K. Beede, Department of Animal Science, Michigan State University, East Lansing.

Performance and milk fatty acid profile of Holstein dairy cows in response to dietary fat supplements and forage:concentrate ratio.
S. Kargar1, M. Khorvash1, G. R. Ghorbani1*, M. Alikhani1, and D. J. Schingoethe2, 1Isfahan University of Technology, Isfahan, Iran, 2South Dakota State University, Brookings.

Effect of a high palmitic acid fat supplement on ruminal fermentation and milk production in high- and low-producing dairy cows.

Effect of extruded flaxseed or alfalfa protein concentrate in interaction with two levels of concentrate on milk fat production.
C. Hurtaud1*, G. Chesneau2, D. Coulmier3, and J. L. Peyraud3, 1INRA-Agrocampus Ouest, Saint-Gilles, France, 2Valorex, Commoutillé, France, 3Desialis, Paris, France.

Abomasal infusion of butterfat during CLA induced milk fat depression in lactating dairy cows.
D. Vyas1*, U. Moollem1, B. B. Teter1, P. Delmonte1, and R. A. Erdman1, 1Department of Animal and Avian Sciences, University of Maryland, College Park, 2Agriculture Research Organization, Bet Dagan, Israel, 3U.S. Food and Drug Administration, Center for Food Safety and Applied Nutrition, College Park, MD.
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.


Effect of added fat to diets for dairy cattle on production performance and dry matter intake.

A. R. Rabiee1, K. Brienhild1, W. Scott3, H. M. Golder1, E. Block2, and I. J. Lean*, 1SBScibus, Camden, New South Wales, Australia, 2Church & Dwight Co. Inc., Princeton, NJ.

Effect of dietary fat blend and monensin supplementation on dairy cattle performance, milk fatty acid profiles and milk fat depression.


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

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.

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

11:00 AM 145 The effect of an exogenous amylase on performance and total tract digestibility in lactating dairy cows.

11:15 AM 146 Spoilage yeasts in silage have the potential to directly impact rumen fermentation.
M. C. Santos*, A. L. Lock2, G. D. Mechor3, and L. Kung4, 1University of Delaware, Newark, 2Michigan State University, East Lansing, 3Elanco 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*, B. B. Teter1, P. Delmonte2, and R. A. Erdman1, 1Department of Animal and Avian Sciences, University of Maryland, College Park, 2U.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.
ADSA-SAD Dairy Production Undergraduate Competition
Chair: Elizabeth Karcher, Michigan State University

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.

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

1:00 PM 158  Assessment of ruminal fermentation characteristics under normal or high fermentative temperature in continuous cultures.
C. C. King*, C. M. Dschaak1, J.-S. Eun1, V. Fellner2, and A. J. Young1, 1Department of Animal, Dairy, and Veterinary Sciences, Utah State University, Logan, 2Department 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.

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*, A. Laubscher1, J. Medrano4, R. Jimenez-Flores1, and G. Rincon1, 1California Polytechnic State University, San Luis Obispo, 2University 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**, M. A. Laws1, T. S. Dennis1, M. M. Schutz1, S. D. Eicher2, and T. D. Nennich1, 1Purdue University, West Lafayette, IN, 2USDA-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.

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.
<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Presenters</th>
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<tbody>
<tr>
<td>3:30 PM</td>
<td>ORALS</td>
<td>The association of electrical conductivities and California Mastitis Tests on a robotic dairy farm.</td>
<td>A. M. Brigham*, C. D. Dechow¹, and B. Carter², ¹Pennsylvania State University, University Park, ²Keseca Veterinary Clinic, Geneva, NY.</td>
</tr>
<tr>
<td>3:45 PM</td>
<td>ORALS</td>
<td>Effects of shade on heat stress reduction in Holstein dairy calves.</td>
<td>S. S. Thibeau**, L. B. Sage¹, C. C. Williams², B. F. Jenny³, and A. H. Dolejsiova³, ²Louisiana State University, Baton Rouge, ³LSU AgCenter, Baton Rouge, LA.</td>
</tr>
<tr>
<td>4:00 PM</td>
<td>ORALS</td>
<td>Xylose absorption in dairy calves supplemented with sodium butyrate in milk replacer.</td>
<td>N. M. Larson*, S. I. Kehoe¹, S. Moreland², and D. Shields¹, ¹University of Wisconsin-River Falls, River Falls, ²Nutriad, Inc., Elgin, IL, ³Merrick's, Inc., Union Center, WI.</td>
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### ADSA Southern Section Symposium

**Producing Quality Milk in Hot, Humid Climates**

**Chair: Patrick D. French, The Old Mill-Troy, Inc.**

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<th>Time</th>
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<th>Presenters</th>
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<tr>
<td>2:00 PM</td>
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<td>Extension programming in Kentucky to address somatic cell count challenges and opportunities.</td>
<td>J. M. Bewley*, University of Kentucky, Lexington.</td>
</tr>
<tr>
<td>2:30 PM</td>
<td></td>
<td>Dairy producer adoption of mastitis control technologies for reducing herd somatic cell counts.</td>
<td>S. C. Nickerson*, University of Georgia, Athens.</td>
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<td>3:00 PM</td>
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<td>Effect of micronutrients on the regulation of the immune system and its role in milk quality.</td>
<td>W. Weiss*, OARDC/The Ohio State University, Wooster.</td>
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<tr>
<td>3:30 PM</td>
<td></td>
<td>Use of records to investigate and monitor mastitis in dairies.</td>
<td>M. W. Overton*, University of Georgia, Athens.</td>
</tr>
<tr>
<td>4:00 PM</td>
<td></td>
<td>Advancing mastitis research: Using proteomics to identify biomarkers and evaluate adjunctive therapies.</td>
<td>J. L. Boehmer*, U.S. Food and Drug Administration Center for Veterinary Medicine, Laurel, MD.</td>
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<td>4:30 PM</td>
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### Animal Behavior and Well-Being 1

**Chair: Janice Siegfoid, Department of Animal Science, Michigan State University**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>2:00 PM</td>
<td></td>
<td>Effects of oxytocin administration in early life on the behavioral and physiological stress response of swine.</td>
<td>J. L. Rault**, C. S. Carter¹, J. P. Garner¹, J. N. Marchant-Forde¹, B. T. Richert¹, and D. C. Lay¹, ¹Department of Animal Sciences, Purdue University, West Lafayette, IN, ²Department of Psychiatry, University of Illinois at Chicago, Chicago, ³USDA-ARS-Livestock Behavior Research Unit, West Lafayette, IN.</td>
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<tr>
<td>2:30 PM</td>
<td></td>
<td>Preference in weaning pigs for sweet or umami taste after in utero exposure.</td>
<td>S. J. Chavez**, E. van Heugten¹, I. Ipharraguerre¹, and G. B. Huntington¹, ¹North Carolina State University, Raleigh, ²R&amp;D Feed Additives, Lucta S.A., Barcelona, Spain.</td>
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<td>Withdrawn</td>
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<td>3:00 PM</td>
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<td>Glucosamine:chondroitin or ginger root extract have little effect on articular cartilage in swine.</td>
<td>D. C. Lay*, J. N. Marchant-Forde¹, B. T. Richert¹, and K. A. McMunn¹, ¹Livestock Behavior Research Unit; Agricultural Research Service-USDA, West Lafayette, IN, ²Purdue University, West Lafayette, IN.</td>
</tr>
</tbody>
</table>
Market pig transport losses, surface temperatures and trailer air temperatures with medium or heavy bedding on the trailer.
A. Sapkota*, B. L. Davis1, A. Butters-Johnson2, and J. J. McGlone1, 1Texas Tech University, Lubbock, 2Iowa State University, Ames.

Brain lesions and time to death resulting from application of a non-penetrating captive bolt to anaesthetized nursery piglets.
T. M. Casey-Trott1, R. Brooks2, P. V. Turner1, S. G. Nykamp1, M. Litman1, S. T. Millman2, and T. M. Widowski*1,
1University of Guelph, Guelph, Ontario, Canada, 2Iowa State University, Ames.

Bayesian analysis of longitudinal Johne’s disease diagnostic data without a gold standard test.
C. Wang*, B. Turnbull2, S. Nielsen1, and Y. Gröhn2, 1Iowa State University, Ames, 2Cornell University, Ithaca, NY, 3University of Copenhagen, Frederiksberg, Denmark.

Environmental contamination with Mycobacterium avium ssp. paratuberculosis in endemically infected dairy herds.
R. L. Smith*, Y. H. Schukken2, A. K. Pradhan1, J. M. Smith2, R. H. Whitlock1, J. S. Van Kessel3, D. R. Wolfgang3, and Y. T. Grohn3, 1Department of Population Medicine and Diagnostic Sciences, College of Veterinary Medicine, Cornell University, Ithaca, NY, 2Department of Animal Science, University of Vermont, Burlington, 3Department of Clinical Studies, New Bolton Center, School of Veterinary Medicine, University of Pennsylvania, Kennett Square, 4Environmental Microbial and Food Safety Laboratory, ANRI, USDA-ARS, Beltsville, MD, 5Department of Veterinary and Biomedical Science, Penn State University, University Park.

Mycobacterium avium ssp. paratuberculosis promotes rapid IL-1β release and macropahge transepithelial migration.
E. Lamont*, S. O’Grady3, W. Davis1, T. Eckstein1, and S. Sreevatsan1, 1University of Minnesota, 2Washington State University, 3Colorado State University.

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*, T. Raghuvanshi1, R. B. Sharma1, B. Singh1, A. V. Singh1, P. K. Singh1, A. Kumar1, and A. Srivastava1, 1Central Institute for Research on Goats, Mathura, Uttar Pradesh, India, 2College of Veterinary Sciences, Mathura, Uttar Pradesh, India.

Association of Bsa I polymorphism of MHC Class II DRB gene with Mycobacterium avium ssp.paratuberculosis bacteremia in Jamunapari breed of goats.

Johne’s program—Impact on education and outreach activities.
K. E. Olson*, KEO Consulting, Schaumburg, IL.

Mathematical modeling of Mycobacterium avium subspecies paratuberculosis infection transmission in dairy cattle: Current status and future directions.
Z. Lu*, R. Mitchell1, R. Smith1, Y. Schukken1, Y. Gröhn1, K. Ahmadizadeh2, M. Teose2,3, T. Damoulas2, and C. Gomes2, 1Department of Population Medicine and Diagnostic Sciences, College of Veterinary Medicine, Cornell University, Ithaca, NY, 2Department of Computer Science, Cornell University, Ithaca, NY, 3Center for Applied Mathematics, Cornell University, Ithaca, NY.

Vertical transmission or increased susceptibility to MAP?
E. Knupfer1, R. M. Mitchell*1, A. K. Pradhan1, A. Kramer1, J. Dieguez2, R. H. Whitlock3, T. Fyock3, and Y. H. Schukken3, 1Ithaca University, Ithaca, NY, 2Utrecht University, Utrecht, the Netherlands, 3Cornell University, Ithaca, NY, 4University of Maryland, College Park, 5Universidad de Santiago de Compostela, Spain, 6University of Pennsylvania, New Bolton Center.

MAP co-infection or evolution?
R. M. Mitchell*1, E. Knupfer1, A. K. Pradhan1, A. Kramer1, J. Dieguez2, R. H. Whitlock3, T. Fyock3, and Y. H. Schukken3, 1Cornell University, Ithaca, NY, 2Utrecht University, Utrecht, the Netherlands, 3University of Maryland, College Park, 4University of Pennsylvania, New Bolton Center.
Towards understanding endemicity of MAP infection in dairy herds.
R. M. Mitchell*, G. F. Medley¹, and Y. H. Schukken¹, ¹Cornell University, Ithaca, NY, ²Warwick University, Coventry, UK.

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.

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

Zinc-finger nucleases: Innovations in custom-designed modification of the swine genome.

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

Improved RNA quantitation and applications to animal science.
C. D. Haudenschild*, Illumina Inc., Hayward, CA.

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

Introduction - Why is this topic important and relevant?
S. Newman, Genus Plc, Hendersonville, TN.

High performance computing and really big datasets: Overview and best practices.
F. Foerster*, Genus plc, Hendersonville, TN.

Data structures and visualization.
J. B. Cole*, Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD.

Computational challenges in genetic evaluation with really big datasets.
I. Aguilar* and I. Misztal¹, ¹Instituto Nacional de Investigación Agropecuaria, INIA Las Brujas, Canelones, Uruguay, ²Animal & Dairy Science Department, University of Georgia, Athens.

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, J. Zulewska, and D. M. Barbano, Cornell University, Ithaca, NY, 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, S. Rankin, M. Molitor, and J. Lucey, University of Wisconsin-Madison, Madison, 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, J. A. Lucey, K. J. Burrington, and M. Molitor, University of Wisconsin, Madison, 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-lactalbulin 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, P. S. Tong, S. Vink, and J. Walker, Dairy Products Technology Center, Cal Poly State University, San Luis Obispo, 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.

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, S. Deng, Y. Cheng, X. Lin, P. Chen, and L. Metzger, University of Minnesota, St. Paul, Fuzhou University, Fuzhou, China, Nanchang University, Nanchang, Jiangxi, China, 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, B. Ganesan, M. Qian, and C. Brothersen, Western Dairy Center, Utah State University, Logan, 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*, M. C. Santos1, J. P. Rigueri1, M. C. Der Bedrosian1, K. E. Nestor1, and L. Kung1, 1University of Delaware, Newark, 2Mycogen 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*, M. Z. Ma1, X. Y. Weng2, J. Y. Sun1, and J. X. Liu1, 1MOE Key Laboratory of Molecular Animal Nutrition, College of Animal Sciences, Zhejiang University, Hangzhou, P.R. China, 2College of Life Science, Zhejiang University, Hangzhou, P.R. China.


3:45 PM 222 Alternative approaches of replication for estimating in vitro starch disappearance. D. R. Mertens*1 and R. Ward1, 1Mertens Innovation & Research LLC, Belleville, WI, 2Cumberland 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-Cervantes1,3, M. A. Cerrillo-Soto1,3, A. S. Juárez-Reyes1,3, H. Bernal-Barragán2,3, and R. G. Ramirez2, 1Universidad Juárez del Estado de Durango, Durango, México, 2Universidad Autónoma de Nuevo León, Nuevo León, México, 3Red Internacional de Nutrición y Alimentación en Ruminantes.

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. Aribede1,2, U. Y. Anele1,2, K.-H. Südekum2, J. Hummel2, A. O. Oni1, J. A. Olanite1, and A. O. Isah1, 1University of Agriculture, Abeokuta, Nigeria, 2University 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. Malmuthuge1,2, M. Li1, P. Fries1, P. Griebel1, and L. L. Guan1, 1University of Alberta, Edmonton, Alberta, Canada, 2Vaccine and Infectious 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*, K. F. Kalscheur1, A. Garcia1, A. Gehman1, and J. M. Tricarico1, 1South Dakota State University, Brookings, 2Alltech Inc., Brookings, SD.
Effect of timing of initiation of Resynch and presynchronization with GnRH on fertility of resynchronized inseminations in lactating dairy cows.

Somatic cell count and management benchmarks in Minnesota dairy herds.

Effect of dietary trans fatty acids on selected inflammatory mediators in early lactating dairy cows.

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*, W. C. Hornback¹, D. E. Beever², P. H. Doane³, M. J. Cecava³, M. R. Murphy¹, and J. K. Drackley¹,
¹University of Illinois, Urbana, ²Keenan Systems, Borris, Ireland, ³Archer Daniels Midland Company, Decatur, IL.

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.

Break

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.

Relationships among temperature, moisture, bacterial counts, and animal hygiene in compost bedded pack barns.

Objective assessment of pain in dairy cattle with clinical mastitis.
C. E. Fitzpatrick¹, N. Chapinal¹², C. S. Petersson-Wolfe¹, and K. E. Leslie¹, ¹University of Guelph, Guelph, Ontario, Canada, ²University of British Columbia, Vancouver, British Columbia, Canada.

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.

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.

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

Introduction.
H. M. White, Indiana University School of Medicine.

Preparing an effective CV for an academic position.
M. T. See*, North Carolina State University, Raleigh.

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

Break

ASAS National Graduate Student Update.
C. Jones, Iowa State University, Ames.
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<th>Speakers</th>
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<tr>
<td>3:40 PM</td>
<td>241</td>
<td>Maximizing your graduate experience.</td>
<td>N. C. Whitley*, North Carolina A&amp;T State University, Greensboro.</td>
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<tr>
<td>4:20 PM</td>
<td>242</td>
<td>Becoming your own personal brand: How to market your talents and experiences for maximum results.</td>
<td>C. Johnson* and C. Luhman1, 1Director Talent Acquisition &amp; Diversity, Land O’ Lakes, Inc, Arden Hills, MN, 2Land O’ Lakes Purina Feed, LLC, Gray Summit, MO.</td>
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<td><strong>Growth and Development</strong></td>
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<td><strong>Growth and Development: Adipose and Body Composition in Ruminants</strong></td>
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<td>Chairs: Tom Welsh, Texas A&amp;M University, and Erin Connor, USDA-ARS, Beltsville</td>
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<td>Sponsor: BASF</td>
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<td><strong>298-299</strong></td>
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<td>2:00 PM</td>
<td>243</td>
<td>Plane of dietary protein during late gestation in beef cows alters longissimus lumborum adipogenic gene expression in the offspring.</td>
<td>S. Moisa*, D. Shike, D. B. Faulkner, and J. J. Loor, University of Illinois, Urbana.</td>
</tr>
<tr>
<td>2:15 PM</td>
<td>244</td>
<td>Oleic acid enhances G protein-coupled receptor 43 (GPR43) in cultured bovine intramuscular adipocytes.</td>
<td>K. Y. Chung*, S. B. Smith1, and B. J. Johnson1, 1Texas Tech University, Lubbock, 2Texas A&amp;M University, College Station.</td>
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<tr>
<td>2:30 PM</td>
<td>245</td>
<td>Effect of stearoyl-CoA desaturase 1 inhibitors on lipid metabolism and cellular proliferation in primary bovine adipocytes.</td>
<td>A. K. G. Kadegowda*, T. A. Burns, S. L. Pratt, and S. K. Duckett, Clemson University, Clemson, SC.</td>
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<tr>
<td>2:45 PM</td>
<td>246</td>
<td>Palmitoleic acid (C16:1), not an elongation product, decreases lipogenesis and desaturation in bovine adipocyte cultures.</td>
<td>T. A. Burns*, C. M. Klein, S. K. Duckett, S. L. Pratt, and T. C. Jenkins, Clemson University, Clemson, SC.</td>
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<td>3:00 PM</td>
<td>247</td>
<td>Palmitic and stearic acids induce adipogenic gene expression in single- or co-cultures of bovine intramuscular preadipocyte and satellite cells.</td>
<td>S. H. Choi1, K. Y. Chung1, B. J. Johnson1, K. H. Kim1, and S. B. Smith1, 1Texas A&amp;M University, College Station, 2Texas Tech University, Lubbock, 3National Institute of Animal Science, Suwon, Gunggi, Korea.</td>
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<tr>
<td>3:15 PM</td>
<td>248</td>
<td>The effect of chromium propionate on bovine intramuscular and subcutaneous preadipocytes and muscle satellite cells.</td>
<td>R. J. Tokach*, W. Rounds1, K. Y. Chung1, and B. J. Johnson1, 1Texas Tech University, Lubbock, 2Kemin Industries Inc., Des Moines, IA.</td>
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<tr>
<td>3:30 PM</td>
<td>249</td>
<td>Effect of rate of gain during grazing on gene expression of adipose tissue in growing beef cattle.</td>
<td>P. A. Lancaster*, E. D. Sharman, G. W. Horn, C. R. Krehbiel, and U. DeSilva, Oklahoma Agricultural Experiment Station, Stillwater.</td>
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<td>4:00 PM</td>
<td>251</td>
<td>Defining maturity of Nellore cattle based on growth and body composition.</td>
<td>M. Marcondes1,2, L. Tedeschi3, S. V. Filho1, M. Gionbelli1, and L. F. Silva1, 1Universidade Federal de Viçosa/INCT-CA, Viçosa, MG, Brazil, 2Texas A&amp;M University, College Station, 3INCT - Ciência Animal, Viçosa, MG, Brazil.</td>
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<td><strong>Nonruminant Nutrition</strong></td>
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<td><strong>Health/Management</strong></td>
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<td>Chairs: Ryan Dilger, University of Illinois, Urbana</td>
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<td>Sponsor: BASF</td>
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<td>2:00 PM</td>
<td>252</td>
<td>Population dynamics of leukocytes during immune activation of the chicken immune system by E. coli.</td>
<td>V. Arias* and K. Klasing, University of California, Davis.</td>
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11:30 AM 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, J. J. Lee, M. Song, T. M. Che, J. A. Soares, D. Bravo, W. G. Van Alstine, and J. E. Pettigrew, 1University of Illinois, Urbana, 2Pancosma SA, Geneva, Switzerland, 3Purdue University, West Lafayette, IN.


12:00 PM Break


12:30 PM 259 Flavour preferences conditioned by the effects of porcine digestible peptides (PDP) and soybean concentrate in post-weaned piglets. J. Figueroa*, D. Solá-Oriol, S. L. Vinokurovas, E. Borda, and J. F. Pérez, Universitat Autònoma de Barcelona, Bellaterra, Barcelona, Spain, 2Bioibérica, Barcelona, Spain.


1:00 PM 261 Effects of an abrupt change from mash to pellets and vice-versa on growth performance in finishing pigs. C. B. Paulk*, J. D. Hancock, J. C. Ebert, and J. J. Ohlde, Kansas State University, Manhattan, 4Key Feeds, Clay Center, KS.


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**Physiology and Endocrinology**

**Estrous Cycle Manipulation - Beef**

Chair: Robert Cushman, USDA MARC, Clay Center, NE

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**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*, V. R. G. Mercadante, J. S. Stevenson, G. A. Perry, and G. C. Lamb, 1North Florida Research and Education Center, University of Florida, Marianna, 2Department 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*, R. Stanko, C. Allen, R. Cardoso, L. Prezotto, J. Thorson, and M. Amstalden, Texas A&M University, College Station, Texas A&M University-Kingsville, Kingsville.

Comparison of long-term progestin-based protocols to synchronize estrus and ovulation prior to fixed-time AI in postpartum beef cows.

Comparison of long- versus short-term progestin-based protocols to synchronize estrus and ovulation prior to fixed-time AI in postpartum beef cows.

Estrogenicity of sugar beet by-products used as animal feeds.
N. W. Shappell*, E. M. Lenneman, and M. S. Mostrom, USDA-ARS, Fargo, ND, North Dakota State University, Fargo.

Effect of length of the preovulatory period on estradiol, progesterone, ISG-15 and Mx2 in cows.

Effect of various doses of prostaglandin F2α on estrous behavior and blood progesterone in beef cows.

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.

Effect of acetylsalicylic acid on vasodilatation of uterine arteries, right external iliac arterial blood flow, and pregnancy in beef cows.

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

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.

Somatic cell count and management benchmarks in Minnesota dairy herds.

Heritability of rectal temperature and genetic correlations with production and reproduction traits in dairy cattle.
S. Dikmen*, J. B. Cole, D. J. Null, and P. J. Hansen, Department of Animal Science, Faculty of Veterinary Medicine, Uludag University, Bursa, Turkey, Animal Improvement Programs Laboratory Agricultural Research Service, USDA, Beltsville, MD, Department of Animal Sciences, University of Florida, Gainesville.

Analysis of twinning, abortion and calf mortality in Irish Holstein and Friesian populations.

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

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

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

4:00 PM
Economic comparison of reproductive programs for dairy herds using estrus detection (ED), Ovsynch, or a combination of both.
K. N. Galvao*, P. Federico, A. De Vries, and G. M. Schuenemann, University of Florida, Gainesville, The Ohio State University, Columbus, Capital University, Columbus, OH.
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*, D. Ziegler†, H. Chester-Jones‡, M. Raeth-Knight§, G. Golombeski∥, and J. Linn∥∥, 1University of Wisconsin-River Falls, River Falls, 2University of Minnesota, Southern Research and Outreach Center, Waseca, 3University 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**, T. J. DeVries†, K. E. Leslie¶, J. M. Sargeant†, N. G. Anderson‡, K. Shore§, and S. T. Millman¶¶, 1Department of Population Medicine, University of Guelph, Guelph, ON, Canada, 2Department of Animal Poultry Science, University of Guelph, Kemptville Campus, Kemptville, ON, Canada, 3Ontario Ministry of Agriculture, Food and Rural Affairs, Elora, ON, Canada, 4Grober Nutrition, Cambridge, ON, Canada, 5Veterinary 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† and S. Jalukar**, 1Kent Nutrition Group Product Development Center, Muscatine, IA, 2Varied Industries Corporation, Mason City, IA.

2:45 PM 297 Effect of different forage sources on performance and feeding behavior of Holstein calves.
L. I. Castells**, A. Bach¹, G. Araujo¹, and M. Terré¹, 1Department of Ruminant Production, IRTA, Caldes de Montbui, Spain, 2ICREA, Barcelona, Spain.

3:00 PM 298 Effect of fatty acid intake by dairy calves on performance, health, and markers of immunity.
T. M. Hill**, M. J. VandeHaar², L. M. Sordillo², H. G. Bateman³, and R. L. Schlotterbeck³, 1Nurture Research Center, Proviimi North America, Lewisburg, OH, 2Department of Animal Science, Michigan State University, East Lansing, 3Department 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.

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**, C. E. Sorenson³, N. K. Betzold³, J. T. Meronek³, and T. J. Earleywine⁴, 1Wisconsin Veterinary Diagnostic Laboratory, University of Wisconsin, Madison, 2United Cooperative, Sauk City, WI, 3University of Wisconsin-Madison, College of Agricultural & Life Sciences, Madison, 4Land 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**, A. Ali†, D. McGill‡, M. Sarwar†, H. Nawaz‡, M. Afzal‡, M. S. Khan‡, M. A. Amer*, R. D. Bush*, P. C. Wynn*, H. M. Warriach³, and H. Nawaz‡, 1Institute of Animal Nutrition and Feed Technology, University of Agriculture, Faisalabad, Pakistan, 2E H Graham Centre (NSW Industry and Investment and Charles Sturt University), Wagga Wagga, Australia, 3Pakistan Agricultural Research Council, Islamabad, Pakistan, 4Livestock Production Research Institute, Bahadurnagar, Okara, Pakistan, 5Faculty 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 Education, Northeast Agricultural University, Harbin, China.

T2 Development of kit for bovine haptoglobin using enzyme-linked immunosorbent assay.

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*, C. J. Cobb, D. L. Hanson, M. L. Galyean, and M. A. Ballou, 1Department of Animal and Food Sciences, Texas Tech University, Lubbock, 1Department of Animal Sciences, University of California-Davis, Davis.

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

T7 Comparative evaluation of gene expression in bovine and caprine neutrophils.

T8 Detection and expression of the gene encoding low density lipoprotein receptor-related proteins 6 (LRP6) in goat peripheral blood.

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

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*, M. C. D. Beraldo, E. Nakandakari, L. Boschini, M. M. Alencar, R. Giglioti, A. C. S. Chagas, B. Rubert, S. C. Bogni, and A. M. G. Ibelli, 1Embrapa Pecuaria Sudeste, São Carlos, SP, Brazil, 2Unicep, São Carlos, SP, Brazil, 3Uniara, Araraquara, SP, Brazil, 4unesp, Jaboticabal, SP, Brazil, 5UFSCar, São Carlos, SP, Brasil.

T12 Concentrations of haptoglobin in bovine plasma determined by ELISA or a colorimetric method based on peroxidase activity.

T13 Feed and water restriction elicits an acute-phase protein response in beef cattle.
T14  Natural infestation by external parasites in beef cattle in southern Brazil.  
M. C. S. Oliveira*, E. Nakandakari1, M. C. D. Beraldo1, M. M. Alencar1, A. C. S. Chagas1, L. Boschin1, R. Giglioti1, and A. M. G. Ibelli1, 1Embrapa Pecuaria Sudeste, São Carlos, SP, Brazil, 2Uniara, Araraquara, SP, Brazil, 3Unicep, São Carlos, SP, Brazil, 4Unesp, Jaboticabal, SP, Brazil, 5UFSCar, São Carlos, SP, Brasil.

T15  Cinnamaldehyde enhances in vitro parameters of immunity and reduces severity of in vivo infection against avian coccidiosis.  
S.-H. Lee1, H. Lillehoj*1, S. Jang1, K. Lee1, and D. Bravo1, 1Animal and Natural Resources Institute, ARS USDA, Beltsville, MD, 2Pancosma 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*, 1Department 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. Ou1, Y. Q. Wang1, and N. E. Forsberg*, 1OmniGen Research, Corvallis, OR, 2Tung thai 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. Ringeis1, M. Siebers1, J. Keller1, A. Steinbeck1, B. Eckel*1, and K. Eder1, 1Institute of Animal Nutrition and Nutrition Physiology, Justus-Liebig-University Giessen, Heinrich-Buff-Ring 26-32, 35390 Giessen, Germany, 2Dr. 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. Tőzsér2, A. Szentléleki2, F. Szabo3, I. Anton4, T. Somogyi1, I. Repa1, and I. Hollo1, 1Kaposvár University, Kaposvár, Hungary, 2St. István University, Gödöllő, Hungary, 3Pannon University, Keszthely, Hungary, 4Research 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. Flaig1, L. Clark1, O. C. Schunicht1, M. L. May1, R. E. Peterson1, C. W. Booker1, R. Krehbiel1, G. K. Jim1, B. P. Holland1, and L. O. Burciga-Robles*, 1Feedlot Health Management Services Ltd., Okotoks, Alberta, Canada, 2Department of Animal Science, Oklahoma State University, Stillwater, 3Department 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.  

T22  Post-weaning feed efficiency of tropically adapted purebred and crossbred calves when fed in either winter or spring.  
S. W. Coleman*, C. C. Chase1, W. A. Phillips1, and D. G. Riley1, 1USDA ARS Subtropical Agricultural Research Station, Brooksville, FL, 2USDA, 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, 1University of Tehran, University College of Agriculture and Natural Resource, Department of Animal Science, Tehran, Karaj, Iran, 2University 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*1,2,3, J. L. Noguera2, R. N. Pena1,3, J. M. Folch1, M. Muñoz2, and N. Ibáñez-Escriche1, 1Departament de Ciencia Animal i dels Aliments, Universitat Autònoma de Barcelona, Bellaterra, Spain, 2Genètica i Milfora Animal, IRITA-Lleida, Lleida, Spain, 3Departament de Producció Animal, Universitat de Lleida, Lleida, Spain, 4Departamento de Mejora Genética Animal, SGIT-DINIA, Madrid, Spain.

**T28**  
Path analysis of candidate genes for intramuscular fat in pigs.  
N. V. L. Serrão*1, J. Bracchini Neto2, A. M. F. Ribeiro1, P. V. Silva1, S. L. Rodríguez-Zas1, and S. E. F. Guimarães3, 1University of Illinois at Urbana-Champaign, Urbana, 2Universidade Federal do Rio Grande do Sul, Porto Alegre, RS, Brazil, 3Universidade 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*, C. W. Ernst1, M. Wysocki, J. K. Lunney, and J. P. Steibel, 1Department of Animal Science, Michigan State University, East Lansing, 2Lehrstuhl für Tierzucht, Technische Universität München, Munich, Germany, 3Animal 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.  

**T32**  
Identification of a JY-1 gene variant in Nellore cattle.  
G. M. F. de Camargo*1, A. C. de Freitas1, A. C. Andrade1, F. M. M. Gil1, D. F. Cardoso1, P. D. S. Fonseca1, F. R. P. Souza1, M. Cervini1, F. Baldi1, L. G. de Albuquerque1, L. C. A. Regitano1, and H. Tonhati1, 1São Paulo State University, Jaboticabal, São Paulo, Brazil, 2Brazilian Agricultural Corporation - Southeast Cattle Center, São Carlos, São 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. Meirelles1, G. B. Veneroni1, M. M. de Souza2, F. Siqueira2, A. do Nascimento Rosa2, L. O. Campos da Silva2, R. de Almeida Torres2, S. R. Medeiros2, R. R. Tullio2, M. M. de Alencar2, F. Feijó2, and L. C. de Almeida Regitano1, 1Embrapa de São Carlos, São Carlos, São Paulo, Brazil, 2Embrapa Beef Cattle National Center, Campo Grande, Mato Grosso do Sul, Brazil, 3Embrapa Southeast Cattle Research Center, São Carlos, São Paulo, Brazil.

**T34**  
CAPN4751 and UOOGAST effects on feed efficiency, carcass traits and feedlot performance in Nellore (Bos indicus) cattle.  
R. C. Gomes*1, M. E. Carvalho2, M. H. A. Santana3, S. L. Silva1, P. R. Leme1, P. Rossi1, and J. B. S. Ferraz2, 1Faculdade de Zootecnia e Engenharia de Alimentos, Universidade de São Paulo (FZEA/USP), Pirassununga, SP, Brazil, 2Escola Superior de Agricultura Luiz de Queiroz, Universidade de São Paulo (Esalq/USP), Piracicaba, SP, Brazil, 3Departamento de Zootecnia, Universidade Federal do Paraná (UFPR), Curitiba, PR, Brazil.

**T35**  
Bialellic expression studies of CAST gene in bovine muscle.  
M. M. de Souza1, S. C. M. Niculita2, A. M. G. Ibelli3, S. L. Meirelles1, M. I. Rocha1, P. C. Tizioto*, G. Gasparin1, E. M. Carvalho1, G. B. Veneroni1, F. A. Bressani1, P. S. N. de Oliveira1, F. Siqueira1, L. L. Coutinho1, and L. C. de Almeida Regitano1, 1Embrapa de São Carlos, São Carlos, São Paulo, Brazil, 2Embrapa Beef Cattle National Center, Campo Grande, Mato Grosso do Sul, Brazil, 3Departamento de Zootecnia, Universidade Federal de São Carlos, SP, Brazil.

**T36**  
The polymorphism Msp I in intron 3 of the growth hormone gene in Nellore cattle (Bos taurus indicus).  
D. F. Cardoso1, G. M. F. de Camargo*1, P. D. S. Fonseca1, F. M. M. Gil1, M. G. Chiquitelli1, F. R. P. Souza1, L. G. de Albuquerque1, M. E. Z. Mercadante1, and H. Tonhati1, 1Department of Animal Sciences, Sao Paulo State University, Jaboticabal, SP, Brazil, 2Animal 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. Curi1, M. R. S. Fortes2, D. M. Vankani1, J. A. V. Silva1, H. N. Oliveira1, M. C. D. Silva1, and A. C. Silveira1, 1Faculdade de Medicina Veterinária e Zootecnia, Unesp, Botucatu, São Paulo, Brazil, 2School of Veterinary Science, University of Queensland, St. Lucia, Queensland, Australia, 3Faculdade de Ciências Agrárias e Veterinárias, Unesp, Jaboticabal, São Paulo, Brazil.

**T38**  
Characterization of polymorphism in the ORL1 gene in Nellore cattle (Bos taurus indicus) by PCR-RFLP.  
P. D. da Silva Fonseca1, F. R. P. de Souza1, G. M. F. de Camargo*1, F. M. Gil1, D. F. Cardoso1, M. G. Chiquitelli1, L. G. Albuquerque1, M. E. Z. Mercadante1, and H. Tonhati1, 1São Paulo State University, São Paulo State University, Jaboticabal, Brazil, 2Animal Science Experimental Station, Animal Science Experimental Station, Sertãozinho, Sertãozinho, Brazil.

**T39**  
Analysis of MUCL alleles in Nellore cattle using single-allele and multi-allele models.  
F. R. P. Souza1, S. Sartore1, S. Maione1, D. Soglia1, V. Spalenza1, G. M. F. de Camargo*1, P. Sacchi2, R. Rasero2, and M. E. Z. Mercadante1, 1São Paulo State University, Jaboticabal, SP, Brazil, 2University of Torino, Grugliasco, TO, Italy, 3Instituto de Zootecnia, Sertãozinho, SP, Brazil.

T41 Identification of polymorphism in leptin gene in Bubalus bubalis.
V. A. Ferreira Junior1, G. M. F. de Camargo*, A. L. F. Lima2, F. M. M. Gil3, and H. Tonhati1, São Paulo State University, Jaboticabal, SP, Brazil, Santa Catarina Federal University, Florianópolis, SC, Brazil.

T42 Relationship between kappa-casein genotype in inseminated bulls and the milk composition of their daughters.
J. Bezdieck4 and J. Riha3, Agriresearch Rapotin, Ltd., Rapotin, Czech Republic, 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.

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. Bressani1,2, P. C. Tizioto2, S. L. Meirelles2, W Malagó Junior2,3, R. Gigliotti1, A. M. G. Ibelli1, J. G. G. Gromboni1, E. Carrilho3, L. G. Zaros4, L. da Silva Vieira1, and L. Correia de Almeida Regitano1, Embrapa Southeast Embrapa Southeast Cattle Research Center, São Carlos, São Paulo, Brazil, Federal University of São Carlos - UFSCar, São Carlos, São Paulo, Brazil, State University of São Paulo - UNESP, Jaboticabal, São Paulo, Brazil, UNICEP, São Carlos, São Paulo, Brazil, University of Sao Paulo, São Carlos, São Paulo, Brazil, Federal University of Rio Grande do Norte, Natal, Rio Grande do Norte, Brazil, 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*, C. Amirinia, S. Gharaveysi, H. Emrani, and A. Yilmaz, Department of Animal Science, Islamic Azad University, Qaemshahr Branch, Qaemshahr, Mazandaran, Iran, Department of Animal Biotechnology, Animal Science Research Institute of Iran, Karaj, Alborz, Iran, 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*, S. Kumar, and B. Nautiyal, MJP Rohilkhand University, Bareilly, U.P. India, 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.
Effect of feeding a combination of galacto-oligosaccharides and a \textit{Bifidobacterium} sp. strain on feline intestinal ecosystem.
G. Biagi\textsuperscript{a,1}, I. Cipollini\textsuperscript{1}, M. Grandi\textsuperscript{1}, C. Pinna\textsuperscript{1}, A. Pompei\textsuperscript{1}, M. Zini\textsuperscript{1}, and G. Zaghini\textsuperscript{1}, \textsuperscript{1}Department of Veterinary Medical Sciences, University of Bologna, Ozzano Emilia, Italy, \textsuperscript{2}Department of Pharmaceutical Sciences, University of Bologna, Bologna, Italy, \textsuperscript{3}Department of Biochemistry, University of Bologna, Bologna, Italy.

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\textsuperscript{a,1}, A. Wolff\textsuperscript{1}, A. N. Beloshapka\textsuperscript{1}, B. M. Vester Boler\textsuperscript{1}, and K. S. Swanson\textsuperscript{1,2}, \textsuperscript{1}Department of Animal Sciences, University of Illinois, Urbana, \textsuperscript{2}Division of Nutritional Sciences, University of Illinois, Urbana.

Comparison of fecal microbial communities of healthy adult dogs fed raw meat-based or extruded diets using 454 pyrosequencing.
A. N. Beloshapka\textsuperscript{a,1}, S. E. Dowd\textsuperscript{1}, L. Duclos\textsuperscript{1}, and K. S. Swanson\textsuperscript{1,2}, \textsuperscript{1}Department of Animal Sciences, University of Illinois, Urbana, \textsuperscript{2}Division of Nutritional Sciences, University of Illinois, Urbana, \textsuperscript{3}Research and Testing Laboratory, Lubbock, TX, \textsuperscript{4}Nature’s Variety Inc., Lincoln, NE.

Processing techniques to maintain low glycemic index of peas.
J. Fouhse\textsuperscript{1}, J. Adolphe\textsuperscript{1}, L. Weber\textsuperscript{1}, and M. Drew\textsuperscript{1}, \textsuperscript{1}University of Saskatchewan, Saskatoon, Saskatchewan, Canada, \textsuperscript{2}Western College of Veterinary Medicine, Saskatoon, Saskatchewan, Canada.

Acute effects of carbohydrates in dogs.
J. L. Adolphe\textsuperscript{a,1}, J. M. Fouhse\textsuperscript{1}, M. D. Drew\textsuperscript{1}, and L. P. Weber\textsuperscript{1}, \textsuperscript{1}Department of Veterinary Biomedical Sciences, Western College of Veterinary Medicine, University of Saskatchewan, Saskatoon, Saskatchewan, Canada, \textsuperscript{2}Department of Animal and Poultry Science, College of Agriculture and Bioresources, University of Saskatchewan, Saskatoon, Saskatchewan, Canada.

Effects of protease enzyme on diets for growing mink (\textit{Mustela vison}).
E. S. Dierenfeld\textsuperscript{a,1}, E. Keith\textsuperscript{1}, R. Johnson\textsuperscript{2}, C. Falco\textsuperscript{2}, B. Roeder\textsuperscript{3}, and N. Odetallah\textsuperscript{1}, \textsuperscript{1}Novus International, Inc., St. Charles, MO, \textsuperscript{2}FBAC, Sandy, UT, \textsuperscript{3}Brigham Young University, Provo, UT.

Influence of feeding a fish oil containing diet to mature overweight dogs: Effects on lipid and protein metabolism, postprandial glyceremia, and body weight.
M. R. C. de Godoy\textsuperscript{a,1}, K. R. McLeod, and D. L. Harmon, University of Kentucky, Lexington.

Influence of feeding a fish oil containing diet to adult lean dogs: Effects on lipid and protein metabolism, postprandial glyceremia, and body weight.
M. R. C. de Godoy\textsuperscript{a,1}, C. E. Conway, K. R. McLeod, and D. L. Harmon, University of Kentucky, Lexington.

In vivo and in vitro procedures for measuring coat quality after dietary manipulation in dogs.
G. González-Ortiz\textsuperscript{1}, L. Castillejos\textsuperscript{a,1}, R. Franco-Rosselló\textsuperscript{2}, J. J. Mallo\textsuperscript{2}, J. Alcañiz\textsuperscript{3}, M. A. Calvo\textsuperscript{2}, and M. D. Baucells\textsuperscript{1}, \textsuperscript{1}Nutrition and Welfare Service, Department of Animal and Food Science (UAB), Bellaterra, Spain, \textsuperscript{2}Departament de Sanitat i d’Anatomia Animals (UAB), Bellaterra, Spain, \textsuperscript{3}Norel, S.A., Spain.

Evaluation of a mixture of \textit{Bacillus amyloliquefaciens} CECT 5940 and \textit{Enterococcus faecium} CECT4515 in adult healthy dogs.
G. González-Ortiz\textsuperscript{1}, L. Castillejos\textsuperscript{a,1}, J. J. Mallo\textsuperscript{2}, J. Alcañiz\textsuperscript{2}, M. A. Calvo\textsuperscript{2}, and M. D. Baucells\textsuperscript{1}, \textsuperscript{1}Nutrition and Welfare Service, Department of Animal and Food Science (UAB), Bellaterra, Spain, \textsuperscript{2}Departament de Sanitat i d’Anatomia Animals (UAB), Bellaterra, Spain, \textsuperscript{3}Norel, S.A., Spain.

Effect of increasing levels of mannoprotein in humoral immunity in dogs.
A. F. Chizzotti\textsuperscript{a,1}, 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.

Effect of dietary starch level on protein metabolism in domestic cats.
T. J. Wester\textsuperscript{a,1}, K. Weigdrauf\textsuperscript{2}, M. Hekman\textsuperscript{3}, N. J. Cane\textsuperscript{1}, and M. H. Tavendale\textsuperscript{1}, \textsuperscript{1}Institute of Food, Nutrition and Human Health, Massey University, Palmerston North, New Zealand, \textsuperscript{2}Institute of Veterinary, Animal and Biomedical Sciences, Palmerston North, New Zealand, \textsuperscript{3}AgResearch Ltd., Palmerston North, New Zealand.

Effect of glucose infusion and dietary protein level on urea production in the domestic cat.
T. J. Wester\textsuperscript{a,1}, K. Weigdrauf\textsuperscript{2}, M. Hekman\textsuperscript{3}, N. J. Cane\textsuperscript{1}, and M. H. Tavendale\textsuperscript{1}, \textsuperscript{1}Institute of Food, Nutrition and Human Health, Massey University, Palmerston North, New Zealand, \textsuperscript{2}Institute of Veterinary, Animal and Biomedical Sciences, Palmerston North, New Zealand, \textsuperscript{3}AgResearch Ltd., Palmerston North, New Zealand.
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T68 Effects of sow stocking rate and season on bermudagrass (Cynodon dactylon) ground cover.
S. Pietrosemoli*†, J. C. Guevara‡, and J. T. Green§, †Animal Science Department, North Carolina State University, Raleigh, ‡Alternative Swine Research and Extension Project, Raleigh, NC, §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.

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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.

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. Cunha¹, A. D. Lage¹, M. M. P. Araújo¹, C. F. Abreu¹, A. R. Tassinari¹, M. R. Souza¹, C. F. A. M. Penna¹, L. M. Fonseca¹, M. O. Leite¹, and M. M. O. P. Cerqueira*², ¹Universidade Federal de Minas Gerais, Belo Horizonte, Minas Gerais, Brazil, ²3M 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.

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. Reid¹, ¹Brescia University College, London, Ontario, Canada, ²Canadian Research and Development Center for Probiotics, London, Ontario, Canada.

T77 Detection and transfer of the glutamate decarboxylase gene in Streptococcus thermophilus.
G. Somkuti*¹, 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.

T79 Genetic analysis of a novel plasmid encoded duracin locus in Enterococcus durans 41D.
L. Du¹, G. Somkuti¹*, and J. Renye², ¹Nanjing University of Finance and Economics, Nanjing, China, ²Eastern Regional Research Center/USDA, Wyndmoor, PA.

T80 Development of a qPCR method for monitoring strain dynamics during yogurt manufacture.

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.
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.

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.

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.

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.

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.

Effect of microencapsulation on survival of *Lactobacillus acidophilus* La5 during simulated gastrointestinal conditions of stirred yoghurt after refrigerated storage.

Viability of free and microencapsulated *Lactobacillus acidophilus* La5 in stirred yoghurt during refrigerated storage.

In vitro property evaluation of *Propionibacterium* cultures for probiotic applications.

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.

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**Milk Protein & Enzymes**

Effects of prolactin on the expression of genes related to milk protein synthesis in bovine mammary epithelial cells.

The best ratio between lysine and methionine on milk protein synthesis in bovine mammary epithelial cells.

Development of safe glue sticks containing whey protein.
G. Wang and M. Guo*, The University of Vermont, Burlington.

Isolation and characterization of prosaposin from milk from four goat breeds.

**Food Safety**

C. Mori*, E. A. García, C. Ducatti, J. C. Denadai, and K. Pelicia, São Paulo State University, Botucatu, São Paulo, Brazil; São Paulo State University, Registro, São Paulo, Brazil.

Use of stable isotopes of carbon-13 and nitrogen-15 in quail eggs.
C. Mori*, C. Ducatti, C. C. Pizzolante, S. K. Kakimoto, and J. C. Denadai, São Paulo State University, Botucatu, São Paulo, Brazil; São Paulo State University, Registro, São Paulo, Brazil; São Paulo Agency of Agribusiness Technology, Brotas, São Paulo, Brazil.
**T100** Adsorption capacity and efficacy assessment of bamboo charcoal as 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.

**T102** Horizontal transfer of Stx2 gene from *E. coli* O157:H7 to non-pathogenic *E. coli* occurred under feedlot conditions.

**T103** Antagonistic intestinal microflora produces antimicrobial substance inhibitory to *Pseudomonas* species and other spoilage organisms.
B. Hatew*, T. Delessa, V. Zakin, and N. Gollop, 1Agricultural Research Organization of Israel, Bet-Degan, Israel, 2Wageningen University, Wageningen, the Netherlands, 3Swiss Federal Institute of Technology, Zurich, Switzerland.

**T104** Microencapsulated feed additives to reduce *Salmonella* shedding.
E. Grilli**, R. Bari*, A. Piva*, B. Tugnoli*, and T. R. Callaway*, 1University of Bologna, Ozzano Emilia, BO, Italy, 2Food 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**, R. C. M. Queiroz*, and A. T. Adesogan*, 1Department of Animal Sciences, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, 2Brazilian Agricultural Research Corporation, Embrapa Cattle-Southeast, 13560-970, São Carlos, SP, Brazil.

**T106** Effects of predipping practices on milk iodine concentrations.

**T107** Effects of natural beta-acids extracted from hops on *Salmonella* and *Campylobacter* pure culture.
N.A. Krueger**, R. C. Anderson*, J. A. Byrd, M. D. Flythe*, and D. J. Nisbet*, 1Food and Feed Safety Research Unit, United States Department of Agriculture, Agriculture Research Service, College Station, TX, 2Forage 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*, 12, 1S. Nouaille*, 12, 1J. Thouin*, 12, 1L. Rault*, 12, 1J. Fauquant*1, 12, 1P. Loubière*, 12, 1L. A. Nero*, 12, 1B. Li*, 12, 1S. Yang*, 12, 1Y. Liu*, 12, 1J. Thouin* 1, 12, 1Y. Jiang*, 12, 1B. Tugnoli*, 12, 1Y. Le Loir*. 1INRA, STLO, Rennes, France, 2Agrocampus Ouest, STLO, Rennes, France, 3Université de Toulouse; INSA, Toulouse, France, 4INRA, UMR792, Toulouse, France, 5University of Geneva Hospitals, Geneva–Switzerland, 6ANSES, LERQAP, Maisons-Alfort, France.

**T109** Characterization of risk of food pathogens in Minas Frescal cheese.

**T110** Inhibition of *Listeria monocytogenes* growth in cheddar cheese by nanofiltration retentate of tryptic extract of whey proteins.
V. Demers-Mathieu**, G. Robitaille*, S. Gauthier*, M. D. Flythe*, and M. Britten*, 1Food Research and Development Centre, Agriculture and Agri-Food Canada, St Hyacinthe, QC, Canada, 2Centre 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.

**T112** Prediction the growth of *Staphylococcus aureus* in raw milk using modified Gompertz and Logistic models.
B. Li*, C. Man1, M. Guo2, Y. Su*, F. Zhao2, S. Yang1, Y. Jiang1, Y. Lang2, and Y. Jiang1, 1National Dairy Engineering and Technology Research Center, Northeast Agricultural University, Harbin, Heilongjiang, China, 2Department of Food Science, Northeast Agricultural University, Harbin, Heilongjiang, China, 3Department 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 monooxide treatment.
Y. Jiang1, C. Man1, M. Guo*, Y. Li1, F. Zhao2, Y. Liu2, B. Li*, S. Yang1, and Y. Jiang1, 1National Dairy Engineering and Technology Research Center, Northeast Agricultural University, Harbin, Heilongjiang, China, 2Department of Food Science, Northeast Agricultural University, Harbin, Heilongjiang, China, 3Department of Nutrition and Food Sciences, The University of Vermont, Burlington.

**T114** Simultaneous analysis of anions Cl, NO3, SO4, PO4, and PO3 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.
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T116
Descriptive statistics for surface and core temperatures measured with infrared imaging and a digital thermometer on commercial Midwestern US silages.

T117
Intake, digestibility, and internal marker recovery of bermudagrass fed to cattle.

T118
In vitro gas production and microbial efficiency of Paulownia tomentosa.
V. Gallardo-Santillan1, R. Luevano-Escobedo1, V. M. Llamas-Rodriguez1*, M. Guerrero-Cervantes1, H. Bernal-Barragán1, A. S. Juárez-Reyes1, and M. A. Cerrillo-Soto1, Universidad Juárez del Estado de Durango, Durango, México, 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-Luna1*, D. Dominguez-Diaz1, M. R. Murphy2, F. A. Rodríguez-Almeida1, C. Arzola1, G. Villalobos2, and J. A. Ortega-Gutierrez1, Facultad de Zootecnia y Ecología, Universidad Autónoma de Chihuahua, Chihuahua, Chihuahua, México, 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. Marichal1*, R. Crespi, M. de los A. Bruni, S. Furtado, and G. Arias, Departamento de Producción Animal y Pasturas, Facultad de Agronomía, Universidad de la República, Montevideo, Uruguay.

T121
Predictive accuracy of near-infrared reflectance (NIR) technology for fat and fatty acids in randomly selected TMR samples.

T122
Relationships of fermentation characteristics in corn forage.
R. Ward1* and D. R. Mertens2, *Cumberland Valley Analytical Services Inc, Maugansville, MD, Mertens Innovation & Research LLC, Belleville, WI.

T123
Factors affecting estimation of spoilage indices in silage. 1: Effects of culture media, temperature, and duration.
J. Leite1, K. G. Arriola1, N. Cavalcanti1, O. C. M. Queiroz1, E. N. Muniz1*, and A. T. Adesogan1, Department of Animal Sciences, IFAS, University of Florida, Gainesville, Universidad Federal Rural de Pernambuco, Recife, PE, Brazil, Embrapa Tabuleiros Costeires, Aracaju, SE, Brazil.

T124
Relationship between residual feed intake, performance, and carcass parameters of pasture finished cattle.
J. P. S. Neel1*, E. E. D. Felton1, S. K. Duckett1, and W. S. Swecker4, USDA-ARS-AFSRC, Beaver, WV, *West Virginia University, Morgantown, Clemson University, Clemson, SC, *Virginia Tech University, Blacksburg.

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T125
Herbage accumulation in Brachiaria humidicola subjected to different frequencies and intensities of defoliation.
H. H. Vilela1, D. Nascimento Junior*1, A. L. Santos1, D. L. R. Henriques1, B. D. Faria1, C. A. S. Freitas1, and A. F. Sbrissia1, Universidad Federal de Viçosa, Viçosa, MG, Brazil, 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. Vilela1, A. L. Santos1, B. D. Faria1, B. M. L. Sousa1, G. O. Rocha1, and A. F. Sbrissia1, Universidad Federal de Viçosa, Viçosa, MG, Brazil, 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. Sousa1, H. C. F. Monteiro1, H. H. Vilela1, M. C. T. Silveira1, A. F. Sbrissia1, and S. C. Da Silva1, Universidad Federal de Viçosa, Viçosa, MG, Brazil, Universidad do Estado de Santa Catarina, Lages, SC, Brazil, Escola Superior de Agricultura Luiz de Queiroz, Piracicaba, SP, Brazil.

T128
Pre-and post-grazing targets for mulato grass subjected to rotational stocking management.
M. C. T. Silveira1, D. Nascimento Junior*1, S. C. Da Silva1, K. S. Pena1, S. C. Rodrigues1, S. J. Souza1, V. A. Limao1, L. M. Barbero2, and B. M. L. Sousa1, Universidad Federal de Viçosa, Viçosa, MG, Brazil, 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. Santos1, V. M. Gomes1, D. M. Fonseca1, D. Nascimento Junior*1, and A. F. Sbrissia1, Universidad Federal de Uberlandia, Uberlandia, MG, Brazil, Universidad Federal de Viçosa, Viçosa, MG, Brazil, Universidad do Estado de Santa Catarina, Lages, SC, Brazil.
Forage utilization efficiency estimated in *Pennisetum purpureum* submitted to grazing severities.

Grazing losses and grazing efficiency on mulato grass subjected to strategies of rotational stocking management.

Relationship between canopy light interception and pre-grazing sward height in *Brachiaria humidicola* pastures subjected to frequencies and intensities of defoliation.

Tiller population density in *Brachiaria humidicola* pastures subjected to frequencies and intensities of defoliation.

Forage production and leaf area index of tropical grass cultivars under irrigation in the cerrado region of Minas Gerais, Brazil.
E. A. da Silva, W. da Silva, J. R. M. Ruas, D. S. Queiroz, M. C. M. Viana, J. M. V. Paes, and L. C. da Silva Júnior, 1EPAMIG, Uberaba, Minas Gerais, Brazil, 2EPAMIG, Janaúba, Minas Gerais, Brazil, 3EPAMIG, Viçosa, Minas Gerais, Brazil, 4EPAMIG, Prudente de Morais, Minas Gerais, Brazil, 5CNPq, Brasilia, Federal District, Brazil, 6FAPEMIG, Belo Horizonte, Minas Gerais, Brazil, 7FAZU, Uberaba, Minas Gerais, Brazil, 8FAPEMIG, Belo Horizonte, Minas Gerais, Brazil.

Morphogenic characteristics of tropical grass cultivars under irrigation in the cerrado region of Minas Gerais, Brazil.
E. A. da Silva, W. da Silva, J. R. M. Ruas, M. C. M. Viana, D. S. Queiroz, J. M. V. Paes, and L. C. da Silva Júnior, 1EPAMIG, Uberaba, Minas Gerais, Brazil, 2EPAMIG, Janaúba, Minas Gerais, Brazil, 3EPAMIG, Viçosa, Minas Gerais, Brazil, 4EPAMIG, Prudente de Morais, Minas Gerais, Brazil, 5CNPq, Brasilia, Federal District, Brazil, 6FAPEMIG, Belo Horizonte, Minas Gerais, Brazil, 7FAZU, Uberaba, Minas Gerais, Brazil, 8FAPEMIG, Belo Horizonte, Minas Gerais, Brazil.

Effect of patch-burning mixed-grass prairie rangeland on cattle performance.

Estimating pasture growth rates using local weather data.
E. B. Rayburn and W. L. Shockey, West Virginia University, Morgantown.

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. Watiaux, R. Gildersleeve, B. L. Barham, and V. E. Cabrera, University of Wisconsin, Madison.

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.

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, M. H. T. Mascarenhas, W. M. Alberna, F. M. Freire, R. C. Alvarenga, E. A. Silva, M. M. Gontijo Neto, and M. F. F. Teixeira, 1EPAMIG - Minas Gerais Agricultural Research Corporation, Belo Horizonte, Minas Gerais, Brazil, 2EMATER MG - Minas Gerais Agricultural Assistance and Rural Extension, Belo Horizonte, Minas Gerais, Brazil, 3Embrapa Maize and Sorghum, Sete Lagoas, Minas Gerais, Brazil, 4FEAD, Belo Horizonte, Minas Gerais, Brazil, 5FAPEMIG, Belo Horizonte, Minas Gerais, Brazil.

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.

Production of wheat and oats overseeded into Tifton-85 grass at different forage allowances.
F. F. Simili, A. C. Ruggieri, T. V. Bertolino, D. R. Casagrande, R. A. Reis, and R. Godoy, 1APTA, Ribeirao Preto, Sao Paulo, Brazil, 2UNESP, Jaboticabal, Sao Paulo, Brazil, 3UFAM, Parintins, Amazonas, Brazil, 4EMBRAPA, Sao Carlos, Sao Paulo, Brazil.

Effects of lack of shade on Wye Angus brood cows.
M. S. Updike and R. M. Harrell, University of Maryland, College Park.

Effect of stocking rate on forage production, soil compaction and root numbers in a swine pasture system.

Average annual weight prediction of cows kept four years in a tough regime using a model of simulation.
Effects of stocking rate and supplementation on carcass traits of beef cattle grazing winter annual forages.
B. C. Williamson*1, M. L. Looper1, F. M. Rouquette1, G. E. Alken1, S. F. Tabler1, J. B. Wolley2, and C. F. Rosenkrans1. 1University of Arkansas, Fayetteville, 1USDA/ARS, DBSFRC, Booneville, AR, 1Texas AgriLife Research, Overton, 1USDA/ARS, FAPRU, Lexington, KY.

Matching hay composition to requirements during the winter.
W. M. Backus1, B. T. Campbell1, A. M. Saxton1, D. K. Joines2, and J. C. Waller*, 1The University of Tennessee, Knoxville, 1Soil, Plant, and Pest Center, Nashville, TN.

Total fat and fatty acid composition of steaks from steers finished on three different forage systems in the Gulf Coast Region.
G. Scaglia1, J. Rodriguez2, K. McMillin2, G. Gentry1, and H. Boland3, 1LSU AgCenter School of Animal Sciences, Baton Rouge, LA, 1Prairie Unit Mississippi State University, Prairie.

Effect of molasses or cornmeal on milk production and nitrogen utilization of grazing organic dairy cows.
S. Ross1, A. F. Brito1, K. J. Soder1, K. Greene1, A. Green1, and P. Y. Chouinard1, 1University of New Hampshire, Durham, 1USDA-Agricultural Research Service-Pasture Systems and Watershed Management Research Unit, University Park, PA, 1Université Laval, Quebec City, Quebec, Canada.

Sensory properties and abundance of selected volatile compounds in milk from cows fed timothy grass as hay, silage or pasture.
M. P. Villeneuve1,2,3, Y. Lebeuf1,2,3, R. Gervais1, G. F. Tremblay1, J. C. Vuillemard1,4, and P. Y. Chouinard1,2, 1Département des sciences animales, Université Laval, Québec, QC, Canada, 1Institute National de la Recherche Agronomique (INAF), Québec, QC, Canada, 3Agriculture and Agri-Food Canada, Québec, QC, Canada, 3Département des sciences des aliments et de nutrition, Université Laval, Quebec City, Quebec, Canada.

Horse Species
Equine Advancements I

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.

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.

Round-bale feeder design affects hay waste and intake during horse feeding.

Glycemic and insulminemic responses of weanling horses to high and low protein diets.
A. L. Wagner1,2, R. N. Diganantionii1, S. L. Tanner1, R. B. Ennis1, P. A. Harris1, J. T. Sylvest1er, and K. L. Urschel1, 1University of Kentucky, Lexington, 1WALTHAM Centre For Pet Nutrition, Melton Mowbray, UK, 1Buckeye Nutrition, Dalton, OH.

The development, evaluation and implementation of an online safety course for youth working on equine facilities.
E. A. Greene*, K. L. Waite2, G. Heyboer2, J. Whittle2, C. D. Skelly2, and K. Vignare2, 1University of Vermont, Burlington, 1Michigan State University, East Lansing, 1University of Kentucky, Lexington.

Greener pastures, stable footing, and seeking balance: An easy-to-use land stewardship series for all horse owners.
E. A. Greene*, R. Gilk1er2, and K. Martinson*, 1University of Vermont, Burlington, 1University of Minnesota, St. Paul.

Genetic evaluation of annual earnings in Quarter Horses.
J. A. V. Silva1, A. P. A. Silva1, B. Langlois2, C. B. Cyrino1, and M. D. S. Mota1, 1Faculdade de Medicina Veterinária e Zootecnia, Unesp, Botucatu, São Paulo, Brasil, 1Institut National de la Recherche Agronomique, Jouy en Josas, France.

Genetic correlation between racing performance traits in Quarter Horses.
M. D. S. Mota1, B. Langlois2, R. A. Curi1, M. C. L. Dal Coleto1, and J. A. V. Silva1, 1Faculdade de Medicina Veterinária e Zootecnia, Unesp, Botucatu, São Paulo, Brasil, 1Institut National de la Recherche Agronomique, Jouy en Josas, France.

Genome-wide association of polymorphic gait in the horse.
E. A. Staiger1, R. R. Bellone2, N. B. Sutter1, and S. A. Brooks1, 1Department of Animal Science, Cornell University, Ithaca, NY, 1Department of Biology, University of Tampa, Tampa, FL, 1Department of Clinical Science, College of Veterinary Medicine Cornell University, Ithaca, NY.

Aromatherapy treatment in horses.
C. E. Ferguson*, H. Klieman, A. L. Browning, J. Browning, and E. L. Ferguson, McNeese State University, Lake Charles, LA.

L-Arginine supplementation increases ovarian blood flow in postpartum mares.

Using glycerol-4H to evaluate equine blastocyst capsule permeability.
B. R. Scott1, D. B. Carwell2, R. A. Hill3, K. R. Bondioli1,2, R. A. Godke1,2, and G. T. Gentry1,2, 1School of Animal Sciences, Louisiana State University AgCenter, Baton Rouge, 1Reproductive Biology Center, Louisiana State University AgCenter, St. Gabriel.
International Animal Agriculture

T166 Milk and plasma iodine in Isfahan Holstein dairy cows.
A. Nikkhah*1 and G. Ghorbani2, 1University of Zanjan, Zanjan, Iran, 1Isfahan 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. Pierce1, L. Delaby1, A. Brennan1, and B. Horan1, 1Animal and Grassland Research and Innovation Centre, Teagasc Moorepark, Fermoy, Co. Cork, Ireland, 2School of Agriculture, Food Science and Veterinary Medicine, University College Dublin, Belfield, Dublin, Ireland, 1INRA, AgroCampus Ouest, Saint-Gilles, France.

G. Császár1, A. Unger2, and L. Varga*, 1Hungarian Dairy Research Institute, Inc., Mosonmagyarovar, Hungary, 2Department 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. Jatawa1, S. Koonawootrittriron1, M. A. Elzo*2, and T. Suwanaslopee1, 1Kasetsart University, Bangkok, Thailand, 2University of Florida, Gainesville.

T170 Factors affecting carcass weight, dressing percent, and marbling score of crossbred beef cattle in tropical Thailand.
S. Koonawootrittriron1, M. A. Elzo*2, C. Kankaew1, and M. Osothongs1, 1Kasetsart University, Bangkok, Thailand, 2University of Florida, Gainesville, 3Pon 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-Elizondo1, and E. E. Corea-Guillén1, 1Estación Experimental Alfredo Volio Mata, Facultad de Ciencias Agroalimentarias, Universidad de Costa Rica, 2Departamento 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-Alvarez1, and A. J. Heinrichs2, 1Estación Experimental Alfredo Volio Mata, Facultad de Ciencias Agroalimentarias, Universidad de Costa Rica, 2The Pennsylvania State University, University Park.

T174 Milk composition, blood cellular and chemical components of Saanen and local Lebanese goats.

T175 Assessment nutrient matrix values of three xylanase and β-glucanase on broilers performance fed wheat-based diet.
S. A. Mofakharzadeh*, 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. Mofakharzadeh*, 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*, H. T. Wang2, J. T. Hsu1, and C. Y. Chen1, 1National Taiwan University, Taipei, Taiwan, 2Chinese Culture University, Taipei, Taiwan.
Nonruminant Nutrition
Amino Acids
Sponsor: Archer Daniels Midland

Fermentation biomass can replace protein from fish and soybean meals in nursery diets.
V. G. Perez1,3, H. Yang1, T. R. Radke1, J. Less2, and D. P. Holzgreve1, 1ADM Alliance Nutrition Inc., Quincy, IL, 2ADM Specialty Feed Ingredients, Decatur, IL.

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. Olukosi1, O. Bolarinwa1, A. J. Cowieson1, and O. Adeola2*, 1Avian Science Research Centre, Scottish Agricultural College, Ayr, Ayrshire, United Kingdom, 2Department of Animal Sciences, Purdue University, West Lafayette, IN, 3Poultry Research Foundation, Faculty of Veterinary Science, The University of Sydney, Camden, Sydney.

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.

Essential amino acids to crude protein ratio in placenta and uterus during gestation.
Y. L. Ma1, N. Trottier2, J. Liesman3, R. L. Payne1, and M. D. Lindemann4, 1University of Kentucky, Lexington, 2Michigan State University, East Lansing, 3Evinik-Degussa Corp., Kennesaw, GA.

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.

Serum amino acid concentration and expression of amino acid transporter bo,+ in pigs fed diets with different protein and amino acid levels.
H. García1, A. Morales1, A. B. Araiza1, M. Cervantes2*, J. Yañez1, and P. Carrillo1, 1ICA, Universidad Autónoma de Baja California, Mexicali, BC, México, 2Universidad Autónoma de Tlaxcala, Tlaxcala, Tlax, México.

Effect of dietary leucine and isoleucine on productive performance and myosin expression in growing pigs.
V. Méndez1, A. Morales2*, M. Cervantes3, B. A. Araiza2, and M. A. Barrera1, 1ICA, Universidad Autónoma de Baja California, Mexicali, BC, México, 2Universidad de Sonora, Hermosillo, Son., México.

Preference for diets with free L-tryptophan in pigs with different tryptophan status.
J. Suárez1, E. Roura2*, I. Ipharraguerre2*, and D. Torrallardona3, 1IRTA-Mas de Bover, Constantí, Spain, 2Lucta S.A., Barcelona, Spain, 3Current address: University of Queensland, Brisbane, Australia.

Effects of dietary inclusion of bioactive grape seed extract on protein and amino acid digestibility in broiler chicks.
S. Chamorro1, A. Viveros1, C. Centeno1, C. Romero2*, I. Arjia2, and A. Brenes1, 1Instituto de Ciencia y Tecnología de Alimentos y Nutrición, ICTAN, CSIC, Madrid, Spain, 2Facultad de Veterinaria, Universidad Complutense de Madrid, Spain, 3Escuela de Ingenieros Agrónomos, Universidad Politécnica de Madrid, Spain.

Effect of lysine and ractopamine on the performance of immunocastrated pigs from 97 to 124 kg.
D. O. Fontes1*, B. O. Rosa2, U. A. D. Orlando2, M. A. e Silva3, and P. C. Silva1, 1Department of Animal Science, Veterinary School of UFMG, Brazil, 2BRF Foods, Brazil.

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. Violqué*, and S. W. Kim, North Carolina State University, Raleigh.

Nonruminant Nutrition
Energy

Importance of sampling diets on the precision of ME studies with swine.

Influence of dietary net energy concentration provided during the finishing period on carcass, meat and fat characteristics of heavy gilts.
M. A. Latorre1,2, J. Suárez1, M. A. Sanz1, G. Ripoll1, and M. Joy1, 1Universidad de Zaragoza, Spain, 2Centro de Investigación y Tecnología Agroalimentaria de Aragón, Zaragoza, Spain.

Metabolizable energy and digestibility of carbohydrates in cereal grains fed to growing pigs.
S. K. Cervantes-Pahn* and H. H. Stein, University of Illinois, Urbana.
T204  **Nutritional value of acerola meal for broiler chickens.**
L. H. Zanetti*1, V. C. da Cruz2, G. do Valle Polycarpo3, A. C. Pezzato2, J. R. Sartori2, V. B. Fascina2, R. F. de Oliveira1, A. L. C. Brichi1, M. L. Poiatti1, O. J. Sabbag3, F. Vercese3, and F. B. de Carvalho2, 1São Paulo State University, Dracena Campus, Dracena, São Paulo, Brazil, 2São Paulo State University, Botucatu Campus, Botucatu, São Paulo, Brazil.

T203  **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.

T202  **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  **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.

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.

T192  **Nutritional value of acerola meal for broiler chickens.**
L. H. Zanetti*1, V. C. da Cruz1, G. do Valle Polycarpo2, A. C. Pezzato1, J. R. Sartori3, V. B. Fascina2, R. F. de Oliveira3, A. L. C. Brichi1, M. L. Poiatti1, O. J. Sabbag3, F. Vercese3, and F. B. de Carvalho2, 1São Paulo State University, Dracena Campus, Dracena, São Paulo, Brazil, 2São Paulo State University, Botucatu Campus, Botucatu, São Paulo, Brazil.

**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.

T200  **Fatty acid content and sensory evaluation of trimmed loins as influenced by timing of feeding flaxseed or fish oil to pigs.**
H. R. Martinez-Ramirez*, L. M. Pivotto1, I. B. Mandell2, J. K. G. Kramer2, and C. F. M. de Lange1, 1Centre for Nutritional Modelling, Department of Animal and Poultry Science, University of Guelph, Guelph, ON, Canada, 2Agriculture and Agri-Food Canada, Guelph, ON, Canada.

T202  **Gene expression of the L–amino acid–sensing receptor T1R1/T1R3 changes in gut tissues of pigs in response to dietary protein.**
G. Tedo1, E. Roura2, 1Lucta SA, Feed Additives Division, Montornes del Vallés, Barcelona, Spain, 2Autonomous University of Barcelona, Bellaterra, Barcelona, Spain, 3Current address: University of Queensland, Brisbane, Australia.

T203  **Gene expression of the porcine sweet taste receptor in tongue and gut tissues changes after weaning.**
G. Tedo1, X. Manteca3, I. Ipharragueur1, M. Reina1, D. Torrallardona4, and E. Roura1, 1Lucta SA, Feed Additives Division, Montornes del Valles, Barcelona, Spain, 2Autonomous University of Barcelona, Veterinary School, Bellaterra, Barcelona, Spain, 3University of Barcelona, Cell Biology Dept., Celltec-UB, Barcelona, Spain, 4IRTA-Mas de Bover, Constanti, Tarragona, Spain, 5Current 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. Dillon1, J. Fanning1, T. Sweeney1, J. Egan1, C. J. O’Shea1, M. Gutierrez2, C. Mannion1, F. Leonard3, and J. V. O’Doherty*, 1University College Dublin, Dublin, Ireland, 2Central Veterinary Research Laboratories, Backweston, Celbridge, Co. Kildare, Ireland.

Physiology and Endocrinology II

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.

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.


Effect of feed restriction on reproductive and metabolic hormones in dairy cows. H. Gençoglu, A. Nascimento, K. Hackbart, L. F. Ferraretto, F. Dalla Costa, J. Guenther, R. Meyer, R. D. Shaver, and M. C. Wiltbank, Department of Dairy Science, University of Wisconsin-Madison, Madison, Department of Animal Nutrition and Nutritional Diseases, Faculty of Veterinary Medicine, University of Uludag, Bursa, Turkey.


Effects of propiogenic supplements on serum concentration of insulin and progesterone in nonlactating cows: I. Monensin. T. Leiva, M. Barbosa, R. O. Rodrigues, R. F. Cooke, and J. L. M. Vasconcelos, UNESP – Faculdade de Medicina Veterinária e Zootecnia, Botucatu, SP, Brazil, Oregon State University – Eastern Oregon Agricultural Research Center, Burns, OR.


Influence of CIDR-based protocols associated with supplementation of calcium soap on reproductive performance of Nellore cows. M. V. Biehl, A. V. Pires, I. Susin, D. D. Nopemuceno, J. R. S. Gonçalves, L. H. Cruppe, F. M. Da Rocha, and M. L. Day, University of Sao Paulo, Pirassununga, SP, Brazil, University of Sao Paulo, Piracicaba, SP, Brazil, Ohio State University, Columbus, Experimental Station Georgina Hildegard von Pritzelwitz, Londrina, PR, Brazil.


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. Biehl1, A. V. Pires2, I. Susin1, L. H. Cruppe1, D. D. Nepomuceno1, J. R. S. Gonçalves4, F. M. Da Rocha1, and M. L. Day3,
1University of Sao Paulo, Pirassununga, SP, Brazil, 2University of Sao Paulo, Piracicaba, SP, Brazil, 3Ohio State University, Columbus, 4Experimental Station Georgina Hildegard von Pritzelwitz, Londrina, PR, Brazil.

T221 Effects of ethanol and acetic acid fed to high-producing dairy cows on blood parameters.

T222 Estrous response in yearling and multiparous ewes during reduction on the synchronized luteal phase and eCG injection.
J. L. Cordero1, T. Sánchez2, P. Molina2, R. Nieto1, J. Peralta2, O. Mejía3, L. Olivares4, E. García5, and J. L. Figueroa6, 1Colecgio de Postgraduados, Texcoco, Estado de México, 2Universidad Autónoma del Estado de Hidalgo, Tulancingo, Hidalgo, México, 3FMVZ, Universidad Autónoma de México, Tres Marías, México, 4Universidad Autónoma del Estado de México, Toluca, Estado de México, 5CUCSUR, 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.

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.

T225 Relationship between follicular and ovulatory responses with embryo production during superovulatory treatment in cattle.
H. Kohram1,2 and M. Poorhamdollah1,3, 1Department of Animal Science, Faculty College of Agriculture and Natural Resources, University of Tehran, Karaj, Iran, 2Department 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. Nikkihah*, 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*, I. S. Lang1, U. Hennig1, M. Peters2, K.-P. Brüssow1, E. Kanitz1, M. Tuchscherer1, F. Schneider1, J. Weitzel5, A. Ooster4, H. Sauerwein2, G. Nürnberg1, C. Rehfelt1, and W. Otten4, 1Leibniz Institute for Farm Animal Biology (FBN), Dummerstorf, Germany, 2Institute of Animal Science, Rheinische Friedrich-Wilhelms-Universität, Bonn, Germany.

T228 Induction of luteal tissue in PGF2α-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*, D. J. Kesler2, M. Poole3, W. Storer4, and C. E. Ferguson2, 1McNeese State University, Lake Charles, LA, 2University of Illinois, Urbana-Champaign.

T230 Dynamics of fat cell turnover in visceral and subcutaneous fat tissue in dairy cows.
S. Häussler*, S. Dänicke, K. Friedauer1, D. Germeroth1, D. von Soosten1, and H. Sauerwein1, 1University of Bonn, Germany, 2Federal Research Institute, Braunschweig, Germany.

T231 Insulin sensitivity in obese (Iberian) and lean (Landrace) 50-kg barrows.

T232 Reproductive performance of replacement beef heifers when estrus was synchronized with progesterone (CIDR) for 5 or 7 d, GnRH, and PGF2α.
K. M. Bischoff1, T. E. Black1, R. D. Estermann1, G. A. Bridges1, G. C. Lamb1, and J. V. Yelich2, B. Pousson2, 1Institute of Animal Nutrition, Friedrich-Loeffler-Institute (FLI), Federal Research Institute for Animal Health, Dummerstorf, Germany, 2North Florida Research and Outreach Center, University of Florida, Gainesville, Florida, 3North 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*, F. Becker1, C. Hametner1, B. Losand2, R. M. Bruckmaier3, W. Kanitz2, and H. M. Hammon1, 1Leibniz Institute for Farm Animal Biology (FBN), Dummerstorf, Germany, 2State Institute for Agriculture and Fishery, Dummerstorf, Germany, 3Veterinary Physiology, Vetswisse 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*, C. Weber1, F. Becker1, C. Hametner1, B. Losand2, and W. Kanitz2, 1Leibniz Institute for Farm Animal Biology (FBN), Dummerstorf, Germany, 2State 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. Mellione, and J. S. Stevenson, Kansas State University, Manhattan.
Production, Management and the Environment I

T236  A mechanistic metabolic model of regulation of reproductive processes in dairy cattle.
J. P. McNamara1, S. L. Shields*, and I. Lean2, 1Washington State University, Pullman, 2University of Sydney, Camden, NSW, Australia.

T237  Effect of prostaglandin F2α on growth of Escherichia coli and Streptococcus uberis associated with bovine mastitis.
C. Autran1, B. Shafii1, M. McGuire1, J. Dalton1, and A. Ahmadzadeh1, 1University of Idaho, Moscow, 2Statistical Programs, College of Ag & Life Sci, Moscow, ID, 3Caldwell 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. Scanavez1, J. G. N. Moraes1, R. G. Bruno1,2, K. J. L. A. Rivera2, J. A. H. Rivera2, P. R. B. Silva1, L. G. D. Mendonca1, T. R. Bilby1, and R. C. Chebel1, 1Department of Veterinary Population Medicine, University of Minnesota, St. Paul, 2Texas AgriLife Research and Extension Service, Texas A&M System, Stephenville, 3Department 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.

T240  Effect of insemination timing on conception rates of dairy cows having high activity as identified by the Select Detect activity monitor.
R. L. Nebel1,2, J. M. DeJarnette1, and E. Harty2, 1Select Sires Inc., Plain City, OH, 2Dairymaster, Causeway, Co. Kerry, Ireland.

T241  Reproductive performance in Mexican Holstein dairies by geographic region.

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. DeJarnette1, M. A. Leach1, R. L. Nebel1, C. E. Marshall1, C. R. McCleary2, and J. F. Moreno3, 1Select Sires Inc., Plain City, OH, 2Sexing Technologies Inc., Plain City, OH, 3Sexing 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.

T244  Cytological endometritis incidence in crossbred dairy cows.

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. Oliveira1, V. F. M. Hossepiam de Lima1, R. M. Santos2, T. Martins3, R. F. G. Peres4, H. B. Graff5, E. R. Carvalho6, A. F. C. de Andrade7, and R. P. Arruda8, 1FCAV-UNESP, Jaboticabal, SP, Brazil, 2FAMEV-UFU, Uberlândia, MG, Brazil, 3FVMZ-UNESP, Botucatu, SP, Brazil, 4Agropecuária Fazenda Brasil, Nova Xavantina, MT, Brazil, 5FVMZ-USP, Pirassununga, SP, Brazil.

T246  An individual cow-based model to aid in decision making about reproductive management of dairy cows.
F. Cakabey1, A. De Vries2, G. M. Schuenemann1, and K. N. Galvão3, 1Capital University, Columbus, 2University of Florida, Gainesville, 3The 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.

T248  Economic evaluation of embryo transfer in dairy cows during the summer using linear programming.

T249  Economic comparison of two resynchronization protocols initiated at different intervals after insemination on fertility in lactating dairy cows.
J. G. N. Moraes1, R. G. S. Bruno2,3, P. R. B. Silva1, A. L. A. Scanavez2, L. G. D. Mendonça1, I. A. Hernandez-Rivera2, K. J. L. A. Rivera2,3, T. R. Bilby2, I. Fetrow1, and R. C. Chebel1, 1Department of Veterinary Population Medicine, University of Minnesota, St. Paul, 2Texas AgriLife Research and Extension Service, Texas A&M System, Stephenville, 3Department 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. Kalderon1 and V. Akay2, 1Cakabey High School, Izmir, Turkey, 2Global Nutritech Biyoteknoloji Ltd., Kocaeli, Turkey.
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*, W. Xiangrong1, H. Jianghua1, Y. Yulong2, and C. Caihui1, 1Department of Animal Science and Technology, Hunan Agricultural University, Changsha, Hunan, P. R. China, 2Institute of Subtropical Agriculture, Chinese Academy of Sciences, Changsha, Hunan, P. R. China.

Effect of season on four categories of fresh and current mastitis infections in Minnesota.
R. F. Leuer* and J. K. Reneau, University of Minnesota, Saint Paul.

Effect of somatic cells counting on milk composition of Holstein cows.
J. A. De Freitas*, A. F. Garcez Neto1, J. C. De Souza2, J. Da Silva2, V. L. De Souza1, and T. M. Dos Santos1, 1Federal University of Paraíba, Patotina, Paraíba, Brazil, 2Federal University of South Mato Grosso, Aquidauana, Mato Grosso do Sul, Brazil.

Evidence that maternal conjugated linoleic acid alters secondary metabolites in plasma of late-stage chick embryos that of Wisconsin-Madison.

Comparison of body weights in Berkshire and Large Black crossbreds produced by the use of antibiotic-free Yorkshire sows.

Use of a blood glucose meter compared with laboratory analysis in dairy calves.

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.

Association between milk urea nitrogen and fertility of Brazilian dairy cows.
M. C. Doska1, J. A. Horst2, A. A. Valloto2, and R. Almeida*, 1Universidade Federal do Paraná, Curitiba, PR, Brazil, 2Associação Paranaense de Criadores de Bovinos da Raça Holandesa, Curitiba, PR, Brazil.

Metabolic profiles and immune status of periparturient dairy cows transitioning from conventional to organic management system.

Season and stage of lactation affected metabolic profiles and innate immunity of periparturient dairy cows.

Management factors affecting microbial contamination of bovine colostrum.
E. Conrad*, K. Morrill1, J. Quigley2, and H. Tyler1, 1Iowa State University, Ames, 2APC Inc., Ankeny, IA.

Effect of short-term treatment with bovine somatotropin on milk yield of Brazilian dairy cows.
R. Almeida* and S. L. Viechnieski2, 1Universidade Federal do Paraná, Curitiba, PR, Brazil, 2StarMilk Farm, Céu Azul, PR, Brazil.

Chop length, dry matter and density of corn and wheat silage structures in California dairies.
N. Silva-del-Rio*1 and C. Heiman2, 1University of California Cooperative Extension, Tulare, 2Alltech, Lexington, KY.

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.

Performance evaluation of Santa Ines ewes and lambs weaned at 60 days of lactation.
M. M. Stradiotto*, A. D. Rodrigues2, and J. A. Negrão3, 1University of Sao Paulo – USP; Faculty of Animal Science and Feed Engineering – FZEA, Pirassununga, SP, Brazil, 2University of Sao Paulo State – UNESP; Faculty of Agronomy and Veterinary Sciences – FCAV, Jaboticabal, SP, Brazil, 3University of Chicago, Chicago, IL.

Comparison of pork characteristics of antibiotic free Yorkshire crossbreds raised in the hoop barn.
S.-H. Oh*, D. Bautista2, D. Hanson1, M. Morrow1, and T. See1, 1North Carolina A&T State University, Greensboro, 2North Carolina State University, Raleigh.

Comparison of body weights in Berkshire and Large Black crossbreds produced by the use of antibiotic-free Yorkshire sows.
S.-H. Oh*, M. Morrow1, and T. See1, 1North Carolina A&T State University, Greensboro, 2North Carolina State University, Raleigh.

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*, D. Haughey1, E. A. Bobeck2, M. E. Cook1, and F. M. Assadi-Porter1, 1University of Chicago, Chicago, IL, 2University of Wisconsin-Madison, Madison.

Suitability of visual ear tags, electronic boluses and retinal images for tracing and auditing lamb traceability.

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*, L. E. Hansen2, S. A. Hansen1, K. A. Frerichs1, and C. W. Hastad2, 1Hubbard Feeds, Mankato, MN, 2New Fashion Pork, Jackson, MN.
Comparative assessment of boar spermatozoa having different cryopreservation potential.  
J. M. Feugang*1, M. M. Ferraz2, J. C. Rodriguez-Munôz2, B. S. Grilli1, S. T. Willard2, and P. L. Ryan1,2. 1Department of Animal and Dairy Sciences, Mississippi State University, Mississippi State, 2Faculdade de Medicina Veterinaria e Zootecnia, Universidade de Sao Paulo, Brasil.

Ruminant Nutrition  
Beef Cattle

Performance and carcass traits of bulls fed different levels of crude glycerin.  

Effects of distillers grain supplementation on beef cow performance.  
M. J. Faulkner*1, P. M. Walker1, R. L. Atkinson2, J. L. Veracini1, L. A. Forster1, J. M. Carmack1, and K. L. Jones2. 1Illinois State University, Normal, 2Southern Illinois University, Carbondale.

Effect of a mixture of cinnamaldehyde, carvacrol and capsicum oleoresin on performance and rumen development of weaning calves.  

Effect of fescue toxicosis on the expression of selected hepatic genes in Angus cattle.  
J. J. Restle1, 2, R. L. Atkinson1, B. Wildeman1, J. L. Veracini1, 2, G. Dusel1, and E. M. Domby1. 1Pancosma, Geneva, Switzerland, 2University of Missouri-Columbia, Columbia.

Evaluation of Nellore steers’ performance supplemented with two levels of concentrate and sugar cane in feedlot.  
R. M. Silva*1,2, J. T. Pádua2, J. Restle1, R. Z. Taveira1, B. A. S. R. Leite1, and D. A. Lima2. 1Universidade Estadual de Goiás, São Luís de Montes Belos, Goiás, Brazil, 2Universidade Federal de Goiás, Goiânia, Goiás, Brazil.

The influence of glycerol supplementation during late gestation on beef cow performance and dietary digestibility.  

The effect of feed additive and sulfur intake on rumen fluid pH and rumen gas cap hydrogen sulfide concentration in feedlot steers.  

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.  

Effects of dietary chromium propionate on performance traits of stocker/growing cattle.  
J. L. Veracini*1, P. M. Walker1, M. J. Faulkner2, and R. E. Hall2. 1Illinois State University, Normal, 2Cooperative Research Farms, Richmond, VA.

Nutrient digestibility and residual feed intake in Nellore heifers.  
R. H. Branco1, E. Magnani1, T. L. Sobrinho1, S. F. M. Bonilha1, L. T. Egawa1, M. E. Z. Mercadante*2, and F. M. Monteiro1. 1Instituto de Zootecnia, Sertãozinho, São Paulo, Brasil, 2Faculdade de Ciências Agrárias e Veterinárias, Jaboticabal, São Paulo, Brasil.

Potential of calcium oxide-treated corn stover and modified distillers grains as a partial replacement for corn grain in feedlot diets.  
J. R. Russell*, D. D. Loy2, and M. Cecava1. 1Iowa State University, Ames, 2Archer Daniels Midland Company, Decatur, IL.

Performance of Nellore steers from a genetic improvement program in feedlot.  
M. D. Freitas Neto1,2, J. J. R. Fernandes*1,2, D. A. Lima1,2, P. L. P. Rezende1,2, G. A. B. Queiroz2, L. F. N. Souza1, J. M. C. Silva1, E. G. Moraes1, and M. L. R. Pereira1. 1Universidade Federal De Goiás, Goiania, Goiás, Brasil, 2Conselho Nacional De Desenvolvimento Científico e Tecnológico, Brasilia, Distrito Federal, Brasil, 3Nelore Qualitas, Goiânia, Goiás, Brasil.

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. Friedt1, T. A. McAllister1, B. Wildeman1, and J. McKinnon1. 1University of Saskatchewan, Saskatoon, SK, Canada, 2Agriculture and Agri-Food Canada, Lethbridge Research Centre, AB, Canada, 3Pound-Maker Agventures Ltd., Lanigan, SK, Canada.
T284  Effect of different doses of chitosans to modulate ruminal fermentation in Nelore steers.
1University of Sao Paulo, Sao Paulo, Brazil, 2State University Julio de Mesquita, Jaboticabal, Sao Paulo, Brazil, 3Vicosa Faculty of Life Sciences and Health, Vicosa, Minas Gerais, Brazil.

T285  Evaluation of residual feed intake of Nelore bulls from a genetic improvement program.
1Universidade Federal de Goias, Goiania, Goias, Brazil, 2Conselho Nacional de Desenvolvimento Científico e Tecnológico, Brasilia, Distrito Federal, 3Nelore Qualitas, Goiania, Goias, Brazil.

T286  Effect of different doses of chitosans on ruminal microbial protein synthesis in Nelore steers.
1São Paulo University, São Paulo, São Paulo, Brazil, 2State University Julio de Mesquita, Jaboticabal, Brazil, 3Faculty 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.
1São Paulo State University, Jaboticabal, São Paulo, Brazil.

T288  Performance and carcass traits of bulls fed lipids sources and ionophore.
1Federal 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.
1University of Delaware, Newark.

T290  Can forage-based nutritional strategies offset weaning stress in calves?
1Virginia Tech Blacksburg.

T291  Urea supplements for beefsteaks grazing on marandugrass pastures during dry season in the Brazilian savannas.
D. G. de Quadros*, H. N. de Souza, G. L. Franco, R. G. de Almeida, and D. N. de Oliveira.
1Universidade do Estado da Bahia (UNEB), Barreiras, Bahia, Brazil, 2PETROBRAS, Rio de Janeiro, Rio de Janeiro, Brazil, 3Universidade 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.
1University of Wisconsin-River Falls, River Falls, 2Milk 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.
1Feedlot Health Management Services, Okotoks, AB, Canada, 2Western 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.
1Novus International Inc., St. Charles, MO.

T295  Evaluation of bimodal distributions to determine meal criterion in heifers fed a high-grain diet.
1Texas 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.
1Texas 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.
1Elanco Animal Health, Southern Cone (Argentina & Chile), 2Ancali Dairy, Los Angeles, Chile.
Associations among digestive tract lesions and abnormal serum chemistries in cull dairy cattle.
M. B. Hall**, G. R. Oetzel†, G. B. Huntington§, F. M. Moore∥, and D. M. Hertzke¶,* 1US Dairy Forage Research Center, USDA-ARS, Madison, WI, 2School of Veterinary Medicine, Univ. of Wisconsin, Madison, 3Dept. of Animal Science, Univ. of North Carolina, Raleigh, 4Marshfield Labs Veterinary Services, Marshfield, WI.

Influence of a reduced-starch diet with or without exogenous amylase on lactation performance by dairy cows.
L. F. Ferraretto*, R. D. Shaver†, M. Espineira§, H. Gencoglu∥, and S. J. Bertics¶,* 1Department of Dairy Science, University of Wisconsin-Madison, Madison, 2Department of Animal Nutrition and Nutritional Diseases, Faculty of Veterinary Medicine, University of Uludag, Bursa, Turkey.

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**, S. Y. Chen†, C. Jiang‡, Y. J. Zhang§, and J. G. Han∥,* 1Department of Grassland Science, China Agricultural University, Beijing, China, 2Department of Agronomy, University of Wisconsin-Madison, Madison.

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**, S. Y. Chen†, R. Z. Zhang‡, Y. J. Zhang§, and J. G. Han∥,* 1Department of Grassland Science, China Agricultural University, Beijing, China, 2Department of Agronomy, University of Wisconsin-Madison, Madison.

Energy expenditure, feeding behavior and locomotion of grazed versus zero-grazed dairy cows throughout the lactation period.
F. Dohme-Meier*, L. D. Kaufmann†, S. Görs‡, P. Junghans§, C. C. Metges∥,* 1Agroscope Liebefeld-Posieux, Research Station ALP, Posieux, Switzerland, 2Research Leibniz Institute for Farm Animal Biology (FBN), Dummerstorf, Germany.

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.

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.

Feeding frequency for individually fed early lactation cows: enlightening the perplexing strategy.

Prolonged provision of protected methionine improves milk contents and yields of fat and protein in lactating cows.
A. Nikkhah*, D. Kianzad†, A. Haj Hosseini‡, A. Zalbeik§, and G. Ghorbani∥,* 1University of Zanjan, Zanjan, Iran, 2Animal Breeding Center, Karaj, Iran, 3Isfahan University of Technology, Isfahan, Iran.

Rumen degradation patterns of ground and steam-processed broomcorn and ground barley.
A. Nikkhah*, University of Zanjan, Zanjan, Iran.

Steam-flaking of broom sorghum improves effective rumen degradation of DM while Controlling that of CP.
A. Nikkhah*, University of Zanjan, Zanjan, Iran.

Steam-flaked broom sorghum a viable substitute for ground barley in midlactation dairy rations.
A. Nikkhah*, University of Zanjan, Zanjan, Iran.

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.

Ground broomcorn in dairy rations.
A. Nikkhah*, University of Zanjan, Zanjan, Iran.

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*, K. Daniels†, and D. Bunting∥,* 1Paradox Nutrition LLC, West Chazy, NY, 2ADM Alliance Nutrition Inc., Quincy, IL.

Large-scale production effects of an intestinally releasable methionine product in dairy cows.
A. Nikkhah*, R. Kowsar‡, and G. Ghorbani∥,* 1University of Zanjan, Zanjan, Iran, 2Isfahan University of Technology, Isfahan, Iran.

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.

Conjugated linoleic acid (CLA) supplementation around calving affects glucose metabolism in dairy cows.
H. M. Hammon*, K. Hötger†, S. Görs‡, M. Becker§, C. Weber∥, A. Trösscher‡, and C. C. Metges∥,* 1Leibniz Institute for Farm Animal Biology (FBN), Dummerstorf, Germany, 2BASF, Limburgerhof, Germany.
Lactation performance and milk fatty acid profile in dairy cows fed linseed oil in diets with different forage to concentrate ratios.
L. Saliba1,2, R. Gervais1, Y. Lebeuf1,2, J.-C. Vuillemond1, and P. Y. Chouinard1,2, 1Département des sciences animales, Université Laval, Québec, Québec, Canada, 2Institute of Nutraceuticals and Functional Foods (INAF), Québec, Québec, Canada.

Rumen volume and passage kinetics depend on feeding time (0900 vs. 2100 h).
A. Nihkhah1, J. C. Plaizier1, and A. D. Kennedy2, 1University of Zanjan, Zanjan, Iran, 2University of Manitoba, Winnipeg, MB, Canada.

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-Ramos1,2, A. Gonzalez-Castellon2, A. Barreras-Serrano3, A. Estrada-Angulo2, M. A. López-Soto1, J. V. Macias-Zamora1, A. Plascencia1, S. H. Vega1, and R. A. Zinn1, 1ICV - Universidad Autónoma de Baja California, México, 2FMVZ - Universidad Autónoma de Sinaloa, México, 3Department of Animal Science, University of California, Davis, El Centro.

Evaluation of limit feeding and bunk management strategies for gravid dairy replacement heifers.
N. M. Esser1, J. Larson2, P. C. Hoffman3, C. L. Liu4, and W. K. Coblenz3, 1University of Wisconsin, Madison, 2Northeast Institute of Geography and Agricultural Ecology, CAS, Harbin, Heilongjiang, China, 3USDA-ARS Dairy Forage Research Center, Marshfield, WI.

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. Queiroz1, A.T. Adesogun1, J. L. P. Daniel1, J. J. Romero1, J. H. Shiri1, C.R. Staples1, and J. E.P. Santos2, 1University of Florida, Gainesville, 2University of Sao Paulo, Piracicaba, Sao Paulo, Brazil.

Effects of Bacillus subtilis natto on intestinal morphology in pre and postweaning dairy calves.
Y. Sun, J. Q. Wang1, P. Sun, D. P. Bu, G. C. Luan, and H. T. Zhang, 1Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China.
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.

Effects of abomasal infusion of linolenic acid on milk fat synthesis and composition in dairy cows.
U. Moallem*, D. Vyas, B. B. Teter, P. Delmon1e, and R. A. Erdman1, 1Agriculture Research Organization, Bet Dagan, Israel, 2University of Maryland, College Park, FDA.

The time of access to temperate pasture influences rumen pH and NH3-N concentration in heifers.

The time of access to temperate pasture influences intake and feeding behavior in heifers.
A. Félix1, N. Hernández2, N. Torterolo1, S. Roja1, M. Aguerre1, A. Pérez-Ruchel2, J. L. Repetto1, and C. Cajamarca2, 1Departamento de Bovinos, Facultad de Veterinaria, UdelaR, Montevideo, Uruguay, 2Departamento de Nutrición Animal, Facultad de Veterinaria, UdelaR, Montevideo, Uruguay.

Effect of replacement of conventional corn silage with brown midrib corn silage on behavior and performance of lactating dairy cows.

Evaluation of protein supplementation strategies for low-starch diets fed to lactating dairy cows.
K. W. Cotanch*, S. E. Boucher1, H. M. Dann1, C. S. Ballard1, R. J. Grant1, and K. Fujita2, 1William H. Miner Agricultural Research Institute, Chazy, NY, 2ZenNoh National Federation of Agricultural Cooperative Associations, Tokyo, Japan.

Effect of time of access to food on fermentation capacity of rumen fluid in heifers consuming temperate pastures.

Frequency of feed delivery affects feeding behavior of limit-fed dairy heifers.
A. M. Greter1, T. F. Duffield2, B. W. McBride1, T. M. Widowski1, and T. J. DeVries*, 1Dept. Animal and Poultry Science, University of Guelph, Kemptville Campus, Kemptville, ON, Canada, 2Dept. Population Medicine, Ontario Veterinary College, University of Guelph, Guelph, ON, Canada, 3Dept. Animal and Poultry Science, University of Guelph, Guelph, ON, Canada.

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 Ramirez1, L. O. Tedeschii2, T. R. Callaway3, S. E. Dowd4, K. Nestor5, and P. J. Kononoff6, 1University of Nebraska-Lincoln, 2Texas A&M University, College Station, 3Food and Feed Safety Research Unit, USDA-ARS, College Station, TX, 4Medical Biofilm Research Institute and Research Testing Laboratory, Lubbock, TX, 5Dow AgroSciences LLC.


Differential expression of the transcriptome in adipose tissue of first lactation dairy cattle.
J. P. McNamara1, J. M. Thomson2, and J. Loo3, 1Washington State University, Pullman, 2University of Alberta, Edmonton, Alberta, Canada, 3University of Illinois, Urbana-Champaign.

The survival of Bacillus subtilis natto in rumen and duodenum of Holstein dairy cows.

Milk fatty acid composition of lactating dairy cows fed short and medium chain fatty acids.

Veal calves deposit nitrogen from solid feed as efficient as nitrogen from milk replacer.
H. Berends1, J. J. G. C. Van den Borne1, C. G. Van Reenen1, and W. J. J. Gerrits1, 1Animal Nutrition Group, Wageningen University, Wageningen, the Netherlands, 2Livestock Research, Animal Sciences Group, Lelystad, the Netherlands.

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.

Effect of feeding Bacillus subtilis natto fermentation production on hindgut fermentation and microbiota of Holstein dairy cows.

Effect of short- and medium-chain fatty acid on milk composition in lactating dairy cows.
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. Peng1, J. Q. Wang2,*, H. Y. Kang3, S. H. Dong1,3, P. Sun1, D. P. Bu1, and L. Y. Zhou1, 1Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, 2College of Animal Science and technology, Southwest University, Chongqing, China, 3Faculty 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. Ferreira1,2, M. C. Soares1, M. P. C. Gallo1, M. R. Paula1,3, and C. M. M. Bittar1,2, 1University of São Paulo/ESALQ, Piracicaba, SP, Brazil, 2Conselho Nacional de Desenvolvimento Científico e Tecnológico ( CNPq), Brasilia, DF, Brazil.

T352  
Performance of dairy calves fed “colostrum silage” or milk replacer.  
L. S. Ferreira1,2, J. T. Silva1, G. G. O. Nápoles1, C. E. Oltramari1, and C. M. M. Bittar1,2, 1University of São Paulo/ESALQ, Piracicaba, SP, Brazil, 2Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq), Brasilia, DF, Brazil.

T353  
In situ dry matter degradation kinetics of fennel forage in Holstein cow.  
M. Chaji1, 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. Sehested1,2, D. N. Braks-Pedersen1, V. Gilsø1, L. K. Skov1, and P. Lund1, 1Department of Animal Health and Bioscience, Aarhus University, Tjele, Denmark, 2Department of Feed Applications, Novozymes A/S, Bagsværd, Denmark.

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Ruminant Nutrition

Ruminant Metabolism

T355  
Effect of sample processing on in situ organic matter degradability of distillers grains.  
M. L. Drewery1,2, J. E. Sawyer1, N. M. Kenney1, W. E. Pinchak1, and T. A. Wickersham1, 1Texas A&M University, College Station, 2Texas 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. Jin1,2,3, Z. Xu1, A. D. Iwaasa1, Y. G. Zhang1, M. P. Schellenberg1, T. A. McAllister1, and Y. Wang1, 1Agriculture and Agri-Food Canada, Lethbridge Research Centre, Lethbridge, AB, Canada, 2Department of Animal Science, Northeast Agricultural University, China, 3SPARC-AAFC, Swift Current, SK, Canada.

T357  
Effect of exogenous fibrolytic enzymes on dry matter in situ digestibility of two *Brachiaria* grasses.  
J. H. Avellaneda-Cevallos1,2, O. D. Montañez-Valdez1,2, D. Romero-Garaicoa1, R. Luna-Murillo1, J. Bravo-Loor1, and M. Peña-Galeas1, 1Unidad de Investigación Científica y Tecnológica. Facultad de Ciencias Pecuarias. Universidad Técnica Estatal de Quevedo, Quevedo, Ecuador, 2Fafjuta de Investigación. Carrera de Pecuaria. Escuela Superior Politécnica Agropecuaria de Manabi Manuel Félix López. Campus Politécnico, Sitio El Limón, Calceta, Manabi, Ecuador, 3Centro 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. Boucher1, S. Calsamiglia1, D. M. Stern1, C. M. Parsons1, H. H. Stein1, C. G. Schwab1, K. W. Kotanch1, J. W. Darrah2, and J. K. Bernard3, 1Kemin AgriFoods North America Inc., Des Moines, IA, 2Universitat Autònoma de Barcelona, Bellaterra, Spain, 3University of Minnesota, St. Paul, 4University of Illinois, Urbana, 5Schwab Consulting LLC, Boscobel, WI, 6William H. Miner Agricultural Research Institute, Chazy, NY, 7University of Georgia, Tifton.

T359  
In vitro modification of ruminal and post ruminal metabolism by lignosulfonate and polysaccharide protected microminerals.  
M. Ruiz-Moreno1,2, E. Seitz1, M. D. Stern2, and J. Garrett2, 1University of Minnesota, St. Paul, 2Quali 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. Cavalcanti1,2, J. Leite1,2, L. G. Paranhos1,3, O. C. M. Queiroz1, K. G. Arriola1, and A. T. Adesogan1, 1University of Florida, Gainesville, 2Federal 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 Júnior1,2, J. L. P. Daniel, F. da C. Meireles, M. B. Moreira, and R. F. de Lima, 1Universidade Federal de Lavras, 2Centro Universitário del Sur de la Universidad de Guadalajara, Ciudad Guzmán, Jalisco, México.

T362  
Adjustment of in vitro rumen fermentation protocol for testing products based on rumen pH regulation and the impact of Acid Buf.  
S. Taylor1, E. Pennala1, and J. Apajalahti1, 1Celtic Sea Minerals Ltd., Cork, Ireland, 2Alimetrics Ltd., Espoo, Finland.

T363  
Impact of different sources of hydrolysable and condensed tannins on rumen fermentation and methane production in vitro.  
F. Hassanat1 and C. Benchaar, 1Agriculture and Agri-Food Canada, Dairy and Swine Research and Development Centre, Sherbrooke, QC, Canada.
Changes in ruminal bacterial community composition following feeding of silage inoculated with a commercial silage inoculant.
R. Mohammed*1,2, D. M. Stevenson1, K. A. Beauchemin1, P. J. Weimer2, and R. E. Muck1, 1USDA-ARS, Madison, WI, 2AAFC, Lethbridge, AB, Canada.

Effect of a dietary antioxidant with different substrate on rumen fermentation in vitro.
Y. Wang*1,2, J. Wang1, M. Vazquez-Anon1, H. Cao1, G. Zanton1, and J. Liu1, 1Institute of Dairy Science, Zhejiang University, Hangzhou, P. R. China, 2Novus International Inc., St. Louis, MO.

Effect of dietary roughage and sulfur concentration on hydrogen sulfide production from corn-based diets containing dried distillers grains.

Effects of hops on rumen fermentation and bacterial populations using the rumen simulation technique.
N. Narvaez*, Y. Wang1, Z. Xu1, T. Alexander1, S. Garden1, and T. McAllister1, 1Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada, 2John I. Haas Inc., Washington DC.

Effect of nitrate, sulfate, monensin, and corn gluten feed on in vitro ruminal methane production.
C. Davis1, S. Ghimire*, T. Wiles1, Z. Wen1, M. A. McCann1, and M. D. Hanigan1, 1Department of Dairy Science, Virginia Polytechnic Institute and State University, Blacksburg, 2Department of Biological Systems Engineering, Virginia Polytechnic Institute and State University, Blacksburg, 3Department of Animal and Poultry Sciences, Virginia Polytechnic Institute and State University, Blacksburg.

Effects of microwave irradiation on ruminal dry matter degradability of canola and corn gluten meal.
M. Dehghan-Banadaky1, H. Khalilvandi-Beheoozyar*2,2, H. R. Khazanehi1, and N. Vahdani1, 1Department of Animal Science, University of Tehran, Karaj, Tehran, Iran, 2Department of Animal Science, University of Urmia, Urmia, West Azerbaijan, Iran, 3Department of Animal Science, University of Manitoba, Manitoba, Canada.

Evaluation of two protein hydrolyzates as a source of soluble protein to foster ruminal microbial growth.
A. Aris1, A. Serrano1, F. Fabregas1, J. Polo1, C. Rodriguez2, and A. Bach*2,1, 1Ruminant Production, Institut de Recerca i Tecnologia Agroalimentàries (IRTA), Caldes de Montbui, Barcelona, Spain, 2Institució Catalana de Recerca i Estudis Avançats (ICREA), Barcelona, Spain, 3APC EUROPE, S.A. R&D department, Granollers, Barcelona, Spain.

Effects of protein protection with orthophosphoric or malic acid and heat in lamb fattening diets.

Identification of several novel fungal species in feed samples from the southeast United States.
J. D. Chapman*, L. O. Tedeschi, and T. K. Miller-Webster1, 1OmniGen Research, Corvallis, OR, 2Prince Agri Products, Quincy, IL.

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*, L. O. Tedeschi, and T. K. Miller-Webster1, 1Grain States Saya Inc., West Point, NE, 2Texas A&M University, College Station, 3West Virginia University, Morgantown.

Effect of ghrelin on bovine myogenic differentiation.
D. Montoya-Flores*1,2, O. Mora1, E. Tamarić1, L. González-Dávalos1, A. González-Gallardo1, A. Antaramian1, A. Shimada1, A. Varela-Echavarria1, and J. L. Romano-Muñoz2, 1Universidad Nacional Autónoma de México, Queretaro, Queretaro, Mexico, 2Instituto Nacional de Investigaciones Forestales, Agrícolas y Pecuarias, Colón, Queretaro, Mexico.

Essential oil and rumensin affect ruminal fermentation in continuous culture.
D. Ye*, S. K. R. Karnati3, J. L. Firkins1, M. L. Eastriidge1, and J. M. Aldrich2, 1Ohio State University, Columbus, 2Provimi-North America, Lewisburg, OH.

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.

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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Ruminant Nutrition
Small Ruminant

Sheep performance on sorghum or sorghum-soybean silage diets.
A. A. Melin* and H. M. Arelovich*, 1Coronel Suarez-Pasman Experimental Station, 2Departamento de Agronomía-CIC-CERZOS.
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.

The 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.

Interactions between nutrient supply and dietary flavors on diet selection by lambs.
A. Bach*, J. J. Villalba, and I. R. Iparraguirre, ICREA and Ruminant Production-IRTA, Barcelona, Spain, Utah State University, Logan, Lucto, S.A., Barcelona, Spain.

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. Saro1,2, M. J. Ranilla*, and M. D. Carro1, Dpto. Producción Animal, Universidad de León, León, Spain, IGM (CSIC–ULE), Finca Marzanas s/n, Grulleros, León, Spain.

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

Selected condensed tannin-containing plant extracts and their effects on Haemonchus contortus larvae.
K. J. Stuts*, M. J. Thomas, M. M. Beverly, R. A. Lane, and S. F. Kelley, Sam Houston State University, Huntsville, TX.

Effect of subclinical mastitis and stage of lactation on somatic cell count, composition and plasmin activity of goat milk.
R. Shangguan1,2, L. Spicer, C. DeWitt2, J. Wang1, and S. Zeng*, Langston University, Langston, OK, Oklahoma State University, Stillwater.

Hematological and spermatological evaluations of Honamli goat in Turkey.
M. S. Gulay*, A. Ata1, O. Elma2, M. Saatci1, N. Mamak1, B. Dag2, and A. H. Akts1, Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Burdur, Turkey, Selcuk University, Faculty of Agriculture, Department of Animal Science, Konya, Turkey, Bahri Dagtas Uluslararasi Hayvaciilik Arastirma Enstitusu, Konya, Turkey.

Managing seasonal outbreak of foot rot in sheep flocks.
T. Wuliji* and C. Clifford-Rathert, Lincoln University, Jefferson City, MO.

Comparison of nematode parasite-susceptibility and performance of Boer and Spanish goats supplemented with garlic.

Effect of sericea lespedea (Lespedeza cuneata) leaf meal pellets fed to gastrointestinal nematode infected goats.

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.

Gastro-intestinal parasitic infestation in meat goats and its relationships with production traits under a pasture-based performance test in Western Maryland.
K. Nadarajah**, S. Schoenian1, D. L. Kuhlers3, M. D. Carpenter1, and D. Rankins1, Auburn University, Auburn, AL, University of Maryland Extension, Keedysville.

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**, M. Penick2, D. L. Kuhlers3, M. D. Carpenter1, and D. Rankins1, Auburn University, Auburn, AL, Kerr Center, Poteau, OK.

Lamb immune status (blood IgG, IgM and chitotriosidase activity) during weaning, preliminary results.
L. E. Hernandez-Castellano**, A. Morales-delaNuez1, I. Moreno-Indias3, D. Sanchez-Macias3, A. Torres1, A. Arguello1, J. Capote3, and N. Castro1, Universidad de Las Palmas de Gran Canaria, Arucas, Las Palmas, Spain, Instituto Canario de Investigaciones Agrarias, La Laguna, Tenerife, Spain.
Comparison of FAMACHA scores and need for deworming in hair sheep and meat goats grazed together or sheep grazed alone.

Lack of an effect of pelletized diets containing pumpkin seeds on gastrointestinal nematode fecal egg counts in goats.
M. Gooden1, E. N. Escobar1, N. C. Whitley3, D. J. Jackson-O’Brien3, and H. Taylor1, University of Maryland Eastern Shore, Princess Anne, 1North Carolina A&T State University, Greensboro, 2Delaware State University, Dover.

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.

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.

Goat browsing for invasive shrub and internal parasite control.
J. C. Warren*, D. J. O’Brien, C. Heckshers, R. beaman, and N. C. Whitley, Delaware State University, Dover, 1Delaware Department of Transportation, Dover, 2North Carolina A&T State University, Greensboro.

Gastrointestinal nematode (GIN) resistance and GIN management on small ruminant farms in the mid-Atlantic U.S.
D. J. O’Brien1, K. K. Crook2, E. N. Escobar1, N. C. Whitley3, B. Storey4, S. Howell5, and R. Kaplan6, Delaware State University, Dover, Virginia Maryland Regional College of Veterinary Medicine, Blacksburg, North Carolina A & T State University, Greensboro, University of Georgia, Athens.

Effects of supplemental dried distillers grains on performance and internal parasites of grazing lambs.
C. L. Pickworth*, T. L. Felix*, I. Susin1, L. M. Shoup*, and S. C. Loerch*, The Ohio State University, Wooster, Universidad de Sao Paulo, Piracicaba, Sao Paulo, Brazil.

Feeding North American panicled tick-clover containing condensed tannins to growing goats reduces Haemonchus contortus infection.
N. M. Cherry1, B. D. Lambert1,2, J. P. Muir1, M. Bullinger1, J. E. Miller2, R. M. Kaplan3, and T. R. Whitney4, Texas Agrilife Research, Stephenville, Tarleton State University, Stephenville, TX, Louisiana State University, Baton Rouge, The University of Georgia, Athens, Texas Agrilife Research, San Angelo.

Demographic factors of meat goat producers completing an online certification program.

Variability among enumerators in assigning body condition scores in meat goats.
R. C. Merkel* and T. A. Gipson, Langston University, Langston, OK.

Comparative effect of implants with trenbolone-estradiol or zeranol on feedlot-performance of Katahdin × Pelibuey hair-lambs.

Influence of zeranol implant on performance of Dorper × Katahdin feedlot lambs.

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, Masonmagyarvar, Hungary.

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, Masonmagyarvar, Hungary.

Milk yield and milk composition of ewes fed diets with canola oil or linseed oil.

The mammary gland of the Canarian dairy goats undergone two different milking frequencies: morphological characterization of the tissular components.
A. Suarez-Trujillo1, J. Capote2, A. Arguello3, A. Arencibia4, N. Castro1, J. Morales2, and M. A. Rivero*, Universidad de Las Palmas de Gran Canaria, Arucas, Las Palmas, Spain, 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*, M. Song; R. W. Johnson; K. W. Kelley; W. G. Van Alstine; K. A. Dawson; and J. E. Pettigrew, 1Department of Animal Sciences, University of Illinois, Urbana, 2Animal Disease and Diagnostic Laboratory, Purdue University, West Lafayette, IN, 3Research, 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*, S. Masching, A. Ganner, and G. Schatzmayr, 1Biomin Research Center, Tulln, Austria, 2Biomin Holding, Herzogenburg, Austria.

T413 Effects of feeding Actigen on ex vivo immune responses of porcine leukocytes.
T. M. Che*, R. W. Johnson; K. W. Kelley; K. A. Dawson; and J. E. Pettigrew, 1Department of Animal Sciences, University of Illinois, Urbana, 2Research, 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.

T416 Effects of thermal stress on liver xenobiotic metabolism gene expression in swine.

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. Morales1, M. P. Serrano1, L. Cámara1, J. D. Berrocoso2, C. J. López-Bote1, J. P. López2, and G. G. Mateos1*, 1Universidad Politécnica de Madrid, Madrid, Spain, 2Universidad Complutense de Madrid, Madrid, Spain, 3Copiso S.A., Soria, Spain.

T418 Productive performance and carcass quality of gilts and surgically and immune-castrated male pigs from crossbreeds of Duroc and Pietrain sire lines.
J. I. Morales1, M. P. Serrano1, L. Cámara1, J. D. Berrocoso2, J. P. López2, and G. G. Mateos1*, 1Universidad Politécnica de Madrid, Madrid, Spain, 3Copiso S.A., Soria, Spain.

T419 Fatty acid composition of piglet tissues changes during suckling time.

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.

T421 Connecting lecture to the real world in animal sciences.

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**, R. M. Lewis*, J. P. Cassady*, and K. M. Cammack*, University of Wyoming, Laramie, 1Virginia Polytechnic Institute and State University, Blacksburg, 2North 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.

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
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9:30 AM 304 Introduction

9:40 AM 305 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
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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.

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.

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. Bergeron2, K. E. Leslie3, and T. J. Devries4, Dept. Animal and Poultry Science, University of Guelph, Kemptville Campus, Kemptville, ON, Canada, Dept. Animal and Poultry Science, University of Guelph, Campus d’Alfred, Alfred, ON, Canada, 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 Younes1,2, G. Azzaro1, I. Schadt2, G. Belvedere3, M. Caccamo3, R. Petriglieri3, G. Licitra1,2, and S. Carpino4, 1NAT, Tunis, Tunisia, 2CoRfilAC, Regione Siciliana, Ragusa, Italy, 3DISPA, Catania University, Catania, Italy.

11:15 AM 310 Assessment of a web camera to evaluate farm management and cow behavior.
G. Licitra1,2, G. Azzaro1, R. Petriglieri3, M. Caccamo3, and J. D. Ferguson4, 1CoRfilAC, Regione Siciliana, Ragusa, Italy, 2DISPA, Catania University, Catania, Italy, 3University of Pennsylvania, PA.

11:30 AM 311 Novel techniques for anesthesia during disbudding of calves.
K. R. Tapper*1, J. P. Goff2, B. L. Leuschen2, J. K. West2, and S. T. Millman3, 1Iowa State University Department of Biomedical Sciences, Ames, 2Iowa 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. Davis2, T. A. Brooks3, and M. A. Ballou1, 1Texas Tech University, Animal and Food Sciences Department, Lubbock, 2AgResearch 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. Sutherland2, B. L. Davis3, T. A. Brooks3, C. J. Cobb1, and L. E. Hubert1, 1Department of Animal and Food Sciences, Texas Tech University, Lubbock, 2Animal Behaviour and Welfare Group, AgResearch, Hamilton, New Zealand, 3Department 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. Jensen1, and D. M. Weary1, 1University of Aarhus, Tjele, Denmark, 2University 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*, D. M. Weary1, E. Galo1, and M. A. G. von Keyserlingk1, 1Animal Welfare Program, University of British Columbia, Vancouver, Canada, 2Novus 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.

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**ARPAS Symposium**

**Understanding Meta-Analysis**

**Chair:** John Wagner, Colorado State University  
**Sponsor:** ARPAS

**288-289**

- **9:30 AM**  
  **Introduction**

- **9:40 AM**  
  **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**  
  **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**

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**Beef Species**

**Beef Production**

**Chair:** Andy Herring, Texas A&M University

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- **9:30 AM**  
  **Relationship between postweaning RFI in heifers and intake and productivity of mid-gestation beef females.**  
  A. N. Hafla*, G. E. Carstens1, T. D. A. Forbes2, J. C. Bailey1, J. T. Walter4, J. W. Holloway7, and J. G. Moreno1, 1Texas A&M University, College Station, 2Texas AgriLife Research, Uvalde.

- **9:45 AM**  
  **Using a mechanistic nutrition model to identify efficient beef cows under grazing conditions.**  
  B. M. Bourg*, L. O. Tedeschi1, A. D. Aguilar3, F. R. B. Ribeiro3, J. Genho3, R. R. Gomez1, D. Delaney4, and S. Moore6, 1Texas A&M University, College Station, 2Texas A&M University, Commerce, 3Eldon Farms, Woodville, VA, 4King Ranch, Kingsville, TX, 5University of Florida, Gainesville.

- **10:00 AM**  
  **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**  
  **A mineral survey of Louisiana beef cow/calf production systems.**  
  J. Rowntree*, K. Guidry4, G. Scaglia3, G. Gentry2, and L. Southern2, 1Michigan State University, East Lansing, 2LSU Agricultural Center, Baton Rouge, LA.

- **10:30 AM**  
  **Finishing steers and bulls with high-vitamin E diets: Effect on pH and tenderness of beef.**  
  C. Reyes, C. Fuentes, and R. E. Larrain*, 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, O. L. Tedeschi, 2, D. G. Fox, 1, and G. Jacimovski, 1, 3Cornell University, Ithaca, NY, 2Texas 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*, 3M. S. Gadbbery, 4D. Hubbell, 5and W. Kellogg, 6University of Arkansas, Department of Animal Science, Little Rock, 7University of Arkansas, Department of Animal Science, Batesville, 8University 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. 

12:15 PM 328 Characterization of feeding behavior of abrupt-weaned crossbred heifer calves. 
A. N. Loyd*, 1R. C. Vann, 2J. P. Banta, 3T. H. Welsh, 4J. A. Carroll, 5and R. D. Randle, 6Texas AgriLife Research, College Station, 7MAFES, Mississippi State University, Raymond, 8Texas AgriLife Extension, Overton, 9Livestock Issues Research Unit, USDA-ARS, Lubbock, TX, 10Texas 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, 1T. A. Cooper, 2K. M. Olson, 2and P. M. VanRaden, 1Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD, 2National Association of Animal Breeders, Columbia, MO.

9:45 AM 330 Properties of different density genotypes used in dairy cattle evaluation. 
P. M. VanRaden, 1M. E. Tooker, 2K. M. Olson, 3T. A. Cooper, 3G. R. Wiggans, 4and C. P. Van Tassell, 5Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD, 6National Association of Animal Breeders, Columbia, MO, 7Bovine 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, 1S. Sorbolini, 1E. Pintus, 1J. T. van Kaam, 1and N. P. P. Macciotta, 1Università di Sassari, Sassari, Italy, 2Associazione 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, 1J. P. Chesnais, 2and E. Pintus, 2Unione Nazionale Allevatori Frisona Italiana, Cremona, Italy, 1Université de Montréal, Montréal, QC, Canada.

10:45 AM 334 Estimation of linkage disequilibrium in four US pig breeds. 
Y. M. Badke, 1R. O. Bates, 1C. W. Ernst, 1C. Schwab, 1and J. P. Steibel, 1Department of Animal Science, Michigan State University, East Lansing, 2National 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, 1D. J. Garrick, 1J. M. Recey, 1R. Rowland, 1M. F. Rothschild, 1J. P. Steibel, 1J. K. Lunney, 1and J. C. M. Dekkers, 1Iowa State University, Ames, 2Kansas State University, Manhattan, 3Michigan State University, East Lansing, 4United 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. 
11:30 AM 337 Genetic analysis of dry matter intake in Holstein cows.

11:45 AM 338 Genetic markers in bovine chromosome 14 are significant for residual feed intake in steers.

12:00 PM 339 QTL-by-feeding period interaction for residual feed intake in crossbred steers: a genome selection approach.
O. N. Durunna*, D. J. Nkrumah, S. S. Moore, and Z. Wang, University of Alberta, Edmonton, Alberta, Canada, Pfizer Animal Genetics, Kalamazoo, MI.

12:15 PM 340 Identification of genomic markers for feed efficiency in purebred Simmental, Angus and crossbred steers.

12:30 PM 341 Prediction of genomic estimated breeding values for temperament at weaning in Bos indicus crossbreds using Bayesian Inference.
L. L. Hulsman*, S. O. Peters, J. O. Sanders, A. D. Herring, C. A. Gill, and D. G. Riley, Department of Animal Science, Texas A&M University, College Station, 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

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.

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. Lombard1, H. D. Norman*, C. A. Kopral1, J. M. Rodriguez1, and J. R. Wright2, USDA-APHIS-VS, Centers for Epidemiology and Animal Health, Fort Collins, CO, 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*, E. Chevaux1, M. Khettou1, O. Marko2, S. Thomas2, U. Wernery2, and J. Juhasz2, Industries for Camel Milk and Products, Dubai, United Arab Emirates, Central Veterinary Research Institute, Dubai, United Arab Emirates, 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*, R. A. Cheeke2, and P. R. Cheeke3, Texas A&M University-Kingsville, Corvallis, OR, 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 partition in cheese and whey during cheesemaking.

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, USDA-APHIS-VS, Centers for Epidemiology and Animal Health, Fort Collins, CO, University of Illinois at Urbana-Champaign Department of Animal Sciences, Urbana-Champaign.

10:15 AM 360 Microbial contamination rates and antimicrobial resistance patterns in “no antibiotics added” labeled chicken products.
J. Zhang*, A. Massow1, M. M. Stanley1, M. Papariella1, X. Chen1, B. Kraft1, and P. D. Ebner1, Purdue University Department of Animal Sciences, West Lafayette, IN, Purdue University College of Veterinary Medicine, West Lafayette, IN, 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.

11:00 AM 363 Prevalence of Coxiella burnetii in bulk tank milk and associations with herd characteristics on US dairy operations.

11:15 AM 364 Bulk milk somatic cell penalties in herds enrolled in dairy herd improvement programs.
K. J. Hand*, A. Godkin1, and D. F. Kelton1, Strategic Solutions Group, Puslinch, ON, Canada, Ontario Ministry of Agriculture, Food and Rural Affairs, Elora, ON, Canada, University of Guelph, Guelph, ON, Canada.

11:30 AM 365 A novel analysis strategy of detection hydrolysate protein adulteration in milk.
Z. Chen1 and D. M. Barbano*, Analysis and Testing Center, Shandong University of Technology, Zibo, Shandong Province, PRC, Department of Food Science, Cornell University, Ithaca, NY.
Lactation Biology 1
Chair: Mike Van Amburgh, Cornell University

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*, R. K. Choudhary, C. M. Evock-Clover, R. W. Li, W. Garrett, and A. V. Capuco, The Ohio State University, Wooster; University of Maryland, College Park; USDA-ARS, Beltsville, MD.

10:00 AM 368 Acute DNA methylation changes are associated with involution and re-initiation of lactation in dairy cows.

10:15 AM 369 Ontogeny of nuclear and cytoplasmic myoepithelial markers during prepubertal bovine mammary development.
S. Safayi*, N. Korn, A. Bertram, R. M. Akers, A. V. Capuco, S. L. Pratt, S. Calcaterra, C. Klein, and S. Ellis, Clemson University, Clemson; Virginia Polytechnic Institute and State University, Blacksburg; USDA-ARS, Beltsville Agricultural Research Center, Beltsville, MD.

10:45 AM Break

11:15 AM 370 Lactogenic hormones and IGF-I do not regulate glucose transporter gene expression in the bovine mammary gland during the transition period.
Y. Shao*, E. Wall, Y. Misra, X. Qian, R. Blauwiekel, T. McFadden, and F.-Q. Zhao, Laboratory of Lactation Physiology, Department of Animal Science, University of Vermont, Burlington; Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, Alberta, Canada.

11:30 AM 371 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 372 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, N. Korn, A. Bertram, R. M. Akers, A. V. Capuco, S. L. Pratt, and S. Ellis, Clemson University, Clemson; Virginia Polytechnic Institute and State University, Blacksburg; USDA-ARS, Beltsville Agricultural Research Center, Beltsville, MD.

12:00 PM 374 Expression profiles of microRNAs from non- and lactating bovine mammary glands.
Z. Li, H. Y. Liu, and J. X. Liu, Institute of Dairy Science, College of Animal Sciences, Hangzhou, P.R. China; 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

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.
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

9:30 AM 379
Structural bases for the nutritional and biological properties of the caseins.
H. M. Farrell1, E. L. Malin1, E. M. Brown1, and A. Mora-Gutierrez1, 1USDA, ERRC, Dairy and Functional Foods RU, Wyndmoor, PA, 2USDA, ERRC, Biobased and Other Animal Coproducts RU, Wyndmoor, PA, 3Cooperative 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.

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. Dupont1,2, K. Bouzerzour1,2, F. Barbe1, Y. Le Gouar1,2, and O. Menard1,2, 1National Institute for Agricultural Research, Rennes, France, 2Agrocampus Ouest, Rennes, France.

Nonruminant Nutrition
Amino Acids
Chair: David Bravo, Pancosma SA, Geneva, Switzerland
Sponsor: Archer Daniels Midland

9:30 AM 384
Effects of creep feeding and supplemental glutamine or glutamate (AminoGut) on pre- and post-weaning growth performance and intestinal health of piglets.
R. Cabrera*, J. Usry2, E. Nogueira3, M. Kutschenko3, A. Moeser1, and J. Odle1, 1North Carolina State University, Raleigh, 2Ajinomoto Heartland LLC, Chicago, IL, 3Ajinomoto 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*, T. Wu1, B. Dai2, S. Luo2, J. Feng2, and A. Chen1, 1Zhejiang University, Hangzhou, Zhejiang, China, 2Zhejiang 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*, J. A. Acosta1, M. D. Tokach1, J. L. Usry4, C. R. Neill5, and J. F. Patience1, 1Iowa State University, Ames, 2Universidad Nacional de Colombia, Bogotá, Colombia, 3Kansas State University, Manhattan, 4Ajinomoto Heartland LLC, Chicago, IL, 5Pig 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. Cámara1, M. P. Serrano1, J. I. Morales1, E. Alcázar2, J. L. Sánchez1, and G. G. Mateos*, 1Departamento de Producción Animal, UPM, Ciudad Universitaria, s/n. 28040, Madrid, 2S.A.T. Vallehermoso, Ctra. La Solana a Infantes, km 9. 13248, Alhambra, Ciudad Real.

11:00 AM 378
Effects of increasing levels of lysine in the diet on growth performance and carcass and meat quality of growing-finishing pigs.
L. Cámara1, M. P. Serrano1, J. I. Morales1, E. Alcázar2, J. L. Sánchez1, and G. G. Mateos*, 1Departamento de Producción Animal, UPM, Ciudad Universitaria, s/n. 28040, Madrid, 2S.A.T. Vallehermoso, Ctra. La Solana a Infantes, km 9. 13248, Alhambra, Ciudad Real.
10:30 AM 388 Apparent precaecal digestibility of amino acids and performance of broiler chickens fed soybean meal-based diets.
A. F. Agboola* 1 and E. A. Iyayi, 2 Department of Animal Science, University of Ibadan, Ibadan, Oyo, Nigeria,
1University 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 weaning pigs.
R. C. Sulabo*, 1, J. K. Mathai, 1, J. L. Usry, 2, B. W. Ratliff, 3, D. M. McKilligan, 1, 4 and H. H. Stein, 1 University of Illinois, Urbana,
1Ajinomoto Heartland LLC, Chicago, IL, 4TechMix 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.

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, 3 and S. W. Kim, 1 North Carolina State University, Raleigh, 3Murphy-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 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, 1 and T. A. Davis, 1 USDA/ARS Children’s Nutrition Research Center, Dept. Pediatrics, Baylor College of Medicine, Houston, TX, 1Division 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


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, 1 M.-R. Aurel, 1 F. Bocquier, 1 and F. Barillet, 1 INRA UMR868, Systèmes d’Élevage Méditerranéens et Tropicaux (SELMET), Montpellier, France, 1INRA UMR1198, Biologie du Développement et Reproduction (BDR), Domaine de Vilvert, Jouy-en-Josas Cedex, France, 1INRA UE0321, Domaine Expérimental de La Fage, Roquefort-Sur-Soulzon, France, 1INRA UR0631, Station d’Amélioration Génétique des Animaux (SAGA), Chemin de Borde Rouge, Auzville, 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. Naæm*, 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*, G. Greif, 2 P. Zorrilla, 2 H. Naya, 2 G. J. M. Rosa, 3 and M. Carriquiry, 3 Facultad de Agronomía, Universidad de la República, Montevideo, Uruguay, 2Instituto Pasteur, Montevideo, Uruguay, 3University of Wisconsin, Madison.

10:45 AM 399 Alterations in the somatotrophic axis during a dual stress and M. haemolytica challenge in beef steers.
S. M. Falkenberg*, J. A. Carroll, M. A. Ballou, J. L. Sartain, J. O. Buntyn, T. Elsasser, S. Kahl, and T. B. Schmidt, 1Mississippi State University, Mississippi State, 2Livestock Issues Research Unit, USDA-ARS, Lubbock, TX, 3Auburn University College of Veterinary Medicine, Auburn, AL, 1Bovine Functional Genomics Lab, USDA-ARS, Beltsville, MD, 1Texas Tech University, Lubbock.
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.
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.
J. M. Husssey1, D. V. Nydam2, R. J. Grant3, and T. R. Overton1; 1Cornell University, Ithaca, NY, 2W. 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.

12:00 PM  403  Insulin-glucose clamps and intramammary LPS challenge: cross reactions between metabolism and mammary immune response.
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.

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

9:30 AM  405  An overview of the environmental impact of beef and dairy systems.
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.
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.
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.
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.
W. R. Wailes*, J. R. Knapp1, and M. D. Welch1, 1Colorado State University, Fort Collins, 2Fox Hollow Consulting LLC, Columbus, OH, 3Dairy 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.
A. N. Hristov*, Pennsylvania State University, University Park.

4:15 PM  411  Managing the environmental impact of pasture production systems.
K. A. Johnson* and C. D. Gambino, Washington State University, Pullman.

Ruminant Nutrition
Beef: Vitamin and Minerals
Chair: Jon Schoonmaker, Purdue University

9:30 AM  412  Ruminal degradable sulfur from organic and inorganic sources in beef cattle finishing diets.
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. Havenga2, 1University of Florida, Range Cattle Research and Education Center, Ona,  
2Multimin 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. Marques1, A. M. Pedroso2, C. T. S. Dias1, L. R. M. Pinto1, and F. A. P. Santos1, 1University of Sao Paulo, College of  
Agricultural Sciences, Piracicaba/SP, Brazil, 2Embrapa 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. Watson1, C. D. Buckner1, J. L. Harding1, D. R. Smith1, G. E. Erickson1, and T. J.  
Klopfenstein1, Department of Animal Science, University of Nebraska-Lincoln, Lincoln, 1School 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*1 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. Wagner1, K. Perryman1, J. W. Spears3, and T. E. Engle1, 1Colorado State University, Fort Collins,  
2Micronutrients, Indianapolis, IN, 3North 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*, R. J. Rathmann1, D. N. Finck1, W. Rounds2, and B. J. Johnson1, 1Texas Tech University, Lubbock,  
2Kemin 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*, N. C. Burdick2, R. J. Rathmann1, D. N. Finck1, J. A. Carroll2, A. N. Loyd2, and B. J. Johnson1, 1Texas Tech  
University, Lubbock, 2Livestock Issues Research Unit, USDA-ARS, Lubbock, TX.

Ruminant Nutrition  
Dairy: Forages and Fiber  
Chair: James Caldwell, Lincoln University  
293
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*, L. Davis², S. Emanuele², and H. Blalock², ¹University of Minnesota, St Paul, ²Quality 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*, K. N. Grigsby, and B. J. Bradford, ¹Department of Animal Science and Industry, Kansas State University, Manhattan, ²Cargill Incorporated, Blair, NE.

11:30 AM 429 Feeding forage cubes to identify divergence for residual feed intake in dairy cows.

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.

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*, F. Bargo, and R. K. Jhajj, ¹The University of Sydney, Camden, NSW, Australia, ²Elanco Animal Health Southern Cone (Argentina & Chile), Buenos Aires, Argentina.
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. Obi1, M. A. Adesina2, B. A. Makanjuola1, O. O. Oluwole1, T. O. Olorunbohunumi1, and O. Fagbiye1, 1Institute of Agricultural Research and Training, Obafemi Awolowo University, Ibadan, Oyo State, Nigeria, 2National Agricultural Extension & Research Liaison Services, Ahmadu Bello University, Zaria, Kaduna State, Nigeria, 3Federal 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. Zerby2, J. M. DeRouchey3, M. D. Cressman1, M. J. Bishop1, A. S. Gress1, and F. L. Fluharty1, 1The Ohio State University, Columbus, 2Kansas 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. Moeller2, H. N. Zerby1, J. M. DeRouchey3, M. D. Cressman1, M. J. Bishop1, A. S. Gress1, and F. L. Fluharty1, 1The Ohio State University, Columbus, 2Kansas 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. Richert2, J. S. Radelcliffe1, D. C. Lay4, and J. N. Marchant-Forde1, 1Purdue University, West Lafayette, IN, 2USDA-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. Walsh3, G. E. Gardiner1, M. C. Rea1, R. P. Ross1, and P. G. Lawlor1, 1Pig Development Department, Moorepark Animal and Grassland Research and Innovation Centre, Teagasc, Fermoy, Co. Cork, Ireland, 2Department of Chemical and Life Sciences, Waterford Institute of Technology, Waterford, Ireland, 3Pig Development 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. Walsh3, G. E. Gardiner1, M. C. Rea1, R. P. Ross1, and P. G. Lawlor1, 1Pig Development Department, Moorepark Animal and Grassland Research and Innovation Centre, Teagasc, Fermoy, Co. Cork, Ireland, 2Department of Chemical and Life Sciences, Waterford Institute of Technology, Waterford, Ireland, 3Pig Development 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. Hall1,2, M. U. Steidinger1,2, J. C. Remus1, M. Hruby1, and A. J. Veldkamp1, 1Hall Farms Consulting, LLC, Noblesville, IN, 2Swine Nutrition Services, Anchor, IL, 3Danisco 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*, S. J. Moeller1, P. H. Hemsworth2, C. C. Croney1, N. A. Botheras1, and H. N. Zerby1, 1Ohio State University, Columbus, 2University of Melbourne, Melbourne, Victoria, Australia.

ADSA Foundation Scholar Lecture – Dairy Foods
Chair: Albert DeVries, University of Florida
Sponsor: ADSA Foundation

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

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.

2:10 PM 453  
A dairy quality assurance program for New Mexico dairy producers.  
F. A. Rivera*, G. R. Hagevooit, M. L. Kinsel, and M. A. Smith; 1\(^{\text{a}}\) NMSU Ag Science Center, Clovis, NM, 2\(^{\text{a}}\) 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*, N. M. Esser, P. C. Hoffman, W. K. Coblenz, and D. K. Combs; 1\(^{\text{a}}\) Department of Dairy Science, University of Wisconsin, Madison, 2\(^{\text{a}}\) USDA-ARS, Marshfield, WI.

2:45 PM 455  
Effects of acute and chronic stress on immune- and inflammatory-response gene expression in beef calves.  

3:00 PM 456  
Estimation of genetic parameters for gait in Canadian Holstein cows.  
N. Chapinal*, E. Miglior, A. Sewalem, A. M. de Passille, J. Rushen, M. A. G. von Keyserlingk, and D. M. Weary; 1\(^{\text{a}}\) Department of Population Medicine, University of Guelph, Guelph, ON, Canada, 2\(^{\text{a}}\) Animal Welfare Program, University of British Columbia, Vancouver, BC, Canada, 3\(^{\text{a}}\) Guelph Food Research Centre, Agriculture and Agri-Food Canada, Guelph, ON, Canada, 4\(^{\text{a}}\) Canadian Dairy Network, Guelph, ON, Canada, 5\(^{\text{a}}\) Agriculture and Agri-Food Canada, Agassiz, BC, Canada.

3:15 PM 457  
Automatic estimation of body condition score from digital images.  
M. Caccamo*, G. Azzaro, G. Gallo, G. C. Guarnera, J. D. Ferguson, and G. Licitra; 1\(^{\text{a}}\) CoRFiLaC, Regione Siciliana, Ragusa, Italy, 2\(^{\text{a}}\) IPLAB, Catania University, Catania, Italy, 3\(^{\text{a}}\) University of Pennsylvania, PA, 4\(^{\text{a}}\) 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.  

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.  

4:15 PM 461  
Group pasture versus stall housing effects on cortisol and DHEA concentrations in young Quarter Horses.  

4:30 PM 462  
Cortisol and DHEA concentrations in foals identified as high versus low behavioral responders during weaning.  

4:45 PM 463  
Preference for condensed tannins by sheep in response to challenge infection with Haemonchus contortus.  
J. Juhnke, J. Miller, F. Provenza, I. Hall, and J. Villalba; 1\(^{\text{a}}\) Utah State University, Department of Wildland Resources, Logan, 2\(^{\text{a}}\) Louisiana State University, Department of Pathobiological Sciences, Baton Rouge, 3\(^{\text{a}}\) 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.  

Animal Behavior and Well-Being 3
Chair: Cassandra Tucker, University of California-Davis

2:00 PM 497  
Introduction.
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.

2:00 PM
Introduction
C. Croney, The Ohio State University.

2:05 PM
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
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
What did they just say? Science, politics, and animal welfare.
J. A. Mench*, University of California, Davis.

4:00 PM
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

2:00 PM
Assessing accuracy of heat detection in dairy herds.
H. Seegers*, D. Billon¹, E. Bossard-Apper², C. Ponsart¹, B. Grimard¹, and N. Bareille¹, *Research Group Epidemiology and Risk Analysis Oniris-INRA, Nantes, France, ¹Agriculture School, Angers, France, ²UNCEIA, Maisons-Alfort, France, ³Veterinary School, Maisons-Alfort, France.

2:15 PM
Heritability and repeatability estimates for twinning rate in the Irish dairy and beef cattle.
A. M. Doyle¹, R. D. Evans², and A. G. Fahey*¹, University College Dublin, Belfield, Dublin 4, Ireland, ²Irish Cattle Breeding Federation, Bandon, Co. Cork, Ireland.

2:30 PM
Genetic analysis of ovulatory disorders in Austrian Fleckvieh cows: A comparison between linear models and survival analysis.
A. Koeck*¹,², B. Fuerst-Waltl², J. Sölkner², C. Egger-Danner³, and G. Meszaros³, ¹Department of Animal and Poultry Science, University of Guelph, Guelph, ON, Canada, ²Division of Livestock Sciences, University of Natural Resources and Life Sciences, Vienna, Austria, ³ZuchtiData EDV-Dienstleistungen GmbH, Vienna, Austria.

2:45 PM
Montbeliarde-sired crossbred cows compared to pure Holstein cows for production, SCS, days open, and survival during their first three lactations.

3:00 PM
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
Estimation of genetic parameters for health and survival in Canadian Holstein calves.
C. E. McCorquodale*¹, F. Miglior², A. Sewalem², D. Kelton¹, A. Robinson³, and K. E. Leslie¹, ¹Department of Population Medicine, University of Guelph, Guelph, Ontario, Canada, ²Guelph Food Research Centre, Agriculture and Agri-Food Canada, Guelph, Ontario, Canada, ³Canadian Dairy Network, Guelph, Ontario, Canada.

3:30 PM
Genetic parameters of lactation yield in the tropical carora breed with random regression test-day models.
E. Tullo*¹, S. Biffani², C. Maltecca³, and R. Rizzi¹, ¹University of Milan, Faculty of Veterinary Medicine, Department of Veterinary Science and Technology for Food Safety, Milan, Italy, ²Parco Tecnologico Padano, Lodi, Italy, ³Department of Animal Science, North Carolina State University, Raleigh.
<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
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<tbody>
<tr>
<td>2:00 PM</td>
<td>476</td>
<td><strong>Cooperation under directional selection with kinship-based groups.</strong> F. Siewerdt*1, A. D. Franklin1, J. A. Carrillo1, A. K. Sasikala-Appukuttan1, A. S. Schierholt2, T. E. Callicrate3, M. A. Campbell4, and H. L. M. Moreira5, 1University of Maryland, College Park, MD, 2Universidade Federal Rural da Amazônia, Belém, PA, Brazil, 3Universidade Federal de Pelotas, Pelotas, RS, Brazil.</td>
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<tr>
<td>2:15 PM</td>
<td>477</td>
<td><strong>A recursive binomial model for piglet mortality.</strong> L. Varona*1 and D. Sorensen2, 1Unidad de Genetica Cualitativa y Mejora Animal, Universidad de Zaragoza, Zaragoza, Spain, 2Department of Genetics and Biotechnology, University of Aarhus, Tjele, Denmark.</td>
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<td>2:30 PM</td>
<td>478</td>
<td><strong>Genetic correlation between purebred piglet birth weight and crossbred performance.</strong> C. Y. Chen*1,2, I. Misztal1, S. Tsuruta1, J. Holl1, W. O. Herring2, and M. Cubertson3, 1Department of Animal and Dairy Science, University of Georgia, Athens, 2Newsham Choice Genetics, Chesterfield, MO, 3Smithfield Premium Genetics Group, Rose Hill, NC.</td>
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<td>2:45 PM</td>
<td>479</td>
<td><strong>Construction of individual breeding values for feed intake of Piétrain boars based on mean pen feed intake, weight and weight gain test station records.</strong> M. Dufrasne*1, V. Jaspart1, J. Wavreille1, and N. Gengler1,4, 1Animal Science Unit, University of Liege, GxABT, Gembloux, Belgium, 2Walloon Pig Breeders Association, Ciney, Belgium, 3Walloon Agricultural Research Centre, Gembloux, Belgium, 4National Fund for Scientific Research, Brussels, Belgium.</td>
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<td>3:00 PM</td>
<td>480</td>
<td><strong>Genetic correlations between purebred Limousin and F1 Limousin*Angus.</strong> R. Davis*1, I. Misztal1, M. Lukaszewicz1,2, S. Tsuruta1, and J. K. Bertrand1, 1University of Georgia, Athens, 2Polish Academy of Sciences, Institute of Genetics and Animal Breeding, Jastrzebiec, Poland.</td>
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<tr>
<td>3:15 PM</td>
<td>481</td>
<td><strong>The heritability of lean color and its influence on beef tenderness.</strong> P. Johnson*1, D. Moser1, and M. Miller1, 1Texas Tech University, Lubbock, 2Kansas State University, Manhattan.</td>
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<tr>
<td>3:30 PM</td>
<td>482</td>
<td><strong>Multivariate characterization of morphological traits in Nigerian sheep.</strong> A. Yakubu1, M. Okpeku2, M. Wheto3, S. Amusan1, B. O. Agaviezor3, M. A. Adefenwa3, B. M. Ilori3, O. Ajayi3, G. O. Onasanya3, J. Ekundayo1, T. Sanni3, C. O. N. Ikeobi1, M. I. Takeet3, and I. G. Imumon1, 1Dept. of Animal Science, Nasarawa State University, Lafia, Nigeria, 2Department of Livestock Production, Niger Delta University, Amassoma, Nigeria, 3Department of Animal Breeding and Genetics, University of Agriculture, Abeokuta, Nigeria, 4Dept. of Animal Science and Fisheries, University of Port-Harcourt, Port-Harcourt, Nigeria, 5Dept. of Cell Biology and Genetics, University of Lagos, Lagos, Nigeria, 6Dept. of Veterinary Microbiology and Parasitology, University of Agriculture, Abeokuta, Nigeria, 7Dept. of Animal Science, Cornell University, Ithaca, NY.</td>
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<td>3:45 PM</td>
<td>483</td>
<td><strong>Multivariate analysis of morphological differentiation in Nigerian goats.</strong> A. Yakubu1, M. Okpeku2, M. Wheto3, S. Amusan1, B. O. Agaviezor3, M. A. Adefenwa3, B. M. Ilori3, O. Ajayi3, G. O. Onasanya3, J. Ekundayo1, T. Sanni3, C. O. N. Ikeobi1, M. I. Takeet3, and I. G. Imumon1, 1Dept. of Animal Science, Nasarawa State University, Lafia, Nigeria, 2Department of Livestock Production, Niger Delta University, Amassoma, Nigeria, 3Department of Animal Breeding and Genetics, University of Agriculture, Abeokuta, Nigeria, 4Department of Animal Science and Fisheries, University of Port-Harcourt, Port-Harcourt, Nigeria, 5Dept. of Cell Biology and Genetics, University of Lagos, Lagos, Nigeria, 6Dept. of Veterinary Microbiology and Parasitology, Abeokuta, Nigeria, 7Dept. of Animal Science, Cornell University, Ithaca, NY.</td>
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<td>4:00 PM</td>
<td>484</td>
<td><strong>Searching for causal relationships among five traits of European quails.</strong> B. D. Valente1,2, G. J. M. Rosa1,3, M. A. Silva2, R. B. Teixeira4, and R. A. Torres4, 1Department of Animal Sciences, University of Wisconsin, Madison, 2Departamento de Zootecnia, Universidade Federal de Minas Gerais, Belo Horizonte, Minas Gerais, Brazil, 3Department of Biostatistics and Medical Informatics, University of Wisconsin, Madison, 4Departamento de Zootecnia, Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil.</td>
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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

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. Lafitte*, 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. Morris1 and J. Cline**, 1Omaha’s Henry Doorly Zoo, Omaha, NE, 2Nestle Purina Petcare Product Technology
Center, St. Louis, MO.

4:25 PM  491  Bones and joints: Improving mobility in senior years.
B. Lussier*1,2, 1Department of Clinical Sciences, Faculty of Veterinary Medicine, University of Montreal, St-Hyacinthe,
Quebec, Canada, 2University Hospital Research Center, University of Montreal, Montreal, Quebec, Canada.

Dairy Foods Symposium
Innovations in Dairy Processing Unit Operations
Chair: Brandon Nelson, Daisy Brand

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.

Dairy Foods
Microbiology and Probiotics
Chair: Tony Schoenfuss, University of Minnesota

2:00 PM  496  Use of high pressure processing to control Listeria monocytogenes in packaged Queso Fresco.
P. Tomasula**, L. Leggett1, R. Kwoczek2, D. Van Hekken1, M. Tunic1, J. Renye1, M. Toth1, S. Mukhopadhyay2, A. Porto-
Fett3, and J. Luchansky1, 1USDA/ARS/ERRC/Dairy and Functional Foods Research Unit, Wyndmoor, PA, 2USDA/ARS/
ERRC/Residue Chemistry and Predictive Microbiology Research Unit, Wyndmoor, PA, 3USDA/ARS/ERRC/Food Safety
Interventions Research Unit, Wyndmoor, PA.

2:15 PM  497  High-pressure processing of lowfat Cheddar cheese.
M. Ozturk*, S. Govindasamy-Lucey2, J. J. Jaeggi2, K. Houck1, M. E. Johnson2, and J. A. Lucey1, 1University of Wisconsin,
Madison, 2Wisconsin 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.
Tina wooden vat biofilms used in Sicilian PDO Ragusano cheese provide a new cluster of Streptococcus thermophilus strains. V. Florence1, C. Delorme1, C. Pediliggieri4, M.-N. Madec1,2, V. Chuat1,2, G. Licitra1, INRA, UMR1253, STLO, Rennes, France, 2Agrocampus Ouest, UMR1253, STLO, Rennes, France, 3INRA, Micalis, Jouy en Josas, France, 4CoRFiLaC, Ragusa, Sicily, Italy.

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*, M. Nasir1, S. U. Rehman2, M. A. Jabbar2, and M. A. Ali3, 1University of Veterinary & Animal Sciences, Lahore, Punjab, Pakistan, 2University of Agriculture Faisalabad, Faisalabad, Punjab, Pakistan.

Transcriptional and physiological responses of Bifidobacterium animalis ssp. lactis strains to hydrogen peroxide stress. T. S. Oberg*, R. E. Ward1, J. L. Steele1, and J. R. Broadbent1, 1Utah State University, Logan, 2University of Wisconsin, Madison.

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).

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).

A dairy safety program: Considering human and animal safety. M. A. Smith*, G. R. Hagevoort, and F. A. Rivera, NMSU Ag Science Center, Clovis.

Assessing a comprehensive dairy cattle economic program for practicing dairy veterinarians. G. M. Schuennemann*, D. Shoemaker, D. Breece, S. Bas, and J. D. Workman, Department of Veterinary Preventive Medicine, The Ohio State University, Columbus.

III. Dairy calving management: Assessment of a comprehensive program for dairy personnel. G. M. Schuennemann*, S. Bas, E. Gordon, and J. Workman, Department of Veterinary Preventive Medicine, The Ohio State University, Columbus.


Evaluating cow efficiency at the producer level: The Northwest Minnesota Beef Improvement Program. R. S. Walker*, S. L. Bird2, G. I. Crawford4, and A. DiCostanzo4, 1LSU AgCenter, Homer, LA, 2University of Minnesota North Central Research & Outreach Center, Grand Rapids, 3University of Minnesota Extension, Hutchinson, MN, 4University of Minnesota, St. Paul.

The benefits of using StockPlan to assist producers make management decisions before and during dry spells or drought. M. J. McPhee*, M. B. Whelan7, B. L. Davies5, G. P. Meaker3, P. Graham5, and P. M. Carberry6, 1Industry and Investment NSW, Armidale, NSW, Australia, 2Southern Cross University, Lismore, NSW, Australia, 3Industry and Investment NSW, Paterson, NSW, Australia, 4Industry and Investment NSW, Goulburn, NSW, Australia, 5Industry and Investment NSW, Yass, NSW, Australia, 6Formerly Industry and Investment, Canberra, NSW, Australia.

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

2:00 PM  
Introduction

2:05 PM  
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  
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  
Endotoxin, inflammation, and intestinal function in swine.
N. K. Gabler*, L. H. Baumgard, and V. Mani, Iowa State University, Ames.

3:50 PM  
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  
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

2:00 PM  
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*, L. F. Hightower1, J. C. Brooks1, B. J. Johnson1, S. L. Parr1, R. J. Rathmann1, J. D. Starkey1, D. A. Yates2, J. M. Hodgen1, J. P. Hutcheson1, and M. F. Miller1, 1Texas Tech University, Lubbock, 2Intervet/Schering-Plough Animal Health, DeSoto, KS.

2:15 PM  
The effects of anabolic growth implant and restricted feed intake on proliferation of bovine primary skeletal muscle cells.

2:30 PM  
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  
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.

Withdrawn
Effect of castration and slaughter ages on animal performance and meat quality of Holstein bulls fed high-concentrate diets.
S. Marti*, C. E. Realini†, A. Bach‡, M. Perez-Juan‡, and M. Devant‡. 1Department Ruminant Production, IRTA, Barcelona, Spain, 2Carass Quality Subprogram, IRTA, Girona, Spain, 3ICREA, Barcelona, Spain.

Establishing a molecular fingerprint of high versus low-quality beef carcasses.

Localization and abundance of DLK1 in skeletal muscle of cattle.
E. Albrecht*, J. Kuzinski†, T. Gotoh†, and S. Maak†. 1Leibniz Institute for Farm Animal Biology, Muscle Biology and Growth, Dummerstorf, Germany, 2Kyushu University, Kujü Agricultural Research Center, Kujü-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

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.

Physiology and Endocrinology Symposium
Factors Controlling Puberty in Beef Heifers
Chair: Paul Fricke, University of Wisconsin

2:00 PM 533 Introduction

2:05 PM 534 Management implications associated with the onset of puberty and persistence of estrous cycles in beef heifers.
G. C. Lamb*, K. M. Bischoff†, T. E. Black†, V. R. G. Mercadante†, G. H. L. Marquezini†, R. F. Cooke†, and N. DiLorenzo†. 1North Florida Research and Education Center, University of Florida, Marianna, 2Eastern Oregon Agricultural Research Center, Oregon State University, Burns.

2:45 PM 535 How SNP chips will advance our knowledge of factors controlling puberty and aid in selecting replacement females.
W. M. Snelling*, R. A. Cushman†, G. L. Bennett†, J. W. Keele†, L. A. Kuehn†, T. G. McDaneld†, R. M. Thallman†, and M. G. Thomas‡. 1USMARC, USDA-ARS U.S. Meat Animal Research Center, Clay Center, NE, 2New 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*, R. C. Vann, J. P. Banta, T. H. Welsh, and R. D. Randle, Texas AgriLife Research, College Station, Texas AgriLife Research, Overton, MAFES, Mississippi State University, Raymond, Lubbock, TX.

2:15 PM 538  Effects of transportation and lipopolysaccharide (LPS) challenge on vaginal temperature in crossbred heifer calves.  
A. N. Loyd*, R. C. Vann, J. P. Banta, T. H. Welsh, J. A. Carroll, and R. D. Randle, Texas AgriLife Research, College Station, MAFES, Mississippi State University, Raymond, Texas AgriLife Extension, Overton, Livestock Issues Research Unit, USDA-ARS, Lubbock, TX, Texas AgriLife Research, Overton.

2:30 PM 539  Chromium supplementation enhances the metabolic response of steers to lipopolysaccharide (LPS) challenge.  
N. C. Burdick*, B. C. Bernhardt, J. A. Carroll, A. N. Loyd, D. N. Finck, R. J. Rathmann, and B. J. Johnson, Livestock Issues Research Unit, USDA-ARS, Lubbock, TX, 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*, R. C. Vann, J. P. Banta, T. H. Welsh, J. A. Carroll, and R. D. Randle, Texas AgriLife Research, College Station, MAFES, Mississippi State University, Raymond, Texas AgriLife Extension, Overton, Livestock Issues Research Unit, USDA-ARS, Lubbock, TX, Texas AgriLife Research, Overton.

3:00 PM 541  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.  

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*, D. A. Neuendorff, G. L. Shafer, M. E. Kjelland, J. Moreno, M. A. Lammoglia, S. Romo, A. W. Lewis, T. H. Welsh, and R. D. Randle, Texas A&M University, College Station, Texas AgriLife Research-Overton, Overton, Texas AgriLife Research, College Station, College Station, Sexing Technologies, Navasota, TX, Universidad Autonoma de Veracruz, Tuxpan, Veracruz, Mexico, 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.  

4:30 PM 546  Effects of temperament on reproductive and physiological responses of beef cows.  

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, L. R. Corah*, T. T. Marston, D. W. Moser, and C. D. Reinhardt*, Kansas State University, Manhattan, Certified Angus Beef, Manhattan, KS, University of Nebraska, Norfolk.
Impact of beef heifer development systems on ADG, reproduction, and feed efficiency.

Late gestation supplementation impacts primiparous beef heifers and progeny.

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.

Season of arrival affects feedlot performance, health, and carcass traits of Angus steers.
M. L. Hands¹, T. T. Marston², L. R. Corah¹, D. W. Moser¹, and C. D. Reinhardt*¹, ²Kansas State University, Manhattan, ³University of Nebraska, Norfolk, ⁴Certified Angus Beef, Manhattan, KS.

Relationships between feedlot performance, yield grade, and quality grade in Angus steers.
M. L. Hands¹, T. T. Marston², L. R. Corah¹, D. W. Moser¹, and C. D. Reinhardt*¹, ²Kansas State University, Manhattan, ³University of Nebraska, Norfolk, ⁴Certified Angus Beef LLC, Manhattan, KS.

Relationship of feed efficiency of replacement beef heifers to subsequent feed efficiency as 3-year old suckled beef cows.
T. E. Black*, K. M. Bischoff¹, V. R. G. Mercadante¹, G. H. L. Marquezini¹, C. C. Chase², S. W. Coleman², and G. C. Lamb³, ¹North Florida Research and Education Center, University of Florida, Marianna, ²USDA-ARS, SubTropical Agricultural Research Station, Brooksville, FL.

Effect of injectable trace minerals on the humoral immune response to multivalent vaccine administration in beef calves.
J. D. Arthington*¹ and L. J. Havenga², ¹University of Florida, Range Cattle Research and Education Center, Ona, ²Multimin USA Inc., Fort Collins, CO.

The effect of beta-agonists on feedlot performance and carcass merit in yearling steers.
R. K. Peterson*, J. J. Wagner¹, T. E. Engle¹, and T. C. Bryant², ¹Colorado State University, Fort Collins, ²JBS Five Rivers Cattle Feeding, Greeley, CO.

Moderate exercise alters blood constituents, growth performance, and carcass characteristics in finishing heifers.
A. D. Stickel¹, L. N. Edwards¹, T. A. Houser¹, J. R. Jaeger¹, T. G. Rozell¹, L. D. Hollis¹, S. Uwituze¹, C. L. Van Bibber¹, K. A. Miller¹, J. J. Higgins¹, and J. S. Drouillard*, ¹Kansas State University, Manhattan, ²Kansas State University, Hays.

Ruminant Nutrition
Beef: Proteins and Carbohydrates
Chair: Sara Winterholler, South Dakota State University
294

Acidosis challenge effects on ruminal pH and temperature in beef cattle.

Fatty acid profile of muscle and subcutaneous fat of Red Norte bulls fed ionophores and lipids sources.

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. Doreva, V. N. Gouvea, A. L. Marra, and F. A. P. Santos*, University of Sao Paulo/ESALQ, Piracicaba, Sao Paulo, Brazil.

Effect of rate of gain on fat deposition during grazing and final carcass characteristics in growing beef cattle.

Nutrient mass balance and performance of feedlot cattle fed barley based diets with and without dried distillers grains plus solubles.
E. M. Hussey*, G. E. Erickson², R. E. Peterson³, and L. O. Burciaga-Robles², ¹University of Nebraska-Lincoln, Lincoln, ²Feedlot Health Management Services Ltd., Okotoks, AB, Canada, ³Western 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. Dórea1, L. R. D. Agostinho Neto1, V. N. Gouvêa1, M. A. C. Danés1, L. G. R. Pereira1, J. A. G. Azevêdo1, and F. A. P. Santos*,1, 1University of Sao Paulo/ESALQ, Piracicaba, Sao Paulo, Brazil, 2Embrapa Dairy Cattle, Juiz de Fora, Minas Gerais, Brazil, 3State 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. Marcondes2, S. C. Valadares Filho2, M. P. Gionbelli2, P. V. R. Paulino2, and M. F. Paulino2, 1Universidade Federal de Lavras, Lavras, MG, Brazil, 2Universidade 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*, P. J. Kononoff1, T. C. Jenkins1, L. O. Tedeschi1, and K. Karges1, 1Department of Animal Science, University of Nebraska-Lincoln, Lincoln, 2Department of Animal and Veterinary Sciences, Clemson University, Clemson, SC, 3Department of Animal Science, Texas A&M University, College Station, 4Dakota Gold Research Association, Sioux Falls, SD.

4:30 PM 567  Evaluation of polyclonal antibodies in cattle adapted or not to highly fermentable carbohydrate diets.
T. Barros1, C. Marino*1, R. Pacheco, F. Ferreira1, F. Perna1, E. Cassiano1, M. Martins1, M. Arrigoni2, and P. Rodrigues1, 1University of Sao Paulo, FMVZ-USP, Pirassununga, Sao Paulo, Brazil, 2University 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 carbohydrate diets after an acidosis challenge.
T. Barros1, C. Marino*1, R. Pacheco, F. Ferreira1, F. Perna1, E. Cassiano1, M. Martins1, M. Arrigoni2, and P. Rodrigues1, 1University of Sao Paulo, FMVZ-USP, Pirassununga, Sao Paulo, Brazil, 2University of Sao Paulo State, FMVZ-UNESP, Botucatu, Sao Paulo, Brazil.

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**Ruminant Nutrition**

**Dairy: Ruminal Metabolism**

*Chair: Juan Loor, University of Illinois*

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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*, E. Block2, and P. H. Morris1, 1Clemson University, Clemson, SC, 2Arm & Hammer Animal Nutrition, Princeton, NJ.

2:30 PM 571  Metabolic effects of feeding supplemental tallow to lactating Nili-Ravi buffalo.
H. Nawa2, M. Yaqoob*, J. I. Sultan1, M. Sarwar1, and M. Younas2, 1Institute of Animal Nutrition and Feed Technology, University of Agriculture, Faisalabad, Pakistan, Faisalabad, Punjab, Pakistan, 2Faculty 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. Onken1, G. Hobgood2, S. L. Sheilds*, and J. P. McNamara1, 1Washington State University, Pullman, 2North 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. Golder1,2, P. Celi1, A. R. Rabiee1,2, C. Heuer3, E. Bramley4, D. W. Miller4, R. King5, and I. J. Lean1,2, 1University of Sydney, Faculty of Veterinary Science, Camden, New South Wales, Australia, 2SBScibus, Camden, New South Wales, Australia, 3Massey University, Epencentre, Institute of Veterinary, Animal and Biomedical Sciences, Palmerston North, New Zealand, 4Murdoch University, School of Veterinary and Biomedical Sciences, Murdoch, Western Australia, Australia, 5Dairy 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.

4:00 PM 577  Protein and fertility in lactating dairy cattle: A meta-analysis and meta-regression.
I. J. Lean*, P. Celi, J. McNamara, H. Raadsma, and A. Rabiee, 1Faculty of Veterinary Science, The University of Sydney, Camden, New South Wales, Australia, 2SBScibus, Camden, New South Wales, Australia, 3Department of Animal Sciences, Washington State University, Pullman.

4:15 PM 578  Effect of increasing proportions of energy concentrates on in vitro gas production estimates.

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.
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**, T. H. Elsasser¹, and C. V. Obiezu-Forster², ¹USDA, Agricultural Research Service, Beltsville, MD, ²Spectral 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.

W5  Repeated oral administration of lipopolysaccharide and lipoteichoic acid modulated post-treatment plasma metabolites and innate immunity of prepartal dairy cows.

W6  Diets enriched in barley grain treated with lactic acid and heat lowered rumen endotoxin and improved innate immunity in dairy cows.

W7  Oral administration of bacterial lipopolysaccharide and lipoteichoic acid modulated milk composition and efficiency in transition dairy cows.

W8  Oronasal exposure to lipopolysaccharide differentially affected blood metabolites in multiparous dairy cows.

W9  Oral administration of lipopolysaccharide and lipoteichoic acid modulated plasma metabolites and decreased the risk of metabolic diseases in periparturient dairy cows.

W10 Bovine acute-phase response following different doses of corticotrophin-releasing hormone (CRH) challenge.
R. F. Cooke*, J. A. Carroll², F. N. T. Cooke¹, B. I. Cappellozza¹, C. Trevisanuto¹, V. D. Tabacow¹, J. Dailey¹, and D. W. Bohnert¹, ¹Oregon State University–Eastern Oregon Agricultural Research Center, Burns, ²USDA–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. Hulbert¹, ¹Department of Animal and Food Sciences, Texas Tech University, Lubbock, ²Department 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. Rodríguez¹, N. Saborido¹, L. Castillejos¹, M. Rodríguez¹, A. Lago², J. Campbell¹, J. Quigley¹, and J. Polo¹, ¹APC Europe, S.A., Granollers, Spain, ²Animal Nutrition and Welfare Service, Autonomous University of Barcelona, Barcelona, Spain, ³APC Inc., Ankeny, IA.

W14 Development of a rapid method to estimate IgG in bovine colostrum.
K. M. Morrill**, J. D. Quigley¹, A. Lago², and H. D. Tyler¹, ¹Iowa State University, Ames, ²APC Inc., Ankeny, IA.
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, 1 J. Wormuth, 1 D. F. Kelton, 1 and K. E. Leslie, 1 University of Guelph, Guelph, Ontario, Canada, 2Washington State University, Pullman, 3CY Heifer Farm, Elba, NY.

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, 1 Estación Experimental Alfredo Volio Mata, Facultad de Ciencias Agroalimentarias, Universidad de Costa Rica, 2The Pennsylvania State University, University Park.

Determining the heritable component of dairy cattle foot lesions.
A. M. Oberbauer*, 1 S. L. Berry, J. M. Belanger, and T. R. Famula, Department of Animal Science, University of California, Davis.

Factors affecting the selling price of calves sold in Texas livestock markets.
K. J. Stutts, M. M. Beverly*, 2 S. F. Kelley, and B. M. Freel, Sam Houston State University, Huntsville, TX.

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, 1 J. Piedrafita, 1 and J. Casellas, 1 G2R, Departament de Ciència Animal i dels Aliments, Universitat Autònoma de Barcelona, Bellaterra, Spain, 2Departamento de Anatomía, Embriología y Genética Animal, Universidad de Zaragoza, Zaragoza, Spain.

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, 1 Dept. of Animal and Poultry Science, University of Guelph, Guelph, Ontario, Canada, 2Dept. of Animal Sciences, North Dakota State University, Fargo.

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.

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, 1 G. K. Jim, 1 and L. O. Burciaga-Robles, 1 Feedlot Health Management Services Ltd., Okotoks, Alberta, Canada, 2Department of Animal Science, Oklahoma State University, Stillwater.

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, 1 S. E. Johnson, 1 and A. D. Ealy, 1 University of Florida, Department of Animal Sciences, Gainesville, 2University 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. Vergara1 and M. A. Elzo2, 3. 1University of Cordoba, Monteria, Colombia, 2University of Florida, Gainesville.

W29 Combining ability of nine tropically adapted and temperate breeds for growth and ultrasound traits in Colombia. C. A. Martínez1, C. Manrique2, M. A. Elzo3, and A. Jiménez4, 1Universidad Nacional de Colombia, Bogota, Colombia, 2University of Florida, Gainesville.

W30 Genetic parameters and trends for age at first calving in Brahman cows raised in Brazil. J. C. DeSouza1, M. Silveira2, M. A. Pereira3, P. B. Ferraz Filho4, J. A. DeFreitas5, R. M. DaSilva6, C. H. M. Malhado7, 8, C. H. M. Cavalar9, M. F. Mota10, H. J. Fernandes11, and W. R. Lamberson12, 1Mato Grosso do Sul Federal University, CPQA/Animal Science, MS, Brazil, 2Student of MSc. of animal science course, UFMS, Campo Grande, Brazil, 3Brazilian Association of Zebu Breeders, Uberaba, Brazil, 4Mato Grosso do Sul Federal University, Tres Lagoas, Brazil, 5Parand Federal University, Palotina, Brazil, 6South Bahia State University, Jequié, Brazil, 7Paranaense University - UNIPAR, Umuarama, Brazil, 8State University of Mato Grosso do Sul, Aquidauana, MS, 9University of Missouri, Columbia, 10Scholarship - CNPQ, Brazil.

W31 Allometric growth study of Guzera cattle under a performance test on grazing regimen. R. C. Sousa1, 2, I. G. Pereira1, P. V. R. Paulino3, S. D. J. Villela3, R. A. M. Oliveira4, A. P. L. Tonaco4, F. S. Coelho5, and F. A. Carvalho Neto6, 1Universidade Federal dos Vales do Jequitinhonha e Mucuri, Diamantina, MG, Brazil, 2Universidade Federal de Viçosa, Viçosa, MG, Brazil, 3Colorado State University, Fort Collins.


W33 Variance components in growth traits of Guzera cattle breed with different models. I. S. Silva1, I. U. Packer2, C. M. R. Melo3, L. O. C. Silva4, and R. A. A. Torres Junior5, 1University of Brasilia - UnB, Brasilia /DF, Brazil, 2University of São Paulo - USP/ESALQ, Piracicaba/SP, Brazil, 3University of Santa Catarina - UFSC, Florianópolis/SC, Brazil, 4Embrapa Gado de Corte, Embu-Mirim, Sao Paulo, Brazil.

W34 Estimates genetic parameters for growth traits of Guzera cattle breed by single-trait and two-trait analysis. I. S. Silva1, I. U. Packer2, C. M. R. Melo3, L. O. C. Silva4, and R. A. A. Torres Junior5, 1University of Brasilia - UnB, Brasilia /DF, Brazil, 2University of São Paulo - USP/ESALQ, Piracicaba/SP, Brazil, 3Federal University of Santa Catarina - UFSC, Florianópolis/SC, Brazil, 4Embrapa Gado de Corte, Campo Grande/MS, Brazil.


W36 Linear B-splines to model longitudinal weight records in Tabapuá cattle. G. R. O. Menezes1,2, R. A. Torres3, R. A. A. Torres Júnior4, L. O. C. Silva5, A. Gondo6, and R. F. Euclides7, 1Embrapa Beef Cattle, Campo Grande, MS, Brazil, 2Federal University of Vicsos, Vicsos, MG, Brazil.


W38 Selection effect for growth traits in reproduction energy females of three production cycles. I. D. P. Solar Díaz1, 2, F. R. de Araujo Neto1, G. M. Ferreira de Camargo1, R. Barbosa Lobo2, and H. N. de Oliveira3, 1Sao Paulo State University, Jaboticabal, Sao Paulo, Brasil, 2Sao 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. Pascoa1, 2, A. de los Reyes3, M. A. Elzo4, J. L. Ferreira4, L. A. F. Bezerra4, and R. B. Lobo5, 1Federal Institute of Brasilia, Planaltina, Distrito Federal, Brazil, 2Federal University of Goias, Goiânia, Goiás, Brazil, 3University of Florida, Gainesville, 4Federal University of Tocantins, Araguacema, Toantins, Brazil, 5National 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. Lino1, 2, 3, T. S. Tsutu4, I. Misztal5, E. N. Martins6, and L. O. C. Silva7, 1University of Georgia, Athens, 2State University of Maringá, Maringá, PR, Brazil, 3Embrapa Gado de Corte, Campo Grande, MS, Brazil.


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.
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.

Heritability and effect of breed and diet on complementary feed utilization traits in Simmental, Angus and crossbreed steers.
N. V. L. Serão*, J. E. Beever†, D. B. Faulkner*, M. Pérez-Enciso*, and S. L. Rodríguez-Zas†, University of Illinois at Urbana-Champaign, Urbana, 2Universitat Autònoma de Barcelona, Barcelona, Catalonia, Spain.

Comparison of body weight genetic evaluation accuracy by random regression with splines and multi-trait model in Limousins.
M. Łukaszewicz*†, I. Misztal†, A. H. Nelson†, J. P. Sánchez†, and J. K. Bertrand†, University of Georgia, Athens, 2Institute of Genetics and Animal Breeding, Jastrzebiec, Poland.

Growth curves for buffaloes (Bubalus bubalis) using random regression mixed models with different structures of residual variances.
D. M. Bolivar†, M. F. Cerón-Muñoz‡, M. A. Elzo*, E. J. Ramirez‡, and D. A. Agudelo¶, National University of Colombia, Medellín, Colombia, 2University of Antioquia, Medellín, Colombia, 3University of Florida, Gainesville, 4Lasallian University Corporation, Caldas, Colombia.

Estimates of genetic and phenotypic trends for body weight traits of Zel sheep obtained by a univariate and multivariate animal model analysis.
H. Mohammadi* and M. Moradi Shahrebak, Department of Animal Science, University College of Agriculture and Natural Resources, University of Tehran, Karaj, Tehran, Iran.

Genetic and phenotypic correlations between reproduction and production traits in Zandi sheep.
H. Mohammadi* and M. Moradi Shahrebak, Department of Animal Science, University College of Agriculture and Natural Resources, University of Tehran, Karaj, Tehran, Iran.

Estimation of genetic trend for some reproductive traits in Zandi sheep breed.
H. Mohammadi* and M. Moradi Shahrebak, Department of Animal Science, University College of Agriculture and Natural Resources, University of Tehran, Karaj, Tehran, Iran.

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

Accuracy and bias of multiple-trait genomic evaluations for linear type traits in US Holsteins.
S. Tsuruta*, I. Misztal†, I. Aguilar‡, and T. Lawlor*, Instituto Nacional de Investigación Agropecuaria, La Piedras, Canelones, Uruguay, 2Holstein Association USA Inc., Beltsville, VT.

Genomic imputation and evaluation using 342 high-density Holstein genotypes.
P. M. VanRaden‡, D. J. Null*, G. R. Wiggans§, T. S. Sonstegard†, and E. E. Connor¶, Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD, 2Bovine Functional Genomics Laboratory, ARS, USDA, Beltsville, MD.

Genomic evaluation of Angus-Brahman multibreed cattle for feed efficiency and postweaning growth using the Illumina 3k chip.
M. A. Elzo*, G. C. Lamb*, D. D. Johnson†, M. G. Thomas†, I. Misztal‡, D. O. Rae†, J. G. Wasdin‡, and J. D. Driver*, University of Florida, Gainesville, 2North Florida Research and Education Center, Marianna, 3New Mexico State University, Las Cruces, 4University of Georgia, Athens.

A neural network approach for association between a low-density whole genome SNP marker panel for 19 traits in beef cattle.
E. Hay**, H. Wang†, X. Liu*, B. Woodward‡, S. Bauck‡, and R. Rekaya*, University of Georgia, Athens, 2Merial Limited, Duluth, GA.

Whole genome association analyses for ultrasound and carcass merit traits in beef cattle.

Large-scale SNP association analyses for somatic cell score in Canadian Holstein cattle.
H. Li**, Z. Wang†, F. S. Schenkel*, M. Sargolzaei†, S. S. Moore†, and P. Stothard*, University of Alberta, Edmonton, Alberta, Canada, 2University of Guelph, Guelph, Ontario, Canada, 3Alliance Boviteq, Saint-Hyacinthe, Québec, Canada.

Comparison of selective genotyping strategies for prediction of breeding values in a population undergoing selection.
A. A. Boligon*, N. Long†, L. G. Albuquerque*, K. A. Weigel†, D. Gianola‡, and G. J. M. Rosa*, Department of Animal Sciences, Sao Paulo State University, Jaboticabal, São Paulo, Brazil, 2Department of Animal Sciences, University of Wisconsin, Madison, 3Department of Dairy Science, University of Wisconsin, Madison.
Estimating genomic breeding values in crossbred animals.
E. H. Hay*, S. Smith, and R. Rekaya, University of Georgia, Athens.

Accounting for new mutations in the genomic relationship matrix.

### Dairy Foods

#### Cheese

Effect of the use of rennet substitute on composition and yield of Minas Padrão cheese.
J. Camisa1, S. T. Di Cicco2, K. Siviern1, P. C. B. Vianna*1, and C. M. V. B. De Rensis1, 1UNOPAR, Londrina, PR, Brazil, 2UNESP, Araraquara, SP, Brazil.

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.

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.

Influence of different cheese matrix structures on lipid digestion in a simulated gastro-intestinal environment.
S. Lamothe1, M.-M. Corbeil1, S. Turgeon2, and M. Britten*1, 1Food Research and Development Centre, Agriculture and Agri-Food Canada, St-Hyacinthe, (QC), Canada, 2Dairy Research Centre STELA, Faculty of Agriculture and Food Science, Université Laval, Quebec, (QC), Canada.

Effects of high pressure processing on the chemical, functional and rheological properties of fresh Queso Fresco.

ACE-inhibitory activity of commercial Wisconsin Cheddar cheeses during ripening.

Influence of cooking temperature on the behavior of enterococci and the production of diacetyl in Coalho cheese.

Identification of the main esterase involved in lipolysis by Propionibacterium freudenreichii.
M. C. Abeijón Mukdsi1,4, H. Falentin1,2, M.-B. Maillard1,2, M. B. Medina1,2, S. Parayre1,2, S.-M. Deutsch1,2, S. Lortal*1,2, and A. Thierry1,2, 1INRA, UMR1253, Rennes, France, 2Agrocampus Ouest, Rennes, France, 3CERELA-CONICET, Tucumán, Argentina, 4Universidad Nacional de Tucumán, Tucumán, Argentina.

Characteristics of the chemical composition and lipolysis during ripening of Emmental cheese.

Oxidative stability of Prato cheese added with lutein.

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.

Influence of pH on flavor of low fat Cheddar cheese.
M. M. Motawee*,1 and D. J. McMahon*, 1National Organization for Drug Control and Research, Cairo, Egypt, 2Western Dairy Center, Utah State University, Logan.

Free fatty acid compositions of low-fat and full-fat goat milk cheeses stored under refrigeration for three months.
W. Nouira1, Z. Guler1, and Y. W. Park*1, 1Fort Valley State University, Fort Valley, GA, 2Mustafa Kemal University, Hatay, Turkey.

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.

**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)-microencapsulation 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 sybiotic quark cheese.
A. F. Carvalho*1, M. M. Gonçalves1, G. M. Tavares1, J. Y. Suda1, N. F. Nogueira Silva1, and J. B. P. Chaves1, 1Federal University of Viçosa, Viçosa, MG, Brazil, 2Institut 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.

**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. Hemsworth1, H. Soltani2, and G. Reid3, 1Brescia University College, London, Ontario, Canada, 2Canadian 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. Marino1, I. Schadt2, S. La Terra1, M. Caccamo2, G. Licitra1, and S. Carpino3, 1CoRFiLaC, Regione Siciliana, Ragusa, Italy, 2DISPA, Catania University, Catania, Italy.

**W87**
The fatty acid composition and properties of summer and winter butter.
O. Tsissynk*, 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, Mosonmagyarvar, Hungary.

**W89**
Long-term ethanol or acetic acid supplementation do not impair sensory milk quality.

**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 Garcia2, D. M. VanLeeuwen3, and J. Idowu4, 1New Mexico State University, Plant and Environmental Sciences Department, Artesia, 2Univesidad Autonoma de Ciudad Juarez, Departamento de Ciencias Veterinarias, Ciudad Juarez, Chihuahua, Mexico, 3New Mexico State University, Agricultural Biometrics Service, Las Cruces, 4New 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*, A. A. AbuGhazaleh1, C. Stuemke1, R. Atkinson1, and B. Dodd2, 1Southern Illinois University, Carbondale, 2Masterschoice, Anna, IL.
Ruminal degradability of *Albizia lebbeck* silage.

Characterization and identification of *Lactobacilli* stains from tropical grasses.
J. P. S. Rigueira¹, O. G. Pereira⁴, K. G. Ribeiro², A. S. Cezário¹, and W. F. Souza¹. Federal University of Viçosa, Viçosa, Minas Gerais, Brazil. ²Universidade Federal dos Vales do Jequitinhonha e Mucuri, Diamantina, Minas Gerais, Brazil.

Milk production response to feeding alfalfa silage inoculated with *Lactobacillus plantarum*.
R. E. Muck⁴, G. A. Broderick¹, A. P. Faciola¹, and U. C. Hymes-Fecht³. USDA, ARS, US Dairy Forage Research Center, Madison, WI, ²University of Wisconsin-Madison, Madison.

Biomin BioStabil Plus enhances the fermentation characteristics, aerobic stability, and intake by rams of native tropical grass silage.
C. Rosario¹, A. A. Rodriguez*¹, and Y. Acosta-Aragon¹. University of Puerto Rico, Mayaguez, PR, ²Biomin Holding GmbH², Herzogenburg, Austria.

Fermentation characteristics and aerobic stability of tropical corn ensiled with additives containing homo-fermentative or hetero-fermentative bacterial strains.
V. Rivera¹, L. Solorzano¹, and A. Rodriguez*¹. University of Puerto Rico, Mayaguez, PR, ²Chr. Hansen, Fitchburg, WI.

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. Coudure¹, J. G. Cazaux¹, F. Skiba¹, E. Chevaux*², V. Demey², and J. Sindou². Arvalis - Institut du végétal, Montardon, France, ²Lallemand SAS, Blagnac, France.

Effect of dry matter density on fermentation and nutrient preservation in brown mid-rib (BMR) corn silage within bunker silos.
K. Griswold¹, P. Craig¹, J. Graybill¹, and R. Ward⁴. Penn State Cooperative Extension, Dauphin, ²Cumberland Valley Analytical Services, Maugansville, MD.

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.

Ruminal parameters of sheep fed corn silage inoculated with *Lactobacillus buchneri* and *L. buchneri* associated with *L. plantarum*.
F. C. Basso¹, P. A. R. Salvo, F. H. Kamada, J. P. R. Costs, W. L. da Silva, and R. A. Reis. Animal Science Department, College Agricultural and Veterinary Sciences, São Paulo State University, Jaboticabal, São Paulo, Jaboticabal.

In vitro fermentation on cactus forage (*Opuntia* spp.) inoculated with *Kluyveromices lactis* yeast.
C. Rodríguez-Muela¹, D. Díaz-Plascencia¹, P. Mancillas-Flores², O. Ruiz-Barrera¹, F. Salvador-Torres¹, G. Corral¹, S. Mena², R. Copado-Garcia¹, and L. Duran¹. Universidad Autónoma de Chihuahua, Chihuahua, México, ²Universidad de Guadalajara, Jalisco, México.

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.

Effects of sodium bisulfate on alfalfa silage preservation.
M. Terré¹, D. Seale¹, C. Knueven¹, and A. Bach*². ¹Institut de Recerca i Tecnologia Agroalimentàries, Ca ldes de Montbui, Barcelona, Spain, ²DS AgriTech Ltd., Reading, Berkshire, UK.

Nutritive value and fermentation parameters of ‘Tifton 85’ bermudagrass and ‘Mulato II’ brachiariagrass silage in Florida.
A. D. Aguiar*¹, I. M. B. Vendramini¹, A. T. Adesogan¹, L. E. Sollenberger¹, L. Galzerano¹, L. Custodio¹, E. Alves¹, and G. R. Manarim¹. ¹Range Cattle Research Education Center, Ona, FL, ²University of Florida, Gainesville.

Effect of new mixtures of silage additives in grass and maize on fermentation quality and aerobic stability.
J. Jatkauskas¹, V. Vrotniakienė¹, C. Ohlsson², and B. Lund*³. ¹Institute of Animal Science of Lithuanian University of Health Sciences, Baisogala, Lithuania, ²Chr Hansen A/S, Hoersholm, Denmark.

Identification and characterization of spoilage yeasts from high moisture corn and corn silages.
M. C. Santos*¹, C. Goit¹, R. D. Joerger¹, G. D. Mechor¹, and L. Kung¹. University of Delaware, Newark, ²Elanco Animal Health, Greenfield, IN.

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 Department, College Agricultural and Veterinary Sciences, São Paulo State University, Jaboticabal, São Paulo, Brazil.

Investigation of microbial additives on fermentation quality of alfalfa silage.
F. Kazemi, M. Dehghan-Banadaky*, A. Zali, and K. Rezayadzi. 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. Malkina1, R. B. Franco2, A. Kumar3, P. G. Green3, and F. M. Mitloehner3, 1Department of Animal Science, University of California-Davis, 2Crocker Nuclear Laboratory, University of California-Davis, Davis, 3Department 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. Viana1, W. Botelho1, P. A. Viana1, D. S. Queiroz1, E. A. Silva1, M. S. Viana1, and C. G. Guimarães1, 1EPAMIG - Minas Gerais Agricultural Research Corporation, Belo Horizonte, Minas Gerais, Brazil, 2Embrapa Maize and Sorghum, Sete Lagoas, Minas Gerais, Brazil, 3UFVJM University, Diamantina, Minas Gerais, Brazil, 4FEAD 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. Castillo1, O. Ruiz2, J. C. Gomez2, E. Peru3, H. Gonzalez3, A. Orozco3, C. Angulo3, I. Ramos3, and M. R. Murphy4, 1División multidisciplinaria, UACJ, Nuevo Casas Grandes, Chihuahua, Mexico, 2Facultad de Zootecnia y Ecología, UACH, Chihuahua, Chih., Mexico, 3Instituto de Ciencia Biológicas, UACJ, Ciudad Juárez, Chihuahua, Mexico, 4Animal Science Department, University of Illinois, Urbana.

W114 Chemical additives on sugarcane ensilage: Fermentation parameters, digestibility and intake by sheep.
A. F. Pedroso*, S. N. Esteves1, W. Barioni1, G. B. Souza1, C. Carbello2, and G. G. Chiquitin2, 1Brazilian Agricultural Research Corporation - Embrapa, São Carlos, SP, Brazil, 2Fund. 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.


W117 In vitro ruminal fermentation of dairy cows diets with eight yeast strains isolated from apple byproducts.
D. Díaz-Plascencia1, C. Rodríguez-Muela1, P. Mancillas-Flores1, F. Salvador-Torres1, C. Arzola2, L. Durán1, J. Jiménez1, and S. Mená3, 1Universidad Autónoma de Chihuahua, Chihuahua, México, 2Universidad 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. López1, R. Rojo2, A. Z. M. Salem2, J. C. Cedillo-Monroy2, B. Albarrán2, A. González2, J. L. Martínez-Benites2, J. Morales-Díaz2, and J. Tinoco-Jaramillo3, 1Centro Universitario UAEM-Temascaltepec, Universidad Autónoma del Estado de México, Temascaltepec, Estado de México, México, 2Universidad Autónoma de Tamaulipas, Cd. Victoria, Tamaulipas México.

W119 Effects of pH and temperature on fibrolytic enzyme activities of various commercial exogenous enzyme preparations.

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-Valdez1, J. A. Reyes-Gutierrez1, J. A. Martínez-Ibarra2, G. Rocha-Chavez2, J. M. Tapia-González2, C. E. Guerra-Medina1, J. J. Martínez-Tinajero1, and J. H. Avellaneda-Cevallos4, 1Centro Universitario del Sur, Ciudad Guzmán, Jalisco, México, 2Centro Universitario de la Costa Sur, Autónoma de la Grana, Jalisco, México, 3Facultad de Ciencias Agrícolas, Universidad Autónoma de Chiapas, México, 4Universidad Técnica de Estatal de Quevedo, Quevedo, Los Ríos, 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 production outcomes of the Cornell Net Carbohydrate and Protein System.
C. T. Hill*, M. J. Tetreault1, and H. M. Dann1, 1Poulin Grain Inc., Newport, VT, 2William H. Miner Agricultural Institute, Chazy, NY.

W124 Partially replacing alfalfa and corn silages with forage silages maintained fat corrected milk production.

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.
Chromium acetate induces adipogenesis of bovine intramuscular adipocytes through reduced phosphorylation of adenosine monophosphate–activated protein kinase α.


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.

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.

Signaling pathways mediating the effects of insulin-like growth factor-I on proliferation, protein synthesis, and protein degradation in bovine satellite cells.


Effects of energy intake and age on the expression of adipogenic genes in subcutaneous and intramuscular fat in bovine Spanish Pirenaica breed.


Age post weaning but not birth weight and sex affects the small intestinal glutathione redox status of piglets.

J. Michiels1,2, E. Claeyse1, A. Ovyn2, and S. De Smet1, 1Faculty of Biosciences and Landscape Architecture, University College Ghent, Ghent, Belgium, 2Laboratory for Animal Nutrition and Animal Product Quality, Department of Animal Production, Ghent University, Melle, Belgium.

Feed restriction alters reactivity of body fat after catabolic stimulation in growing pigs.


M. Mohammadi*, A. Towhidi, H. Moravej, and A. Zareh Shahn1, Department of Animal Science, University of Tehran, Karaj, Alborz, Iran.

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.

Insulin-like growth factor-I (IGF-I), 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.

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.

Transfer of omega-3 fatty acids from dams to calves in dairy cows.

M. Zachut1,2, A. Romanenko1,2, H. Lehrer1, A. Arieli1, and U. Moallem1, 1Agriculture Research Organization, Bet Dagan, Israel, 2Faculty of Agriculture, Hebrew University, Rehovot, Israel.

Temporal changes in the proteome of the uterine histotroph in cattle.

M. P. Mullen*, A. C. O. Evans2, G. Elia2, M. Hilliard2, N. Forde2, M. H. Parr1, M. G. Diskin1, and M. A. Crowe1, 1Animal and Bioscience Research Department, Animal and Grassland Research and Innovation Centre, Teagasc, Athenry, Co. Galway, Ireland, 2School of Agriculture, Food Science and Veterinary Medicine, University College Dublin, Belfield, Dublin, Ireland, 3Conway Mass Spectrometry Resource, University College Dublin, Belfield, Dublin, Ireland.

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.

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.

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).

Lactation Biology 2

W142 Hormonal regulation of suspected components of bovine IgG1 transcytosis mechanism in primary bovine mammary cells in vitro.
A. Stark1, E. Vaschkova2, O. Wellnitz3*, R. M. Bruckmaier1, and C. R. Baumrucker1, 1Veterinary Physiology, Vetsuisse Faculty, University of Bern, Switzerland, 2Trakia University, Stara Zagora, Bulgaria, 3Penn State University, State College.

W143 Reducing metabolic stress of dairy cows during the transition period by partial milking or nursing.
É. Carbonneau1*, A.-M. De Passillé2, J. Rushen3, B. G. Talbot4, and P. Lacasse5, 1Université de Sherbrooke, Sherbrooke, QC, Canada, 2AAFC-Pacific Agri-Food Research Centre, Agassiz, BC, Canada, 3AAFC-Dairy and Swine Research and Development Centre, Sherbrooke, QC, Canada.

W144 Analysis of the bovine milk transcriptome by RNA sequencing.
S. Wickrmasinghe, 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).

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*, X. Zhao2, and P. Lacasse3, 1AAFC-Dairy and Swine Research and Development Centre, Sherbrooke, QC, Canada, 2Department 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. Choudhary1, C. M. Evock-Clover1, and A. V. Capuco2, 1Department of Animal Sciences, University of Maryland, College Park, 2Bovine 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.

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. Mori1*, E. A. Garcia2, C. Ducatti2, J. C. Denadai2, and K. Pelicia2, 1São Paulo State University, Botucatu, São Paulo, Brazil, 2São Paulo State University, Registro, São Paulo, Brazil.

W152 Meat quality of Pelibuey sheep finished with different levels of alfalfa.
V. Resendiz-Cruz1, O. Hernandez-Mendoza2, J. Gallegos-Sanchez2, I. Guerrero-Lagarreta2, P. A. Martinez-Hernandez3, and G. Aranda-Osorio4, 1Cólegio de Postgraduados, Montecillos, Estado de Mexico, Mexico, 2Universidad Autónoma Metropolitana-Iztapalapa, Mexico D.F., Mexico, 3Università Autonoma Chapingo, Chapingo, Estado de Mexico, Mexico.

W153 Meat quality of lambs fed fresh or dehydrated spineless cactus (Opuntia ficus-indica).
M. I. Aguilar-Yañez1, O. Hernández-Mendoza2, G. Aranda-Osorio3*, J. E. Ramirez-Bribiesca4, I. Guerrero-Lagarreta5, and M. M. Crosby-Galvan6, 1Cólegio de Postgraduados, Montecillos, Estado de Mexico, Mexico, 2Universidad Autónoma Chapingo, Chapingo, Estado de Mexico, Mexico, 3Universidad Autonoma Metropolitana-Iztapalapa, Mexico D.F., Mexico.

W154 Qualitative characteristics of meat from lambs fed with sunflower seeds and vitamin E.

W155 Effects of nutritional plane and selenium supply during gestation in primiparous ewes on offspring skeletal muscle development.

X. Liu, J. Wang, R. Li, X. Yang, Q. Sun, and R. Zhao*, Nanjing Agricultural University, Nanjing, P. R. China.
Effect of kidney matrix on the detection of β-lactam and tetracycline residues by UPLC-MS/MS.
M. P. Almeida1,2, M. O. Leite2*, S. V. Cançado2, M. R. Souza2, and M. M. O. P. Cerqueira2, 1Lanago-MG/Ministério da Agricultura, Pecuária e Abastecimento, 2Escola de Veterinária - Universidade Federal de Minas Gerais.

Extent of μ-calpain autolysis differs depending on the extent of destructured tissue in the ham.
M. Müller1, C. Bialley1, P. Silacci1, and G. Bee2*, 1Agroscope Liebefeld Posieux Research Station (ALP), Posieux, Switzerland, 2Swiss College of Agriculture, SHT, Zollikofen, Switzerland.

Early adaptation of sarcoplasmic reticulum Ca2+ pump in bovine myofiber under chronic low-frequency electrical stimulation.
T. Sakurada1*, E. Kitagawa1, M. Miyake1,2, S. Ohwada1, H. Asō1, and K. Watanabe1, 1Tohoku University, Sendai, Japan, 2The University of Tokushima, Tokushima, Japan.

Effects of temperament classification on carcass characteristics, tenderness and value in Angus-based composite steers.
J. W. Behrens1*, R. K. Miller1, D. S. Hale1, J. T. Walter1, J. C. Bailey1, A. N. Hafia1, T. Machado1, L. O. Tedeschi1, and G. E. Carstens1, 1Texas A&M University, College Station, 2Texas A&M University at Kingsville, Kingsville.

Rump measurements as related to others carcass traits.
M. N. Bonin1*, S. L. Silva1, J. B. S. Ferraz1, D. P. D. Lanna2, F. Manicardi1, R. C. Gomes1, M. H. A. Santana1, V. N. Barbosa1, F. Novais1, J. H. A. Campo1, and F. Syuffi1, 1University of Sao Paulo, College of Animal Science and Food Engineering, Pirassununga, Sao Paulo, Brazil, 2University of Sao Paulo, College of Agricultural Sciences, Piracicaba, Sao Paulo, Brazil.

Effect of finishing heifers on tall fescue, tall fescue with grain, or alfalfa on: I. carcass and LM quality.
S. K. Duckett1*, M. C. Miller3, T. A. Burns1, and M. L. Wahlberg2, 1Clemson University, Clemson, SC, 2Virginia Tech University, Blacksburg.

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. Duckett1*, M. C. Miller3, T. A. Burns1, and M. L. Wahlberg2, 1Clemson University, Clemson, SC, 2Virginia Tech University, Blacksburg.

Gene expression profile of M. longissimus in Japanese Black, Holstein, and Charolais steers fed a high-energy diet.
E. Albrecht1*, S. Ponsuksil1, K. Wimmers1, T. Gotoh1, and S. Maak1, 1Leibniz Institute for Farm Animal Biology, Dummerstorf, Germany, 2Kyushu University, Kuju Agricultural Research Center, Kuju-cho, Oita, Japan.

Effect of genotype on fatty acid composition of bovine muscles fattened with maize silage and flaxseed supplemented concentrate.
G. Hollo1*, T. Somogyi1, K. Loli1, I. Anton2, and I. Hollo1, 1Kaposvár University, 2Research Institute for Animal Breeding and Nutrition.

Quality characteristics of dried meat laver made from different beef muscle types.
G. D. Kim1*, E. Y. Jung1, H. U. Seo1, J. Y. Jeong1, S. J. Hur1,2, H. S. Yang1, and S. T. Joo1, 1Division of Applied Life Science (BK21 Program), Gyeongsang National University, Jinju, Republic of Korea, 2Swine Scientific and Technology Center, Gyeongnam National University of Science and Technology, Jinju, Republic of Korea, 3College of Biomedical and Health Science, Department of Applied Biochemistry, Konkuk University, Chungju, Republic of Korea.

Carcass characteristics of bullocks of different genotype finished under feedlot conditions.

Relationship between meat quality and the expression of related genes in the muscle of two different genetic groups of cattle.
J. Giusti1, E. P. Castan1, S. R. Baldin1, M. D. B. Arrigoni2, M. Dal Pai-Silva2, and H. N. Oliveira2*, 1State University of Sao Paulo, Jaboticabal, Sao Paulo, Brazil, 2State University of Sao Paulo, Botucatu, Sao Paulo, Brazil.

Measurement of loin muscle in the carcass of Nellore breed on Bracharia brizantha 'Marandu' with two levels of concentrate supplementation.
S. L. S. Cabral Filho1*, R. V. Oliveira1, J. M. S. Diogo1,2, R. A. Mandarino1, C. F. Lobo1, F. A. Oliveira1, and G. S. Firmino1, 1Universidade de Brasilia, Brasilia, Distrito Federal, Brasil, 2Fazenda Experimental Agua Limpa, Brasilia, Distrito Federal, Brasil.

Frame size and sex effects on meat quality characteristics of Nellore cattle.
S. L. Silva1, 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, Universidade de Sao Paulo/ Faculdade de Zootecnica e Engenharia de Alimentos, Pirassununga, SP, Brazil.

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 Sao Paulo/ Faculdade de Zootecnica e Engenharia de Alimentos, Pirassununga, Sao Paulo, Brazil.
The influence of two levels of supplementation on the yield of hindquarter cuts of Nellore in Brachiaria brizantha ‘Marandu’.
1Faculty of Agronomy and Veterinary Medicine, University of Brasilia - UnB, Brasilia, DF, Brazil, 2School of Veterinary Medicine, Federal University of Minas Gerais - UFMG, Belo Horizonte, MG, Brazil.

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. Oliveira1, F. A. Barbosa2, F. F. Gouveia1, G. A. Carneiro5, J. M. S. Diogo1, J. F. B. Guedes3, and R. A. Mandarino1, 1Faculty of Agronomy and Veterinary Medicine, University of Brasilia - UnB, Brasilia, DF, Brazil, 2School of Veterinary Medicine, Federal University of Minas Gerais - UFMG, Belo Horizonte, MG, Brazil.

Effect of different levels of whole raw soybean grain on performance and meat characteristics of feedlot finished Nellore steers.

Genetic group and slaughter weight influence on meat color of feedlot cattle.
R. Mello*,1, A. C. de Queiroz2, F. D. de Resende3, L. A. de Miranda Gomide4, P. B. Costa3, and W. da Silva Cotrim3, 1Universidade Federal de Santa Maria, Santa Maria, Rio Grande do Sul, Brazil, 2Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, 3Agência Paulista de Tecnologia dos Agronegócios, Colina, São Paulo, Brazil.

C18:1,2,3 fatty acid isomers from intramuscular fat influenced by genetic group and slaughter weight.
R. Mello*,1, A. C. de Queiroz2, F. D. de Resende3, D. P. D. Lanna4, M. H. de Faria4, and E. da Costa Eifert5, 1Universidade Federal de Santa Maria, Santa Maria, Rio Grande do Sul, Brazil, 2Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, 3Agência Paulista de Tecnologia dos Agronegócios, Colina, São Paulo, Brazil, 4Universidade de São Paulo – Escola Superior de Agricultura ‘Luiz de Queiroz’, Piracicaba, São Paulo, Brazil.

Fatty acids profile of intramuscular fat from crossbreed young bulls slaughtered at different body weights.
R. Mello*,1, A. C. de Queiroz2, F. Dutra de Resende3, D. P. D. Lanna4, M. H. de Faria4, and E. da Costa Eifert5, 1Universidade Federal de Santa Maria, Santa Maria, Rio Grande do Sul, Brazil, 2Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, 3Agência Paulista de Tecnologia dos Agronegócios, Colina, São Paulo, Brazil, 4Universidade de São Paulo – Escola Superior de Agricultura ‘Luiz de Queiroz’, Piracicaba, São Paulo, Brazil.

Effects of modified wet corn distillers grains containing 6.7% fat on beef quality and rib fat composition.
J. L. Veracini*,1, P. M. Walker1, B. R. Wiegand2, H. L. Evans2, R. L. Atkinson3, M. J. Faulkner4, and L. A. Forster5, 1Illinois State University, Normal, 2University of Missouri, Columbia, 3Southern Illinois University, Carbondale, 4Archer Daniels Midland Co., Decatur, IL.

Diet and genotype effects on the quality index of beef Nellore and F1 Nellore × Brahman produced in feedlot.
R. A. Mandarino*,1, F. A. Barbosa2,1, I. S. Silva3, S. L. S. Cabral Filho1, J. L. Vilela1, and C. F. Lobo1, 1University of Brasilia, Brasilia, DF, 2Federal University of Minas Gerais, Belo Horizonte, MG, Brazil.

Beef quality parameters of Nellore bulls finished with cottonseed cake as fat source.
A. P. Neto*,1,2, R. H. Branco3, S. F. M. Bonilha3, T. L. S. Corvino3, E. N. Andrade3, and R. de Oliveira Roça3, 1Universidade Federal do Mato Grosso, Sinop - Mato Grosso/Brazil, 2Universidade Estadual Paulista, Botucatu - São Paulo/Brazil, 3CAPTA Bovinos de Corte - Instituto de Zootecnia, Sertãozinho - São Paulo/Brazil.

Meat tenderness of Nellore cattle classified for residual feed intake.
T. L. Sobrinho1,2, K. Zorzi3, R. H. Branco3, S. F. M. Bonilha3, L. T. Egaiva4, E. Magnani4, and M. E. Z. Mercadante*1, 1Faculdade de Ciências Agrárias e Veterinárias, Jaboticabal, São Paulo, Brazil, 2Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, 3Instituto de Zootecnia, Sertãozinho, São Paulo, Brasil.

Nonruminant Nutrition

Health

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. Yang1, W. R. Yang3, S. L. Johnston4, and F. Chi5, 1Department of Animal Sciences and Technology, Shandong Agricultural University, Taian, Shandong, China, 2Amlan International, Chicago, IL.

Ameliorate effect of Calibrin Z enterosorbert on serum reproductive hormone, immunoglobulin, antibody titer in young pigs fed purified zearalenone.
S. Z. Jiang*,1, Z. B. Yang1, S. L. Johnston4, and F. Chi5, 1Department of Animal Sciences and Technology, Shandong Agricultural University, Taian, Shandong, China, 2Amlan International, Chicago, IL.
Dietary effect of short-chain organic acids on growth performance, mortality, and development of intestinal lymphoid tissues in young non-medicated rabbits.
C. Romero*, P. G. Rebollar1, A. Dal Bosco2, C. Castellini3, and R. Cardinellii, 1Universidad Politécnica de Madrid, Spain, 2Universita degli Studi di Perugia, Italy.

Casein glycomacropeptide and mannan-oligosaccharides reduce the enterotoxigenic E. coli (ETEC K88) adhesion to IPEC-J2 cell line.
R. G. Hermes*, E. G. Manzanilla1, S. Martin-Orue1, J. F. Perez1, and K. C. Klasing1, 1Universitat Autonoma de Barcelona, Barcelona, Catalonia, Spain, 2University of California, Davis, Davis.

The effects of a galactoglucomannan-arabinobioxylan complex on eimeria acervulina infection in broiler chicks.
T. A. Faber*, R. N. Dilger1, A. C. Hopkins1, N. P. Price1, and G. C. Fahey2, 1University of Illinois, Urbana, 2Temple-Inland, Diboll, TX, 3National Center for Agricultural Utilization Research, Peoria, IL.

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.

Effects of plant extracts on peripheral blood immune cells and inflammatory mediators of weaned pigs experimentally infected with a pathogenic E. coli.
Y. Liu*, M. Song1, T. M. Che1, J. A. Soares1, D. Bravo1, C. W. Maddox1, and J. E. Pettigrew1, 1University of Illinois, Urbana, 2Pancosma SA, Geneva, Switzerland.

Acute toxicity of aqueous extract of Moringa oleifera leaf in growing poultry.
J. O. Ashong* and D. L. Brown, Cornell University, Ithaca, NY.

Effects of spray-dried plasma on growth and reproductive responses of pregnant mice to lipopolysaccharide as a model for inflammation in sows.
M. Song*, Y. Liu1, J. A. Soares1, J. J. Lee1, T. M. Che1, J. M. Campbell2, J. Polo2, J. C. O’Connor3, and J. E. Pettigrew1, 1University of Illinois, Urbana, 2APC Inc., Ankeny, IA, 3University of Texas Health Science Center, San Antonio.

Effects of spray-dried plasma on immune responses of pregnant mice to lipopolysaccharide as a model for inflammation in sows.
M. Song*, Y. Liu1, J. J. Lee1, J. A. Soares1, T. M. Che1, J. M. Campbell2, J. Polo2, J. C. O’Connor3, and J. E. Pettigrew1, 1University of Illinois, Urbana, 2APC Inc., Ankeny, IA, 3University of Texas Health Science Center, San Antonio.

Wheat bran and casein glycomacropeptide may regulate the immune response of IPEC-J2 cells challenged with enterotoxigenic E. coli (ETEC K88).
R. G. Hermes*, E. G. Manzanilla1, S. Martin-Orue1, J. F. Perez1, and K. C. Klasing1, 1Universitat Autonoma de Barcelona, Barcelona, Catalonia, Spain, 2University of California, Davis, Davis.

Nonruminant Nutrition Management

Importance of evaluating piglet daily weight gain during the first week after weaning.
G. J. M. M. Lima* and L. S. Lopes, Embrapa, Brazil.

Acquisition of garlic conditioned preference enhances the flavor hedonic power of porcine digestive peptides (PDP) in post-weaned piglets.
J. Figueroa*, D. Solà-Oriol1, S. L. Vinokurovas1, E. Borda1, and J. F. Pérez1, 1Universitat Autònoma de Barcelona, Bellaterra, Barcelona, Spain, 2Bioibérica, Barcelona, Spain.

Nutrient composition changes in pigs and associated liver from birth to 21 days of age.
Y. L. Ma*, M. D. Lindemann1, J. L. Pierce1, and G. L. Cromwell1, 1University of Kentucky, Lexington, 2Alltech Inc., Nicholasville KY.

Evaluating performance of dairy replacement calves housed in different group numbers with the same space/calf.

Comparison of moisture determination methods for feed ingredients.

The effect of diet and creep feed on feed intake by weaning pigs.
J. Shea, D. A. Gillis, and A. D. Beaulieu*, Prairie Swine Centre, Inc., Saskatoon, SK, Canada.

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 CaSO₄₂½-zeolite mixture combined with a slight protein reduction on production indices, egg quality and excreta pH in laying hens. C. Romero*, E. M. Onyango, W. Powers, R. Angel, and T. J. Applegate, 1Universidad Politécnica de Madrid, Spain, 2East Tennessee State University, 3Michigan State University, East Lansing, 4University of Maryland, 5Purdue University, IN.

W202 Dietary sources of selenium in nulliparous sows: The importance of vitamin B₆ status for some aspects of antioxidant status and ovulation during the peri-estrus period. M. Roy*, I. Audet, M.-F. Palin, H. Quesnel, F. Guay, and J. J. Matte, 1Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, 2Laval University, Québec, QC, Canada, 3Institut National de la Recherche Agronomique, St-Gilles, France.

W203 Effects of high dietary zinc supplementation on fasting plasma glucose and lipid profiles of young pigs. E. Isaacs*, K. Roneker, and X. G. Lei, Cornell University, Ithaca, NY.


W206 Different levels of chelated selenium (Se) addition on the performance, and internal and external quality of Japanese quail eggs. V. C. da Cruz*, L. C. Carvalho, G. do Valle Polycarpo, L. H. Zanetti, R. F. de Oliveira, D. D. Millen, R. G. A. Cardoso, A. L. C. Brichi, M. L. Poiatti, and O. J. Sabbag, 1São Paulo State University, Dracena Campus, Dracena, São Paulo, Brazil, 2São Paulo State University, Botucatu Campus, Botucatu, São Paulo, Brazil.


W208 Ionomic profile changes in the intestine, liver, kidney, serum and gall bladder contents due to Cu source and concentration. B. Aldridge*, R. F. Power, K. A. Dawson, and S. Radcliffe, 1Purdue University, Department of Animal Science, West Lafayette, IN, 2Center 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 CuSO₄. B. Aldridge*, R. Xiao, D. Mallonee, R. F. Power, K. A. Dawson, and S. Radcliffe, 1Purdue University, Department of Animal Sciences, West Lafayette, IN, 2Center 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*, A. B. Strathe, E. Kebreab, and P. K. Theil, 1Department of Animal Science, University of California, Davis, 2Department 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. Abdellahim*, R. C. Richardson, and A. Gueye, 1Alabama A&M University, Normal, 2Texas State University, San Marcos, 3Mt. Ida College, Newton, MA.

W212 Improved retention rates and reduced culling for lameness for sows fed a chelated trace mineral blend. J. Zhao*, L. Greiner, G. Allee, M. Vazquez-Anon, C. D. Knight, and R. J. Harrell, 1Novus International Inc, St Charles, MO, 2Innovative Swine Solutions, Carthage, IL, 3University of Missouri, Columbia, MO.


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. Branco1, E. Magnani1, L. T. Egawa1, T. L. Sobrinho1, S. F. M. Bonilha1, M. E. Z. Mercadante*, J. N. S. G. Cyrillo1, and L. A. Figueiredo1, 1Instituto de Zootecnia, Sertãozinho, São Paulo, Brasil, 1Faculdade de Ciências Agrárias e Veterinárias, Jaboticabal, São Paulo, Brasil.

W217 Follicular and ovulatory responses following superovulation treatment with rFSH and HMG in dairy cattle.
P. M. Poornamollah1, H. Kohram1,2, and A. Nejati-Javaremi1, 1Department of Animal Science, Faculty College of Agriculture and Natural Resources, University of Tehran, Karaj, Iran, 2Department 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.

W219 Effect of short-term supplementation and temporary weaning on follicular liquid composition in first-calved Hereford cows.
L. Veloz1,2, M. E. Trobo1,2, C. García Pintos1,2, C. Viñoles2, and M. Carriquiry*, 1School of Agronomy, UdelaR, Montevideo, Uruguay, 2National 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*, M. L. Van Emon1, C. S. Schauer2, K. R. Maddock Carlin1, and K. A. Vonnahme1, 1Center for Nutrition and Pregnancy, Department of Animal Science, South Dakota State University, Brookings, 2Department of Animal Science, North Dakota State University, Fargo, 3Hettinger Research Extension Center, North Dakota State University, Hettinger.

W222 Functional genomics and role of integrin beta 5 in cattle fertility.
L. Koenig1, X. Wang1, A. Kaya2, S. Bridges1, and E. Memili*, 1Mississippi State University, Mississippi State, 2Alta Genetics, Inc., Watertown, WI.

W223 Male goat vocalizations stimulate LH secretion and estrous behavior in sexually experienced but not in sexually inexperienced goats.

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*, P. Steichen*, C. L. Wright1, K. A. Vonnahme1, M. L. Bauer2, J. S. Jennings3, and G. A. Perry1, 1Department of Animal and Range Sciences, South Dakota State University, Brookings, 2Department of Animal Science, North Dakota State University, Fargo, 3Alltech Animal Nutrition, Brookings, SD.

W227 Influence of sperm fertility-associated antigen status on nulliparous Nellore heifer fertility at first-service timed AI.
J. C. Dalton*, L. Deragon1, J. L. M. Vasconcelos1, A. Ahmadzadeh*, and R. F. G. Peres1, 1University of Idaho, Caldwell, 2Alta Genetics Brazil, Uberaba, MG, Brazil, 3FMVZ-UNESP, Botucatu, SP, Brazil, 4University of Idaho, Moscow, 5Agropecuária Fazenda Barra do Garças, MT, Brazil.

W228 Feeding rumen-protected polysaturated fatty acids (PUFA) to high-producing dairy cows: II. Effects on serum concentrations of progesterone and insulin.
M. M. Reis1, R. F. Cooke2, B. L. Cappellozza3, and J. L. M. Vasconcelos*, 1UNESP – Faculdade de Medicina Veterinária e Zootecnia, Botucatu, SP, Brazil, 2Oregon State University–Eastern Oregon Agricultural Research Center, Burns.

W229 Feeding rumen-protected polysaturated fatty acids (PUFA) to high-producing dairy cows: I. Effects on milk production and reproductive performance.
M. M. Reis1, R. F. Cooke2, S. Soriano4, F. L. Aragon3, M. B. Veras5, and J. L. M. Vasconcelos*, 1UNESP – Faculdade de Medicina Veterinária e Zootecnia, Botucatu, SP, Brazil, 2Oregon State University–Eastern Oregon Agricultural Research Center, Burns, 3Pioneiros Veterinary Clinic, Carambeí, PR, Brazil, 4Colorado Dairies, Arras, SP, Brazil.

W230 Puberty induction in Nellore heifers receiving eCG and/or estradiol cypionate at the end of the estrus synchronization protocol.
A. Rodrigues1, R. Peres*, A. Lemes1, T. Martins1, F. Aono1, M. Pereira1, H. Graffi1, E. Carvalho1, and J. L. M. Vasconcelos1, 1FMVZ-UNESP, Botucatu, SP, Brazil, 2ESALQ-USP, Piracicaba, SP, Brazil, 3Agropecuaria Fazenda Brasil, Barra do Garças, MT, Brazil.

W231 Repeated exposure to human chorionic gonadotropin causes development of antibodies in some lactating dairy cows.
J. O. Giordano*, M. C. Willbank, and P. M. Fricke, Department of Dairy Science, University of Wisconsin-Madison, Madison.
Synchronization of dairy heifers with a modified 5-day CIDR-PGF₂α-GnRH timed AI protocol.
J. Howard*, 1, 2, K. Carnahan, 1, C. Autran, 1, J. Bransen, 1, R. Kasimanickam, 1, G. Sasser, 1, and A. Ahmadzadeh, 1, *University of Idaho, Moscow, 2BioTracking LLC, Moscow, ID, 3Washington State University, Pullman.

Prepartum 2,4-thiazolidinedione administration increases plasma tumor necrosis factor alpha in transition dairy cows.

Effect of dietary β-glucan on growth performance, fecal microbial shedding and immunological responses after lipopolysaccharide challenge in weaned pigs.
T. X. Zhou*, 1, B. U. Yang, 1, and I. H. Kim, Dankook University, Cheonan, Choongnam, South Korea.

Difference in the expression of components of the GHR/IGF-I axis in follicular granulosa cells and corpus luteum in cows.
A. Schneideret al., 1, L. F. M. Pfeifer, 1, M. N. Corrèa, 1, and W. R. Butler*, 1*Universidade Federal de Pelotas, Pelotas, RS, Brazil, 2Cornell University, Ithaca, NY.

Functional genomics of liver in purebred beef cows in two forage allowances during gestation and lactation period.
J. Laporta*, 1, G. Greiff, 1, P. Zorrilla, 1, H. Naya, 2, G. J. M. Rosa, 2, and M. Carriquiry, 3*Facultad de Agronomía, Universidad de la República, Montevideo, Uruguay, 2Instituto Pasteur, Montevideo, Uruguay, 3University of Wisconsin, Madison.

Conjugated linoleic acids (CLA) and lactation related changes in serum amyloid A3 (SAA3) and IL-6 mRNA abundance in different bovine tissues with a focus on different adipose depots.
B. Saremiet al., 1, M. Mielenz, 1, D. von Soosten, 1, S. Dänicke, 1, and H. Sauerwein, 1*Institute of Animal Science, Physiology and Hygiene Unit, University of Bonn, Bonn, North Rhine-Westphalia, Germany, 2Institute of Animal Nutrition, Friedrich-Loeffler-Institute (FLI), Federal Research Institute for Animal Health, Braunschweig, Lower Saxony, Germany.

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.

Effects of heat stress on Na+/K'ATPase activity in growing pigs.
S. C. Pearce*, 1, J. A. Harris, 1, N. K. Gabler, 1, and L. H. Baumgard, 2Iowa State University, Ames.

Serum shock did not synchronize clock gene expression in primary bovine hepatocyte cultures.
C. A. Kurman*, 1, M. M. McCarthy, 1, L. M. Nemec, 1, and T. F. Gressley, University of Delaware, Newark.

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, 1, and M. Carriquiry, 3*School of Agronomy, UDELAR, Montevideo, Uruguay, 4Research Institute for Agriculture, Tacuarembó, Uruguay.

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.

Caspase 3 is upregulated in murine spermatogonia and Leydig cells treated with aflatoxin B₁.
K. J. Austin*, 1, R. R. Cockrum, 1, K. L. Speiser, 1, and K. M. Cammack, 2University of Notre Dame, Notre Dame, IN, 3Washington State University, Pullman.

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.

Effect of urea on interferon-tau response in the bovine endometrium.
A. Ahmadzadeh*, 1, T. Davis, 1, and K. Carnahan, University of Idaho, Moscow.

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. Trofe*, 1, F. Bialade, 1, C. Viñoles, 1, and M. Carriquiry, 3*School of Agronomy, UDELAR, Montevideo, Uruguay, 4National Research Institute for Agriculture, Tacuarembó, Uruguay.

Liver gene expression of GH-IGF1 axis and fatty acid metabolism genes of beef cows on grazing conditions. I: Winter-gestational period.
J. Laporta*, 1, A. L. Astessiano, 1, V. Gutierrez, 1, A. C. Espasandin, 1, P. Soca, 1, and M. Carriquiry, 3Facultad de Agronomía, Universidad de la República, Montevideo, Uruguay.

Liver gene expression of GH-IGF1 axis and fatty acid metabolism genes of beef cows on grazing conditions. II: Peripartum and lactation period.
J. Laporta*, 1, A. L. Astessiano, 1, V. Gutierrez, 1, A. C. Espasandin, 1, P. Soca, 1, and M. Carriquiry, 3Facultad de Agronomía, Universidad de la República, Montevideo, Uruguay.

Uterine gene expression in beef cows grazing different forage allowances of native pastures.
M. Carriquiry*, 1, 2, F. Bialade, 1, M. P. Grignola, 1, P. Soca, 1, A. C. Espasandin, 1, C. Viñoles, 1, and A. Meikle, 3*School of Agronomy, Udelar, Montevideo, Uruguay, 2National Research Institute for Agriculture, Tracuarembó, Uruguay, 3School of Veterinary Sciences, Udelar, Montevideo, Uruguay.

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.
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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.

W252 Replacing grain and silage with wheat distiller grains affects feeding behavior of finishing beef cattle.
W. Z. Yang*, T. A. McAllister1, J. J. McKinnon2, and K. A. Beauchemin3, 1Agriculture and Agri-Food Canada, Research Centre, Lethbridge, AB, Canada, 2Department 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.

W254 Productive performance during fattening phase of Nelore fed diets with two concentrate levels.
G. S. Firmino*, I. S. Silva1, F. A. Barbosa2, S. L. S. Cabral Filho1, J. F. B. Guedes1, G. A. Carneiro1, F. F. Gouveia1, and J. F. A. Oliveira1,
1University of Brasilia - UnB, Brasilia, DF, Brazil, 2Federal 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*, T. E. Black1, V. R. G. Mercadante1, G. H. L. Marquezini1, C. C. Chase2, S. W. Coleman2, and G. C. Lamb2, 1North Florida Research and Education Center, University of Florida, Marianna, 2USDA-ARS, SubTropical Agricultural Research Station, Brooksville, FL.

W256 Temperament evaluation of Nelore (Bos indicus) cattle in Brazilian commercial cow-calf operations.
M. Meneghetti*, R. F. Cooke1, B. I. Cappellozzi2, D. W. Bohnert1, and T. C. Losi1, 1Oregon State University–Eastern Oregon Agricultural Research Center, Burns, 2Pfizer Animal Health, São Paulo, SP, Brazil, 3Lageado 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*, S. L. S. Cabral Filho1, R. Guimarães Júnior2, A. L. Abdalla3, A. K. B. Ramos2, and F. D. Fernandes2,
1Universidade de Brasilia, Brasilia, Distrito Federal, Brasil, 2Embrapa Cerrados, Planaltina, Distrito Federal, Brasil, 3Universidade de São Paulo, Piracicaba, São Paulo, Brasil.

W259 Methodology for estimating intermuscular, subcutaneous, and intramuscular fat in primal cuts.
M. J. McPhee1, 2, J. P. Siddell1, 2, B. J. Walmsley1, 2, and P. L. Greenwood2, 3, 1Cooperative Research Centre for Beef Genetic Technologies, Armidale, NSW, Australia, 2Industry 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*, F. A. Barbosa1, S. L. S. Cabral Filho1, R. V. Oliveira1, G. S. Firmino1, C. E. Souza1, F. F. Gouveia1, and J. F. A. Oliveira1, 1University of Brasilia, Brasilia, DF, Brazil, 2Federal University of Minas Gerais, Minas gerais, MG, Brazil.

W261 Two methods to estimate milk yield in beef cattle grazing systems.
A. C. Espasandin1, 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*, W. M. Backus1, M. C. Dixon1, R. J. Carlisle1, and J. C. Waller1, 1The University of Tennessee, Knoxville, 2Research 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. Bailey1, 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. Martins1, 2, C. A. A. Torres1, A. B. Mancio1, W. F. Souza1, G. C. Lamb1, and J. D. Arthington1, 1Universidade Federal de Viçosa, Departamento de Zootecnia, Viçosa, Minas Gerais, Brazil, 2University of Florida, Range Cattle Research and Education Center, Ona, 1University 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. Wiley1, 2, T. D. A. Forbes1, A. N. Hafla2, C. M. Hensarling1, B. G. Warrington1, and G. E. Carstens1, 1Texas AgriLife Research, Uvalde, 2Texas A&M University, College Station.
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*, M. Chahine, A. Bach, B. Ozeri, M. E. de Haro Marti, J. B. Glaze, and T. Fife, 1University of Idaho, Twin Falls, 2IRTA, Caldes de Montbui, Spain, 3ICREA, Barcelona, Spain, 4University of Idaho, Gooding.

Different periods offering chromium oxide (Cr₂O₃) as external marker to evaluate the intake of cattle treated with different diets under feedlot.
R. A. Mandarino*, F. A. Barbosa, I. S. Silva, C. F. Lobo, S. L. S. Cabral Filho, G. A. Carneiro, and G. S. Firmino, 1University of Brasilia, Brasilia, DF, Brazil, 2Federal University of Minas Gerais, Minas Gerais, MG, Brazil.

Total and inorganic phosphorus content of an array of feedstuffs.
J. P. Jarrett, M. D. Hanigan, R. Ward, P. Siros, and K. F. Knowlton, 1Virginia Polytechnic Institute and State University, Blacksburg, 2Cumberland Valley Analytical Services, Inc., Maugansville, MD, 3Dairy One, Ithaca, NY.

Protein-energy mineral supplementation of Nellore bulls in the growing phase at Brachiaria brizantha ‘Marandu’ during the rainy season.
C. F. Lobo*, F. A. Barbosa, R. A. Mandarino, G. A. Carneiro, and S. L. S. Cabral Filho, 1University of Brasilia, Brasilia, DF, Brazil, 2Federal University of Minas Gerais, Minas Gerais, MG, Brazil.

Requirements for continuous ammonia-NH₃ sampling when using relaxed eddy accumulation from concentrated animal feeding operations.

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.

Whole herd enteric methane emission estimates in three contrasting dairy systems.

Withdrawn

Effect of feeding frequency and protein supplementation on methane production by Holstein cows.

Withdrawn

Effect of Quebracho-chestnut tannin extracts at two forage levels on dairy cow lactation performance and emission of methane and ammonia.
M. J. Aguerre*, M. C. Capozzolo, M. A. Wattiaux, and J. M. Powell, 1University of Wisconsin-Madison, Madison, 2U.S. Dairy Forage Research Center, Madison, WI.

Effect of fiber on greenhouse gas emissions from stored manure.
Q. Huang, K. Perano, M. Tenuta, C. M. Nyachoti, A. Strathe, and E. Kebreab, 1University of Manitoba, Winnipeg, MB, Canada, 2University of California, Davis, Davis.

Evaluation of SF₆ 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.

Effect of dietary protein level and greenhouse gas emissions from dairy manure.
C. Lee*, A. N. Hristov, C. J. Dell, G. W. Feyereisen, J. Kaye, and D. Beegle, 1Pennsylvania State University, University Park, 2USDA-ARS-PSWMRU, University Park, PA, 3USDA-ARS-SWMRU, St. Paul, MN.

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.

Seasonal and diel changes of air emissions from cross-ventilated dairy freestall barns in Midwestern United States.
F. Y. Ayadi*, E. L. Curtos, L. D. Jacobsen, B. P. Hetchler, and A. J. Heber, 1South Dakota State University, Brookings, 2University of Minnesota, St. Paul, 3Purdue University, West Lafayette, IN.
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W282
Effect of oat maturity and variety on yield and nutritive value for grazing cattle.
M. L. Drewery*, L. A. Redmon1, and T. A. Wickersham1, 1Texas A&M University, College Station, 2Texas 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*, T. A. McAllister1, J. J. McKinnon2, and K. A. Beauchemin1, 1Agriculture and Agri-Food Canada, Research Centre, Lethbridge, AB, Canada, 2Department 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*1, F. S. Parra1, J. R. Ronchesel1, M. D. B. Arrigoni1, C. L. Martins1, R. S. Barducci1, L. M. N. Sarti1, R. D. L. Pacheco1, L. C. Vieira Júnior1, M. C. S. Franzóí1, R. Espigolan1, J. M. P. Silva1, M. F. Val1, F. P. Luiz2, E. A. Chacon Filho1, 1São Paulo State University (UNESP), Botucatu, São Paulo, Brazil, 2São Paulo State University (UNESP), Dracena, São Paulo, Brazil, 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 Brasilia-UnB, Brasilia/DF, Brazil.

W286
Effects of supplementing an exogenous proteolytic enzyme on growth performance in finishing beef steers.
J. M. Vera*, C. T. Noviandi1, A.-H. Smith1, D. R. ZoBell1, and J.-S. Eun1, 1Department of Animal, Dairy, and Veterinary Sciences, Utah State University, Logan, 2Danisco USA, Inc., Waukesha, WI.

W287
Effects of supplementing an exogenous proteolytic enzyme in beef finishing diets on ruminal fermentation in continuous cultures.
J. M. Vera1, T. Astuti1, A.-H. Smith1, D. R. ZoBell1, and J.-S. Eun1, 1Department of Animal, Dairy, and Veterinary Sciences, Utah State University, Logan, 2Faculty of Animal Science, Andalas University, Padang, West Sumatra, Indonesia, 3Danisco 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. Li2, C. Li1,3, W. Z. Yang1, T. A. McAllister1, and K. A. Beauchemin1, 1Agriculture and Agri-Food Canada, Research Centre, Lethbridge, AB, Canada, 2Feed Research Institute, Chinese Academy of Agricultural Sciences, Beijing, China, 3College of Animal Science, Inner Mongolia Agricultural University, Hohhot, Inner Mongolia, China.

W289
Effect of Optaflex® when fed as a topdress on performance and carcass traits of finishing steers.

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*, L. van Weeren, and J. S. Drouillard1, 1Kansas State University, Manhattan, 2São 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, Weifang, Shandong, China.

W292
Oro-sensorial preferences for mixtures of protein and energetic ingredients in weaned calves.
C. Montoro*1, I. Ipharraguerre1, and A. Bach1,3, 1Ruminant Production, IRTA, Caldes de Montbui, Barcelona, Spain, 2Lucta S.A., Montnors del Vallés, Barcelona, Spain, 3ICREA, 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. Cervantes1, A. Camacho1, M. Verdugo1, M. Espino1, L. R. Flores1, J. A. Romo1, and E. A. Velazquez1, 1FMVZ-Universidad Autónoma de Sinaloa, Culiacán, Sinaloa, México, 2Ganadera 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*, B. J. Cervantes2, M. A. Espino1, M. Verdugo1, L. R. Flores1, J. A. Romo1, and R. Barajas1, 1FMVZ-Universidad Autónoma de Sinaloa, Culiacán, Sinaloa, México, 2Ganadera 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*, B. J. Cervantes1, S. C. Arechiga1, M. A. Espino1, L. R. Flores1, A. Camacho1, and J. A. Romo1, 1FMVZ-Universidad Autónoma de Sinaloa, Culiacán, Sinaloa, México, 2Ganadera Los Migueles S.A. de C.V., Culiacán, Sinaloa, México.

W297
Effect of length feeding additional tannins-extract on carcass traits of finishing bulls.
C. Arechiga*, B. J. Cervantes1, M. A. Espino1, L. R. Flores1, A. Camacho1, J. A. Romo1, and R. Barajas1, 1FMVZ-Universidad Autónoma de Sinaloa, Culiacán, Sinaloa, México, 2Ganadera Los Migueles S.A. de C.V., Culiacán, Sinaloa, México.
Meta-analysis of the effects of the interaction between copper and molybdenum on weight gain and gain:feed ratio in growing cattle.
R. Dias*, S. Lopez, Y. Montanholi, B. Smith, L. Haas, S. Miller, and J. France, ¹University of Guelph, Guelph, Ontario, Canada, ²Instituto de Ganadería de Montaña (IGM), Universidad de León, León, Spain.

Effects of purified lignin on growth performance of feedlot cattle.

Feed performance and carcass traits of yearling bulls fed polyclonal antibody preparations, yeast or monensin.

Rumen papillae alterations of feedlot yearling bulls fed polyclonal antibody preparations, yeast or monensin.

Fatty acid profiles in adipose tissue of grazing and feedlot beef steers.
C. T. Noviandi, R. E. Ward, J.-S. Eun, D. R. ZoBell, T. Astuti, B. L. Waldron, and M. D. Peel, ¹Department of Animal, Dairy, and Veterinary Sciences, ²Department of Nutrition, Dietetics, and Food Sciences, Utah State University, Logan, ³Faculty of Animal Science, Andalus University, Padang, West Sumatra, Indonesia, ⁴Forage and Range Research Laboratory, USDA-ARS, Logan, UT.

Chromium propionate supplementation on feedlot performance of bulls.

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.

Effect of glycerin on intake and digestion of bermudagrass hay in beef cattle.
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.

Effect of returned milk (Nutri-Gold) on performance of veal calves.
D. Vermeire, Nouriche Nutrition Ltd., Lake St. Louis, MO.

Antioxidant activity in milk of dairy cows fed diets containing propolis-based products.

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Protein balance alters expression of key genes for protein and lysine catabolism in liver of lactating dairy cattle.
H. A. Tucker, S. L. Kosier, P. H. Doane, and S. S. Donkin, ¹Purdue University, West Lafayette, IN, ²Archer Daniels Midland Company, Decatur, IL.

Effects of OmniGen-AF on performance and economics of a veal operation.
O. Bewley, J. D. Chapman, K. P. Zanzalari, Y. Q. Wang, and N. E. Forsberg, ¹Prince Agri Products, Quincy, IL, ²OmniGen Research, Corvallis, OR.

Determining methionine bioavailability in commercial dairy herds.
D. Stucker, J. R. Knapp, N. R. St-Pierre, ¹Venture Milling, Salisbury, MD, ²Fox Hollow Consulting LLC, Columbus, OH, ³The Ohio State University, Columbus.

Effect of returned milk (Nutri-Gold) on performance of veal calves.
D. Vermeire, Nouriche Nutrition Ltd., Lake St. Louis, MO.

Antioxidant activity in milk of dairy cows fed diets containing propolis-based products.
Ruminal fermentation of acidosis induced cows treated with monensin or polyclonal antibodies against target ruminal bacteria. D. D. Millen2,3, R. D. L. Pacheco4, C. T. Marino4, J. P. S. T. Bastos5, T. A. Barros6, F. A. Ferreira7, C. L. Martins8, M. D. B. Arrigoni9, and P. H. M. Rodrigues10, 1São Paulo State University (UNESP), Botucatu, São Paulo, Brazil, 2São Paulo State University (UNESP), Dracena, São Paulo, Brazil, 3Supported by FAPESP, São Paulo, São Paulo, Brazil, 4University of São Paulo (USP), Pirassununga, São Paulo, Brazil.

Effect of a combined supplement of vitamin B12 and folic acid on vitamin B12 concentration in milk of dairy cows. M. Duplessis*,1, D. Pellerin1, and C. L. Girard1, 1Université Laval, Département des sciences animales, Québec, QC, Canada, 2Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada.

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. Brito1, H. V. Pettit2, and K. J. Soder3, 1University of New Hampshire, Durham, 2Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, 3USDA-Agricultural Research Service-Pasture Systems and Watershed Management Research Unit, University Park, PA.

Antioxidant activity of calf milk replacers. M. A. Soberon*,1, D. J. R. Cherney, and R. H. Liu, Cornell University, Ithaca, NY.

Effects of essential oils, yeast and enzyme additive to milk replacer and starter on dairy calf performance. A. D. Kmickewycz*,1, H. T. Pervis2, J. Hill3, and N. B. Litherland4, 1University of Minnesota, St. Paul, 2Ralco Nutrition Inc., Marshall, MN.

Milk production responses of grazing cows to partial mixed rations. M. J. Auldist*,1, J. L. Jacobs, L. C. Marett, J. S. Greenwood, and W. J. Wales, Department of Primary Industries, Ellinbank, Victoria, Australia.

Evaluation of a rumen protected carbohydrate supplement prototype feed with fresh lactation dairy cows. J. P. Russi*,1, P. F. Russi1, J. M. Simondi1, G. M. Bonetto1, C. Nasser Marzo1, J. A. Di Rienzo2, and A. R. Castillo4, 1Rusitec S.A., Buenos Aires, Argentina, 2INTA, EEA Manfredi, Cordoba, Argentina, 3University of Cordoba, School of Agriculture, Cordoba, Argentina, 4University of California, Cooperative Extension, Merced, CA.

Effects of balancing for methionine and lysine in a lactation diet containing high concentrations of wet corn gluten feed. C. R. Mullins*,1, D. Weber2, E. Block2, J. F. Smith1, M. J. Brouk1, and B. J. Bradford2, 1Kansas State University, Manhattan, 2Arm & Hammer Animal Nutrition, Princeton, NJ.


Interactions between mild protein imbalance and taste preference in young ruminants. A. Bach*,1, J. J. Villalba2, and I. R. Ipharraguerre3, 1CREA and Ruminant Production-IRTA, Barcelona, Spain, 2Utah State University, Logan, 3Lucta, S.A., Barcelona, Spain.

Evaluation of RumeNext-D and monensin in early lactation diets for dairy cattle. J. P. McNamara*,1, G. Duncan1, R. Bose2, S. Rocco2, J. Kay1, P. Doane2, and K. L. Perfield1, 1Washington State University, Pullman, 2ADM Research, Des Moines, IA, 3Elanco Animal Health, Indianapolis, IN.

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.

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. Williams2, and A. J. Young1, 1Department of Animal, Dairy, and Veterinary Sciences, Utah State University, Logan, 2Department of Soil and Crop Sciences, Colorado State University, Fort Collins.


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.

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. Khorvash1, S. Kargar1, G. R. Ghorbani2, M. Boroumand-Jari2, A. Ghaempour1, and W. Z. Yang3, 1Isfahan University of Technology, Isfahan, Iran, 2Jahad-Agriculture Institute of Scientific-Applied Higher Education, Isfahan, Iran, 3Agriculture 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. Araujo1, M. Devant1, A. Mereu1, I. Ipharraguerre2, and A. Bach3, 1Department of Ruminant Production, Institut de Recerca i Tecnologia Agroalimentàries (IRTA), Barcelona, Spain, 2Lucta, S.A., Barcelona, Spain, 3Institució 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. Gunn4, J. P. Schoonmaker4, R. P. Lemenager1, and G. A. Bridges3, 1Purdue University, West Lafayette, IN, 2University 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. Gunn4, J. P. Schoonmaker4, R. P. Lemenager1, and G. A. Bridges3, 1Purdue University, West Lafayette, IN, 2University 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. Nikkhah1, S. M. Nasrollahi2, M. Khorvash2, and G. R. Ghorbani2, 1University of Zanjan, Zanjan, Iran, 2Isfahan University of Technology, Isfahan, Iran.

W335 Textured versus ground starter effects on Holstein calves chewing behavior.
A. Nikkhah1, S. M. Nasrollahi2, B. Raad2, S. Khorsandi2, M. Forootan3, and S. P. Emami Panaah4, 1University of Zanjan, Zanjan, Iran, 2Foeka 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. Preseault1, H. M. Dann1, and A. L. Lock2, 1Michigan State University, East Lansing, 2William 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.

W338 Reduced protein for late-lactation dairy cows.
A. B. D. Pereira1, L. K. Zeringue3, C. Leonardi2, M. E. McCormick2, and V. R. Moreira2, 1Louisiana State University Agricultural Center, Baton Rouge, 2Louisiana State University - Health Sciences Center, New Orleans.

W339 Comparison of in vivo and in vitro NDF digestibility data in dairy cows.
S. Colombini1, 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. I. Castells1, A. Bach1, G. A. Pirisino1, and M. Terré1, 1Department of Ruminant Production, IRTA, Caldes de Montbui, Spain, 2ICREA, Barcelona, Spain.

W341 Morphology of the rumen of dairy cows fed high or low grain content diets before pariturnition.

W342 Effects of monensin on metabolic parameters, feeding behavior, and productivity of transition dairy cows. (see Abstract 73).

W343 Energy efficiency and performance of lactating dairy cows fed ethanol and acetic acid.

W344 Effect of an essential oil compound based oil on ruminal disappearance of proteins, fiber and starch and fermentation parameters in dairy cow.
D. Éclache, P. Etienne, and V. Noirot*, Phodé Laboratoires, Terrassac, France.

W345 Milk fatty acid profile from dairy cows fed tropical forage-based TMR containing increasing levels of sunflower oil.
M. A. S. Gama1, C. G. S. Ribeiro1, F. C. F. Lopes3, M. M. Almeida1, E. F. Motta1, M. T. Ribeiro4, and J. M. Grinari5, 1Brazilian Agricultural Research Corporation, Juiz de Fora, Minas Gerais, Brazil, 2The University of Juiz de Fora, Juiz de Fora, Minas Gerais, Brazil, 3Swedish University of Agricultural Sciences, Uppsala, Sweden, 4The University of Minas Gerais, Belo Horizonte, Minas Gerais, Brazil.
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. Ganjkhaniou, Animal Science Department, Campus of Agriculture and Natural Resources, University of Tehran, Karaj, Tehran, Iran.

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. Ganjkhaniou, Animal Science Department, Campus of Agriculture and Natural Resources, University of Tehran, Karaj, Tehran, Iran.

Investigation of chewing activity in cows fed diet with different ratios of alfalfa hay and corn silage.
A. Akbari, A. Zali, M. Ganjkhaniou, and M. Dehghan-Banadaky*, Animal Science Department, Campus of Agriculture and Natural Resources, University of Tehran, Karaj, Tehran, Iran.

A non activated charcoal reduced diarrhea of calves subject to Escherichia coli compared to a conventional treatment after 9 days of treatment.
C. Ionescu*, P. Ferretti1, and D. M. Bravo1, 1Pancosma, Geneva, Switzerland, 1NanoAgro, Buenos Aires, Argentina.

A new method for individually feeding a supplement to dairy cows in a free stall.
E. M. Ramsing*, C. M. Shriver-Munsch1, J. R. Males1, W. K. Sanchez1, I. Yoon1, and G. Bobe1, 1Department of Animal Science, Oregon State University, Corvallis, 1Diamond V Mills, Cedar Rapids, IA.

Effect of quantity and frequency of colostrum feeding on passive transfer, health, and performance of pre-weaned and post-weaned dairy calves.
B. Ozer*, M. Chahine1, C. M. Matuk1, and M. E. de Haro Martí1, 1University of Idaho, Twin Falls, 1University of Idaho, Gooding.

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*, B. Valemenck1, A. Fancheone, P. Nozière, M. Doreau, and V. Fieve1, 1Département des sciences animales, Université Laval, Québec, Québec, Canada, 1Lanupro, Ghent University, Melle, Belgium, 1Unité de Recherches Zootechniques, INRA, Petit Bourg, Guadeloupe, France, 1Unité de Recherche sur les Herbivores, INRA, Theix, St-Genès-Champanelle, France.

Effect of dietary escape microbial protein (DEMP) and degradable protein level on fermentation, digestion, and N flow in rumen-simulating fermenters.

Effect of level of dietary escape microbial protein (DEMP) on fermentation, digestion, and N flow in rumen-simulating fermenters.

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*, L. Ma1, B. A. Corl1, R. Gervais1, Y. Lebeuf1, F. J. Richard1, and P. Y. Chouinard1, 1Département des sciences animales, Université Laval, Québec, Québec, Canada, 1Institute of Nutraceuticals and Functional Foods (INAF), Québec, QC, Canada, 1Department of Dairy Science, Virginia Tech, Blacksburg.

Effect of corn silage inoculation with Sil-All and dietary protein on fermentation, digestion, and N flow in rumen-simulating fermenters.

Enhancing antioxidant properties of milk using a programmed, nutritional approach.

Mineral metabolism in pregnant dairy goats.
C. J. Härter*, I. A. M. A. Teixeira1, L. D. Lima1, H. G. O. Silva1, A. R. Rivera1, D. S. Castagnino1, K. T. Resende1, and N. R. St-Pierre1, 1Universidade Estadual Paulista, Jaboticabal, SP, Brasil, 1Department of Animal Sciences, The Ohio State University, Columbus.

Effect of various dosages of Saccharomyces cerevisiae fermentation product on milk production of multiparous dairy cows.
E. M. Ramsing*, C. M. Shriver-Munsch1, J. R. Males1, W. K. Sanchez1, I. Yoon1, and G. Bobe1, 1Department of Animal Science, Oregon State University, Corvallis, 1Diamond V, Cedar Rapids, IA.

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.

Effect of dietary starch content in early lactation on the lactational performance of dairy cows.
B. H. Nelson*, K. W. Cotanch1, M. P. Carter1, H. M. Gauthier1, R. E. Clark1, P. D. Krawczel1, R. J. Grant1, K. Yagi1, K. Fujita1, and H. M. Dann1, 1William H. Miner Agricultural Research Institute, Chazy, NY, 1Department of Animal Science, The University of Vermont, Burlington, 1ZenNoh National Federation of Agricultural Cooperative Associations, Tokyo, Japan.

A fibrolytic enzyme additive for lactating dairy cow diets: ruminal fermentation, pH, bacterial populations and enteric methane emissions.
Y.-H. Chung*, L. Holtshauser1, T. W. Alexander2, M. Oba3, and K. A. Beauchemin3, 1Agriculture and Agri-Food Canada, Research Centre, Lethbridge, AB, Canada, 1Department of Animal Science, University of Vermont, Burlington, 1Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada.
Ruminant Nutrition

Ruminal Metabolism

W363 Nutritional and seasonal factors causes milk fat concentration variability in dairy cows.
A. S. Atzoril,* P. Carta1, G. Gaspa1, and A. Cannas1, 1Dipartimento di Scienze Zootecniche, Università di Sassari, Sassari 07100, Italy, 2Associazione 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. Broderick1, T. M. Kerkmann1, H. M. Sullivan1, M. K. Dowd1, and P. A. Funk1, 1U.S. Dairy Forage Research Center, Madison, WI, 2EcoSol, Tucson, AZ, 3USDA-ARS, New Orleans, LA, 4USDA-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.

W366 Determination of the metabolizable methionine contributions of three different sources of lipid coated methionine.
E. Devillard1, F. Rouffineau1, and B. Sloan1, 1Adisseo France, Commentry, France, 2Adisseo 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. Edwards1, R. C. Anderson1, R. K. Miller1, T. M. Taylor1, M. D. Hardin1, S. B. Smith1, N. A. Krueger1, and D. J. Nisbet2, 1Texas A&M University, College Station, 2United States Department of Agriculture/Agricultural Research Service, Southern Plains Agricultural Research Center, College Station, TX, 3IEH 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 hydrolysates agents used in Brazilian farms.
S. L. S. Cabral Filho1,2, D. C. Pinto1, and R. A. Mandarino1, 1Universidade de Brasilia, Brasilia, Distrito Federal, Brasil, 2Fazenda Experimental Agua Limpa, Brasils, 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. Yuan1, R. Shaver1, S. Bertics1, M. Espineira1, and R. Grummer2, 1Department of Dairy Science, University of Wisconsin-Madison, Madison, 2Balchem 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*, M. Blanch1, M. D. Carro2, and M. J. Ranilla1, 1Novus International Inc., St. Charles, MO, 2Departamento de...
W381  Ruminal kinetics of the diets with increasing levels of crude propane-1,2,3-triol.
R. Mello*, C. M. M. Bittar†, L. A. M. A. da Costa‡, R. C. de Araújo§, and A. L. Abdalla†, †Universidade Federal de Santa Maria, Santa Maria, Rio Grande do Sul, Brazil, ‡Universidade de São Paulo - Escola Superior de Agricultura ‘Luiz de Queiroz’, Piracicaba, São Paulo, Brazil, §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**, M. Danesh Mesgaran†, A. R. Vakili‡, and K. Rezayazdi†, †Dept. of Animal Science, Excellence Center for Animal Science, Faculty of Agriculture, Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran, ‡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*, C. M. M. Bittar†, L. A. M. A. da Costa‡, R. C. de Araújo§,  J. K. Kirinus§, and J. L. Nörnb erg§, †Universidade Federal de Santa Maria, Santa Maria, Rio Grande do Sul, Brazil, ‡Universidade de São Paulo - Escola Superior de Agricultura ‘Luiz de Queiroz’, Piracicaba, São Paulo, Brazil, §Universidade Federal de Roraima, Boa Vista, Roraima, Brazil, ¶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.

W385  Estimation of protein fractions of tropical grasses by near infrared reflectance spectroscopy.
R. G. Basurto†, G. Budencia-Rodriguez‡, E. R. Ramirez‡, M. A. Barron‡, J. J. G. Bustamante§, R. E. Santos§, J. M. Maldonado§, and S. S. Gonzalez-Muñoz*, *CENID Fisiología y Mejoramiento Animal-INIFAP, Queretaro, Mexico, †CE Huimanguillo-INIFAP, Tabasco, Mexico, ‡CE Santiago Ixcuintla-INIFAP, Nayarit, Mexico, §CE Iguala-INIFAP, Guerrero, Mexico, ¶CE Rosario Izapa-INIFAP, Chiapas, Mexico, ¶Colegio de Postgraduados, Montecillo, Estado de Mexico, Mexico.

W386  Commodity blood meal variation: digestible RUP and amino acids.
R. Brown*, D. Stucker†, J. R. Knapp‡, and N. R. St-Pierre¶, *Venture Milling, Salisbury, MD, †Fox Hollow Consulting, LLC, Columbus, OH, ¶The Ohio State University, Columbus.

W387  Tannin content and rate of ruminal protein degradation of legume hays.
S. Colombini*, G. A. Broderick†, J. H. Grabber‡, and W. K. Coblenz‡, †University of Michigan, Ann Arbor, Michigan, ‡U.S. Dairy Forage Research Center, Madison, WI, †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, 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.

W391  Inclusion of substrate of Pleurotus ostreatus on kinetics of in vitro fermentation of Brachiaria hay.

W392  Evaluation of protein fractions of tropical grasses by near infrared reflectance spectroscopy.

W393  The effect of storage structure on haylage and corn silage fermentation.
C. Rasmussen*, D. Petri, S. Jens, and A. H. Smith, Danish USA, Waukesha, WI.

W394  The effect of direct fed lactic acid bacteria combined with monensin.
R. C. de Souza*, R. B. Reis†, J. Holliday‡, E. Rabele³, and R. A. Filho⁴, †Federal University of Minas Gerais, Belo Horizonte, Minas Gerais, Brasil, ¶Chr. Hansen - Animal Health and Nutrition, Hørsholm, Denmark, ‡Chr. Hansen - Animal, Valinhos, São Paulo, Brasil, §Rehagro Team Consultation, Belo Horizonte, Minas Gerais, Brasil.

W395  Morphological response of the ruminal and omasal mucosa to the variation in the energy of the diet.

W396  Determination of solubility of alternate magnesium sources and their impact on pH with an optimized in vitro rumen fermentation protocol.
S. J. Taylor*, J. Apajalahti‡, E. Pennala‡, C. Murphy†, and T. Rinttilä‡, †Celtic Sea Minerals Ltd., Cork, Ireland, ‡Alimetrics Ltd., Espoo, Finland.
Ruminant Nutrition
Small Ruminant

W397 Influence of *Salix babylonica* and *Leucaena leucocephala* extracts on ruminal fermentation activities in growing lambs.

W398 Effect of live yeast *Saccharomyces cerevisiae* (strain Sc 47) on ruminal fermentation activities of growing Mehraban lambs.
N. Baleghi*, A. Taghizadeh*, A. FarahAvat*, and H. Khaliilvandi-Behroozyar**, 1Islamic Azad University, Maragheh Branch, 2University of Tabriz, 3University of Tehran, 4Urmia University.

W399 Intake and digestibility by wethers fed a fresh ryegrass-based diet intraruminally infused with *Acacia mearnsii* tannins.
F. Hentz**, C. J. Harter*, G. V. Kozloski**, S. C. Avila*, and D. S. Castagnino**, 1Universidade Federal de Santa Maria, Santa Maria, RS, Brazil, 2Universidade Estadual Paulista, Jaboticabal, SP, Brazil.

W400 Effect of sorghum grain supplementation on glucose metabolism 2: Oxine.

W401 Inter-individual variability in in vitro methane production by ruminal microorganisms from sheep fed different diets.

W402 Influence of sugar cane molasses levels on apparent digestibility of diets for finishing lambs.

W403 Influence of additional tannins-extract level on feedlot-performance of finishing lambs.

Small Ruminant
Carcass, Genetics, Management, and Reproduction

W404 Carcass evaluations of sheep supplemented with brewery waste (ensiled and dried) grazing under the rainy season in tropics.

W405 Feed efficiency and carcass traits in crossbred Katahdin lambs supplemented with hydroponic green wheat.

W406 Effect of diet and finishing weight on performance and carcass traits of meat goat kids.

W407 Feedlot productive performance and carcasses traits by hybrid lambs.

W408 Evaluation of carcass characteristics of feedlot lambs receiving repeated doses of zanolol.

W409 Performance and carcass characteristics of lambs fed with diets including protected fat and vitamin E.
Feeding system and breed affect goat kid growth and carcass composition.
M.-E. Brassard*1, T. Tessier1, R. Gervais1, E. Pouliot1, C. Garley2, G. F. Tremblay3, R. Berthiaume1, P. Y. Chouinard1, and D. Cinq-Mars1, 1Département des sciences animales, Université Laval, Québec, QC, Canada, 2AAFC, Food Research and Development Centre, Saint-Hyacinthe, QC, Canada, 3AAFC, Soils and Crops Research and Development Centre, Québec, QC, Canada, 4AAFC, Dairy and Swine Research and Development Centre, Sherbrooke, QC, Canada.

Molecular survey of Trypanosoma vivax infection in Nigerian goats.
T. Sanni1, A. Yakubu*2, M. A. Adenewa1, B. O. Agavieor4, C. O. N. Ikeobi1, M. Wheto1, M. Okpeku1, M. I. Takeet1, M. De Donato3, and I. G. Immunorin2, 1Dept of Animal Breeding and Genetics, University of Agriculture, Abeokuta, Nigeria, 2Dept of Animal Science, Nasarawa State University, Lafia, Nigeria, 3Dept of Cell Biology and Genetics, University of Lagos, Lagos, Nigeria, 4Dept of Animal Science and Fisheries, University of Port Harcourt, Port-Harcourt, Nigeria, 5Dept of Livestock Production, Niger Delta University, Amassoma, Nigeria, 6Dept of Veterinary Microbiology and Parasitology, University of Agriculture, Abeokuta, Nigeria, 7Dept of Animal Science, Cornell University, Ithaca, NY.

Gene expression changes in goat testes during development and in sperm during the breeding and nonbreeding seasons.
A. N. Faucette*1, P. K. Riggs1, D. W. Forrest1, L. Nuti1, G. R. Newton1, and N. H. Ing1, 1Prairie View A&M University, Cooperative Agriculture Research Center, Prairie View, TX, 2Texas A&I University, Research, College Station.

Feeding management affect the occurrence of self-suckling in dairy goats.

Withdrawn

Finishing performance of lambs fed fresh or dehydrated spineless cactus (Opuntia ficus-indica).
M. I. Aguilar-Yañez1, O. Hernandez-Mendo1, G. Aranda-Osorio**1, J. E. Ramirez-Bribiesca1, S. S. Gonzalez-Muñoz1, and M. M. Crosby-Galvan1, 1Colegio de Postgrados, Montecillos, Estado de Mexico, Mexico, 2Universidad Autonoma Chapingo, Chapingo, Estado de Mexico, Mexico.

Finishing performance of Pelibuey sheep fed with different levels of alfalfa.
V. Resendiz-Cruz1, O. Hernandez-Mendo1, J. Gallegos-Sanchez, P. A. Martinez-Hernandez3, G. Aranda-Osorio**1, C. Sanchez-Del Real2, and S. S. Gonzalez-Muñoz3, 1Colegio de Postgrados, Montecillos, Estado de Mexico, Mexico, 2Universidad Autonoma Chapingo, Chapingo, Estado de Mexico, Mexico.

Evaluation of feedlot male lamb performance receiving repeated doses of Zeranol.

Effect of using different performance traits to estimate residual feed intake.

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*, E. Carrillo1, L. M. Tejeda1, J. M. Guillén-Muñoz2, P. A. Robles-Trillo1, C. A. Meza-Herrera3, F. G. Vélez1, R. Rodríguez-Martinez**1, and M. Mellado1, 1Universidad Autonoma Agraria Antonio Narro, Torreón, Coahuila, México, 2Instituto Tecnológico de Torreón, Torreón, Coahuila, México, 3Universidad Autónoma Chapingo, Unidad Regional de Zonas Áridas, Bermejillo, Dgo., México, 4Universidad Autonoma Agraria Antonio Narro, Buenavista, Saltillo, Coahuila, México.

Response of sexually inactive French Alpine bucks to the stimulus of estrous goats.
L. M. Tejada*, E. Carrillo1, R. Rivas-Muñoz2, M. Guillén-Muñoz2, C. A. Meza-Herrera3, G. Arellano-Rodríguez2, M. Mellado1, and F. G. Vélez1, 1Universidad Autónoma Agraria Antonio Narro, Torreón, Coahuila, México, 2Instituto Tecnológico de Torreón, Torreón, Coahuila, México, 3Universidad Autónoma Chapingo, Unidad Regional Universitaria de Zonas Áridas, Bermejillo, Durango, México.

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. Carrillo1, R. Rivas-Muñoz2, L. M. Tejeda1, J. M. Guillén-Muñoz2, R. Rodríguez-Martinez1, P. A. Robles1, C. A. Meza-Herrera3, F. G. Vélez1, and G. Arellano-Rodríguez2, 1Universidad Autónoma Agraria Antonio Narro, Torreón, Coahuila, México, 2Instituto Tecnológico de Torreón, Torreón, Coahuila, México, 3Universidad Autónoma Chapingo, Unidad Regional Universitaria de Zonas Áridas, Bermejillo, Durango, México.

NC2Synch: A protocol for ovulation synchronization and timed artificial insemination in goats.

Comparison of two ovulation synchronization methods for timed artificial insemination in goats.
N. C. Whitley*1, C. E. Farin1, W. B. Knox1, L. Townsend1, J. R. Horton1, K. Moulton1, and S. Nusz2, 1North Carolina A&T State University, Greensboro, 2North Carolina State University, Raleigh, 3NCDA, UMRS, Laurel Springs, NC, 4Redlands Community College, El Reno, OK.
Effect of flushing and (or) exposure to estrogenized does upon reproductive performance of anovulatory range goats exposed to male effect.
*Universidad Autonoma Agraria Antonio Narro, *Centro de Bachillerato Tecnologico Agropecuario N° 1, *Universidad Autonoma Chapingo, Universidad Regional Universitaria de Zonas Aridas.

Exposure of does in estrus to bucks subsequently induces estrus in anestrus females.
*Universidad Autonoma Agraria Antonio Narro, *Centro de Bachillerato Tecnologico Agropecuario N° 1, *Universidad Autonoma Chapingo, Universidad Regional Universitaria de Zonas Aridas.

Influence of sexually inactive bucks subjected to either long photoperiod or testosterone upon the induction of estrus in anovulatory goats.
*Centro de Bachillerato Tecnológico Agropecuario No 1, Torreón, Coahuila, México, *Universidad Autónoma Chapingo, Universidad Regional de Zonas Áridas, Bermejillo, Dgo., México.

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.
### Animal Health Symposium

**Swine and Other Species**

**Chair:** Tanya Gressley, University of Delaware

**288-289**

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| 10:30 AM | 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 | The effect of prenatal stress and dominance order on immune function in response to a DTH and LPS challenge in pigs.  
B. L. Davis*, M. A. Sutherland¹, ², and M. A. Ballou¹, ¹Texas Tech University, Lubbock, ²Ruakura Research Centre, AgResearch, Hamilton, New Zealand.  |
| 11:00 AM | 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 | In vitro antibacterial activity, cytotoxicity and mechanisms of cathelicidin peptides against enteric pathogens in weaning piglets.  
| 11:30 AM | Microbial transmission and assembly of the gut microbiota in neonatal pigs on day 7 and 14 postfarrowing.  
| 11:45 AM | Viability of *Parascaris equorum* eggs intermittently exposed to the interior of a windrow composting system.  
| 12:00 PM | 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.*  |

### Animal Health Symposium

**Lipid Metabolism**

**Chair:** Pedram Rezamand, University of Idaho

**Sponsors:** Elanco Animal Health, Pfizer Animal Health

**298-299**

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<tr>
<td>10:30 AM</td>
<td>Introduction</td>
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| 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

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. Soyeurt1,2, C. Bastin1, B. Buske1, S. Vanderick1, and F. Colinet1, 1ULg - GxABT, Gembloux, Belgium, 2FNRS, Brussels, Belgium.

11:30 AM 597  
Overview of genomic selection in dairy cattle populations.  
P. M. VanRaden* and J. R. O'Connell1, 1Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD, 2University of Maryland School of Medicine, Baltimore.

11:50 AM 598  
Overview of genomic selection in small populations of beef cattle.  

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

10:30 AM 601  
Influence of salt-in-moisture of full fat and low fat Cheddar cheese on microflora and flavor.  
D. J. McMahon*, C. J. Oberg, L. V. Moyes, R. E. Miracle, and M. A. Drake, Western Dairy Center, Utah State University, Logan, Department of Microbiology, Weber State University, Ogden, UT, 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*, M. F. Budinich, M. A. Drake, R. E. Miracle, J. R. Broadbent, and J. L. Steele, Department of Food Science, University of Wisconsin-Madison, Madison, Department of Nutrition, Dietetics, and Food Sciences, Utah State University, Logan, 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**

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. Lucey1,  
1University of Wisconsin, Madison, 2University of Kafrelsheikh, Egypt.

10:45 AM 609  Engineering yoghurt texture: Interactions between texturing lactic acid bacteria and processing conditions in low fat stirred yogurt.  
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. Ozcan1,2 and J. Lucey*,  
1University of Wisconsin-Madison, Madison, 2Uludag University, Bursa, Turkey.

11:15 AM 611  Dextran addition to model acid gels to explore the mechanism by which EPS influence yogurt texture.  
U. Pachekrepol* and J. A. Lucey, University of Wisconsin - 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. Cruz1, J. Assis*, D. Granato2, S. Bogusz Junior1, and H. Godoy1,  
1University of Campinas (UNICAMP), 2University 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

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**Extension Education Symposium**  
**Enhancing Educational Approaches for Future Changes in Biosecurity and Antibiotic Use in Animal Agriculture**  
**Chair: Tamilee Nennich, Purdue University**

10:30 AM 617  Overview–The importance of biosecurity and animal production.  

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 619  Changes in Antibiotic Use in Europe.  
A. Mathew.

12:00 PM 620  The Future of Antibiotic Use in the United States.  
S. Clark.

12:30 PM 621  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

10:30 AM 620 Novel approach to measuring internal scrotal temperature in stallions utilizing a thermal sensory device.

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.

11:15 AM 623 Role of cellular sodium transport in nonglandular equine gastric ulcer disease.
F. Andrews*1, A. Peretich1, R. Reese1, L. Abbott1, and M. Dhar2, 1Louisiana State University, Baton Rouge, 2University 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.

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*, B. J. Rude1, J. D. Davis1, D. L. Christiansen1, C. Mochal1, P. M. Ward2, and P. L. Ryan1, 1Mississippi State University, Starkville, 2Rutgers University, New Brunswick, NJ.

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**International Animal Agriculture**
Chair: Harvey Blackburn, USDA-ARS

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. Fiaz1, M. Nasir1, M. E. Babar1, J. A. Bhatti1, T. N. Pasha1, and M. A. Jabbar1, 1University of Veterinary & Animal Sciences, Lahore, Punjab, Pakistan, 2Buffalo 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. Bhatti1, Z. Iqbal1, and K. Hayat1, 1University of Veterinary and Animal Sciences, Lahore, Pakistan, 2Livestock Experiment Station, Jahangirabad, Khanewal, Pakistan.

11:00 AM 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. Parada2, 1EcoAgroPec, Hueytamalco, Puebla, Mexico, 2Carnes La Rumorosa, Poza Rica, Veracruz, Mexico.

11:15 AM 633 Expansion of meat rabbit projects in disaster-stricken Haiti.
S. D. Lukefahr*4, M. Kaplan-Pasternak4, J. I. McNitt3, and Benito Migny Jasmin4, 1Texas A&M University, Kingsville, 2Nicasio, CA, 3Southern University Agricultural Research and Extension Center, Baton Rouge, LA, 4Cap 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

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. Yasmine2, B. Samira2, G. Mohamed2, and O. Ahmed*, 1INRA de Clermont-Theix, St Genes Champanelle, France, 2University 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

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. Allee1, 1Chia Tai Investment Co., Ltd., Beijing, China, 2University 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.

11:45 AM 642 Effects of distillers dried grains with solubles in the diet of gestating sows on nutrient excretion.

Nonruminant Nutrition Symposium
Nutrition’s Role in Environmental Management and Meeting Government Regulations
Chair: W. Randy Walker, DPI Global
Sponsor: EAAP

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.
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*, S. D. Eicher1, A. K. Johnson1, D. C. Lay2, B. T. Richert3, and E. A. Pajor4,  
1Purdue University, W. Lafayette, IN,  
2LBRU, USDA-ARS, W. Lafayette, IN,  
3Iowa State University, Ames,  
4University of Calgary, Calgary, AB, Canada.

10:45 AM 648  
Heat stress increases small intestinal permeability and circulating endotoxin in growing pigs.  

11:00 AM 649  
The effect of naloxone on reproductive behavior and plasma prolactin levels in third lactation sows.  
V. O. Fuentes Hernandez*, 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*, K. Pendarvis1, S. T. Willard1, and P. L. Ryan4,  
1Department of Animal and Dairy Sciences, Mississippi State University, Mississippi State,  
2Life Science Biotechnology Institute, Mississippi State University, Mississippi State,  
3Department of Biochemistry and Molecular Biology, Mississippi State University, Mississippi State,  
4Department 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*, L. D. Prezotto1,2, R. D. Cardoso1,2, B. R. C. Alves3, M. Amstalden4, and G. L. Williams1,2,  
1Texas AgriLife Research, Beeville,  
2Texas 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*, L. Greiner, J.Connor, J. Salak-Johnson, and R. Knox,  
1University of Illinois, Urbana,  
2Carthage 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*, A. Danfaer3, H. Jorgensen2, and E. Kebreab1,  
1Department of Animal Science, University of California, Davis,  
2Department 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.

Withdrawn

Withdrawn
11:30 AM 661 Doe reproductive rates among Boer F₁ and four purebred genotypes including Myotonic in the southeastern United States.
A. Nguluma*, R. Browning, A. Pellerin, J. Groves, and M. Leite-Browning, ¹Tennessee State University, Nashville, ²Alabama 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*, R. Browning, M. Leite-Browning, and M. Byars, ¹Tennessee State University, Nashville, ²Alabama A&M University, Huntsville.

Ruminant Nutrition

Dairy: Fats, Proteins, and Carbohydrates

Chair: Stephanie Ward, Mississippi State University

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.

11:30 AM 667 Microbiome analysis of the rumen, cecum, and feces of dairy cows with subacute ruminal acidosis.
E. Khafipour, S. Li*, J. C. Plaizier, S. E. Dowd, and D. O. Krause, ¹University of Manitoba, Winnipeg, MB, Canada, ²Medical 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*, Y. Chouinard, R. Lacroix, D. Lefebvre, and K. M. Wade, ¹McGill University, Montreal, QC, Canada, ²Laval University, Quebec City, QC, Canada, ³Valacta, 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.

12:15 PM 670 Effects of close-up dietary energy strategy and prepartal dietary monensin on rumen dynamics and fermentation in Holstein cows.

12:30 PM 791 Feeding a C16:0-enriched fat supplement increased the yield of milk fat and improved feed efficiency.
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 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* and R. P. Rhoads², ¹Iowa State University, Ames, ²University of Arizona, Tucson.

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**Ruminant Nutrition**

**Small Ruminants**

Chair: Darrell Rankins, Auburn University

10:30 AM 675 Toxicokinetic and carry-over of ochratoxin A in lactating goats.
R. Blank*, M. Looff², M. Mobashar¹, A. Westphal¹, and K.-H. Südekum², ¹University of Kiel, Germany, ²University 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*, A. V. Chaves¹, E. Jonas¹, A. Tanner¹, D. Palmer¹, and R. D. Bush², ¹Faculty of Veterinary Science, The University of Sydney, Sydney, NSW, Australia, ²Faculty 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.

11:15 AM 678 Estimation of milk yield of West African Dwarf (WAD) ewe fed Mexican sunflower leaf meal (MSLM) based diets.

11:30 AM 679 Iron carbonate supplementation of lambs administered high-sulfur water.
A. M. Jons*, K. L. Kessler¹, K. J. Austin¹, C. Wright¹, and K. M. Cammack¹, ¹University of Wyoming, Laramie, ²South 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*, K. A. Vonnahn², S. E. Eckerman¹, L. A. Lekatz¹, K. R. Maddock Carlin¹, M. M. Thompson², and C. S. Schauer¹, ¹Department of Animal Sciences, North Dakota State University, Fargo, ²Hettinger 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.

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**Small Ruminant**

**Health and Genetics**

Chair: Rebecca Cockrum, University of Wyoming

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*, L. E. Hernandez-Castellano¹, A. Morales delaNuez¹, I. Moreno-Indias¹, J. Capote¹, and N. Castro¹, ¹Universidad de Las Palmas de Gran Canaria, Arucas, Las Palmas, Spain, ²Instituto Canario de Investigaciones Agrarias, La Laguna, Tenerife, Spain.
Immune status of goat kids fed cow’s milk with an exogenous source of DHA.
I. Moreno-Indias*, L. E. Hernández-Castellano, A. Morales delaNuez, A. Torres, D. Sánchez-Macias, N. Castro, and A. Argüello, Universidad de las Palmas de Gran Canaria, Arucas, Las Palmas, Spain, Instituto Canario de Ciencias Agrarias, La Laguna, Santa Cruz de Tenerife, Spain.

Effects of feeding sericea lespedeza as a natural anthelmintic for Haemonchus contortus in lactating does.

Polymorphisms in the melanocortin-1 receptor (MC1R) gene in Nigerian indigenous goats.

Molecular identification of Trypanosoma vivax Infection and physiological indices in Nigerian sheep.

Polymorphism in the ovine TNXB gene and association with morphological traits and physiological status in Nigerian Indigenous sheep.

Lean lamb production during the process of grading up to hair sheep genetics.

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.
SYMPOSIA AND ORAL SESSIONS

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-Robles2, 1Department of Animal and Range Sciences, South Dakota State University, Brookings, 2Feedlot 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-Allen2, J. D. Trujillo3, and G. Goodell4, 1Utah State University, Logan, 2Arizona Game and Fish Department, Phoenix, 3Iowa State University, Ames, 4The 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. Singh1, A.V. Singh1, B. Singh1, A. Kumar1, A. Srivastav1, S. Gupta1, H. Singh1, A. Mittal2, S. Yadav3, and J. S. Sohal1, 1Central Institute for Research on Goats, Mathura, Uttar Pradesh, India, 2College of Veterinary Sciences, Mathurai, 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. Rood1, and G. Goodell1, 1Utah State University, Logan, 1The Dairy Authority, Greeley, CO.

3:00 PM 700 Biophotonic imaging as a method to evaluate efficacy of intramammary antibiotics against Staphylococcus aureus in vitro.

3:15 PM 701 Experimental induction of Streptococcus uberis mastitis in bred dairy heifers: A challenge model.

3:30 PM 702 Effects of OmniGen-AF on enhancing immunity in dairy heifers vaccinated with a Staphylococcus aureus bacterin.
V. J. Eubanks1*, N. E. Forsberg1, Y. Q. Wang2, K. Zanzalari3, J. Chapman2, D. J. Hurley1, F. M. Kautz2, L. O. Ely1, and S. C. Nickerson1, 1University of Georgia, Athens, 2Oregon State University, Corvallis, 3Prince Agri Products Inc., Quincy, IL.
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**Breeding and Genetics**

**Dairy Cattle Breeding II**

*Chair: John B. Cole, Animal Improvement Programs Laboratory, ARS-USDA, Beltsville, MD*

2:00 PM 707  
**Methods for the assessment of milk coagulation properties: a genetic analysis.**  

2:15 PM 708  
**Genetic relationships between fertility and content of major fatty acids in milk for first-parity Walloon Holstein cows.**  
C. Bastin*, N. Gengler1,2, and H. Soyeurt1,2, *University of Liège, Gembloux Agro-Bio Tech, Animal Science Unit, Gembloux, Belgium,* 1National 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*, C. Bastin*, F. Miglior1,2, A. Sewalem*, L. R. Schaeffer*, J. Jamrozik*, and V. Osborne*, CGIL, *Dept. of Animal and Poultry Science, University of Guelph, Guelph, ON, Canada,* 1University of Liège, Gembloux Agro-Bio Tech, Gembloux, Belgium,* 2Guelph Food Research Centre, Agriculture and Agri-Food Canada, Guelph, ON, Canada,* 3Canadian Dairy Network, Guelph, ON, Canada,* 4Centre 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*, F. Miglior1,2, and G. Kistemaker2, 1Agriculture and Agri-Food Canada, Guelph, Ontario, Canada,* 2Canadian Dairy Network, Guelph, Ontario, Canada.

3:15 PM 712  
**Modeling of residual feed intake for primiparous dairy cow using orthogonal polynomial random regression.**  

3:30 PM 713  
**Genetic association of days open with feed intake and efficiency.**  
J. E. Vallimont1, C. D. Dechow*, J.M. Daubert1, M. W. Dekleva1, and J. W. Blum1, 1Pennsylvania State University, University Park,* 2University of Bern, Bern, Switzerland.

**Breeding and Genetics**

**Molecular Genetics**

*Chair: Catherine W. Ernst, Michigan State University*

2:00 PM 714  
**A comparison of six protocols for isolation of high quality and quantity ovine genomic DNA suitable for microarray analysis.**  
A. Psifidi1, C. I. Dovas1, G. Bramis1, G. Arsenos1, and G. Banos*, 1Department of Animal Production, Faculty of Veterinary Medicine, Aristotle University of Thessaloniki, GR 54124, Thessaloniki, Greece,* 2Laboratory of Microbiology and Infectious Diseases, Faculty of Veterinary Medicine, Aristotle University of Thessaloniki, GR 54124, Thessaloniki, Greece.
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<tr>
<td>3:00 PM</td>
<td>718</td>
<td>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.</td>
<td>Ch. Kuehn*, C. Kalbe, R. Brunner, T. Goldammer, and R. Weikard, Leibniz Institute for Farm Animal Biology (FBN), Dummerstorf, Germany.</td>
</tr>
<tr>
<td>3:15 PM</td>
<td>719</td>
<td>Sound and efficient designs and models for RNA-seq experiments with application in animal genomics.</td>
<td>J. P. Steibel* and P. Reeb, Michigan State University, East Lansing.</td>
</tr>
</tbody>
</table>

### Dairy Foods

**Cheese**

*Chair: Randy Brandsma, Schreiber Foods*

- **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.  

- **2:45 PM** 723 | In situ proteolytic activity of *Lactobacillus helveticus* and stretchability of Swiss-type cheese.  

- **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. Elias-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.

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.

2:45 PM 731 Effect of methane emission reducing diet on coagulation properties of bovine milk.
A. Aprianita*, O. N. Donkor, P. J. Moate, M. J. Auldist, J. S. Greenwood, W. J. Wales, and T. Vasiljevic, School of Biomedical and Health Sciences, Faculty of Health, Engineering and Science, Victoria University, Melbourne, Victoria, Australia, 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* and R. Jimenez-Flores, Cal Poly Biomedical Engineering, San Luis Obispo, Cal Poly, DPTC, San Luis Obispo.

3:30 PM 734 Mid-infrared predictions of lactoferrin content in bovine milk.

3:45 PM 735 First assessment of diffusion coefficients in model cheese by fluorescence recovery after photobleaching (FRAP) analysis.

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.

2:15 PM 737 Effects of serum protein-based arrival formula and serum protein supplement (Gammulin) on plasma metabolites in transported dairy calves.
Meat Science and Muscle Biology

Lamb and Pork Quality and Muscle Biology and Meat Products

Chair: Kasey Carlin, North Dakota State University

2:00 PM 746 Carcass and meat attributes of Red Sokoto buck goats as influenced by post-slaughter processing methods.
A. B. Omojola*, E. S. Apat*, and O. O. Olusola†, University of Ibadan, Ibadan, Oyo State, Nigeria, 2Glabisi Onabanjo University, Ago Iwoye, Ogun State, Nigeria, 3University of Ibadan, Ibadan, Oyo State, Nigeria.

2:15 PM 747 Yield of West African dwarf buck goats slaughtered at different weights.
A. B. Omojola*, S. Attah*, and O. O. Olusola†, University Of Ibadan, Ibadan, Nigeria, University of Agriculture, Markurdi, Nigeria, Markurdi, Nigeria, University of Ibadan, Ibadan, Nigeria.

2:30 PM 748 Fatty acid composition of muscles from Sarda suckling lamb reared indoor and outdoor.

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.

3:15 PM 751 Intrauterine crowding impairs formation as well as growth of secondary myofibers.
C. E. Pardo*, A. Koller-Bähler†, M. Kreuzer‡, and G. Bee**, Agroscope Liebefeld Posieux, Postieux, Switzerland, Department of Agricultural and Food Science, Zurich, Switzerland.
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.

SIFT-MS identifies unique volatile masses in 24 h post-mortem loins from Berkshire- and Landrace-influenced swine.

Nonruminant Nutrition
Feed Ingredients/Feed Additives
Chair: Brian Kerr, USDA-ARS-NLAE, Ames, IA
386-387

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*, K. Roneker, M. Huntley, and X. G. Lei, 1Cornell University, Ithaca, NY, 2Cellana, Kailua-Kona, HI.

Effects of soybean meal of different origins and micronization of high protein soybean meal on nutrient digestibility and productive performance of weanling pigs.

Effects of adding cracked corn to a pelleted supplement for nursery and finishing pigs.
C. B. Paulk*, A. C. Fahrenholz, L. McKinney, J. D. Hancock, K. C. Benhke, J. C. Ebert, and J. J. Ohlde, 1Kansas State University, Manhattan, 2Key Feeds, Clay Center, KS.

Inulin, alfalfa and citrus pulp in diets for piglets: Effects on digestibility and metabolism of N.

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*, I. N. Roman-Muniz, B. D. Willson, and S. L. Archibeque, 1Colorado State University, Department of Animal Sciences, Fort Collins, 2Colorado State University, Department of Mechanical Engineering, Fort Collins.

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*, R. Arentson, and J. F. Patience, 1Iowa State University, Ames, 2Elanco Animal Health, Greenfield, IN.

Dietary nucleotides as an alternative to antibiotic growth promoters (AGP) for nursery pigs.

In vitro fermentative characteristics of citrus pulp, apple pomace and inulin combined in increasing levels with a pre-digested dog food.
## Nonruminant Nutrition Symposium

**Nutrition and Gut Microbiome**

**Chair:** James E. Pettigrew, University of Illinois

**Sponsors:** EAAP, Pancosma

### Session 383-385

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<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Presenters</th>
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<tbody>
<tr>
<td>2:00 PM</td>
<td>764</td>
<td>Whole-body systems approaches for gut microbiota-targeted, preventive healthcare.</td>
<td>L. Zhao*, Shanghai Jiao Tong University, Shanghai, China.</td>
</tr>
<tr>
<td>2:30 PM</td>
<td>765</td>
<td>Dietary modulation of the gut microbiota by prebiotics and probiotics.</td>
<td>G. R. Gibson*, University of Reading, Reading, UK.</td>
</tr>
</tbody>
</table>
| 3:00 PM| 766     | Effect of dietary change on equine and swine gut microbiota.         | K. Daly*, A. Darby*, N. Hall*, C. Proudman*, D. Bravo*, and S. P. Shirazy-Beechey*;  
Department of Molecular and Cellular Physiology, University of Liverpool, Liverpool, UK;  
Department of Functional and Comparative Genomics, University of Liverpool, Liverpool, UK;  
Equine Division, Department of Veterinary Clinical Sciences, University of Liverpool, Liverpool, UK;  
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.                      |
| 4:30 PM|         | Questions                                                            |                                                                                                                     |

## Physiology and Endocrinology

**Nutritional Physiology**

**Chair:** Kevin Harvatine, Penn State University

### Session 393

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<tr>
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<th>Session</th>
<th>Title</th>
<th>Presenters</th>
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</table>
School of Agronomy, UDELAR, Montevideo, Uruguay;  
National Research Institute for Agriculture, Tacuarembó, 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*, J. P. Schoonmaker, R. P. Lemenager, and G. A. Bridges;  
Purdue University, West Lafayette, IN;  
University of Minnesota, Grand Rapids. |
Texas AgriLife Research, Overton;  
Texas AgriLife Research, College Station;  
Texas AgriLife Research, Uvalde. |
Texas AgriLife Research, Overton;  
Texas AgriLife Research, College Station;  
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, A. Bach, and A. Aris;  
Department of Ruminant Production, IRTA, Caldes de Montbui, Spain;  
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*, L. A. Helser², M. D. Utts, L. H. Cruppe¹, F. M. Abreu¹, G. E. Fogle¹, J. M. DeJarnette¹, and M. L. Day¹, ¹The Ohio State University, Columbus, ²Select Sires Inc., Plain City, OH.


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*, D. Graugnard¹, D. H. Keisler², B. J. Bradford³, L. K. Mamedova³, J. K. Drackley¹, and J. J. Loor³, ¹University of Illinois, Urbana, ²University of Missouri, Columbia, ³Kansas State University, Manhattan.

Production, Management and the Environment
Dairy Facilities
Chair: Stephanie Hill, Mississippi 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.


2:30 PM 782 Effectiveness of fly traps and baits at three primary fly sites on Florida dairy farms. M. E. Sowerby*¹ and J. A. Hogsette², University of Florida, Gainesville, 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.


3:30 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. Swiger¹*, K. J. Lager¹, T. R. Bilby¹, B. R. Henderson², R. G. S. Bruno², and E. R. Jordan³, Texas AgriLife Extension and Research, Stephenville, Texas AgriLife Extension, Canyon, 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*, J. Dijkstra¹, J. J. G. C. van den Borne¹, and A. Bannink², Wageningen University, Wageningen, the Netherlands, Wageningen UR Livestock Research, Lelystad, the Netherlands.
2:15 PM 788  

**2010 National survey of barriers related to precision phosphorus feeding.**

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*, P. H. Robinson, and J. E. Garrett, 1Department of Animal Science, University of California, Davis, 2Quali 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*, T. Takagi, and I. Shinzato, 1Spruce Haven Farm and Research Center, Auburn, NY; 2Ajinomoto Co., Inc., Tokyo, Japan.

3:00 PM 792  

**Characterizing the effect of Amaferm on forage NDF digestibility.**
J. E. Nocek* and H. Jensen, 1Spruce Haven Farm and Res. Ctr, Auburn, NY; 2Biozyme 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*, E. C. Titgemeyer, B. J. Bradford, J. F. Smith, and C. A. Macgregor, 1Kansas State University, Manhattan, KS, 2Grain 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.

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**Small Ruminant Symposium**

**Advancements in Genetic Selection of Small Ruminants for Performance and Parasite Resistance**
Chair: Kenneth Andries, Kentucky State University
Sponsors: AAPA, AMPA

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.**

4:55 PM  

Roundtable Discussion

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**Teaching/Undergraduate and Graduate Education Symposium**

**Adapting Our Teaching to Meet Current and Emerging Societal Needs**
Chair: Wesley Greene, Ohio State University, Wooster

2:00 PM 800  

**Effecting change in teaching and learning in the agricultural sciences.**
R. Kirby Barrick*, University of Florida.
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<tr>
<th>Time</th>
<th>Session</th>
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<th>Presenter(s)</th>
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<tr>
<td>2:40 PM</td>
<td>801</td>
<td>Perspectives on using values-based communications as a tool for preparing animal science students to address consumer trust issues challenging the animal industry.</td>
<td>J. L. Garrett*, JG Consulting Services LLC, Dowling, MI.</td>
</tr>
<tr>
<td>3:00 PM</td>
<td>802</td>
<td>Course and activities based learning teams: A method of enhancing the first-year university experience.</td>
<td>M. D. Kenealy*, Iowa State University.</td>
</tr>
<tr>
<td>3:20 PM</td>
<td>Break</td>
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<tr>
<td>3:30 PM</td>
<td>803</td>
<td>Innovative and effective practices for student development—What are the difference makers?</td>
<td>D. Mulvaney*, Auburn University, Auburn, AL.</td>
</tr>
<tr>
<td>3:50 PM</td>
<td>804</td>
<td>Best practices in designing undergraduate research experiences in animal science curricula.</td>
<td>C. Rosenkrans*, University of Arkansas, Fayetteville.</td>
</tr>
<tr>
<td>4:10 PM</td>
<td>805</td>
<td>Casting a Line—Creating a national Scholarship of Teaching and Learning (SoTL) for animal sciences: Adapting to the gaps through SoTL and networking.</td>
<td>M. A. Wattiaux*, University of Wisconsin-Madison, Madison.</td>
</tr>
<tr>
<td>4:30 PM</td>
<td>806</td>
<td>Casting a Line—Multi-institutional collaborations to enhance animal science education.</td>
<td>D. L. Boggs*, Kansas State University, Manhattan.</td>
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<tr>
<td>4:50 PM</td>
<td>Discussion</td>
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**ADSA Production Division Symposium**

**Current and Future Determinants of Dairy Product Pricing**

Chair: Tony Capuco, USDA, ARS 288-289

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<tr>
<td>3:00 PM</td>
<td>807</td>
<td>Factors that are important in determining US milk prices.</td>
<td>D. S. Brown*, Food and Agricultural Policy Research Institute, University of Missouri, Columbia.</td>
</tr>
<tr>
<td>4:30 PM</td>
<td>809</td>
<td>Producing for a global export market.</td>
<td>M. Piper*, Fonterra (USA) Inc., Rosemont, IL.</td>
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<tr>
<td>5:15 PM</td>
<td>Discussion</td>
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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

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<tbody>
<tr>
<td>8:30 AM</td>
<td>I. Dairy calving management: Dystocia and timing for intervention.</td>
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<tr>
<td>8:45 AM</td>
<td>II. Dairy calving management: Effect of perineal hygiene scores on metritis.</td>
</tr>
<tr>
<td>9:00 AM</td>
<td>Dam heat load affects neonatal calves’ bacterial levels and innate immunity.</td>
</tr>
<tr>
<td>9:15 AM</td>
<td>Antisecretory factor counteracts calf diarrhea and increases daily weight gain.</td>
</tr>
<tr>
<td>9:30 AM</td>
<td>Innate immune function of Holstein calves after commingling.</td>
</tr>
<tr>
<td>9:45 AM</td>
<td>Risk factors and impact of postpartum anovulation in dairy cows.</td>
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<tr>
<td>10:00 AM</td>
<td>Inflammation and infection of the reproductive tract in dairy cows.</td>
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<tr>
<td>10:15 AM</td>
<td>Physiological and behavioral characteristics related to vitality of newborn dairy calves and the efficiency of absorption of immunoglobulins.</td>
</tr>
<tr>
<td>10:30 AM</td>
<td>The effect of omega-3 supplementation on the immune response of Holstein calves.</td>
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<tr>
<td>10:45 AM</td>
<td>Impact of intrauterine dextrose therapy on conception of lactating dairy cows with clinical endometritis.</td>
</tr>
<tr>
<td>11:00 AM</td>
<td>Effect of propylene glycol in fresh cows diagnosed with subclinical ketosis on milk yield and resolution of ketosis.</td>
</tr>
</tbody>
</table>
Association between serum metabolite concentrations in the transition period and milk production in dairy cows. N. Chapinal*1,2, M. E. Carson1, S. L. Leblanc3, K. E. Leslie3, S. Godden3, M. Capel4, J. E. P. Santos3, M. W. Overton6, and T. F. Duffield1, 2Department of Population Medicine, University of Guelph, Guelph, ON, Canada, 3Animal Welfare Program, University of British Columbia, Vancouver, BC, Canada, 4Department of Veterinary Population Medicine, University of Minnesota, St. Paul, 5Perry Veterinary Clinic, Perry, NY, 6Department of Animal Science, University of Florida, Gainesville, 7Department of Population Health, University of Georgia, Athens.

Dairy Foods
Milk Protein & Enzymes
Chair: Rafael Jimenez-Flores, Cal Poly, San Luis Obispo
298-299

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.

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.

Controlling whey proteins spontaneous self assembly.

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.

In situ structural investigations of the milk fat globule membrane revealing heterogeneities and sphingomyelin-rich domains.
C. Lopez*, INRA-STLO, Rennes, France.

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.

Antimicrobial role of serum amyloid A3 in goat milk.
A. Doménech*, J. G. Raynes3, A. Arís3, A. Bach1,3, and A. Serrano1, 1Department of Ruminant Production, IRTA, Caldes de Montbui, Spain, 2Immunology Unit, Department of Infectious and Tropical Diseases, London School of Hygiene and Tropical Medicine, London, United Kingdom, 3ICREA, Barcelona, Spain.

Horse Species Symposium
Disaster Preparedness—Insights to Aid the Equine and Livestock Industries
Chair: Julia McCann, Virginia Tech
297

Introduction
8:30 AM

Disaster readiness: Real life in Louisiana.
R. S. McConnico, Department of Veterinary Clinical Sciences, School of Veterinary Medicine, Louisiana State University.

Reducing the impact of a disaster through planning.
R. M. Dwyer, Maxwell H. Gluck Equine Research Center, University of Kentucky.

Agricultural extension’s role in large animal emergency management assessment and recovery plans.
D. H. Sigler, Texas A&M University, College Station.

Discussion of case scenarios and question/answer session
10:20 AM
Lactation Biology 2
Chair: Darryl Hadsell, Baylor College of Medicine

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*, J. S. Liesman1, M. J. VandeHaar2, J. Dijkstra2, A. M. van Vuuren1, and J. van Baal1, 1Wageningen University, Wageningen, the Netherlands, 2Michigan State University, East Lansing.

8:45 AM 830 Effect of timing of feed intake on circadian pattern of milk synthesis.

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. Vahmani1*, K. Glover2, L. A. MacLaren2, J. Green-Johnson3, and A. Fredeen3, 1Dalhousie University, Halifax, NS, Canada, 2Nova Scotia Agricultural College, Truro, NS, Canada, 3University 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. Stelwagen1*, M. K. Broadhurst1, K. Kim2, A. J. Molenaar2, D. P. Harris1, and T. T. Wheeler3, 1Agri-Search Ltd., Hamilton, New Zealand, 2AgResearch 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. Phyn1, T. M. Grala2, J. K. Kay2, A. G. Rius1, S. R. Morgan1, and J. R. Roche1*, 1DairyNZ Ltd., Hamilton, New Zealand, 2DairyNZ 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*, J. Dobson1, K. Oden2, A. Molenaar2, R. Murney1, K. Swanson1, and K. Stelwagen1, 1AgResearch Ltd., Ruakura Research Centre, Hamilton, New Zealand, 2Agri-Search Ltd., Hamilton, New Zealand.

10:00 AM 836 Effect of heat stress during the dry period on insulin sensitivity of multiparous dairy cows.

10:15 AM 837 Dry period seasonal effects on the subsequent lactation.

Meat Science and Muscle Biology Symposium
Extracellular Matrix in Skeletal Muscle Development and Meat Quality
Chair: Min Du, University of Wyoming

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 extracellular 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

8:30 AM 842 Determining the energy digestibility of mold damaged corn selected for low mycotoxin content in finishing pigs.

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.
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†, R. W. Todd†, D. B. Parker†, M. Rhoades†, and A. Mason†, USDA-ARS, Conservation & Production Research Lab, Bushland, TX, †USDA-ARS-MARC, Clay Center, NE, ‡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. Dehareng1, E. Froidmont1, H. Soyeurt1, A. D. Beaulieu1, 1University of Liège, Gembloux Agro-Bio Tech, Animal Science Unit, Gembloux, Belgium, 2National 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*, C. A. Rotz2, and F. M. Mitloehner1, 1University of California, Davis, 2USDA/Agriculture Research Service, Pasture Systems and Watershed Management Research Unit, University Park, CA.

9:45 AM 853 Effects of calf hutch flooring on air quality and exposure.
M. S. Calvo*, M. van der Voort†, J. A. McGarvey, J. P. Reynolds, T. L. Armitage, E. A. M. Bokkers, and F. M. Mitloehner, 1Department of Animal Science, University of California, Davis, 2Department of Animal Sciences, North Carolina State University, Raleigh, 3North Carolina State University, Raleigh, 4Hanor Company Inc., Franklin, KY.

10:00 AM 854 Feeding saponins to reduce air emissions from steers.
L. Eastwood†, A. D. Beaulieu†, and P. Leterme†, Prairie Swine Centre Inc, Saskatoon, SK, Canada, Animal and Poultry Science, University of Saskatchewan, Saskatoon, SK, Canada, 2Cargill - R & D Centre Europe, Havenstraat, Vilvoorde, Belgium.

10:15 AM 855 Development of a user-friendly online system to quantitatively measure metabolic gas fluxes from ruminants.
P. Zimmerman†, S. Zimmermann, S. Utsumi, and D. Beebe, 1C-‐Lock Inc, Rapid City, SD, 2Michigan 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†, J. A. McGarvey, Y. Pan, Y. Zhao, and F. M. Mitloehner, 1Department of Animal Science, University of California-Davis, Davis, 2United States Department of Agriculture, Agricultural Research Service, Albany, CA.
Ruminant Nutrition

Beef: Supplements

Chair: Holly Boland, Mississippi State University

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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*, R. K. Miller1, J. C. Bailey1, J. T. Walter1, A. N. Hafla1, E. D. Mendes1, D. S. Hale1, T. Machado2, L. O. Tedeschi1, and G. E. Carstens1, 1Texas A&M University, College Station, 2Texas 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.

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*, D. A. Kenny1, C. J. Creevey1, and S. M. Waters1, 1Animal and Bioscience Department, Animal and Grassland Research and Innovation Centre, Teagasc, Grange, Dunsany, Co. Meath, Ireland, 2School 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.

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. Marques1, J. R. R. Dórea1, A. M. Pedroso1, A. W. Bispo1, C. G. Martins1, W. F. Angolini1, and F. A. P. Santos2, 1University of Sao Paulo, Piracicaba, SP, Brazil, 2Embrapa Cattle Southeast, Sao Carlos SP, Brazil.

9:45 AM 863 Evaluation of two complete-feed receiving diets.
C. J. Schneider*, B. L. Nuttelman1, K. M. Rolfe1, W. A. Griffin1, T. J. Klopfenstein1, R. A. Stock1, and G. E. Erickson1, 1University of Nebraska, Lincoln, 2Cargill 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. Brooks1, R. M. Harvey2, N. F. Johnson2, and M. S. Kerley2, 1North Carolina State University, Raleigh, 2University 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, Athens.

10:30 AM 866 Effects of energy supplementation frequency and forage quality on performance of replacement beef heifers.
P. Moriel1, R. F. Cooke1, F. N. T. Cooke1, E. Alves1, L. Custodio1, D. W. Bohnert1, J. M. B. Vendramini2, and J. D. Arthington2, 1Oregon State University–Eastern Oregon Agricultural Research Center, Burns, 2University 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.

11:00 AM 868 Effect of sorghum grain supplementation on glucose metabolism 1: Bovine.
M. Aguerre*, M. Cajarville3, A. L. Astessiano2, C. Cajarville1, and J. L. Repetto1, 1Departamento de Bovinos, Facultad de Veterinaria, Universidad de la República, Montevideo, Uruguay, 2Departamento de Producción Animal y Pasturas, Facultad de Agronomía, Universidad de la República, Montevideo, Uruguay, 3Departamento 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*, C. Cajarville3, and J. L. Repetto1, 1Departamento de Bovinos, Facultad de Veterinaria, Universidad de la República, Montevideo, Uruguay, 2Departamento de Nutrición Animal, Facultad de Veterinaria, Universidad de la República, Montevideo, Uruguay.
**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.  

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 Research Center, 31027 Toulouse Cedex 03, France.

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**Teaching/Undergraduate and Graduate Education**
Chair: Wesley Greene, Ohio State University, Wooster

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8:30 AM  887  **Perceptions of livestock practices by students entering introductory animal science courses.**
G. A. Holub*, C. T. Boelman1, and S. W. Ramsey1, 3Texas A&M University, College Station, 3Texas AgriLife Extension, College Station.

8:45 AM  888  **Demographics and eating habits of students entering introductory animal science courses.**
G. A. Holub*, C. T. Boelman1, and S. W. Ramsey1, 3Texas A&M University, College Station, 3Texas 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*, D. A. Mallory1, D. J. Patterson1, M. F. Smith1, J. L. M. Vasconcelos2, R. F. G. Peres3, and E. R. Vilela4,
1University of Missouri, Columbia, 2FMVZ - UNESP, Botucatu, SP, Brazil, 3Agronecologia Fazenda Brasil, Barra do Garças, MT, Brazil, 4Lageado 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*, R. M. Legere1, and A. Rodríguez2, 3Sul Ross State University, Alpine, TX, 3University of Puerto Rico, Mayagüez, PR.

10:30 AM  895  **Graduate student course curriculum in animal science departments.**

10:45 AM  896  **Increasing awareness of the Multimedia Educational Resource for Learning and Online Teaching (MERLOT) website.**
J. Bertrand*4 and M. Rieger2, 1University of Georgia, Athens, 2University of Florida, Gainesville.

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**OTHER EVENTS**

**Mixed Models**

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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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