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ADSA Dairy Foods Division Schedule of Events

Sunday, July 12

5:00 pm – 6:00 pm ADSA Dairy Foods Division Council Meeting, Convention Center, Room 523a

Monday, July 13

7:30 am – 9:30 am Posters: Dairy Foods: Dairy Foods/Cheese, Convention Center, Room 220cde

9:30 am – 12:15 pm Graduate Student Paper Competition: National ADSA Dairy Foods, Convention Center, Room 510ac

1:30 pm – 5:00 pm SYMPOSIUM: Dairy Foods: Milk Protein Fractionation Symposium, Convention Center, Room 513cd

Tuesday, July 14

7:30 am – 9:30 am Posters: Dairy Foods: Dairy Foods Processing/Cheese/Dairy Micro, Convention Center, Room 220cde

10:30 am – 11:30 am Dairy Foods: Danisco International Dairy Science Award Lecture, Convention Center, Room 513ef

11:30 am – 12:30 pm ADSA Dairy Foods Division Business Meeting, Convention Center, Room 513ef

12:30 pm – 2:00 pm ADSA DF Division Milk Proteins & Enzyme Committee, Convention Center, Room 523a

12:30 pm – 2:00 pm ADSA DF Division Program Planning Lunch, Convention Center, Room 523b

2:00 pm – 4:45 pm Dairy Foods: Dairy Foods 1, Convention Center, Room 513cd

2:00 pm – 4:45 pm Dairy Foods: Dairy Foods/Cheese, Convention Center, Room 513ef

Wednesday, July 15

7:30 am – 9:30 am Posters: Dairy Foods: Dairy Products/Chemistry/Enzyme, Convention Center, Room 220cde

10:30 am – 12:30 pm Dairy Foods: Dairy Foods/Microbiology, Convention Center, Room 513cd

2:00 pm – 4:30 pm SYMPOSIUM: Dairy Foods: Challenges and Opportunities of Microencapsulation Technology in Application to Dairy Foods, Convention Center, Room 513ef

2:00 pm – 4:30 pm SYMPOSIUM: Dairy Foods: Milk Protein and Enzymes Symposium, Convention Center, Room 513cd

Thursday, July 16

8:30 am – 10:45 am Dairy Foods: Dairy Foods Processing/Enzymes, Convention Center, Room 513cd

NOTES

Sunday, July 12

SYMPOSIA AND ORAL SESSIONS

Triennial Reproduction Symposium

Challenges and Opportunities Facing Livestock Reproduction in the 21st Century

Session 1: Global perspectives on animal health and livestock reproduction

Chair: Rob Knox, University of Illinois

Sponsors: ASAS Foundation, EAAP, Lauderdale Appreciation Club, Intervet/Schering-Plough Animal Health, and Pfizer Animal Health

511cf

- 8:00 AM Welcome and Introductions
- 8:05 AM 1 A global perspective on the evolution of animal agriculture. R. D. Green*, *Pfizer Animal Genetics, Sutton, NE.*
- 8:50 AM 2 Impact of animal health on endocrinology and reproduction in dairy cows. D. Wolfenson*¹, Y. Lavon¹, R. Meidan¹, Z. Roth¹, and G. Leitner², ¹*The Hebrew University, Rehovot, Israel*, ²*The Veterinary Institute, Bet-Dagan, Israel.*
- 9:35 AM 3 Challenges in matching the physiology and productivity of the modern commercial sow. G. R. Foxcroft*, *University of Alberta, Edmonton, Alberta, Canada.*
- 10:20 AM Break
- 10:50 AM 4 The impact of amino acid nutrition on pregnancy outcome in pigs: mechanisms and implications for swine production. G. Wu*¹, F. W. Bazer¹, G. A. Johnson¹, S. W. Kim², and T. E. Spencer¹, ¹*Texas A&M University, College Station*, ²*North Carolina State University, Raleigh.*
- 11:35 AM **Casida Award Program**

Session 2: Genetic influences on animal reproduction

Chair: Rob Knox, University of Illinois

Sponsors: ASAS Foundation, Lauderdale Appreciation Club, Intervet/Schering-Plough Animal Health, and Pfizer Animal Health

511cf

- 1:30 PM 5 Application of genome based technologies for identifying genes and their expression that are important for livestock reproduction. J. F. Taylor*, S. D. McKay, J. E. Decker, D. Vasco, M. C. McClure, J. W. Kim, M. A. Rolf, T. Taxis, and R. D. Schnabel, *University of Missouri, Columbia.*
- 2:15 PM 6 Application of molecular and genetic tools for identification of reproductive traits to create and establish commercial lines of swine. T. Rathje*, *Danbred North America, Columbus, NE.*
- 3:00 PM Break
- 3:30 PM 7 Epigenetics: A mechanism of adaptation to perinatal events. R. Lane*, R. McKnight, L. Joss-Moore, Q. Fu, and X. Ke, *Division of Neonatology, University of Utah Department of Pediatrics, Salt Lake City.*
- 4:15 PM 8 Impact of dam nutrition on subsequent growth and reproduction in beef heifers. R. N. Funston*, *University of Nebraska, West Central Research and Extension Center, North Platte.*

OTHER EVENTS

Late Breaking/Original Research

Sponsors: Monsanto and Lallemand

510ac

3:00 PM–5:00 PM

Monday, July 13

POSTER PRESENTATIONS

Animal Behavior and Well-Being

- M1 Validation of footprint analysis to describe sow gait. J. Grégoire*^{1,2}, R. Bergeron³, S. D'Allaire⁴, M.-C. Meunier-Salaün⁵, and N. Devillers¹, ¹AAFC, Dairy and Swine R&D Centre, Sherbrooke, Qc, Canada, ²University Laval, Ste Foy, Qc, Canada, ³University of Guelph, Alfred, On, Canada, ⁴University of Montreal, Faculty of Veterinary Medicine, St Hyacinthe, Qc, Canada, ⁵INRA-SENAH, St-Gilles, France.
- M2 Changes of serum HSP70 during weaning and effects of NCG and arginine on serum HSP70 in early-weaned piglets. X. Wu, X. Zhou, Y. Gao, Y. Yin*, and R. Huang, Key Laboratory for Agro-ecological Processes in Subtropical Region, Institute of Subtropical Agriculture, the Chinese Academy of Sciences, Changsha, China.
- M3 Effects of feed-borne *Fusarium* mycotoxins on histological changes in lymphoid organs of turkeys. C. K. Girish*, T. K. Smith, P. Anil Kumar, and G. N. Girgis, University of Guelph, Guelph, Ontario, Canada.
- M4 Seasonal cow behavior in a large dairy herd in central Iran. R. Kowsar¹, A. Nikkha*^{2,1}, M. Khorvash¹, M. Alikhani¹, and G. R. Ghorbani¹, ¹Isfahan University of Technology, Isfahan, Iran, ²Zanjan University, Zanjan, Iran.
- M5 Automated recording of sow posture and locomotion using accelerometers. N. Devillers*¹, J. Déom^{1,2}, C. Corriveau¹, J. Grégoire^{1,3}, and R. Bergeron⁴, ¹AAFC, Dairy and Swine R&D Centre, Sherbrooke, QC, Canada, ²University of Sherbrooke, Sherbrooke, QC, Canada, ³University Laval, Ste Foy, QC, Canada, ⁴University of Guelph, Alfred, ON, Canada.
- M6 The effects of farm-to-slaughter plant pig management on pork quality. L. N. Edwards*¹, T. Grandin¹, T. E. Engle¹, M. J. Ritter², A. Sosnicki³, and D. B. Anderson¹, ¹Colorado State University, Fort Collins, ²Elanco Animal Health, Greenfield, IN, ³PIC, Hendersonville, TN.
- M7 Comparison of slaughter methods with or without previous stunning on animal welfare and bleeding efficiency in bulls. J. E. Gomes Neves¹, M. J. R. Paranhos da Costa¹, R. Roça², N. G. Gregory³, and L. Faucitano*⁴, ¹Faculdade de Ciências Agrárias e Veterinárias, Universidade Estadual Paulista Julio de Mesquita Filho, Jaboticabal, Sao Paulo, Brazil, ²Faculdade de Medicina Veterinária e Zootecnia, Universidade Estadual Paulista Julio de Mesquita Filho, Botucatu, Sao Paulo, Brazil, ³Royal Veterinary College, London, UK, ⁴Agriculture and Agri-Food Canada, Sherbrooke, Canada.
- M8 Water access and the physiological well-being of Holstein slaughter cows. K. D. Vogel*¹, J. R. Claus², T. Grandin¹, G. R. Oetzel³, and D. M. Schaefer², ¹Colorado State University, Fort Collins, ²University of Wisconsin, Madison, ³University of Wisconsin, Madison.
- M9 Changes in temperament score as a result of handling do not affect voluntary feed intake. T. D. Maddock*¹, J. L. Foster¹, M. A. Elzo², and G. C. Lamb¹, ¹North Florida Research and Education Center, Marianna, ²University of Florida, Gainesville.
- M10 Effect of group change on lying time and milk yield of dairy cattle. I. Guasch*¹ and A. Bach^{1,2}, ¹IRTA-Ruminant Production, Caldes de Montbui, Spain, ²ICREA, Barcelona, Spain.
- M11 Effect of rubber flooring in a freestall dairy barn on cow behavior and milk production. J. Pempek* and N. Botheras, The Ohio State University, Columbus.
- M12 Effect of feed bin stocking density on the feeding and standing behavior of postpartum dairy cows. P. D. Krawczel*^{1,2}, D. M. Weary³, R. J. Grant¹, and M. A. G. von Keyserlingk³, ¹William H. Miner Agricultural Research Institute, Chazy, NY, ²The University of Vermont, Burlington, ³University of British Columbia, Vancouver, BC, Canada..
- M13 Assessing within- and between-herd variation in lying behavior of dairy cows. K. Ito*, D. M. Weary, and M. A. G. von Keyserlingk, Animal Welfare Program, University of British Columbia, Canada.
- M14 Effects of pair versus single housing on behavior and performance of dairy calves before and after weaning from milk. A. De Paula Vieira*^{1,2}, M. A. G. von Keyserlingk¹, and D. M. Weary¹, ¹University of British Columbia, Vancouver, BC, Canada, ²Capes Foundation, Brasilia, DF, Brazil.
- M15 Flavors affect the feeding behaviour of ewes fed two unpalatable feeds. A. Mereu¹, V. Giovanetti², G. Molle², I. Ipharraguerre³, and A. Cannas*¹, ¹Dipartimento di Scienze Zootecniche, University of Sassari, Sassari, Sardinia, Italy, ²Agris Sardegna, DiRPA, Olmedo, Sardinia, Italy, ³LUCTA SA, Barcelona, Spain.
- M16 When and where do cows defecate? M. Villettaz Robichaud*¹, A. M. de Passillé², and J. Rushen², ¹Université Laval, Québec, Québec, Canada, ²Agriculture and Agri-Food Canada, Agassiz, British Columbia, Canada.

Animal Health Stress, Respiratory Disease, Small Ruminants

- M17 Effects of dehydration and rehydration on the thermoregulation of heat stressed Angus steers. B. Scharf*, L. E. Wax, T. J. Evans, and D. E. Spiers, *University of Missouri, Columbia*.
- M18 Heat stress augments plasma tyrosine-nitrated proteins and lactate-to-pyruvate ratio after repeated endotoxin (LPS) challenge in steers. T. Elsasser*¹, R. Rhoads², S. Kahl¹, R. Collier², L. Baumgard², C. Li¹, and T. Caperna¹, ¹USDA-ARS, Beltsville, MD, ²University of Arizona, Tucson.
- M19 Lack of adaptation to fescue toxicosis under thermoneutral and heat stress conditions. D. E. Spiers*, D. K. Kishore, P. A. Eichen, and E. Moran, *University of Missouri, Columbia*.
- M20 Cyclic heat stress alters the diurnal thermal status of sows during lactation. E. A. Coate*, M. C. Lucy, T. J. Safranski, P. A. Eichen, A. M. Williams, and D. E. Spiers, *University of Missouri, Columbia*.
- M21 Effects of bluetongue virus infection on sperm quality in German test-bulls. K. Kemmerling¹, D. Straet¹, U. Mueller¹, U. Janowitz², and H. Sauerwein*¹, ¹Institute of Animal Science, Physiology and Hygiene Group, University of Bonn, North-Rhine-Westphalia, Germany, ²Rinder-Union-West, Borken, North-Rhine-Westphalia, Germany.
- M22 The use of infrared thermography in the non invasive, automated detection of calves displaying bovine respiratory disease. A. L. Schaefer*¹, C. Bench², J. Basarab³, N. Cook³, E. Okine², J. Colyn¹, B. Chabot¹, D. Froehlich³, L. Holt-Klemic¹, T. Liu¹, and P. Lepage¹, ¹Agriculture and Agri-Food Canada, Lacombe, Alberta, Canada, ²University of Alberta, Edmonton, Alberta, Canada, ³Alberta Agriculture, Lacombe, Alberta, Canada.
- M23 Orbital thermal topography in calves with bovine respiratory disease. A. L. Schaefer¹, C. Bench², N. Cook³, J. Colyn*¹, T. Liu¹, E. Okine², M. Stewart⁴, and J. Webster⁴, ¹Agriculture and Agri-Food Canada, Lacombe, Alberta, Canada, ²University of Alberta, Edmonton, Alberta, Canada, ³Alberta Agriculture, Lacombe, Alberta, Canada, ⁴AgResearch, Hamilton, New Zealand.
- M24 Relationship between ex vivo neutrophil function in response to an enteropathogenic *Escherichia coli* and measures of health and performance of dairy calves. L. G. D. Mendonça*¹, G. Lopes Jr.¹, M. A. Ballou², and R. C. Chebel¹, ¹Veterinary Medicine Cooperative Extension, University of California Davis, Tulare, ²Department of Animal and Food Sciences, Texas Tech University, Lubbock.
- M25 Replacing milk proteins with nucleotides in milk replacers for pre-weaned dairy calves. J. A. Elizondo-Salazar*^{1,2}, C. M. Jones¹, R. F. Leuer¹, and A. J. Heinrichs¹, ¹The Pennsylvania State University, University Park, ²Estación Experimental Alfredo Volio Mata, Facultad de Ciencias Agroalimentarias. Universidad de Costa Rica.
- M26 Association of bovine Fc receptor alpha-chain promoter gene haplotypes with IgG transfer into milk of Chinese Holstein cows. S. S. Li, J. Q. Wang*, H. Y. Wei, D. P. Bu, G. L. Liu, X. L. Dong, and K. L. Liu, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*.
- M27 Predictive measures of fetal distress in calves during delivery. K. E. Hard* and H. D. Tyler, *Iowa State University, Ames*.
- M28 Automated measurement of feeding behavior to detect illness in milk-fed calves. F. T. Borderas^{1,3}, J. Rushen², M. A. G. von Keyserlingk¹, and A. M. de Passillé*², ¹University of British Columbia, Vancouver, BC, Canada, ²Agriculture and Agri-Food Canada, Agassiz, BC, Canada, ³Universidad Autónoma Metropolitana-Xochimilco, Coyoacán, Mexico.
- M29 Age-dependent health status in the goat. M. Worku*, R. C. Noble, and H. Mukhtar, *North Carolina A&T State University, Greensboro*.
- M30 Effect of vitamin E supplementation on naturally acquired parasite infection in lambs. C. E. MacGlaflin¹, A. M. Zajac², K. A. Rego¹, C. S. Petersson-Wolfe², and K. H. Petersson*¹, ¹University of Rhode Island, Kingston, ²Virginia Tech, Blacksburg.
- M31 Analysis of the lipopolysaccharide profiles of *Escherichia coli* O118 and O151 O antigen gene clusters. J. W. Allen*¹, C. DebRoy², L. P. Fratamico³, and A. R. Byers¹, ¹North Carolina A&T State University, Greensboro, ²The Pennsylvania State University, University Park, ³U.S. Department of Agriculture, Agricultural Research Service, Eastern Regional Research Center, Wyndmoor, PA.
- M32 Association of tumor necrosis factor- α (*TNF- α*) gene promoter polymorphisms with hyper-responsiveness to endotoxin (LPS) in calves. S. Kahl*, T. H. Elsasser, M. Proszkowiec-Weglarz, and E. E. Connor, *USDA, Agricultural Research Service, Beltsville, MD*.
- M33 Effect of calf-specific *Bacillus* on health and growth of young calves. D. Wood*, J. Sowinski, and R. Blome, *Animix, Juneau, WI*.
- M34 Feeding colostrum with an esophageal feeder does not reduce IgG absorption in neonatal dairy heifer calves. J. A. Elizondo-Salazar*^{1,2} and A. J. Heinrichs¹, ¹The Pennsylvania State University, University Park, ²Estación Experimental Alfredo Volio Mata, Facultad de Ciencias Agroalimentarias. Universidad de Costa Rica.
- M35 High bacterial concentration in colostrum does not interfere with IgG absorption in neonatal dairy bull calves. J. A. Elizondo-Salazar*^{1,2} and A. J. Heinrichs¹, ¹The Pennsylvania State University, University Park, ²Estación Experimental Alfredo Volio Mata, Facultad de Ciencias Agroalimentarias. Universidad de Costa Rica.

- M36 Abrupt weaning alters leukocyte subsets and functional activity of granulocytes in beef calves. E. M. Lynch^{*1,2}, B. Earley¹, M. McGee³, and S. Doyle², ¹*Teagasc, Animal Bioscience Centre, Dunsany, Co. Meath, Ireland*, ²*Department of Biology, National University of Ireland, Maynooth, Co Kildare*, ³*Teagasc, Grange Beef Research Centre, Dunsany, Co. Meath, Ireland*.

Bioethics

- M37 Measuring and managing for sustainability in dairy production: A stewardship scorecard. G. W. C. Clark^{*}, A. A. Whitman, and J. M. Hagan, *Manomet Center for Conservation Science, Brunswick, ME*.

Breeding and Genetics Beef Breeding, Poultry Breeding, and Genetics of Disease

- M38 Milk production and composition during the first 4 months of lactation of Hereford (HH), Angus (AA) and F1 crosses grazing on native pastures Uruguay. A. Espasandin^{*1}, A. Casal², A. Graña², V. Gutiérrez², and M. Carriquiry¹, ¹*School of Agronomy, UDELAR, Montevideo, Uruguay*, ²*School of Veterinary, UDELAR, Montevideo, Uruguay*.
- M39 Genetic relationships of monounsaturated fatty acid with image analysis traits in Japanese Black cattle. Y. Nakahashi^{*1}, T. Kato², M. Nakamachi¹, N. Murasawa¹, Y. Hamasaki¹, S. Hidaka¹, and K. Kuchida¹, ¹*Obihiro University of A & VM, Obihiro, Hokkaido, Japan*, ²*Tokachi Federation of Agricultural Cooperatives, Obihiro, Hokkaido, Japan*.
- M40 Genetic analysis of growth traits considering the average numerator relationship matrix and a hierarchical Bayes model for Nellore cattle. L. Shiotsuki^{*1}, F. F. Cardoso², J. A. V. Silva II³, and L. G. Albuquerque¹, ¹*Universidade Estadual Paulista, Jaboticabal, Sao Paulo, Brazil*, ²*Embrapa Pecuaria Sul, Bage, Rio Grande do Sul, Brazil*, ³*Alta Genetics, Uberaba, Minas Gerais, Brazil*.
- M41 Estimates of genetic parameters using random regression on B-spline functions for weights from birth to mature in Nellore cattle. A. A. Boligon^{*1}, L. G. Albuquerque¹, M. E. Z. Mercadante², and R. B. Lobo³, ¹*Faculdade de Ciências Agrárias e Veterinárias, UNESP, Jaboticabal, São Paulo, Brazil*, ²*Instituto de Zootecnia, Estação Experimental de Zootecnia de Sertãozinho, Sertãozinho, São Paulo, Brazil*, ³*Faculdade de Medicina de Ribeirão Preto, USP, Ribeirão Preto, São Paulo, Brazil*.
- M42 Estimation of genetic parameters for weights, scrotal circumference and testicular volume in Nellore cattle. A. A. Boligon^{*1}, L. G. Albuquerque¹, J. A. V. Silva², R. C. Sesana¹, and J. B. Junqueira¹, ¹*Faculdade de Ciências Agrárias e Veterinárias, UNESP, Jaboticabal, São Paulo, Brazil*, ²*Alta Genetics Brasil LTDA, Uberaba, Minas Gerais, Brazil*.
- M43 Heritabilities, genetic correlations, and genetic trends for age at first calving and calving intervals in a Colombian Blanco Orejinegro-Angus-Zebu cattle population. O. D. Vergara^{1,3}, M. A. Elzo^{*2}, and M. F. Ceron-Muñoz¹, ¹*University of Antioquia, Medellín, Colombia*, ²*University of Florida, Gainesville,*, ³*University of Córdoba, Monteña, Colombia*.
- M44 Genetic parameters and genetic trends for pre and postweaning growth in a Colombian Blanco Orejinegro-Romosinuano-Angus-Zebu cattle population. O. D. Vergara^{1,3}, M. A. Elzo^{*2}, and M. F. Ceron-Muñoz³, ¹*University of Cordoba, Monteria, Colombia*, ²*University of Florida, Gainesville,*, ³*University of Antioquia, Medellin, Colombia*.
- M45 Genotype by environment interaction in Nellore cattle for 450 day weight. M. G. Dib^{*1}, I. D. P. S. Diaz², F. R. de Araujo Neto², H. N. de Oliveira^{1,2}, R. B. Lobo³, and L. A. F. Bezerra³, ¹*FMVZ-UNESP, Botucatu, SP, Brazil*, ²*FCAV-UNESP, Jaboticabal, SP, Brazil*, ³*FMRP-USP, Ribeirao Preto, SP, Brazil*.
- M46 Random regression analyses using B-spline functions to model growth from birth to adult age in Canchim cattle. F. Baldi^{*1}, L. G. Albuquerque¹, and M. M. Alencar², ¹*Faculdade de Ciências Agrárias e Veterinárias, UNESP, Jaboticabal (SP), Brazil*, ²*Embrapa Pecuária Sudeste, São Carlos (SP), Brazil*.
- M47 Genetic parameter estimates for growth traits in Canchim cattle using random regression models. F. Baldi^{*1}, M. M. Alencar², and L. G. Albuquerque¹, ¹*Faculdade de Ciências Agrárias e Veterinárias, UNESP, Jaboticabal, São Paulo, Brazil*, ²*Embrapa Pecuária Sudeste, São Carlos, São Paulo, Brazil*.
- M48 Performance group in G×E study for genetic evaluation of growth in Brazilian Nellore. L. O. C. Silva^{1,2}, S. Tsuruta^{*1}, J. K. Bertrand¹, A. Gondo², L. A. Josahkian⁴, P. R. C. Nobre⁴, and A. N. Rosa², ¹*University of Georgia, Athens*, ²*EMBRAPA, Campo Grande, MS, Brazil*, ³*CNPq, Brasilia, DF, Brazil*, ⁴*ABCZ, Uberaba, MG, Brazil*.
- M49 Residual feed intake and reproductive performance of heifers sired by high or low RFI EBV bulls. J. M. Bormann^{*1}, D. W. Moser¹, T. T. Marston², and K. C. Olson¹, ¹*Kansas State University, Manhattan*, ²*University of Nebraska, Lincoln*.
- M50 Association between carcass and meat quality traits, and phenotypic residual feed intake, breed composition, and temperament in Angus-Brahman multibreed cattle. M. A. Elzo^{*1}, D. D. Johnson¹, D. G. Riley², G. R. Hansen³, G. C. Lamb⁴, R. O. Myer⁴, J. G. Wasdin¹, and J. D. Driver¹, ¹*University of Florida, Gainesville*, ²*USDA-ARS STARS, Brooksville, FL*, ³*North Carolina State University, Plymouth*, ⁴*North Florida Research and Education Center, Marianna, FL*.

- M51 Temperature and humidity as criteria of between states differences in beef cattle growth rate. M. Lukaszewicz^{1,2}, J. L. Williams^{*1}, J. K. Bertrand¹, and I. Misztal¹, ¹University of Georgia, Athens, ²Polish Academy of Sciences, Jastrzebiec, Poland.
- M52 Multiple-trait genetic analysis of weight at week 8, age at sexual maturity and initial egg weight in Iranian indigenous chickens. H. Farhangfar*, S. M. Hosseini, and M. E. Navidizadeh, *Birjand University, Birjand, Iran.*
- M53 Comparative analyses of some growth traits of straight-runs and separate sex reared broilers. O. T. F. Abanikanda¹, A. O. Leigh¹, M. O. Akinsola¹, M. Orunmuyi², O. N. Coker³, and K. A. Binuyo^{*1}, ¹Lagos State University, Ojo - Lagos, Nigeria, ²Ahmadu Bello University, Zaria, Kaduna State, Nigeria, ³S & D Farms Nigeria Limited, Odeda, Ogun State, Nigeria.
- M54 Analysis of androgen receptor gene in dairy bulls. C. Foresta², A. Garolla², D. Zuccarello², and M. Cassandro^{*1}, ¹University of Padova, Agripolis, Legnaro (PD), Italy, ²University of Padova, Padova, Italy.
- M55 Evidence for a genetic contribution to bovine viral diarrhoea vaccine response in beef calves. X. Fang^{*1}, T. A. Henrickson¹, C. Maltecca², and M. G. Gonda¹, ¹South Dakota State University, Brookings, ²North Carolina State University, Raleigh.
- M56 Estimation of genetic parameters and transmitting ability for Minnesota Johne's milk ELISA test. S. A. Attalla^{*1,3}, A. J. Seykora¹, J. B. Cole², and B. J. Heins¹, ¹University of Minnesota, Saint Paul, ²Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD, ³Cairo University, Giza, Egypt.

Dairy Foods Dairy Foods/Cheese

- M57 Relationship between base and process cheese characteristics. A. Hassan* and N. Nigam, *South Dakota State University, Brookings.*
- M58 Fate of aflatoxin M₁ during manufacture and brining of feta cheese. M. M. Motawee^{*1} and D. J. McMahon², ¹National Organization for Drug Control and Research, Cairo, Egypt, ²Utah State University, Logan.
- M59 The ELISA test to determinate the κ-casein B contents in bulk milk samples: Practical use. A. Rossoni^{*1}, M. Malacarne², C. Nicoletti¹, and A. Summer², ¹ANARB - Italian Brown Cattle Breeders' Association, Bussolengo, Verona, Italy, ²Dip. Produzioni Animali B.V.Q.S.A Università degli Studi di Parma, Parma, Italy.
- M60 Aroma profile characterization of traditional Algerian Bouhezza cheese. S. Carpino^{*1}, T. Rapisarda¹, G. Belvedere¹, and G. Licitra^{1,2}, ¹CoRFiLaC, Regione Siciliana, Ragusa, Italy, ²D.A.C.P.A. University of Catania, Italy.
- M61 Molecular characterization of Algerian cheese Bouhezza by PCR-TTGE. C. Pediliggieri¹, S. Carpino^{*1}, and G. Licitra^{1,2}, ¹CoRFiLaC, Regione Siciliana, Ragusa, Italy, ²D.A.C.P.A. University of Catania, Italy.
- M62 Characterization of bacterial ecosystem in Pecorino Siciliano cheese produced in different areas of Sicily. C. Pediliggieri¹, S. Carpino^{*1}, and G. Licitra^{1,2}, ¹CoRFiLaC, Regione Siciliana, Ragusa, Italy, ²D.A.C.P.A. University of Catania, Italy.
- M63 Persistency of conjugated linoleic acid and vaccenic acid on Tybo cow cheese. G. A. Gagliostro^{*1}, M. Martínez², V. I. Cejas³, M. A. Rodríguez³, and M. Balán⁴, ¹Instituto Nacional de Tecnología Agropecuaria, Balcarce, Buenos Aires, Argentina, ²Instituto Nacional de Tecnología Agropecuaria, Salta, Argentina, ³Instituto Nacional de Tecnología Industrial, PTM Miguelete, Buenos Aires, Argentina, ⁴PRODEO S.R.L., Chivilcoy, Buenos Aires, Argentina.
- M64 Influence of microfiltration and adjunct culture on quality of Egyptian soft white cheese. S. Awad*, N. Ahmed, and M. El Soda, *Alexandria University, Alexandria, Egypt.*
- M65 Development of a flavor lexicon for processed and imitation cheeses. S. L. Drake*, M. D. Yates, and M. A. Drake, *North Carolina State University, Raleigh.*
- M66 Effect of cream cheese made from freeze-dried milk powder on physicochemical properties. S. H. Kim¹, S. Y. Lee¹, J. Ahn², and H. S. Kwak^{*1}, ¹Sejong University, Seoul, Korea, ²Jungwon University, Chungbuk, Korea.
- M67 Optimization of recovery of key Cheddar cheese flavor compounds from full fat and reduced fat Cheddar cheeses. D. M. Watson*, R. E. Miracle, and M. A. Drake, *North Carolina State University, Raleigh.*
- M68 The influence of sodium chloride on flavor of natural Cheddar cheese. M. A. Drake^{*1}, R. E. Miracle¹, and D. J. McMahon², ¹North Carolina State University, Raleigh, ²Utah State University, Logan.
- M69 Automatic detection of microstructural features using a statistical image processing method. G. Impoco¹, L. Tuminello¹, N. Fucà¹, M. Caccamo^{*1}, and G. Licitra^{1,2}, ¹CoRFiLaC, Ragusa, Italy, ²D.A.C.P.A., University of Catania, Catania, Italy.
- M70 Lactic acid bacteria enhance levels of conjugated linoleic acid in Cheddar cheese. A. J. Pandit, S. K. Anand*, A. N. Hassan, and K. F. Kalscheur, *South Dakota State University, Brookings.*

- M71 Effect of aging on the rheology of full fat and low fat Cheddar-like caprine cheese. D. L. Van Hekken^{*1}, Y. W. Park², and M. H. Tunick¹, ¹*Dairy Processing and Products Research Unit, Agricultural Research Service, Wyndmoor, PA*, ²*Agricultural Research Station, Fort Valley University, Fort Valley, GA*.
- M72 Effect of renneting pH on calcium balance in cheese making process. N. Remillard* and M. Britten, *Food Research and Development Centre, Agriculture and Agri-food Canada, St-Hyacinthe, QC, Canada*.
- M73 Denaturation of proteins measured in liquid whey. M. Allen* and P. Tong, *California Polytechnic State University, San Luis Obispo*.
- M74 Use of fluorescence spectroscopy for monitoring changes and predicting browning reactions during whole milk powder storage. P. Salunke*, J. Amamcharla, and L. E. Metzger, *Midwest Dairy Foods Research Center, South Dakota State University, Brookings*.
- M75 Profiling changes in amino acids and organic acids in Cheddar cheese during ripening using infrared spectroscopy. A. Subramanian*, J. Harper, and L. Rodriguez-Saona, *The Ohio State University, Columbus*.
- M76 Production of nisin-containing whey protein concentrate. H. Abd El-aal¹, R. Dave¹, A. Khattab², and A. Hassan^{*1}, ¹*South Dakota State University, Brookings*, ²*Alexandria University, Alexandria, Egypt*.
- M77 Bovine milk based infant formula promote the growth and acid production of bifidobacteria. K. Mohamedali* and S. A. Ibrahim, *North Carolina A&T State University, Greensboro*.
- M78 Induction of α and β galactosidases from *Lactobacillus reuteri* by different metal ions. A. Y. Alazze^{*1}, S. A. Ibrahim¹, D. Song¹, A. Shahbazi¹, and A. A. AbuGhazaleh², ¹*North Carolina A&T State University, Greensboro*, ²*Southern Illinois University, Carbondale*.
- M79 Immobilization of *Lactobacillus acidophilus* in apple pieces (*Pyrus malus*) and mamey sapote (*Pouteria sapota*) for whey fermentation. M. E. Yañez-Villar¹, E. Paz-Gamoba^{*1}, A. Perez-Silva¹, H. S. García², and M. Montero-Lagunes³, ¹*Instituto Tecnológico de Tuxtepec, Tuxtepec, Oax, Mexico*, ²*Instituto Tecnológico de Veracruz, Veracruz, Ver, Mexico*, ³*INIFAP Campo Experimental, Veracruz, Ver, Mexico*.
- M80 A simple on-farm technique for early detection of foreign substances in milk. M. H. Hathurusinghe^{*1}, A. Alazze¹, A. Shahbazi¹, S. A. Ibrahim¹, and A. A. AbuGhazaleh², ¹*North Carolina A&T State University, Greensboro*, ²*Southern Illinois University, Carbondale*.
- M81 Fatty acid composition in ewe's milk fat produced in lowland, hill and highland areas of Sardinia. M. G. Manca, F. Puggioni, R. Boe, R. Rubattu, G. Battacone*, and A. Nudda, *Dipartimento di Scienze Zootecniche, University of Sassari, Italy*.
- M82 Properties of nanopowdered chitosan-added and cholesterol-reduced yogurt during storage. M. H. Seo, Y. S. Lee, and H. S. Kwak*, *Sejong University, Seoul, Korea*.
- M83 Residual beta-cyclodextrin and entrapped nutrients in milk treated by crosslinked beta-cyclodextrin. H. J. Ha, J. E. Lee, and H. S. Kwak*, *Sejong University, Seoul, Korea*.
- M84 Effect of reconstituted milk made from freeze-dried milk powder on physicochemical properties. S. H. Kim, S. I. Ahn, Y. H. Chang, and H. S. Kwak*, *Sejong University, Seoul, Korea*.
- M85 Comparison of physico-chemical properties between freeze-dried and spray-dried milk powders during storage. S. H. Kim, J. H. Park, and H. S. Kwak*, *Sejong University, Seoul, Korea*.
- M86 Phylogenetic analysis of dairy *Penicillium* rDNA. G. Petit* and S. Labrie, *Université Laval, Québec, Canada*.
- M87 Effects of culture conditions on the growth and autoaggregation ability of bifidobacteria and *Lactobacillus reuteri*. O. A. Hassan^{*1}, S. A. Ibrahim¹, A. A. AbuGhazaleh², A. Shahbazi¹, and Y. Murad³, ¹*North Carolina A&T State University, Greensboro*, ²*Southern Illinois University, Carbondale*, ³*National Research Council-Canada, Ottawa, Canada*.
- M88 80% whey (WPC) and serum protein (SPC) concentrate and 95% serum protein (SP) reduced micellar casein concentrate (MCC): Production and composition. J. Zulewska^{*2}, D. M. Barbano¹, M. Newbold¹, M. Drake³, E. A. Foegeding³, and C. Moraru¹, ¹*Cornell University, Ithaca, NY*, ²*University Of Warmia And Mazury, Olsztyn, Poland*, ³*North Carolina State University, Raleigh*.

Forages and Pastures

Forage Composition, Analysis and Utilization

- M89 Utilizing near infrared (NIR) spectroscopy to predict carbohydrates (sugars) in forages. J. Horst^{*1,2} and G. Ayangbile^{1,2}, ¹*Agri-King Inc., Fulton, IL*, ²*Analab, Fulton, IL*.
- M90 Investigation into the use of NIR predicted 12 and 30 hr IVNDFD as a measure of corn silage quality. R. T. Ward¹ and R. A. Patton^{*2}, ¹*Cumberland Valley Analytical Service, Maugansville, MD*, ²*Nittany Dairy Nutrition, Inc., Mifflinburg, PA*.

- M91 Ethanol or amylase pretreatments affect estimates of *in vitro* NDF digestibility. A. L. Miller, J. P. Goeser, and D. K. Combs*, *University of Wisconsin, Madison*.
- M92 Condensed tannins from purple prairie clover inhibit growth of *Escherichia coli* O157:H7. Y. Wang*, T. A. McAllister¹, S. N. Acharya¹, and A. D. Iwaasa², ¹*Agriculture and Agri-Food Canada Research Centre, Lethbridge, Alberta, Canada*, ²*Agriculture and Agri-Food Canada, Semiarid Prairie Agricultural Research Centre, Swift Current, Saskatchewan, Canada*.
- M93 Evaluation of tannins from forages for their capacity to inhibit growth of *Escherichia coli* O157:H7. Y. Wang*, T. A. McAllister¹, K. H. Ominski², D. O. Krause², and K. M. Wittenberg², ¹*Agriculture and Agri-Food Canada Research Centre, Lethbridge, Alberta, Canada*, ²*University of Manitoba, Winnipeg, Manitoba, Canada*.
- M94 Comparing mathematical models to estimate *in vitro* gas production parameters of hydroponic forage. E. Herrera-Torres, A. Cerrillo-Soto, M. Murillo-Ortiz, O. Reyes-Estrada, and A. S. Juarez-Reyes*, *Universidad Juarez del Estado de Durango, Durango, Dgo. Mexico*.
- M95 Effect of citrate synthase genes transformed into alfalfa on aluminum tolerance of its cells. F. F. Fan*, J. J. L. Li, Y. M. W. Wu, and J. X. L. Liu, *Zhejiang University, Hangzhou, China*.
- M96 Total digestible nutrient and energy values of new crossed and winter-hardy proanthocyanidin-containing alfalfa populations transformed with the maize bHLH (Lc) regulatory gene in ruminants: Comparison with non-transgenic alfalfa. A. Jonker*, P. Yu¹, Y. Wang², and M. Gruber³, ¹*University of Saskatchewan, Saskatoon, SK, Canada*, ²*Lethbridge Research Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada*, ³*Saskatoon Research Centre, Agriculture and Agri-Food Canada, Saskatoon, SK, Canada*.
- M97 Chemical profiles and protein and carbohydrate subfractions of new crossed and winter-hardy proanthocyanidin-containing alfalfa populations transformed with the maize bHLH (Lc) regulatory gene in ruminants: Comparison with non-transgenic alfalfa. A. Jonker*, P. Yu¹, Y. Wang², and M. Gruber³, ¹*University of Saskatchewan, Saskatoon, SK, Canada*, ²*Lethbridge Research Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada*, ³*Saskatoon Research Centre, Agriculture and Agri-Food Canada, Saskatoon, SK, Canada*.
- M98 Sugarcane stalk proportion effects on dairy cow performance. S. Siécola Júnior¹, L. L. Bitencourt¹, V. A. Silveira¹, N. M. Lopes¹, G. S. Dias Júnior¹, J. R. M. Silva², R. A. N. Pereira³, and M. N. Pereira*, ¹*Universidade Federal de Lavras, Lavras, MG, Brazil*, ²*Centro Federal de Educação Tecnológica, Januária, MG, Brazil*, ³*Better Nature Research Center, Ijaci, MG, Brazil*.
- M99 Sugarcane stalk proportion effects on heifer growth. J. R. M. Silva², S. Siécola Júnior¹, L. L. Bitencourt¹, G. S. Dias Júnior¹, N. M. Lopes¹, V. A. Silveira¹, I. R. Rios¹, and M. N. Pereira*, ¹*Universidade Federal de Lavras, Lavras, MG, Brazil*, ²*Centro Federal de Educação Tecnológica, Januária, MG, Brazil*.
- M100 Early-lactation cows fed concentrate do not respond to high-total nonstructural carbohydrates alfalfa. A. F. Brito*, G. Régimbald², G. F. Tremblay³, A. Bertrand³, Y. Castonguay³, G. Bélanger³, R. Michaud³, and R. Berthiaume¹, ¹*Agriculture & Agri-Food Canada, Sherbrooke, QC, Canada*, ²*Université Laval, Québec, QC, Canada*, ³*Agriculture and Agri-Food Canada, Québec, QC, Canada*.
- M101 Effects of variety and maturity at harvest time in the composition and *in vitro* kinetics of ruminal degradability of alfalfa hays. C. Arzola*, A. Muro², M. R. Murphy⁴, O. Ruiz¹, J. Salinas³, C. Rodriguez¹, Y. Castillo¹, and J.A. Payan⁵, ¹*Universidad Autónoma de Chihuahua, Chihuahua, Chihuahua, Mexico*, ²*Universidad Autónoma de Zacatecas, Zacatecas, Zacatecas, Mexico*, ³*Universidad Autónoma de Tamaulipas, Cd. Victoria, Tamaulipas, Mexico*, ⁴*University of Illinois, Urbana, IL, USA*, ⁵*INIFAP, Delicias, Chihuahua, Mexico*.
- M102 Diurnal variation of non structural carbohydrate concentrations in alfalfa. C. Morin*, G. Bélanger², G. F. Tremblay², A. Bertrand², Y. Castonguay², R. Michaud², R. Berthiaume³, and G. Allard¹, ¹*Université Laval, Québec, QC, Canada*, ²*Agriculture and Agri-Food Canada, Québec, QC, Canada*, ³*Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada*.
- M103 Subjectivity of qualitative assessment of corn silage by dairy nutritionists. K. E. Griswold*, P. H. Craig¹, R. C. Goodling¹, and A. J. Heinrichs², ¹*Penn State Cooperative Extension, University Park, PA, USA*, ²*Penn State University, University Park, PA, USA*.
- M104 Use of *Pleurotus oestreatus* to change the nutritional quality of wheat straw. O. D. Montañez Valdez*, J. H. Avellaneda-Cevallos², J. M. Tapia-Gonzalez², G. Rocha-Chavez², E. Guerra-Medina³, and E. O. Garcia-Flores³, ¹*Centro Universitario del Sur de la Universidad de Guadalajara, Ciudad Guzmán, Jalisco, Jalisco, Mexico*, ²*Universidad Técnica Estatal de Quevedo, Santo Domingo, Quevedo, Los Ríos, Ecuador*, ³*Centro Universitario de la Costa Sur de la Universidad de Guadalajara, Autlán, Jalisco, Jalisco, Mexico*.
- M105 Effects of wilting, molasses and inoculants on alfalfa silage nutritional properties. F. Hashemzadeh Sigari¹, M. Khorvash¹, G. R. Ghorbani¹, and A. Nikkhan*, ¹*Isfahan University of Technology, Isfahan, Iran*, ²*Zanjan University, Zanjan, Iran*.
- M106 Effect of drying methods on chemical composition kinetics of ruminal fermentation and digestibility of *Leucaena leucocephala* in goats. R. Rojo-Rubio*, O. Vázquez-Mendoza¹, A. Z. M. Salem^{1,2}, D. López-Aguirre¹, D. Cardoso-Jiménez¹, B. Albarrán-Portillo¹, S. Rebollar-Rebollar¹, J. Hernández-Martínez¹, F. Vázquez-Armijo¹, and L. M. Camacho-Díaz¹, ¹*Universidad Autónoma del Estado de México, Temascaltepec, Estado de México, México*, ²*Alexandria University, Alexandria Egypt*.
- M107 Timothy dietary cation-anion difference, grass tetany index, and mineral concentrations predicted by near infrared reflectance spectroscopy. G. F. Tremblay*, Z. Nie², G. Bélanger¹, S. Pelletier¹, and G. Allard³, ¹*Agriculture and Agri-Food Canada, Québec, QC, Canada*, ²*China Agricultural University, Beijing, China*, ³*Université Laval, Québec, QC, Canada*.

- M108 The effect of maturity stage on in vitro digestibility and energy utilization of mesquite (*Prosopis laevigata*) pods in goats. R. Rojo-Rubio*¹, A. Z. M. Salem^{1,2}, L.M. Camacho-Díaz¹, D. Cardoso-Jiménez¹, and S. Rebollar- Rebollar¹, ¹Universidad Autónoma del Estado de México, Estado de México, México, ²Alexandria University, Alexandria, Egypt.
- M109 Nutritive value, in situ degradability and intake of forage soybean and Lablab by weanling goats. E. Valencia*, A. Rodríguez, and F. Rivera Melendez, *University of Puerto Rico, Mayaguez, Puerto Rico.*
- M110 Inclusion of nopal (cactus) in diets for finishing lambs in Mexico. G. Aranda-Osorio*, M. Segundo-Espejel, C. A. Flores-Valdez, and F. M. Cruz-Miranda, *Universidad Autonoma Chapingo, Chapingo, Mexico, Mexico.*
- M111 Nopal (cactus) fresh versus proteinically enriched in diets for finishing lambs in Mexico. G. Aranda-Osorio*, Y. Campos-Anzures, F. A. Salinas-García, C. A. Flores-Valdez, L. A. Miranda-Flores, and F. M. Cruz-Miranda, *Universidad Autonoma Chapingo, Chapingo, Mexico, Mexico.*
- M112 Chemical composition, in vitro gas production kinetics of mesquite (*Prosopis laevigata*) pods at different stages of maturity in goats. A. Z. M. Salem^{1,2}, R. Rojo-Rubio*¹, O. Vazquez-Mendoza¹, D. Cardoso-Jiménez¹, and B. Albarrán-Portillo¹, ¹Universidad Autónoma del Estado de México, Estado de México, México, ²Alexandria University, Alexandria, Egypt.
- M113 Using in vitro gas production technique to calculate total digestible nutrients value of native forage in southern Texas. A. D. Aguiar*¹, L. O. Tedeschi¹, F. M. Rouquette², A. Ortega³, D. S. Delaney³, and S. Moore⁴, ¹Texas A&M University, College Station, ²Texas AgriLife Research, Overton, TX, ³Texas A&M University, Kingsville, ⁴King Ranch, Kingsville, TX.

Graduate Student Paper Competition CSAS Graduate Student Competition 1

- M114 Variation in antibody and cell-mediated immune responses between Canadian Holsteins and Norwegian-Red crossbred first calf heifers. S. Cartwright*¹, E. B. Burnside³, N. Karrow², L. Schaeffer², and B. A. Mallard¹, ¹University of Guelph Department of Pathobiology, Guelph, Ontario, Canada, ²Centre for Genetic Improvement of Livestock, Guelph, Ontario, Canada, ³Gencor Inc., Guelph, Ontario, Canada.
- M115 Translation efficiency mediated by untranslated region of bovine beta casein mRNA. J. Kim*, M. Bakovic, J. Li, J. Bag, and J. P. Cant, *University of Guelph, Guelph, Ontario, Canada.*
- M116 Impact of an extended photoperiod in farrowing houses on sow and litter performances. M.-P. Lachance*¹, J.-P. Laforest², N. Devillers¹, A. Laperrière³, and C. Farmer¹, ¹Agriculture and Agri-Food Canada, Dairy and Swine R&D Centre, Sherbrooke, QC, Canada, ²Animal Science Dept., Laval University, Québec, QC, Canada, ³LTE, Hydro-Québec's Research Institute, Shawinigan, QC, Canada.
- M117 Effects of low-voltage electrical stimulation and aging on heavy lamb meat tenderness. E. Pouliot*¹, C. Gariépy², M. Thériault^{1,3}, C. Avezard², J. Fortin², N. J. Simmons⁴, and F. W. Castonguay^{1,3}, ¹Université Laval, Québec, QC, Canada, ²Food Research and Development Centre, AAFC, St-Hyacinthe, QC, Canada, ³Dairy and Swine Research and Development Centre, AAFC, Lennoxville, QC, Canada, ⁴Carne Technologies Ltd, Cambridge, New Zealand.
- M118 Lysine and energy maintenance requirements in modern, high productivity sows are greater than previous estimates. R. S. Samuel*¹, S. Moehn¹, P. B. Pencharz², and R. O. Ball^{1,2}, ¹Swine Research and Technology Centre, University of Alberta, Edmonton, Alberta, Canada, ²Research Institute, Hospital for Sick Children, Toronto, Ontario, Canada.
- M119 A modified Ovsynch protocol using pLH or hCG in lactating dairy cows. M. B. Gordon*¹, R. Rajamahendran¹, M. G. Colazo², and D. J. Ambrose^{2,3}, ¹Department of Animal Science, Faculty of Land Food Systems, University of British Columbia, Vancouver, BC, Canada, ²Dairy Research and Technology Centre, Alberta Agriculture and Rural Development, Edmonton, AB, Canada, ³University of Alberta, Edmonton, AB, Canada.
- M120 Dairy farm sustainability in Quebec, Canada: The social aspect. V. Bélanger*, D. Parent, A. Vanasse, G. Allard, and D. Pellerin, *FSAA, Université Laval, Québec, Canada.*
- M121 Characterization of rumen epithelial structure and function in lambs fed rapidly fermentable carbohydrates. M. A. Steele*, S. Greenwood, S. E. Hook, O. AlZahal, and B. W. McBride, *University of Guelph, Guelph, Ontario, Canada.*
- M122 The influence of fish oil diets on insulin metabolism in adult male pig. C. A. Castellano*^{1,2}, I. Audet¹, J. -P. Laforest², P. Y. Chouinard², and J. J. Matte¹, ¹Dairy and Swine R&D Centre, Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, ²Department of Animal Sciences, Québec city, QC, Canada.

**Graduate Student Paper Competition
National ADSA Production MS Poster
Chair: Jeffrey S. Stevenson, Kansas State University**

- M123 Use of ash and nitrogen concentrations in manure to estimate loss of ammonia over time. H. A. Paz* and W. P. Weiss, *The Ohio State University, Wooster*.
- M124 The effects of metaphylactic therapy on health and growth of neonatal Holstein bull calves. K. S. Holloway*, G. A. Holub, J. E. Sawyer, and M. A. Tomaszewski, *Texas A&M University, College Station*.
- M125 Effects of single nucleotide polymorphisms in stearoyl CoA desaturase on milk fatty acid profile in lactating Holstein cows fed diets varying in fat content. L. Clark*, S. Moore, and M. Oba, *University of Alberta, Edmonton, Alberta, Canada*.
- M126 Influence of subclinical hypocalcemia on plasma biochemical parameters in dairy cows. W. G. Chamberlin*, J. R. Middleton, and J. N. Spain, *University of Missouri, Columbia*.
- M127 Risk factors for multi-drug resistance of *Staphylococcus aureus* obtained from cases of mastitis. L. Oliveira*, H. Langoni, and P. Ruegg, *University of Wisconsin, Madison*.
- M128 Evaluating the impacts of a ruminally protected lysine product in dairy cows. N. Swanepoel*^{1,2}, P. H. Robinson², and L. J. Erasmus¹, ¹*University of Pretoria, Pretoria, South Africa*, ²*University of California, Davis*.
- M129 Effect of two CIDRs on progesterone concentrations and LH secretion in lactating dairy cows. C. Tritsch*, W. Silvia, S. Hayes, D. Ray, H. Hamilton, and A. Sanders, *University of Kentucky, Lexington*.
- M130 Effects of increasing glycerin in the diet on ruminal fermentation during continuous culture. D. E. Rico*, Y.-H. Chung, C. M. Martinez, T. Cassidy, K. S. Heyler, and G. A. Varga, *The Pennsylvania State University, University Park*.
- M131 Evaluation of the economic impact of Optigen® use in commercial dairy herd diets with varying feed and milk prices. J. F. Inostroza*, V. E. Cabrera¹, R. D. Shaver¹, and J. M. Tricárico², ¹*University of Wisconsin, Madison*, ²*Alltech Inc., Brookings, SD*.
- M132 Dry matter intake measurements in commercial tie-stall dairy herds. M. W. Dekleva*¹, C. D. Dechow¹, J. M. Daubert¹, J. W. Blum², and G. A. Varga¹, ¹*The Pennsylvania State University, University Park*, ²*University of Bern, Bern, Switzerland*.

**Graduate Student Paper Competition
National ADSA Production PhD Poster
Chair: Jeffrey S. Stevenson, Kansas State University**

- M133 Metabolism of ferulic acid in ram lambs. M. A. Soberón* and D. J. R. Cherney, *Cornell University, Ithaca, NY*.
- M134 Effects of acetate and essential amino acids on protein synthesis signaling in bovine mammary epithelial cells in-vitro. J. A. D. R. N. Appuhamy*, C. T. Bray, J. Escobar, and M. D. Hanigan, *Virginia Polytechnic Institute and State University, Blacksburg*.
- M135 Molecular cloning, distribution and ontogenetic expression of b0,+AT and the oligopeptide transporter PepT1 mRNA in Tibetan suckling piglets. W. Wang*¹, G. Wu⁴, W. Gu¹, T. Li¹, M. Geng¹, W. Chu², R. Huang¹, M. Fan³, D. Fu¹, Z. Feng¹, and Y. Yin¹, ¹*The Chinese Academy of Sciences, Changsha, Hunan, P. R. China*, ²*Changsha University, Changsha, Hunan, P. R. China*, ³*University of Guelph, Guelph, Ontario, Canada*, ⁴*Texas A and M University, College Station*.
- M136 Milk fatty acid composition of whole fluid milk in the United States. A. M. O'Donnell*, D. M. Barbano, and D. E. Bauman, *Cornell University, Ithaca, NY*.
- M137 Polymorphisms in lipogenic genes and variations in milk fatty acid composition in Holstein dairy cows. R. A. Nafikov*¹, J. P. Schoonmaker¹, J. M. Reecy¹, D. Moody-Spurlock¹, J. Minick-Bormann², K. J. Koehler¹, and D. C. Beitz¹, ¹*Iowa State University, Ames*, ²*Kansas State University, Manhattan*.
- M138 Regulation of bovine pyruvate carboxylase promoters by fatty acids. H. M. White*, S. L. Koser, and S. S. Donkin, *Purdue University, West Lafayette, IN*.

Lactation Biology

- M139 Effects of restricted feeding of prepubertal ewe lamb on growth performance, mammary gland development and first lactation. L. Villeneuve*¹, D. Cinq-Mars², and P. Lacasse³, ¹Centre d'expertise en production ovine du Québec, LaPocatière, QC, Canada, ²Laval University, Québec, QC, Canada, ³AAFC, Dairy and Swine Research and Development Center, Sherbrooke, QC, Canada.
- M140 Effects of intravenous infusion of *trans*-10, *cis*-12 18:2 on mammary lipid metabolism in lactating dairy cows. R. Gervais*¹, J. W. McFadden², A. J. Lengi², B. A. Corl², and P. Y. Chouinard¹, ¹Université Laval, Québec, QC, Canada, ²Virginia Tech, Blacksburg.
- M141 Selection of reference genes for quantitative real-time PCR in mouse mammary gland during different lactation days. X. L. Dong^{1,2}, J. Q. Wang*¹, D. P. Bu¹, K. L. Liu¹, H. Y. Wei¹, and L. Y. Zhou¹, ¹State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, ²Yangzhou University, Yangzhou, China.
- M142 Responses of milk protein and mammary amino acids metabolism to duodenal soybean small peptides and free amino acids infusion in lactating goat. H. Liu, Z.-J. Cao, L. Wang, S.-L. Li*, and L.-B. Wang, College of Animal Science and Technology, China Agricultural University, Beijing, China.
- M143 Characterization of the bovine mammary FcRn receptor in mammary cells *in vitro*. C. R. Baumrucker*, Y. Wang, W. Liu, and C. D. Dechow, The Pennsylvania State University, University Park.
- M144 *In vitro* culture and characterization of a mammary epithelial cell line from Chinese Holstein dairy cows. H. Hu¹, D. P. Bu¹, J. Q. Wang*¹, Q. Chen¹, X. Y. Li¹, H. Y. Wei¹, L. Y. Zhou¹, and J. J. Loo², ¹State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, ²University of Illinois, Urbana.
- M145 Transcriptomics comparison of MacT cells and mammary tissue during pregnancy and lactation. R. Sharma, M. Bionaz, A. K. G. Kadegowda, R. E. Everts, H. A. Lewin, and J. J. Loo*, University of Illinois, Urbana.
- M146 Chinese women dietary behavior in different lactating stages and breast milk levels of fatty acids and iron. L. Xu*¹, Q.-H. Sheng², Z.-G. Zhang³, Q. Gen³, and L.-W. Zhang¹, ¹School of Food and Science and Engineering, Harbin Industry University, Harbin city, China, ²National Dairy Engineering and Technical Research Center, Northeast Agriculture, Harbin city, China, ³Hebei Dairy Engineering and Technical Research Center, Shingjiazhuang city, China.
- M147 Effect of staged ovariectomy on mammary histology and transcript abundance in prepubertal heifers. B. T. Velayudhan*¹, R. M. Akers¹, B. P. Huderson¹, A. Rowson-Baldwin², R. C. Hovey², and S. E. Ellis³, ¹Virginia Polytechnic Institute and State University, Blacksburg, ²University of California, Davis, ³Clemson University, Clemson, SC.
- M148 Variation in expression of genes involved in glucose production and transport in mammary gland, liver and muscle of lactating cows. R. Weikard*, K. Krappmann, B. Brand, T. Goldammer, R. Brunner, and Ch. Kühn, Research Institute for the Biology of Farm Animals (FBN), Dummerstorf, Germany.
- M149 Effects of increased milking frequency on milk fatty acid composition in early lactation dairy cows. S. L. Shields*, D. Sevier, J. E. Williams, S. Zaman, P. Rezamand, and M. A. McGuire, University of Idaho, Moscow.
- M150 Energy deprivation inhibits protein synthesis in mammary epithelial cells through an AMPK- and mTOR-dependent pathway. S. A. Burgos* and J. P. Cant, University of Guelph, Guelph, Ontario, Canada.
- M151 Effect of milking frequency (1 vs. 4x) on milk yield, composition and numbers of gene transcripts for alpha-lactalbumin and beta casein in milk. A. P. Alex*¹, J. L. Collier¹, D.L. Hadsell², and R. J. Collier¹, ¹University of Arizona, Tucson, ²Baylor University, Houston, TX.
- M152 Lactational effects of once- versus twice-daily milkings throughout lactation in two breeds of dairy ewes. A. Santibañez, X. Such*, G. Caja, V. Castillo, and E. Albanell, G2R, Universitat Autònoma de Barcelona, Bellaterra, Spain.
- M153 Activation of mTOR signaling by insulin-like growth factor-I stimulates translation initiation in mammary epithelial cells. S. A. Burgos* and J. P. Cant, University of Guelph, Guelph, Ontario, Canada.
- M154 An intact SREBP pathway is essential for the *trans*-10, *cis*-12 CLA-induced inhibition of de novo fatty acid synthesis in the murine lactating mammary gland. M. R. Foote*¹, K. J. Harvatine¹, J. Monks², M. C. Neville², Y. R. Boisclair¹, and D. E. Bauman¹, ¹Cornell University, Ithaca, NY, ²University of Colorado, Aurora.
- M155 Low dosage oxytocin treatment induces milk ejection in dairy cows. C. J. Belo and R. M. Bruckmaier*, University of Bern, Vetsuisse Faculty, Veterinary Physiology, Bern, Switzerland.
- M156 Effect of exogenous growth hormone and ovariectomy on protein expression of aromatase in prepubertal bovine mammary gland. B. P. Huderson*¹, S. E. Ellis², and R. M. Akers¹, ¹Virginia Polytechnic Institute and State University, Blacksburg, ²Clemson University, Clemson, SC.
- M157 Removal of histidine from an intravenous amino acid infusion depresses milk protein and stimulates milk fat production by dairy cows. N. G. Purdie*, C. E. A. Borsy, C. Chui, J. Imada, P. Stahel, C. Longo, A. K. Shoveller, V. R. Osborne, and J. P. Cant, University of Guelph, Guelph, Ontario, Canada.

- M158 Effects of a shortened dry period on milk production and composition in early lactating Holstein cows. S. Safa¹, A. Heravi Moussavi^{*1}, M. Danesh Mesgaran¹, A. Golian¹, and A. Soleimani^{1,2}, ¹Department of Animal Science, Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran, ²Islamic Azad University-Kashmar Branch, Kashmar, Khorasan Razavi, Iran.
- M159 Udder morphology of the Holstein cows, primiparous and multiparous. M. Porcionato^{*}, J. Negrão, F. Paiva, and T. Delgado, University of São Paulo, Pirassununga, São Paulo, Brazil.
- M160 Effects of increased milking frequency on milk yield and selected measures of mammary gland health in lactating cows. S. L. Shields^{*}, D. Sevier, J. Peak, K. S. Seo, P. Rezamand, and M. A. McGuire, University of Idaho, Moscow.

Meat Science and Muscle Biology 1

- M161 Regulation of CYP17A1 activity and its potential implications on the development of boar taint. M. J. Billen and E. J. Squires^{*}, University of Guelph, Guelph, Ontario, Canada.
- M162 Effects of dietary energy level and slaughter weight on carcass quality traits and grades in finishing pigs. M. J. Park¹, J. Y. Jeong¹, D. M. Ha², J. C. Han², B. C. Park³, S. T. Joo¹, and C. Y. Lee^{*2}, ¹Gyeongsang National University, Jinju, Korea, ²Jinju National University, Jinju, Korea, ³CJ Corps., Seoul, Korea.
- M163 Feedlot performance and carcass traits of Nellore, Simmental, Simbrasil and F₁ Simmental × Nellore bullocks. S. R. Baldin^{1,2}, C. L. Martins¹, R. D. L. Pacheco^{*1}, D. D. Millen¹, R. S. Barducci¹, L. M. N. Sarti¹, T. M. Mariani¹, J. P. S. T. Bastos¹, M. D. B. Arrigoni¹, and J. C. Hadlich¹, ¹FMVZ/Unesp, Botucatu, São Paulo, Brazil, ²Apoio FAPESP, São Paulo, Brazil.
- M164 Effects of vitamin D supplementation on carcass traits of Nellore and Canchim bullocks fed high concentrate diets. F. S. Parra^{1,2}, S. R. Baldin¹, M. D. B. Arrigoni¹, C. L. Martins¹, J. R. Ronchesel¹, N. R. B. Consolo³, A. L. Campanini¹, R. S. Barducci¹, L. M. N. Sarti¹, D. D. Millen¹, R. D. L. Pacheco^{*1}, D. Tomazella¹, H. D. Rosa¹, T. Leiva¹, E. N. Andrade¹, ¹FMVZ/Unesp, Botucatu, São Paulo, Brazil, ²Apoio FAPESP, São Paulo, Brazil, ³UD/Unesp, Dracena, São Paulo, Brazil.
- M165 Interaction of dietary vitamin D₃ and sunlight exposure on meat tenderness and color of *Bos indicus* cattle. A. R. Lobo Jr.¹, E. F. Delgado^{*1}, G. B. Mourão¹, A. Berndt², and J. J. A. A. Demarchi², ¹Escola Superior de Agricultura, Piracicaba, SP, Brazil, ²Agência Paulista de Tecnologia do Agronegócio, Andradina, SP, Brazil.
- M166 Expression of calpastatin isoforms and meat tenderness of pure-bred Large White and Duroc animals fed different doses of ractopamine. E. F. Leonardo, E. F. Delgado^{*}, I. L. Stella, L. L. Coutinho, and G. B. Mourão, Escola Superior de Agricultura, Piracicaba, SP, Brazil.
- M167 Heat shock protein β -6 emerges as a potential biomarker to predict meat tenderness. I. Zapata^{*}, H. N. Zerby, and M. Wick, The Ohio State University, Columbus.
- M168 Evaluating the application of dual x-ray energy absorptiometry (DEXA) to assess dissectible fat and muscle from the 9–11th rib section of beef cattle. F. R. B. Ribeiro^{*1}, R. D. Rhoades², L. O. Tedeschi³, S. E. Martin³, and S. F. Crouse³, ¹Texas A&M University, Commerce, ²The King Ranch Institute, Kingsville, TX, ³Texas A&M University, College Station.
- M169 Age entering the feedlot and implant potency: I. Post-weaning-weaning and feedlot performance. P. Beck^{*1}, B. Barham², S. Gadberry², J. Apple³, M. Miller⁴, and L. Hughes⁴, ¹University of Arkansas, Hope, ²University of Arkansas Coop. Ext. Ser., Little Rock, ³University of Arkansas, Fayetteville, ⁴Texas Tech University, Lubbock.
- M170 Age entering the feedlot and implant potency: II. Carcass quality, shear force and sensory panel characteristics. B. Barham^{*1}, P. Beck², S. Gadberry¹, J. Apple³, W. Whitworth⁴, and M. Miller⁵, ¹University of Arkansas, Little Rock, ²University of Arkansas, Hope, ³University of Arkansas, Fayetteville, ⁴University of Arkansas, Monticello, ⁵Texas Tech University, Lubbock.
- M171 Enhancing pork loin quality attributes through genotype, chilling method and ageing time. M. Juarez^{*}, W. R. Caine, J. L. Aalhus, W. M. Robertson, and M. E. R. Dugan, Agriculture and Agri-Food Canada, Lacombe Research Centre, Lacombe, Alberta, Canada.
- M172 Effects of dry-ageing on pork quality of vitamin E enhanced loins. M. Juarez^{*1}, W. R. Caine¹, J. L. Aalhus¹, M. E. R. Dugan¹, N. Hidiroglou², and B. E. Uttaro¹, ¹Agriculture and Agri-Food Canada, Lacombe Research Centre, Lacombe, Alberta, Canada, ²Health Products and Food Branch, Health Canada, Sir Frederick G. Banting Research Centre, Ottawa, Ontario, Canada.
- M173 Age at the beginning of the free-range fattening period affects meat quality of Iberian pigs. M. A. Latorre^{*}, J. A. Rodríguez-Sánchez, and G. Ripoll, Centro de Investigación y Tecnología Agroalimentaria de Aragón, Zaragoza, Spain.
- M174 Effects of electrical stimulation and aging on beef tenderness of dairy cows. A. A. Souza^{*1}, T. I. Ferreira², and J. C. Hadlich³, ¹UNIDERP/ANHANGUERA, Campo Grande, Mato Grosso do Sul, Brazil, ²IAGRO, Campo Grande, Mato Grosso do Sul, Brazil, ³UNESP, Botucatu, Sao Paulo, Brazil.
- M175 Relationship between raw breast meat color lightness values and functionalities of broiler fillets deboned six to eight hours postmortem. H. Zhuang^{*} and E. Savage, ARS-USDA, Athens, GA.

- M176 *In vitro* analysis of effect of time–temperature combinations on viability of *Taenia hydatigena* eggs. B. S. Buttar*, M. L. Nelson, J. R. Busboom, D. P. Jasmer, D. D. Hancock, and D. Walsh, *Washington State University, Pullman*.

Nonruminant Nutrition Feed Ingredients

- M177 Characterization of protein structure of the new co-products from bioethanol production in western Canada using DRIFT Spectroscopy: Comparison among blend DDGS, wheat DDGS and corn DDGS, between wheat and wheat DDGS, and corn and corn DDGS. P. Yu*, D. Damiran, and W. Nuez Ortin, *Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, SK, Canada*.
- M178 Effects of various cereals on nursery pigs: Gastrointestinal bacterial populations. Y. Liu*, M. Rossoni, J. Barnes, and J. E. Pettigrew, *University of Illinois, Urbana*.
- M179 Effects of altering the syrup inclusion rate and the dryer recycling rate on DDGS composition and digestibility in pigs. K. A. Houin*, B. E. Aldridge, B. T. Richert, A. L. Sutton, and J. S. Radcliffe, *Purdue University, West Lafayette, IN*.
- M180 Combined usage of corn distillers solubles and corn steep water for liquid fed growing-finishing pigs. C. L. Zhu*, D. Wey, and C. F. M. de Lange, *University of Guelph, Guelph, ON, Canada*.
- M181 Comparison of drying methods for whole frozen fish commonly fed to marine mammals. S. M. Langowski¹, A. W. White¹, K. L. West¹, K. S. Yamamoto², and J. R. Carpenter*², ¹*Hawaii Pacific University, Honolulu*, ²*University of Hawaii at Manoa, Honolulu*.
- M182 Effects of feeding soybean meal from high protein or low oligosaccharide varieties of soybeans to weanling pigs. K. M. Baker*, B. G. Kim, and H. H. Stein, *University of Illinois, Urbana*.
- M183 The granulated barley provided during the finishing period improves the production cost, intramuscular fat percentage and oleic acid content in muscle from heavy pigs. A. Daza¹, M. A. Latorre*², G. Cordero³, A. Olivares³, and C. J. López-Bote³, ¹*Universidad Politécnica de Madrid, Madrid, Spain*, ²*Centro de Investigación y Tecnología Agroalimentaria de Aragón, Zaragoza, Spain*, ³*Universidad Complutense de Madrid, Madrid, Spain*.
- M184 Nutritive utilization of protein and amino acids from raw cowpea flour (*Vigna unguiculata*) in growing rats. G. Kapravelou¹, J. Martino*¹, E. Nebot¹, J. M. Porres¹, and I. Fernández-Fígares², ¹*University of Granada, Granada, Spain*, ²*Spanish Research Council, CSIC, Granada, Spain*.
- M185 Influence of sunflower seed meal on histological alterations of broiler chickens. S. Salari*, H. Nassiri Moghaddam, J. Arshami, A. Golian, and M. Maleki, *Ferdowsi University of Mashhad, Mashhad, Iran*.
- M186 Guar gum as a source of soluble non-starch polysaccharides for swine decreases nutrient digestibility and ammonia emission while increasing manure odor. W. Zhang¹, E. van Heugten*¹, T. van Kempen^{1,2}, and V. Fellner¹, ¹*North Carolina State University, Raleigh*, ²*Provimi, RIC, Brussels, Belgium*.
- M187 The effect of dried distillers grains with solubles in the diet of the growing-finishing pig on performance and nitrogen and phosphorus excretion. P. McDonnell, J. J. Callan, and J. V. O'Doherty*, *Lyons Research Farm, University College Dublin, Newcastle, Co Dublin, Ireland*.
- M188 Influence of sunflower seed meal (SFSM) on body organ weights and blood parameters of broiler chickens. S. Salari*, H. Nassiri Moghaddam, J. Arshami, and A. Golian, *Ferdowsi University of Mashhad, Mashhad, Iran*.
- M189 The effects of increasing the level of rapeseed meal in the diet of the growing-finishing pig on the growth performance and nitrogen and phosphorus excretion. P. McDonnell, S. Figat, J. J. Callan, and J. V. O'Doherty*, *Lyons Research Farm, University College Dublin, Newcastle, Co. Dublin, Ireland*.
- M190 Effect of hydrothermally processed corn on fecal digestibility of energy in cannulated roosters. L. Babinszky* and J. Tossenberger, *Kaposvár University, Kaposvár, Hungary*.
- M191 Evaluation of blue mussel shells as an alternative dietary calcium source for laying hens. J. L. MacIsaac*¹ and D. M. Anderson², ¹*Atlantic Poultry Research Institute, Truro, Nova Scotia, Canada*, ²*Nova Scotia Agricultural College, Truro, Nova Scotia, Canada*.
- M192 Feeding flax to late-pregnant and lactating sows: Effects on sow immunity and antibody transfer to their piglets. M. Lessard*, H. V. Petit, A. Giguère, and C. Farmer, *Dairy and Swine Research and Development Centre, Agriculture and Agri-Food Canada, Sherbrooke, Quebec, Canada*.
- M193 Changes in gut microbiota of broiler chicks fed distillers dried grains with solubles (DDGS) during a coccidial infection. V. Perez-Mendoza*¹, C. Jacobs¹, C. Parsons¹, J. Barnes¹, M. Kuhlenschmidt¹, M. Jenkins², and J. Pettigrew¹, ¹*University of Illinois, Urbana*, ²*United States Department of Agriculture, Beltsville, MD*.

- M194 Effects of feeding garbanzo beans and canola seed meal to finishing pigs on production, carcass quality and expression of key metabolic control genes. J. McNamara, A. Hutchins, A. Youngquist*, J. Busboom, J. Vierck, C. Schachtschneider, A. Whalen, J. Miller, and A. Lowe, *Washington State University, Pullman*.
- M195 Digestible and metabolizable energy of oils and lards for growing pigs. H. O. Silva, R. V. Sousa, E. T. Fialho*, J. A. F. Lima, and L. F. Silva, *University Federal of Lavras, Lavras, MG, Brazil*.
- M196 Feeding flax to late-pregnant and lactating sows: Effects on fatty acid profiles, hormones and performances of sows and their litters. C. Farmer*, A. Giguère, M. Lessard, and H. V. Petit, *Agriculture and Agri-Food Canada, Dairy and Swine R&D Centre, Sherbrooke, QC, Canada*.
- M197 Effect of the substitution of soybean meal and corn for cull chickpeas on the apparent digestibility of nutrients in growing diets for pigs. J. M. Uriarte*, J. F. Obregon, H. R. Guemez, R. Barajas, and P. A. Valdez, *Universidad Autónoma de Sinaloa, Culiacán, Sinaloa, México*.
- M198 The effect of corn of different textures in dry grain or silage forms on digestibility and growth performance of piglets from 7 to 15 kg. E. T. Fialho*, J. V. Neto, V. S. Cantarelli, M. G. Zangeronimo, J. A. F. Lima, and P. B. Rodrigues, *University Federal of Lavras, Lavras, MG, Brazil*.
- M199 Changes in diversity and homogeneity of the gut microbiota of pigs fed distillers dried grains with solubles (DDGS) after an *E. coli* challenge. V. Perez-Mendoza*, J. Barnes¹, C. Maddox¹, J. Pluske², and J. Pettigrew¹, ¹University of Illinois, Urbana, ²Murdoch University, Murdoch, WA, Australia.
- M200 Variation and relationships in nutrient and mineral composition for six species of whole fish commonly used as animal feeds. K. S. Yamamoto*, J. R. Carpenter¹, S. Atkinson², L. Polasek², and H. Zaleski¹, ¹University of Hawaii at Manoa, Honolulu, ²Alaska SeaLife Center, Seward, AK.
- M201 In vitro starch kinetics hydrolysis and fermentation of field peas (*Pisum sativum*). C. A. Montoya, P. Kish, and P. Leterme*, *Prairie Swine Centre Inc., Saskatoon, SK, Canada*.
- M202 Ileal amino acid digestibility in dried distillers grains with solubles originating from wheat, corn or wheat-corn blend fed to growing pigs. Y. Yang*, E. Kiarie, B. A. Slominski, A. Brûlé-Babel, and C. M. Nyachoti, *University of Manitoba, Winnipeg, Manitoba, Canada*.
- M203 In vitro rabbit cecal fermentation patterns of four substrates: Glucose, cellobiose, microcrystalline cellulose and NDF separated from alfalfa hay. H. J. Yang*, Q. Yue¹, Y. C. Cao¹, D. F. Zhang¹, and J. Q. Wang², ¹China Agricultural University, Beijing, P. R. China, ²State Key Laboratory of Animal Nutrition, Institute of Animal Science, China Academy of Agricultural Sciences, Beijing, P. R. China.
- M204 Nutritional evaluation of fermented fish meal (*L. acidophilus* GB-LC2 and *B. licheniformis* GB-F2) based on nitrogen balance and nutrient digestibility in comparison with spray-dried plasma protein for weanling pigs. J. H. Cho*, J. S. Yoo¹, J. H. Ahn², I. B. Chung², and I. H. Kim¹, ¹Dankook University, Cheonan, Choongnam, Korea, ²National Institute of Animal Science, RDA, Korea.
- M205 Apparent metabolizable energy of hydrolyzed swine intestinal mucosa (Palbio RD50[®]) for broiler chickens. D. Solà-Oriol¹, R. Muns¹, D. Martínez-Puig*², and J. F. Pérez¹, ¹Universitat Autònoma de Barcelona, Bellaterra, Spain, ²Bioiberica, Palafolls, Spain.
- M206 Digestibilities of components in three sources of liquid mycelium feed products in growing pigs. W. C. Sauer^{1,2}, A. B. Araiza*, B. Schutte³, M. Cervantes¹, A. Morales¹, R. Zijlstra², and J. L. Landero¹, ¹ICA, Universidad Autónoma de Baja California, Mexicali, BC, México, ²DAFNS, University of Alberta, Edmonton, AB, Canada, ³S&P Consultancy, Bennekom, The Netherlands.
- M207 A spreadsheet program for making a balanced Latin square design. B. G. Kim* and H. H. Stein, *University of Illinois, Urbana*.
- M208 Influence of phytase on the apparent ileal digestibility of amino acids in soybean meal diets in growing pigs. H. Silva, E. Fialho*, R. Sousa, N. Schoulten, W. Santos, L. Silva, and V. Cantarelli, *University Federal of Lavras-UFLA, Lavras-MG- Brazil*.
- M209 Effects of the gestation and farrowing housing system on physiology and performance of primiparous sows and piglets. W. S. Ju*, L. G. Piao, H. F. Long, Y. D. Jang, S. K. Jang, and Y. Y. Kim, *Seoul National University, Seoul, Korea*.
- M210 The effect of different double choice feeding protocols on the measurement of feed preferences. D. Solà-Oriol¹, E. Roura², and D. Torrallardona*, ¹IRTA, Mas de Bover, Constantí, Spain, ²Lucta SA, Barcelona, Spain.
- M211 Influence of the type of diet on the growth performance of two genotypes of quails in a floor housing system. D. Cardoso-Jiménez¹, A. Z. M. Salem*^{1,2}, R. Rojo-Rubio¹, and A. Perez-Chávez¹, ¹Centro Universitario UAEM-Temascaltepec, Universidad Autónoma del Estado de México, Toluca-Tejupilco, Estado de México, México, ²Alexandria University, Alexandria, Egypt.
- M212 Effects of a dietary complex enzyme in corn distillers dried grains with solubles (DDGS) on meat quality and pork fatty acid composition of loin muscle. J. S. Yoo*, H. D. Jang¹, T. X. Zhou¹, J. P. Wang¹, and C. Y. Lee², ¹Dankook University, Cheonan, Choongnam, Korea, ²Regional Animal Industry Center, Jinju National University, Jinju, Gyeongnam, Korea.
- M213 Supplementation with phytase and xylanase can increase energy availability in swine diets containing corn distillers dried grains with solubles (DDGS). M. D. Lindemann*, G. A. Apgar², G. L. Cromwell¹, P. H. Simmins³, and A. Owusu-Asiedu³, ¹University of Kentucky, Lexington, ²Southern Illinois University, Carbondale, ³Danisco Animal Nutrition, Marlborough, UK.

Physiology and Endocrinology Endocrinology and Metabolism

- M214 Methionine requirements for the preimplantation bovine embryo. L. Bonilla*¹, D. Luchini², E. Devillard³, and P. J. Hansen¹, ¹University of Florida, Gainesville, ²Adisseo USA, Inc., Alpharetta, GA, ³Adisseo France, SAS, Commeny, France.
- M215 Effect of exogenous insulin and fasting on estradiol production and growth hormone receptor (GHR) and insulin-like growth factor I (IGF-I) genes expression by the pre-ovulatory follicle of ewes. A. Schneider¹, L. F. M. Pfeifer¹, E. Schmitt¹, J. W. Silva Neto¹, L. T. Hax¹, M. M. Antunes¹, F. A. B. Del Pino¹, G. R. Paludo², and M. N. Corrêa*¹, ¹Federal University of Pelotas, Brazil, ²University of Brasilia, Brazil.
- M216 TNF α and adipocyte-hepatic metabolism at drying off and during early lactation in dairy cows. H. A. van Dorland¹, H. Sadri², and R. M. Bruckmaier*¹, ¹University of Bern, Vetsuisse Faculty, Veterinary Physiology, Bern, Switzerland, ²Isfahan University of Technology, Department of Animal Science, Isfahan, Iran.
- M217 Early-weaning up-regulates the expression of sucrase-isomaltase in the jejunum of the piglet. D. Lackeyram*, T. Archbold, K. C. Swanson, and M. Z. Fan, University of Guelph, Guelph, ON, Canada.
- M218 Effect of propionate infusion on hepatic PEPCK and glucose-6-phosphatase expression in neonatal Holstein calves. S. S. Donkin*, E. Cedeño, and S. L. Koser, Purdue University, West Lafayette.
- M219 The Effects of supplemented diet with fish oil and canola oil during transition period to early lactation on follicular dynamics of Iranian Holstein dairy cows. T. S. Vafa, A. Heravi Mousavi*, A. Naserian, M. Danesh Mesgaran, R. Valizadeh, and A. Parand, Excellent Center for Animal Science, Ferdowsi University of Mashhad, Iran.
- M220 The effects of supplemented diet with fish oil and canola oil during transition period to early lactation on complete blood count of Iranian Holstein dairy cows. T. S. Vafa, A. Heravi Mousavi*, A. Naserian, M. Danesh Mesgaran, and R. Valizadeh, Excellent Center for Animal Science, Ferdowsi University of Mashhad, Iran.
- M221 Serum metabolomics of multiparous Holstein cows during the transition period. C. Chen, W. J. Weber, M. Carriquiry, S. C. Fahrenkrug, and B. A. Crooker*, Department of Animal Science, University of Minnesota, St Paul.
- M222 Effects of heat stress on ghrelin secretion in lactating dairy cattle. S. E. Cossel*, M. E. Field, M. V. Skrzypek, S. R. Sanders, S. L. Marion, J. B. Wheelock, S. R. Hartman, Y. Yuxi, P. B. Hoyer, R. J. Collier, R. P. Rhoads, L. H. Baumgard, and M. L. Rhoads, University of Arizona, Tucson.
- M223 Plant oil supplementation in dietary concentrate improves milk yield, ovarian function and uterine health of postpartum dairy cows in a tropical environment. C. Navanukraw*, A. Boonsom, S. Guntaprom, S. Uriyapongson, and C. Wachirapakorn, Khon Kaen University, Khon Kaen, Thailand.
- M224 Hematological profile of confined ewes fed corn silage. J. P. F. Silveira¹, J. L. C. B. Reis*², M. A. Factori¹, D. H. Vieira³, V. L. Tierzo¹, L. F. D. Medeiros¹, and C. Costa⁴, ¹São Paulo State University, Botucatu, SP, Brazil, ²University of Agrarian Sciences - University of Marília, Marília, SP, Brazil, ³Center of Creation of Animals of Laboratory, Rio de Janeiro, RJ, Brazil, ⁴Rural Federal university of Rio de Janeiro, Seropedica, RJ, Brazil.
- M225 Effects of lactation and pregnancy on metabolic and hormonal responses of Holstein dairy cattle. I. M. Thompson*¹, R. L. Cerri¹, I. H. Kim², A. D. Ealy¹, P. J. Hansen¹, C. R. Staples¹, and W. W. Thatcher¹, ¹University of Florida, Gainesville, ²Chungbuk National University, South Korea.
- M226 Does a low feeding level enhance estradiol synthesis in preovulatory follicles of Holstein \times Normande dairy cows? E. Cutullic*¹, A. Benhaim², S. Barbey³, H. Mitre², S. Carreau², and C. Disenhaus¹, ¹UMR1080 INRA Dairy Production, Rennes, France, ²INRA USC2006, Estrogen and Reproduction, Caen, France, ³INRA UE326 Le Pin-au-Haras, Exmes, France.
- M227 Serum and anterior pituitary gland (AP) concentrations of IGF-I during an estradiol induced LH surge in gilts. N. M. Rasmussen*, C. E. Hostetler, and J. A. Clapper, South Dakota State University, Brookings.
- M228 Influence of heifer development method on post-AI blood metabolites. B. L. Perry*, J. A. Walker, C. L. Wright, K. C. Olson, and G. A. Perry, Dept. Anim. and Range Sci., South Dakota State University, Brookings.
- M229 Relationships between dry matter intake (DMI), plasma progesterone (P4), and liver catabolic enzymes in lactating dairy cows. O. G. Sa Filho*^{1,3}, C. O. Lemley², M. E. Wilson², J. Hillegass³, J. L. M. Vasconcelos¹, and W. R. Butler³, ¹FMVZ/UNESP, Botucatu, SP, Brazil, ²West Virginia University, Morgantown, ³Cornell University, Ithaca, NY.
- M230 Method development and preliminary evaluation of the potential for using erythrocyte membranes in the assessment of long-chain polyunsaturated fatty acid status in dairy cows. C. L. Preseault*^{1,2}, J. Kraft¹, H. M. Dann², and A. L. Lock¹, ¹University of Vermont, Burlington, VT, ²William H. Miner Agricultural Research Institute, Chazy, NY.

- M231 Effects of BCS and level of concentrate feeding during early lactation on plasma concentrations of blood metabolites in pasture-fed dairy cows. F. Y. Obese*^{1,2}, T. E. Stirling³, C. R. Stockdale⁴, K. L. Macmillan³, A. R. Egan², and S. Humphrys⁵, ¹CSIR-Animal Research Institute, Accra, Ghana, ²School of Agriculture and Food Systems, the University of Melbourne, Melbourne, Victoria, Australia, ³School of Veterinary Science, the University of Melbourne, Werribee, Victoria, Australia, ⁴Department of Primary Industries, Kyabram, Victoria, Australia, ⁵Primegro Pty Ltd, Thebarton, South Australia, Australia.
- M232 Metabolic profile of the hypocalcemic dairy cows in an intensive grazing system in south of Brazil. E. Schmitt*^{1,2}, D. A. C. Hoffmann¹, M. E. Lima¹, T. dos S. Farofa¹, M. A. Goulart¹, M. S. Lopes¹, P. Montagner¹, R. T. França¹, F. A. B Del Pino¹, J. J. Loor², and M. N. Corrêa¹, ¹Federal University of Pelotas, Pelotas, RS, Brazil, ²University of Illinois, Urbana.
- M233 A comparison of physiological and endocrine parameters during the peri-estrous period in lactating dairy cows that did and did not conceive. A. K. Sanders*¹, D. Ray¹, C. H. Hamilton¹, C. Tritsch¹, M. E. Riskey², M. F. Smith², and W. J. Silvia¹, ¹University of Kentucky, Lexington, ²University of Missouri, Columbia.
- M234 Plant-based diets enriched with linseed oil or marine algae and organic selenium alter reproductive performances of broiler breeder hens over the reproductive season. C. Brèque*^{1,2}, C. Coss^{1,2}, C. Lessard^{1,2}, R. Gervais², D. Venne³, M. R. Lefrançois², P. Y. Chouinard², G. Vandenberg², and J. L. Bailey^{1,2}, ¹Centre de recherche en biologie de la reproduction, Québec, QC, Canada, ²Département des Sciences Animales, Québec, QC, Canada, ³Couvoir Scott Ltée, Scott Jonction, QC, Canada.
- M235 Temporal changes in hepatic gene expression during the periparturient period of spring-calving beef cows on grazing conditions. A. L. Astessiano*¹, R. Perez-Clariget¹, G. Quintans², P. Soca¹, B. A. Crooker³, and M. Carriquiry¹, ¹School of Agronomy, UDELAR, Uruguay, ²INIA, Treinta y Tres, Uruguay, ³Department of Animal Science, University of Minnesota, St. Paul.
- M236 Effect of short-term prepartum supplementation on reproduction of multiparous beef cows on grazing conditions. G. Quintans*¹, G. Banchemo¹, G. Roig¹, and M. Carriquiry², ¹INIA, Treinta y Tres, Uruguay, ²School of Agronomy, UDELAR, Uruguay.
- M237 Endocrine and reproductive parameters of North American Holstein × New Zealand Holstein-Friesian crossbred cows on grazing conditions. A. Fernandez-Foren*¹, M. Carriquiry², V. Artegoitia¹, D. Laborde³, and A. Meikle¹, ¹Veterinary School, UDELAR, Uruguay, ²School of Agronomy, UDELAR, Uruguay, ³Private consultant, Uruguay.
- M238 Effect of short-term prepartum supplementation on milk production and calf performance of multiparous beef cows on grazing conditions. M. Carriquiry*¹, G. Roig², G. Banchemo², and G. Quintans², ¹School of Agronomy, UDELAR, Uruguay, ²INIA, Treinta y Tres, Uruguay.
- M239 Effect of bovine somatotropin (bST), dietary fat, and day in milk (DIM) on hepatic mineral concentrations in Holstein cows. M. Carriquiry*¹, W. J. Weber², W. A. House³, and B. A. Crooker², ¹School of Agronomy, UDELAR, Uruguay, ²Department Animal Science, University of Minnesota, St. Paul, ³SDA-ARS, Ithaca, NY.
- M240 Responses of physiological parameters in cattle to a short period of induced heat load. Y. Aharoni¹, A. Brosh*², E. Tahar¹, and A. Abud¹, ¹VETERIX Ltd, Or Aqiva, Israel, ²Agricultural Research Organization, Ramat Yishai, Israel.
- M241 Differential propionate effects on the mRNA expression of a putative beta-hydroxybutyrate sensitive receptor GPR109A in two adipose depots of goats. M. Mielenz* and H. Sauerwein, *University of Bonn, Bonn, Germany.*
- M242 Effect of maternal nutrition and selenium (Se) supply on growth and thyroxine (T4) and triiodothyronine (T3) concentrations in female lambs. L. A. Lekatz*¹, J. J. Reed¹, T. L. Neville¹, D. A. Redmer¹, L. P. Reynolds¹, J. S. Caton¹, and K. A. Vonnahme¹, *Department of Animal Sciences, North Dakota State University, Fargo.*
- M243 Stearoyl-CoA desaturase gene expression and its fatty acid products in bovine tissues. P. Rezamand, J. Watts, D. Pfeifer, K. M. Hunt*¹, S. Zaman, and M. A. McGuire, *University of Idaho, Moscow.*
- M244 Effects of heat stress on glucose homeostasis and metabolic response to an endotoxin challenge in Holstein steers. R. P. Rhoads*¹, S. R. Sanders¹, L. Cole¹, M. V. Skrzypek¹, T. H. Elsasser², G. C. Duff¹, R. J. Collier¹, and L. H. Baumgard¹, ¹University of Arizona, Tucson, ²USDA-ARS, Beltsville, MD.
- M245 Impact of unsaturated fatty acid supply on the regulation of CLA-induced milk fat depression in lactating cows. M. J. de Veth¹, J. M. Griinari², V. Toivonen³, and K. J. Shingfield*³, ¹BASF-AG, Offenbach/Queich, Germany, ²University of Helsinki, Helsinki, Finland, ³MTT Agrifood Research Finland, Jokionen, Finland.

Production, Management and the Environment Beef and Dairy

- M246 Sexed-biased semen for nulliparous heifers: Effects on reproductive and lactational performances. F. Guagnini¹, J. E. P. Santos², J. R. Lima¹, J. Fetrow³, and R. C. Chebel*¹, ¹*Veterinary Medicine Cooperative Extension, University of California Davis, Tulare*, ²*Department of Animal Science, University of Florida, Gainesville*, ³*Department of Veterinary Population Medicine, University of Minnesota, Saint Paul*.
- M247 Use of sex-sorted semen in superovulated Holstein cows and heifers: A case study. S. R. Potter¹, B. J. Paus¹, J. M. DeJarnette², and R. L. Nebel*², ¹*Spruce Haven Farm, LLC, Union Springs, NY*, ²*Select Sires, Inc, Plain City, OH*.
- M248 What percentage of Nellore (*Bos indicus*) bulls exhibit fertility-associated antigen on sperm membranes? J. C. Dalton*¹, L. Deragon², and J. L. M. Vasconcelos³, ¹*University of Idaho, Caldwell*, ²*Alta Genetics Brazil, Uberaba, MG, Brazil*, ³*FMVZ-UNESP, Botucatu, SP, Brazil*.
- M249 Effect of dry period length on productive and reproductive parameters at subsequent lactation period of Holstein cows. D. R. Lozano¹ and C. F. Aréchiga*², ¹*Instituto Nacional de Investigaciones Forestales, Agrícolas y Pecuarias, Aguascalientes, Aguascalientes, México*, ²*Universidad Autónoma de Zacatecas, Zacatecas, Zacatecas, México*.
- M250 Effect of total dissolved solids and sulfates in drinking water on growing heifers fed sorghum silage. J. I. Arroquy*^{1,2}, M. Avila¹, J. Saravia¹, R. Ibañez¹, and P. Fisolo¹, ¹*INTA Santiago del Estero, Santiago del Estero, Argentina*, ²*Univ. Nacional de Santiago del Estero - Fac. Agronomía y Agroindustrias, Santiago del Estero, Argentina*, ³*CONICET, Santiago del Estero, Argentina*.
- M251 Non genetics effects on reproductive traits in Nellore female: I. Gestation length. D. H. Vieira¹, V. C. Rodrigues², L. F. D. Medeiros², C. G. Barbosa², J. P. F. Silveira³, V. L. Tierzo³, J. L. C. B. Reis*⁴, and R. S. B. Pinheiro³, ¹*Center of Creation of A, Rio de Janeiro, RJ, Brazil*, ²*Rural Federal university of Rio de Janeiro, Seropedica, RJ, Brazil*, ³*São Paulo State University, Botucatu, SP, Brazil*, ⁴*University of Agrarian Sciences - University of Marília, Marília, SP, Brazil*.
- M252 Effects of differing levels of rumen degradable protein on nitrogen metabolism in dairy cows and environmental pollution. H. Rafiee*, *University of Tehran, Tehran, Iran*.
- M253 PGF2 α analog on uterine health and reproductive performance of dairy cattle. R. M. Santos*¹, D. G. B. Demétrio², C. C. Dias², and J. L. M. Vasconcelos², ¹*FAMEV-UFU, Uberlandia, MG, Brazil*, ²*FMVZ-UNESP, Botucatu, SP, Brazil*.
- M254 Effects of GnRH treatment 7 days prior to resynchronization on conception rates to previous and repeat inseminations. R. L. Nebel*¹, J. M. DeJarnette¹, and B. A. Meek², ¹*Select Sires, Inc., Plain City, OH*, ²*Cache Valley/Select Sires, Logan, UT*.
- M255 Tasco alleviation of heat stress in dairy cows. L. B. Pompeu*¹, J. E. Williams¹, D. E. Spiers¹, R. L. Weaver¹, M. R. Ellersieck¹, K. M. Sargent¹, N. P. Feyerabend¹, H. L. Vellios¹, and F. Evans², ¹*University of Missouri, Columbia*, ²*Acadian Seaplants, Dartmouth, NS, Canada*.
- M256 Evaluation of the nitrogen balance module of the AminoCow ration evaluator. R. A. Patton*¹, W. Heimbeck², and J. R. Patton¹, ¹*Nittany Dairy Nutrition, Inc., Mifflinburg, PA*, ²*Evonik Degussa GmbH, Health & Nutrition, Hanau, Germany*.
- M257 Validation of right ruminal artery and vein as models of bovine foregut vasculature. J. L. Klotz*¹, L. P. Bush², and J. R. Strickland¹, ¹*USDA-ARS, FAPRU, Lexington, KY*, ²*University of Kentucky, Lexington*.
- M258 Effects of a commercial product containing *Morinda citrifolia* extract on growth performance and health of calves with a high risk of developing bovine respiratory disease. M. S. Brown*¹, R. Godbee², B. Coufal¹, C. L. Maxwell¹, J. O. Wallace¹, and C. H. Ponce¹, ¹*Feedlot Research Group, West Texas A&M University, Canyon*, ²*Morinda Agriculture, Provo, UT*.

Ruminant Nutrition By-product Feeds

- M259 Nature of fermentation in stored wet distillers grains. A. R. Geis*, P. J. Kononoff, A. M. Gehman, and C. S. Heine, *University of Nebraska, Lincoln*.
- M260 The effect of ensilage storage duration and proportion of wet distillers grains and straw on in situ dry matter disappearance. K. L. Neuhold*, J. J. Wagner, T. E. Engle, S. L. Archibeque, and K. S. Sellins, *Colorado State University, Fort Collins*.
- M261 In situ ruminal protein degradation of whole corn or corn endosperm distiller grains. W. Z. Yang*¹, L. E. Armentano², and Y. L. Li¹, ¹*Agriculture and Agri-Food Canada, Lethbridge, AB, Canada*, ²*University of Wisconsin, Madison*.
- M262 In situ ruminal degradability and intestinal digestibility of protein in soybean and dried distillers grains with solubles products. K. Mjoun*, K. F. Kalscheur, A. R. Hippen, and D. J. Schingoethe, *South Dakota State University, Brookings*.

- M263 Effects of feeding different combinations of stored wet corn distillers grains plus soluble (WDGS) on performance of lactating dairy cows. H. A. Ramirez Ramirez*, P. J. Kononoff, and A. M. Gehman, *University of Nebraska Lincoln, Lincoln*.
- M264 The effect of feeding dried distillers grains plus solubles on the performance of Chinese Holstein cows. Z. Yan, J. Wang*, D. Bu, M. Wang, and H. Wei, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*.
- M265 The effects of replacing barley silage or barley grain with dried distillers grains plus solubles on productivity of lactating dairy cows. S. Z. Zhang*, G. B. Penner, and M. Oba, *University of Alberta, Edmonton, AB, Canada*.
- M266 In vitro intestinal digestion of ruminal undegraded protein of distiller grain. Y. L. Li*¹, W. Z. Yang¹, and L. E. Armentano², ¹*Agriculture and Agri-Food Canada, Research Center, Lethbridge, AB, Canada*, ²*University of Wisconsin, Madison*.
- M267 Effects of diets containing elevated levels of modified wet corn distillers grains with solubles (DGS) on performance and carcass characteristics of beef steers. J. M. Carmack*¹, P. M. Walker¹, R. L. Atkinson², S. W. Reader², and B. R. Wiegand³, ¹*Department of Agriculture, Illinois State University, Normal*, ²*Animal Science, Food and Nutrition, Southern Illinois University, Carbondale*, ³*Division of Animal Science, University of Missouri, Columbia*.
- M268 Effects of high levels of distillers grains and composition of distillers grains on performance and carcass characteristics in steers. J. M. Carmack*¹, P. M. Walker¹, R. L. Atkinson², S. W. Reader², and B. R. Wiegand³, ¹*Department of Agriculture, Illinois State University, Normal*, ²*Animal Science, Food and Nutrition, Southern Illinois University, Carbondale*, ³*Division of Animal Science, University of Missouri, Columbia*.
- M269 Effect of varying ratios of corn to wheat grain in ethanol production on fermentation of ethanol by-product in batch culture. W. Z. Yang*¹, J. J. Mckinnon², T. A. McAllister¹, K. A. Beauchemin¹, and D. J. Gibb¹, ¹*Agriculture and Agri-Food Canada, Lethbridge, AB, Canada*, ²*University of Saskatchewan, Saskatoon, SK, Canada*.
- M270 Effects of feeding glycerol on fermentation kinetics of alfalfa hay. N. A. Krueger*¹, R. C. Anderson¹, L. O. Tedeschi², W. K. Krueger², and D. J. Nisbet¹, ¹*USDA-ARS-Food Feed Safety Research Unit, College Station, TX*, ²*Texas A&M University, College Station*.
- M271 Performance of post-weaned Holstein heifer calves fed grain mixes with glycerin as an energy source. G. Golombeski*¹, M. Raeth-Knight¹, B. Ziegler², R. Larson², D. Ziegler³, H. Chester-Jones³, and J. Linn¹, ¹*University of Minnesota, St. Paul*, ²*Hubbard Feeds, Mankato, MN*, ³*University of Minnesota, Southern Research and Outreach Center, Waseca*.
- M272 Effects of replacing starch or sugar with glycerin in diets for dairy cows on production and blood metabolites. D. E. Rico*, Y.-H. Chung, C. M. Martinez, T. Cassidy, K. S. Heyler, and G. A. Varga, *Department of Dairy and Animal Science, The Pennsylvania State University, University Park*.
- M273 Effects of increasing concentrations of dietary glycerol on ruminal environment and digestibility in lactating dairy cows. J. Boyd*, J. W. West, and J. K. Bernard, *University of Georgia, Tifton*.
- M274 Response of dairy cows to the complete substitution of corn by crude glycerin. O. F. Zacaroni¹, N. M. Lopes¹, S. Siécola Júnior¹, G. S. Dias Júnior¹, L. L. Bitencourt¹, B. F. Carvalho¹, J. R. M. Silva², R. A. N. Pereira³, and M. N. Pereira*¹, ¹*Universidade Federal de Lavras, Lavras, MG, Brazil*, ²*Centro Federal de Educação Tecnológica, Januária, MG, Brazil*, ³*Better Nature Research Center, Ijaci, MG, Brazil*.
- M275 Glycerol supplementation to corn silage- or cottonseed hull-based diets for lactating dairy cows. J. H. Shin*¹, S. C. Kim^{1,2}, D. Wang¹, A. T. Adesogan¹, and C. R. Staples¹, ¹*Department of Animal Sciences, University of Florida, Gainesville*, ²*Department of Animal Science, Gyeongsang National University, Jinju, Gyeongsangnam, South Korea*.
- M276 The effects of feeding glycerol on rumen fermentation and bacteria. R. B. Potu*¹, A. A. AbuGhazaleh¹, D. Hastings¹, S. Abo El-Nor², and S. Ibrahim³, ¹*Southern Illinois University, Carbondale*, ²*Egyptian National Research Center, Cairo, Egypt*, ³*North Carolina A&T State University, Greensboro*.
- M277 Effects of replacing corn starch or sugar with glycerin on ruminal fermentation during continuous culture. D. E. Rico*, Y.-H. Chung, C. M. Martinez, T. Cassidy, K. S. Heyler, and G. A. Varga, *Department of Dairy and Animal Science, The Pennsylvania State University, University Park*.
- M278 Effect of glycerol level in feedlot diets on animal performance. B. R. Ilse* and V. L. Anderson, *Carrington Research Extension Center, North Dakota State University, Carrington*.
- M279 Kinetics of fermentation of apple residues. Y. Castillo-Castillo¹, O. Ruiz-Barrera*¹, A. Elias-Iglesias², C. Arzola-Alvarez¹, C. Rodriguez-Muela¹, J. A. Ortega-Gutierrez¹, O. LaO-Leon², C. Holguin-Licon¹, and Y. Ricardo-Olive³, ¹*Facultad de Zootecnia y Ecología, Universidad Autónoma de Chihuahua, Chihuahua, Chihuahua, Mexico*, ²*Instituto de Ciencia Animal, La Habana, Cuba*, ³*Instituto de Investigaciones Agropecuarias Jorge Dimitrov, Bayamo, Granma, Cuba*.
- M280 Feeding behavior of yearling bulls fed a finishing diet containing low pectin wet citrus pulp silage. J. O. Sarturi*², L. G. Nussio¹, M. Zopollatto¹, J. T. Vasconcelos², and J. G. M. Munoz¹, ¹*University of São Paulo, São Paulo, SP, Brazil*, ²*University of Nebraska, Scottsbluff*.
- M281 Feeding behavior of yearling bulls fed a finishing diet containing low pectin wet citrus pulp. J. O. Sarturi*², L. G. Nussio¹, M. Zopollatto¹, J. T. Vasconcelos², and L. J. Mari¹, ¹*University of São Paulo, São Paulo, SP, Brazil*, ²*University of Nebraska, Scottsbluff*.

- M282 Dry matter and nutrient intake of sheep fed with different levels of cashew nut in the diet. E. S. Pereira*, P. G. Pimentel, J. G. L. Regadas Filho, M. S. S. Carneiro, and I. S. G. Maia, *Universidade Federal do Ceará, Fortaleza, Ceará, Brasil.*
- M283 Antioxidant activity of plasma and carcass characteristics of mature cows fed diets with manzanilla. C. Rodríguez-Muela¹, S. Romero-Villalobos*¹, H. E. Rodríguez-Ramírez^{2,1}, A. C. Arzola-Alvarez², A. Flores-Mariñelarena¹, G. Corral¹, O. La O-León³, and J. A. Grado-Ahuir¹, ¹Universidad Autónoma de Chihuahua, Chihuahua, Chihuahua, México, ²Instituto Nacional de Investigaciones Agrícolas Forestales y Pecuarias, Delicias, Chihuahua, México, ³Instituto de Ciencia Animal, La Habana, Cuba.
- M284 Effects of tomato pomace on feed intake and milk production of lactating dairy cows. R. Safari, R. Valkizadeh*, A. A. Naserian, and A. M. Tahmasbi, *Department of Animal Science (Excellent Center of Animal Nutrition), Faculty of Agriculture, Ferdowsi University of Mashhad, Mashhad, Iran.*

Ruminant Nutrition Dairy

- M285 The effect of allocation frequency in rotational grazing systems on the fatty acid (FA) profile in milk fat of dairy cows. B. Vlaeminck*¹, P. A. Abrahamse², V. Fievez¹, J. Dijkstra², and S. Tamminga², ¹Laboratory for Animal Nutrition and Animal Product Quality, Ghent University, Melle, Belgium, ²Animal Nutrition Group, Wageningen University, Wageningen, The Netherlands.
- M286 Economic analysis of alfalfa hay inclusion in wet corn gluten feed based diets for lactating dairy cattle. C. R. Mullins* and B. J. Bradford, *Kansas State University, Manhattan.*
- M287 Effect of alfalfa hay particle size and source of neutral detergent soluble carbohydrates on intake, chewing activity, ruminal fermentation and nutrient digestibility of midlactation cows. A. Asadi*, G. R. Ghorbani, M. Alikhani, and M. Bagheri, *Department of Animal Sciences, Isfahan University of Technology, Isfahan, Iran.*
- M288 Differentiating effects of effective fiber sources on performance of lactating dairy cows. R. A. Starkey*, P. N. Gott, M. L. Eastridge, E. R. Oelker, A. R. Sewell, B. Mathew, and J. L. Firkins, *The Ohio State University, Columbus.*
- M289 Effect of roughage to concentrate ratio on ruminal parameters and protein degradability in dairy cows. L. J. Erasmus*¹, W. A. van Niekerk¹, H. Nienaber¹, and P. H. Robinson², ¹University of Pretoria, Department of Animal and Wildlife Sciences, Pretoria, South Africa, ²University of California, Department of Animal Science, Davis.
- M290 Effect of decreasing forage fiber in close-up cows diets on rumination time, DMI and subsequent lactation performance. A. Nikkhah*¹, V. Keshavarz², H. Amanloo², M. Dehghan¹, and M. Kazemi Bonchenari¹, ¹Department of Animal Sciences, University of Tehran, Karaj, Iran, ²Department of Animal Sciences, University of Zanjan, Zanjan, Iran.
- M291 Feed sorting of dairy cows receiving diets different in dietary fiber level. O. AlZahal*, M. S. Douglas, S. L. Greenwood, and B. W. McBride, *University of Guelph, Guelph, ON, Canada.*
- M292 Corn bran vs. corn grain at two levels of forage: Intake and production responses by lactating dairy cows. C. Arndt*¹, L. E. Armentano¹, and M. B. Hall², ¹Department of Dairy Science, University of Wisconsin, Madison, ²U.S. Dairy Forage Research Center, University of Wisconsin, Madison.
- M293 Corn bran vs. corn grain at two levels of forage: Apparent digestibilities by lactating dairy cows. C. Arndt*¹, L. E. Armentano¹, and M. B. Hall², ¹Department of Dairy Science, University of Wisconsin, Madison, ²U.S. Dairy Forage Research Center, University of Wisconsin, Madison.
- M294 Effects of increasing levels of concentrate supplementation on milk production of grazing dairy cows. G. A. Gagliostro*, L. Antonacci, P. Barbera, D. A. Garciarena, and C. A. Cangiano, *Instituto Nacional de Tecnología Agropecuaria, Balcarce, Buenos Aires, Argentina.*
- M295 Effect of dietary concentrate level on rumen fermentation, digestibility, and nitrogen losses in dairy cows. M. Agle*¹, A. N. Hristov², S. Zaman¹, and C. Schneider¹, ¹University of Idaho, Moscow, ²Pennsylvania State University, University Park.
- M296 Feeding dairy cows rolled barley grain treated with lactic acid and heat delays *in situ* DM disappearance and prevents development of sub-acute ruminal acidosis. Q. Zebeli*, A. Mazzolari, S. M. Dunn, and B. N. Ametaj, *University of Alberta, Edmonton, AB, Canada.*
- M297 Dietary energy source in primiparous dairy cows during the transition period: Blood metabolites, metabolic hormones and milk production. M. A. T. Artunduaga*¹, S. G. Coelho¹, B. G. Campos¹, A. M. Borges¹, A. M. Q. Lana¹, R. B. Reis¹, H. M. Saturnino¹, H. N. Da Costa², and R. V. Sá Fortes², ¹Federal University of Minas Gerais, Belo Horizonte, Minas Gerais, Brazil, ²Human Resources on Agribusiness, ReHAgro, Belo Horizonte, Minas Gerais, Brazil.
- M298 Corn endosperm type influences nutrient digestibility in lactating dairy cows. J. C. Lopes*¹, R. D. Shaver¹, P. C. Hoffman¹, M. S. Akins¹, S. J. Bertics¹, H. Gencoglu², and J. G. Coors³, ¹Department of Dairy Science, University of Wisconsin, Madison, ²Department of Animal & Nutritional Sciences, Faculty of Veterinary Medicine, Uludag University, Bursa, Turkey, ³Department of Agronomy, University of Wisconsin, Madison.

- M299 Performance of dairy cows fed extruded or hydrated and ensiled mature corn grain. L. L. Bitencourt¹, S. Siécola Júnior¹, L. Q. Melo¹, N. M. Lopes¹, V. A. Silveira¹, I. R. Rios¹, J. R. M. Silva², R. A. N. Pereira³, and M. N. Pereira^{*1}, ¹Universidade Federal de Lavras, Lavras, MG, Brazil, ²Centro Federal de Educação Tecnológica, Januária, MG, Brazil, ³Better Nature Research Center, Ijaci, MG, Brazil.
- M300 Effect of starch infusion site on glucose rate of appearance (Ra) and digestibility of starch and nitrogen in dairy cows. F. Hassanat*, H. Lapierre, and D. R. Ouellet, *Dairy and Swine R&D Centre, Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada.*
- M301 The effects of different sources of nonstructural carbohydrates and addition of full fat roasted canola seed on milk production and composition in lactating cows. M. Sari, A. A. Naserian*, R. Valizadeh, and S. Salari, *Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran.*
- M302 Supplemental starch in postpartum dairy cow diets 1. Effect on productivity. B. L. Dyck*¹, L. Doepel¹, and M. G. Colazo², ¹University of Alberta, Edmonton, AB, Canada, ²Alberta Agriculture and Rural Development, Edmonton, AB, Canada.
- M303 Effect of dietary protein level on rumen fermentation, digestibility, and nitrogen losses in dairy cows. M. Agle*¹, A. N. Hristov², S. Zaman¹, and C. Schneider¹, ¹University of Idaho, Moscow, ²Pennsylvania State University, University Park.
- M304 Effect of dietary crude protein concentration on production and nitrogen balance of lactating dairy cows. T. Sun, Z.-J. Cao*, Y.-X. Dong, H.-T. Zhang, and S.-L. Li, *College of Animal Science and Technology, China Agricultural University, Beijing, China.*
- M305 Use of milk urea nitrogen(MUN) to improve dairy farm management. M. Nourozi*^{1,2}, A. Heravi Moussavi¹, and M. Abazari², ¹Department of Animal Science, Ferdowsi University of Mashhad, Mashhad, Iran, ²Department of Animal Science, Khorasan Razavi Agricultural and Natural Resources Research Center, Torogh, Mashhad, Iran.
- M306 Varying ruminally degradable protein concentrations in the lactating dairy cow diets maintains rumen fiber digestion and outflow of nutrients. J. Cyriac*¹, A. G. Rius¹, J. A. D. R. N. Appuhamy¹, R. E. Pearson¹, J. H. Herbein¹, K. F. Knowlton¹, J. L. Firkins², and M. D. Hanigan¹, ¹Virginia Polytechnic Institute and State University, Blacksburg, ²The Ohio State University, Columbus.
- M307 Effect of NPN source and dietary fermentable carbohydrate composition on fermentation, digestion, and N flow in rumen-simulating fermenters. G. A. Harrison*, M. D. Meyer, and K. A. Dawson, *Alltech Biotechnology, Nicholasville, KY.*
- M308 Effects of different levels of rumen degradable protein on rumen and plasma parameters in midlactation Holstein cows. H. Rafiee*, *Aboureihan Campus, Tehran University, Tehran, Iran.*
- M309 Partial replacement of soybean meal by protected urea effects on milk yield and composition. V. L. Souza¹, D. F. F. Silva¹, P. R. B. Piekarski¹, C. P. Jesus², M. N. Pereira³, and R. Almeida*¹, ¹Universidade Federal do Paraná, Curitiba, PR, Brazil, ²Colégio Agrícola Olegário Macedo, Castro, PR, Brazil, ³Universidade Federal de Lavras, Lavras, MG, Brazil.
- M310 Effect of different ratios of ammonia nitrogen to peptide nitrogen on microbial nitrogen synthesis in dairy cows. A. Nikkhah*, M. Kazemi Bonchenari, K. Rezayazdi, M. Dehghan, and H. Kohram, *Department of animal Sciences, Faculty of agronomy and animal sciences, University of Tehran, Karaj, Iran.*
- M311 Optimum ratio of ammonia nitrogen to peptide nitrogen in ruminal fluid for fiber digestibility and nitrogen utilization efficiency in dairy cows. M. Kazemi Bonchenari¹, K. Rezayazdi¹, M. Dehghan¹, A. Nikkhah*¹, H. Khalilvandi¹, V. Keshavarz², and F. Ghaziani¹, ¹Department of Animal Sciences, Faculty of Agronomy and Animal Sciences, University of Tehran, Karaj, Iran, ²Department of Animal Sciences, University of Zanjan, Zanjan, Iran.
- M312 Effect of whole cottonseed levels on ruminal parameters of dairy cows grazing elephant grass. J. Cesar Martinez*¹, F. Augusto Portela Santos², T. Vinhas Voltolini², A. Vaz Pires², and C. Maris Machado Brittar², ¹São Paulo State University, Jaboticabal, São Paulo, Brazil, ²São Paulo University, Piracicaba, São Paulo, Brazil.
- M313 Effect of whole cottonseed levels on performance of dairy cows grazing elephant grass. J. Cesar Martinez*¹, F. Augusto Portela Santos², T. Vinhas Voltolini², M. Antonio Penati², and A. Mendonça Pedroso², ¹São Paulo State University, Jaboticabal, São Paulo, Brazil, ²São Paulo University, Piracicaba, São Paulo, Brazil.
- M314 Effect of whole cottonseed processing on ruminal degradability of dairy cow grazing elephant grass. J. Cesar Martinez*¹, F. Augusto Portela Santos², T. Vinhas Voltolini², and A. Dias Pacheco Júnior², ¹São Paulo State University, Jaboticabal, São Paulo, Brazil, ²São Paulo University, Piracicaba, São Paulo, Brazil.
- M315 Effect of dietary protein on urea concentrations and preovulatory follicle characteristics in dairy cattle. U. Moallem*¹, R. Blank², M. Zachut^{1,2}, and A. Arieli², ¹ARO, Bet Dagan, Israel, ²Faculty of Agriculture, Rehovot, Israel.
- M316 Relationship between milk odd and branched-chain fatty acids and duodenal flow of microbial protein. L. Wang, J. Q. Wang*, D. P. Bu, Khas-Erdene, and S. Y. Luan, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, P. R. China.*
- M317 Comparison of optimal lysine and methionine concentrations in metabolizable protein estimated by the NRC (2001), CPM-Dairy (v.3.0.10) and AMTS.Cattle (v.2.1.1) models. N. Whitehouse*¹, C. Schwab¹, T. Tylutki², D. Luchini³, and B. Sloan³, ¹University of New Hampshire, Durham, ²Integrated Solutions for Sustainable Agriculture, Cortland, NY, ³Adisseo, Atlanta, GA.

- M318 Reevaluation of the breakpoint estimates for the NRC (2001) required concentrations of lysine and methionine in metabolizable protein for maximal content and yield of milk protein. C. Schwab*¹, N. Whitehouse¹, D. Luchini², and B. Sloan², ¹University of New Hampshire, Durham, ²Adisseo, Atlanta, GA.
- M319 Rumen microbial population shifts in dairy cattle experimentally induced with subacute ruminal acidosis (SARA). E. Khafipour*, S. Li, J. C. Plaizier, and D. O. Krause, *Department of Animal Science, University of Manitoba, Winnipeg, MB, Canada.*
- M320 Molecular population analysis of *Escherichia coli* associated with subacute ruminal acidosis (SARA) in dairy cattle. E. Khafipour*, J. C. Plaizier, and D. O. Krause, *Department of Animal Science, University of Manitoba, Winnipeg, MB, Canada.*
- M321 Factors affecting lipopolysaccharide (LPS) in the feces of dairy cows and its relationship to sub-acute ruminal acidosis (SARA). J. C. Plaizier*, D. O. Krause, and S. Li, *University of Manitoba, Winnipeg, MB, Canada.*
- M322 Estimation of herd level risk of subacute ruminal acidosis on four commercial dairies on the Priority P-One Program. K. Schneider*¹, D. Mertz², K. Mertz², and R. Breunig¹, ¹Priority IAC, Manitowoc, WI, ²Agtech Products, Inc., Waukesha, WI.
- M323 Use of magnesium exchanged natural zeolite as a source of ruminal buffer additive for lactating dairy cows. C. M. Dschaak*¹, J.-S. Eun¹, A. J. Young¹, and S. Peterson², ¹Utah State University, Logan, ²Zeotech Corporation, Fort Worth, TX.
- M324 Dietary cation-anion difference with calcium supplementation: Effects on metabolites and health of Holstein periparturient cows. W.-X. Wu*¹ and J.-X. Liu², ¹College of Animal Science, Guizhou University, Guiyang, China, ²Institute of Dairy Science, Zhejiang University, Hangzhou, China.
- M325 Influence of subclinical hypocalcemia on post-partum disease incidence in dairy cows. W. G. Chamberlin*, J. R. Middleton, and J. N. Spain, *University of Missouri, Columbia.*
- M326 Effect of β -carotene supply during close-up dry period on ovulation at the first follicular wave postpartum in dairy cows. C. Kawashima*¹, S. Nagashima¹, Y. Fujihara¹, F. J. Schweigert², K. Sawada³, A. Miyamoto¹, and K. Kida¹, ¹Obihiro University of Agriculture and Veterinary Medicine, Obihiro, Hokkaido, Japan, ²University of Potsdam, Potsdam-Rehbrücke, Germany, ³DSM Nutrition Japan K.K., Tokyo, Japan.
- M327 Effect of prepartum diet on rumen bacterial adaptation to a lactation diet fed to dairy cattle. S. E. Stebulis*¹, D. M. Stevenson², G. J. M. Rosa¹, P. J. Weimer^{2,1}, and R. R. Grummer¹, ¹University of Wisconsin, Madison, ²USDA-ARS US Dairy Forage Research Center, Madison, WI.
- M328 Effect of feeding level on the sorting behavior of lactating dairy cows. E. K. Miller-Cushon and T. J. DeVries*, *Department of Animal and Poultry Science, University of Guelph, Kemptville Campus, Kemptville, Ontario, Canada.*
- M329 Relationship of dairy cattle chewing behavior with forage fragility and fiber digestibility. K. W. Cotanch*¹, H. M. Dann¹, C. S. Ballard¹, C. S. Mooney¹, R. J. Grant¹, T. Eguchi², and K. Yagi², ¹William H. Miner Agricultural Research Institute, Chazy, NY, ²Zen-Noh National Federation of Agricultural Cooperative Associations, Tokyo, Japan.
- M330 Parity and its effect on conjugated linoleic acid (CLA) content in confined Holstein cows milk, in the northwest of México. A. Martínez-Borraz, H. González-Rios, S. Y. Moya-Camarena, J. Hernández, and A. Pinelli-Saavedra*, *Centro de Investigación en Alimentación y Desarrollo, A.C., Hermosillo, Sonora, México.*
- M331 Concentration of mammalian lignan enterolactone in milk of dairy cows fed different levels of flaxseed hulls. N. Gagnon*, C. Côrtes, C. Benchaar, and H. V. Petit, *Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada.*
- M332 Weekly excretion of the mammalian lignan enterolactone in milk of dairy cows fed flaxseed meal. N. Gagnon*, C. Côrtes, and H. V. Petit, *Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada.*
- M333 Effect of dietary plant antioxidant on milk fatty acids oxidation. D. Tedesco*, L. Garavaglia, and L. Chiesa, *University of Milan, VSA Dep., Milan, Italy.*
- M334 Performance and ruminal fermentation parameters of lactating dairy cows during hot environment. J. P. Wang^{1,2}, J. Q. Wang*², D. P. Bu², F. D. Li¹, X. K. Huo², T. J. Guo², H. Y. Wei², and L. Y. Zhou², ¹Gansu Agricultural University, Lanzhou, Gansu, China, ²Chinese Academy of Agricultural Sciences, Beijing, China.

Ruminant Nutrition Forages

- M335 Efficiency of different chemicals in deactivation of phenolic compounds in Sainfoin (*Onobrychis viciifolia* Scop.). H. Khalilvandi-Behroozyar, M. Dehghan-Banadaki*, and K. RezaYazdi, *Research Center of Excellence for Improving Sheep Carcass Quality and Quantity, Animal Science Department, University of Tehran, Karaj, Tehran, I.R. Iran.*
- M336 The effect of high sugar grass on nitrogen and methane output in cattle: A modeling approach. J. L. Ellis*¹, A. Bannink², J. Dijkstra³, A. J. Parsons⁴, S. Rasmussen⁴, G. R. Edwards⁵, E. Kebreab⁶, and J. France¹, ¹Centre for Nutrition Modelling, Department of Animal and Poultry Science, University of Guelph, Guelph, ON, Canada, ²Animal Sciences Group, Division Animal Production, Wageningen University and Research Centre, Lelystad, The Netherlands, ³Animal Nutrition Group, Wageningen Institute of Animal Sciences, Wageningen University, Wageningen, The Netherlands, ⁴AgResearch, Palmerston North, New Zealand, ⁵Lincoln University, Lincoln, New Zealand, ⁶Department of Animal Science, University of Manitoba, Winnipeg, MB, Canada.
- M337 Lipolysis and biohydrogenation of forage species at vegetative and reproductive stages of growth. A. Cabiddu¹, M. R. F. Lee*², L. Salis¹, N. D. Scollan¹, and M. L. Sullivan³, ¹AGRIS, Sardinia, Italy, ²Aberystwyth University, Wales, UK, ³USDA-DFRC, Madison, WI.
- M338 Effects of maturity of alfalfa conserved as silage on intake, productivity, and rumen pools in lactating dairy cows. K. L. Kammer*, Y. Ying, and M. S. Allen, *Michigan State University, East Lansing.*
- M339 Alfalfa silage length of cut interacts with feed intake to affect concentration of milk components in Holstein cows. K. L. Kammer*, Y. Ying, and M. S. Allen, *Michigan State University, East Lansing.*
- M340 Protein fractionation of various whole crop silages, and effect of silage based TMR on fermentation characteristics and degradability in vitro, and ruminal degradability and whole tract digestibility of TMR by cattle. J. Shinekhuu*¹, G. L. Jin¹, S. H. Choi¹, B. J. Ji¹, X. Z. Li², and M. K. Song¹, ¹Department of Animal Science, Chungbuk National University, Cheong-ju, Chungbuk, Korea, ²Department of Animal Science, Yanbian University, Yanji, Jilin, China.
- M341 Fermentation profiles of brown midrib and non-brown midrib hybrid corn silage. K. E. Nestor Jr.*, P. Krueger, J. Anderson, J. Brouillette, and K. Emery, *Mycogen Seeds, Inc., Indianapolis, IN.*
- M342 Utilization of solid state fermentation of *Pleurotus sapidus* for sugar cane silages. A. Peláez-Acero¹, M. Meneses-Mayo¹, L. A. Miranda-Romero², S. S. González-Muñoz*¹, and O. Loera-Corral³, ¹Colegio de Postgraduados, Montecillo, Edo. de México, México, ²Universidad Autónoma de Chapingo, Chapingo, Edo. de México, México, ³UAM Iztapalapa, México D.F., México.
- M343 As corn plants mature, NDF mass decreases. P. M. Walker¹, J. M. Carmack*¹, L. H. Brown², and F. N. Owens², ¹Department of Agriculture, Illinois State University, Normal, ²Pioneer Hi-Bred International, a DuPont Business, Johnston, IA.
- M344 Effects of moisture content and storage time on quality of baled TMR. J. Wang, J. Q. Wang*, W. J. Guo, Z. T. Song, J. Y. Zhang, and D. P. Bu, *The State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China.*
- M345 Chemical composition and nutritive value of total mixed ration (TMR) stored as wrapped round bales. J. Wang, J. Q. Wang*, W. J. Guo, Z. T. Song, J. Y. Zhang, and D. P. Bu, *The State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China.*
- M346 Effect of supplementing sodium diacetate in baled-TMR on the performance of middle lactation dairy cows. W. J. Guo, J. Q. Wang*, J. Wang, Z. T. Song, J. Y. Zhang, and D. P. Bu, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Beijing, China.*

Teaching/Undergraduate & Graduate Education

- M347 An introductory animal cell culture course for animal science, biomanufacturing and biotechnology programs. P. E. Mozdziak*^{1,2}, J. N. Petite^{1,2}, and S. Carson¹, ¹Biotechnology Program, North Carolina State University, Raleigh, ²Biomanufacturing Program, North Carolina State University, Raleigh.
- M348 Justification of university equine extra-curricular activities. M. Nicodemus*, *Mississippi State University, Mississippi State.*
- M349 A practical stem cell culture course for agricultural, life science, and engineering students. J. N. Petite*^{1,2}, P. E. Mozdziak^{1,2}, and S. Carson¹, ¹North Carolina State University, Biotechnology Program, Raleigh, ²North Carolina State University, Biomanufacturing Program, Raleigh.
- M350 Reliability of item scores on end-of-semester departmental course evaluation. M. A. Wattiaux* and P. M. Crump, *University of Wisconsin, Madison.*
- M351 Effect of instructor on use of an informal consumer sensory panel to teach students concepts related to beef palatability. J. A. Daniel*¹, S. E. Kitts¹, and T. D. Pringle², ¹Berry College, Mount Berry, GA, ²University of Georgia, Athens.

- M352 Factors influencing student success in an introductory to animal science class. F. M. LeMieux*, T. H. Shields, and J. T. Compton, *McNeese State University, Lake Charles, LA*.
- M353 Introducing a “Nutritional Physiology Webinar” for animal scientists. K. J. Harvatine*, *Penn State University, University Park*.
- M354 Assessment of needs for teaching, research and extension for goat sector. S. Solaiman*, C. Hill, N. Gurung, O. Bolden-Tiller, and C. Okere, *Tuskegee University, Tuskegee, AL*.
- M355 Preferences and backgrounds of incoming students in animal sciences at Tuskegee University. O. U. Bolden-Tiller*, E. Bush, and S. Bruinton, *Tuskegee University, Tuskegee, AL*.

SYMPOSIA AND ORAL SESSIONS

Alpharma Beef Cattle Nutrition Symposium

Chair: Matt Hersom, University of Florida

Sponsor: Alpharma

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- 9:30 AM Introduction
- 9:35 AM 9 What routine analytical measurements best predict available energy content of feeds and co-products? F. N. Owens*, *Pioneer Hi-Bred International, Johnston, IA*.
- 10:10 AM 10 Interesting but minor ingredients available for use in feedlot formulations. R. A. Zinn*, J. Salinas, and P. Garces, *University of California, Davis*.
- 10:45 AM 11 Changes and evolution of corn based co-products for beef cattle. L. Berger* and V. Singh, *University of Illinois, Urbana*.
- 11:20 AM 12 Utilization and application of wet co-products. M. L. Nelson*, *Washington State University, Pullman*.
- 11:55 AM 13 Applying technology with newer feed ingredients – Do the old paradigms apply? M. L. Galyean* and N. DiLorenzo, *Texas Tech University, Lubbock*.

Animal Health

Mastitis, Lameness, and Stress

Chair: Gina Pighetti, University of Tennessee, Knoxville

Sponsors: Elanco Animal Health and Pfizer Animal Health

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- 9:30 AM 14 Validation of a novel in-line milk analysis system designed to measure SCC and milk components. H. Karp* and C. S. Petersson-Wolfe, *Virginia Polytechnic and State Insitute, Blacksburg*.
- 9:45 AM 15 Reproduction and milk loss following clinical mastitis compared among J5 vaccinates and controls. D. J. Wilson*, *Utah State University, Logan*.
- 10:00 AM 16 Relationships between rumen lipopolysaccharide and mediators of inflammatory response with milk fat production and efficiency in dairy cows. Q. Zebeli, S. M. Dunn, and B. N. Ametaj*, *University of Alberta, Edmonton, Alberta, Canada*.
- 10:15 AM 17 Joint association of some *Staphylococcus aureus* genes with *in-vitro* biofilm formation and sub-clinical intramammary infection. B. V. Le Thanh^{1,3}, C. L. Jacob^{2,3}, S. Messier^{1,3}, F. Malouin^{2,3}, K. Pépin Gaudreau², and D. Scholl^{*1,3}, ¹*University of Montreal, Saint-Hyacinthe, Quebec, Canada*, ²*University of Sherbrooke, Sherbrooke, Quebec, Canada*, ³*Canadian Bovine Mastitis Research Network, Saint-Hyacinthe, Quebec, Canada*.
- 10:30 AM 18 Effect of flunixin meglumine treatment following parturition on cow health and milk production. T. F. Duffield*¹, H. Putnam-Dingwell¹, D. Weary², A. Skidmore⁵, L. Neuder⁴, W. Raphael⁴, S. Millman³, N. Newby¹, and K. E. Leslie¹, ¹*University of Guelph, Guelph, ON, Canada*, ²*University of British Columbia, Vancouver, ON, Canada*, ³*Iowa State University, Ames*, ⁴*Michigan State University, East Lansing*, ⁵*Intervet-Schering Plough, Desoto, KS*.
- 10:45 AM 19 Use of dermal fibroblasts to identify cows with high and low innate immune response potential. S. Kandasamy* and D. E. Kerr, *University of Vermont, Burlington*.

- 11:00 AM 20 Effect of farm, housing and management practices on the occurrence of clinical mastitis and pathogen isolation. Y. B. Hunt² and J. K. Margerison^{*1, 3}, ¹Massey University, Palmerston North, New Zealand, ²Plymouth University, Newton Abbot, UK.
- 11:15 AM 21 The effect of lameness in Holstein Friesian dairy cattle on live weight, milk yield, milk let down and milking duration. J. A. Hollis² and J. K. Margerison^{*1, 3}, ¹Massey University, Palmerston North, New Zealand, ²Plymouth University, Newton Abbot, UK.
- 11:30 AM 22 A comparison of measures of stress following administration of either lipopolysaccharide (LPS) or corticotropin-releasing hormone (CRH) to Brahman bulls and heifers. L. E. Hulbert^{*1}, J. A. Carroll¹, M. A. Ballou⁴, J. W. Dailey¹, L. C. Caldwell^{2,3}, A. N. Loyd^{2,3}, N. C. Burdick^{2,1}, R. C. Vann⁵, T. H. Welsh, Jr.², and R. D. Randel³, ¹Livestock Issues Research Unit, USDA-ARS, Lubbock, TX, ²Texas AgriLife Research, Texas A&M System, College Station, ³Texas AgriLife Research, Texas A&M System, Overton, ⁴Department of Animal and Food Sciences, Texas Tech University, Lubbock, ⁵MAFES, Mississippi State University, Raymond.
- 11:45 AM 23 Peripartum measures of stress, inflammation and energy status as predictors for postpartum health disorders in transition dairy cows. J. M. Huzzey^{*1}, T. R. Overton¹, D. V. Nydam¹, and R. J. Grant², ¹Cornell University, Ithaca, NY, ²W. H. Miner Agricultural Research Institute, Chazy, NY.
- 12:00 PM 24 Use of rumen temperature for health monitoring in cattle. L. E. Sims^{*1}, T. K. Dye-Rose¹, C. L. Goad², B. P. Holland¹, L. O. Burciaga-Robles¹, D. L. Step³, C. R. Krehbiel¹, and C. J. Richards¹, ¹Department of Animal Science, Oklahoma State University, ²Department of Statistics, Oklahoma State University, ³Veterinary Clinical Sciences, Oklahoma State University.
- 12:15 PM 25 Relationship between milk fat depression and laminitis in early lactating Holstein cows. M. Vazirigohar^{*}, A. Nejati Javaremi, and A. Nikkiah, *University of Tehran, Karaj, Tehran, Iran.*

SYMPOSIUM

Bioethics

A Scientist's Guide to Approaching Bioethics
Chair: Janice Siegford, Michigan State University
511be

- 9:30 AM Introduction. Diane Van Hekken, Dairy Processing and Products Research, ERRC, ARS, USDA.
- 9:35 AM 26 Bioethical considerations of food animal products and production. W. R. Stricklin^{*}, *University of Maryland, College Park.*
- 10:05 AM Discussion
- 10:10 AM 27 Thinking critically about bioethical issues. K. K. Schillo^{*}, *University of Kentucky, Lexington.*
- 10:40 AM Discussion
- 10:45 AM 28 A pedagogical tool for scientists faced with ethical issues. C. C. Croney^{*}, *The Ohio State University, Columbus.*
- 11:15 AM Questions and overall discussion

Breeding and Genetics

Dairy Cattle Breeding I

Chair: Kent Weigel, University of Wisconsin
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- 9:30 AM 29 Using veterinary and milk recording data for a genetic analysis of health traits. J. Moro-Méndez^{*1}, E. Bouchard², and R. I. Cue¹, ¹McGill University, Ste-Anne-de-Bellevue, QC, Canada, ²Université de Montréal, Faculté de Médecine Vétérinaire, Saint-Hyacinthe, QC, Canada.
- 9:45 AM 30 Use of linear and threshold models for analysis of producer-recorded health data in Holstein cattle. T. F.-O. Neuenschwander¹, F. Miglior^{*2,3}, J. Jamrozik¹, and L. R. Schaeffer¹, ¹CGIL, Dept. of Animal and Poultry Science, University of Guelph, Guelph, ON, Canada, ²Dairy and Swine Research and Development Centre, Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, ³Canadian Dairy Network, Guelph, ON, Canada.
- 10:00 AM 31 Comparison of service-sire fertility evaluations formerly or currently available to the US dairy industry. H. D. Norman^{*}, J. L. Hutchison, and J. R. Wright, *Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD.*

- 10:15 AM 32 Analysis of accounting for production in the genetic evaluation of direct herd life in Canadian Holsteins. A. Sewalem*^{1,2}, G. Kistemaker², and F. Miglior^{1,2}, ¹*Agriculture and Agri-Food Canada, Sherbrooke, Quebec, Canada*, ²*Canadian Dairy Network, Guelph, ON, Canada*.
- 10:30 AM 33 Estimates of residual feed intake in Holstein dairy cattle using an automated, continuous feed intake monitoring system. E. E. Connor*¹, J. L. Hutchison², H. D. Norman², and R. L. Baldwin, VI¹, ¹*USDA-ARS, Bovine Functional Genomics Laboratory, Beltsville, MD*, ²*USDA-ARS, Animal Improvement Programs Laboratory, Beltsville, MD*.
- 10:45 AM Break
- 11:00 AM 34 Trends for monthly changes in days open in Holsteins. M. Pszczola*^{1,2}, I. Aguilar^{1,3}, and I. Misztal¹, ¹*University of Georgia, Athens*, ²*Animal Breeding and Genetics Group, Wageningen University, Wageningen, the Netherlands*, ³*Instituto Nacional de Investigación Agropecuaria, Las Brujas, Uruguay*.
- 11:15 AM 35 Effects of milk fat composition, DGAT1 and SCD1 on fertility traits in Dutch Holstein cattle. R. M. Demeter*^{1,2}, G. C. B. Schopen¹, A. G. J. M. Oude Lansink², M. P. M. Meuwissen², and J. A. M. van Arendonk¹, ¹*Animal Breeding and Genetics Centre, Wageningen University, Wageningen, the Netherlands*, ²*Business Economics Group, Wageningen University, Wageningen, the Netherlands*.
- 11:30 AM 36 Deriving final score from linear traits for the Italian Holstein cattle. S. Biffani, F. Canavesi*, and R. Finocchiaro, *ANAFI, Cremona, Italy*.
- 11:45 AM 37 Modelling technical parameters of individual extended lactation curves in Italian Holsteins. R. Steri¹, E. L Nicolazzi², G. Gaspa¹, F. Canavesi², C. Dimauro¹, and N. P. P. Macciotta*¹, ¹*Dipartimento di Scienze Zootecniche, Università di Sassari, Sassari, Italia*, ²*Associazione Nazionale Allevatori Frisone Italiana, Cremona, Italia*.

Breeding and Genetics
Molecular Genetics I
Chair: Curt Van Tassell, USDA-ARS
524

- 9:30 AM 38 Hybridization quality diagnostics using control probes on long-oligonucleotide microarrays: An application to the Pigoligoarray. J. P. Steibel*¹, M. Wysocki², V. D. Rillington¹, A. M. Ramos^{1,3}, J. K. Lunney², and C. W. Ernst¹, ¹*Michigan State University, East Lansing*, ²*ANRI, BARC, ARS, USDA, Beltsville, MD*, ³*Wageningen University, Wageningen, the Netherlands*.
- 9:45 AM 39 Low density SNP chip for non-genotyped animals. H. Wang*¹ and R. Rekaya^{1,2}, ¹*Department of Animal and Dairy Science, University of Georgia, Athens*, ²*University of Georgia, Athens*.
- 10:00 AM 40 An approach to predict and manage Mendelian sampling variation based on dense SNP data. G. Abdel-Azim*, *Genex Cooperative Inc., Shawano, WI*.
- 10:15 AM 41 Selection of SNPs for an optimal low-density assay for genomic prediction of transmitting abilities. A. Vazquez*, G. de los Campos, K. A. Weigel, G. J. M. Rosa, and D. Gianola, *University of Wisconsin, Madison*.
- 10:30 AM Break
- 10:45 AM 42 Transcriptional profiling during fetal skeletal muscle development of Piau and commercial pigs. B. P. Sollero*^{1,2}, V. D. Rillington¹, R. J. Tempelman¹, S. E. F. Guimarães², J. D. Guimarães², M. S. Lopes², N. E. Raney¹, J. P. Steibel¹, and C. W. Ernst¹, ¹*Michigan State University, East Lansing*, ²*Federal University of Viçosa, Viçosa, MG, Brazil*.
- 11:00 AM 43 Extent of linkage disequilibrium in purebred and crossbred beef cattle. D. Lu*¹, M. Sargolzaei¹, M. Kelly¹, G. Vander Voort¹, Z. Wang², J. Mah², G. Plastow², S. Moore², and S. Miller¹, ¹*University of Guelph, Guelph, Ontario, Canada*, ²*University of Alberta, Edmonton, Alberta, Canada*.
- 11:15 AM 44 Construction of LD maps for SNPs linked to susceptibility loci. L. Gomez-Raya*, *University of Nevada, Reno*.
- 11:30 AM 45 Characterization of a whole-genome map of single nucleotide polymorphisms applied to two selection lines in British dairy cattle. G. Banos*¹ and M. P. Coffey², ¹*Faculty of Veterinary Medicine, Aristotle University of Thessaloniki, Thessaloniki, Greece*, ²*Sustainable Livestock Systems, Scottish Agricultural College, Edinburgh, Scotland, UK*.

Graduate Student Paper Competition
ADSA-ASAS Northeast Section
Chair: Kristen E. Govoni, University of Connecticut
513ab

- 9:30 AM 46 Evaluation of supplemental dried bovine colostrum in milk replacer fed dairy calves. V. Biemann*, T. J. DeVries, S. J. LeBlanc, K. Lissemore, and K. E. Leslie, *University of Guelph, Guelph, Ontario, Canada.*
- 9:45 AM 47 Feeding anionic salts in the prefresh period, the addition of sodium bicarbonate to colostrum replacer and their effects on IgG absorption in the neonate. K. M. Morrill*, S. P. Marston, N. L. Whitehouse, and P. S. Erickson, *University of New Hampshire, Durham.*
- 10:00 AM 48 Intramammary infections in pasture-based dairy cows supplemented with barium selenate before calving. A. Ceballos^{*1}, J. Kruze², I. R. Dohoo¹, J. Sanchez³, H. W. Barkema⁴, J. J. Wichtel¹, and F. Wittwer⁵, ¹Centre for Veterinary Epidemiologic Research, University of Prince Edward Island, Charlottetown, Prince Edward Island, Canada, ²Institute of Microbiology, Universidad Austral de Chile, Valdivia, Chile, ³Canadian Food and Inspection Agency, Charlottetown, Prince Edward Island, Canada, ⁴Department of Production Animal Health, University of Calgary, Calgary, Alberta, Canada, ⁵Institute of Veterinary Clinical Sciences, Universidad Austral de Chile, Valdivia, Chile.
- 10:15 AM 49 Prevalence, risk factors, and impact of postpartum uterine diseases in dairy cows. J. Dubuc*, T. F. Duffield, K. E. Leslie, J. S. Walton, and S. J. LeBlanc, ¹Population Medicine, University of Guelph, Guelph, Ontario, Canada, ²Animal and Poultry Science, University of Guelph, Guelph, Ontario, Canada.
- 10:30 AM 50 Effects of level of concentrate supplementation on milk production and ruminal pH in lactating cows on pasture. G. R. Clevenger*, L. R. Tager, and K. M. Krause, *West Virginia University, Morgantown.*
- 10:45 AM 51 Use of in vitro and in vivo tests to characterize gastrointestinal nematode anthelmintic resistance on sheep and goat farms in the mid-Atlantic U.S. E. K. Crook^{*1}, D. J. O'Brien¹, N. C. Whitley², R. M. Kaplan³, and J. M. Burke⁴, ¹Delaware State University, Dover, ²North Carolina A&T State University, Greensboro, ³University of Georgia, Athens, ⁴USDA, ARS, Booneville, AR.
- 11:00 AM 52 Effects of cinnamaldehyde, eugenol, and capsicum on rumen fermentation in continuous culture. L. R. Tager* and K. M. Krause, *West Virginia University, Morgantown.*

Graduate Student Paper Competition
CSAS Graduate Student Oral Competition 1
Chair: Luigi Faucitano, Agriculture and Agri-Food Canada
514

- 9:30 AM 53 Plant-based diets enriched with linseed oil or marine algae and organic selenium modify sperm fertility parameters in broiler breeders over the reproductive cycle. C. Coss^{*1,2}, C. Brèque^{1,2}, R. Gervais², C. Lessard^{1,2}, D. Venne³, M. R. Lefrançois², P. Y. Chouinard², G. Vandenberg², and J. L. Bailey^{1,2}, ¹Centre de recherche en biologie de la reproduction, Québec, Québec, Canada, ²Département des sciences animales, Université Laval, Québec, Québec, Canada, ³Couvoir Scott Ltée, Scott Jonction, Québec, Canada.
- 9:45 AM 54 The effect of two calving seasons on cow and calf performance in western Canada. L. C. Girardin^{*1}, H. A. Lardner², A. D. Iwaasa³, S. L. Scott⁴, and S. H. Hendrick¹, ¹University of Saskatchewan, Saskatoon, Saskatchewan, Canada, ²Western Beef Development Centre, Lanigan, Saskatchewan, Canada, ³Agriculture and Agri-Food Canada - Semiarid Prairie Agricultural Research Centre, Swift Current, Saskatchewan, Canada, ⁴Agriculture and Agri-Food Canada - Brandon Research Centre, Brandon, Manitoba, Canada.
- 10:00 AM 55 Evaluation of swine group-housing systems for breed-to-wean herds using a sow investment model. M. A. Fynn*, N. J. Lewis, M. L. Connor, and G. V. Johnson, *University of Manitoba, Winnipeg, Manitoba, Canada.*
- 10:15 AM 56 Effect of ruminal protozoa on urea-nitrogen recycling in growing lambs fed varying dietary protein concentrations. D. Kiran* and T. Mutsvangwa, *University of Saskatchewan, Saskatoon, Saskatchewan, Canada.*
- 10:30 AM 57 Comparison of NRC-2001 chemical approach with biological approach (in situ animal study) in the determination of digestible nutrients and energy values of dry distillers grains with solubles in ruminants. W. G. Nuez Ortin* and P. Yu, *University of Saskatchewan, Saskatoon, SK, Canada.*
- 10:45 AM 58 Effect of butyrate absorption on the severity of subacute ruminal acidosis. G. B. Penner^{*1}, J. R. Aschenbach², G. Gäbel², and M. Oba¹, ¹University of Alberta, Edmonton, AB, Canada, ²Universität Leipzig, Leipzig, Germany.

- 11:00 AM 59 Comparison of wheat or corn dried distillers grains with solubles (DDGS) on performance and carcass characteristics of feedlot steers. L. J. Walter*¹, J. L. Aalhus², W. M. Robertson², T. A. McAllister³, D. J. Gibb³, M. E. R. Dugan², N. Aldai², and J. J. McKinnon¹, ¹University of Saskatchewan, Saskatoon, SK, Canada, ²Agriculture and Agri-Food Canada, Lacombe Research Centre, Lacombe, AB, Canada, ³Agriculture and Agri-Food Canada, Lethbridge Research Centre, Lethbridge, AB, Canada.
- 11:15 AM 60 Effect of graded levels of wheat-based dried distillers grains with solubles on rumen fermentation in finishing cattle. R. M. Beliveau*^{1,2} and J. J. McKinnon², ¹Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada, ²University of Saskatchewan, Saskatoon, Saskatchewan, Canada.
- 11:30 AM 61 Impact of feed waste on the nutrition and economics of wintering beef cows. B. J. Yaremcio*¹, E. K. Okine², M. Oba², and D. McCartney³, ¹Alberta Agriculture and Rural Development, Canada, ²University of Alberta, Canada, ³Agriculture and Agri-Food Canada, Canada.
- 11:45 AM 62 A temporal characterization of the rumen epithelium response to dramatic shifts in dietary fermentable carbohydrates. M. A. Steele*, O. AlZahal, S. E. Hook, S. Greenwood, and B. W. McBride, University of Guelph, Guelph, Ontario, Canada.
- 12:00 PM 63 Fertility of Alpine goats following oestrus synchronisation with CIDR and artificial insemination with cryopreserved semen. M.-E. Marier*^{1,2}, F. Castonguay³, M. Theriault³, D. Cinq-Mars², C. Lessard^{1,2}, and J. L. Bailey^{1,2}, ¹Centre de recherche en biologie de la reproduction, ²Département des sciences animales, Université Laval, Québec City, ³Dairy & Swine Research and Development Center, AAFC, Lennoxville.

Graduate Student Paper Competition

National ADSA Dairy Foods

**Chair: Kayanush J. Aryana, Louisiana State University Agricultural Center
510ac**

- 9:30 AM 65 Structure-function relationship of exopolysaccharides from lactic acid bacteria in fermented milk. M.-C. Gentès*^{1,2}, D. St-Gelais², and S. L. Turgeon¹, ¹STELA Dairy Research Centre and Institute of Nutraceuticals and Functional Foods, Laval University, Quebec city, Quebec, Canada, ²Food Research and Development Centre, Agriculture and Agri-Food Canada, St-Hyacinthe, Quebec, Canada.
- 9:45 AM 66 Modifying whey proteins to improve heat stability and clarity. K. N. Ryan*, B. Vardhanabhuti, and E. A. Foegeding, North Carolina State University, Raleigh.
- 10:00 AM 67 Evaluation of heated milkfat flavor profile and its effect on buttery flavor in cheese. E. L. Harvey* and S. A. Rankin, University of Wisconsin, Madison.
- 10:15 AM 68 Are the physico-chemical properties of the casein micelle modified by ultrafiltration? M. A. Ferrer*^{1,2}, M. Alexander², and M. Corredig², ¹University of Zulia, Maracaibo, Zulia, Venezuela, ²University of Guelph, Guelph, Ontario, Canada.
- 10:30 AM Break
- 10:45 AM 69 Isolation of a whey fraction rich in α -lactalbumin from skim milk through microfiltration. B. Holland*¹, J. Kacmar², and M. Corredig¹, ¹University of Guelph, Guelph, ON, Canada, ²NCSRT, Raleigh, NC.
- 11:00 AM 70 Production efficiency of a serum protein (SP) reduced micellar casein concentrate (MCC) produced with polymeric spiral-wound microfiltration (MF) membranes. S. L. Beckman*¹, J. Zulewska², M. Newbold¹, and D. M. Barbano¹, ¹Cornell University, Ithaca, NY, ²University of Warmia and Mazury, Olsztyn, Poland.
- 11:15 AM 71 Retention of vitamin D fortified emulsions in bench-top cheese. M. Tippetts*^{1,2}, S. Martini^{1,2}, C. Brothersen^{2,1}, and D. McMahan^{1,2}, ¹Utah State University, Logan, ²Western Dairy Center, Logan, UT.
- 11:30 AM 72 Low fat Mozzarella cheese with improved baking and melting properties. R. Wadhvani* and D. J. McMahan, Utah State University, Logan.
- 11:45 PM 73 Effects of starch addition on a low-fat cheese model system. K. M. Larsen*^{1,2}, D. J. McMahan^{1,2}, and W. R. McManus^{1,2}, ¹Western Dairy Center, Logan, UT, ²Utah State University, Logan.
- 12:00 PM 524 Genotyping for strain-level differentiation of *Bifidobacterium animalis* ssp. *lactis*. J. R. Loquasto*¹, E. P. Briczinski², A. M. Roberts¹, E. G. Dudley¹, R. Barrangou³, and R. F. Roberts¹, ¹Pennsylvania State University, State College, ²University of Wisconsin, Madison, ³Danisco USA Inc., Madison, WI.
- 12:15 PM 752 An on-line light backscatter sensor at 980 nm for monitoring curd moisture and whey solids contents with a cooking step during syneresis in a cheese vat. M. J. Mateo*¹, C. D. Everard¹, C. P. O'Donnell², M. Castillo³, F. A. Payne³, and D. J. O'Callaghan¹, ¹Teagasc, Cork, Ireland, ²University College Dublin, Dublin, Ireland, ³University of Kentucky, Lexington.

12:30 PM 424 Development of an optical backscatter method for determining thermal denaturation of whey proteins during milk processing. A. M. Lamb*, M. Castillo, F. A. Payne, and Y. L. Xiong, *University of Kentucky, Lexington*.

**Graduate Student Paper Competition
National ADSA Production MS Oral
Chair: Mike McGilliard, Virginia Tech
513cd**

- 9:30 AM 74 Effects of conjugated linoleic acid isomers on mammary gland development in BALB/cJ mice. J. M. Gloviczki*¹, J. Kraft², A. L. Lock², J. F. Trott¹, and R. C. Hovey¹, ¹*University of California, Davis*, ²*University of Vermont, Burlington*.
- 9:45 AM 75 The effects of TGF- β 1 on mammary stroma during the dry period of dairy cows. L. De Vries*, J. Liesman, K. Weiss, H. Dover, T. Casey, M. VandeHaar, and K. Plaut, *Michigan State University, East Lansing*.
- 10:00 AM 76 Comparison of real-time PCR and culture for detection and speciation of *Mycoplasma* species in bulk tank milk samples. A. Justice-Allen*¹, G. Goodell², J. Trujillo¹, and D. Wilson¹, ¹*Utah State University, Logan*, ²*Dairy Authority, Greeley, CO*.
- 10:15 AM 77 Intermediates of linoleic acid biohydrogenation in ruminal batch cultures dosed with uniformly ¹³C labeled linoleic acid. C. M. Klein* and T. C. Jenkins, *Clemson University, Clemson, SC*.
- 10:30 AM 78 Effect of an exogenous fibrolytic enzyme or ammonia on fiber concentration, feed intake, digestibility, and ruminal pH of steers fed bermudagrass hay harvested at two maturity stages. J. J. Romero*, A. T. Adesogan, M. A. Zarate, O. C. M. Queiroz, J. Han, K. G. Arriola, C. M. Huisden, C. R. Staples, and M. Garcia, *University of Florida, Gainesville*.
- 10:45 AM 79 Supplemental starch in postpartum dairy cow diets: 2. Effects on reproduction. B. L. Dyck*¹, M. G. Colazo², D. J. Ambrose^{1,2}, M. K. Dyck¹, and L. Doepel¹, ¹*University of Alberta, Edmonton, AB, Canada*, ²*Alberta Agriculture and Rural Development, Edmonton, AB, Canada*.
- 11:00 AM 80 Accuracy of an on-farm blood test for pregnancy in dairy and beef cattle. J. C. Green*¹, D. H. Volkman¹, S. E. Poock¹, M. F. McGrath², M. Ehrhardt², A. E. Moseley², and M. C. Lucy¹, ¹*University of Missouri, Columbia*, ²*Monsanto Co., St. Louis, MO*.
- 11:15 AM 81 Financial analysis of direct comparison of natural service sires and timed artificial insemination in a dairy herd. F. Lima*, A. deVries, and C. Risco, *University of Florida, Gainesville*.
- 11:30 AM 82 Fecal and urinary estrogens in dairy heifers during the estrous cycle. H. A. Tucker*¹, K. F. Knowlton¹, and N. G. Love², ¹*Virginia Polytechnic Institute and State University, Blacksburg*, ²*University of Michigan, Ann Arbor*.
- 11:45 AM 83 Low progesterone concentration during the development of the first follicular wave impairs fertility of lactating dairy cows. A. C. Denicol*¹, G. Lopes Jr.¹, L. G. D. Mendonça¹, F. A. Rivera¹, F. Guagnini¹, R. V. Perez¹, J. R. Lima¹, R. G. S. Bruno¹, J. E. P. Santos², and R. C. Chebel¹, ¹*University of California, Tulare*, ²*University of Florida, Gainesville*.

**Graduate Student Paper Competition
National ADSA Production PhD Oral
Chair: Matthew Lucy, University of Missouri
513ef**

- 9:30 AM 84 Expression of inducible nitric oxide synthase is up-regulated by production of 1,25-dihydroxyvitamin D₃ in bovine monocytes in response to toll-like receptor signaling. C. D. Nelson*^{1,2}, D. C. Beitz¹, T. A. Reinhardt², and J. D. Lippolis², ¹*Iowa State University, Ames*, ²*National Animal Disease Center, United States Department of Agriculture, Ames, IA*.
- 9:45 AM 85 Regulation of bovine pyruvate carboxylase mRNA and promoter expression by heat stress. H. M. White*, S. L. Koser, and S. S. Donkin, *Purdue University, West Lafayette, IN*.
- 10:00 AM 86 Activation of AMP-activated protein kinase (AMPK) inhibits *de novo* fatty acid synthesis in bovine mammary epithelial cells. J. W. McFadden* and B. A. Corl, *Virginia Polytechnic Institute and State University, Blacksburg*.
- 10:15 AM 87 Evaluation of effects of fibrolytic enzyme application on the digestibility of corn silage, alfalfa hay, and two concentrates and complete diets under simulated ruminal and preruminal conditions. K. G. Arriola* and A.T. Adesogan, *University of Florida, Gainesville*.
- 10:30 AM 88 Comparison of a controlled-energy high-fiber diet fed throughout the dry period to a two-stage far-off and close-up dietary strategy. B. F. Richards*¹, N. A. Janovick¹, K. M. Moyes¹, D. E. Beever², and J. K. Drackley¹, ¹*University of Illinois, Urbana*, ²*Richard Keenan & Co., County Carlow, Ireland*.

- 10:45 AM 89 Effects of addition of live bacterial inoculants and glycerol to the diet of lactating dairy cows on apparent efficiency and milk yield during heat stress. J. Boyd*¹, J. W. West¹, J. Bernard¹, J. Loften², and D. R. Ware², ¹University of Georgia, Tifton, ²Nutrition Physiology Corporation, St. Cloud, MN.
- 11:00 AM 90 Subacute ruminal acidosis decreases acetate absorption across the isolated ruminal epithelia. G. B Penner*¹, J. R. Aschenbach², G. Gäbel², and M. Oba¹, ¹University of Alberta, Edmonton, AB, Canada, ²Universität Leipzig, Leipzig, Germany.
- 11:15 AM 91 Effect of feed bin stocking density on the feeding and standing behavior of postpartum dairy cows. P. D. Krawczel*^{1,2}, D. M. Weary³, R. J. Grant¹, and M. A. G. von Keyserlingk³, ¹William H. Miner Agricultural Research Institute, Chazy, NY, ²The University of Vermont, Burlington, ³University of British Columbia, Vancouver, BC, Canada.
- 11:30 AM 92 Evaluation of NEFA and β -hydroxybutyrate (BHB) as predictors of clinical disease, milk production and reproductive performance in dairy cattle. P. A. Ospina*, D. V. Nydam, T. Stokol, and T. R. Overton, Cornell University, Ithaca, NY.
- 11:45 AM 93 Heterogeneous relationship between milk production and reproduction in dairy cows: Preliminary evidence. N. M. Bello*, R. J. Erskine, and R. J. Tempelman, Michigan State University, East Lansing.
- 12:00 PM 94 Effects of maternal lineage on production and fertility traits of Holstein cattle. C. N. Vierhout*, S. P. Washburn, R. L. McCraw, and E. J. Eisen, North Carolina State University, Raleigh.
- 12:15 PM 95 Use of acaricides and gastrointestinal anthelmintics in developing countries: A case study among livestock farmers in Ghana. W. Addah*¹, J. Baah², and E. K. Okine¹, ¹University of Alberta, Edmonton, Alberta, Canada, ²Agriculture and Agri-Food Canada, Lethbridge Research Centre, Lethbridge, Alberta, Canada.

**Nonruminant Nutrition
Feed Ingredients
Chair: Randy Walker, DPI Global
Sponsor: Danisco Animal Nutrition
518**

- 9:30 AM 228 Prediction of DE content of common ingredients in grower pigs using an in vitro digestibility technique. P. R. Regmi*¹, N. S. Ferguson², A. Pharazyn², L. F. Wang¹, and R. T. Zijlstra¹, ¹University of Alberta, Edmonton, AB, Canada, ²Nutreco Canada, Guelph, ON, Canada..
- 9:45 AM 96 A comparative evaluation of a new dried cheese and milk product (Gold Star Milk) versus other milk protein sources for weanling pigs. G. L. Cromwell*, M. C. Ulery, Y. L. Ma, I. F. Hung, and M. D. Lindemann, University of Kentucky, Lexington.
- 10:00 AM 97 Canola meals from yellow-seeded *Brassica napus* and *B. juncea* have a higher digestible and net energy content in pigs than the meal from black-seeded *B. napus*. C. A. Montoya, K. Neufeld, P. Kish, and P. Leterme*, Prairie Swine Centre Inc., Saskatoon, SK, Canada.
- 10:15 AM 98 Chemical composition and nutritive value of yellow-seeded canola for broiler chickens. W. Jia*¹, B. A. Slominski¹, G. Rakow², and D. Hickling³, ¹University of Manitoba, Winnipeg, MB, Canada, ²Agriculture and Agri-Food Canada, Saskatoon, SK, Canada, ³Canola Council of Canada, Winnipeg, MB, Canada.
- 10:30 AM 99 Effect of grinding on the digestible and net energy content of field peas (*Pisum sativum*) in growing pigs. C. A. Montoya, K. Neufeld, P. Kish, and P. Leterme*, Prairie Swine Centre Inc., Saskatoon, SK, Canada.
- 10:45 AM 100 Various levels of guar meal supplementation on growth performance and meat quality in growing-finishing pigs. P. S. Heo, S. W. Lee*, D. H. Kim, G. Y. Lee, K. H. Kim, and Y. Y. Kim, Seoul National University, Seoul, Korea.
- 11:00 AM 101 Prediction of barley grain feed value for swine using near infrared reflectance spectroscopy (NIRS). M. L. Swift*¹, L. Oatway¹, R. T. Zijlstra², W. C. Sauer², and J. H. Helm¹, ¹Alberta Agriculture and Rural Development, Lacombe, AB, Canada, ²University of Alberta, Edmonton, AB, Canada.
- 11:15 AM 102 Prediction of metabolizable energy value of meat and bone meal for swine using near infrared reflectance analysis. O. A. Olukosi* and O. Adeola, Purdue University, West Lafayette, IN.
- 11:30 AM 103 Nutritive value of distillers dried grains with solubles (DDGS) for poultry. A. Rogiewicz*, B. A. Slominski, M. Mogielnicka, C. M. Nyachoti, and K. M. Wittenberg, University of Manitoba, Winnipeg, Canada.
- 11:45 AM 104 Effects of distillers dried grains with solubles on the digestibility of energy, DM, AA, and fiber, and intestinal transit time in a corn-soybean meal diet fed to growing pigs. P. E. Urriola* and H. H. Stein, University of Illinois, Urbana.

- 12:00 PM 105 Copra meal and palm kernel meal on growth performance, blood urea nitrogen concentration and meat quality in growing-finishing pigs. Y. H. Choi, G. Y. Lee*, K. H. Kim, S. W. Lee, P. S. Heo, D. H. Kim, H. K. Oh, and Y. Y. Kim, *Seoul National University, Seoul, Korea*.

**Production, Management and the Environment
Environment
Chair: Karen Koenig, Agriculture and Agri-Food Canada
510bd**

- 9:30 AM 106 Emissions of ammonia and methane from concentrated dairy production facilities in Southern Idaho. A. B. Leytem*, D. L. Bjorneberg, and R. S. Dungan, *USDA-ARS, Kimberly, ID*.
- 9:45 AM 107 Ammonia emissions from beef feedlot cattle fed corn-based backgrounding and finishing diets varying in protein concentration and source. K. M. Koenig*, S. M. McGinn, and K. A. Beauchemin, *Agriculture and Agri-Food Canada, Lethbridge, AB, Canada*.
- 10:00 AM 108 Methane emissions from finishing beef cattle offered maize silages harvested at four different stages of maturity. E. Mc Geough*^{1,2}, P. O'Kiely¹, T. M. Boland², K. J. Hart², P. A. Foley², and D. A. Kenny², ¹*Teagasc, Grange Beef Research Centre, Dunsany, Co. Meath, Ireland*, ²*School of Agri., Food Sci. & Vet. Med., University College Dublin, Belfield, Dublin, Ireland*.
- 10:15 AM 109 Effect of ammonia volatilization on manure nitrogen isotope composition. C. H. Lee*¹, A. N. Hristov¹, and S. Silva², ¹*Pennsylvania State University, University Park, PA*, ²*U.S. Geological Survey, Menlo Park, CA*.
- 10:30 AM 110 On-farm evaluation and demonstration of ammonia reduction best management practices (BMPs) for feedlots and dairies. N. M. Marcillac-Embertson*, J. Pritchett, J. L. Collett, and J. G. Davis, *Colorado State University, Fort Collins*.
- 10:45 AM 111 Nitrogen volatilization losses from bed pack in dairy cow barns. A. S. Atzori*, R. Boe, P. Carta, A. H. D. Francesconi, and A. Cannas, *Dipartimento di Scienze Zootecniche, University of Sassari, Sassari, Sardinia, Italy*.
- 11:00 AM 112 DairyGHG: A tool for evaluating the greenhouse gas emissions and carbon footprint of dairy production systems. C. A. Rotz* and F. Montes, *USDA/ARS, University Park, PA*.
- 11:15 AM 113 Greenhouse gas emission rates from Holstein and Black Angus-Cross feedlot steers and calves. K. R. Stackhouse*, Y. Pan, Y. J. Zhao, M. J. Tobias, and F. M. Mitloehner, *University of California, Davis*.
- 11:30 AM 114 Effects of urine application on chemistry of feedlot pen surfaces. N. A. Cole*¹, A. M. Mason¹, R. W. Todd¹, and D. B. Parker², ¹*USDA-ARS-CPRL, Bushland, TX*, ²*West Texas A&M University, Canyon*.
- 11:45 AM 115 Modifying available grazing time to increase dairy cow urine capture. C. E. F. Clark*¹, K. L. M. McLeod¹, C. B. Glassey¹, P. Gregorini¹, K. Betteridge², and J. G. Jago¹, ¹*DairyNZ, Hamilton, Waikato, New Zealand*, ²*AgResearch, Palmerston North, Manawatu, New Zealand*.

**Ruminant Nutrition
Dairy 1
Chair: Allen Young, Utah State University
516c**

- 9:30 AM 116 Production of angiopoietin-like protein 4 in ruminal tissue is decreased with increasing dietary fermentability. L. K. Mamedova*¹, G. B. Penner², K. A. Beauchemin³, M. Oba², and B. J. Bradford¹, ¹*Kansas State University, Manhattan*, ²*University of Alberta, Edmonton*, ³*Agriculture and Agri-Food Canada, Lethbridge Research Centre, AB, Canada*.
- 9:45 AM 117 Mammary transcriptomics response to milk fat-depressing or milk fat-enhancing diets in lactating dairy cows. G. Invernizzi*^{1,2}, B. J. Thering¹, D. E. Graugnard¹, P. Piantoni¹, M. A. McGuire³, G. Savoini², and J. J. Loor¹, ¹*University of Illinois, Urbana*, ²*University of Milan, Milan, Italy*, ³*University of Idaho, Moscow*.
- 10:00 AM 118 Mammary glucose metabolism in response to energy and/or protein supply in lactating dairy cows. S. Lemosquet*^{1,2}, F. Bardey^{1,2}, H. Rulquin^{1,2}, H. Lapierre³, and J. Guinard-Flament^{2,1}, ¹*INRA, Rennes, France*, ²*Agrocampus ouest, Rennes, France*, ³*Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada*.
- 10:15 AM 119 Regulation of adipose tissue metabolism in dairy cattle as affected by genetic merit and dietary efficiency. S. Rocco, A. M. Youngquist, G. Duncan, C. Schachtschneider, J. Miller, J. L. Vierck, A. Hutjens, J. P. McNamara*, and A. Lowe, *Washington State University, Pullman*.

- 10:30 AM 120 Changes in deposition of visceral adipose tissues and expression of lipogenesis-related genes induced by diets with different energy levels in non-lactating cows. P. Ji*, J. J. Loor, A. Nikkah, M. Bionaz, N. A. Janovick, and J. K. Drackley, *Department of Animal Science, University of Illinois, Urbana.*
- 10:45 AM 121 Contribution of changes in gene transcription in dairy cattle adipose tissue to control of metabolic pathways dictating increased overall efficiency. J. M. Sumner, C. Shachtschneider, A. Hutchins, A. M. Youngquist, G. Duncan, S. Rocco, J. Miller, J. L. Vierck, J. P. McNamara*, and A. Lowe, *Washington State University, Pullman.*
- 11:00 AM 122 Nitrogen recycling in lactating dairy cows consuming diets predicted by CPM Dairy to be deficient in either ruminal N or metabolizable protein. E. B. Recktenwald*, D. A. Ross, and M. E. Van Amburgh, *Cornell University, Ithaca, NY.*
- 11:15 AM 123 Effect of metabolizable methionine (MET) and lysine (LYS) concentrations on milk production and N utilization in lactating dairy cows. Z. H. Chen*¹, G. A. Broderick², N. D. Luchini³, B. K. Sloan³, and E. Devillard⁴, ¹*University of Wisconsin, Madison*, ²*U. S. Dairy Forage Research Center, Madison, WI*, ³*Adisseo USA Inc., Alpharetta, GA*, ⁴*Adisseo, France S.A.S., Commentry, France.*
- 11:30 AM 124 Effects of jugular infused branched-chain amino acid supplementation on milk protein synthesis in high producing dairy cows. J. A. D. R. N. Appuhamy*¹, J. R. Knapp², C. A. Umberger¹, and M. D. Hanigan¹, ¹*Virginia Polytechnic Institute and State University, Blacksburg*, ²*Fox Hollow Consulting, LLC, Columbus, OH.*
- 11:45 AM 125 Effect of carbohydrate source on rumen fluid pH and in vitro gas production (GP) in heifers fed pasture silage. A. Britos*¹, A. Mendoza², M. Claramunt¹, M. Karlen¹, G. Kelly¹, L. Magallanes¹, S. Ramirez¹, A. Zunini¹, J. L. Repetto², and C. Cajarville¹, ¹*Department of Animal Nutrition, Faculty of Veterinary, UdelaR, Montevideo, Uruguay*, ²*Department of Bovines, Faculty of Veterinary, UdelaR, Montevideo, Uruguay.*
- 12:00 PM 126 TMR particles breakdown through ingestive mastication of dairy cows. I. Schadt*¹, J. D. Ferguson², G. Azzaro¹, C. Guardiano¹, R. Petriglieri¹, and G. Licitra^{1,3}, ¹*CoRFiLaC, Regione Siciliana, Ragusa, Italy*, ²*University of Pennsylvania, School of Veterinary Medicine, Kennett Square*, ³*D.A.C.P.A. University of Catania, Italy.*

Ruminant Nutrition
Growing Cattle and Beef Breeding Herd
Chair: Cathy Bandyk, Quality Liquid Feeds
516ab

- 9:30 AM 127 Relationship between metabolizable protein balance, purine derivative excretion, 3-methyl histidine excretion, to feed efficiency in individually-fed heifers. W. A. Griffin*, G. I. Crawford, K. M. Rolfe, T. J. Klopfenstein, G. E. Erickson, P. S. Miller, and R. M. Diedrichsen, *University of Nebraska, Lincoln.*
- 9:45 AM 128 Residual feed intake in Nellore heifers selected for growth. R. H. Branco¹, S. F. M. Bonilha¹, D. P. D. Lanna*², L. A. Figueiredo¹, L. Calegare³, and A. G. Razook¹, ¹*Instituto de Zootecnia, Agência Paulista de Tecnologia dos Agronegócios, Sertãozinho, São Paulo, Brazil*, ²*Departamento de Zootecnia, Esalq/USP, Piracicaba, São Paulo, Brazil*, ³*Nutron Alimentos LTDA, Toledo, Paraná, Brazil.*
- 10:00 AM 129 Relationships between residual feed intake and apparent nutrient digestibility, in vitro methane producing activity and VFA concentrations in growing Brangus heifers. W. K. Krueger^{1,2}, G. E. Carstens^{1,2}, R. R. Gomez*², B. M. Bourg², P. A. Lancaster², L. J. Slay², J. C. Miller², R. C. Anderson³, S. M. Horrocks³, N. A. Krueger³, and T. D. A. Forbes⁴, ¹*Intercollegiate Faculty of Nutrition - Texas A&M University, College Station*, ²*Department of Animal Science - Texas A&M University, College Station*, ³*USDA, ARS, Food and Feed Safety Research Unit, College Station, TX*, ⁴*Texas AgriLife Research - Texas A&M University, Uvalde.*
- 10:15 AM 130 Relationship between residual feed intake, temperament, blood constituents and serum cortisol in growing Brangus heifers. R. R. Gomez*, G. E. Carstens, T. H. Welsh, P. A. Lancaster, W. K. Krueger, and L. J. Slay, *Texas A&M University, College Station.*
- 10:30 AM 131 Frequency of supplementation of a soyhull/corn gluten feed mix does not affect performance of growing cattle fed hay. M. E. Drewnoski* and M. H. Poore, *North Carolina State University, Raleigh.*
- 10:45 AM 132 Effect of energy source on leucine utilization and nitrogen retention in growing steers. K. S. Spivey*, E. C. Titgemeyer, and M. L. Jones, *Kansas State University, Manhattan.*
- 11:00 AM 133 Steer performance and digestibility when fed stocker diets with soyhull, corn gluten feed and distillers grain. G. M. Hill*¹, V. A. Corriher², D. J. Renney¹, and A. J. Nichols¹, ¹*The University of Georgia, Tifton*, ²*Texas AgriLife Ext. Ctr., Overton, TX.*
- 11:15 AM 134 Effects of supplemental energy and protein on forage digestion. E. A. Bailey*, E. C. Titgemeyer, K. C. Olson, K. S. Spivey, D. W. Brake, D. E. Anderson, and M. L. Jones, *Kansas State University, Manhattan.*

- 11:30 AM 135 Feeding dried distillers grains in lieu of standard range cubes to pregnant beef cows consuming low quality roughages improved economic returns with limited impacts on serum urea nitrogen or trace mineral status of the cows or their offspring. K. L. Swyers*¹, M. J. Jarosz¹, L. W. Douglass², and S. L. Archibeque¹, ¹Colorado State University, Department of Animal Sciences, Fort Collins, ²University of Maryland, Department of Animal and Avian Sciences, College Park.
- 11:45 AM 136 A meta-analysis evaluation of supplementing dried distillers grains plus solubles to cattle consuming forage based diets. W. A. Griffin*¹, V. R. Bremer¹, T. J. Klopfenstein¹, L. A. Stalker², L. W. Lomas³, J. L. Moyer³, and G. E. Erickson¹, ¹University of Nebraska, Lincoln, ²West Central Research and Extension Center, North Platte, NE, ³Southeast Agricultural Research Center, Parsons, KS.
- 12:00 PM 137 Effects of dam's dietary prepartum energy source on post-natal skeletal muscle development and growth in offspring of beef cattle. A. E. Radunz*, H. N. Zerby, F. L. Fluharty, and S. C. Loerch, *The Ohio State University, Wooster.*
- 12:15 PM 138 Effect of ZADO[®], as enzymes from anaerobic bacterium, on extent of ruminal fermentation, nutrient digestibilities and average daily gain in steers. H. Gado*¹ and B. E. A. Borhami², ¹Ain-Shams University, Dept. of Animal Production, Faculty of Agriculture, Cairo, Egypt, ²Alexandria University, Dept. of Animal Production, Faculty of Agriculture, Alexandria, Egypt.

SYMPOSIUM
Teaching/Undergraduate and Graduate Education
Enhancing the Writing Experience
Chair: C. L. Hicks, University of Kentucky
512ae

- 9:30 AM Introductory remarks. Jeannette Moore.
- 9:35 AM 139 Making the writing experience right. D. K. Aaron*, *University of Kentucky, Lexington.*
- 9:55 AM 140 Creating effective writing assignments in the animal sciences. M. W. Orth* and T. T. Barry, *Michigan State University, East Lansing.*
- 10:15 AM Discussion
- 10:20 AM 141 Incorporating journals and journal writing into the teaching and learning process. A. Zimmerman*, *The Ohio State University, Wooster.*
- 11:20 AM Break
- 11:30 AM 142 Incorporating writing assignments in large animal science courses. J. A. Sterle*, *Texas A&M University, College Station.*
- 11:40 AM 143 Journal writing. C. L. Hicks*, *University of Kentucky, Lexington.*
- 11:50 AM 144 Students' perception of writing assignments in contrasting learning environments. M. Wattiaux*, *University of Wisconsin, Madison.*
- 12:00 PM Panel discussion. All participants.

SYMPOSIUM
ASAS-ADSA Cell Biology Symposium
Chair: B. W. Hess, University of Wyoming
Sponsors: ASAS, ADSA, USDA, and EAAP
511ad

- 10:00 AM Introductions. B. W. Hess.
- 10:05 AM 145 Redox regulation of cysteine-dependent enzymes. R. P. Guttman*, *University of Kentucky, Lexington.*
- 10:35 AM 146 Redox regulation of cell function in skeletal muscle: Effects of contractile activity and implications for aging muscle. G. L. Close, E. D. O'Neill, and M. J. Jackson, J. Palomero*, *University of Liverpool, UK.*
- 11:05 AM 147 Mammalian epididymal glutathione peroxidases control the maintenance of sperm DNA integrity. E. Chabory, P. Vernet, R. Cadet, F. Saez, and J. R. Drevet*, *GReD, Clermont Université, Aubiere, France.*

11:35 AM 148 A theoretical approach to sperm preservation based upon mitochondrial energetics. D. P. Froman*, *Oregon State University, Corvallis*.

ADSA-SAD (Student Affiliate Division) Undergraduate Competition

Dairy Foods

Chair: Larry Fox, Washington State University

520ad

11:00 AM 149 Consumer fluid milk choices: Balancing nutrition, safety, cost, and emotions. K. Bolen* and L. Timms, *Iowa State University, Ames*.

11:15 AM 150 Raw milk: The controversy continues. S. Stelly*, *Louisiana State University, Baton Rouge*.

11:30 AM 151 Human health benefits of bovine colostrum. P. F. Welch*, D. R. Winston, and R. E. James, *Virginia Polytechnic Institute and State University, Blacksburg*.

11:45 AM 152 Importance of conventional dairy products in young adult diets. K. M. Stomack* and E. L. Karcher, *Michigan State University, East Lansing*.

12:00 PM 153 Risks associated with raw milk consumption. A. M. Harshbarger*, *The Pennsylvania State University, University Park*.

12:15 PM 154 Defending the US milk supply with a novel bulk milk transportation security system. C. N. Gravatte* and C. D. Thompson, *University of Kentucky, Lexington*.

12:30 PM 155 On farm pasteurization: Finding a niche market. J. T. Price*, *Clemson University, Clemson, SC*.

Graduate Student Paper Competition

ADSA Southern Section

Chair: Albert DeVries, University of Florida

513ab

11:30 AM 156 Phosphorus and other nutrient disappearance from plants containing condensed tannins using the mobile nylon bag technique. S. Pagán-Riestra*^{1,2}, J. P. Muir^{1,2}, B. D. Lambert², L. O. Tedeschi¹, and L. Redmon³, ¹*Texas A&M University, College Station*, ²*Texas AgriLife Research, Stephenville, TX*, ³*Texas AgriLife Extension, College Station, TX*.

11:45 AM 157 Effect of feeding supplemental rumen-protected Niacin (Niasure™) on milk yield, and milk composition in early lactation Holstein cows. D. J. Vanderwende*¹, B. A. Hopkins¹, S. M. Emanuele², S. Davidson¹, G. W. Smith¹, and L. W. Whitlow¹, ¹*North Carolina State University, Raleigh*, ²*Balchem Corporation, New Hampton, NY*.

12:00 PM 158 Effect of probiotics and yeast culture on rumen development and growth of dairy calves. J. M. Laborde*, C. C. Williams, C. Leonardi, C. F. Hutchison, B. F. Jenny, B. L. Fisher, and A. H. Dolejsiova, *Louisiana State University AgCenter, Baton Rouge*.

SYMPOSIUM

Dairy Foods

Milk Protein Fractionation Symposium

Chair: Lloyd Metzger, South Dakota State University

Sponsor: DMI

513cd

1:30 PM 159 Introduction to milk protein fractionation symposium. L. E. Metzger*, *Midwest Dairy Foods Research Center, South Dakota State University, Brookings*.

1:40 PM 160 Global use, opportunities and challenges for dairy proteins. P. Tong*, *Dairy Products Technology Center, California Polytechnic State University, San Luis Obispo*.

2:05 PM 161 Isolation of serum proteins from milk. D. M. Barbano*¹ and J. Zulewska², ¹*Cornell University, Ithaca, NY*, ²*University of Warmia and Mazury, Olsztyn, Poland*.

2:30 PM 162 Comparison of the functional properties of whey proteins isolated from milk or whey. E. A. Foegeding*¹, J. Zulewska², D. M. Barbano², M. A. Drake¹, P. J. Luck¹, Y. H. Yong¹, B. Vardhanabhuti¹, and T. Berry¹, ¹*North Carolina State University, Raleigh*, ²*Cornell University, Ithaca, NY*.

- 2:55 PM 163 Comparison of the flavor chemistry and sensory properties of whey proteins isolated from milk and whey. M. A. Drake*¹, D. M. Barbano², E. A. Foegeding¹, J. Zulewska², and M. Newbold², ¹North Carolina State University, Raleigh, ²Cornell University, Ithaca, NY.
- 3:20 PM 164 An integrated processing system to produce beta-casein, native whey protein and casein concentrates from whole milk. J. Lucey*¹ and K. Smith², ¹Department of Food Science, University of Wisconsin, Madison, ²Wisconsin Center for Dairy Research, University of Wisconsin, Madison.
- 3:45 PM 165 Charged ultrafiltration membranes for whey protein fractionation. M. Etzel* and S. Bhushan, University of Wisconsin, Madison.
- 4:10 PM 166 Utilization of supercritical carbon dioxide to produce milk protein fractions. P. M. Tomasula*, L. M. Bonnaille, and P. X. Qi, Dairy Processing and Products Research Unit, USDA/ARS/ERRC, Wyndmoor, PA.
- 4:35 PM Wrap-up and closing. L. E. Metzger.

SYMPOSIUM
ADSA Southern Section Symposium
Dairy Replacement Health Challenges in the Southeastern U.S.
Chair: David Winston, Virginia Polytechnic Institute and State University
510bd

- 2:00 PM 167 Advances in colostrum management. S. Godden*¹, S. Wells¹, J. Stabel², D. Haines³, R. Bey¹, J. Fetrow¹, P. Pithua¹, and M. Donahue¹, ¹University of Minnesota, St. Paul, ²USDA, ARS, National Animal Disease Center, Ames, IA, ³University of Saskatchewan, Saskatoon, SK, Canada.
- 2:30 PM Development of vaccination programs that enhance heifer immune systems. G. Goodell, Dairy Authority, Greeley, CO.
- 3:00 PM 168 Strategies to minimize the impact of heat stress on heifer health and performance. J. W. West*, University of Georgia, Tifton.
- 3:30 PM Differences in health and survivability between purebred and crossbred heifers. B. Cassell, Virginia Polytechnic Institute and State University, Blacksburg.
- 4:00 PM Producer's perspective on heifer health challenges in the Southeast and strategies to manage them. B. Patrick, Veterinarian, GA.
- 4:30 PM ADSA Southern Section Business Meeting

ADSA-SAD (Student Affiliate Division) Undergraduate Competition
Dairy Production
Chair: Larry Fox, Washington State University
520ad

- 2:00 PM 169 The impact of genomic selection on A.I. companies, today and tomorrow. K. L. Westaby* and L. H. Kilmer, Iowa State University, Ames.
- 2:15 PM 170 Pre-planning considerations for on-farm dairy processing enterprises. E. A. Chaney*, University of Kentucky, Lexington.
- 2:30 PM 171 Bovine genomics: Mapping the future of the dairy industry. V. Eubanks*, Clemson University, Clemson, SC.
- 2:45 PM 172 The effects of genomic predictions in dairy cattle. R. R. Liskey*, B. G. Cassell, and D. R. Winston, Virginia Polytechnic Institute and State University, Blacksburg.
- 3:00 PM 173 Advanced technology in gender selection: Sexed semen. H. Parkins* and S. Washburn, North Carolina State University, Raleigh.
- 3:15 PM 174 Blood pregnancy tests as alternatives to transrectal examinations. N. J. Heim*, The Pennsylvania State University, University Park.

- 3:30 PM 175 Contracted tendons in calves. M. Reed*, *Louisiana State University, Baton Rouge.*
- 3:45 PM 176 The effects of breeding for increased milk production in dairy cattle on other productive traits. G. A. Carpenter* and E. L. Karcher, *Michigan State University, East Lansing.*

ADSA-SAD (Student Affiliate Division) Undergraduate Competition
Original Research
Chair: Larry Fox, Washington State University
520be

- 2:00 PM 177 Feeding brown midrib forage sorghum silage and wet corn gluten feed to lactating dairy cows. C. S. Heine*¹, P. J. Kononoff¹, J. F. Pedersen², A. G. Geis¹, and A. M. Gehman¹, ¹*University of Nebraska, Lincoln*, ²*USDA-ARS Grain, Forage, and Bioenergy Research Unit, Lincoln, NE.*
- 2:15 PM 178 Measuring the citrate content in milk, mammary epithelial cells, and blood using capillary electrophoresis. M. J. Howell* and R. Jimenez-Flores, *California Polytechnic State University, San Luis Obispo.*
- 2:30 PM 179 Effects of black hair coat color in neonatal Holstein bull calves. A. J. Krenek*, G. A. Holub, and J. E. Sawyer, *Texas A&M University, College Station.*
- 2:45 PM 180 The effect of TGF- β 1 on cell proliferation in the bovine mammary gland during the dry period. K. Weiss*, L. DeVries, H. Dover, T. Casey, J. Liesman, M. VandeHaar, and K. Plaut, *Michigan State University, East Lansing.*
- 3:00 PM 181 The economic impact of soybean meal products on milk production and components for Holstein dairy cows. J. A. Hartzell*, G. A. Varga, Y.-H. Chung, K. S. Heyler, and V. A. Ishler, *The Pennsylvania State University, University Park.*
- 3:15 PM 182 Microbial growth in refrigerated colostrum over seven days. M. Beyer* and S. I. Kehoe, *University of Wisconsin, River Falls.*
- 3:30 PM 183 Postpartum plasma progesterone changes during early lactation in Holsteins, Jerseys and their crosses. S. Sheer*, K. L. Brown, B. G. Cassell, and F. C. Gwazdauskas, *Virginia Polytechnic Institute and State University, Blacksburg.*
- 3:45 PM 184 Differentiating effects of effective fiber sources on performance of lactating dairy cows. R. A. Starkey*, P. N. Gott, M. L. Eastridge, E. R. Oelker, A. R. Sewell, B. Mathew, and J. L. Firkins, *The Ohio State University, Columbus.*
- 4:00 PM 185 The effects of betaine on free choice water intake and vital signs related to heat stress of neonatal Holstein bull calves. J. L. Clark*, G. A. Holub, and J. E. Sawyer, *Texas A&M University, College Station.*
- 4:15 PM 186 Producer assessment of dairy extension programming in Kentucky. R. A. Russell* and J. M. Bewley, *University of Kentucky, Lexington.*
- 4:30 PM 187 Performance of weanling goats when fed a mixed concentrate with dried distillers grains compared to a pelleted concentrate. J. Popowski*¹, M. Raeth-Knight¹, T. Walsh², J. Linn¹, and R. Larson², ¹*University of Minnesota, St. Paul*, ²*Hubbard Feeds, Mankato, MN.*
- 4:45 PM 188 The effects of in-vivo derived trophoblastic vesicles on corpus luteum lifespan and serum progesterone concentrations in dairy cattle. E. R. Waggoner*, J. L. Fain, and J. R. Gibbons, *Clemson University, Clemson, SC.*

Animal Health
Immunity and Swine Health
Chair: Jeffery Escobar, Virginia Polytechnic Institute and State University
Sponsors: Elanco Animal Health and Pfizer Animal Health
511cf

- 2:00 PM 189 Pea dietary fiber for adhesion and excretion of enterotoxigenic *E. coli* K88 to prevent intestinal colonization. P. M. Becker*, P. G. van Wikselaar, A. J. M. Jansman, and J. van der Meulen, *Animal Sciences Group of Wageningen UR, Lelystad, the Netherlands.*
- 2:15 PM 190 Health benefits of yeast derivatives: In vitro and in vivo investigation. A. Ganner* and G. Schatzmayr, *BIOMIN Research Center, Tulln, Lower Austria, Austria.*
- 2:30 PM 191 Use of *Saccharomyces cerevisiae* fermentation product during *Salmonella* infection in weaned pigs. K. L. Price*, H. R. Totty, H. B. Lee, M. D. Utt, M. A. Ponder, and J. Escobar, *Virginia Polytechnic Institute and State University, Blacksburg.*

- 2:45 PM 192 Effects of feeding OmniGen-AF on neutrophil-mediated killing of *Archanobacterium pyogenes*. A. Rowson*, Y.-Q. Wang, S. B. Puntenney, and N. E. Forsberg, *OmniGen Research, Corvallis, OR*.
- 3:00 PM 193 Influence of an *in vivo* endotoxin challenge on *ex vivo* phagocytic and oxidative burst capacities of bovine neutrophils. M. A. Ballou*¹, L. E. Hulbert², L. R. Schwertner¹, J. A. Carroll², L. C. Caldwell^{3,4}, R. C. Vann⁵, T. H. Welsh Jr.³, and R. D. Randel⁴, ¹*Texas Tech University, Lubbock*, ²*Livestock Issues Research Unit, USDA-ARS, Lubbock, TX*, ³*Texas Agrilife Research, Texas A&M System, College Station*, ⁴*Texas A&M System, Overton*, ⁵*MAFES, Mississippi State University, Raymond*.
- 3:15 PM 194 Influence of an *in vivo* corticotropin-releasing hormone (CRH) challenge on *ex vivo* phagocytic and oxidative burst capacities of bovine neutrophils. M. A. Ballou*¹, L. E. Hulbert², L. R. Schwertner¹, J. A. Carroll², L. C. Caldwell^{3,4}, R. C. Vann⁵, T. H. Welsh, Jr³, and R. D. Randel⁴, ¹*Texas Tech University, Lubbock*, ²*Livestock Issues Research Unit, USDA-ARS, Lubbock, TX*, ³*Texas A&M System, College Station*, ⁴*Texas A&M System, Overton*, ⁵*MAFES, Mississippi State University, Raymond*.
- 3:30 PM 195 Bovine adipose tissue depot inflammatory gene expression responsiveness to lipopolysaccharide (LPS) *in vitro*. M. Mukesh, D. E. Graugnard*, M. Bionaz, J. K. Drackley, and J. J. Loor, *University of Illinois, Urbana*.
- 3:45 PM 196 Genotypic profiling of enterococci isolated from bovine origin. B. A. Stewart*¹, T. H. Yang¹, J. S. Hogan², and C. S. Petersson-Wolfe¹, ¹*Virginia Tech, Blacksburg*, ²*The Ohio State University, Ohio Agricultural Research and Development Center, Wooster*.
- 4:00 PM 197 Protective effect of polysaccharide produced by *Enterobacter cloacae* Z0206 on cyclophosphamide-induced suppression of immune functions in mice. M. Jin*, Y. Wang, X. Yang, C. Xu, and Z. Lu, *Institute of Feed Science, Zhejiang University, Hangzhou, Zhejiang Province, China*.
- 4:15 PM 198 Effects of recombine porcine Lactoferrin-N on growth performance and immune function of weanling piglets. L. Yifan, H. Feifei, X. Yonggang, and W. Yizhen*, *Zhejiang University, Hangzhou, Zhejiang, China*.
- 4:30 PM 199 Effects of α -ketoglutarate on mucosal morphology and function of small intestine in piglets. Q. Hu, Y. Hou*, B. Ding, H. Zhu, Y. Liu, M. Wang, and H. Xiao, *Hubei key Laboratory of Animal Nutrition and Feed Science, Wuhan Polytechnic University, Wuhan, Hubei, P. R. China*.

SYMPOSIUM

Bioethics

Working through Bioethical Issues in Practice
Chair: Janice Siegford, Michigan State University
Sponsor: Monsanto
511be

- 2:00 PM Introductions. J. Siegford, Michigan State University.
- 2:05 PM Introduction of case exercises and working process
- 2:20 PM Work on cases in small groups.
- 3:50 PM Group presentations on working processes and conclusions
- 4:50 PM Summary and discussion

SYMPOSIUM

Breeding and Genetics

Whole Genome Selection - The New Frontier?
Chair: Janice M. Rumph, Michigan State University
524

- 2:00 PM Introduction. J. M. Rumph, Michigan State University.
- 2:10 PM 200 National and international genomic evaluations for dairy cattle. P. M. VanRaden*¹ and P. G. Sullivan², ¹*USDA Animal Improvement Programs Laboratory, Beltsville, MD*, ²*Canadian Dairy Network, Guelph, ON, Canada*.
- 2:45 PM 201 Beef cattle industry structure: Implications for whole genome selection. A. Van Eenennaam*, *University of California, Davis*.

3:20 PM		Break
3:50 PM	202	Utilization of next generation sequencing technologies for development of a high-density pig SNP genotyping platform. R. P. M. A. Crooijmans* ¹ , M. A. M. Groenen ¹ , and L. B. Schook ² , ¹ Wageningen University, Wageningen, the Netherlands, ² University of Illinois, Urbana.
4:25 PM	203	Bioinformatics requirements to apply whole genome prediction in livestock. D. Garrick*, Iowa State University, Ames.
5:00 PM		Panel discussion

SYMPOSIUM

Companion Animals

Dietary Supplements in Companion & Exotic Animal Nutrition - Use, Regulations & Safety

Chair: Kelly Swanson, University of Illinois

Sponsors: Procter and Gamble Pet Care and International Ingredient Corp.

511ad

2:00 PM		Introduction. Kelly Swanson.
2:10 PM	204	Navigating the FDA's regulation of animal feed "supplements". J. B. Murphy*, U.S. Food and Drug Administration's Center for Veterinary Medicine, Rockville, MD.
2:35 PM	205	Safety of Dietary Supplements for Horses, Dogs and Cats – New NRC Publication. G. L. Czarnecki-Maulden*, Nestle Purina Research, St Louis, MO.
3:00 PM	206	The big "S" supplementation in exotic animal diets. N. A. Irlbeck*, Colorado State University, Fort Collins, CO.
3:25 PM		Break
3:45 PM	207	From arthritis to zinc deficiency, veterinarians are increasingly recommending pet supplements. P. Brown*, Nutri-Vet LLC, Boise, ID.
4:10 PM	208	Who are we, what do we do and how can we help? W. Bookout*, National Animal Supplement Council, Valley Center, CA.
4:35 PM		2008 Corbin Award Winner: Opportunities in companion animal sciences. Gail Kuhlman, Procter & Gamble Pet Care, Lewisburg, OH.
4:55 PM		Reception

Food Safety

Chair: Mandy Carr, National Cattlemen's Beef Association

519

2:00 PM	209	<i>Clostridium difficile</i> in cattle and swine. R. Harvey*, FFSRU, ARS, USDA, College Station, TX.
2:30 PM	210	Optimising fluorescence of feces as a real-time solution for the detection of fecal contamination on carcasses. M. R. F. Lee* ¹ , V. J. Theobald ¹ , M. K. Theodorou ¹ , A. Veberg Dahl ² , F. Lundby ² , and J.-P. Wold ² , ¹ Aberystwyth University, Wales, UK, ² Nofima Mat, Ås, Norway.
2:45 PM	211	Influence of serum prolactin concentrations on fecal shedding of <i>E. coli</i> O157:H7 in cattle. R. L. Farrow*, T. S. Edrington, K. M. MacKinnon, R. C. Anderson, and D. J. Nisbet, USDA - ARS, College Station, TX.
3:00 PM	212	Oral delivery systems for encapsulating bacteriophage targeted at <i>E. coli</i> O157:H7. K. Stanford* ¹ , T. P. Stephens ¹ , T. A. McAllister ² , D. Niu ^{1,3} , and R. P. Johnson ⁴ , ¹ Alberta Agriculture and Rural Development, Lethbridge, AB, Canada, ² Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, ³ Dalian University of Technology, Dalian, China, ⁴ Public Health Agency of Canada, Guelph, ON, Canada.
3:15 PM	213	Effects of Aviplus® on <i>E. coli</i> O157:H7 in pure culture and in mixed ruminal culture fermentations. T.R. Callaway* ¹ , E. Grilli ² , M. R. Messina ² , and A. Piva ² , ¹ Food and Feed Safety Research Unit, Agricultural Research Service, USDA, College Station, TX, ² DIMORFIPA, University of Bologna, Bologna, Italy.

- 3:30 PM 214 Control of *E. coli* O157:H7 in corn silage with inoculants under anaerobic and aerobic conditions. A. F. Pedroso^{1,2}, A. T. Adesogan², O. C. M. Queiroz^{*2}, and S. K. Williams², ¹Brazilian Agricultural Research Corporation, Embrapa Cattle-Southeast, Sao Carlos, Sao Paulo, Brazil, ²Department of Animal Sciences, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, Florida, USA.
- 3:45 PM 215 Characterization of antimicrobial-resistant *Escherichia coli* from samples collected throughout processing of feedlot cattle at a commercial abattoir. T. W. Alexander^{*1}, G. D. Inglis¹, L. J. Yanke¹, E. Topp², and T. A. McAllister¹, ¹Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada, ²Agriculture and Agri-Food Canada, London, Ontario, Canada.
- 4:00 PM 216 Screening of class IIa bacteriocin-producing lactic acid bacteria from Chinese traditional fermented food by PCR based method. H. Yi, L. Zhang^{*}, Y. Tuo, X. Han, and M. Du, Harbin Institute of Technology, Harbin, Heilongjiang, China.
- 4:15 PM 217 Salmonella infection and immune response in finishing pigs. M. H. Rostagno^{*}, S. D. Eicher, and D. C. Lay, USDA, ARS, Livestock Behavior Research Unit, West Lafayette, IN.

Graduate Student Paper Competition
CSAS Oral Competition 2
Chair: Luigi Faucitano, Agriculture and Agri-Food Canada
514

- 2:00 PM 218 The effect of animal location during transit on heart rate of pigs transported to slaughter using two vehicle types. J. A. Correa^{*1}, H. Gonyou², R. Bergeron³, S. Torrey⁴, T. Crowe⁵, T. Widowski³, J. P. Laforest¹, C. Dewey³, N. Lewis⁶, and L. Faucitano⁴, ¹Laval University, Quebec, Quebec, Canada, ²Prairie Swine Centre, Saskatoon, Saskatchewan, Canada, ³University of Guelph, Guelph, Ontario, Canada, ⁴Agriculture & Agri-Food Canada, Sherbrooke, Quebec, Canada, ⁵University of Saskatchewan, Saskatoon, Saskatchewan, Canada, ⁶University of Manitoba, Winnipeg, Manitoba, Canada.
- 2:15 PM 219 Utilization of electrolytes to encourage early feed and water consumption in weanlings. A. K. Gigiel^{*}, N. J. Lewis, and M. L. Connor, University of Manitoba, Winnipeg, Manitoba, Canada.
- 2:30 PM 220 Identification of single nucleotide polymorphisms influencing feed efficiency and performance in multi-breed beef cattle using a candidate gene approach. M. K. Abo-Ismael^{*1}, M. J. Kelly¹, E. J. Squires¹, K. C. Swanson¹, J. D. Nkrumah², and S. P. Miller¹, ¹University of Guelph, Guelph, ON, Canada, ²Igenity Livestock Production Business Unit, Merial Ltd., Duluth, GA.
- 2:45 PM 221 Heritability estimates of reproductive, growth and carcass traits of tropical pigs: A meta-analysis. E. C. Akanno^{*}, F. S. Schenkel, V. M. Quinton, R. M. Friendship, and J. A. B. Robinson, University of Guelph, Guelph, ON, Canada.
- 3:00 PM 222 Seasonal based genetic regulation of reproductive traits in a male turkey line. L. A. Case^{*1}, M. J. Kelly¹, S. P. Miller¹, and B. J. Wood², ¹University of Guelph, Guelph, Ontario, Canada, ²Hybrid Turkeys, Kitchener, Ontario, Canada.
- 3:15 PM 223 Effects of feeding solid feed on ruminal pH and expression of genes involved in ketogenesis in dairy calves during weaning transition. A. H. Laarman^{*} and M. Oba, University of Alberta, Edmonton, Alberta, Canada.
- 3:30 PM 224 The threonine requirement in sows increases in late gestation. C. L. Levesque^{*1}, S. Moehn¹, P. B. Pencharz², and R. O. Ball¹, ¹Swine Research and Technology Centre, University of Alberta, Edmonton, Alberta, Canada, ²Sick Children's Hospital, University of Toronto, Toronto, Ontario, Canada.
- 3:45 PM 225 Energy and amino acid utilization in expeller-extracted canola meal fed to growing pigs. T. A. Woyengo^{*}, E. Kiarie, and C. M. Nyachoti, University of Manitoba, Winnipeg, Manitoba, Canada.
- 4:00 PM 226 Calcium chloride and sodium nitrate as nutritional means to overcome the reduction in performance of pigs fed high potassium diets. J. Guimaraes^{*}, D. Wey, C. Zhu, and C. F. M de Lange, University of Guelph, Guelph, Ontario, Canada.
- 4:15 PM 227 Protein turnover and heat production of sows varies at day 30, 45 and 105 of gestation. R. S. Samuel^{*1}, S. Moehn¹, P. B. Pencharz², and R. O. Ball^{1,2}, ¹Swine Research and Technology Centre, University of Alberta, Edmonton, Alberta, Canada, ²Research Institute, Hospital for Sick Children, Toronto, Ontario, Canada.
- 4:30 PM 228 Prediction of DE content of common ingredients in grower pigs using an in vitro digestibility technique. P. R. Regmi^{*1}, N. S. Ferguson², A. Pharazyn², L. F. Wang¹, and R. T. Zijlstra¹, ¹University of Alberta, Edmonton, AB, Canada, ²Nutreco Canada, Guelph, ON, Canada.

SYMPOSIUM
Meat Science and Muscle Biology
Balancing Live Cattle Performance and Beef Quality
Chair: John Stika, Certified Angus Beef LLC
510ac

- 2:00 PM 229 Growth technologies: Performance benefits and quality considerations. J. D. Tatum*, *Colorado State University, Fort Collins.*
- 2:45 PM 230 Production systems to optimize growth and beef quality. I. Rush*, *University of Nebraska, Lincoln.*
- 3:25 PM 231 Cellular differentiation: Muscle growth and marbling. B. J. Johnson*, K. Y. Chung, and S. L. Parr, *Texas Tech University, Lubbock.*
- 4:05 PM 232 Managing genetic antagonisms between economically important beef production traits and marbling. R. L. Weaber¹ and R. M. Enns*², ¹*University of Missouri, Columbia*, ²*Colorado State University, Fort Collins.*
- 4:45 PM 233 Maternal obesity affects adipogenesis and myogenesis in fetal sheep muscle at late gestation. X. Yan*, W. Xu, J. F. Tong, J. X. Zhao, M. J. Zhu, S. P. Ford, and M. Du, *University of Wyoming, Laramie.*

SYMPOSIUM
Nonruminant Nutrition
Improving the Nutritional Value of Alternative Feed Ingredients
Chair: Kevin Herkelman, Wenger Feeds
Sponsors: Evonik Degussa Corp. and Monsanto
518

- 2:00 PM Introduction. Kevin Herkelman.
- 2:10 PM 234 Carbohydrates in alternative feed ingredients. B. M. Vester Boler and G. C. Fahey Jr.*, *University of Illinois, Urbana.*
- 2:50 PM 235 Mycotoxins in alternative ingredients. T. K. Smith*, *University of Guelph, Guelph, ON, Canada.*
- 3:30 PM 236 Anti-nutritional compounds and other limitations to the use of alternative feed ingredients. H. H. Stein*, *University of Illinois, Urbana.*
- 4:10 PM 237 Phytase and NSP-degrading enzymes for alternative feed ingredients. R. T. Zijlstra*¹, E. Beltranena^{1,2}, C. M. Nyachoti³, and S. W. Kim⁴, ¹*University of Alberta, Edmonton, AB, Canada*, ²*Alberta Agriculture and Rural Development, Edmonton, AB, Canada*, ³*University of Manitoba, Winnipeg, MB, Canada*, ⁴*North Carolina State University, Raleigh.*
- 4:50 PM Summary. Kevin Herkelman.

Physiology and Endocrinology
Dairy Cattle Reproduction
Chair: Paul M. Fricke, University of Wisconsin-Madison
516c

- 2:00 PM 238 Effect of PRID administered 5-12 days post-insemination on progesterone levels and pregnancy risk in previously inseminated dairy cows. S. J. Scott*, K. E. Leslie, R. B. Walsh, J. S. Walton, and S. J. LeBlanc, *University of Guelph, Guelph, ON, Canada.*
- 2:15 PM 239 Plasma hormones and energy metabolites in postpartum lactating (L) and nonlactating (NL) Holstein cows that either conceived or failed to conceive at first insemination. A. N. Brauch*¹, J. C. Green¹, J. P. Meyer¹, A. M. Williams¹, C. S. Okamura¹, P. Taube², L. Goetze², and M. C. Lucy¹, ¹*University of Missouri-Columbia, Columbia*, ²*Pfizer Animal Health, New York, NY.*
- 2:30 PM 240 Effect of lactation on plasma progesterone concentrations and early embryonic development in Holstein cows. J. C. Green*¹, J. P. Meyer¹, A. M. Williams¹, A. N. Brauch¹, C. S. Okamura¹, P. Taube², L. Goetze², and M. C. Lucy¹, ¹*University of Missouri, Columbia*, ²*Pfizer Animal Health, New York, NY.*
- 2:45 PM 241 Effects of resynchronization programs on fertility, progesterone and PAGs after insemination. I. M. Thompson*¹, R. L. A. Cerri¹, I. H. Kim², J. A. Green³, J. E. P. Santos¹, and W. W. Thatcher¹, ¹*University of Florida, Gainesville*, ²*Chungbuk National University, South Korea*, ³*University of Missouri, Columbia.*

- 3:00 PM 242 Fertility after timed artificial insemination in lactating dairy cows resynchronized using Double-Ovsynch or standard Ovsynch. J. O. Giordano*¹, M. C. Wiltbank¹, S. Bas¹, A. P. Cunha¹, R. A. Pawlisch², J. N. Guenther¹, and P. M. Fricke¹, ¹Department of Dairy Science, University of Wisconsin, Madison, ²Brodhead Veterinary Clinic, Brodhead, WI.
- 3:15 PM Break
- 3:30 PM 243 Effect of parity on pedometer activity at estrus in dairy cows. S. J. Caldwell and G. E. Mann*, *Division of Animal Sciences, School of Biosciences, University of Nottingham, Sutton Bonington Campus, Loughborough, UK.*
- 3:45 PM 244 Effect of body condition score on milk yield, milk composition and reproductive competence during the service period of Holstein-Friesian dairy cattle. T. J. Hole² and J. K. Margerison*¹, ¹Massey University, Palmerston North, New Zealand, ²Plymouth University, Seale Hayne, Newton Abbot, UK.
- 4:00 PM 245 Effects of nutrient restriction on ghrelin secretion and cyclicity in dairy heifers. M. E. Field*, S. E. Cossel, S. L. Marion, J. B. Wheelock, S. R. Hartman, M. D. O'Brien, T. R. Bilby, R. P. Rhoads, R. J. Collier, P. B. Hoyer, and M. L. Rhoads, *University of Arizona, Tucson.*
- 4:15 PM 246 The effect of GnRH and an opioid antagonist on pregnancy rate of repeat breeding Holstein dairy cows. V. O. Fuentes*, A. Bernal-Canseco, and P. I. Fuentes-Castro, *Centro Universitario de los Altos.*
- 4:30 PM 247 Use of OVSYNCH and alternative protocols to synchronize estrus and ovulation in dairy cows managed in a seasonal grass-based system. M. M. Herlihy*^{1,2}, M. A. Crowe², M. G. Diskin³, and S. T. Butler¹, ¹Teagasc Moorepark DPRC, Fermoy, Co. Cork, Ireland, ²SAFVM, University College Dublin, Ireland, ³Teagasc, APRC, Athenry, Co. Galway, Ireland.

Ruminant Nutrition
Feedlot, Byproduct Feeds
Chair: John Wagner, Colorado State University
516ab

- 2:00 PM 248 Effects of ruminally degradable N in diets containing wet corn distillers grains and steam-flaked corn on feedlot cattle performance and carcass characteristics. C. H. Ponce*¹, M. S. Brown¹, N. A. Cole², C. L. Maxwell¹, and J. C. Silva¹, ¹Feedlot Research Group, West Texas A&M University, Canyon, ²USDA ARS Conservation and Production Research Laboratory, Bushland, TX.
- 2:15 PM 60 Effect of graded levels of wheat-based dried distillers grains with solubles on rumen fermentation in finishing cattle. R. M. Beliveau*^{1,2} and J. J. McKinnon², ¹Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, ²University of Saskatchewan, Saskatoon, Saskatchewan, Canada.
- 2:30 PM 59 Comparison of wheat or corn dried distillers grains with solubles (DDGS) on performance and carcass characteristics of feedlot steers. L. J. Walter*¹, J. L. Aalhus², W. M. Robertson², T. A. McAllister³, D. J. Gibb³, M. E. R. Dugan², N. Aldai², and J. J. McKinnon¹, ¹University of Saskatchewan, Saskatoon, SK, Canada, ²Agriculture and Agri-Food Canada, Lacombe Research Centre, Lacombe, AB, Canada, ³Agriculture and Agri-Food Canada, Lethbridge Research Centre, Lethbridge, AB, Canada..
- 2:45 PM 249 Evaluation of lighter density fraction from dried distillers grains with solubles as a feedstuff for ruminants. J.M. Greene*¹, R. Srinivasan², and B.J. Rude¹, ¹Animal and Dairy Sciences, Mississippi State University, Starkville, ²Agricultural and Biological Engineering, Mississippi State University, Starkville.
- 3:00 PM 250 Effects of grain processing method and use of dried corn distillers grains on beef carcass composition, heterocyclic amine concentration and fatty acid profiles of lean and lipid portions. P. L. Black*¹, G. L. Parsons¹, M. K. Shelor¹, M. E. Dikeman¹, K. K. Karges², M. L. Gibson², J. S. Smith¹, and J. S. Drouillard¹, ¹Kansas State University, Manhattan, ²Dakota Gold Research Association, Sioux Falls, SD.
- 3:15 PM 251 Optimal roughage level in finishing diets containing combinations of flaked corn and dried distiller's grains with solubles. K. A. Miller*, M. K. Shelor, G. L. Parsons, and J. S. Drouillard, *Kansas State University, Manhattan.*
- 3:30 PM 252 The effect of corn or sorghum dried distillers grains + solubles on growth performance and carcass characteristics of beef steers. K. M. Wood*¹, H. Salim¹, P. L. McEwen², I. B. Mandell¹, S. P. Miller¹, and K. C. Swanson¹, ¹Department of Animal and Poultry Science, University of Guelph, Guelph, Ontario, Canada, ²Ridgetown Campus, University of Guelph, Ridgetown, Ontario, Canada.
- 3:45 PM 253 Effect of feeding fiber from wet corn gluten feed and silage in diets containing 30% modified wet distillers grains plus solubles on feedlot cattle performance and nitrogen mass balance. A. R. Rich*, M. K. Luebbe, G. E. Erickson, T. J. Klopfenstein, and J. R. Benton, *University of Nebraska-Lincoln, Lincoln.*
- 4:00 PM 254 Effects on ruminal pH, hydrogen sulfide concentration, and feed intake when using wet distillers grains with solubles to adapt cattle to finishing diets compared to forage. K. M. Rolfe*, G. E. Erickson, T. J. Klopfenstein, and J. T. Vasconcelos, *Department of Animal Science, University of Nebraska, Lincoln.*

- 4:15 PM 255 High sulfur content in distillers grains alters ruminal fermentation and diet digestibility by beef steers. S. Uwituzé*¹, M. K. Shelor¹, G. L. Parsons¹, K. K. Karges², M. L. Gibson², L. C. Hollis¹, and J. S. Drouillard¹, ¹*Kansas State University, Manhattan*, ²*Dakota Gold Research Assn, Sioux Falls, SD*.
- 4:30 PM 256 High sulfur content in distillers grains with solubles may be deleterious to performance and carcass quality of finishing steers. S. Uwituzé*¹, M. K. Shelor¹, G. L. Parsons¹, K. K. Karges², M. L. Gibson², L. C. Hollis¹, and J. S. Drouillard¹, ¹*Kansas State University, Manhattan*, ²*Dakota Gold Research Assn, Sioux Falls, SD*.
- 4:45 PM 257 Evaluation of feedlot and carcass performance of steers fed different levels of ECORN™, a potential new feed product from ethanol plants. C. M. Godsey-Williams*¹, G. E. Erickson¹, T. J. Klopfenstein¹, M. Greenquist², P. Guiryo², C. Ibanez², and J. Kazin³, ¹*University of Nebraska, Lincoln*, ²*Cargill Inc., Wayzata, MN*, ³*Reussen LLC., Wayzata, MN*.

SYMPOSIUM

Ruminant Nutrition

Forage Digestibility Estimates; Obtaining and Applying Meaningful Values

Chair: JoAnne Knapp, Fox Hollow Consulting, LLC

Sponsor: Monsanto

517b

- 2:00 PM Introduction. Charles Schwab.
- 2:05 PM 258 Opportunities and challenges in determining forage digestibility values. R. Ward*¹, *Cumberland Valley Analytical Services, Hagerstown, MD*.
- 2:35 PM 259 Do in vitro digestibility data have value in dairy cattle nutrition? W. P. Weiss*¹, *Ohio State University, Wooster*.
- 3:10 PM 260 Obtaining and applying meaningful forage digestibility estimates: Forage-fed beef. E. S. Vanzant* and J. W. Lehmkuhler, *University of Kentucky, Lexington*.
- 3:45 PM 261 Addressing fiber digestibility in low-forage diets. N. DiLorenzo and M. L. Galyean*¹, *Department of Animal and Food Sciences, Texas Tech University, Lubbock*.
- 4:15 PM 262 Attempting to apply meaningful forage values and digestibility estimates in commercial feedlot diets. T. M. Peters*¹, S. P. Montgomery, and S. J. Bierman, *Corn Belt Livestock Services, Rock Falls, IL*.
- 4:45 PM Panel discussion. Charles Schwab.

Swine Species

Chair: Bradley V. Lawrence, Novus International Inc.

512ae

- 2:00 PM 263 Birth weight implications for reproductive parameters in boars. F. R. C. L. Almeida*¹, A. L. N. Alvarenga¹, G. R. Foxcroft², and H. Chiarini-Garcia¹, ¹*Federal University of Minas Gerais, Belo Horizonte, Minas Gerais, Brazil*, ²*University of Alberta, Edmonton, Alberta, Canada*.
- 2:15 PM 264 Effect of ambient temperature and light intensity on reproduction in mature gilts. D. Canaday*¹, B. Yantis, A. Visconti, J. Salak-Johnson, and R. Knox, *University of Illinois, Champaign-Urbana*.
- 2:30 PM 265 Cloning and expression of porcine lactoferrin N-lobe gene in *Pichia methanolica* and effects of recombinant protein on growth performance of weanling piglets. F. Han*¹, Y. Xie, Y. Liu, Y. Gao, and Y. Wang, *Institution of Feed Science, Zhejiang university, Hangzhou, Zhejiang, China*.
- 2:45 PM 266 Influence of seasonality of the growing-finishing period on carcass characteristics of heavy barrows and gilts. M. A. Latorre*¹, S. Calvo¹, and L. Ariño², ¹*Centro de Investigación y Tecnología Agroalimentaria de Aragón, Zaragoza, Spain*, ²*Integraciones Porcinas SL, Teruel, Spain*.
- 3:00 PM 267 Artificial sweeteners enhance the capacity of the swine small intestine to absorb glucose. A. Moran*¹, D. Arora¹, M. Al-Rammahi¹, D. Batchelor¹, E. Coulter¹, N. Jones¹, C. Ionescu², D. Bravo², and S. Shirazi-Beechey¹, ¹*Department of Veterinary Preclinical Sciences, University of Liverpool, Liverpool, UK*, ²*Pancosma SA, Geneva, Switzerland*.
- 3:15 PM Break

- 3:30 PM 268 Changes in expression of swine intestinal Na⁺/glucose cotransporter in response to increased dietary carbohydrates. A. Moran*¹, M. Al-Rammahi¹, D. Arora¹, D. Batchelor¹, E. Coulter¹, N. Jones¹, C. Ionescu², D. Bravo², and S. Shirazi-Beechey¹, ¹*Department of Veterinary Preclinical Sciences, University of Liverpool, Liverpool, UK*, ²*Pancosma SA, Geneva, Switzerland*.
- 3:45 PM 269 Individual piglet birth weight, sow parity, gestation length, number of fully formed pigs and within litter birth weight variation affect incidence of stillborns. J. S. Fix*¹, J. W. Holl², W. O. Herring², and M. T. See¹, ¹*North Carolina State University, Raleigh*, ²*Smithfield Premium Genetics Group, Rose Hill, NC*.
- 4:00 PM 270 New DFM product (Bacillus) improves performance of grower/finisher swine. I. Knap and B. T. Lund*, *Chr. Hansen, Hoersholm, Denmark*.
- 4:15 PM 271 Cholecystokinin excited and sensitized porcine gastric mechanoreceptors responding to distension. W. L. Grovum*, W. R. Ellison, and W. W. Bignell, *Department of Biomedical Sciences, Ontario Veterinary College, University of Guelph, Guelph, Ontario, Canada*.

OTHER EVENTS

JDS-JAS Reviewer Workshop
513ab
2:00 PM–5:00 PM

**Canadian Council on Animal Care Guidelines on
The care and use of farm animals in research, teaching and testing**
Chair: Julie Dale, Canadian Council on Animal Care
513ef

- 3:30 PM **Welcome and Introductions.** M. von Keyserlingk¹ and J. Dale², ¹*University of British Columbia*, ² *Canadian Council on Animal Care*.
- 3:45 PM **Cattle.** J. Rushen and A. M. de Passillé, *Agriculture and Agri-Food Canada*.
- 4:00 PM **Sheep and Goats.** K. Stanford, *Alberta Agriculture and Rural Development*.
- 4:15 PM **Pigs.** L. Connor, *University of Manitoba*.
- 4:30 PM **Poultry.** F. Silversides, *Agriculture and Agri-Food Canada*.
- 4:45 PM **General wrap-up and discussion.** J. Dale, *Canadian Council on Animal Care*.

Tuesday, July 14

POSTER PRESENTATIONS

Animal Health

Mastitis and Associated Microbiology

- T1 Natural autoantibodies in milk and their role in the development of mastitis in dairy cows. A. T. M. Van Knegsel*, G. De Vries Reilingh, A. Lammers, B. Kemp, and H. K. Parmentier, *Adaptation Physiology Group, Wageningen Institute of Animal Sciences, Wageningen University, Wageningen, the Netherlands.*
- T2 Psoriasis expression in bovine udder is induced by *E. coli* infection. P. Regenhard*¹, W. Petzl², H. Zerbe², and H. Sauerwein¹, ¹*Institute of Animal Science, Bonn, NRW, Germany*, ²*Clinic for Ruminants, Munich, Bavaria, Germany.*
- T3 Innate immune responses in dairy cows and study of a promising candidate: Osteopontin. K. Alain^{1,3}, N. A. Karrow³, C. Thibault¹, M. Lessard¹, and N. Bissonnette*^{1,3}, ¹*Dairy and Swine Research and Development Center, Agriculture and Agri-Food Canada, Sherbrooke, Québec, Canada*, ²*Université de Sherbrooke, Sherbrooke, Québec, Canada*, ³*University of Guelph, Guelph, Ontario, Canada.*
- T4 Expression of Toll like receptor 4 on bovine neutrophils is not dependent on transcriptional activation. M. Worku*, A. Morris, H. Mukthar, and N. Mikiashvilli, *North Carolina A&T State University, Greensboro.*
- T5 Comparison of in vivo and in vitro mammary cell expression of selected inflammatory genes in response to α -linolenic acid. P. Rezamand*, B. P. Hatch, K. Parnell, K. M. Hunt, J. E. Williams, W. Price, and M. A. McGuire, *University of Idaho, Moscow.*
- T6 Development of a multiplex-PCR detection assay for simultaneous identification of the major pathogens causing mastitis in dairy milk. B. Cressier*^{1,2}, C. Thibault¹, and N. Bissonnette^{1,2}, ¹*Dairy and Swine Research and Development Center, Agriculture and Agri-Food Canada, Sherbrooke, Québec, Canada*, ²*Université de Sherbrooke, Sherbrooke, Québec, Canada.*
- T7 Microbiology results of milk samples from California dairies received between 1999 and 2008. D. F. Resende*, K. Glenn, J. S. Cullor, and R. G. S. Bruno, *University of California-Davis, Tulare.*
- T8 Prototheca mastitis outbreak investigation in lactating Jersey cows. A. G. Kenyon*, D. F. Resende, K. Glenn, R. Moeller, and R. G. S. Bruno, *University of California-Davis, Tulare.*
- T9 Comparison of 16S rRNA gene sequence analysis with aerobic milk culture for the identification of potential bacterial etiologies of bovine clinical mastitis. J. R. Wenz*, T. E. Besser, L. K. Fox, and Y. Zhang, *Washington State University, Pullman.*
- T10 Effect of year period on mastitis prevalence and routine procedures characteristics of milking in Culiacán, Sinaloa. M. Valdez*, M. A. Luque, L. Almeida, J. Rodríguez, F. T. Olivas, and D. C. Ochoa, *Investigación y Transferencia de Tecnología para Rumiantes, Facultad de Medicina Veterinaria y Zootecnia, Universidad Autónoma de Sinaloa, Culiacán, Sinaloa, México.*
- T11 Effects of *Mangifera indica* peel extracts on *Staphylococcus aureus* mammary infections. S. Stella and D. Tedesco*, *University of Milan, VSA Dep., Milan, Italy.*
- T12 Effects of OmniGen-AF on mammary mucosal responses to an *Escherichia coli* challenge. Y.-Q. Wang*, A. Rowson, N. E. Forsberg, and S. B. Punttenney, *OmniGen Research, Corvallis, OR.*
- T13 Decision-making for early postpartum subclinical mastitis. V. E. Cabrera*, J. Pantoja, P. Ruegg, and G. Shook, *University of Wisconsin, Madison.*
- T14 Effects of CpG ODN adjuvant on the immune responses elicited by a quadrivalent mastitis vaccine in dairy cows. S.-C. Lee¹ and J.-W. Lee*², ¹*Graduate Institute of Animal Vaccine Technology, National Pingtung University of Science and Technology, Neipu, Pingtung, Taiwan*, ²*Department of Tropical Agriculture and International Cooperation, National Pingtung University of Science and Technology, Neipu, Pingtung, Taiwan.*
- T15 Intramammary glucocorticoid treatment during LPS-induced mastitis. O. Wellnitz, M. Soudenowa, and R. M. Bruckmaier*, *University of Bern, Vetsuisse Faculty, Veterinary Physiology, Bern, Switzerland.*

Breeding and Genetics

Dairy Cattle Breeding II and Rabbit Breeding

- T16 Ketosis – Manageable by breeding strategies? F. Rehbock¹, G. Freyer², F. Klug³, and N. Vukasinovic^{*4}, ¹Landesforschungsanstalt für Landwirtschaft und Fischerei M-V, Institut für Tierproduktion, Dummerstorf, Germany, ²FBN, Unit Genetics and Biometry, Dummerstorf, Germany, ³Alexandrastr. 4, Graal-Müritz, Germany, ⁴Newsham Choice Genetics, STL Research Center, Chesterfield, MO.
- T17 Genetic parameters and breeding values estimated under heterogeneous variances of two groups for type records of Holstein cows in Japan. T. Baba^{*1}, Y. Masuda¹, Y. Goto², and M. Suzuki¹, ¹Obihiro University of A and VM, Obihiro, Japan, ²The Holstein Cattle Association of Japan, Hokkaido branch, Sapporo, Japan.
- T18 Estimation of genetic parameters for maturity of lactation using a test day model in Japanese Holsteins. Y. Masuda^{*} and M. Suzuki, *Obihiro University of Agriculture and Veterinary Medicine, Obihiro, Japan.*
- T19 Bayesian analysis of random regression using B-splines to model test-day milk yield of Holstein cattle. A. B. Bignardi^{*1,3}, L. El Faro², G. J. M. Rosa³, F. F. Silva^{3,4}, V. L. Cardoso², P. F. Machado⁵, and L. G. Albuquerque¹, ¹Universidade Estadual Paulista, Jaboticabal, São Paulo, Brazil, ²Agência Paulista de Tecnologia dos Agronegócios, Ribeirão Preto, São Paulo, Brazil, ³University of Wisconsin, Madison, ⁴Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, ⁵Universidade de São Paulo, Piracicaba, São Paulo, Brazil.
- T20 Study on genetic evaluation for linear type traits in Holstein cows. D.-H. Lee¹, S.-H. Oh^{*2}, and N. C. Whitley², ¹Hankyong National University, Ansung, Gyeonggi, South Korea, ²North Carolina A&T State University, Greensboro.
- T21 Comparison of Swiss and New Zealand cows in a pasture-based milk production system. P. Kunz^{*}, V. Piccand, and P. Thomet, *Swiss College of Agriculture, 3052 Zollikofen, Bern, Switzerland.*
- T22 Udder health traits as related to economic losses in Friesian cattle. H. G. El Awady¹ and E. Z. M. Oudah^{*2}, ¹Kafr El Sheikh University, Kafr ElSheikh, Egypt, ²Mansoura University, Mansoura, Egypt.
- T23 Comparing random regression models to analyse first lactation daily milk yield data in Murrah buffaloes by Bayesian inference. F. C. Breda Mello^{*1}, L. G. de Albuquerque³, R. F. Euclides², H. Tonhati³, and A. B. Bignardi³, ¹Universidade Federal de Roraima, Boa Vista, Roraima, Brazil, ²Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, ³Faculdade de Ciências Agrárias e Veterinária/ Universidade Estadual Paulista, Jaboticabal, São Paulo, Brazil.
- T24 Genetic parameters estimation for milk yield of buffaloes Murrah breed using parametric functions. F. C. Breda^{*1}, R. F. Euclides², L. G. de Albuquerque³, H. Tonhati³, and A. B. Bignardi³, ¹Universidade Federal de Roraima, Boa Vista, Roraima, Brazil, ²Univesidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, ³Faculdade de Ciências Agrárias e Veterinária/ Universidade Estadual Paulista, Jaboticabal, São Paulo, Brazil.
- T25 Estimation of heritability of monthly test day milk yield at different calving seasons in Holsteins of Khorasan province of Iran. R. Lotfi^{*1}, H. Farhangfar², and A. Shoorideh³, ¹Tarbiat Modares University, Tehran, Iran, ²Birjand University, Birjand, Iran, ³Jihade Agriculture of Razavi Khorasan, Mashhad, Iran.
- T26 Genetic characteristics of energy balance for Iranian primiparous Holsteins using a fixed regression test day model. H. Farhangfar^{*1}, R. Lotfi², and M. H. Fathi Nasri¹, ¹Birjand University, Birjand, Iran, ²Tarbiat Modares University, Tehran, Iran.
- T27 Estimation of genetic correlations among peak milk yield, energy balance and age at first calving for Iranian Holstein heifers. H. Farhangfar^{*1}, R. Lotfi², and M. H. Fathi Nasri¹, ¹Birjand University, Birjand, Iran, ²Tarbiat Modares University, Tehran, Iran.
- T28 Mixed model analyzing of some environmental factors affecting average lactation somatic cell score in Iranian Holstein heifers. H. Farhangfar^{*1}, A. Abedini¹, K. Shojaeian², and M. H. Fathi Nasri¹, ¹Birjand University, Birjand, Iran, ²Zabol University, Zabol, Iran.
- T29 Genetic association between male fertility and prolificacy after artificial insemination with semen subjected to limited screening. L. L. Tusell^{*1}, R. Rekaya², M. López-Bejar³, M. García-Tomás¹, O. Rafel¹, J. Ramon¹, and M. Piles¹, ¹Unitat de Cunicultura, IRTA, Barcelona, Spain, ²University of Georgia, Athens, ³UAB, Barcelona, Spain.
- T30 Breeding values of fat and protein content in inbred and outbred cows. J. Bezdicek^{*1}, J. Subrt¹, R. Filipcik², and J. Riha¹, ¹Agrovyzkum Rapotin Ltd., Rapotin, Czech Republic, ²MZLU v Brne, Brno, Czech Republic.
- T31 Genetic correlations of dry matter intake with fat corrected milk yield, body weight, and body condition score in eleven commercial tie-stall dairy farms. S. M. Hall^{*1}, C. D. Dechow¹, J. M. Daubert¹, M. D. Dekleva¹, J. W. Blum², G. A. Varga¹, C. R. Baumrucker¹, and W. Liu¹, ¹Pennsylvania State University, University Park, ²University of Bern, Bern, Switzerland.
- T32 Phenotypic and genotypic variation of bovine immune responses in Cohort dairy herds across Canada. K. A. Thompson^{*1}, N. Karrow¹, K. Leslie¹, M. Quinton¹, F. Miglior², and B. A. Mallard¹, ¹University of Guelph, Guelph, ON, Canada, ²Canadian Dairy Network, Guelph, ON, Canada.
- T33 Study on genetic parameters of conception rate and heat detection rate of NY Holsteins. C. Huang¹, S. Tsuruta^{*1}, I. Misztal¹, and T. J. Lawlor², ¹University of Georgia, Athens, ²Holstein Association USA Inc., Brattleboro, VT.

- T34 Beta-casein enhancer (BCE) and evolutionarily conserved region 3 (ECR3) polymorphisms are associated with milk composition and management traits in dairy cattle. G. Rincon¹, M. Rijnkels², A. Islas¹, and J. F. Medrano*¹, ¹University of California, Davis, ²USDA/ARS Children's Nutrition Research Center, Department of Pediatrics, Baylor College of Medicine, Houston, TX.
- T35 Comparison of superovulation, embryo recovery, and embryo transfers in lactating dairy cows and heifers. M. B. Gordon*, T. Pretheeban, and R. Rajamahendran, *University of British Columbia, Vancouver, BC, Canada.*
- T36 Effect of sexed semen on conception rate for Holsteins in the United States. H. D. Norman and J. L. Hutchison*, *Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD.*
- T37 Derivation of factors to estimate daily fat, protein, and somatic cell score from one milking of cows milked twice daily. M. M. Schutz*¹, J. M. Bewley², and H. D. Norman³, ¹Purdue University, West Lafayette, IN, ²University of Kentucky, Lexington, ³USDA-ARS, Beltsville, MD.
- T38 Best prediction of lactation yields accounting for regional and seasonal differences. J. B. Cole and D. J. Null*, *Animal Improvement Programs Laboratory, Agricultural Research Service, USDA, Beltsville, MD.*
- T39 Trends in international flow of Holstein genes. R. L. Powell*, J. R. Wright, and H. D. Norman, *Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD.*
- T40 Holstein, Jersey and its cross affects fatty acid composition under grazing conditions. R. A. Palladino¹, F. Buckley², J. J. Murphy², R. Prendiville^{1,2}, and D. A. Kenny*¹, ¹University College Dublin, Belfield, Dublin 4, Ireland, ²Teagasc, Moorepark Dairy Research Centre, Fermoy, Co. Cork, Ireland.
- T41 Logistic analysis of some environmental factors affecting multiple birth performance of Iranian indigenous goats. H. Farhangfar*¹, Y. Shamshirgaran², M. Esfandiari³, and M. H. Fathi Nasri¹, ¹Birjand University, Birjand, Iran, ²Ferdowsi University of Mashhad, Mashhad, Iran, ³Agricultural Jihad Organisation, Birjand, Iran.
- T42 A neural networks approach for prediction fertility in rabbit using semen quality parameters. L. L. Tusell*¹, R. Rekaya², M. López-Bejar³, M. García-Tomás¹, C. Andreu³, O. Rafel¹, J. Ramon¹, and M. Piles¹, ¹Unitat de Cunicultura, IRTA, Barcelona, Spain, ²University of Georgia, Athens, ³UAB, Barcelona, Spain.

Dairy Foods

Dairy Foods Processing/Cheese/Dairy Micro

- T43 Understanding and controlling flavor and color development resulting from non-thermal browning (NTB) in cheese. A. Lopez-Hernandez*, N. Van Epps, and S. A. Rankin, *University of Wisconsin, Madison.*
- T44 Transcriptomic analysis of Camembert cheese fungal activity. C. Viel*, F. Boileau, A. Thériault, and S. Labrie, *Département des sciences des aliments et de nutrition, Centre de recherche en sciences et technologie du lait (STELA), Institut des nutraceutiques et des aliments fonctionnels (INAF), Université Laval, Québec, QC, Canada.*
- T45 Comparison of Hispanic cheeses from US and country of origin manufacturers. L. A. Jimenez-Maroto¹, A. Lopez-Hernandez*¹, B. Maldonado², and S. A. Rankin¹, ¹University of Wisconsin, Madison, ²Tecnológico de Monterrey, Campus Querétaro, Querétaro, México.
- T46 Partitioning of omega-3 fatty acids in Cheddar cheese curd and whey. C. Brothersen*, D. J. McMahon, and B. Pettee, *Western Dairy Center, Utah State University, Logan.*
- T47 Microbiological quality of raw milk utilized for small scale artisan cheese production. D. J. D'Amico* and C. W. Donnelly, *University of Vermont, Burlington.*
- T48 Effect of anhydrous milk fat, milk fat globular membrane and corn oil as the fat source in the AIN93 diet on the fecal microbiota in Fisher 344 rats. R. E. Ward*¹, D. Snow¹, R. Jimenez-Flores², and K. J. Hintze¹, ¹Nutrition, Dietetics and Food Sciences, Utah State University, Logan, ²Dairy Products Technology Center, Department of Agriculture, California Polytechnic State University, San Luis Obispo.
- T49 Beneficial effects of bovine colostrum acid protein on bone properties of ovariectomized rats. M. Du*¹, L. Zhang¹, Z. Mu², H. Yi¹, and X. Han¹, ¹Harbin Institute of Technology, Harbin, Heilongjiang, China, ²Inner Mongolia Agricultural University, Hohhot, Inner Mongolia, China.
- T50 Comparison of commercially available RNA extraction methods for effective bacterial RNA isolation from milk. S. Secchi¹, A. Serrano², P. García-Nogales¹, S. Gutiérrez³, and A. Arís*², ¹Applied Research using OMICS Sciences, Barcelona, Spain, ²Institut de Recerca i Tecnologia Agroalimentàries, Barcelona, Spain, ³Centre de Recerca i Investigació de Catalunya, Barcelona, Spain.

- T51 Effect of carbon dioxide on microbial growth in refrigerated raw milk. P. C. B. Vianna and M. L. Gigante*, *State University of Campinas, Campinas, SP, Brazil.*
- T52 Expression profile analysis of intestinal cells effected by *Lactobacillus acidophilus* NCFM. M. Wang¹, G. Zhang¹, L. Yao¹, Y. Zhou¹, L. Han¹, and Y. Jiang*^{1,2}, ¹*Key Lab of Dairy Science, Ministry of Education, Northeast Agricultural University, Harbin, China,* ²*National Dairy Engineering & Technical Research Center, Northeast Agricultural University, Harbin, China.*
- T53 Development of a Multiplex-PCR detection assay for simultaneous identification of the major mastitis causing pathogens in dairy milk. B. Cressier*¹, C. Thibault², and N. Bissonnette^{1,2}, ¹*Université de Sherbrooke, Sherbrooke, QC, Canada,* ²*Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada.*
- T54 Nisin-inducible expression of recombinant peptides in dairy lactic acid bacteria. J. A. Renye and G. A. Somkuti*, *USDA-Agricultural Research Service, Wyndmoor, PA.*
- T55 Growth-promoting activities of bovine and caprine caseinomacropeptide. G. Robitaille*, R. Ioannoni, and C. Jolicoeur, *Food Research and Development Centre, Agriculture and Agri-Food Canada, St-Hyacinthe, QC, Canada.*
- T56 Study of the genetic diversity of *Geotrichum candidum*. I. Alper* and S. Labrie, *Département des sciences des aliments et de nutrition, Centre de recherche en sciences et technologie du lait (STELA) – Institut des nutraceutiques et des aliments fonctionnels (INAF), Université Laval, Quebec, QC, Canada.*
- T57 Effect of somatic cell count on milk composition. R. Noorbakhsh*¹, A. Mortazavi¹, F. Shahidi¹, A. F. Mehdikhani², M. Ahoei², and A. Heravi Moussavi², ¹*Dept of Food Science and Technology, Ferdowsi University of Mashhad, Mashhad, Khorasan, Iran,* ²*Dept of Animal Science, Ferdowsi University of Mashhad, Mashhad, Khorasan, Iran.*
- T58 Impact of *Lactobacillus acidophilus* NCFM surface protein expression on its binding properties toward the milk fat globule membrane. G. Brisson, H. F. Payken, E. Pettey, and R. Jimenez-Flores*, *California Polytechnic State University, San Luis Obispo.*
- T59 Acid tolerance of *Lactobacillus acidophilus* LA-K as influenced by various pulsed electric field conditions. O. Cueva¹ and K. Aryana*^{2,1}, ¹*Louisiana State University, Baton Rouge,* ²*Louisiana State University Agricultural Center, Baton Rouge.*
- T60 Growth of *Lactobacillus acidophilus* LA-K as influenced by certain pulsed electric field conditions. O. Cueva¹ and K. Aryana*^{2,1}, ¹*Louisiana State University, Baton Rouge,* ²*Louisiana State University Agricultural Center, Baton Rouge.*
- T61 Stability of *Bifidobacterium animalis* ssp. *lactis* BB12 in yogurt smoothie developed for use in clinical trials with children. E. Furumoto, L. Weir*, and R. Roberts, *Department of Food Science, The Pennsylvania State University, University Park.*
- T62 Bile tolerance of *Lactobacillus acidophilus* LA-K as influenced by certain pulsed electric field conditions. O. Cueva¹ and K. Aryana*^{2,1}, ¹*Louisiana State University, Baton Rouge,* ²*Louisiana State University Agricultural Center, Baton Rouge.*
- T63 European Union Decision 2073/2005: A comparison between 3M Petrifilm *Enterobacteriaceae* and ISO 21528:2 in a milk powder production chain. M. Ferraz*, M. Cerqueira, and M. Souza, *Universidade Federal de Minas Gerais, Belo Horizonte, Minas Gerais, Brasil.*
- T64 Environmental scanning of bacteria with the potential to produce ropy milk in a farm. A. Laubscher*¹, K. White¹, A. Cano¹, R. Cano², and R. Jimenez-Flores¹, ¹*Dairy Products Technology Center, California Polytechnic State University, San Luis Obispo,* ²*Biological Sciences Department, California Polytechnic State University, San Luis Obispo.*
- T65 Influence of growth medium composition on survival and storage stability and viability of lactobacilli during freeze-drying. M. I. Tudor, E. P. Cuesta-Alonso*, and S. E. Gilliland, *Oklahoma State University, Stillwater.*
- T66 Development of a sequence-based molecular subtyping method for *Bacillus cereus* dairy isolates. D. Miller*, S. Doores, and R. Roberts, *Pennsylvania State University, University Park.*
- T67 Confirmation of *Bacillus cereus* milk isolates using traditional microbiological and a recently developed molecular method. D. Miller*, S. Doores, and R. Roberts, *Pennsylvania State University, University Park.*
- T68 Influence of the sample pre-heating and time for reanalysis in the Total Bacteria Count of milk by flow cytometry. L. Clementino^{1,2}, F. A. Pinto^{1,2}, L. M. Fonseca^{1,2}, J. F. Castro¹, R. Rodrigues^{1,2}, M. M. O. P. Cerqueira*^{1,2}, M. O. Leite^{1,2}, C. S. P. Fonseca¹, C. F. A. M. Penna^{1,2}, and M. R. Souza^{1,2}, ¹*Federal University of Minas Gerais (UFMG), School of Veterinary Medicine, Department of Food Technology and Inspection, Belo Horizonte, MG, Brazil,* ²*Laboratory of Milk Quality Analysis, Belo Horizonte, MG, Brazil.*
- T69 Methodology for differentiation of lactic acid bacteria in cheese made with probiotic adjunct cultures. C. J. Oberg*¹, L. Moyes¹, C. Brothersen², and D. J. McMahon², ¹*Microbiology Department, Weber State University, Ogden, UT,* ²*Western Dairy Center, Utah State University, Logan.*
- T70 Use of supercritical fluid extraction to remove non-polar lipids from whey buttermilk powder. M. R. Costa*^{1,2}, M. L. Gigante², and R. Jiménez-Flores³, ¹*Universidade Norte do Paraná, Londrina, Paraná, Brazil,* ²*Universidade Estadual de Campinas, Campinas, São Paulo, Brazil,* ³*California Polytechnic State University, San Luis Obispo.*

- T71 Effect of pH and ionic strength on heat-induced deposition of whey proteins at the surface of fat droplets in oil-in-water emulsions. M. Britten* and S. Lamothe, *Food Research and Development Centre, Agriculture and Agri-Food Canada, St-Hyacinthe, QC, Canada.*
- T72 The impact of antioxidant addition on flavor stability of Cheddar whey and whey protein. I. W. Liaw*¹, H. Eshpari², P. S. Tong², and M. A. Drake¹, ¹*North Carolina State University, Raleigh*, ²*CalPoly University, San Luis Obispo, CA.*
- T73 Comparison of composition, sensory and volatile components of 80% whey protein and serum protein concentrates. J. P. Evans*¹, J. Zulewska², M. Newbold², D. M. Barbano², and M. A. Drake¹, ¹*North Carolina State University, Raleigh*, ²*Cornell University, Ithaca, NY.*
- T74 Production efficiency of a 95% serum protein (SP) reduced micellar casein concentrate (MCC) produced with ceramic microfiltration (MF) membranes. E. E. Hurt*¹, J. Zulewska², M. W. Newbold¹, and D. M. Barbano¹, ¹*Cornell University, Ithaca, NY*, ²*University of Warmia and Mazury, Olsztyn, Poland.*
- T75 Functionality characterization of 65% and 95% serum protein (SP) reduced micellar casein concentrates (MCC): Concentration and drying effects. C. M. Belicium*¹, J. Zulewska², M. Newbold¹, C. I. Moraru¹, and D. M. Barbano², ¹*Cornell University, Ithaca, NY*, ²*University of Warmia and Mazury, Olsztyn, Poland.*

Food Safety

- T76 A modeling system to predict *S.aureus* growth and SEA production in milk. F. Zhao, X. Qu, X. Lv, L. Xiang, B. Yan, and Y. Jiang*, *Northeast Agricultural University, Harbin, China.*
- T77 *Salmonella* serotype shift during an endemic dairy infection. J. Van Kessel* and J. Karns, *USDA-ARS, Beltsville, MD.*
- T78 Determination of the mechanism(s) by which direct-fed microbials control *Escherichia coli* O157:H7 in cattle. L. M. Guillen*, S. McCoy, M. R. Bible, L. O. Burciaga-Robles, M. M. James, C. R. Krehbiel, and S. E. Gilliland, *Oklahoma State University, Stillwater.*
- T79 PCR analysis of pathogenic *E. coli* on three dairy farms in the northeastern US. J. Karns* and J. Van Kessel, *USDA/ARS/BA/ANRI/EMFSL, Beltsville, MD.*
- T80 Effect of a mycotoxin deactivating feed additive on the transfer of aflatoxin from dairy feed into milk. U. Hofstetter*¹, I. Rodrigues¹, A. Pietri², and T. Bertuzzi², ¹*Biomim Holding GmbH, Herzogenburg, Austria*, ²*Istituto di Scienze degli Alimenti e della Nutrizione - Facoltà di Agraria U.C.S.C., Piacenza, Italy.*
- T81 Food crisis consumer information needs. K. E. Olson*¹, D. Pelzer², and S. Stevens², ¹*KEO Consulting, Schaumburg, IL*, ²*DMI, Rosemont, IL.*

Forages and Pastures Pastures and Grazing

- T82 Structure of Tanzania grass managed under different residual light area index at rotational stocking by goats. A. C. Ruggieri*^{1,2}, N. Lima Santos^{1,2}, I. A. M. Teixeira¹, V. C. e Silva¹, B. R. Vieira¹, and E. B. Malheiros¹, ¹*São Paulo State University, Jaboticabal, São Paulo, Brazil*, ²*Fundação de Amparo a Pesquisa do Estado de São Paulo, São Paulo, São Paulo, Brazil.*
- T83 Effects of stocking rate and supplementation on pasture quality, production, and utilization in pasture-based dairy systems in Eastern North Carolina. R. E. Vibart*¹, S. P. Washburn², G. A. Benson², and J. T. Green², ¹*AgResearch Limited, Palmerston North, New Zealand*, ²*North Carolina State University, Raleigh.*
- T84 Predicting dry matter intake of grazing Brahman bulls selected for high and low feed efficiency. A. D. Aguiar*¹, L. O. Tedeschi¹, F. M. Rouquette, Jr.², T. D. A. Forbes³, C. M. Hensarling³, and R. D. Randel², ¹*Texas A&M University, College Station*, ²*Texas AgriLife Research, Overton, TX*, ³*Texas AgriLife Research, Uvalde, TX.*
- T85 Summer forage species alters animal performance, carcass characteristics and fatty acid composition of grazing beef steers. J. R. Schmidt, J. G. Andrae, S. K. Duckett*, and M. Miller, *Clemson University, Clemson, SC.*
- T86 Performance by spring and fall-calving cows grazing with full access, limited access, or no access to endophyteinfected tall fescue—2 year summary. J. Caldwell*¹, K. Coffey¹, D. Philipp¹, J. Jennings³, D. Hubbell III¹, T. Hess¹, D. Kreider¹, M. Looper², M. Popp¹, M. Savin¹, and C. Rosenkrans Jr.¹, ¹*University of Arkansas, Fayetteville*, ²*USDA-ARS, Booneville, AR*, ³*Cooperative Extension Service, Little Rock, AR.*
- T87 Characteristics of Tanzania (*Panicum maximum*) and Xaraés (*Brachiaria brizantha*) pastures under dairy cows grazing with two supplementation levels. C. A. M. Gomide*, D. S. C. Paciullo, D. Vilela, and J. H. Bruschi, *Embrapa Dairy Cattle Research Center, Juiz de Fora, MG, Brasil.*

- T88 Characteristics of forages utilized by the Przewalski horse (*Equus ferus przewalskii*) in Hustai National Park, Mongolia. B. N. Petrukovich*, J. P. Stevens, and D. A. Christensen, *University of Saskatchewan, Saskatoon, Saskatchewan, Canada*.
- T89 Timing of herbage allocation in a strip grazing organic system: Effects on performance and milk composition of lactating dairy cows. L. Baldoceca*^{1,2}, G. Raggio³, R. Bergeron³, D. Pellerin¹, and R. Berthiaume², ¹Université Laval, Québec, Québec Canada, ²Dairy and Swine Research & Development Centre, Agriculture and Agri-Food Canada, Lennoxville, Québec, Canada,, ³Campus Alfred Université de Guelph, Alfred, Ontario Canada.
- T90 Performance of stocker cattle fed hay and protein supplements during the winter and grazed on wheat pasture during the spring. W. A. Phillips*¹, C. A. Bandyk², and T. W. Geary³, ¹USDA-ARS, El Reno, OK, ²Quality Liquid Feeds Inc., Dodgeville, WI, ³USDA-ARS, Miles City, MT.
- T91 Perennial forage kochia for increased production of winter grazed pastures. L. K. Greenhalgh¹, D. R. ZoBell*¹, B. L. Waldron², K. C. Olson³, A. R. Moulton¹, and B. W. Davenport⁴, ¹Utah State University, Logan, ²USDA-ARS, Logan, UT, ³South Dakota State University, Rapid City, ⁴USDA-NRCS, Tooele, UT.
- T92 Seasonal distribution of minerals in grazed and ungrazed cool-season tame grass pasture. C. L. Wright* and A. J. Smart, *South Dakota State University, Brookings*.
- T93 Nutritive value of standing mature Buffel grass (*Cenchrus ciliaris*) for dry season feeding of cattle in Northeastern Mexico. H. Bernal-Barragan*^{1,2}, R. W. Blake², D. J. R. Cherney², and M. E. Van Amburgh², ¹Facultad de Agronomía UANL, Escobedo, N.L., México, ²Cornell University, Ithaca, NY.
- T94 The effect of grazing and supplementing with corn byproducts on reproductive performance of Creole × Zebu cows: A simulation model. J. M. Tapia-Gonzalez*¹, A. Tewolde-Medhin², W. E. Grant³, J. C. Martinez González², H. Diaz Solís⁴, A. Moreno Valdéz⁵, O. Z. Montañez Valdez¹, L. F. Galvan-Benavidez¹, and G. Rocha Chávez¹, ¹CUSUR, Univ de Guadalajara, Cd Guzman Jalisco Mexico, ²Univ Autonom de Tamaulipas, Cd Victoria Tamps. Mexico, ³Texas A&M University, College Station, ⁴UAAAN, Saltillo Coahuila Mexico, ⁵Inst Tec de Cd Victoria, Cd Victoria Tamps. Mexico.
- T95 Evaluation of cultivated summer pastures for meat goats in Tennessee. M. Lema*, K. Suleyman, and R. Opio, *Tennessee State University, Nashville*.
- T96 Dry matter yield and nutritional value of Kikuyu Grass grazed under phenological concepts in commercial dairy farms in Costa Rica. J. M. Sánchez*^{1,2}, K. Peters^{1,3}, and A. Martínez^{1,2}, ¹Universidad de Costa Rica, San José, Costa Rica, ²Centro de Investigación en Nutrición Animal, San José, Costa Rica, ³Escuela de Zootecnia, San José, Costa Rica.
- T97 Nutritive value of the Tanzania grass managed under different residual LAI, at rotational stocking by goats. N. Lima Santos^{1,2}, A. C. Ruggieri*^{1,2}, I. A. M. Teixeira¹, V. C. e Silva¹, A. F. Campos¹, and E. B. Malheiros¹, ¹São Paulo State University, Jaboticabal, São Paulo, Brazil, ²Fundação de Amparo a Pesquisa do Estado de São Paulo, São Paulo, São Paulo, Brazil.

Graduate Student Paper Competition CSAS Graduate Student Competition 2

- T98 Effects of ruminally-degradable starch and ruminally-degradable protein levels on urea-nitrogen recycling, microbial protein synthesis, and nitrogen balance in beef heifers. K. Baker*¹, J. J. McKinnon¹, T. A. McAllister², and T. Mutsvangwa¹, ¹University of Saskatchewan, Saskatoon, SK, Canada, ²Agriculture and Agri-Food Canada, Lethbridge Research Centre, Lethbridge, AB, Canada.
- T99 Effect of ruminal protozoa on urea-nitrogen recycling in growing lambs fed diets varying in ruminally-fermentable carbohydrate. D. Kiran* and T. Mutsvangwa, *University of Saskatchewan, Saskatoon, Saskatchewan, Canada*.
- T100 Effect of feed borne *Fusarium* mycotoxins on the performance of grain fed veal calves. L. M. Martin*¹, K. M. Wood¹, P. L. McEwen^{2,1}, T. K. Smith¹, I. B. Mandell¹, A. Yiannikouris³, and K. C. Swanson¹, ¹University of Guelph, Guelph, Ontario, Canada, ²Ridgetown Campus, University of Guelph, Ridgetown, Ontario, Canada, ³Alltech, Nicholasville, KY.
- T101 Effect of replacing barley grain with triticale-based dry distillers grains with solubles on lamb performance and nutrient digestibility. L. E. McKeown*^{1,2}, A. V. Chaves², M. Oba¹, T. A. McAllister², and E. Okine¹, ¹University of Alberta, Edmonton, Alberta, Canada, ²Agriculture and Agri-Food Canada Research Centre, Lethbridge, Alberta, Canada.
- T102 Effect of bioethanol co-product type and bioethanol plant on situ degradation kinetics, effective degradability and rumen bypass of nutrient components. W. G. Nuez Ortin* and P. Yu, *Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, SK, Canada*.
- T103 Protein and carbohydrate fractions of new co-products of bioethanol production: Comparison among blend DDGS, wheat DDGS and corn DDGS, and between different bioethanol plants. W. G. Nuez Ortin* and P. Yu, *University of Saskatchewan, Saskatoon, SK, Canada*.

- T104 Influence of feeding increasing levels of dry or modified wet corn distillers grains plus solubles in whole corn grain-based finishing diets on performance and carcass traits in feedlot cattle. H. Salim*¹, K. M. Wood¹, P. L. McEwen², I. B. Mandell¹, S. P. Miller¹, and K. C. Swanson¹, ¹University of Guelph, Guelph, ON, Canada, ²Ridgetown Campus, University of Guelph, Ridgetown, ON, Canada.
- T105 Effects of supplementing beef cows grazing low quality roughages with wheat dried distillers grains with solubles. A. Van De Kerckhove*¹ and H. A. Lardner^{1,2}, ¹University of Saskatchewan, Saskatoon, SK, Canada, ²Western Beef Development Centre, Humboldt, SK, Canada.
- T106 Effect of microalgal type and length of incubation on fatty acid composition *in vitro* cultures of rumen fluid. C. Whitney*¹, J. Ronquillo³, C. Enright¹, J. Green-Johnson², L. MacLaren¹, A. Fredeen¹, and K. Glover¹, ¹Nova Scotia Agricultural College, Truro, Nova Scotia, Canada, ²University of Ontario Institute of Technology, Oshawa, Ontario, Canada.
- T107 Effects of alfalfa hay on chewing behavior, rumen pH, and milk production for lactating dairy cows fed dried distillers grains plus solubles in place of barley silage. S. Z. Zhang*, G. B. Penner, and M. Oba, University of Alberta, Edmonton, Alberta, Canada.

Growth and Development

- T108 Genetic group and slaughter weight influence on carcass quantitative traits of feedlot cattle. R. Mello*¹, F. D. de Resende², A. C. de Queiroz³, M. H. de Faria², P. V. R. Paulino³, and G. R. Siqueira², ¹Universidade Federal de Roraima, Boa Vista, Roraima, Brazil, ²Agência Paulista de Tecnologia dos Agronegócios, Colina, São Paulo, Brazil, ³Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil.
- T109 Physical carcass composition of crossbreed beef cattle slaughtered at different end points. R. Mello*¹, F. D. de Resende², A. C. de Queiroz³, M. H. de Faria², G. F. Alleoni², and P. V. R. Paulino³, ¹Universidade Federal de Roraima, Boa Vista, Roraima, Brazil, ²Agência Paulista de Tecnologia dos Agronegócios, Colina, São Paulo, Brazil, ³Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil.
- T110 Chemical composition of HH section from crossbred beef bulls slaughtered at different body masses. R. Mello*¹, A. C. de Queiroz², F. D. de Resende³, M. H. de Faria³, G. R. Siqueira³, and G. F. Alleoni³, ¹Universidade Federal de Roraima, Boa Vista, Roraima, Brazil, ²Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, ³Agência Paulista de Tecnologia dos Agronegócios, Colina, São Paulo, Brazil.
- T111 Measurement of changes in body composition of piglets from birth to 4 kg using quantitative magnetic resonance (QMR). A. D. Mitchell*¹, G. Taicher², and I. Kovner², ¹USDA, Agricultural Research Service, Beltsville, MD, ²Echo Medical Systems, Houston, TX.
- T112 An *in vivo* and *in vitro* comparison of muscle precursor cells originating from broiler and layer chick somites. P. E. Mozdziak*, D. Hodgson, and J. N. Petitte, North Carolina State University, Raleigh.
- T113 Glucose metabolism in preterm (PT) and term (T) born neonatal calves. H. M. Hammon*¹, J. Steinhoff¹, S. Görs¹, C. C. Metges¹, and R. M. Bruckmaier², ¹Institute for the Biology of Farm Animals (FBN), Dummerstorf, Germany, ²University of Bern, Bern, Switzerland.
- T114 Milk diet affects glucose status and postprandial hepatic glucose metabolism in neonatal calves. J. Steinhoff*¹, S. Görs¹, C. C. Metges¹, R. M. Bruckmaier², and H. M. Hammon¹, ¹Institute for the Biology of Farm Animals (FBN), Dummerstorf, Germany, ²University of Bern, Bern, Switzerland.
- T115 Metabolic maturity at birth and neonate lamb survival and growth. III. Association among pre-suckling plasma metabolic and endocrine factors and lamb growth to weaning. D. R. Miller*¹, R. B. Jackson¹, D. Blache², and J. R. Roche¹, ¹Tasmanian Institute of Agricultural Research, Mt Pleasant, TAS, Australia, ²University of Western Australia, Perth, WA, Australia.
- T116 Glucagon-like peptide-2 increases splanchnic blood flow acutely in calves but loses effectiveness with chronic exposure. C. C. Taylor-Edwards*¹, D. G. Burrin², J. J. Holst³, K. R. McLeod¹, and D. L. Harmon¹, ¹University of Kentucky, Lexington, ²USDA/ARS Children's Nutrition Research Center, Baylor College of Medicine, Houston, TX, ³The Panum Institute, University of Copenhagen, Copenhagen, Denmark.
- T117 Glucagon-like peptide-2 increases small intestinal mass of calves. C. C. Taylor-Edwards*¹, D. G. Burrin², K. R. McLeod¹, and D. L. Harmon¹, ¹University of Kentucky, Lexington, ²USDA/ARS Children's Nutrition Research Center, Baylor College of Medicine, Houston, TX.
- T118 Maternal low and high protein diets during pregnancy affect body weight and stress reactivity in the offspring of pigs. M. Graebner*, E. Kanitz, M. Tuchscherer, B. Stabenow, C. C. Metges, C. Rehfeldt, and W. Otten, Research Institute for the Biology of Farm Animals (FBN), Dummerstorf, Germany.
- T119 Linoleic acid changes fatty acid profiles and alters gene expression in bovine adipocyte cultures. A. P. Burns*, S. K. Duckett, S. L. Pratt, and S. E. Ellis, Clemson University, Clemson, SC.
- T120 Docosahexaenoic acid enhances hepatic serum amyloid A expression via a protein kinase A-dependent mechanism. J. J. Dai, Y. C. Wang, P. H. Wang, H. J. Mersmann, and S. T. Ding*, Institute of Biotechnology, National Taiwan University, Taipei, Taiwan.

- T121 Effects of arginine supplementation to gilts during early gestation on fetal myogenesis. C. Kalbe^{*1}, M. Porm¹, J. Bérard², G. Bee², and C. Rehfeldt¹, ¹Research Institute for the Biology of Farm Animals, Dummerstorf, Germany, ²Agroscope, Liebefeld Posieux, Switzerland.
- T122 Identification and characterization of the bovine G protein-coupled receptor GPR41 and GPR43 genes. A. Wang, Z. Gu, B. Heid, R. M. Akers, and H. Jiang^{*}, Virginia Polytechnic Institute and State University, Blacksburg.
- T123 Potential role of low-density lipoprotein receptor-related protein (LRP)-1 and IGFBP-3 in the proliferation-suppressing actions of TGF-beta on cultured myogenic cells. E. Kamanga-Sollo, M. S. Pampusch, M. E. White^{*}, M. R. Hathaway, and W. R. Dayton, University of Minnesota, St. Paul.
- T124 Clofibrate treatment up-regulates hepatic gene expression encoding fatty acid oxidation and ketogenesis enzymes in liver of pigs during early postnatal development. K. Shim, L. Xi^{*}, S. Jacobi, and J. Odle, North Carolina State University, Raleigh.
- T125 Use of gas chromatography to measure stearoyl-CoA desaturase activity and substrate preference. J. A. Stamey^{*}, C. A. Umberger, M. D. Hanigan, and B. A. Corl, Virginia Polytechnic Institute and State University, Blacksburg.
- T126 Maternal weight and P8 fat amount affects *IGF2* expression in *semitendinosus* muscle tissue of the developing fetus. C. J. Fitzsimmons^{*1,2}, R. Feldmann¹, Z. A. Kruk^{1,3}, S. Truran¹, D. Lines¹, D. Rutley¹, and S. Hiendleder^{1,4}, ¹JS Davies Epigenetics and Genetics Group, Discipline of Agricultural and Animal Science, The University of Adelaide, Roseworthy Campus, Roseworthy, South Australia, Australia, ²Agriculture and Agri-Food Canada, Department of Agricultural, Food, and Nutritional Science, University of Alberta, Edmonton, Alberta, Canada, ³Chungnam National University, Daejeon, South Korea, ⁴Research Centre for Reproductive Health, The University of Adelaide, Adelaide, South Australia, Australia.
- T127 Fetal growth is substantially modulated by at least two different genetic loci in the middle part of bovine chromosome 6. A. Eberlein¹, A. Takasuga², K. Setoguchi³, R. Pfuhl¹, K. Flisikowski⁴, R. Fries⁴, N. Klopp⁵, K. Suhre⁵, R. Weikard¹, and Ch. Kühn^{*1}, ¹Research Institute for the Biology of Farm Animals, Dummerstorf, Germany, ²Shirikawa Institute of Animal Genetics, Fukushima, Japan, ³Cattle Breeding Development Institute of Kagoshima Prefecture, Kagoshima, Japan, ⁴Chair of Animal Breeding, Technische Universität München, Freising, Germany, ⁵Helmholtz Zentrum, Munich, Germany.
- T128 Relationships between growth and metabolic parameters of replacement heifers on two nutrition programs. F. Abeni¹, L. Calamari², G. Pirlo^{*1}, and L. Stefanini³, ¹CRA-FLC, Cremona, Italy, ²Istituto di Zootecnica, U.C.S.C., Piacenza, Italy, ³Azienda Sperimentale V. Tadini, Gariga di Podenzano, Italy.
- T129 Luminal energy supply (but not substrate) affects expression of mRNA for three proteins capable of amino acid transport by ileal epithelium (but not duodenal or jejunal) of forage-fed growing beef cattle. S. F. Liao^{*}, J. A. Boling, and J. C. Matthews, University of Kentucky, Lexington.
- T130 Early life management and long term productivity of dairy calves. F. Soberon^{*}, E. Raffrenato, R. W. Everett, and M. E. Van Amburgh, Cornell University, Ithaca, NY.
- T131 Metformin inhibits adipogenesis in fetal muscle of dam receiving high energy diet. J. F. Tong^{*}, X. Yan, J. X. Zhao, and M. Du, University of Wyoming, Laramie.
- T132 Albumin induced cytokine expression in porcine adipose tissue explants. T. G. Ramsay^{*}, M. Stoll, and T. J. Caperna, USDA-ARS, Beltsville, MD.
- T133 Assisted reproductive technologies (ART) have a dramatic effect on cell proliferation in ovine fetal membranes (FM) during early pregnancy. P. P. Borowicz^{*1}, L. P. Reynolds¹, L. R. Coupe¹, G. Ptak², P. Loi², P. A. Scapolo², A. Cuomo², C. Palmieri², and A. T. Grazul-Bilska¹, ¹North Dakota State University, Fargo, ²Department of Comparative Biomedical Sciences, Faculty of Veterinary Medicine, University of Teramo, 64100 Teramo, Italy.
- T134 SCD1 induction during early differentiation of bovine preadipocytes. L. Ma^{*}, A. J. Lengi, and B. A. Corl, Virginia Polytechnic Institute and State University, Blacksburg.
- T135 Conjugated linoleic acid effects on adiposity are independent of spot 14 gene expression in mice. M. Hussein^{*}, K. Harvatine, Y. Boisclair, and D. Bauman, Cornell University, Ithaca, NY.
- T136 The effect of KemTRACE[®] chromium propionate supplementation on global gene expression in adipocytes of finishing pigs. L. Wonderling^{*1}, J. Hahn¹, M. Spurlock², and A. Jourdan¹, ¹Kemin Industries, Des Moines, IA, ²Iowa State University, Ames.
- T137 Expression of microRNA in bovine preadipocytes and adipocytes. S. L. Pratt, A. P. Burns, and S. K. Duckett^{*}, Clemson University, Clemson, SC.
- T138 Characterization of ovine fetal heart gene expression during fetal growth restriction. K. A. Partyka^{*1}, J. S. Barry², R. V. Anthony^{1,2}, and H. Han¹, ¹Colorado State University, Fort Collins, ²University of Colorado Health Sciences Center, Aurora.
- T139 Development of a protocol for staining BrdU-labeled cells within cryosections of bovine mammary tissue that is suitable for subsequent transcriptome analysis. R. K. Choudhary^{*1}, K. M. Daniels², C. Clover², and A. V. Capuco^{2,1}, ¹University of Maryland, College Park, ²Bovine Functional Genomics Laboratory, USDA-ARS, Beltsville, MD.

- T140 Analysis of protein oxidation in serum of fetal and newborn piglets and the influence of iron dextran on induction of protein carbonyls. T. J. Caperna*, A. E. Shannon, T. G. Ramsay, L. A. Blomberg, and W. M. Garrett, *USDA/ARS, Beltsville, MD*.
- T141 AMP-activated protein kinase γ 3 subunit mutation in transgenic mice corresponding to RN- allele in pigs inhibits adipogenesis. J. X. Zhao*, X. Yan, J. F. Tong, M. J. Zhu, and M. Du, *University of Wyoming, Laramie*.
- T142 Growth hormone does not stimulate IGF-I mRNA expression in bovine skeletal muscle, myoblasts, or myotubes. X. Ge and H. Jiang*, *Virginia Polytechnic Institute and State University, Blacksburg*.
- T143 Early-weaning down-regulates the expression of aminopeptidase N gene in the jejunum of the piglet. D. Lackeyram*, T. Archbold, K. C. Swanson, and M. Z. Fan, *University of Guelph, Guelph, Ontario, Canada*.

Horse Species

- T144 Influence of extension on the stock-type western pleasure jog. M. Nicodemus* and J. Williams, *Mississippi State University, Mississippi State*.
- T145 Manure management practices on equine farms. M. L. Westendorf*¹, T. Joshua², S. J. Komar¹, C. Williams¹, and R. Govindasamy¹, ¹Rutgers, *The State University of New Jersey, New Brunswick*, ²USDA National Agricultural Statistics Service, *Trenton, NJ*.
- T146 Temporal variables of the Marsh Tacky intermediate gait. M. Nicodemus*¹ and J. Beranger², ¹Mississippi State University, *Mississippi State*, ²American Livestock Breeds Conservancy, *Pittsboro, NC*.
- T147 The use of Doppler ultrasonography to measure vasoconstriction in horses consuming endophyte-infected tall fescue. K. C. Gradert*¹, J. M. Bormann¹, S. F. DeWitt², L. W. Lomas³, J. M. Kouba¹, and T. L. Slough¹, ¹Kansas State University, *Manhattan*, ²Woodside Equine Clinic, *Ashland, VA*, ³Southeast Agricultural Research Center, *Parsons, KS*.
- T148 Genistein does not work through estrogen receptors to reduce lipopolysaccharide stimulated tumor necrosis factor α release from equine peripheral blood mononuclear cells (PBMC). A. Taylor*, C. Paulson, and J. Clapper, *South Dakota State University, Brookings*.
- T149 The evaluation of the miniature horse as a nutritional model for full size horses fed various levels of dietary fat. J. S. Pendergraft*¹, B. Gutierrez², and M. J. Arns², ¹Sul Ross State University, *Alpine, TX*, ²University of Arizona, *Tucson*.
- T150 The effect of forage nonstructural carbohydrate on glucose, insulin and lipid response in Morgan horses. L. A. Perry*^{1,2}, B. A. Younge², K. W. Cotanch¹, K. N. Lassell¹, and C. S. Ballard¹, ¹William H. Miner Agricultural Research Institute, *Chazy, NY*, ²University of Limerick, *Castletroy, Limerick, Ireland*.

Meat Science and Muscle Biology 2

- T151 Retail and sensory quality of Longissimus thoracis from steers fed corn- or wheat-based dry distillers grains plus solubles (DDGS). N. Aldai*¹, J. L. Aalhus¹, M. E. R. Dugan¹, T. A. McAllister², L. J. Walter³, and J. J. McKinnon³, ¹Agriculture & Agri-Food Canada, *Lacombe Research Centre, Lacombe, AB, Canada*, ²Agriculture & Agri-Food Canada, *Lethbridge Research Centre, Lethbridge, AB, Canada*, ³Department of Animal & Poultry Science, *University of Saskatchewan, Saskatoon, SK, Canada*.
- T152 Effects of feeding cattle increasing levels of dried distillers grains with solubles (DDGS) from wheat on muscle fatty acid composition. M. E. R. Dugan*¹, N. Aldai¹, D. J. Gibb³, T. A. McAllister³, and J. K. G. Kramer², ¹Lacombe Research Centre, *Lacombe, AB, Canada*, ²Guelph Food Research Centre, *Guelph, ON, Canada*, ³Lethbridge Research Centre, *Lethbridge, AB, Canada*.
- T153 Effects of wet distillers grains feeding supplemented with vitamin E on fatty acid composition and sensory attributes of beef steaks. L. S. Senaratne*, C. R. Calkins, A. S. de Mello Jr., T. P. Carr, and G. A. Sullivan, *University of Nebraska, Lincoln*.
- T154 Wet distillers grains with or without solubles and vitamin E supplementation alter proximate and mineral composition of beef. L. S. Senaratne, C. R. Calkins*, and A. S. de Mello Jr., *University of Nebraska, Lincoln*.
- T155 Alternative muscles for traditional Japanese and Korean beef recipes. C. R. Calkins, A. S. de Mello Jr.*¹, L. S. Senaratne, and K. Watanabe, *University of Nebraska, Lincoln*.
- T156 Fatty acid composition of western Canadian beef: Hamburger. N. Aldai*¹, M. E. R. Dugan¹, D. C. Rolland¹, and J. K. G. Kramer², ¹Lacombe Research Centre, *Lacombe, AB, Canada*, ²Guelph Food Research Centre, *Guelph, ON, Canada*.
- T157 Effect of slaughter end point on pH of beef carcasses from British or Continental versus Nelore crossbred cattle. R. Mello*¹, F. D. de Resende², A. C. de Queiroz³, M. H. de Faria², F. Maldonado², and P. V. R. Paulino³, ¹Universidade Federal de Roraima, *Boa Vista, Roraima, Brazil*, ²Agência Paulista de Tecnologia dos Agronegócios, *Colina, São Paulo, Brazil*, ³Universidade Federal de Viçosa, *Viçosa, Minas Gerais, Brazil*.

- T158 Post-mortem variation in temperature of beef carcasses in relation to breed and slaughter end point. R. Mello*¹, A. C. de Queiroz², F. D. de Resende³, M. H. de Faria³, G. R. Siqueira³, and J. S. de Oliveira², ¹Universidade Federal de Roraima, Boa Vista, Roraima, Brazil, ²Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, ³Agência Paulista de Tecnologia dos Agronegócios, Colina, São Paulo, Brazil.
- T159 Effect of breed and production system on the content of *cis*-9, *trans*-11 CLA in m. *longissimus lumborum* and m. *semimembranosus* of lambs. G. Davila El Rassi*¹, V. Banskalieva¹, and M. Brown², ¹R. M. Kerr Food and Agricultural Products Center, Oklahoma State University, Stillwater, ²USDA-ARS, Grazinglands Research Laboratory, El Reno, OK.
- T160 Free amino acids profile in *Biceps femoris* of Iberian gilts fed betaine, CLA or both. I. Fernandez-Figares*, M. Lachica, J. M. Rodriguez-Lopez, L. Gonzalez-Valero, and J. F. Aguilera, Spanish Research Council, CSIC, Granada, Spain.
- T161 Feeding flaxseed to beef cows increases plasma omega-3 linolenic acid levels. M. L. He*^{1,2}, Y.-H. Chung¹, K. A. Beauchemin¹, P. S. Mir¹, J. L. Aalhus³, M. E. R. Dugan³, and T. A. McAllister¹, ¹Agriculture & Agri-Food Canada Research Centre, Lethbridge, Alberta, Canada, ²Dept. of Animal and Poultry Sciences, University of Saskatchewan, Saskatoon, Saskatchewan, Canada, ³Agriculture & Agri-Food Canada Research Centre, Lacombe, Alberta, Canada.
- T162 Grazing or concentrate feeding for 11 months prior to slaughter: Influence on colour and sensory characteristics of beef. A. P. Moloney*^{1,2}, A. Black¹, P. G. Dunne², and F. J. Monahan³, ¹Teagasc, Grange Beef Research Centre, Dunsany, County Meath, Ireland, ²Teagasc, Ashtown Food Research Centre, Ashtown, Dublin, Ireland, ³University College Dublin, Belfield, Dublin, Ireland.
- T163 The influence of forage diets and aging on beef palatability. T. Jiang*¹, J. R. Busboom¹, M. L. Nelson¹, J. O'Fallon¹, T. P. Ringkob², D. Joos², K. R. Rogers-Klette², and K. Piper², ¹Washington State University, Pullman, ²University of Nevada, Reno.
- T164 Influence of management systems on meat quality of heifers fed with different lipid supplements in the finishing phase. M. C. A. Santana*¹, T. T. Berchielli¹, R. A. Reis¹, A. V. Pires², G. Fiorentini¹, and M. A. A. Balsalobre³, ¹São Paulo State University, Jaboticabal, São Paulo, Brazil, ²São Paulo University, Piracicaba, São Paulo, Brazil, ³Bellman, Mirassol, São Paulo, Brazil.

Nonruminant Nutrition Feed Additives I

- T165 Hypocholesteremic effect of turmeric powder and sodium selenite in Ross broilers reared under heat stress conditions. A. Zeinali*¹, A. Riasi¹, H. Farhangfar¹, and H. Ziaei², ¹Birjand University, Birjand, Iran, ²Agricultural Research Center, Birjand, Iran.
- T166 Cloning and expression of porcine carboxypeptidase A1 for feed application. Y. Zhao¹, H. Zhao¹, J. C. Zhou¹, X. J. Xia¹, and X. G. Lei*^{1,2}, ¹Int. Ctr of Future Agriculture for Human Health, Sichuan Agri. Univ., Ya'an 625014, China, ²Cornell University, Ithaca, NY.
- T167 Determination of optimal conditions for hydrolysis of conjugated deoxynivalenol in corn and wheat with trifluoromethanesulfonic acid. S.-T. Tran* and T. K. Smith, University of Guelph, Guelph, Ontario, Canada.
- T168 Efficacy of a commercial purified phyllosilicate in preventing fumonisin toxicity in finishing pigs. C. A. Mallmann¹, P. Dilkin¹, L. Giacomini¹, R. H. Rauber¹, and J. Garcia-Sirera*², ¹Universidade Federal de Santa Maria, Laboratorio de Analises Micotoxicologicas (LAMIC), Santa Maria, RS, Brasil, ²Special Nutrients, Miami, FL.
- T169 Development and validation of an analysis method for carvacrol encapsulated in different matrixes and set in pelleted feed. S. Oguey*, A. Vienne, C. Ionescu, and D. Bravo, Pancosma, Geneva, Switzerland.
- T170 Heterologous expression of recombinant porcine elastase 2 as a feed enzyme. Y. J. Zhang¹, H. Zhao¹, J. C. Zhou¹, X. J. Xia¹, and X. G. Lei*^{1,2}, ¹Int. Ctr of Future Agriculture for Human Health, Sichuan Agri. Univ., Ya'an 625014, China, ²Cornell University, Ithaca, NY.
- T171 Expression and purification of porcine pancreatic carboxypeptidase B in a yeast system. Y. Liu¹, H. Zhao¹, J. C. Zhou¹, X. J. Xia¹, and X. G. Lei*^{1,2}, ¹Int. Ctr of Future Agriculture for Human Health, Sichuan Agri. Univ., Ya'an 625014, China, ²Cornell University, Ithaca, NY.
- T172 Effects of antioxidants on growth performance and antioxidant status of broiler chickens. Y. Zou, Z. B. Yang*, W. R. Yang, S. Z. Jiang, and G. G. Zhang, Shandong Agricultural University, Tai-an, Shandong, P. R. China.
- T173 Comparative effects of *Escherichia coli* AppA2 and *Aspergillus niger* PhyA phytases on bone property of weanling pigs fed a high phosphorus diet. C. E. Mills, C. A. Faber, K. R. Roneker, and X. G. Lei*, Cornell University, Ithaca, NY.
- T174 Effects of dietary marine microbe accumulating ω -3 fatty acid supplementation on growth performance and carcass characteristics in finishing pigs. H. J. Kim*¹, T. X. Zhou¹, J. H. Jung¹, M. S. Ryu², H. J. Kim², and I. H. Kim¹, ¹Dankook University, Cheonan, Choongnam, Korea, ²JINIS Inc, Wanju, Jeonbuk, Korea.
- T175 Comparative effects of phytase derived from *Escherichia coli* and *Aspergillus niger* in laying hens. L. Yan*¹, H. D. Jang¹, S. M. Hong¹, H. S. Kim², Y. Hyun², and I. H. Kim¹, ¹Dankook University, Cheonan, Choongnam, Korea, ²Seoul Feed, Co. LTD, Seoul, Korea.

- T176 Effects of cysteamine to replace antibiotics on growth performance and nutrient digestibility in weaning pigs. J. H. Jung*, T. X. Zhou, L. Yan, S. M. Hong, and I. H. Kim, *Dankook University, Cheonan, Choongnam, Korea*.
- T177 Effects of different dietary combinations of antibiotics, benzoic acid and probiotic for weaning pigs. G. F. Lopes¹, L. Alebrante¹, D. L. Santos¹, G. G. Garcia², A. A. Passos^{*3}, R. Balestrin³, and G. J. M. M. Lima⁴, ¹Vitamix Animal Nutrition, ²Santa Maria Federal University, ³DSM, ⁴Embrapa.
- T178 Effect of phytase supplementation on the calcium and phosphorus balance in adult cannulated ganders. J. Tossenberger¹, L. Babinszky^{*1}, and D. Feuerstein^{2,3}, ¹Kaposvár University, Kaposvár, Hungary, ²BASF SE, Ludwigshafen, Germany.
- T179 Genetic engineering of an *Escherichia coli* mutant phytase for thermostability does not affect the enzymatic efficacy in a diet for young pigs. L. E. Denmark, J. D. Weaver, K. R. Roneker, and X. G. Lei*, *Cornell University, Ithaca, NY*.
- T180 The effects of lactose inclusion and seaweed sugars on performance, nutrient digestibility and microbial populations in newly weaned piglets. J. V. O'Doherty*, S. Dillon, J. J. Callan, and T. Sweeney, *University College Dublin, Belfield, Dublin 4, Ireland*.
- T181 Screening based on antibacterial and phytase activities of lactic acid bacteria towards their use as a chicken probiotic supplement. H. R. Taheri^{*1}, H. Moravej¹, F. Tabandeh², M. Zaghari¹, and M. Shivazad¹, ¹University of Tehran, Karaj, Tehran, Iran, ²National Institute of Genetic Engineering and Biotechnology, Tehran, Iran.
- T182 Effects of different pen types and dietary antibiotics on growth performance, immune response and diarrhea occurrence of weaning pigs. Y. S. Noh*, K. W. Kang, Y. H. Choi, S. K. Jang, Y. D. Jang, H. K. Oh, and Y. Y. Kim, *Seoul National University, Seoul, Korea*.
- T183 Evaluation of antimicrobial activity of organic acids against *Salmonella typhimurium* isolated from swine. M. R. Messina^{*1}, E. Grilli¹, S. Albonetti², and A. Piva¹, ¹DIMORFIPA, University of Bologna, Italy, ²DSPVPA, University of Bologna, Italy.
- T184 Effect of Natuzyme supplementation on broiler performance in deficient standardized ileal threonine diets. S. Khalaji, M. Zaghari*, and M. Shivazad, *University of Tehran, Karaj, Iran*.

Nonruminant Nutrition Nutrients

- T185 Effects of protein and sulfur AA concentration in diets fed to weaning pigs on growth performance and diarrhea incidence. T. C. S. Reis^{*1}, G. Mariscal-Landin², P. E. Urriola³, and H. H. Stein³, ¹Universidad Autonoma de Queretaro, Queretaro, Mexico, ²INIFAB CENID Fisiologica, Queretaro, Mexico, ³University of Illinois, Urbana.
- T186 Effect of the degree and duration of early dietary amino acid restrictions on subsequent and overall pig performance and physical and sensory characteristics of pork. R. B. Kamalakar*, L. I. Chiba, K. C. Divakala, S. P. Rodning, E. G. Welles, W. G. Bergen, C. R. Kerth, D. L. Kuhlers, and N. K. Nadarajah, *Auburn University, Auburn, AL*.
- T187 Apparent ileal digestibility of CP and amino acids in pigs fed sorghum-soybean meal diets supplemented with phytase. M. Cervantes^{*1}, E. Sánchez¹, A. Morales¹, A. Araiza¹, W. Sauer¹, M. Barrera¹, and J. Yáñez², ¹ICA, Universidad Autónoma de Baja California, Mexicali, BC, México, ²Universidad Autónoma de Tlaxcala, Tlaxcala, México.
- T188 Effects of low-CP feeding on growth, nutrient utilization and manure odor in weaning pigs. M. Z. Fan*, T. Archbold, Z. R. Wang, and C. Yang, *University of Guelph, Guelph, Ontario, Canada*.
- T189 Effects of NCG or Arginine on immune function of intestinal mucosa in weaning period of piglets. X. Wu, Y. Gao, Y. Yin*, X. Zhou, R. Huang, Z. Tang, M. Geng, and T. Li, *Laboratory of Animal Nutritional Physiology and Metabolic Process, Institute of Subtropical Agriculture, the Chinese Academy of Sciences, Changsha, China*.
- T190 Effect of varying levels of metabolizable energy and crude protein in phytase-supplemented diets on nitrogen retention and growth performance in young pigs. M. J. M. Almeida, E. T. Fialho*, J. A. F. Lima, P. B. Rodrigues, V. S. Cantarelli, and H. O. Silva, *University Federal of Lavras, Lavras, MG, Brazil*.
- T191 The effects of reduction in protein and phosphorus in finishing broiler chicken diets supplemented with phytase. Y. L. Silva, P. B. Rodrigues, E. T. Fialho*, R. T. F. Freitas, and A. G. Bertechini, *University Federal of Lavras, Lavras, MG, Brazil*.
- T192 Intestinal absorption of vitamin B₁₂ in growing pigs. D. Prévéraud^{2,1}, C. L. Girard¹, F. Guay², N. LeFloc'h³, and J. J. Matte^{*1}, ¹Dairy & Swine R&D Centre, Agriculture & Agri-Food Canada, STN-Lennoxville, Sherbrooke, QC, Canada, ²Laval University, Quebec City, QC Canada, ³UMR 1079 SENAH, INRA, St-Gilles, France.
- T193 Multivariate nonlinear mixed effect models for protein and lipid deposition in growing pigs. A. B. Strathe^{*1} and E. Kebreab², ¹University of Copenhagen, Copenhagen, Denmark, ²University of Manitoba, Winnipeg, Manitoba, Canada.

- T194 Impacts of zinc and arginine in the piglets diets at weaning on inflammatory reaction and antioxidant potential. N. Bergeron*, A. Hudon-Thibault, M. Roy, and F. Guay, *Université Laval, Québec, Québec, Canada*.
- T195 Meta-analytic study of phosphorus excretion in pigs. R. S. Dias*¹, J. Chen¹, J. Ellis¹, E. Kebreab², S. Lopes³, D. M. S. S. Vitti⁴, M. Fan¹, and J. France¹, ¹*University of Guelph, Guelph, Ontario, Canada*, ²*University of Manitoba, Winnipeg, Manitoba, Canada*, ³*Universidad de Leon, Leon, Leon, Spain*, ⁴*Centro de Energia Nuclear na Agricultura, Piracicaba, Sao Paulo, Brazil*.
- T196 Effects of dietary lactose levels during different starter phases on the performance of weanling pigs. J. S. Kim, Y. X. Yang, K. Yun, J. Y. Choi, P. L. Shinde, and B. J. Chae*, *College of Animal Life Sciences, Kangwon National University, Chuncheon, Republic of Korea*.
- T197 Effect of lysine levels in gestating and lactating diets on reproductive performance of sows and their progeny. J. S. Chang*¹, H. F. Long², L. G. Piao², W. S. Ju², Y. D. Jang², and Y. Y. Kim², ¹*CJ Cheiljedang Corporation, Seoul, Korea*, ²*Seoul National University, Seoul, Korea*.
- T198 Effect of betaine partially replacing dietary methionine on nutrient digestibility and on serum metabolites and enzymes of broiler chickens. H. Sun¹, W. R. Yang¹, Y. Wang², Z. B. Yang*¹, S. Z. Jiang¹, and G. G. Zhang¹, ¹*Shandong Agricultural University, Tai-an, Shandong, P. R. China*, ²*Agriculture and Agri-Food Canada, Lethbridge Research Centre, P.O. Box 3000, Lethbridge, AB, Canada*.
- T199 Effects of decreased levels of crude protein in nursery diets on growth performance and diarrhea occurrence of pigs weaned at 21 days. C. J. Giroto Jr.*¹, F. F. Barbosa¹, P. F. Campos¹, P. C. Brustolini¹, and J. V. Moutinho¹, *Federal University of Viçosa, Viçosa, Minas Gerais, Brazil*.
- T200 Effects of decreasing nutrient density of diet on Cu and nutrient absorption in ileal tissue of broilers. B. E. Aldridge* and J. S. Radcliffe, *Purdue University, West Lafayette, IN*.
- T201 The effect of period and duration of feeding restriction on nitrogen balance in pigs. M. Richer-Lanciale¹, M. Roy*¹, J. F. Bernier¹, R. Fillion³, M. Lessard², and F. Guay¹, ¹*Université Laval, Québec, Québec, Canada*, ²*Agriculture and AgriFood Canada, Sherbrooke, Québec, Canada*, ³*CDPQ, Québec, Québec, Canada*.
- T202 Effects of feeding sodium selenite vs. selenium yeast as the selenium source for sows during late gestation and lactation. T. E. Shipp*, D. W. Funderburke, and C. L. Funderburke, *Cape Fear Consulting, LLC, Warsaw, NC*.
- T203 Efficacy of Cr (III) supplementation on growth, carcass composition, blood metabolites, and endocrine parameters in finishing pigs. M. Q. Wang*^{1,2}, Y. D. He^{1,2}, and Z. R. Xu^{1,2}, ¹*Animal Science College of Zhejiang University, Hangzhou, Zhejiang, P. R. China*, ²*The Key Laboratory of Molecular Animal Nutrition, Ministry of Education, Hangzhou, Zhejiang, P. R. China*.
- T204 Biochemical profile of broiler chicken supplemented with organic selenium (SelPlex®) in total replacement of inorganic selenium (sodium selenite). F. M. Gonçalves, M. N. Corrêa*, M. A. Anciuti, F. Rutz, and F. A. B. Del Pino, *Federal University of Pelotas, Pelotas, RS, Brazil*.
- T205 Effects of level of soybean oil in diets on true and ileal digestibility and endogenous losses of amino acids in growing pigs. E. C. Almeida, E. T. Fialho*, V. S. Cantarelli, M. G. Zangeronimo, R. A. N. Pereira, and P. B. Rodrigues, *University Federal of Lavras, Lavras, MG, Brazil*.
- T206 Antagonistic strains isolated from the porcine gastrointestinal tract. V. Klose*¹, K. Bayer¹, R. Bruckbeck¹, A. P. Loibner¹, and G. Schatzmayr², ¹*BOKU-University, Vienna, A-3430 Tulln, Austria*, ²*BIOMIN Research Center, A-3430 Tulln, Austria*.
- T207 The effect of period and duration of feeding restriction on compensatory growth and global growth performances in pigs. M. Richer-Lanciale*¹, J. F. Bernier¹, R. Fillion³, M. Lessard², and F. Guay¹, ¹*Université Laval, Québec, Québec, Canada*, ²*Agriculture and AgriFood Canada, Sherbrooke, Québec, Canada*, ³*CDPQ, Québec, Québec, Canada*.
- T208 Citrulline as a parameter for villus atrophy in weaned piglets. L. der Kinderen*¹, H. Zwolschen², D. Bravo³, A. Mul¹, and E. Bruininx^{1,4}, ¹*CCL Research, Veghel, The Netherlands*, ²*Cehave Landbouwbetang Voeders Nederland, Veghel, the Netherlands*, ³*Pancosma, Geneva, Switzerland*, ⁴*Animal Nutrition Group, Wageningen University, Wageningen, the Netherlands*.

Physiology and Endocrinology Estrous Synchronization

- T209 Effect of progesterone insert during presynchronization program on reproductive responses of dairy cows. R. G. S. Bruno*¹, A. C. Denicol¹, D. F. Resende¹, G. Lopes Jr.¹, L. G. D. Mendonça¹, F. A. Rivera¹, J. E. P. Santos², and R.C. Chebel¹, ¹*University of California - Davis, Tulare, University of Florida, Gainesville*.
- T210 Effect of duration of CIDR treatment on reproductive performance of dairy heifers using a timed-AI protocol. G. Lopes Jr.*¹, L. G. D. Mendonça¹, R. C. Chebel¹, J. C. Dalton², and A. Ahmadzadeh³, ¹*Veterinary Medicine Cooperative Extension, University of California - Davis, Tulare, Caldwell Research and Extension Center, University of Idaho, Caldwell*, ³*University of Idaho, Moscow*.
- T211 Effect of reusing CIDRs on the pregnancy rate of beef cattle. W. A. Greene* and M. L. Borger, *The Ohio State University, Wooster*.

- T212 Reproductive outcomes of beef heifers treated with various duration of CIDR exposure in a modified timed-AI protocol. A. Ahmadzadeh*¹, D. Falk¹, D. Gunn², J. B. Hall³, and B. Glaze⁴, ¹University of Idaho, Moscow, ²University of Idaho, R & E Center, Fort Hall, ³University of Idaho, R & E Center, Salmon, ⁴University of Idaho, R & E Center, Twin Falls.
- T213 Increasing circulating P4 in lactating dairy cattle by treatment with hCG and/or CIDR. A. B. Nascimento*, A. H. Souza, J. N. Guenther, F. P. Dalla Costa, and M. C. Wiltbank, *University of Wisconsin, Madison.*
- T214 Effect of increasing GnRH and PGF_{2α} dose during double-Ovsynch on fertility of lactating dairy cows at first postpartum timed artificial insemination. J. O. Giordano*¹, P. M. Fricke¹, S. Bas¹, A. P. Cunha¹, R. A. Pawlisch², J. N. Guenther¹, and M. C. Wiltbank¹, ¹Department of Dairy Science, University of Wisconsin, Madison, ²Brodhead Veterinary Clinic, Brodhead, WI.
- T215 Use of eCG, hCG, or estradiol cypionate (ECP) after CIDR removal in Creole Rodeo multiparous cows. J. A. Ramirez-Godinez*, L. V. Beltran-Prieto, E. Santellano-Estrada, and A. Flores-Mariñelareña, *Universidad Autonoma de Chihuahua, Chihuahua, Chihuahua, Mexico.*
- T216 Effect of body condition score on estrus expression, and AI and breeding season pregnancy rates in beef cows synchronized with progesterone supplemented protocols. R. Kasimanickam* and W. D. Whittier, *Virginia-Maryland Regional College of Veterinary Medicine, Blacksburg.*
- T217 Comparison of the CIDR Select and 5 day CO-Synch + CIDR protocols for synchronizing estrus in beef heifers. P. J. Gunn*¹, K. C. Culp¹, R. P. Arias¹, R. P. Lemenager¹, K. Heaton², S. L. Lake³, and G. A. Bridges¹, ¹Purdue University, West Lafayette, IN, ²Utah State University, Logan, ³University of Wyoming, Laramie.
- T218 Effect of double prostaglandin injections in the Ovsynch[®] protocol on serum progesterone in cycling dairy cows. J. L. Fain*, E. R. Waggoner, and J. R. Gibbons, *Clemson University, Clemson, SC.*
- T219 In vitro assessment of corpus luteum function in cows induced to ovulate with porcine LH, GnRH or estradiol benzoate. D. J. Ambrose*^{1,3}, M. G. Colazo¹, J. P. Kastelic², T. O. Ree^{3,4}, M. K. Dyck³, P. Ponce Barajas^{1,3}, and A. G. A. Lamont^{1,3}, ¹Alberta Agriculture and Rural Development, Edmonton, AB, Canada, ²Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, ³University of Alberta, Edmonton, AB, Canada, ⁴Lakeland College, Vermilion, AB, Canada.
- T220 Reproductive performance of grazing dairy cows following presynchronization and resynchronization protocols. E. S. Ribeiro*, R. L. A. Cerri, R. S. Bisinotto, F. S. Lima, F. T. Silvestre, W. W. Thatcher, and J. E. P. Santos, *University of Florida, Gainesville.*
- T221 Follicular wave of the ovulatory follicle and not cyclic status influences fertility of dairy cows. R. S. Bisinotto*¹, R. C. Chebel², and J. E. P. Santos¹, ¹University of Florida, Gainesville, ²University of California Davis, Tulare.
- T222 Resynchronization strategies to improve fertility in lactating dairy cows utilizing a presynchronization injection of GnRH or supplemental progesterone: II. Economic evaluation. L. G. D. Mendonça*¹, S. T. Dewey², G. Lopes Jr.¹, F. A. Rivera¹, F. Guagnini¹, J. Fetrow⁴, T. R. Bilby^{2,3}, and R. C. Chebel¹, ¹Veterinary Medicine Cooperative Extension, University of California Davis, Tulare, ²Department of Animal Sciences, University of Arizona, Tucson, ³Texas A&M AgriLife Research and Extension, Texas A&M System, Stephenville, ⁴Veterinary Population Medicine, University of Minnesota, St. Paul.
- T223 Low progesterone concentration during superstimulation of the first follicular wave impairs embryo quality of lactating dairy cows. F. A. Rivera*¹, L. G. D. Mendonça¹, G. Lopes Jr.¹, R. V. Perez¹, F. Guagnini¹, M. Amstalden², R. G. S. Bruno¹, J. E. P. Santos³, and R. C. Chebel¹, ¹Veterinary Medicine Cooperative Extension, University of California Davis, Tulare, ²Animal Reproduction Laboratory, Texas A&M University Agricultural Research Station, Beeville, ³Department of Animal Science, University of Florida, Gainesville.
- T224 Resynchronization strategies to improve fertility in lactating dairy cows utilizing a presynchronization injection of GnRH or supplemental progesterone: I. Pregnancy rates and ovarian responses. S. T. Dewey*¹, L. G. D. Mendonça², G. Lopes Jr.², F. A. Rivera², F. Guagnini², R. C. Chebel², and T. R. Bilby^{1,3}, ¹University of Arizona, Department of Animal Sciences, Tucson, ²Veterinary Medicine Cooperative Extension, University of California-Davis, Tulare, ³Texas A&M AgriLife Research and Extension, Texas A&M System, Stephenville.
- T225 Effect of follicular replacement prior to ovsynch and use of somatotropin at insemination on pregnancy rate at first service of Holstein cows exposed to warm climate. D. R. Lozano*¹ and C. F. Aréchiga², ¹Instituto Nacional de Investigaciones Forestales, Agrícolas y Pecuarias, Aguascalientes, Aguascalientes, México, ²Universidad Autónoma de Zacatecas, Zacatecas, Zacatecas, México.
- T226 Dynamics of luteolysis using two PGF_{2α} analogs and subsequent differences in fertility. J. P. N. Martins*, R. Policelli, and J. R. Pursley, *Michigan State University, East Lansing.*
- T227 Effects of presynchronization with hCG 7 d prior to estrous synchronization and fixed-time AI (TAI) on fertility and concentrations of progesterone in suckled beef cows. G. Marquezini*¹, C. R. Dahlen², S. L. Bird³, B. J. Funnell³, and G. C. Lamb¹, ¹North Florida Research and Education Center, University of Florida, Marianna, ²Northwest Research and Outreach Center, University of Minnesota, Crookston, ³North Central Research and Outreach Center, University of Minnesota, Grand Rapids.
- T228 Comparison of two protocols to achieve pregnancy to fixed-time artificial insemination (TAI) in suckled beef cows. S. E. Echternkamp*, W. G. Hays, S. A. Jones, and R. A. Cushman, *USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE.*

- T229 Relationship between follicular profiles and the superovulatory responses in cattle. H. Kohram* and H. Kermani Moakhar, *Department of Animal Science, Faculty of Agriculture, Karaj, Tehran, Iran.*
- T230 Ovarian follicular dynamics during the estrous cycle in water buffalo. H. Kohram*¹, G. Mohammadi², and E. Dirandeh¹, ¹*University of Tehran, Iran,* ²*Shahid Chamran University, Ahvaz, Khoozestan, Iran.*
- T231 The response to a progestin-based ovulation induction in anoestrous goats is enhanced by bovine somatotropin applied 5 days before the end of progestin treatment. A. M. Martinez, C. G. Gutierrez, Y. Dominguez, and J. Hernandez-Ceron*, *Facultad de Medicina Veterinaria y Zootecnia, Universidad Nacional Autónoma de México, México.*
- T232 Ovarian response to different doses of eCG after synchronization of estrous and ovulation with CIDR during 14 days in the breeding season in goats. L. F. Uribe-Velásquez*¹, M. I. Lenz Souza², and J. H. Osorio¹, ¹*University of Caldas, Manizales, Caldas, Colombia,* ²*Federal University of Mato Grosso do Sul, Campo Grande, MS, Brazil.*
- T233 Origin and fate of preovulatory follicles after induced luteolysis at different stages of the luteal phase of the estrous cycle in ewes. L. F. Uribe Velásquez*¹, M. I. Lenz Souza², and M. Vélez Marín¹, ¹*University of Caldas, Manizales, Caldas, Colombia,* ²*Federal University of Mato Grosso do Sul, Campo Grande, MS, Brazil.*
- T234 Endocrine function and follicular growth in sheep treated with exogen progesterone. L. F. Uribe Velásquez*¹, M. I. Lenz Souza², and A. Correa Orozco¹, ¹*University of Caldas, Manizales, Caldas, Colombia,* ²*Federal University of Mato Grosso do Sul, Campo Grande, MS, Brazil.*
- T235 Real time PCR quantification of mRNA expression in the corpus luteum of cows induced to ovulate following different hormonal treatments. P. Ponce Barajas*^{1,2}, M. G. Colazo¹, J. P. Kastelic³, M. K. Dyck², and D. J. Ambrose^{1,2}, ¹*Alberta Agriculture and Rural Development, Edmonton, AB, Canada,* ²*University of Alberta, Dept of Agricultural Food and Nutritional Science, Edmonton, AB, Canada,* ³*Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.*

Production, Management and the Environment Dairy

- T236 A stochastic decision support system tool for dairy expansion. J. Janowski* and V. E. Cabrera, *University of Wisconsin, Madison.*
- T237 Airborne endotoxin concentrations at a large open lot dairy in Southern Idaho. R. S. Dungan and A. B. Leytem*, *USDA-ARS, Kimberly, ID.*
- T238 Iodine levels in Canadian bulk-tank milk. S. I. Borucki-Castro*¹, R. Berthiaume¹, S. Turcotte², A. Robichaud², and P. Lacasse¹, ¹*Dairy and Swine R&D Centre, Sherbrooke, QC, Canada,* ²*Health Canada, Food Directorate, Health Products and Food Branch, Longueuil, QC, Canada.*
- T239 Sicilian dairy herd demographics with a focus on culling. D. Galligan*¹, G. Azzaro², A. Pozzebon², S. Ventura², and G. Licitra^{2,3}, ¹*University of Pennsylvania, School of Veterinary Medicine, Kennett Square,* ²*CoRFiLaC, Regione Siciliana, Ragusa, Italy,* ³*D.A.C.P.A., University of Catania, Italy.*
- T240 The effect of pregnancy on milk fat percent. C. D. Dechow*¹, J. E. Vallimont¹, J. S. Clay², and C. G. Sattler³, ¹*The Pennsylvania State University, University Park,* ²*Dairy Records Management Systems, Raleigh, NC,* ³*Select Sires, Inc., Plain City, OH.*
- T241 Effect of rumen protected niacin (NiaShure[®]) supplementation during summer on milk production, and composition in lactating dairy cows. S. Emanuele*¹ and D. Schoenbaum², ¹*Balchem, New Hampton, NY,* ²*Akey, Lewisburg, OH.*
- T242 Effect of mixing before on-farm milk sampling on milk fat percent. M. Vazirigohar* and M. Dehghan Banadaki, *University of Tehran, Karaj, Tehran, Iran.*
- T243 Agreement between fat and protein measurements from DHIA and the AfiLab™ real time milk analyzer. A. De Vries*, M. J. Hayen, E. J. Diepersloot, A. H. Sanders, D. W. Webb, and D. R. Bray, *University of Florida, Gainesville.*
- T244 Imprinting effects of lactational performance from dam to calf during gestation. V. A. Absalón Medina*, R.W. Everett, M. E. Van Amburgh, and W. R. Butler, *Cornell University, Ithaca, NY.*
- T245 Deviation of reticular temperatures in association with mastitis and estrus. J. M. Bewley*^{1,2}, M. E. Einstein¹, M. W. Grott¹, and M. M. Schutz¹, ¹*Purdue University, West Lafayette, IN,* ²*University of Kentucky, Lexington.*
- T246 Effect of Gammulin supplementation in milk of dairy calves during the first 24 d of life on growth and health. G. Lopes Jr.*¹, L. G. D. Mendonça¹, S. Hayes², and R. C. Chebel¹, ¹*Veterinary Medicine Cooperative Extension, University of California Davis, Tulare,* ²*APC Inc., Ankeny, IA.*

T247 Genetics and environmental effects which influence reproduction and milk production traits in goats in Rio de Janeiro State, Brazil. L. F. D. Medeiros¹, D. H. Vieira², C. A. Oliveira¹, L. Shikasho¹, V. L. Tierzo³, J. P. F. Silveira³, T. F. Silveira³, P. Persichetti Junior³, and J. L. C. B. Reis^{*4}, ¹Rural Federal University of Rio de Janeiro, Seropedica, RJ, Brazil, ²Center of Creation of Animals of Laboratory, Rio de Janeiro, RJ, Brazil, ³São Paulo State University, Botucatu, SP, Brazil, ⁴University of Agrarian Sciences - University of Marília, Marília, SP, Brazil, ⁵Agricultural Municipal School Adolfo Alves Rezende, Campina Verde, MG, Brazil.

T248 Environmental effects and variance components of birth weight in dairy goats in Rio de Janeiro state, Brazil. L. F. D. Medeiros¹, D. H. Vieira², C. A. Oliveira¹, J. P. F. Silveira³, V. L. Tierzo³, M. V. Fonseca¹, T. F. Silveira⁵, P. R. C. Cordeiro⁶, and R. Belintani^{*4}, ¹Rural Federal University of Rio de Janeiro, Seropedica, RJ, Brazil, ²Center of Creation of Animals of Laboratory, Marília, SP, Brazil, ³São Paulo State University, Botucatu, SP, Brazil, ⁴University of Agrarian Sciences - University of Marília, Marília, SP, Brazil, ⁵Agricultural Municipal School Adolfo Alves Rezende, Campina Verde, MG, Brazil, ⁶Celles Lamb Foods, Nova Friburgo, RJ, Brazil.

Ruminant Nutrition Additives

T249 Effects of capsicum extract on intake and performance of feedlot calves. A. L. Cardillo¹, A. D. Garcarena¹, C. Faverin¹, G. A. Gagliostro¹, J. M. Hernandez Vieyra⁴, and D. Colombatto^{*2,3}, ¹INTA, Balcarce, Buenos Aires, Argentina, ²Universidad de Buenos Aires, Buenos Aires, Argentina, ³CONICET, Buenos Aires, Argentina, ⁴Pancosma, Geneva, Switzerland.

T250 Effect of a mixture of eugenol and cinnamaldehyde on milk production and composition of goats during the first five months of lactation. D. Bravo^{*1}, N. Manteaux², P. H. Doane³, Y. Senlis², and M. Cecava³, ¹Pancosma, Geneva, Switzerland, ²Sanders Nutrition Animale, Bruz, France, ³ADM Research, Decatur, IL.

T251 Synergy of cinnamaldehyde, eugenol and garlic for reduction of methane production in vitro. S. Cavini¹, D. Bravo^{*2}, S. Calsamiglia¹, M. Rodriguez¹, and A. Ferret¹, ¹Universitat Autònoma de Barcelona, Bellaterra, Spain, ²Pancosma, Geneva, Switzerland.

T252 Effect of feeding eugenol on ruminal fermentation and carbohydrate digestion in the digestive tract of beef cattle fed finishing ration. W. Z. Yang^{*1}, C. Benchaar², B. N. Ametaj³, M. L. He¹, and K. A. Beauchemin¹, ¹Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, ²Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, ³University of Alberta, Edmonton, AB, Canada.

T253 Effects of eugenol supplementation on ruminal fermentation, protozoa counts, and in situ ruminal degradation of soybean meal, grass/legume hay, and corn grain in dairy cows fed high- or low-concentrate diets. C. Benchaar^{*1}, W. Z. Yang², H. V. Petit¹, and P. Y. Chouinard³, ¹Agriculture and Agri-Food Canada, Dairy and Swine R&D Centre, Sherbrooke, QC, Canada, ²Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, ³Université Laval, Département des Sciences Animales, Québec, QC, Canada.

T254 Effects of eugenol supplementation on feed intake, nutrient digestibility, nitrogen retention, milk production, and milk composition of dairy cows fed high- or low-concentrate diets. C. Benchaar^{*1}, W. Z. Yang², H. V. Petit¹, and P. Y. Chouinard³, ¹Agriculture and Agri-Food Canada, Dairy and Swine R&D Centre, Sherbrooke, QC, Canada, ²Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, ³Université Laval, Départements des Sciences Animales, Québec, QC, Canada.

T255 Assessment of the potential of cinnamaldehyde, condensed tannins, and saponins to modify milk fatty acid composition of dairy cows. C. Benchaar^{*1} and P. Y. Chouinard², ¹Agriculture and Agri-Food Canada, Dairy and Swine Research and Development Centre, Sherbrooke, QC, Canada, ²Université Laval, Département des Sciences Animales, Québec, QC, Canada.

T256 Screening the activity of medicinal plants or spices on in vitro ruminal methane production. H. Jahani-Azizabadi¹, M. Danesh Mesgaran^{*1}, A. R. Vakili¹, A. R. Heravi Moussavi¹, and M. Hashemi², ¹Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran, ²Research and Petroleum Engineering Center of Kermanshah, Kermanshah, Iran.

T257 Effects of cinnamaldehyde on in vitro methane production and ruminal fermentation of medium and high-concentrate diets. C. Kamel¹, H. M. R. Greathead¹, M. L. Tejido², M. J. Ranilla^{*2}, M. E. Martínez², C. Saro², and M. D. Carro², ¹Faculty of Biological Sciences, University of Leeds, Leeds, United Kingdom, ²Departamento de Producción Animal, Universidad de León, León, Spain.

T258 Evaluation of plant extracts in natural-fed finishing cattle. N. A. Pyatt^{*1}, D. Bravo², and P. H. Doane¹, ¹ADM Research, Decatur, IL, ²Pancosma Research, Geneva, Switzerland.

T259 Effect of yellow mustard glucosinolates on ruminal fermentation *in vitro*. R. A. Hristova^{*1}, A. N. Hristov², S. Zaman¹, and V. Borek², ¹Pennsylvania State University, University Park, ²University of Idaho, Moscow.

T260 Effects of *Saccharomyces cerevisiae* on ruminal pH and fermentation of Holstein dairy cows. Y.-H. Chung^{*1}, L. Holtshausen¹, N. Walker², and K. A. Beauchemin¹, ¹Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, ²Lallemand Animal Nutrition, Montréal, QC, Canada.

T261 Multiple study analysis of the effect of live yeast (*Saccharomyces cerevisiae* CNCM I-1077) on milk and milk component production and feed efficiency. M. B. de Ondarza^{*1}, C. J. Sniffen², L. Dussert³, E. Chevaux³, J. Sullivan³, and N. Walker³, ¹Paradox Nutrition, LLC, West Chazy, NY, ²Fencrest, LLC, Holderness, NH, ³Lallemand Animal Nutrition, Milwaukee, WI.

- T262 Potential of yeast-supplemented barley based dairy cow diets. L. Holtshausen* and K. A. Beauchemin, *Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.*
- T263 The effect of enzymatically hydrolyzed yeast on feeding behavior and immune function in early lactation dairy cows. K. Proudfoot*¹, J. Nocek², and M. von Keyserlingk¹, ¹University of British Columbia, Vancouver, BC, Canada, ²Spruce Haven Research Center, Auburn, NY, ³University of British Columbia, Vancouver, BC, Canada.
- T264 Effect of feeding supplemental rumen-protected Niacin (Niashure™) on milk yield, and milk composition in early lactation Holstein cows. D. J. Vanderwende*¹, B. A. Hopkins¹, S. M. Emanuele², S. Davidson¹, G. W. Smith¹, and L. W. Whitlow¹, ¹North Carolina State University, Raleigh, ²Balchem Corporation, New Hampton, NY.
- T265 Repeated ruminal acidotic challenges in sheep: Effects on pH and microbial ecosystem and influence of active dry yeasts. M. Silberberg*¹, F. Chaucheyras-Durand^{2,1}, L. Commun¹, M. M. Richard-Mialon¹, C. Martin¹, and D. P. Morgavi¹, ¹INRA, Saint Gens Champanelle, France, ²Lallemand Animal Nutrition, Toulouse, France.
- T266 Effects of live yeast on growth performances and meat quality of beef cattle fed fast or slow fermentable diets. A. Agazzi¹, G. Invernizzi¹, M. Ferroni¹, V. Vandoni¹, C. A. Sgoifo Rossi¹, G. Savoini*¹, V. Dell'Orto¹, and E. Chevaux², ¹University of Milan, Milan, Italy, ²Lallemand, Blagnac, France.
- T267 Effect of live yeast *Saccharomyces cerevisiae* (strain Sc 47) on ruminal nitrogen degradation in relation with varying levels of protein solubility. C. Julien¹, J. P. Marden^{1,2}, E. Auclair², R. Moncoulon¹, and C. Bayourthe*¹, ¹Université de Toulouse, INRA, Castanet-Tolosan, France, ²Lesaffre Feed Additives, Marquette-Lez-Lille, France.
- T268 Effect of live yeast dietary supplementation on growing calves performance and health. V. Bontempo*¹, A. Agazzi¹, E. Chevaux², V. Dell'Orto¹, and G. Savoini¹, ¹Dept Veterinary Science and Technologies for Food Safety, University of Milan, Italy, ²Lallemand SAS, France.
- T269 Reduced carriage of *Escherichia coli* O157:H7 in cattle fed yeast culture supplement. L. Liou¹, H. Sheng¹, W. Ferens¹, C. Schneider², A. N. Hristov*³, I. Yoon⁴, and C. J. Hovde¹, ¹Department of Microbiology, Molecular Biology and Biochemistry, University of Idaho, Moscow, ²Department of Animal and Veterinary Science, University of Idaho, Moscow, ³Department of Dairy and Animal Science, Pennsylvania State University, University Park, ⁴Diamond V Mills, Inc., Cedar Rapids, IA.
- T270 A meta-analysis of the effect of monensin or live yeast or a combination thereof on performance of beef cattle. L. J. Erasmus*¹, R. F. Coertze¹, M. N. Leviton¹, and E. Chevaux², ¹Dept. Animal and Wildlife Sciences, University of Pretoria, Pretoria, South Africa, ²Lallemand SAS, Blagnac Cedex, France.
- T271 Feed additives (monensin or yeast cultures) for finishing Nelore cattle. C. T. Gomes, F. A. P. Santos, J. T. das N. Neto, L. F. Greco, J. R. R. Dórea, L. R. D. A. Neto, M. C. Moscardini, G. B. Mourão, A. M. Pedroso*, A. D. Pacheco Jr., and M. A. C. Danes, *University of Sao Paulo, Piracicaba, São Paulo, Brazil.*
- T272 Digestibility and ruminal parameters in beef steers fed different additives. J. P. I. S. Monneratt, P. V. R. Paulino*, S. C. Valadares Filho, M. S. Duarte, N. K. P. Souza, L. D. Silva, and P. D. B. Benedeti, *Universidade Federal de Viçosa, Viçosa, MG, Brazil.*
- T273 Feedlot performance of Nelore and Brangus cattle fed monensin or polyclonal antibody preparation against lactate-producing rumen bacteria. D. D. Millen*^{1,2}, R. D. L. Pacheco¹, M. D. B. Arrigoni¹, C. L. Martins¹, T. M. Mariani¹, J. P. S. T. Bastos¹, L. M. N. Sarti¹, R. S. Barducci¹, and S. R. Baldin¹, ¹FMVZ/Unesp, Botucatu, São Paulo, Brazil, ²Apoio FAPESP, São Paulo, Brazil.
- T274 The interaction of flaxseed hulls and monensin on feed intake, apparent digestibility, and milk composition of late-lactating dairy cows. C. Côrtes*¹, D. C. da Silva^{1,2}, R. Kazama^{1,2}, N. Gagnon¹, C. Benchaar¹, G. T. dos Santos^{1,3}, L. M. Zeoula^{1,3}, and H. V. Petit¹, ¹Agriculture and Agri-Food Canada, Quebec, Canada, ²Universidade Estadual de Maringá, Parana, Brazil, ³CNPq, Brazil.
- T275 Feeding behavior of Nelore and Brangus cattle fed monensin or polyclonal antibody preparation against lactate-producing rumen bacteria. T. M. Mariani^{1,2}, D. D. Millen*¹, R. D. L. Pacheco¹, M. D. B. Arrigoni¹, C. L. Martins¹, J. P. S. T. Bastos¹, R. S. Barducci¹, L. M. N. Sarti¹, S. R. Baldin¹, D. Tomazella¹, E. S. Ogawa¹, F. S. Parra¹, and J. R. Ronchesel¹, ¹FMVZ/Unesp, Botucatu, São Paulo, Brazil, ²Apoio FAPESP, São Paulo, Brazil.
- T276 Feedlot performance of Brangus cattle fed monensin or polyclonal antibody preparation against lactate-producing rumen bacteria. R. S. Barducci^{1,2}, L. M. N. Sarti¹, M. D. B. Arrigoni¹, R. D. L. Pacheco*¹, D. D. Millen¹, C. L. Martins¹, S. R. Baldin¹, F. S. Parra¹, J. R. Ronchesel¹, D. Tomazella¹, T. Leiva¹, H. D. Rosa¹, T. M. Mariani¹, J. P. S. T. Bastos¹, T. C. Putarov¹, ¹FMVZ/Unesp, Botucatu, São Paulo, Brazil, ²Apoio FAPESP, São Paulo, Brazil.
- T277 Rumen papillae measurements of feedlot cattle fed monensin or polyclonal antibody preparation against lactate-producing rumen bacteria. L. M. N. Sarti^{1,3}, R. S. Barducci¹, D. D. Millen*¹, R. D. L. Pacheco¹, M. D. B. Arrigoni¹, C. L. Martins¹, S. F. Costa², L. Q. Melo², F. S. Parra¹, J. R. Ronchesel¹, D. Tomazella¹, H. D. Rosa¹, T. Leiva¹, S. R. Baldin¹, N. R. B. Cônsolo⁴, ¹FMVZ/Unesp, Botucatu, São Paulo, Brazil, ²UFLA, Lavras, Minas Gerais, Brazil, ³Apoio FAPESP, São Paulo, Brazil, ⁴UD/Unesp, Dracena, São Paulo, Brazil.
- T278 Influence of virginiamycin supplementation on ruminal fermentation and microbial populations of steers. T. J. Guo^{1,2}, J. Q. Wang*¹, D. P. Bu¹, J. P. Wang¹, K. L. Liu¹, D. Li¹, S. Y. Luan¹, and X. K. Huo¹, ¹Institute of Animal Science, State Key Laboratory of Animal Nutrition, Chinese Academy of Agricultural Science, Beijing, China, ²Xinjiang Agricultural University, Urumqi, China.

- T279 Effects of increasing levels of monensin on dairy cows in early lactation. G. F. Schroeder*¹, B. D. Strang¹, M. A. Shah¹, M. A. Messman¹, and H. B. Green², ¹*Cargill Animal Nutrition, Innovation Campus, Elk River, MN*, ²*Elanco Animal Health, Greenfield, IN*.
- T280 Field study to investigate the risk factors for milk fat depression (MFD) in dairy herds feeding Rumensin®. D. V. Nydam*¹, T. R. Overton¹, D. E. Bauman¹, T. C. Jenkins², and G. D. Mechor³, ¹*Cornell University, Ithaca, NY*, ²*Clemson University, Clemson, SC*, ³*Elanco Animal Health, Greenfield, IN*.
- T281 Effect of monensin and propylene glycol on volatile fatty acid and rumen parameters in early lactation Holstein cows. H. Bahrami-Yekdangi, K. RezaYazdi, and M. Dehghan-Banadaky*, *University of Tehran, Karaj, Tehran, I.R., Iran*.
- T282 The interaction of flaxseed hulls and monensin on milk fatty acid composition of late-lactating dairy cows. C. Côrtes*¹, D. C. da Silva^{1,2}, R. Kazama^{1,2}, N. Gagnon¹, C. Benchaar¹, G. T. dos Santos^{2,3}, L. M. Zeoula^{2,3}, and H. V. Petit¹, ¹*Agriculture and Agri-Food Canada, Sherbrooke, Quebec, Canada*, ²*Universidade Estadual de Maringá, Parana, Brazil*, ³*CNPq, Brazil*.
- T283 Combined use of ionophore and virginiamycin in Nellore steers fed high concentrate diets. A. J. C. Nuñez*^{1,2}, M. Caetano¹, A. Berndt³, J. J. A. A. Demarchi³, P. R. Leme², and D. P. D. Lanna¹, ¹*ESALQ/USP, Piracicaba, SP, Brazil*, ²*FZEA/USP, Pirassununga, SP, Brazil*, ³*APTA Regional Extremo Oeste, Andradina, SP, Brazil*.
- T284 Effects of an amylase inhibitor on rumen pH and feed intake of young Holstein heifers fed a 100% concentrate diet. A. Bach*^{1,2}, M. Devant², A. Serrano², and A. Aris², ¹*ICREA, Barcelona, Spain*, ²*IRTA-Ruminant Production, Caldes de Montbui, Spain*.
- T285 Effect of *Bacillus subtilis* natto on milk performance, ruminal fermentation, and microbial profile of dairy cows. L. F. Deng¹, J. Q. Wang*¹, D. P. Bu¹, K. L. Liu¹, Y. M. Jiang¹, Q. Chen¹, P. Yu¹, H. T. Zhang¹, and J. K. Drackley², ¹*State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*, ²*University of Illinois, Urbana*.
- T286 Probiotic effect of *Bacillus subtilis* (natto) on rumen bacterial diversity of weaning Holstein calves. P. Yu¹, J. Wang*¹, D. Bu¹, K. Liu¹, D. Li¹, and C. McSweeney², ¹*State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*, ²*CSIRO Livestock Industries, Queensland, Australia*.
- T287 Effect of an exogenous phytase on *in vitro* dry matter degradation, phosphorus balance and growth performance of finishing lambs. G. Buendía-Rodríguez¹, S. S. González-Muñoz*¹, G. D. Mendoza-Martínez², J. M. Pinos-Rodríguez³, E. Aranda-Ibañez¹, L. A. Miranda-Romero⁴, and L. M. Melgoza-Contreras², ¹*Colegio de Postgraduados, Montecillo, Edo. de México, México*, ²*UAM Xochimilco, México D.F., México*, ³*UASLP, San Luis Potosí, SLP, México*, ⁴*Universidad Autónoma Chapingo, Chapingo, Edo. de México, México*.
- T288 Effect of fibrolytic enzymes on ruminal fermentation and digestibility in steers fed a diet with sodium bicarbonate. O. D. Montañez-Valdez*¹, J. M. Tapia Gonzalez¹, G. Rocha-Chavez¹, E. O. Flores-García², and J. H. Avellaneda-Cevallos³, ¹*Centro Universitario del Sur de la Universidad de Guadalajara, Ciudad Guzmán, Jalisco, México*, ²*Centro Universitario de la Costa Sur de la Universidad de Guadalajara, Autlán de Navarro, Jalisco, México*, ³*Universidad Técnica Estatal de Quevedo, Quevedo, Ecuador*.
- T289 Effects of feeding a mixed enzyme on performance in Varamini male lambs. H. Baghershah*, K. Rezayazdi, and M. Dehghan-banadaky, *Department of Animal Science, Faculty of Agriculture, University of Tehran, Karaj, Iran*.
- T290 Feruloyl and acetyl esterase production of an anaerobic rumen fungus *Neocallimastix* sp YQ2 and its potential in the hydrolysis of fibrous feedstuffs. Q. Yue¹, H. J. Yang*¹, Y. C. Cao¹, Y. H. Jiang¹, and J. Q. Wang², ¹*Department of Animal Nutrition and Feed Science, College of Animal Science and Technology, China Agricultural University, Beijing, P.R. China*, ²*State key Laboratory of Animal Nutrition, Institute of Animal Science, China Academy of Agricultural Sciences, Beijing, P.R., China*.
- T291 Use of *Megasphaera elsdenii* NCIMB41125 as a probiotic for early-lactation dairy cows: Effects on rumen pH and fermentation patterns. P. C. Aikman*¹, P. H. Henning², C. H. Horn², and D. J. Humphries¹, ¹*University of Reading, UK*, ²*KK Animal Nutrition, South Africa*.
- T292 Prebiotic performance in the prevention of acidosis of different substances using the 'gas-*in-vitro*' methodology in ruminal acidosis-like condition. A. R. Aldrovandi¹, A. Britos¹, S. Paz¹, A. Molina¹, C. Cajarville*¹, and P. Zunino², ¹*Universidad de la República, Montevideo, Uruguay*, ²*Instituto de Investigaciones Biológicas Clemente Estable, Montevideo, Uruguay*.
- T293 Effect of a prebiotic (AgriMOS) and a probiotic (Levucell SB) on performance, health and fecal microflora of veal calves. K. Chong*¹, L. Phillip¹, R. Cue¹, and N. Walker², ¹*McGill University, Montreal, QC, Canada*, ²*Lallemand, Animal Nutrition, Montreal, QC, Canada*.
- T294 Effect of rumen-protected lysine (AminoShure™-L) on milk production and composition in dairy cows fed diets containing distillers dried grains. S. Emanuele*¹, P. Doane², D. Putnam¹, and M. Cecava², ¹*Balchem, New Hampton, NY*, ²*ADM, Decatur, IL*.
- T295 In vivo determination of lysine bioavailability of rumen protected lysine in lactating dairy cows. M. D. Hanigan*¹, C. Vanderhoof¹, S. Garbade¹, O. Becvar¹, C. A. Umberger¹, and M. J. de Veth², ¹*Virginia Polytechnic Institute and State University, Blacksburg*, ²*Balchem Corporation, New Hampton, NY*.
- T296 Supplementation of RuMin 8™ and urea on microbial crude protein, ammonia and volatile fatty acid concentrations *in vitro*. D. P. Bu¹, X. Y. Li¹, J. Q. Wang*¹, H. Y. Wei¹, L. Y. Zhou¹, and R. R. Rastani², ¹*State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*, ²*MSC, Carpentersville, IL*.

- T297 Effect of Optigen® on milk yield, composition, and component yields in commercial Wisconsin dairy herds. J. F. Inostroza*¹, R. D. Shaver¹, V. E. Cabrera¹, and J. M. Tricarico², ¹Department of Dairy Science, University of Wisconsin, Madison, ²Alltech Inc., Brookings, SD.
- T298 Supplementation of grazing dairy cows with isopropyl ester of 2-hydroxy-4-methylthiobutanoic acid (HMBi). L. F. Greco*^{1,2}, J. T. Neves Neto¹, A. Moreira¹, M. A. Penatti¹, C. M. M. Bittar¹, G. B. Mourao¹, and F. A. P. Santos¹, ¹University of Sao Paulo, Piracicaba, Sao Paulo, Brazil, ²University of Florida, Gainesville.
- T299 Effects of feeding 2-hydroxyl-4-methylthio butanoic acid (HMTBa) and HMTBa chelated trace minerals on dairy cattle production. M. Gallardo², G. Conti³, G. Castillo¹, and S. Toffano*¹, ¹Novus International Inc., Capital Federal, Buenos Aires, Argentina, ²EEA- Inta Rafaela, Rafaela, Santa Fe, Argentina, ³Universidad del Litoral, Esperanza, Santa Fe, Argentina.
- T300 The impact of a blend of synthetic antioxidants (AGRADO® Plus) on milk fatty acids in dairy cows fed a high rumen unsaturated fatty acid load (RUFAL) diet. C. L. Preseault*^{1,3}, J. Kraft¹, G. R. Bowman², H. M. Dann³, and A. L. Lock¹, ¹University of Vermont, Burlington, ²Novus International Inc., St. Charles, MO, ³William H. Miner Agricultural Research Institute, Chazy, NY.
- T301 The effect of malic acid supplementation on diet digestibility and methane production by beef cattle fed a forage diet. S. M. Cobb, J. J. Michal, and K. A. Johnson*, Washington State University, Pullman.
- T302 Effects of DeOdorase® on fermentation and digestion in rumen-simulating fermenters. G. A. Harrison*, M. D. Meyer, and K. A. Dawson, Alltech Biotechnology, Nicholasville, KY.
- T303 Effect of saponin extract supplementation on ruminal fermentation in continuous culture. J.-S. Eun*, C. M. Dschaak, F. H. Bhushan, Y.-M. Kim, and A. J. Young, Utah State University, Logan.
- T304 The effect of combinations of Acid Buf and sodium bicarbonate on milk production, milk composition and ruminal pH profiles. C. W. Cruywagen*¹, S. J. Taylor², and T. Calitz¹, ¹Dept. Animal Sciences, Stellenbosch University, Stellenbosch, South Africa, ²Celtic Sea Minerals, Carrigaline, Co. Cork, Ireland.
- T305 Effect of ractopamine on whole body and splanchnic energy balance in holstein steers. A. F. Koontz*, S. W. El-Kadi, D. L. Harmon, and K. R. McLeod, Department of Animal and Food Sciences, University of Kentucky, Lexington.
- T306 Zilpaterol hydrochloride impact on core body temperature, performance, and carcass characteristics of finishing steers. J. L. Wahrmond*¹, B. P. Holland¹, C. R. Krehbiel¹, M. N. Streeter², D. A. Yates², J. P. Hutcheson², W. T. Nichols², C. L. Goad³, and C. J. Richards¹, ¹Department of Animal Science, Oklahoma State University, Stillwater, ²Intervet/Schering-Plough, DeSoto, KS, ³Department of Statistics, Oklahoma State University, Stillwater
- T307 The effect of substituting fish oil in cow diets with DHA-micro algae on milk composition and fatty acids profile. R. B. Potu*¹, A. A. AbuGhazaleh¹, and S. Ibrahim², ¹Southern Illinois University, Carbondale, ²North Carolina A&T University, Greensboro.

Ruminant Nutrition Efficiency

- T308 Residual feed intake and feeding behavior of Nellore bulls selected for post-weaning weight. T. L. S. Corvino*¹, R. H. Branco², A. Polizel Neto¹, S. F. M. Bonilha², L. A. Figueiredo², and A. G. Razook², ¹Programa de Pós-graduação em Zootecnia - UNESP, Botucatu, São Paulo, Brazil, ²CAPTA Pecuária de Corte - Instituto de Zootecnia, Sertãozinho, São Paulo, Brazil.
- T309 Effects of residual feed intake on carcass characteristics of Nellore bulls. S. F. M. Bonilha*¹, R. H. Branco¹, G. F. Alleoni², A. M. Castilhos³, L. A. Figueirdo¹, and A. G. Razook¹, ¹Instituto de Zootecnia, Agência Paulista de Tecnologia dos Agronegócios, Sertãozinho, SP, Brazil, ²Instituto de Zootecnia, Agência Paulista de Tecnologia dos Agronegócios, Nova Odessa, SP, Brazil, ³Faculdade de Medicina Veterinária e Zootecnia, Universidade Estadual Paulista, Botucatu, SP, Brazil.
- T310 Relationships between residual feed intake and internal organs of Nellore bulls. S. F. M. Bonilha*¹, R. H. Branco¹, T. L. S. Corvino², G. F. Alleoni³, L. A. Figueiredo¹, and A. G. Razook¹, ¹Instituto de Zootecnia, Agência Paulista de Tecnologia dos Agronegócios, Sertãozinho, SP, Brazil, ²Faculdade de Medicina Veterinária e Zootecnia, Universidade Estadual Paulista, Botucatu, SP, Brazil, ³Instituto de Zootecnia, Agência Paulista de Tecnologia dos Agronegócios, Nova Odessa, SP, Brazil.
- T311 Genetics of feed conversion efficiency: Using a dynamic metabolic model to investigate the patterns of nutrient flux in the most efficient dairy animals. C. Shachtschneider, J. L. Vierck, and J. P. McNamara*, Washington State University, Pullman.
- T312 Associations between feed efficiency and gut microbial ecology and fermentation parameters in feedlot cattle. W. K. Krueger^{1,2}, G. E. Carstens^{1,2}, Z. D. Paddock^{1,2}, T. R. Calloway³, R. C. Anderson³, N. A. Krueger³, V. Gontcharova⁴, S. E. Dowd⁴, R. R. Gomez*², and W. E. Pinchak⁵, ¹Intercollegiate Faculty of Nutrition, Texas A&M University, College Station, ²Department of Animal Science, Texas A&M University, College Station, ³USDA, ARS, Food and Feed Safety Research Unit, College Station, TX, ⁴Medical Biofilm Research Institute, Lubbock, TX, ⁵Texas AgriLife Research, Texas A&M University, Vernon.

- T313 Proteomic analyses in beef cows with low and high maintenance energy requirements. M. J. Prado-Cooper^{*1,2}, R. D. Madden¹, J. W. Dillwith¹, C. L. Bailey¹, E. C. Wright¹, C. R. Krehbiel¹, D. L. Step¹, and R. P. Wettemann¹, ¹Oklahoma Agricultural Experiment Station, Stillwater, ²Universidad Centroccidental, Barquisimeto, Lara, Venezuela.
- T314 Forage intake, rumen and blood variables, ultrasound and body measurements and behaviour in pregnant beef heifers differing in phenotypic residual feed intake. P. Lawrence^{*1,2}, M. McGee¹, D. Kenny², D. H. Crews, Jr.³, and B. Earley⁴, ¹Teagasc, Grange Beef Research Centre, Dunsany, Co. Meath, Ireland, ²UCD School of Agriculture, Food Science and Veterinary Medicine, Belfield, Dublin, Ireland, ³Department of Animal Sciences, Colorado State University, Fort Collins, ⁴Teagasc, Animal Bioscience Centre, Dunsany, Co. Meath, Ireland.

Ruminant Nutrition Feedlot

- T315 Fatty acid profiles and meat quality of steers finished in feedlot or on pasture. H. O. Patino^{*1}, F. S. Medeiros¹, K. C. Swanson², and M. A. Sierra¹, ¹Dep. Zootecnia, UFRGS, Porto Alegre, RS, Brazil, ²Dept. Animal and Poultry Science, University of Guelph, Guelph, ON, Canada.
- T316 Nutrient digestibilities of Holstein steers fed diets containing different levels of nonforage fiber in a low forage diet. M. Mojtahedi, M. Danesh Mesgaran^{*}, A. R. Heravi Moussavi, and A. Tahmasbi, Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran.
- T317 Adjustment of physically effective fiber sources in diets for beef cattle. R. Goulart^{*}, J. Daniel, V. Santos, R. Amaral, G. Muraro, S. Toledo Filho, L. Nussio, and A. Pires, University of Sao Paulo-ESALQ, Piracicaba, SP, Brazil.
- T318 Effect of infrequent roughage delivery on digestion and ruminal pH of beef steers fed concentrate diets. J. I. Arroquy^{*1,3}, J. Cervetto², M. Avila¹, and D. Daviu², ¹INTA Santiago del Estero, Santiago del Estero, Argentina, ²Univ. Nacional de Santiago del Estero- Fac. Agronomía y Agroindustrias, Santiago del Estero, Argentina, ³CONICET, Santiago del Estero, Argentina.
- T319 Ruminal pH profile of feedlot steers during a 3-week transition from a high-forage to high-concentrate diet. L. Holtshausen^{*}, K. A. Beauchemin, and K. S. Schwartzkopf-Genswein, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.
- T320 Influence of processing method on comparative digestion of white corn vs. conventional steam-flaked yellow dent corn in finishing diets for feedlot cattle. A. Plascencia^{*1}, M. Cervantes¹, M. A. Lopez-Soto¹, D. May¹, and R. A. Zinn², ¹Universidad Autonoma de Baja California, Mexicali, Baja California, Mexico, ²University of California, Davis, El Centro.
- T321 Use of whole oats in feedlot diets. D. J. Gibb^{*}, Y. Wang, K. S. Schwartzkopf-Genswein, and T. A. McAllister, Agriculture & Agri-Food Canada Research Centre, Lethbridge, Alberta, Canada.
- T322 Performance of steers fed a high energy oat as a replacement for barley or corn in growing and finishing diets. G. R. Zalinko^{*1}, B. G. Rossnagel², V. J. Racz¹, D. A. Christensen¹, and J. J. McKinnon¹, ¹Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, SK, Canada, ²Department of Plant Sciences, University of Saskatchewan, Saskatoon, SK, Canada.
- T323 Effects of replacing barley with corn grain in finishing diets on VFA concentration and ruminal ammonia nitrogen of Holstein male calves. F. Fatehi, M. Dehghan-Banadaky^{*}, K. Reza-Yazdi, M. Moradi-Shahrbabak, and H. Bahrami, The University of Tehran, Karaj, Tehran, Iran.
- T324 The effect of dietary protein on immune response in receiving steers. E. P. Lane^{*}, E. S. Vanzant, K. R. McLeod, and M. N. Steinman, University of Kentucky, Lexington.
- T325 Feeding soybean meal, urea or slow release urea (Optigen[®]) to finishing Zebu cattle. R. Carareto^{*1}, F. A. P. Santos¹, G. B. Mourão¹, D. F. A. Costa², A. M. Pedroso¹, J. A. D. Pacheco Junior¹, and J. C. Martinez³, ¹University of Sao Paulo, Piracicaba, São Paulo, Brazil, ²University of Queensland, St. Lucia, Brisbane, Australia, ³Faculdade de Ciências Agrárias e Veterinárias, Jaboticabal, São Paulo, Brazil.
- T326 The effects of crude protein concentration and urea source on nitrogen metabolism in Holstein steers. V. B. Holder^{*1}, S. Elkadi¹, J. M. Tricarico², E. Vanzant¹, K. M. McLeod¹, and D. L. Harmon¹, ¹Department of Animal and Food Sciences, University of Kentucky, Lexington, ²Alltech Biotechnology, Nicholasville, KY.
- T327 Feed intake by Nelore and Red Norte bulls finished in feedlot. O. R. Machado Neto¹, M. M. Ladeira^{*1}, T. M. Gonçalves¹, L. S. Lopes¹, R. L. Oliveira², M. S. Bassi¹, D. M. Oliveira¹, J. S. Ribeiro¹, and E. O. S. Saliba³, ¹Federal University of Lavras, Lavras, MG, Brazil, ²Federal University of Bahia, Salvador, BA, Brazil, ³Federal University of Minas Gerais, Belo Horizonte, MG, Brazil.

Ruminant Nutrition Grass Cattle

- T328 Nutrient balance and fermentive parameters of continuously cultured rumen fluid maintained with bermudagrass hay and supplied with additional soybean hulls and/or corn. A. I. Orr* and B. J. Rude, *Mississippi State University, Mississippi State*.
- T329 Effects of dietary energy source in late gestation diets on pre-and post-partum beef cow performance. A. E. Radunz*, H. N. Zerby, F. L. Fluharty, and S. C. Loerch, *The Ohio State University, Wooster*.
- T330 Growth performance and metabolism of cow-calf pairs receiving a high or low total non-structural carbohydrate diet with or without folic acid and vitamin b₁₂ supplementation of the dams. J. Mercier*¹, C. L. Girard², D. Cinq-Mars¹, and R. Berthiaume², ¹Département des Sciences Animales, Pavillon Paul-Comtois, Université Laval, Québec, QC, Canada, ²Agriculture et Agroalimentaire Canada, Centre de Recherche sur le Bovin Laitier et le Porc, Sherbrooke, QC, Canada.
- T331 Camelina meal and crude glycerin as feed supplements for developing replacement beef heifers. P. Moriel*, E. P. Goncalves, P. L. Price, V. Nayigihugu, and B. W. Hess, *University of Wyoming, Laramie*.
- T332 Growth performance and breeding soundness of Angus bulls fed FlaxLic®. A. C. Pesta* and J. S. Drouillard, *Kansas State University, Manhattan*.
- T333 A meta-analysis of dry matter intake in Nellore and Zebu-crosses cattle. J. A. G. Azevedo^{1,2}, S. C. Pina², M. L. Chizzotti³, and O. G. Pereira*², ¹Universidade Estadual de Santa Cruz, Ilheus, Bahia, Brazil, ²Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, ³Universidade Federal do Vale do São Francisco, Petrolina, Pernambuco, Brazil.
- T334 Dry matter intake and performance of steers fed sugar cane ensiled with different levels of calcium oxide. F. H. M. Chizzotti¹, O. G. Pereira*¹, S. C. Valadares Filho¹, M. L. Chizzotti², and R. T. S. Rodrigues², ¹Universidade Federal de Viçosa, Viçosa, MG, Brazil, ²Universidade Federal do Vale do São Francisco, Petrolina, PE, Brazil.
- T335 Effects of protein or fat supplements for finishing beef cattle grazing tropical grass during dry season. A. A. Souza*¹, T. I. Ferreira², C. F. Martins¹, and J. C. Hadlich³, ¹UNIDEP/ANHANGUERA, Campo Grande, Mato grosso do Sul, Brazil, ²IAGRO, Campo Grande, Mato grosso do Sul, Brazil, ³UNESP, Botucatu, Sao Paulo, Brazil.
- T336 Effect of supplemental energy level on performance, blood parameters and carcass characteristics of steers finished on pasture. H. O. Patino*¹, F. S. Medeiros¹, K. C. Swanson², and M. A. Sierra¹, ¹Dep. Zootecnia, UFRGS, Porto Alegre, RS, Brazil, ²Dept. Animal and Poultry Science, University of Guelph, Guelph, ON, Canada.

Small Ruminant Lactation, Physiology, Reproduction, Health

- T337 Long-term effects of lipid supplementation on milk concentration of conjugated linoleic (CLA) and vaccenic acid (VA) in dairy goats. G. A. Gagliostro*¹, M. A. Rodriguez², V. I. Cejas², M. Martinez³, A. V. Cano¹, P. Gatti², G. Muset², R. A. Castañeda³, and Y. Chilliard⁴, ¹Instituto Nacional de Tecnología Agropecuaria, Balcarce, Buenos Aires, Argentina, ²Instituto Nacional de Tecnología Industrial, PTM San Martín, Buenos Aires, Argentina, ³Instituto Nacional de Tecnología Agropecuaria, Salta, Salta, Argentina, ⁴Institut National de la Recherche Agronomique, Theix, Ceyrat, France.
- T338 Effects of mechanical processing of sugarcane on performance and milk composition of dairy goats. V. P. Santos*, L. G. Nussio, G. B. Muraro, S. G. Toledo Filho, R. C. Amaral, J. L. P. Daniel, R. S. Goulart, I. Susin, G. B. Mourão, R. S. Gentil, and C. Q. Mendes, *University Of Sao Paulo/ESALQ, Piracicaba, SP, Brazil*.
- T339 Thyroid hormones and blood metabolites of dairy goats supplemented with dietary iodine. A. Nudda¹, G. Battacone¹, G. Bomboi², B. Floris², and G. Pulina*^{1,3}, ¹Dipartimento di Scienze Zootechniche, University of Sassari, Italy, ²Dipartimento di Biologia Animale, University of Sassari, Italy, ³Agricultural Research Agency of Sardinia - AGRIS Sardegna, Sassari, Italy.
- T340 Effect of duodenal soybean small peptides infusion on lactation performance, peptide-bound amino acid and free amino acid metabolism in lactating goats. H. Liu, Z.-J. Cao, L. Wang, and S.-L. Li*, *College of Animal Science and Technology, China Agricultural University, Beijing, China*.
- T341 The effects of shearing on milk production traits and milk fatty acid profile in Sarda dairy ewes. S. P. G. Rassu, M. G. Manca, R. Boe, R. Rubattu, A. H. D. Francesconi, and A. Nudda*, *Dipartimento di Scienze Zootechniche, University of Sassari, Italy*.
- T342 Goat colostrum chemical composition evolution during 7 h postpartum. D. Sanchez-Macias¹, N. Castro¹, J. Capote², I. Moreno-Indias¹, and A. Argüello*¹, ¹Las Palmas de Gran Canaria University, Arucas, Las Palmas, Spain, ²Instituto Canario de Investigaciones Agrarias, La Laguna, Tenerife, Spain.
- T343 Somatic cell count in milk of goats enrolled in Dairy Herd Improvement Program in 2007. L. Zhang^{1,2}, G. R. Wiggins³, J. Clay⁴, R. LaCroix⁵, J. Z. Wang¹, T. Gipson¹, and S. S. Zeng*¹, ¹Langston University, Langston, OK, ²Agricultural Research Center of China, Changchun, Jilin, China, ³Animal Improvement Programs Laboratory, USDA-ARS, Beltsville, MD, ⁴Dairy Records Management Systems, North Carolina State University, Raleigh, ⁵AgSource Cooperative Services, Verona, WI.

- T344 Excretion pattern of aflatoxin M1 in milk of goats fed a single dose of aflatoxin B1. G. Battacone^{*1}, A. Nudda¹, M. Decandia², A. Mazzette¹, M. Acciaro², and G. Pulina^{1,2}, ¹*Dipartimento di Scienze Zootecniche, Università di Sassari, Sassari, Italy*, ²*Agenzia AGRIS Sardegna, Sassari, Italy*.
- T345 Lamb production in the Northern Patagonia with or without winter supplementation. L. Villar^{*1}, E. Pavan², M. Zimerman¹, C. Giraudo¹, and F. Santini³, ¹*INTA-EEA Bariloche, Bariloche, Rio Negro, Argentina*, ²*INTA-EEA Balcarce, Balcarce, Buenos Aires, Argentina*, ³*INTA-CIA Castelar, Hurlingham, Buenos Aires, Argentina*.
- T346 Relationship between body condition score and fertility of Saanen goats under intensive conditions. A. Ata^{*1}, M. Saatci², and M. S. Gulay³, ¹*Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Department of Reproduction and Artificial Insemination, Burdur, Turkey*, ²*Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Department of Animal Science, Burdur, Turkey*, ³*Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Department of Physiology, Burdur, Turkey*.
- T347 Preliminary results of a comparison between Texas Rambouillet sheep and Australian Merino F1 crosses. C. J. Lupton¹, F. A. Pfeiffer^{*1}, W. S. Ramsey², M. Salisbury³, D. F. Waldron¹, J. W. Walker¹, and T. D. Willingham¹, ¹*Texas AgriLife Research, San Angelo*, ²*Texas A&M University, College Station*, ³*Angelo State University, San Angelo, TX*.
- T348 Two seasonal lambing in spring and fall increases reproductive efficiency of range sheep flock. T. Wuliji^{*1}, H. Glimp¹, and T. Filbin², ¹*University of Nevada, Reno*, ²*Rafter 7 Ranch, Yerington, NV*.
- T349 A daily exposure for 4 hours to the male effect is sufficient to induce ovulatory activity in goats. J. A. Delgadillo^{*1}, M. Bedos¹, J. A. Flores¹, G. Fitz-Rodriguez², and B. Malpau², ¹*Centro de Investigacion en Reproduccion Caprina, Universidad Autonoma Agraria Antonio Narro, Torreon, Coahuila, Mexico*, ²*Physiologie de la Reproduction et des Comportements, UMR 6175 INRA-CNRS-Universite de Tours-Haras Nationaux, Nouzilly, France*.
- T350 Estrus and mating response after estrus synchronization protocols in meat goats. J. L. Eierman^{*1}, D. J. O'Brien¹, E. K. Crook¹, R. A. Barczewski¹, and N. C. Whitley², ¹*Delaware State University, Dover*, ²*North Carolina A&T State University, Greensboro*.
- T351 Complement system activity on goats, hemolytic assay possibilities. I. Moreno-Indias^{*1}, A. Argüello¹, N. Castro¹, J. Capote², A. Morales-delaNuez¹, and B. Sim³, ¹*Las Palmas de Gran Canaria University, Arucas, Las Palmas, Spain*, ²*Instituto Canario de Investigaciones Agrarias, La Laguna, Tenerife, Spain*, ³*Oxford University, Oxford, United Kingdom*.
- T352 The use of internet-based tools in establishing scrapie resistant sheep flocks in Canada. D. G. Bishop and A. Farid^{*}, *Nova Scotia Agricultural College, Truro, Nova Scotia, Canada*.
- T353 Comparison of raw versus post-differentially corrected GPS collar fixes in free-ranging goats. T. A. Gipson^{*1}, S. P. Hart¹, and R. Heinemann², ¹*American Institute for Goat Research, Langston University, Langston, OK*, ²*Kiamichi Forestry Research Station, Oklahoma State University, Idabel*.
- T354 Garlic as an anthelmintic for goats. Z. Wang^{*}, A. L. Goetsch, S. P. Hart, and T. Sahlu, *American Institute for Goat Research, Langston University, Langston, OK*.
- T355 Comparison of copper sulfate and copper oxide wire particles as an anthelmintic for goats. S. P. Hart^{*} and Z. Wang, *E Kika de la Garza American Institute for Goat Research, Langston, OK*.
- T356 Performances of kids and calves grazing together and separately. S. Gebrelul^{*}, R. Marshall, Y. Ghebreyessus, and V. Bachiredy, *Southern University Ag. Center, Baton Rouge, LA*.
- T357 Small ruminant producer gastrointestinal nematode (GIN) management survey. N. C. Whitley^{*1}, R. M. Kaplan², J. M. Burke³, T. H. Terrill⁴, J. E. Miller⁵, W. R. Getz⁴, S. Mobini⁴, E. Valencia⁶, and M. J. Williams⁷, ¹*North Carolina A&T State University, Greensboro*, ²*University of Georgia, Athens*, ³*USDA, ARS, Booneville, AR*, ⁴*Fort Valley State University, Fort Valley, GA*, ⁵*Louisiana State University, Baton Rouge*, ⁶*University of Puerto Rico, Mayaguez, PR*, ⁷*NRCS, Gainesville, FL*.
- T358 Leg bands and rumen boluses for the long-term electronic identification of goats. S. Carné, G. Caja, M. A. Rojas-Olivares, and A. A. K. Salama^{*}, *G2R, Universitat Autònoma de Barcelona, Bellaterra, Spain*.
- T359 Natural plant anthelmintic fails to reduce internal parasites in meat goat kids. D. J. O'Brien¹, K. K. Mathews^{*1}, J. E. Miller², N. C. Whitley³, E. K. Crook¹, and J. L. Eierman¹, ¹*Delaware State University, Dover*, ²*Louisiana State University, Baton Rouge*, ³*North Carolina A&T State University, Greensboro*.

SYMPOSIA AND ORAL SESSIONS

ADSA Foundation Scholar Lecture - Production
Chair: Ashraf Hassan, South Dakota State University
513ef

9:30 AM Effects of heat stress on post-absorptive metabolism. L. H. Baumgard, *University of Arizona, Tucson.*

SYMPOSIUM

Animal Health

Emerging Foreign Animal and Zoonotic Diseases

Chair: Gary Snowder, National Center for Foreign Animal and Disease Defense

Sponsors: Elanco Animal Health and Pfizer Animal Health

511cf

9:30 AM 272 Potential threat of foreign animal diseases to US agriculture. T. Beckham*, *Texas Veterinary Medical Diagnostic Laboratory, Texas A&M University System, College Station.*

10:30 AM 273 Preventing and detecting foreign animal diseases. T. McKenna*, *Wisconsin Veterinary Diagnostic Laboratory, Madison.*

11:30 AM 274 Responding to a foreign animal disease incident. M. Cochran*, *Texas Animal Health Commission, Austin.*

Breeding and Genetics

Genomic Evaluation

Chair: Curt Van Tassell, USDA-ARS

510ac

9:30 AM 275 Opportunities for genomic deletion with redesign of breeding programs. J. C. M. Dekkers*¹, H. H. Zhao², D. Habier³, and R. L. Fernando¹, ¹*Iowa State University, Ames*, ²*Pioneer Hi-Bred Int., Johnston, IA*, ³*Christian-Albrechts University of Kiel, Kiel, Germany.*

9:45 AM 276 Computing procedures for genetic evaluation including phenotypic, full pedigree and genomic information. I. Aguilar*^{1,2}, I. Misztal¹, and A. Legarra³, ¹*University of Georgia, Athens*, ²*Instituto Nacional de Investigación Agropecuaria, Las Brujas, Uruguay*, ³*INRA, SAGA, Castanet-Tolosan, France.*

10:00 AM 277 Genetic evaluation including phenotypic, full pedigree and genomic information. I. Misztal*¹, A. Legarra², and I. Aguilar¹, ¹*University of Georgia, Athens*, ²*INRA SAGA, 32326 Castanet-Tolosan, France.*

10:15 AM 278 Transition of genomic evaluation from a research project to a production system. G. R. Wiggans*¹, P. M. VanRaden¹, L. R. Bacheller¹, F. A. Ross¹, T. S. Sonstegard¹, G. te Meerman², and C. P. Van Tassell¹, ¹*ARS, USDA, Beltsville, MD*, ²*University Medical Center Groningen and University of Groningen, Groningen, the Netherlands.*

10:30 AM 279 Can you believe those genomic evaluations for young bulls? P. M. VanRaden, M. E. Tooker*, and J. B. Cole, *USDA Animal Improvement Programs Laboratory, Beltsville, MD.*

10:45 AM Break

11:00 AM 280 Application of kernel partial least squares to estimate genomic breeding values of crossbred beef cattle. G. Vander Voort*¹, M. Kelly¹, T. Caldwell¹, D. Lu¹, Z. Wang², J. Mah², G. Plastow², S. Moore², and S. Miller¹, ¹*Centre for Genetic Improvement of Livestock, University of Guelph, Guelph, Ont., Canada*, ²*Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, Alberta, Canada.*

11:15 AM 281 Visualization of results from genomic predictions. J. B. Cole*, *Animal Improvement Programs Laboratory, Agricultural Research Service, USDA, Beltsville, MD.*

11:30 AM 282 Comparison of Student's *t*, LASSO, and multiple shrinkage methods for the prediction of genomic breeding values. C. Maltecca* and J. P. Cassidy, *North Carolina State University, Raleigh.*

11:45 AM 283 Equivalent mixed model for joint genetic evaluation considering molecular and phenotypic information. N. Gengler*^{1,2} and F. Colinet¹, ¹*Gembloux Agricultural University, B-5030 Gembloux, Belgium*, ²*National Fund for Scientific Research, B-1000 Brussels, Belgium.*

- 12:00 PM 284 Effect of estimation approach and number of QTLs in accuracies of genomic breeding values for simulated data. G. Gaspa¹, E. L. Nicolazzi², R. Steri¹, C. Dimauro¹, and N. P. P. Macciotta*¹, ¹*Dipartimento di Scienze Zootecniche, Università di Sassari, Sassari, Italia*, ²*Istituto di Zootecnica, Università Cattolica del Sacro Cuore, Piacenza, Italia*.

Companion Animals

Chair: Gail Kuhlman, Procter and Gamble Pet Care

Sponsors: Procter and Gamble Pet Care and International Ingredient Corp.

511ad

- 9:30 AM Introduction. Gail Kuhlman.
- 9:40 AM 285 Protein quality differences exist among high quality mammalian, avian, and marine protein sources evaluated using avian assays. T. A. Faber*¹, D. C. Hernot¹, C. M. Parsons¹, K. S. Swanson¹, S. Smiley², P. J. Bechtel^{2,3}, and G. C. Fahey, Jr.¹, ¹*University of Illinois, Urbana*, ²*University of Alaska, Fairbanks, Alaska*, ³*Agricultural Research Service, Fairbanks, Alaska*.
- 9:55 AM 286 Total tract nutrient digestibility, fecal characteristics, and blood chemistry profiles of dogs as affected by alpha-cyclodextrin supplementation. M. A. Guevara*¹, K. A. Garleb², and G. C. Fahey¹, ¹*University of Illinois, Urbana*, ²*Abbott Nutrition, Columbus, OH*.
- 10:10 AM 287 Influence of dietary protein on fecal quality and colonic tight junction gene expression in Miniature poodles and German shepherds. J. Nery*^{1,2}, V. Leray¹, V. Biourge³, L. Martin¹, H. Dumon¹, and P. Nguyen¹, ¹*École Nationale Vétérinaire de Nantes, France*, ²*University of Turin, Italy*, ³*Royal Canin, Aimargues, France*.
- 10:25 AM 288 Identifying relationships of urinary 5-hydroxyindoleacetic acid, homovanillic acid and cortisol with behavioural display during social isolation in the domestic dog. M. J. Toscano*, C. Basse, E. Blackwell, J. W. S. Bradshaw, and R. Casey, *DFAS, University of Bristol, Langford, UK*.
- 10:40 AM 289 Canine adipose tissue transcriptome changes following eight weeks of diet-induced obesity. R. W. Grant*, B. M. Vester, T. K. Ridge, T. K. Graves, and K. S. Swanson, *University of Illinois, Urbana*.
- 10:55 AM 290 Colonic protein metabolites and microbial populations are altered in adult cats by consumption of cellulose, fructooligosaccharides, or pectin. K. A. Barry*, B. J. Wojcicki, I. S. Middelbos, B. M. Vester, K. S. Swanson, and G. C. Fahey Jr., *University of Illinois, Urbana*.
- 11:10 AM 291 Apparent macronutrient digestibility of four raw meat diets in African wildcats, jaguars, and Malayan tigers. K. R. Kerr*¹, A. Beloshpaka¹, C. Dikeman², S. Burke², L. G. Simmons², and K. S. Swanson¹, ¹*University of Illinois, Urbana*, ²*Henry Doorly Zoo, Omaha, NE*.
- 11:25 AM 292 Response of the somatotrophic axis and growth rate in mule deer (*Odocoileus hemionus*) fed three different diets from birth to 68 weeks of age. G. A. Comeau*¹, S. McCusker², J. P. Richmond¹, L. A. Shipley², E. A. Koutsos³, and S. A. Zinn¹, ¹*University of Connecticut, Storrs*, ²*Washington State University, Pullman*, ³*Mazuri Exotic Animal Nutrition, St. Louis, MO*.
- 11:40 AM 293 Effects of zinc amino acid complex and iron amino acid complex on performance, health and pelt quality of weanling blue fox (*Alopex lagopus*). Y. Zhang¹, H. Wei¹, D. J. Tomlinson*², and T. L. Ward², ¹*Institute of Special Wild Animal and Plant Science, Jilin, China*, ²*Zinpro Corporation, Eden Prairie, MN*.

SYMPOSIUM

CSAS Symposium

Nutrition - Behavior Interaction in Ruminants

Chair: Karen Schwartzkopf-Genswein, Agriculture and Agri-Food Canada

Sponsors: EAAP and Intervet/Schering-Plough Animal Health

517b

- 9:30 AM Introduction
- 9:35 AM 294 Behavior and dairy cattle nutrition: Not just what she eats but how she eats it. M. A. G. von Keyserlingk* and D. M. Weary, *University of British Columbia, Vancouver, BC, Canada*.
- 10:05 AM 295 Interactions of nutrition and behavior in dairy calves. J. K. Drackley*, *University of Illinois, Urbana*.

10:35 AM	296	Understanding the behavior of growing dairy heifers from a nutritional perspective. T. J. DeVries*, <i>University of Guelph, Kemptville Campus, Kemptville, Ontario, Canada.</i>
11:05 AM	297	Application of feeding behavior as an indicator of pain and morbidity in feedlot cattle. K. Schwartzkopf-Genswein*, L. González, D. Gibb, and T. McAllister, <i>Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada.</i>
11:35 AM	298	Grazing preferences in sheep and cattle: Implications for production, the environment and animal welfare. S. M. Rutter*, <i>Harper Adams University College, Newport, Shropshire, United Kingdom.</i>
12:05 PM		Closing

SYMPOSIUM
Forages and Pastures
Forage Management Strategies of Offset High Input Costs
Chair: David Combs, University of Wisconsin
524

9:30 AM	299	Effects of biological N fixation and nutrient cycling on stocking strategies for cow-calf and stocker programs. F. Rouquette Jr.* and G. Smith, <i>Texas AgriLife Research, Overton.</i>
10:15 AM	300	Effects of N fertilization and supplementation strategies on forage intake, dietary selection, and performance of growing beef cattle. S. A. Gunter*, T. L. Springer, and J. A. Bradford, <i>USDA-ARS, Southern Plains Range Research Station, Woodward, OK.</i>
11:00 AM	301	Effects of grazing management on productivity of cow/calf and stocker cattle with an emphasis on utilization of stockpiled tall fescue. M. H. Poore* and M. E. Drewnoski, <i>North Carolina State University, Raleigh.</i>
11:45 AM	302	Economic analysis of cost, rewards and trade-offs of alternative forage management strategies. G. A. Benson*, <i>North Carolina State University, Raleigh.</i>

Growth and Development
Physiology of Growth In Vivo and In Vitro
Chair: Erin Connor, USDA ARS, Beltsville
Sponsor: Elanco Animal Health
511be

9:30 AM	303	Modeling lifetime growth and feed efficiency in pigs. A. B. Strathe* ¹ , A. Danfaer ¹ , and E. Kebreab ² , ¹ <i>University of Copenhagen, Copenhagen, Denmark</i> , ² <i>University of Manitoba, Winnipeg, Manitoba, Canada.</i>
9:45 AM	304	Stimulation of skeletal muscle protein synthesis in neonatal pigs by long-term infusion of leucine is amino acid dependent. F. A. Wilson, A. Suryawan, M. C. Gazzaneo, R. A. Orellana, H. V. Nguyen, and T. A. Davis*, <i>USDA/ARS Children's Nutrition Research Center, Critical Care Med. Div., Dept. Pediatrics, Baylor College of Medicine, Houston, TX.</i>
10:00 AM	305	Dietary starch effects on metabolic gene networks in <i>longissimus lumborum</i> of early-weaned angus steers. D. E. Graugnard*, L. L. Berger, D. B. Faulkner, and J. J. Loor, <i>University of Illinois, Urbana.</i>
10:15 AM	306	Effect diet composition on precocious puberty and concentrations of IGF-1 in beef heifers. M. Maquivar* ¹ , L. A. Souto ¹ , D. E. Grum ¹ , D. M. Hallford ² , S. C. Loerch ¹ , A. V. Pires ³ , and M. L. Day ¹ , ¹ <i>The Ohio State University, Columbus</i> , ² <i>New Mexico State University, Las Cruces, NM</i> , ³ <i>University of Sao Paulo, Piracicaba, Sao Paulo, Brazil.</i>
10:30 AM	307	Effect of nutrition and chronic infusion of leptin on sexual maturation of <i>Bos indicus</i> heifers. M. V. Carvalho*, J. D. Magalhães, L. U. Gimenes, and L. F. P. Silva, <i>Universidade de São Paulo, Pirassununga, São Paulo, Brazil.</i>
10:45 AM	308	Physiological drivers of variation in feed efficiency in Red Angus-sired calves. C. M. Welch* ¹ , J. K. Ahola ¹ , J. B. Hall ¹ , J. I. Szasz ² , L. Keenan ² , and R. A. Hill ¹ , ¹ <i>University of Idaho, Red Angus Association of America.</i>
11:00 AM	309	Effect of the beta-agonist RU-42173 on growth and body composition of bulls. D. P. D. Lanna* ¹ , P. R. Leme ² , F. G. F. Castro ¹ , A. C. Vieira ¹ , V. M. Quecini ¹ , L. O. Tedeschi ³ , and L. L. Coutinho ¹ , ¹ <i>ESALQ/USP, Piracicaba, SP, Brazil</i> , ² <i>FZEA/USP, Pirassununga, SP, Brazil</i> , ³ <i>Texas A&M University, College Station.</i>
11:15 AM	310	Effects of ractopamine and gender on serum hormones and skeletal muscle gene expression in finishing steers and heifers. D. K. Walker* ¹ , E. C. Titgemeyer ¹ , T. J. Baxa ¹ , K. Y. Chung ¹ , D. E. Johnson ¹ , S. B. Laudert ² , and B. J. Johnson ¹ , ¹ <i>Kansas State University, Manhattan</i> , ² <i>Elanco Animal Health, Greenfield, IN.</i>

- 11:30 AM 311 Bovine satellite cells contain three distinct subpopulations in young and adult cattle. D. K. Walker*, J. Li, M. J. Hersom, and S. E. Johnson, *University of Florida, Gainesville.*
- 11:45 AM 312 Abundance of growth hormone secretagogue receptor in adipose tissue from beef cattle undergoing compensatory growth. J. S. Jennings*, J. A. Clapper, A. D. Weaver, and A. E. Wertz-Lutz, *South Dakota State University, Brookings.*
- 12:00 PM 313 Effect of Sirt1 on lipolysis and gene expression of adipose triglyceride lipase (ATGL) in porcine adipocytes. Y. Wang*, T. Shan, J. Guo, T. Wu, and C. Liu, *The Key Laboratory of Molecular Animal Nutrition, Ministry of Education. Institute of Feed Science, Zhejiang University, Hangzhou, Zhejiang, China.*
- 12:15 PM 314 Breed difference and regulation of porcine adipose triglyceride lipase (pATGL) and hormone sensitive lipase (HSL) by TNF α and insulin. T. Shan*, Y. Wang, T. Wu, C. Liu, and J. Guo, *The Key Laboratory of Molecular Animal Nutrition, Ministry of Education. College of Animal Science, Zhejiang University, Hangzhou, China.*
- 12:30 PM 315 Effects of plane of nutrition and bioavailable trace minerals on claw growth and wear in transported male dairy calves. J. S. Osorio*¹, J. K. Drackley¹, R. L. Wallace¹, D. Rincker¹, D. J. Tomlinson², M. T. Socha², and T. J. Earleywine³, ¹*University of Illinois, Urbana*, ²*Zinpro Performance Minerals, Eden Prairie, MN*, ³*Land O'Lakes Animal Milk Products Inc., Madison, WI.*
- 12:45 PM 223 Effects of feeding solid feed on ruminal pH and expression of genes involved in ketogenesis in dairy calves during weaning transition. A. H. Laarman* and M. Oba, *University of Alberta, Edmonton, Alberta, Canada.*

Lactation Biology 1
Chair: Wendie Cohick, Rutgers University
512ae

- 9:30 AM 316 Gene expression profile research of dairy goat mammary gland by Long-SAGE. H. Yan, C. Li, Q. Li*, and X. Gao, *Northeast Agricultural University, Harbin, China.*
- 9:45 AM 317 Selection of key gene related to development of mammary gland in dairy goat. C. Li, H. Yan, Q. Li*, and X. Gao, *Northeast Agricultural University, Harbin, China.*
- 10:00 AM 318 Epigenetic changes during functional differentiation of the mammary gland. M. Rijnkels*, C. Freeman-Zadrowski, and J. Hernandez, *USDA/ARS Children's Nutrition Research Center, Baylor College of Medicine, Houston, TX.*
- 10:15 AM 319 Expression of peptide transporter PEPT2 gene in bovine mammary tissues influenced by oligopeptide and lactogenic hormones. M. M. Zhou*, H. Y. Liu, Y. M. Wu, and J. X. Liu, *Institute of Dairy Science, Ministry of Education Key Laboratory of Molecular Animal Nutrition, Zhejiang University, Hangzhou, P.R. China.*
- 10:30 AM 320 Microarray analysis of gene expression profiles in dry period bovine mammary gland. X. Hou and Q. Li*, *Northeast Agricultural University, Harbin, Heilongjiang, China.*
- 10:45 AM Break
- 11:15 AM 321 Palmitate affects larger gene networks in MACT cells compared with *trans*-10,*cis*-12-CLA or PPAR-gamma activation via Rosiglitazone. G. Invernizzi*^{1,2}, A. K. G. Kadegowda¹, M. Bionaz¹, G. Savoini², R. E. Everts¹, H. A. Lewin¹, and J. J. Looor¹, ¹*University of Illinois, Urbana*, ²*University of Milan, Milan, Italy.*
- 11:30 AM 322 Energy metabolism in the development of dairy goat mammary gland. N. A. Zhang, Q. Li*, and X. Gao, *Northeast Agricultural University, Harbin, Heilongjiang, China.*
- 11:45 AM 323 Lactose synthesis in dairy goat mammary gland. X. Nan, Q. Li*, X. Gao, and B. Qu, *Northeast Agricultural University, Harbin, Heilongjiang, China.*
- 12:00 PM 324 Mammary expression of activating transcription factor 4 (ATF4) and tribbles homolog 3 (TRB3) is up-regulated during CLA-induced inhibition of milk fat synthesis in the dairy cow. K. J. Harvatine*¹, Y. R. Boisclair², and D. E. Bauman², ¹*Pennsylvania State University, University Park*, ²*Cornell University, Ithaca, NY.*
- 12:15 PM 325 Lipid transporters and their regulators in the bovine mammary gland in relation to blood serum metabolites during pregnancy, involution, and lactation. O. Mani¹, M. T. Sorensen², K. Sejrsen², R.M. Bruckmaier*³, and C. Albrecht¹, ¹*Institute of Biochemistry and Molecular Medicine, University of Bern, Bern, Switzerland*, ²*Department of Animal Health, Welfare and Nutrition, Aarhus University, Tjele, Denmark*, ³*Veterinary Physiology, Vetsuisse Faculty, University of Bern, Bern, Switzerland.*

SYMPOSIUM
Meat Science and Muscle Biology
Effects of By-product Feeding on Meat Quality Traits
Chair: Giuseppe Bee, Agroscope Liebefeld-Posieux
Sponsor: EAAP
514

- 9:30 AM 326 Effects of feeding distillers grains on fat deposition in feedlot cattle. B. A. Casey*, S. R. Rust, and J. P. Grobbel, *Michigan State University, East Lansing.*
- 9:45 AM 327 Dietary inclusion of CLA changes fatty acid profiles of pigs fed 30% DDGS during the growing-finishing phase. D. Pompeu*, R. B. Hinson, Z. P. Zhu, B. R. Wiegand, J. W. Rickard, and G. L. Allee, *University of Missouri, Columbia.*
- 10:00 AM 328 Effects of distillers grains on beef carcass quality and palatability. C. R. Calkins*, A. S. de Mello Jr., and L. S. Senaratne, *University of Nebraska, Lincoln.*
- 10:40 AM 329 Effects of various coproducts on beef consumer sensory and tenderness traits. G. P. Lardy* and R. J. Maddock, *North Dakota State University, Fargo.*
- 11:10 AM 330 By-product feeding effects on pork quality and carcass traits. J. D. Wood*, F. M. Whittington, and K. G. Hallett, *University of Bristol, Langford, Bristol, UK.*
- 11:50 AM Questions and answers

Nonruminant Nutrition
Amino Acids and Energy
Chair: Allen Pettey, Cal Poly State University
Sponsor: Evonik Degussa Corp.
518

- 9:30 AM 331 Birth order, birth weigh, sow colostrum IgG, and pig IgG concentration and their effects on neonatal piglet survival. R. Cabrera*¹, X. Lin¹, K. Shim¹, T. Inskeep¹, J. Campbell², A. Moeser¹, and J. Odle¹, ¹*North Carolina State University, Raleigh,* ²*American Protein Coporation, Ankeny, IA.*
- 9:45 AM 332 Efficacy of dietary amino acids to replace fish meal and whey protein on physiological changes in weanling pigs. Y. Zhao*¹, C. M. Ballou¹, A. C. Chaytor¹, R. L. Payne², and S. W. Kim¹, ¹*North Carolina State University, Raleigh,* ²*Evonik-Degussa Corp., Kennesaw, GA.*
- 10:00 AM 333 Maximizing the use of supplemental amino acids in diets for 14-kilogram pigs. V. D. Naranjo*¹, T. D. Bidner¹, R. L. Payne², and L. L. Southern¹, ¹*Louisiana State University Agricultural Center, Baton Rouge,* ²*Evonik-Degussa Corporation, Kennesaw, GA.*
- 10:15 AM 334 Optimum isoleucine to lysine ratio in a barley and wheat based diet fed to starter pigs. J. Htoo*¹, C. Zhu², and C. de Lange², ¹*Evonik Degussa Canada Inc., Gibbons, AB, Canada,* ²*University of Guelph, Guelph, ON, Canada.*
- 10:30 AM 335 Ileal digestibility of amino acids in low-Kunitz soybeans fed to weanling pigs. K. P. Goebel* and H. H. Stein, *University of Illinois, Urbana.*
- 10:45 AM 336 Amino acid digestibility and energy concentration in soybean meal produced from high protein, high digestible, or conventional varieties of soybeans and fed to weanling pigs. K. M. Baker* and H. H. Stein, *University of Illinois, Urbana.*
- 11:00 AM 337 Amino acid digestibility in corn and corn co-products fed to growing pigs. G. I. Petersen* and H. H. Stein, *University of Illinois, Urbana.*
- 11:15 AM 224 The threonine requirement in sows increases in late gestation. C. L. Levesque*¹, S. Moehn¹, P. B. Pencharz², and R. O. Ball¹, ¹*Swine Research and Technology Centre, University of Alberta, Edmonton, Alberta, Canada,* ²*Sick Children's Hospital, University of Toronto, Toronto, Ontario, Canada.*
- 11:30 AM 227 Protein turnover and heat production of sows varies at day 30, 45 and 105 of gestation. R. S. Samuel*¹, S. Moehn¹, P. B. Pencharz², and R. O. Ball^{1,2}, ¹*Swine Research and Technology Centre, University of Alberta, Edmonton, Alberta, Canada,* ²*Research Institute, Hospital for Sick Children, Toronto, Ontario, Canada.*
- 11:45 AM 225 Energy and amino acid utilization in expeller-extracted canola meal fed to growing pigs. T. A. Woyengo*, E. Kiarie, and C. M. Nyachoti, *University of Manitoba, Winnipeg, Manitoba, Canada.*

- 12:00 PM 338 Net energy of distillers dried grains with solubles and high protein distillers dried grains fed to growing and finishing pigs. N. A. Gutierrez*, D. Y. Kil, and H. H. Stein, *University of Illinois, Urbana*.
- 12:15 PM 339 Effect of saturated fat in diets with corn distillers dried grains with solubles (DDGS) on growth performance, carcass characteristics and apparent digestibility of nutrients of diets for finishing pigs. L. S. Freitas*¹, M. J. Azain², D. C. Lopes¹, C. R. Dove², T. D. Pringle², P. Cline², and T. C. Tsai², ¹*Federal University of Viçosa, Vicosa, Brazil*, ²*University of Georgia, Athens*.

Production, Management and the Environment

Dairy

Chair: Tim Klusmeyer, Monsanto

Sponsor: Monsanto

510bd

- 9:30 AM 340 Short dry period: A new reality? Results from a long term field study. D. E. Santschi*^{1,2}, D. Lefebvre³, C. L. Girard¹, and D. Pellerin², ¹*Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada*, ²*Université Laval, Quebec, QC, Canada*, ³*Valacta, Ste-Anne-de-Bellevue, QC, Canada*.
- 9:45 AM 341 Short dry period management improves peripartum ruminal adaptation in dairy cows. M. S. Jolicoeur*^{1,2}, A. F. Brito², D. Pellerin¹, D. Lefebvre³, R. Berthiaume², and C. L. Girard², ¹*Université Laval, Québec, QC, Canada*, ²*Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada*, ³*Valacta, Ste-Anne-de-Bellevue, QC, Canada*.
- 10:00 AM 342 Effect of a shortened dry period on the mammary gland physiology. P. Bernier-Dodier*¹, B. G. Talbot¹, and P. Lacasse², ¹*Université de Sherbrooke, Sherbrooke, QC, Canada*, ²*Dairy and Swine R&D Centre, Sherbrooke, QC, Canada*.
- 10:15 AM 343 Effects of heat stress and monensin on production and metabolism in lactating Holstein cows. J. B. Wheelock*¹, S. R. Sanders¹, M. D. O'Brien¹, C. E. Moore², H. B. Green², M. R. Waldron³, R. P. Rhoads¹, and L. H. Baumgard¹, ¹*University of Arizona, Tucson*, ²*Elanco Animal Health, Indianapolis, IN*, ³*University of Missouri, Columbia*.
- 10:30 AM 344 Effects of soaking dairy cows at the feed line on dry matter intake and milk production in a tunnel ventilated barn equipped with evaporative pads located in a tropical climate, Thailand. D. V. Armstrong*¹, S. Rungruang², V. Wuthirananarith², M. J. Brouk³, and J. F. Smith³, ¹*University of Arizona, Tucson*, ²*Charoen Pokphand Group Co., Ltd., Bangkok, Thailand*, ³*Kansas State University, Manhattan*.
- 10:45 AM 345 Animal welfare in cross-ventilated and naturally ventilated dairy barns in the upper Midwest USA. K. M. Lobeck*, M. I. Endres, E. M. Shane, S. M. Godden, and J. Fetrow, *University of Minnesota, St. Paul*.
- 11:00 AM 346 Environmental characteristics in cross-ventilated and naturally ventilated dairy barns in the upper Midwest USA. K. M. Lobeck*, M. I. Endres, E. M. Shane, and K. A. Janni, *University of Minnesota, St. Paul*.
- 11:15 AM 347 Changes in body condition scores during the transition period in Holstein cows. J. Moro-Méndez*, H. Monardes, and R. I. Cue, *McGill University, Department of Animal Science, Ste-Anne-de-Bellevue, QC, Canada*.
- 11:30 AM 348 The association of level of milk production with reproductive performance. M. S. Campbell¹, K. Hand¹, D. F. Kelton¹, F. Miglior^{2,3}, and S. J. LeBlanc*¹, ¹*University of Guelph, Guelph, ON, Canada*, ²*Canadian Dairy Network, Guelph, ON, Canada*, ³*Dairy and Swine Research & Development Centre, Agriculture and Agri-Food Canada*.
- 11:45 AM 349 Management practices associated with conception rate and service rate of lactating Holstein cows in large, commercial dairy herds. J. M. Schefers*¹, K. A. Weigel¹, N. B. Cook¹, C. L. Rawson², and N. R. Zwald², ¹*University of Wisconsin, Madison*, ²*Alta Genetics USA Inc., Watertown, WI*.
- 12:00 PM 350 Pregnancy rates and herd turnover proportions after using a hormonal synchronization protocol in primiparous dairy cows in a California dairy. K. G. Gohary*¹, S. S. Aly², D. C. Wagner¹, B. R. Hoar², V. M. Lane³, and J. D. Rowe³, ¹*William R. Pritchard Veterinary Medical Teaching Hospital, School of Veterinary Medicine, University of California, Davis*, ²*Department of Veterinary Medicine and Epidemiology, School of Veterinary Medicine, University of California, Davis*, ³*Department of Population Health and Reproduction, School of Veterinary Medicine, University of California, Davis*.
- 12:15 PM 351 Effect of days open in the previous lactation on the risk of culling or death around calving. P. J. Pinedo* and A. De Vries, *University of Florida, Gainesville*.

**Ruminant Nutrition
Fat Supplementation
Chair: Paul Kononoff, University of Nebraska
516c**

- 9:30 AM 352 Effective use of safflower seeds in early lactation diets with alfalfa hay and corn silage. A. Alizadeh¹, G. R. Ghorbani¹, M. Alikhani¹, H. R. Rahmani¹, and A. Nikkhah^{*2}, ¹*Isfahan University of Technology, Isfahan, Iran*, ²*Zanjan University, Zanjan, Iran*.
- 9:45 AM 353 Effect of flaxseed oil supplementation on *in vitro* ruminal fermentation in the rumen simulating fermenter (RUSITEC). K. J. Hart^{*}, F. Wurlod, D. A. Kenny, and T. M. Boland, *University College Dublin, Lyons Research Farm, Newcastle, Co. Dublin, Ireland*.
- 10:00 AM 354 Effect of prepartum feed restriction and oilseed supplementation on peripartum cow metabolism. A. Hayirli^{*1} and L. Doepel², ¹*Atatürk University, Erzurum, Turkey*, ²*University of Alberta, Edmonton, AB, Canada*.
- 10:15 AM 355 Effects of duodenal infusion of linolenic acid on milk fatty acid composition in dairy cows. D. P. Bu¹, Khas-Erdene¹, J. Q. Wang^{*1}, H. Y. Wei¹, L. Y. Zhou¹, and J. K. Drackley², ¹*State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, P. R. China*, ²*Department of Animal Sciences, University of Illinois, Urbana*.
- 10:30 AM 356 Milk fatty acid and protein profiles of grazing cows fed high-fat protein supplements. R. Nyoka^{*}, A. R. Hippen, K. F. Kalscheur, and D. J. Schingoethe, *South Dakota State University, Brookings*.
- 10:45 AM 357 Production response to fat supplementation of corn silage based diets in dairy goats. C. Montes de Oca G, L. Olivares R, J. G. Estrada F, and M. Gonzalez-Ronquillo^{*}, *Universidad Autonoma del Estado de Mexico, Toluca, Mexico*.
- 11:00 AM 358 Tracer studies in cultures of ruminal microorganisms reveal the formation of conjugated double bonds originating from biohydrogenation of ¹³C- labeled linolenic acid. Y. J. Lee, C. M. Klein, and T. C. Jenkins^{*}, *Clemson University, Clemson, SC*.
- 11:15 AM 359 Effect of linolenic acid, fish oil and dietary vitamin E supplementation on sustained conjugated linoleic acid production in milk fat from dairy cows. A. M. O'Donnell^{*}, K. P. Spatny, J. C. Alishauskas, and D. E. Bauman, *Cornell University, Ithaca, NY*.
- 11:30 AM 360 Lactation performance of dairy cows supplemented with different oil sources. J. A. Ye¹, C. Wang^{*1}, H. F. Wang², H. W. Ye³, B. X. Wang¹, H. Y. Liu¹, Y. M. Wang¹, Z. Q. Yang¹, and J. X. Liu¹, ¹*Institute of Dairy Science, Zhejiang University, Hangzhou, P. R. China*, ²*School of Forestry and Biotechnology, Zhejiang Forestry University, Hangzhou, P. R. China*, ³*Hangzhou Zhengxing Animal Industries, Hangzhou, P. R. China*.
- 11:45 AM 361 Milk production and composition from cows with different levels of cashew nut in the diet. P. G. Pimentel¹, L. A. Leite², I. R. F. M. Veiga², and R. B. Reis^{*2}, ¹*Animal Science Department, Federal University of Ceará, Brazil*, ²*Veterinary School, Federal University of Minas Gerais, Brazil*.
- 12:00 PM 362 Effect of dietary n-3 polyunsaturated fatty acids (PUFA) on gene expression of the insulin-like growth factor (IGF) system in the bovine uterus. G. S. Coyne^{*1,2}, D. A. Kenny², and S. M. Waters¹, ¹*Animal Bioscience Centre, Teagasc, Grange Beef Research Centre, Dunsany, Co. Meath, Ireland*, ²*School of Agriculture, Food Science & Veterinary Medicine, University College Dublin, Belfield, Dublin, Ireland*.

**Ruminant Nutrition 1
Chair: John Wagner, Colorado State University
516ab**

- 9:30 AM 363 Oats grain as an alternative to corn in beef cattle diets. J. A. Marcenac¹, H. M. Arelovich^{*1,2}, M. F. Martinez¹, M. I. Amela¹, and R. D. Bravo^{1,2}, ¹*Dto. Agronomía-Universidad Nacional del Sur, Comisión de Investigaciones Científicas de la Provincia de Buenos Aires (CIC); CERZOS, Bahía Blanca, Argentina*.
- 9:45 AM 364 The effect of steam-flaked corn storage method on enzymatic starch availability and *in situ* dry matter disappearance. K. L. Neuhold, J. J. Wagner^{*}, T. E. Engle, S. L. Archibeque, and K. S. Sellins, *Colorado State University, Fort Collins*.
- 10:00 AM 365 Effect of type and length of dietary fiber on growth, efficiency and carcass quality of feedlot cattle. M. J. Baker^{*}, D. E. Hogue, M. L. Thonney, and D. J. Ketchen, *Cornell University, Ithaca, NY*.
- 10:15 AM 58 Effect of butyrate absorption on the severity of subacute ruminal acidosis. G. B. Penner^{*1}, J. R. Aschenbach², G. Gäbel², and M. Oba¹, ¹*University of Alberta, Edmonton, AB, Canada*, ²*Universität Leipzig, Leipzig, Germany*.

- 10:30 AM 366 Effect of nitrogen supplementation on urea kinetics and microbial use of recycled urea in steers consuming corn-based diets. D. W. Brake*¹, E. C. Titgemeyer¹, M. L. Jone², and D. E. Anderson², ¹*Department of Animal Sciences and Industry, Kansas State University, Manhattan*, ²*Department of Clinical Sciences, Kansas State University, Manhattan*.
- 10:45 AM 367 Effects of a slow-release urea product on the N balance of growing cattle fed steam flaked corn. B. M. Bourg*¹, T. A. Wickersham¹, L. O. Tedeschi¹, and J. M. Tricarico², ¹*Dept. of Animal Science, Texas A&M University, College Station*, ²*Alltech Inc., Nicholasville, KY*.
- 11:00 AM 368 Effects of a slow-release urea product on performance and carcass characteristics of growing cattle fed steam-flaked corn. B. M. Bourg*¹, L. O. Tedeschi¹, J. M. Tricarico², T. A. Wickersham¹, and W. K. Krueger¹, ¹*Dept. of Animal Science, Texas A&M University, College Station*, ²*Alltech Inc., Nicholasville, KY*.
- 11:15 AM 369 Dose and release pattern of anabolic implants affects growth of finishing beef steers. S. L. Parr*¹, K. Y. Chung¹, J. P. Hutcheson², W. T. Nichols², D. A. Yates², M. N. Streeter², R. S. Swingle³, M. L. Galyean¹, and B. J. Johnson¹, ¹*Texas Tech University, Lubbock*, ²*Intervet / Schering-Plough Animal Health, De Soto, KS*, ³*Cactus Research Ltd., Amarillo, TX*.
- 11:30 AM 370 **ASAS Early Career Achievement Award:** Nutritional and management methods to decrease nitrogen losses from beef feedlots. G. E. Erickson* and T. J. Klopfenstein, *University of Nebraska, Lincoln*. **Sponsor: ASAS Foundation**
- 12:00 PM 371 Increasing dietary concentration of coconut oil reduces enteric methane emission from lactating Holstein cows. M. Hollmann*¹, W. J. Powers^{1,2}, A. Fogiel¹, N. M. Bello^{1,3}, J. S. Liesman¹, and D. K. Beede¹, ¹*Department of Animal Science, Michigan State University, East Lansing*, ²*Department of Biosystems Engineering, Michigan State University, East Lansing*, ³*College of Agriculture and Natural Resources Statistical Consulting Center, Michigan State University, East Lansing*.
- 12:15 PM 372 Effects of two strains of *Saccharomyces cerevisiae* on methane emissions from Holstein dairy cattle. Y.-H. Chung*¹, S. M. McGinn¹, N. Walker², and K. A. Beauchemin¹, ¹*Agriculture and Agri-Food Canada, Lethbridge, AB, Canada*, ²*Lallemand Animal Nutrition, Montréal, QC, Canada*.
- 12:30 PM 373 The effect of pre-grazing herbage mass on growth rate and methane emissions of grazing beef cattle. T. M. Boland*, K. J. Hart, K. M. Pierce, B. M. Lynch, R. McDonnell, D. Murphy, A. K. Kelly, and D. A. Kenny, *School of Agriculture, Food Science and Veterinary Medicine, University College Dublin, Belfield, Dublin, Ireland*.

SYMPOSIUM
Small Ruminant
Organic and Grass-Fed Small Ruminant Challenges and Opportunities
Chair: Joan Burke, USDA, ARS, Booneville, AR
Sponsor: AMPA
513cd

- 9:30 AM 374 Obstacles to organic and grass fed small ruminant production in the U.S. J. M. Burke*, *USDA, Agricultural Research Service, Booneville, AR*.
- 10:00 AM 375 Ecology as a model for organic dairy production. F. Thicke*, *Radiance Dairy, Fairfield, IA*.
- 10:30 AM 376 Successful organic dairy systems. K. J. Soder*, *USDA-ARS, Pasture Systems & Watershed Mgmt. Research Unit, University Park, PA*.
- 11:00 AM 377 Grass-fed management systems for profitable livestock production. S. K. Duckett* and J. G. Andrae, *Clemson University, Clemson, SC*.
- 11:30 AM Discussion

Dairy Foods
Danisco International Dairy Science Award Lecture
Chair: John Lucey, University of Wisconsin
Sponsor: Danisco
513ef

- 10:30 AM From udder to fridge: The impact of milk proteins and enzymes through the dairy chain. A. L. Kelly, *University College Cork, Cork, Ireland*

Animal Behavior and Well-Being 1
Chair: Trevor DeVries, University of Guelph
511be

- 2:00 PM 378 Enriched colony cage for laying hens and the effects on behavioural and physiological parameters. N. J. Cook*¹, J. Feddes², D. Korver², D. B. Haley², and J. S. Church³, ¹Alberta Agriculture and Rural Development, Lacombe Research Centre, Lacombe, Alberta, Canada, ²University of Alberta, Edmonton, Alberta, Canada, ³Thompson Rivers University, Kelowna, British Columbia, Canada.
- 2:15 PM 379 Animal welfare indicators of Holstein bulls ring-castrated at three months of age. S. Marti*^{1,2}, A. Velarde², J. L. de la Torre^{1,3}, A. Bach^{2,4}, X. Manteca^{1,3}, A. Aris², A. Serrano², and M. Devant^{1,3}, ¹Animal Nutrition, Management, and Welfare Group, Barcelona, Spain, ²IRTA, Barcelona, Spain, ³UAB, Barcelona, Spain, ⁴ICREA, Barcelona, Spain.
- 2:30 PM 380 Pain mitigation at time of castration improves performance and intake in feedlot bull calves. L. A. González*¹, K. S. Schwartzkopf-Genswein¹, E. Fierheller², E. Janzen², N. A. Caulkett², T. A. McAllister¹, D. B. Haley⁴, J. M. Stookey³, and S. Hendrick³, ¹Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, ²University of Calgary, Calgary, AB, Canada, ³University of Saskatchewan, Saskatoon, SK, Canada, ⁴University of Alberta, Edmonton, AB, Canada.
- 2:45 PM 381 Feeding behavior and weight gain of dairy calves in the post-weaning period. A. L. Stanton*¹, D. Kelton¹, K. E. Leslie¹, S. J. LeBlanc¹, K. Hester¹, and S. T. Millman², ¹University of Guelph, Guelph, Ontario, Canada, ²Iowa State University, Ames.
- 3:00 PM 382 Evaluation of the Pedometry Plus system for the detection of pedometric activity and lying behaviour in dairy cattle. J. H. Higginson*¹, K. E. Leslie¹, S. T. Millman², and D. F. Kelton¹, ¹University of Guelph, Guelph, Ontario, Canada, ²Iowa State University, Ames.
- 3:15 PM 383 Behavioral and physiological responses to lipopolysaccharide induced clinical mastitis. J. L. Zimov*, N. A. Botheras, and J. S. Hogan, *The Ohio State University, Wooster.*
- 3:30 PM Break
- 3:45 PM 384 A comparison of the effects of two different Korral Kool® systems on dairy cows in a desert environment. X. Ortiz*¹, J. Smith¹, B. Bradford¹, J. Harner¹, and A. Oddy², ¹Kansas State University, Manhattan, ²NADA Al-Othman, Saudi Arabia.
- 4:00 PM 385 Effect of feedline soakers complementing Korral Kool systems on lactating dairy cows in a desert environment. X. Ortiz*¹, J. Smith¹, B. Bradford¹, J. Harner¹, and A. Oddy², ¹Kansas State University, Manhattan, ²NADA Al-Othman, Al Ahsa, Saudi Arabia.
- 4:15 PM 386 Revised temperature humidity index (THI) for high producing dairy cows. R. B. Zimbleman*, R. P. Rhoads, L. H. Baumgard, and R. J. Collier, *University of Arizona, Tucson.*
- 4:30 PM 387 Evaluation of the stress response of heifers during transportation. S. M. Behrends*¹, T. B. Schmidt¹, D. H. Keisler³, J. W. Daily², J. O. Buntyn¹, D. J. Sykes¹, L. E. Hulbert², K. M. Cooley¹, D. T. Dawson¹, and J. A. Carroll², ¹Mississippi State University, Mississippi State, ²Livestock Issues Research Unit, USDA-ARS, Lubbock, ³University of Missouri, Columbia.
- 4:45 PM 388 Use of an automated sampler to assess bovine adrenal hormone response to transportation. N. C. Burdick*^{1,2}, J. A. Carroll², R. D. Randel³, S. T. Willard⁴, R. C. Vann⁵, C. C. Chase, Jr.⁶, D. A. Neuendorff³, A. W. Lewis³, J. W. Dailey², L. E. Hulbert², L. C. Caldwell^{1,3}, J. G. Lyons¹, and T. H. Welsh, Jr.¹, ¹Texas AgriLife Research, Texas A&M System, College Station, ²USDA ARS Livestock Issues Research Unit, Lubbock, TX, ³Texas AgriLife Research, Texas A&M System, Overton, ⁴Mississippi State University, Mississippi State, ⁵MAFES, Mississippi State University, Raymond, ⁶USDA ARS Subtropical Agricultural Research Station, Brooksville, FL.

SYMPOSIUM
Animal Health

Animal Well Being: Tackling the Issue of Cow Longevity
Chair: Isis Mullarky, Virginia Polytechnic Institute and State University
Sponsors: Elanco Animal Health and Pfizer Animal Health
518

- 2:00 PM 389 New frontiers in mastitis research. S. C. Nickerson*, *University of Georgia, Athens.*
- 2:45 PM 390 Tackling the issue of cow longevity: Battling lameness. J. K. Shearer*, *University of Florida, Gainesville.*
- 3:30 PM 391 Increasing longevity by increasing reproductive efficiency in dairy cattle. M. C. Wiltbank*, *University of Wisconsin, Madison.*
- 4:15 PM 392 Improving longevity with new genetic models and marker assisted selection. K. A. Weigel*, *University of Wisconsin, Madison.*

SYMPOSIUM
ARPAS Symposium
Feed Management: ARPAS, NRCS, and the National Project
Chair: Randy Shaver, University of Wisconsin–Madison
511ad

- 2:00 PM Introductions. R. Shaver, University of Wisconsin, Madison.
- 2:15 PM 393 Feed management from perspective of national feed management project. J. H. Harrison*¹, R. A. White¹, G. Erickson², R. Koelsch², A. Sutton³, T. Applegate³, R. Burns⁴, and G. Carpenter⁵, ¹Washington State University, Puyallup, ²University of Nebraska, Lincoln, ³Purdue University, Lafayette, IN, ⁴Iowa State University, Ames, ⁵USDA-NRCS, Washington, DC.
- 2:45 PM 394 Update on feed management from the perspective of USDA NRCS at the national and state levels. G. Carpenter*, USDA NRCS, Beltsville, MD.
- 3:15 PM 395 The Virginia feed phosphorus monitoring project. C. C. Stallings*, K. F. Knowlton, R. E. James, and M. D. Hanigan, Virginia Polytechnic Institute and State University, Blacksburg.
- 3:45 PM 396 Feed management: Northeast perspective on workshops, ARPAS certification and relationship with national feed management project and NRCS. V. Ishler*¹, C. Stallings², and R. Kohn³, ¹The Pennsylvania State University, University Park, ²Virginia Polytechnic and State University, Blacksburg, ³University of Maryland, College Park.
- 4:15 PM Wrap-up

SYMPOSIUM
Beef Species
Population Data Analyses to Evaluate Trends in Animal Production Systems
Chair: Alfredo DiCostanzo, University of Minnesota
516ab

- 2:00 PM Introduction. A. DiCostanzo.
- 2:05 PM 397 Enhancing management decisions in modern animal agriculture using population data and appropriate analytical methodology. P. D. Matzat*¹, J. Bargaen², and W. J. Platter¹, ¹Elanco Animal Health, Greenfield, IN, ²AgSpan, Overland Park, KS.
- 2:50 PM 398 An animal breeding approach to the estimation of genetic and environmental trends from field populations. D. Garrick*, Iowa State University, Ames.
- 3:20 PM Break
- 3:30 PM 399 Data collection and determination of factors affecting efficiency and profitability of beef cattle production systems. R. Jones¹ and M. Langemeier*², ¹Oklahoma State University, Enid, ²Kansas State University, Manhattan.
- 4:00 PM 400 Applications of population data analysis in on-farm dairy trials. M. Engstrom*¹, W. Sanchez², W. Stone², and N. R. St-Pierre³, ¹DSM Nutritional Products, Inc., Parsippany, NJ, ²Diamond V Mills, Cedar Rapids, IA, ³The Ohio State University, Columbus.
- 4:30 PM 401 Application of statistical process control techniques to monitor changes in animal production systems. A. De Vries*, University of Florida, Gainesville.

Breeding and Genetics
Dairy Breeding III - Parameter Estimation
Chair: Kent Weigel, University of Wisconsin
510ac

- 2:00 PM 402 Estimates of heritability of feed intake in Canadian Holsteins. J. Song*, J. F. Hayes, and R. I. Cue, McGill University, Macdonald Campus, Ste-Anne de Bellevue, Quebec, Canada.
- 2:15 PM 403 Heritability of body condition score and relationships with milk production traits in Canadian Ayrshires. S. Loker*¹, C. Bastin², F. Miglior³, A. Sewalem³, J. Fatehi¹, L. R. Schaeffer¹, and J. Jamrozik¹, ¹CGIL, University of Guelph, Canada, ²Gembloux Agricultural University, Belgium, ³Agriculture and Agri-Food Canada, Canadian Dairy Network, Guelph, Canada.

- 2:30 PM 404 Effect of test-day records beyond 305 days in milk on variance components and 305-d estimated breeding values for production traits and somatic cell score of Canadian Holsteins. J. Bohmanova*¹, F. Miglior^{2,3}, and J. Jamrozik¹, ¹Centre for Genetic Improvement of Livestock, University of Guelph, Guelph, Ontario, Canada, ²Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, ³Canadian Dairy Network, Guelph, ON, Canada.
- 2:45 PM 405 Genetic variability of test-day stearoyl coenzyme-A desaturase 9 activity. V. M.-R. Arnould*¹, N. Gengler^{1,2}, and H. Soyeurt¹, ¹Gembloux Agricultural University, Animal Science Unit, Gembloux, Belgium, ²National Fund for Scientific Research, Brussels, Belgium.
- 3:00 PM Break
- 3:15 PM 406 Influence of non-coagulating milk records on estimates of genetic parameters of milk coagulation properties. A. Cecchinato*, M. De Marchi, L. Gallo, G. Bittante, and P. Carnier, *University of Padova, Legnaro, Padova, Italy.*
- 3:30 PM 407 Estimates of genetic parameters among body condition score and fertility traits in first-parity Canadian cows. C. Bastin*¹, S. Loker², N. Gengler^{1,3}, and F. Miglior^{4,5}, ¹Animal Science Unit, Gembloux Agricultural University, Gembloux, Belgium, ²CGIL, Dept. of Animal and Poultry Science, University of Guelph, Guelph, ON, Canada, ³National Fund for Scientific Research, Brussels, Belgium, ⁴Dairy and Swine Research and Development Centre, Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, ⁵Canadian Dairy Network, Guelph, ON, Canada.
- 3:45 PM 408 The influence of genetic selection and feed system on milk production and fertility performance of spring-calving dairy cows. J. Coleman*^{1,2}, K. M. Pierce², D. P. Berry¹, A. Brennan¹, and B. Horan¹, ¹Teagasc, Moorepark Dairy Production Research Centre, Fermoy, Co. Cork, Ireland, ²UCD, School of Agriculture Food Science and Veterinary Medicine, Belfield, Dublin 4, Co. Dublin, Ireland.
- 4:00 PM 409 Consequence on reproduction of two feeding levels with opposite effects on milk yield and body condition loss in Holstein and Normande cows. E. Cutullic*¹, L. Delaby¹, G. Michel², and C. Disenhaus¹, ¹INRA UMR1080 Dairy Production, Rennes, France, ²INRA UE326 Le Pin-au-Haras, Exmes, France.

Breeding and Genetics
Swine Breeding
Chair: Cathy Ernst, Michigan State University
510bd

- 2:00 PM 410 Performance and carcass composition of pigs selected for residual feed intake on restricted and ad libitum diets. N. Boddicker*, D. Nettleton, N. Gabler, M. Spurlock, and J. C. M. Dekkers, *Iowa State University, Ames.*
- 2:15 PM 411 Effect of selection for residual feed intake on feeding behavior and daily feeding patterns in pigs. J. M. Young*, W. Cai, and J. C. M. Dekkers, *Iowa State University, Ames.*
- 2:30 PM 412 Longitudinal random regression analysis of growth and feed intake in selection lines for residual feed intake in Yorkshire swine. W. Cai*, H. Wu, and J. C. M. Dekkers, *Iowa State University, Ames.*
- 2:45 PM 413 Impact of genetic social interactions on relationships between average daily gain and feeding pattern in pigs. C. Y. Chen*¹, I. Misztal¹, S. Tsuruta¹, W. O. Herring², J. Holl², and M. Culbertson², ¹University of Georgia, Athens, ²Smithfield Premium Genetics Group, Rose Hill, NC.
- 3:00 PM 414 Genetic relationships of individual pig birth weight with weaning weight, off-test weight, feed intake, backfat and loin depth. J. S. Fix*¹, J. W. Holl², W. O. Herring², J. P. Cassidy¹, C. Maltecca¹, and M. T. See¹, ¹North Carolina State University, Raleigh, ²Smithfield Premium Genetics Group, Rose Hill, NC.
- 3:15 PM 221 Heritability estimates of reproductive, growth and carcass traits of tropical pigs: A meta-analysis. E. C. Akanno*, F. S. Schenkel, V. M. Quinton, R. M. Friendship, and J. A. B. Robinson, *University of Guelph, Guelph, ON, Canada.*
- 3:30 PM 415 Breed differences in swine temperament and its phenotypic relationship with performance. C. L. Yoder*¹, C. Maltecca¹, J. P. Cassidy¹, S. Price², and M. T. See¹, ¹North Carolina State University, Raleigh, ²Ivey Spring Creek Farms, Goldsboro, NC.
- 3:45 PM 416 Genetic parameters for litter traits and piglet survival in Norsvin Landrace. B. Zumbach*¹, P. Madsen², and B. Holm³, ¹Norsvin, Hamar, Norway, ²Aarhus University, Tjele, Denmark, ³Norsvin USA, Rochester, MN.
- 4:00 PM 417 Marker assisted selection using simulated IGF2 gene in Canadian Landrace. M. Jafarikia*, B. Sullivan, and L. Maignel, *Canadian Centre for Swine Improvement, Ottawa, ON, Canada.*
- 4:15 PM 418 A DNA based test for evaluating and improving pork colour in Canadian pigs. B. Uttaro*¹, M. Jafarikia², W. Van Berkel³, S. Wyss², B. Sullivan², and S. Chen⁴, ¹Agriculture and Agri-Food Canada, Lacombe Research Centre, Lacombe, Alberta, Canada, ²Canadian Centre for Swine Improvement, Ottawa, Ontario, Canada, ³Western Swine Testing Association, Lacombe, Alberta, Canada, ⁴University of Guelph, Laboratory Services Division, Guelph, Ontario, Canada.

- 4:30 PM 419 Estimation of the IGF2 effect on backfat and lean muscle depth in Canadian Landrace. M. Jafarikia*, B. Sullivan, L. Maignel, and S. Wyss, *Canadian Centre for Swine Improvement, Ottawa, ON, Canada.*
- 4:45 PM 420 Proximal promoter of the pig HMGCRC gene: Structural and functional study. A. Cánovas*¹, R. Quintanilla¹, J. M. Reecy², M. Marquiés³, and R. N. Pena¹, ¹IRTA. *Genetica i Millora Animal., Lleida, Spain*, ²Iowa State University, Ames, ³INDEGA. *Universidad de León, León, Spain.*

Dairy Foods 1
Chair: Dave McCoy, DMI Inc.
513cd

- 2:00 PM 421 **ADSA Pioneer:** Value-added components derived from whey. W. Modler*, *Agriculture Canada (formerly Centre for Food & Animal Research, Ottawa, Ontario, Canada), Kemptville, Ontario, Canada.*
- 2:30 PM 422 Optimizing the recovery of protein during microfiltration of pre-concentrated whey. C. Marella*, L. E. Metzger, and K. Muthukumarappan, *Midwest Dairy Foods Research Center, South Dakota State University, Brookings.*
- 2:45 PM 423 Nanoparticulation of denatured whey protein by pH-cycling. M. Britten*, J. Houde, and H. J. Giroux, *Agriculture and Agri-Food Canada, St-Hyacinthe, QC, Canada.*
- 3:00 PM 425 Use of whey protein fractions as a fat substitute for sausage. A. C. B. Ferreira¹, W. L. M. Santos¹, L. M. Fonseca*^{1,2}, and R. L. Bradley Jr.³, ¹Federal University of Minas Gerais (UFMG), *School of Veterinary Medicine, Department of Food Technology and Inspection, Belo Horizonte, MG, Brazil*, ²Laboratory of Milk Quality Analysis, UFMG, *Belo Horizonte, MG, Brazil*, ³University of Wisconsin, *Department of Food Science, Madison.*
- 3:15 PM 426 Influence of casein on flux and passage of serum proteins (SP) during microfiltration (MF) using polymeric spiral wound (SW) membranes at 50°C. J. Zulewska*¹, M. Newbold², and D. M. Barbano², ¹University of Warmia and Mazury, *Olsztyn, Poland*, ²Cornell University, *Ithaca, NY.*
- 3:30 PM 427 A non-pasta filata Mozzarella cheese making method using CO₂: Cheese composition and yield. L. Li¹, M. Newbold², and D. M. Barbano*², ¹South China University of Technology, *Guangzhou, China*, ²Cornell University, *Ithaca, NY.*
- 3:45 PM 428 A non-pasta filata Mozzarella cheese making method using CO₂: Cheese functionality. L. Li¹, M. Newbold², and D. M. Barbano*², ¹South China University of Technology, *Guangzhou, China*, ²Cornell University, *Ithaca, NY.*
- 4:00 PM 429 Caseins as molecular chaperones: Functional analysis and structural considerations. Y. H. Yong* and E. A. Foegeding, *Department of Food, Bioprocessing and Nutrition Sciences, North Carolina State University, Raleigh.*
- 4:15 PM 430 Development and functionalities of milk protein-based paper glue. X. Chen^{2,1}, Y. L. Gao^{2,1}, L. H. Zhou¹, and M. R. Guo*¹, ¹University of Vermont, *Burlington*, ²Inner Mongolia Agriculture University, *Huhot, Inner Mongolia, China.*

Dairy Foods
Dairy Foods/Cheese
Chair: Donald McMahon, Utah State University
Sponsor: European Association of Animal Production
513ef

- 2:00 PM 431 **ADSA Pioneer:** A century of predictive cheese yield formulas. D. B. Emmons*, *Food Research Laboratory, Research Branch, Agriculture and Agri-Food Canada, Guelph, ON, Canada.*
- 2:30 PM 432 Cheesemaking properties of camel chymosin. K. B. Qvist*, M. Harboe, H. van den Brink, M. L. Broe, and M. W. Børsting, *Chr. Hansen, Hørsholm, Denmark.*
- 2:45 PM 433 Aggregation of casein micelles by combined rennet and acidification studied by rheology and diffusing wave spectroscopy: Effect of heat treatment. C. Cooper*, M. Alexander, and M. Corredig, *University of Guelph, Guelph, ON, Canada.*
- 3:00 PM 434 Improvement in the texture of low-fat Cheddar cheese by altering the manufacturing protocol. N. Bansal*¹, N. Y. Farkye¹, and M. A. Drake², ¹California Polytechnic State University, *San Luis Obispo*, ²North Carolina State University, *Raleigh.*
- 3:15 PM 435 Impact of grating and reforming on the texture of low fat/nonfat cheese. C. Akbulut*¹, S. Govindasamy-Lucey², J. A. Lucey¹, J. J. Jaeggli², and M. E. Johnson², ¹Department of Food Science, *University of Wisconsin, Madison*, ²Wisconsin Center of Dairy Research, *University of Wisconsin, Madison.*

- 3:30 PM 436 Influence of brine concentration and temperature on composition, microstructure and yield of feta cheese. D. J. McMahon^{*1}, M. M. Motawee², and W. R. McManus¹, ¹Western Dairy Center, Utah State University, Logan, ²National Organization for Drug Control and Research, Cairo, Egypt.
- 3:45 PM 437 Impact of the addition of salts on the textural and rheological properties of nonfat cheese. J. A. Stankey^{*1}, M. E. Johnson², and J. A. Lucey¹, ¹University of Wisconsin, Department of Food Science, Madison, ²Wisconsin Center for Dairy Research, Madison.
- 4:00 PM 438 Comparison of mono- and poly-unsaturated fatty acid compositions between reduced-fat and full-fat goat milk cheeses during three months aging. W. Noura¹, Z. Guler², J. H. Lee¹, T. H. Terrill¹, G. Kannan¹, and Y. W. Park^{*1}, ¹Fort Valley State University, Fort Valley, GA, ²Mustafa Kemal University, Hatay, Turkey.
- 4:15 PM 439 Distribution of fat in comminuted cheese at varying fat levels and storage times using laser scanning confocal microscopy and textural analysis. W. R. McManus^{*}, N. Garg, and D. J. McMahon, Western Dairy Center, Utah State University, Logan.
- 4:30 PM 440 Development of various paneer based spreads. H. G. Ramachandra Rao^{*} and H. Arun Kumar, Dairy Science College, Hebbal, Bangalore, Karnataka, India.

SYMPOSIUM
Growth and Development
Fetal Programming in Animal Agriculture
Chair: Rodney A. Hill, University of Idaho
517c

- 2:00 PM 441 Dam/grand-dam nutrition during pregnancy affects milk supply in offspring and reproductive performance in grand-offspring. H. T. Blair^{*}, D. S. van der Linden, L. C. Davenport, P. R. Kenyon, C. M. C. Jenkinson, S. W. Peterson, D. D. S. Mackenzie, S. T. Morris, and E. C. Firth, National Research Centre for Growth & Development, Massey University, Palmerston North, New Zealand.
- 2:35 PM 442 Fetal programming of skeletal muscle development in ruminant animals. M. Du^{*} and M. J. Zhu, University of Wyoming, Laramie.
- 3:10 PM 443 Programming of fetal fat and muscle: Natural and genetic fetal restriction and exogenous nutritional influences. G. J. Hausman^{*}, USDA-ARS, Athens, GA.
- 3:45 PM 444 Epigenetic programming of behavior and physiology. M. Meaney^{*}, McGill University, Montreal, Quebec, Canada.
- 4:20 PM 445 Large animal models of developmental programming. L. P. Reynolds^{*}, J. S. Caton, K. A. Vonnahme, J. S. Luther, C. J. Hammer, K. R. Maddock Carlin, A. T. Grazul-Bilska, and D. A. Redmer, Center for Nutrition and Pregnancy, and Animal Sciences Department, North Dakota State University, Fargo.

Meat Science and Muscle Biology
Pork and Beef Quality
Chair: Kasey Maddock Carlin, North Dakota State University
514

- 2:00 PM 446 Effects of dietary oxidative stress on postmortem events and tenderness of fresh pork. D. D. Boler^{*}, L. W. Kutzler, A. C. Dilger, D. M. Fernandez-Duenas, S. F. Holmer, F. K. McKeith, and J. Killefer, University of Illinois, Urbana.
- 2:15 PM 447 Effects of oxidized corn oil and synthetic antioxidant blend on pork quality and shelf-life. D. M. Fernández-Dueñas^{*1}, L. W. Kutzler¹, D. D. Boler¹, S. F. Holmer¹, J. Zhao², R. J. Harrell², J. Andrews², M. Vazquez-Añon², M. Ellis¹, F. K. McKeith¹, and J. Killefer¹, ¹University of Illinois, Urbana, ²Novus International Inc., St. Charles, MO.
- 2:30 PM 448 Impact of varying CO₂ and O₂ concentrations during stunning and carcass chilling conditions on pork quality traits. G. Bee^{*1}, M. Gerritzen², M. Mull², C. Biolley¹, G. Guex¹, B. Dougoud¹, and C. Vonnez¹, ¹Agroscope Liebefeld Posieux, Research Station ALP, Posieux, Switzerland, ²Animal Sciences Group of Wageningen, Lelystad, the Netherlands.
- 2:45 PM 449 Using ultrasound technology to predict intramuscular fat of loin in live pigs and potential use in swine genetic improvement. L. Maignel^{*1}, J.-P. Daigle², and B. Sullivan¹, ¹Canadian Centre for Swine Improvement, Ottawa, ON, Canada, ²Centre de Développement du Porc du Québec, Québec, QC, Canada.
- 3:00 PM 450 The effects of restricted feeding and subsequent realimentation on pig carcass composition. C. Chaosap^{*}, T. Parr, and J. Wiseman, Nottingham University, Loughborough, UK.

- 3:15 PM Break
- 3:30 PM 451 Carcass traits of tropically adapted cattle when evaluated at different endpoints. S. W. Coleman*¹, D. G. Riley¹, C. C. Chase Jr.¹, M. F. Miller², J. C. Brooks², D. D. Johnson³, W. A. Phillips⁴, and T. A. Olson³, ¹USDA ARS STARS, Brooksville, FL, ²Texas Tech Univ., Lubbock, ³Univ. Florida, Gainesville, ⁴USDA ARS GRL, El Reno, OK.
- 3:45 PM 452 Sarcomere length influences postmortem proteolysis of Troponin-T in bovine muscle. S. J. Wells*, T. M. Nath, D. M. Wulf, and A. D. Weaver, *South Dakota State University, Brookings.*
- 4:00 PM 453 Water access and the carcass characteristics of Holstein slaughter cows. K. D. Vogel*¹, J. R. Claus², T. Grandin¹, G. R. Oetzel², and D. M. Schaefer², ¹Colorado State University, Fort Collins, ²University of Wisconsin, Madison.
- 4:15 PM 454 Growth and carcass characteristics of steers fed an omega-3-fatty acid-fortified supplement from flaxseed while on improved pastures and following feedlot finishing. R. C. Vann*¹, S. T. Willard², E. L. Schenck², J. M. Martin², K. Moulton², W. Holmes², A. Brown², B. Thomas², T. E. Lawrence³, and M. S. Brown³, ¹MAFES-Brown Loam Exp. Stat., Mississippi State University, Raymond, ²Mississippi State University, Starkville, ³West Texas A&M University, Canyon.
- 4:30 PM 455 Impact of feeding *Fusarium graminearum*-infested barley on meat quality and fatty acid profiles in beef steers. S. L. Scott*¹, D. L. McLaren¹, H. C. Block¹, M. E. R. Dugan², Y. Wang³, and T. A. McAllister³, ¹Agriculture and Agri-Food Canada, Brandon Research Centre, Brandon, MB, Canada, ²Agriculture and Agri-Food Canada, Lacombe Research Centre, Lacombe, AB, Canada, ³Agriculture and Agri-Food Canada, Lethbridge Research Centre, Lethbridge, AB, Canada.
- 4:45 PM 456 Long-term supplementation with sunflower/fish oil-containing concentrates in a grass-based beef production system: Effects on colour and lipid stability during retail display. P. G. Dunne¹, F. J. Monahan², and A. P. Moloney*^{1,3}, ¹Teagasc, Ashtown Food Research Centre, Ashtown, Dublin, Ireland, ²University College Dublin, Belfield, Dublin, Ireland, ³Teagasc, Grange Beef Research Centre, Dunsany, County Meath, Ireland.

SYMPOSIUM
Nonruminant Nutrition
Mineral-Mineral Interactions: Implications for Nutrition
Chair: Scott Radcliffe, Purdue University
Sponsor: Alltech
524

- 2:00 PM 457 Ionomics: Mineral nutrition, physiology, and interactions as a biological system. J. Fleet* and D. Salt, *Purdue University, West Lafayette, IN.*
- 2:40 PM 458 Trace mineral interactions, known, unknown and not used. G. M. Hill* and J. E. Link, *Michigan State University, East Lansing.*
- 3:20 PM 459 Macromineral interactions. J. S. Radcliffe*, *Purdue University, West Lafayette, IN.*
- 4:00 PM Panel discussion: How should future mineral requirement studies be designed? James Fleet, Gretchen Hill, and Scott Radcliffe.
- 4:40 PM Summary. Scott Radcliffe.

Physiology and Endocrinology
Estrous Synchronization of Beef Cattle
Chair: Ricardo C. Chebel, VMTRC-University of California Davis
519

- 2:00 PM 460 **ASAS Early Career Achievement Award:** Control of the estrous cycle for fixed-time artificial insemination (TAI) in beef cattle. G. C. Lamb*, *North Florida Research and Education Center, University of Florida, Marianna.* **Sponsor: ASAS Foundation**
- 2:35 PM 461 Comparison of progestin-based protocols to synchronize estrus in prepubertal and estrous cycling beef heifers. N. R. Leitman, D. C. Busch, D. J. Wilson, D. A. Mallory, M. R. Eilersieck, M. F. Smith, and D. J. Patterson*, *University of Missouri, Columbia.*
- 2:50 PM 462 Comparison of progestin-based protocols to synchronize estrus in beef heifers. D. A. Mallory*, D. J. Wilson, D. C. Busch, N. R. Leitman, M. R. Eilersieck, M. F. Smith, and D. J. Patterson, *University of Missouri, Columbia.*

- 3:05 PM 463 Comparison of progestin-based protocols to synchronize estrus and facilitate AI in postpartum beef cows. D. J. Wilson*¹, D. A. Mallory¹, D. C. Busch¹, N. R. Leitman¹, J. K. Haden², D. J. Schafer², M. R. Ellersieck¹, M. F. Smith¹, and D. J. Patterson¹, ¹University of Missouri, Columbia, ²MFA, Inc., Columbia, MO.
- 3:20 PM 464 Comparison of follicular dynamics and hormone concentrations between the 7 d and 5 d CO-Synch + CIDR program in two-year old beef cows. G. A. Bridges*¹, M. L. Mussard², L. A. Helser³, and M. L. Day², ¹Purdue University, West Lafayette, IN, ²The Ohio State University, Columbus, ³Select Sires Inc., Plain City, OH.
- 3:35 PM 465 Fertility and luteal regression with 5-d CIDR synchronization programs in postpartum beef cows using differing luteolytic treatments. L. A. Souto*, M. Maquivar, M. L. Mussard, G. A. Bridges, D. G. Grum, and M. L. Day, *The Ohio State University, Columbus.*
- 3:50 PM Break
- 4:00 PM 466 Efficacy of the 5 day CO-Synch estrous synchronization protocol with or without the inclusion of a CIDR in beef cows. K. C. Culp*¹, R. P. Lemenager¹, M. C. Claeys¹, P. J. Gunn¹, M. Van Emon¹, R. P. Arias¹, S. L. Lake², and G. A. Bridges¹, ¹Purdue University, West Lafayette, IN, ²University of Wyoming, Laramie.
- 4:15 PM 467 Presynchronization with hCG 7 d prior to estrous synchronization and replacement of GnRH with hCG at fixed-time AI (TAI) in suckled beef cows. G. Marquezini*¹, C. R. Dahlen², S. L. Bird³, B. J. Funnell³, and G. C. Lamb¹, ¹North Florida Research and Education Center, University of Florida, Marianna, ²Northwest Research and Outreach Center, University of Minnesota, Crookston, ³North Central Research and Outreach Center, University of Minnesota, Grand Rapids.
- 4:30 PM 468 Administration of human chorionic gonadotropin (hCG) 7 days after insemination of suckled beef cows. C. R. Dahlen*¹, S. L. Bird², C. A. Martel³, K. C. Olson³, J. S. Stevenson³, and G. C. Lamb⁴, ¹Northwest Research and Outreach Center, University of Minnesota, Crookston, ²North Central Research and Outreach Center, Grand Rapids, MN, ³Department of Animal Sciences and Industry, Kansas State University, Manhattan, ⁴North Florida Research and Education Center, University of Florida, Marianna.
- 4:45 PM 469 Effect of used CIDR and FSH on estrus expression and pregnancy rate during low breeding season in Nili-Ravi buffaloes. N. Ahmad*¹, Z. Naseer¹, E. Ahmad¹, M. Mushtaq², and J. Singh³, ¹Department of Theriogenology, University of Veterinary & Animal Sciences, Lahore, Pakistan, ²Buffalo Research Institute, Pattoki, Pakistan, ³Department of Veterinary Biomedical Sciences, WCVU, Saskatoon, Canada.

**Ruminant Nutrition
Feed Additives
Chair: Cathy Bandyk, Quality Liquid Feeds
Sponsors: Atlantic Dairy and Forage Institute and Diamond V Mills
516c**

- 2:00 PM 470 Distillers grains-based diets with monensin supplemented with plant extracts: Effects on steer performance, carcass characteristics, and ruminal VFA concentrations. A. L. Shreck*¹, N. A. Pyatt², L. L. Berger¹, J. M. Dahlquist¹, T. G. Nash¹, and D. Bravo³, ¹University of Illinois, Urbana, ²ADM Research, Decatur, IL, ³Pancosma, Geneva, Switzerland.
- 2:15 PM 471 Meta analysis of growing ruminants fed a mixture of eugenol, cinnamaldehyde and capsicum oleoresin. D. Bravo*¹, N. A. Pyatt², P. H. Doane², and M. J. Cecava², ¹Pancosma, Geneva, Switzerland, ²ADM Research, Decatur, IL.
- 2:30 PM 472 Synergy of cinnamaldehyde, eugenol and garlic for reduction of methane production in vitro. S. Cavini¹, D. Bravo*², S. Calsamiglia¹, M. Rodriguez¹, A. Ferret¹, and G. Schroeder³, ¹Universitat Autònoma de Barcelona, Barcelona, Spain, ²Pancosma, Geneva, Switzerland, ³Cargill, Elk River, MN.
- 2:45 PM 473 Essential oils may reduce the risk of ketosis in dairy goats carrying twins. S. Calsamiglia¹, S. Cavini¹, A. Bouattour¹, A. Ferret¹, and D. Bravo*², ¹Universitat Autònoma de Barcelona, Bellaterra, Spain, ²Pancosma, Switzerland.
- 3:00 PM 474 Effects of feeding an essential oil complex on whole tract nutrient digestion and productive performance of lactating dairy cows. M. B. Santos*^{1,2}, P. H. Robinson¹, and P. Williams³, ¹University of California, Davis, ²CECAV-UTAD, Vila Real, Portugal, ³Advantec Associates, Davis, CA.
- 3:15 PM 475 Effects of an encapsulated combination of cinnamaldehyde and garlic oil on early and late lactating Red Simmental dairy cows. C. Kamel*¹, H. M. R. Greathead¹, and P. W. Cardozo², ¹School of Biology, University of Leeds, Leeds, United Kingdom, ²Carotenoid Technologies, IQF Group, Tarragona, Spain.
- 3:30 PM 476 Yeast culture supplementation interacts with voluntary feed intake to affect ruminal starch digestion. Y. Ying* and M. S. Allen, *Michigan State University, East Lansing.*

- 3:45 PM 477 Effect of yeast culture on ruminal fermentation and nutrient utilization in dairy cows. A. N. Hristov*¹, G. Varga¹, T. Cassidy¹, M. Long¹, K. Heyler¹, C. J. Hovde², and I. Yoon³, ¹*Pennsylvania State University, University Park*, ²*University of Idaho, Moscow*, ³*Diamond V Mills, Cedar Rapids, IA*.
- 4:00 PM 478 Production response to soybean meal and methionine supplementation of corn silage-based diets in dairy cows. M. Gonzalez Ronquillo*¹, H. Nursoy², G. A. Broderick³, and A. P. Faciola⁴, ¹*Universidad Autonoma del Estado de Mexico, Toluca, Mexico*, ²*Yuzuncu Yil University, Van, Turkey*, ³*U.S. Dairy Forage Research Center, Madison, WI*, ⁴*University of Wisconsin, Madison*.
- 4:15 PM 479 Effects of dietary antioxidants, trace minerals and calcium salt of 2-hydroxyl-4-methylthio butanoic acid (Ca-HMTBa) supplementation on lactation performance. G. R. Bowman*¹, M. Vázquez-Añón¹, D. E. Diaz¹, and J. Nocek², ¹*Novus International, Inc., St. Charles, MO*, ²*Spruce Haven Research, Union Springs, NY*.
- 4:30 PM 480 High-fat or low-fat distillers grains with dry or high-moisture corn in diets containing monensin for dairy cows. T. M. Owens*¹, A. R. Hippen¹, K. F. Kalscheur¹, D. J. Schingoethe¹, D. L. Prentice², and H. B. Green², ¹*South Dakota State University, Brookings*, ²*Elanco Animal Health, Greenfield, IN*.
- 4:45 PM 481 Effect of marine algae (ALG) on milk production characteristics and fatty acid (FA) composition in early lactating dairy cows. B. Vlaeminck*¹, M. Hostens², G. Opsomer², and V. Fievez¹, ¹*Laboratory for Animal Nutrition and Animal Product Quality, Ghent University, Melle, Belgium*, ²*Department of Reproduction, Obstetrics and Herd Health, Ghent University, Merelbeke, Belgium*.

SYMPOSIUM

Ruminant Nutrition

Using Molecular Techniques to Advance Research in Ruminant Nutrition

Chair: Masahito Oba, University of Alberta

Sponsor: Atlantic Dairy and Forage Institute

517b

- 2:00 PM Introduction. Masahito Oba.
- 2:05 PM 482 Introduction to molecular techniques currently used in ruminant nutrition research. J. R. Knapp*, *Fox Hollow Consulting, LLC, Columbus, OH*.
- 2:30 PM 483 Integration of microbial profiling techniques to improve the efficiency of nutrient usage in ruminant production. J. L. Firkins* and Z. Yu, *The Ohio State University, Columbus*.
- 3:10 PM 484 Metagenomics of the rumen microbial ecosystem. D. Krause*, *University of Manitoba, Winnipeg, Canada*.
- 3:50 PM 485 Basal expression of 27 nucleoside and amino acid transporter mRNA by small intestinal epithelia of forage-fed growing beef steers is differentially affected by increased luminal substrate or energy supply. J. C. Matthews*, S. F. Liao, and J. A. Boling, *Department of Animal and Food Sciences, University of Kentucky, Lexington*.
- 4:25 PM 486 Molecular adaptations in transition dairy cows. J. J. Loor*, *University of Illinois, Urbana*.

Small Ruminant

Production, Management, Lactation

Chair: Bret Taylor, USDA-ARS, US Sheep Experiment Station

511cf

- 2:00 PM 487 Effects of kid genotype on carcass traits of meat goats from a three-breed diallel. R. Browning, Jr.*¹, W. Getz², O. Phelps³, and C. Chisley⁴, ¹*Tennessee State University, Nashville*, ²*Fort Valley State University, Fort Valley, GA*, ³*USDA-AMS, Lakewood, CO*, ⁴*Southern University, Baton Rouge, LA*.
- 2:15 PM 488 Advantages of using electronic identification for automated lambing data and body weight recording in sheep. A. Ait-Saidi, G. Caja*, S. Carné, and A. A. K. Salama, *G2R, Universitat Autònoma de Barcelona, Bellaterra, Spain*.
- 2:30 PM 489 Using retinal image recognition for auditing identity of live and harvested lambs. M. A. Rojas-Olivares, G. Caja*, S. Carné, and A. A. K. Salama, *G2R, Universitat Autònoma de Barcelona, Bellaterra, Spain*.
- 2:45 PM 490 Comparison of body composition measurements in sheep using dual energy X-ray absorptiometry (DXA) *in vivo* and *post mortem*. A. M. Scholz*¹, C. Mendel², P. V. Kremer¹, E. Gruber¹, A. Steiner², K.-U. Goetz², and M. Foerster¹, ¹*Ludwig Maximilians University Munich, Livestock Center, Oberschleissheim, Bavaria, Germany*, ²*Bavarian State Research Center for Agriculture, Institute for Animal Breeding, Poing, Bavaria, Germany*.

- 3:00 PM 491 Cost-benefit evaluation of implementing the electronic identification for performance recording in sheep farms. G. Caja*, M. J. Milán, A. Ait-Saidi, A. A. K. Salama, and S. Carné, *G2R, Universitat Autònoma de Barcelona, Bellaterra, Spain.*
- 3:15 PM 492 Use of sodium dodecyl sulfate (SDS) as a microbicide in goat colostrum. A. Morales-delaNuez¹, J. Capote², M. C. Juste¹, D. Sanchez-Macias¹, N. Castro¹, and A. Argüello*¹, ¹*Las Palmas de Gran Canaria University, Arucas, Las Palmas, Spain.*, ²*Instituto Canario de Investigaciones Agrarias, La Laguna, Tenerife, Spain.*
- 3:30 PM 63 Fertility of Alpine goats following oestrus synchronisation with CIDR and artificial insemination with cryopreserved semen. M.-E. Marier*^{1,2}, F. Castonguay³, M. Theriault³, D. Cinq-Mars², C. Lessard^{1,2}, and J. L. Bailey^{1,2}, ¹*Centre de recherche en biologie de la reproduction*, ²*Département des sciences animales, Université Laval, Québec City*, ³*Dairy & Swine Research and Development Center, AAFC, Lennoxville.*
- 3:45 PM 493 Testing the performance of a mechanistic mathematical model of the mammary gland in dairy sheep. C. Dimauro*, A. S. Atzori, A. Cannas, N. P. P. Macciotta, and G. Pulina, *Dipartimento di Scienze Zootecniche, Università di Sassari, Sassari, Italy.*
- 4:00 PM 494 Effect of lamb age on response to immunization. M. E. Gailor, J. Gavalchin, and M. L. Thonney*, *Cornell University, Ithaca, NY.*
- 4:15 PM 495 Control of *Haemonchus contortus* using three chemical classes of anthelmintics and copper oxide wire particles in meat goat kids. M. Rothaug², K. Andries*¹, E. Sherrow¹, and J. Burke³, ¹*Kentucky State University, Frankfort*, ²*Midway College, Midway, KY*, ³*USDA, ARS, Booneville, AR.*

Teaching/Undergraduate and Graduate Education
Teaching Issues
Chair: Jodi Sterle, Texas A&M University
512ae

- 2:00 PM 500 Teaching a 'dog lab' in a traditional animal science department. G. M. Hill*, B. B. Snedegar, J. A. Snedegar, and J. E. Link, *Michigan State University, East Lansing.*
- 2:15 PM 496 Comparative development of critical thinking skills in animal science undergraduates who enroll in evaluation courses. L. M. White* and K. D. Layfield, *Clemson University, Clemson, SC.*
- 2:30 PM 497 Enhancing underrepresented, minority student learning through agricultural and natural resources based research. R. L. Stanko*^{1,2}, S. D. Nelson¹, J. C. Laurenz³, and M. R. Garcia¹, ¹*Texas A&M University, Kingsville*, ²*Texas AgriLife Research, Beeville*, ³*Eastern New Mexico State University, Portales.*
- 2:45 PM 498 Teaching livestock production for niche markets. P. J. Lammers* and M. S. Honeyman, *Iowa State University, Ames.*
- 3:00 PM 499 The effectiveness of a distance education laboratory in 'Anatomy of Domestic Animals'. J. Bing*, S. Pratt, L.-A. Gillen, and C. Farin, *North Carolina State University, Raleigh.*
- 3:15 PM 501 Using companion animal classes to teach biology, nutrition, critical thinking and media literacy to animal sciences majors and across the University community. S. Rocco and J. P. McNamara*, *Washington State University, Pullman.*
- 3:30 PM 502 Innovative dairy teaching through a broad-based Dairy Consortium. G. R. Hagevoort*¹, M. A. Tomaszewski², and R. Collier³, ¹*New Mexico State University, Clovis*, ²*Texas A&M University, College Station*, ³*University of Arizona, Tuscon.*
- 3:45 PM 503 The Dairy Cattle Breeding Simulation Program (DCBSP 4.9), an interactive software to teach animal breeding principles and practices. J. Casellas^{1,2}, A. Ahmadi², R. A. Verdugo², G. A. E. Gall², and J. F. Medrano*², ¹*Genètica i Millora Animal, IRTA-Lleida, Lleida, Spain*, ²*Department of Animal Science, University of California, Davis.*

Wednesday, July 15

POSTER PRESENTATIONS

Animal Health

- W1 The economic impact of five dairy cattle clinical diseases as measured by the correlation between Lactational incidence risk and the income over feed cost in Wisconsin dairy herds. M. C. Ruiz* and V. E. Cabrera, *University of Wisconsin, Madison*.
- W2 Cows response to glucose tolerance test (GTT) and periparturient diseases: Preliminary study. G. Matteo*, C. Chiara, C. Mauro, and M. Massimo, *Department of Veterinary Clinical Sciences, University of Padua, Legnaro, Padova (PD), Italy*.
- W3 Effect of modified yeast extract and HSCAS containing mycotoxin adsorbent on blood metabolites of dairy cows challenged with aflatoxin B1. M. R. Akkaya¹, M. A. Bal¹, F. Inanc Tolun¹, F. Bilge¹, Y. Atli¹, and V. Akay*², ¹*Kahramanmaraş Sutcu Imam University, Turkey*, ²*Global Nutritech Ltd., Kocaeli, Turkey*.
- W4 Comparison of rectal and vaginal body temperatures in lactating dairy cows. L. A. Vickers*¹, M. A. G. von Keyserlingk¹, D. M. Veira³, D. M. Weary¹, and W. Heuwieser², ¹*Animal Welfare Program, Faculty of Land and Food Systems, University of British Columbia, Vancouver, British Columbia, Canada*, ²*Clinic for Animal Reproduction, Faculty of Veterinary Medicine, Freie Universität Berlin, Berlin, Germany*, ³*Agriculture and Agri-Food Canada, Pacific Agriculture Research Station, Agassiz, British Columbia, Canada*.
- W5 Effects of prepartum dietary carbohydrate source on reproductive performance and metabolic disorders in Holstein cows during the periparturient period. H. R. Mirzaei Alamouti*¹, H. Amanlou², K. Rezayazdi¹, and A. Towhidi¹, ¹*University of Tehran, Karaj, Tehran, Iran*, ²*Zanjan University, Zanjan, Zanjan, Iran*.
- W6 Expression of inducible nitric oxide synthase is up-regulated by production of 1,25-dihydroxyvitamin D3 in bovine monocytes in response to toll-like receptor signaling. C. D. Nelson*^{1,2}, D. C. Beitz¹, T. A. Reinhardt², and J. D. Lippolis², ¹*Iowa State University, Ames*, ²*National Animal Disease Center, United States Department of Agriculture, Ames, IA*.
- W7 Factors affecting milk ELISA scores of cows tested for Johne's disease. H. D. Norman¹, J. R. Wright*¹, and T. M. Byrem², ¹*Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD*, ²*Antel BioSystems, Lansing, MI*.
- W8 Characteristics of milk ELISA results for Johne's disease in US dairy cows. T. M. Byrem*¹, H. D. Norman², and J. R. Wright², ¹*Antel BioSystems, Inc., Lansing, MI*, ²*Animal Improvement Programs Laboratory, Beltsville, MD*.
- W9 Johne's outreach survey. K. E. Olson*, *KEO Consulting, Schaumburg, IL*.
- W10 Perceptions of and participation in a Johne's control program. E. Hovingh*¹, K. E. Olson², and J. McDonald³, ¹*Pennsylvania State University, University Park*, ²*KEO Consulting, Schaumburg, IL*, ³*University of Wisconsin, Madison*.
- W11 Relationship between lying patterns, feeding management, and udder health in lactating dairy cows. B. L. Kitts*¹, S. Dufour², D. T. Scholl², and T. J. DeVries¹, ¹*Department of Animal and Poultry Science, University of Guelph, Kemptville Campus, Kemptville, Ontario, Canada*, ²*Faculté de Médecine Vétérinaire, Université de Montréal, Saint-Hyacinthe, Quebec, Canada*.
- W12 Using gait score and resting behavior to detect hoof lesions in cows. N. Chapinal², A. M. de Passillé¹, D. M. Weary², M. A. G. von Keyserlingk², and J. Rushen*¹, ¹*Agriculture and Agri-Food Canada, Agassiz, BC, Canada*, ²*University of British Columbia, Vancouver, BC, Canada*.
- W13 Effect of metritis on health, fertility and milk production in two subsequent lactations in dairy cows. J. R. Lima*¹, J. E. P. Santos², and R. G. S. Bruno¹, ¹*University of California-Davis, Tulare*, ²*University of Florida, Gainesville*.
- W14 Effects of feeding menhaden fish meal or Ca salts of fish oil fatty acids on some cytokine genes expression and endometrial cytology in early lactating cows. A. Heravi Moussavi*¹, H. B. Roman², T. R. Overton², D. E. Bauman², W. R. Butler², and R. O. Gilbert², ¹*Department of Animal Science and Excellence Center for Animal Science, Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran*, ²*Cornell University, Ithaca, NY*.
- W15 Feeding dairy cows barley grain treated with lactic acid and heat modulated diurnal patterns of selected plasma metabolites. S. Iqbal, Q. Zebeli, A. Mazzolari, S. M. Dunn, and B. N. Ametaj*, *University of Alberta, Edmonton, Alberta, Canada*.
- W16 Treating barley grain with lactic acid and heat modulates selected plasma metabolites in dairy cows. D. Mansmann, Q. Zebeli, A. Mazzolari, S. M. Dunn, and B. N. Ametaj*, *University of Alberta, Edmonton, Alberta, Canada*.
- W17 Effects of *Bacillus subtilis* on antioxidant capacity and immunity of broilers. Y. Dongyou, M. Xiangfei, Q. Yan, and L. Weifen*, *College of Animal Science, Feed Science Institute, Zhejiang University, Hangzhou, Zhejiang, China*.
- W18 Melamine residues in tissues of ducks fed diets containing graded levels of melamine. M. Lü*, L. Yan, J. Guo, Z. Sun, and S. Zhu, *Research and Development Center, Liuhe Feed Co., Ltd., Qingdao, Shandong, China*.

- W19 Metabolic and histological evaluation of quails fed with or without genetically modified Bt-maize. N. Scholtz*¹, G. Flachowsky², I. Halle², and H. Sauerwein¹, ¹University of Bonn, Bonn, Germany, ²Friedrich-Loeffler-Institute, Braunschweig, Germany.
- W20 Immune response in quail fed with or without genetically modified Bt-maize. N. Scholtz*¹, G. Flachowsky², and H. Sauerwein¹, ¹University of Bonn, Bonn, Germany, ²Friedrich-Loeffler-Institute, Braunschweig, Germany.
- W21 Ameliorating effect of ascorbic acid on subacute endosulfan toxicity in male New Zealand White rabbits. F. S. Hatipoglu¹, O. Ozmen², A. Ata³, T. Ileri-Buyukoglu⁴, S. Sahinduran⁵, F. Mor⁶, O. Yildiz-Gulay¹, and M. S. Gulay*¹, ¹Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Department of Physiology, Burdur, Turkey, ²Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Department of Pathology, Burdur, Turkey, ³Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Department of Reproduction and Artificial Insemination, Burdur, Turkey, ⁴Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Department of Biochemistry, Burdur, Turkey, ⁵Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Department of Internal Medicine, Burdur, Turkey, ⁶Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Department of Pharmacology, Burdur, Turkey.
- W22 Effect of autolysed yeast on macrophage activation in vitro and performance of weaning piglets. A. Ganner*¹, S. Nitsch², and G. Schatzmayr¹, ¹BIOMIN Research Center, Technopark 1, Tulln, Austria, ²BIOMIN Holding GmbH, Industriestr. 12, Herzogenburg, Austria.
- W23 Monitoring of the efficacy of SOP GOLD PIG on the reduction of the microbial load in an Italian commercial fattening piglet farm. G. Tacconi¹, A. Covarelli¹, and A. Zanierato*², ¹Veterinary Medicine Faculty, Department of Biopathological Science and Hygiene of Food and Animal Productions, Perugia, Italy, ²SOP Srl, Busto Arsizio, Italy.
- W24 Effect of timing of *Mannheimia haemolytica* challenge following short-term exposure to bovine viral diarrhea virus type 1b on serum cytokine concentrations and muscle and fat gene expression changes in growing beef steers. L. Carlos-Valdez*¹, L. Burciaga-Robles¹, D. L. Step², R. W. Fulton³, A. W. Confer³, U. DeSilva¹, and C. R. Krehbiel¹, ¹Oklahoma State University, Department of Animal Science, Stillwater, ²Oklahoma State University, Department of Veterinary Clinical Sciences, Stillwater, ³Oklahoma State University, Department of Veterinary Pathobiology, Stillwater.

Beef Species

Growth, Concentrate Level, Meat Quality, and Production Traits

- W25 Effect of time of ractopamine feeding on growth, carcass characteristics, and muscle biology of steers. M. Hill*¹, K. Chapalamadugu¹, C. Schneider¹, R. A. Hill¹, G. Gaylord², J. K. Ahola¹, C. W. Hunt¹, J. Szasz¹, and G. K. Murdoch¹, ¹University of Idaho, Moscow, ²USDA/ARS/PWA/SGPGRU, Hagerman, ID.
- W26 Residual feed intake in progeny of Nellore bulls. Y. B. Farjalla¹, C. U. Magnabosco², F. Manicardi³, F. R. C. Araújo⁴, D. P. D. Lanna*¹, and R. D. Sainz⁵, ¹Universidade de São Paulo, Piracicaba, São Paulo, Brazil, ²Embrapa Cerrados, Planaltina, Distrito Federal, Brazil, ³Guaporé Pecuaría, Pontes e Lacerda, Mato Grosso, Brazil, ⁴Aval Serviços Tecnológicos, Uberaba, Minas Gerais, Brazil, ⁵University of California, Davis.
- W27 Effects of breed biotype and concentrate feeding on carcass traits of beef steers. I. M. Oliveira, P. V. R. Paulino*, M. I. Marcondes, S. C. Valadares Filho, J. Cavali, L. F. Prados, A. M. Ribeiro, and N. K. P. Souza, *Universidade Federal de Viçosa, Viçosa, MG, Brazil.*
- W28 Carcass traits of beef heifers of different genetic groups finished with different concentrate allowance levels. S. F. Reis¹, P. V. R. Paulino*¹, E. J. Souza³, J. F. Lage¹, R. A. A. Torres Júnior², S. C. Valadares Filho¹, L. F. Costa e Silva¹, L. F. Prados¹, and P. B. Benedeti¹, ¹Universidade Federal de Viçosa, Viçosa, MG, Brazil, ²EMBRAPA Beef Cattle Research Center, Campo Grande, MS, Brazil, ³Universidade Federal Rural de Pernambuco, Recife, PE, Brazil.
- W29 Feedlot performance of cull cows fed using three systems. C. L. Wright*¹ and R. J. Maddock², ¹South Dakota State University, Brookings, SD, USA, ²North Dakota State University, Fargo.
- W30 Impact of castration and weaning age on yearling carcass and meat quality. R. Berthiaume*¹, L. Faucitano¹, I. Mandell², S. Miller², and C. Lafrenière³, ¹Agriculture and Agri-Food Canada, Sherbrooke, Quebec, Canada, ²University of Guelph, Guelph, Ontario, Canada, ³Agriculture and Agri-Food Canada, Kapuskasing, Ontario, Canada.
- W31 Fatty acid profile of back fat and intramuscular fat from yak and Chinese Yellow Cattle. Y. S. Peng*¹, M. A. Brown², and J. P. Wu¹, ¹Gansu Agricultural University, Lanzhou, Gansu, PRC, ²USDA-ARS, Grazinglands Research Laboratory, El Reno, OK.
- W32 Differences in hair coat shedding, calf weaning weight and BCS among Angus dams. K. A. Gray*, J. P. Cassady, and C. Maltecca, *North Carolina State University, Raleigh.*
- W33 Age at first calving and longevity of Charolais cows. F. Szabó* and Z. Zsuppán, *University of Pannonia, Keszthely, Hungary.*
- W34 Weaning performance of Charolais calves. F. Szabó*¹, A. Fördös¹, Z. Domokos², and S. Bene¹, ¹University of Pannonia, Keszthely, Hungary, ²National Association of Hungarian Charolais Breeders, Miskolc, Hungary.

- W35 Improving the profitability of beef from pastures: A case study of Tasmania's Circular Head Beef Business Group. A. E. O. Malau-Aduli*¹, I. D. Bruce¹, B. Doonan², and P. A. Lane¹, ¹*School of Agricultural Science, University of Tasmania, Hobart, Tasmania 7001, Australia*, ²*Davey & Maynard Consultants, Davenport, Tasmania 7310, Australia*.

Breeding and Genetics

Genomic Evaluation, Molecular Genetics, Statistical Methods, Sheep Breeding, and Swine Breeding

- W36 Value of genome-wide selection in Japanese dairy population. H. Ohmiya* and M. Suzuki, *Obihiro University of Agriculture & Veterinary Medicine, Obihiro, Hokkaido, Japan*.
- W37 Genomic heritability of beef cattle growth. W. M. Snelling*, L. A. Kuehn, R. M. Thallman, J. W. Keele, and G. L. Bennett, *USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE*.
- W38 Genomic evaluation of Holstein cattle in Canada utilizing MACE proofs. F. S. Schenkel*¹, M. Sargolzaei¹, G. Kistemaker², G. B. Jansen³, P. Sullivan², B. J. Van Doormaal², P. M. VanRaden⁴, and G. R. Wiggans⁴, ¹*University of Guelph, Guelph, ON, Canada*, ²*Canadian Dairy Network, Guelph, ON, Canada*, ³*Dekoppel Consulting, Chiaverano, TO, Italy*, ⁴*Agricultural Research Service-USDA, Beltsville, MD*.
- W39 Integrated software tools for genome-wide association analysis and genomic prediction in livestock. J. R. O'Connell*, *University of Maryland School of Medicine, Baltimore*.
- W40 Effect of CSN2 gene polymorphism on somatic cell count in Czech Fleckvieh. J. Riha*, I. Manga, J. Bezdicek, and J. Subrt, *Agroresearch, Ltd., Rapotin, Czech Republic*.
- W41 Molecular genetic characterization of Nigerian goats. M. Okpeku*¹, M. Ozoje², M. J. O'Neill³, and I. Imumorin⁴, ¹*Niger Delta University, Amassoma, Bayelsa State, Nigeria*, ²*University of Agriculture, Abeokuta, Ogun State Nigeria*, ³*University of Connecticut, Storrs, CT*, ⁴*Cornell University, Ithaca, NY*.
- W42 Analysis of distributions of estimated QTL effects for dairy cattle. G. Gaspa, M. A. Pintus, R. Steri, S. Sorbolini, and N. P. P. Macciotta*, *Dipartimento di Scienze Zootecniche, Università di Sassari, Sassari, Italia*.
- W43 Investigation for increase reproduction rate with used of identification QTL associated with twinning in Shall sheep. N. Hedayat-Evrigh*, S. R. Miraei-Ashtiani, and A. Nejati-Javaremi, *University of Tehran, Karaj, Tehran, Iran*.
- W44 Diversity of *ureC* genes from rumen microflora metagenomic library. S. G. Zhao, J. Q. Wang*, K. L. Liu, D. Li, P. Yu, and D. P. Bu, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*.
- W45 Analysis in silico and in vitro of caseinophosphopeptides from different genetic variants. A. M. Caroli*¹, O. Bulgari¹, S. Chessa², D. Rignanese¹, D. Cocchi¹, and G. Tulipano¹, ¹*Dept. SBB, Brescia, Italy*, ²*Dept. VSA, Milano, Italy*.
- W46 Differential gene expression in the testis of adult male mice after treatment with Aflatoxin B1. K. J. Austin*, R. R. Cockrum, A. M. Kaiser, and K. M. Cammack, *University of Wyoming, Laramie*.
- W47 Development of a two-species cDNA microarray for transcriptional profiling of sow and dairy cow reproductive traits. M. F. Palin*¹, D. Beaudry¹, M. Vallée², N. Bissonnette¹, B. D. Murphy³, and H. V. Petit¹, ¹*Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada*, ²*Université Laval, Québec, QC, Canada*, ³*Université de Montréal, St-Hyacinthe, QC, Canada*.
- W48 Genome-wide analysis of QTL effects in Canadian Holstein cattle using empirical Bayes method. H. Li*¹, Z. Wang¹, P. Stothard¹, M. Sargolzaei², F. S. Schenkel², and S. Xu³, ¹*University of Alberta, Edmonton, AB, Canada*, ²*University of Guelph, Guelph, ON, Canada*, ³*University of California, Riverside*.
- W49 Associations of single nucleotide polymorphisms in bovine fatty acid synthase gene with fat deposition and carcass merit traits in Hybrid, Angus and Charolais beef cattle. K. Islam*¹, M. Vinsky², R. Crews³, E. Okine¹, S. S. Moore¹, D. H. Crews Jr.^{1,4}, and C. Li^{1,2}, ¹*Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, Alberta, Canada*, ²*Agriculture and Agri-Food Canada, Lacombe Research Centre, 6000 C&E Trail, Lacombe, Alberta, Canada*, ³*Agriculture and Agri-Food Canada, Lethbridge Research Centre, 5403-1st Avenue South, Lethbridge, Alberta, Canada*, ⁴*Colorado State University, Fort Collins*.
- W50 Association analyses of single nucleotide polymorphisms in bovine stearoyl-CoA desaturase and fatty acid synthase genes with fatty acid composition in commercial crossbred beef steers. C. Li*^{1,2}, M. Vinsky¹, M. E. R. Dugan¹, N. Aldai¹, and T.A. McAllister³, ¹*Agriculture and Agri-Food Canada, Lacombe Research Centre, 6000 C&E Trail, Lacombe, Alberta, Canada*, ²*Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, Alberta, Canada*, ³*Agriculture and Agri-Food Canada, Lethbridge Research Centre, 5403-1st Avenue South, Lethbridge, Alberta, Canada*.
- W51 Validation and characterization of 1536 fat-related gene-specific SNPs in beef cattle. M. Vinsky*¹, K. Islam², P. Stothard², and C. Li^{1,2}, ¹*Agriculture and Agri-Food Canada, Lacombe Research Centre, 6000 C&E Trail, Lacombe, Alberta, Canada*, ²*Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, Alberta, Canada*.

- W52 Use of low density SNP chip for parental verification in US Holsteins. S. Tsuruta^{*1}, I. Misztal¹, and T. J. Lawlor², ¹University of Georgia, Athens, ²Holstein Association USA Inc., Brattleboro, VT.
- W53 Characteristics of the bovine PL10 gene and its evolution in mammals. T.-C. Chang and W.-S. Liu*, *The Pennsylvania State University, University Park.*
- W54 Using a repeated measurements mixed model to analyse some environmental factors affecting weight at different ages of Arabi sheep breed of Iran. H. Farhangfar^{*1}, B. Zinvand², M. B. Sayyadnezhad³, and I. Mirzaee⁴, ¹Birjand University, Birjand, ²Azad University of Shooshtar, Shooshtar, Iran, ³Animal Breeding Centre, Karaj, Iran, ⁴Agricultural Jihad Organisation, Khuzistan, Iran.
- W55 Improve reproduction with identification of polymorphism in FecXH gene in Shall sheep. N. Hedayat-Evrih^{*1}, S. R. Miraei-Ashtiani, and A. Nejati-Javaremi, *University of Tehran, Karaj, Tehran, Iran.*
- W56 Comparison of genetic diversity between US and Kazak sheep breeds. H. D. Blackburn^{*1}, Y. Toishibekov², C. Welsh¹, S. Spiller¹, and M. Brown³, ¹ARS-National Animal Germplasm Program, Ft. Collins, CO, ²Institute of Experimental Biology, Almaty, Kazakhstan, ³ARS-Grasslands Research Laboratory, El Reno, OK.
- W57 Effect of vitamin E on chromatin integrity of ram epididymal sperm. B. L. Sartini*, K. H. Petersson, and M. Procopio, *University of Rhode Island, Kingston.*
- W58 Association of beta-lactoglobulin and prolactin genes with milk production in East Friesian sheep. E. A. Staiger^{*1}, M. L. Thonney², B. W. Buchanan¹, and R. G. Mateescu¹, ¹Oklahoma State University, Stillwater, ²Cornell University, Ithaca, NY.
- W59 An R package for fitting generalized linear mixed models in animal breeding. A. Vazquez*, D. M. Bates, D. Gianola, K. A. Weigel, and G. J. M. Rosa, *University of Wisconsin, Madison.*
- W60 Genetic analysis of lean tissue growth and carcass traits in Large White swine. T. M. Gonçalves^{*1}, A. L. L. Costa¹, A. I. G. Oliveira¹, and M. C. A. M. Bink², ¹University of Lavras, Lavras, Minas Gerais, Brazil, ²University of Wageningen, Wageningen, the Netherlands.
- W61 Factors affecting weaning-to-first service interval in a Landrace-Large White swine population in Northern Thailand. C. Chansomboon¹, S. Koonawootrittriron¹, M. A. Elzo^{*2}, and T. Suwanasopee¹, ¹Kasetsart University, Bangkok, Thailand, ²University of Florida, Gainesville.
- W62 Use of random regression models for the genetic analysis of weight gain from electronic swine feeders. C. Y. Chen^{*1}, I. Misztal¹, S. Tsuruta¹, B. Zumbach^{1,2}, M. Łukaszewicz^{1,3}, W. O. Herring⁴, J. Holl⁴, and M. Culbertson⁴, ¹University of Georgia, Athens, ²Norsvin, Hamar, Norway, ³Institute of Genetics and Animal Breeding, Polish Academy of Sciences, Wólka Kosowska, Poland, ⁴Smithfield Premium Genetics Group, Rose Hill, NC.

Dairy Foods Dairy Products/Chemistry/Enzyme

- W63 Calcium reduces DMH-induced large intestinal tumors in male Wistar rats. K. Sivieri^{*1} and E. Rossi², ¹Universidade Norte do Paraná-UNOPAR, Londrina, Paraná, Brasil, ²Universidade Estadual Paulista-UNESP, Araraquara, São Paulo, Brasil.
- W64 Effect of storage temperatures on ice cream quality. J. Buyck* and R. Baer, *South Dakota State University, Brookings.*
- W65 Obtention of a dairy ingredient rich in milk fat globule membrane material from whey buttermilk. M. R. Costa^{*1,2}, R. Jiménez-Flores³, and M. L. Gigante², ¹Universidade Norte do Paraná, Londrina, Paraná, Brazil, ²Universidade Estadual de Campinas, Campinas, São Paulo, Brazil, ³California Polytechnic State University, San Luis Obispo.
- W66 Effect of pH on functional properties of regular and whey buttermilk powders. M. R. Costa^{*1,2}, R. Jiménez-Flores³, and M. L. Gigante², ¹Universidade Norte do Paraná, Londrina, Paraná, Brazil, ²Universidade Estadual de Campinas, Campinas, São Paulo, Brazil, ³California Polytechnic State University, San Luis Obispo.
- W67 Milk iodine concentration in goats supplemented with potassium iodide. A. Nudda^{*1}, F. Aghini-Lombardi², G. Battacone¹, M. Decandia³, M. Frigeri², and G. Pulina^{1,3}, ¹Dipartimento di Scienze Zootecniche, University of Sassari, Italy, ²Dipartimento di Endocrinologia e Metabolismo, University of Pisa, Italy, ³Agricultural Research Agency of Sardinia - AGRIS Sardegna, Sassari, Italy.
- W68 Antioxidant properties of milk protein dispersions preheated with various sugars. H. J. Giroux*, J. Houde, and M. Britten, *Food Research and Development Centre, Agriculture and Agri-Food Canada, Saint-Hyacinthe, QC, Canada.*
- W69 Main phospholipids content of sweet whey cream, butter and buttermilk. M. R. Costa^{*1,2}, R. Jiménez-Flores³, and M. L. Gigante², ¹Universidade Norte do Paraná, Londrina, Paraná, Brazil, ²Universidade Estadual de Campinas, Campinas, São Paulo, Brazil, ³California Polytechnic State University, San Luis Obispo.
- W70 Expression of milk-derived angiotensin-converting-enzyme-inhibiting peptide in *Lactococcus lactis*. X. Han², L. Yao², M. Wang², D. Sun², B. Li², and Y. Jiang^{*1,2}, ¹National Dairy Engineering & Technical Research Center, Northeast Agricultural University, Harbin, China, ²Key Laboratory of Dairy Science, Ministry of Education, Northeast Agricultural University, Harbin, China.

- W71 Effect of tara gum and carrageenan addition on syneresis of non-fat set yogurt. C. L. Hatanaka, A. L. Cavallieri, R. L. Cunha, and M. L. Gigante*, *Universidade Estadual de Campinas, Campinas, SP, Brazil*.
- W72 Improvement of emulsifying properties of sodium caseinate by conjugation with maltodextrins through the initial step in the Maillard reaction. Y. Lu* and J. Lucey, *University of Wisconsin, Madison*.
- W73 Chemical composition, probiotic survivability and sensory property of goat's milk kefir. Y. H. Bao^{1,2}, G. P. Yu^{1,3}, and M. R. Guo*¹, ¹*University of Vermont, Burlington*, ²*Northeast Forestry University, Harbin, Heilongjiang, China*, ³*Northeast Agricultural University, Harbin, Heilongjiang, China*.
- W74 Optimizing the organoleptic and nutritional qualities of a dairy-based ready-to-eat food product. J. Heick*, M. Cleveland, H. Khalil, and R. Jiménez-Flores, *California Polytechnic State University, San Luis Obispo*.
- W75 Milk fatty acid composition of whole fluid milk in the United States. A. M. O'Donnell*, D. M. Barbano, and D. E. Bauman, *Cornell University, Ithaca, NY*.
- W76 Shelf life of milk. C. A. Boeneke*, J. L. Vargas, and K. J. Aryana, *Louisiana State University Agricultural Center, Baton Rouge*.
- W77 Influence of resistant starch on the characteristics of fat free plain yogurt. M. Moncada¹, K. Aryana*^{2,1}, M. Keenan^{2,1}, R. Martin^{2,1}, F. Greenway³, and N. Dhurandhar³, ¹*Louisiana State University, Baton Rouge*, ²*Louisiana State University Agricultural Center, Baton Rouge*, ³*Pennington Biomedical Research Center, Baton Rouge, LA*.
- W78 Acceptability of yogurt containing resistant starch. K. Aryana*^{1,2}, D. Olson², M. Keenan^{1,2}, R. Martin^{1,2}, F. Greenway³, and N. Dhurandhar³, ¹*Louisiana State University Agricultural Center, Baton Rouge*, ²*Louisiana State University, Baton Rouge*, ³*Pennington Biomedical Research Center, Baton Rouge, LA*.
- W79 Improving the quality of yogurt with modified whey protein ingredients. P. T. Matumoto-Pintro*, L. Rabiey, G. Robitaille, and M. Britten, *Agriculture and Agri-Food Canada, St-Hyacinthe, QC, Canada*.
- W80 Effect of starch spherulites on survival of bifidobacteria in the presence of acid or bile. S. Chittiprolu, R. F. Roberts*, and G. R. Ziegler, *The Pennsylvania State University, University Park*.
- W81 Determination of free fatty acid profiles of reduced-fat and whole goat milk cheeses aged for 3 months under refrigeration. W. Noura¹, Z. Guler², and Y. W. Park*¹, ¹*Fort Valley State University, Fort Valley, GA*, ²*Mustafa Kemal University, Hatay, Turkey*.
- W82 Heat stability of mixtures of different milk protein concentrates (40–90% protein) and whey protein concentrate (80% protein). Y. H. Yong* and E. A. Foegeding, *Department of Food, Bioprocessing and Nutrition Sciences, North Carolina State University, Raleigh*.
- W83 Effect of processing on the structure and functional properties of milk phospholipids. S. Gallier*^{1,2}, D. Gragson³, D. W. Everett¹, and R. Jiménez-Flores², ¹*Department of Food Science, University of Otago, Dunedin, Otago, New Zealand*, ²*Dairy Products Technology Center, California Polytechnic State University, San Luis Obispo*, ³*Department of Chemistry and Biochemistry, California Polytechnic State University, San Luis Obispo*.
- W84 Investigation of self-assembly properties of a β -lactoglobulin tryptic peptide. M.-M. Guy*^{1,2}, M. Tremblay³, N. Voyer³, S. Gauthier^{1,2}, and Y. Pouliot^{1,2}, ¹*Institute of Nutraceuticals and Functional Foods (INAF), Quebec City, QC, Canada*, ²*Dairy Science and Technology Research Center (STELA), Quebec City, QC, Canada*, ³*Protein function, Structure and Engineering Research Center (CREFSIP), Quebec City, QC, Canada*.
- W85 Identification of chemical components responsible for cardboard flavor in whey proteins. M. E. Whitson*, R. E. Miracle, and M. A. Drake, *North Carolina State University, Raleigh*.
- W86 Salty taste in dairy foods: Can we reduce the salt? S. L. Drake*, K. Lopetcharat, and M. A. Drake, *North Carolina State University, Raleigh*.
- W87 Binding affinity of various strains of lactic acid bacteria to phospholipids found in buttermilk. M. Cleveland* and R. Jiménez-Flores, *California Polytechnic State University, San Luis Obispo*.
- W88 Non-casein nitrogen analysis of microfiltration and ultrafiltration retentate. H. Zhang*^{1,2} and L. E. Metzger^{1,2}, ¹*Midwest Dairy Foods Research Center, Brookings, SD*, ²*South Dakota State University, Brookings*.
- W89 Effect of processing and refrigerated storage on isoflavone and stachyose contents of yogurt fortified with nongerminated or germinated whole soy powder. U. Nsofor* and Z. Ustunol, *Michigan State University, East Lansing*.
- W90 The effect of pH and whey protein nitrogen (WPN) on the heat stability of medium heat nonfat dry milk powders. V. Sikand*¹, E. Ng¹, S. Gualco¹, A. Hui¹, P. S. Tong¹, and J. H. Walker², ¹*Dairy Products Technology Center, Cal Poly State University, San Luis Obispo*, ²*Statistics Department, Cal Poly State University, San Luis Obispo*.
- W91 Dietary milk fat globule membrane (MFGM) reduces the incidence of aberrant crypt foci (ACF) in Fisher-344 rats. K. J. Hintze*¹, D. Snow¹, R. Jimenez-Flores², J. Campbell¹, and R. E. Ward¹, ¹*Department of Nutrition and Food Sciences, Utah State University, Logan*, ²*Dairy Products Technology Center, Department of Agriculture, California Polytechnic State University, San Luis Obispo*.

- W92 Codon optimization of bovine prochymosin gene and its expression in *Kluyveromyces lactis*. F. Zhen*¹ and Z. Lanwei², ¹College of Food Science, Northeast Agricultural University, Harbin, Heilongjiang Province, China, ²College of Food Science and Technology, Harbin Institute of Technology, Harbin, Heilongjiang Province, China.
- W93 Effect of carbon dioxide addition on refrigerated raw milk proteolysis. P. C. B. Vianna, M. T. Ruiz, and M. L. Gigante*, State University of Campinas, Campinas, SP, Brazil.
- W94 Expression of bovine trypsin in *Lactococcus lactis*. L. Yao², X. Han², X. Qu², B. Li², Y. Jiang², and Y. Jiang*^{1,2}, ¹National Dairy Engineering & Technical Research Center, Northeast Agricultural University, Harbin, China, ²Key Lab of Dairy Science, Ministry of Education, Northeast Agricultural University, Harbin, China.
- W95 Effect of the protein fractions of the milk serum, alpha-lactalbumin and beta-lactoglobulin, on the *Escherichia coli* O157:H7 colonization in the intestinal mucosa of mice. J. P. Teixeira², N. Silva², L. M. Fonseca*^{1,3}, and R. L. Bradley Jr.⁴, ¹Federal University of Minas Gerais (UFMG), School of Veterinary Medicine, Department of Food Technology and Inspection, Belo Horizonte, MG, Brazil, ²Federal University of Minas Gerais (UFMG), School of Veterinary Medicine, Department of Preventive Veterinary Medicine, Belo Horizonte, MG, Brazil, ³Laboratory of Milk Quality Analysis, UFMG, Belo Horizonte, MG, Brazil, ⁴University of Wisconsin, Madison.

Extension Education

- W96 Effects of heat mount detectors, season, breed, and lactation on reproductive efficiency in summer and winter of dairy cows marked with chalk. J. A. Pennington*¹ and Z. B. Johnson², ¹University of Arkansas, Little Rock, ²University of Arkansas, Fayetteville.
- W97 Improving IPM of house flies at commercial dairy operations through pest monitoring and determination of nuisance threshold. G. E. Higginbotham*¹, L. N. Pereira², and A. C. Gerry³, ¹University of California Cooperative Extension, Fresno, ²California State University-Fresno, Fresno, ³University of California, Riverside, Riverside.
- W98 Pizza Ranch is an educational tool to teach fourth graders about proper nutrition and where food originates. J. A. Pennington* and J. Buffalo, University of Arkansas Cooperative Extension Service, Little Rock.
- W99 Economic importance of some traits of dairy cattle. F. Szabó* and Z. Fekete, University of Pannonia, Keszthely, Hungary.
- W100 Financial performance of dairies in Florida and Georgia in 2007. L. O. Ely*¹, A. DeVries², R. Giesy², M. Sowerby², B. Broadus², and C. Vann², ¹University of Georgia, Athens, ²University of Florida, Gainesville.
- W101 Profitability of milk production considering different prices and yield. F. Szabó*, G. Buzás, and I. Heinrich, University of Pannonia, Keszthely, Hungary.
- W102 Livestock gross margin insurance for dairy cattle: Analysis of program performance and cost under alternative policy configurations and market conditions. M. Valvekar*, V. E. Cabrera, and B. W. Gould, University of Wisconsin, Madison.
- W103 Description of Kentucky dairy management systems and producer demographics. R. A. Russell* and J. M. Bewley, University of Kentucky, Lexington.
- W104 Characterization of the decision making behavior of Kentucky dairy producers. R. A. Russell* and J. M. Bewley, University of Kentucky, Lexington.
- W105 A Spanish language artificial insemination school for Idaho dairy employees. J. C. Dalton*¹, K. S. Jensen², M. Chahine³, and M. de Haro Marti⁴, ¹University of Idaho, Caldwell, ²University of Idaho, Marsing, ³University of Idaho, Twin Falls, ⁴University of Idaho, Gooding.
- W106 Hoof care workshop in English and Spanish. M. Chahine*¹, T. S. Hirsch², J. M. DeFrain², T. Fife¹, and M. E. de Haro Marti³, ¹University of Idaho, Twin Falls, ²Zinpro Corporation, Eden Prairie, MN, ³University of Idaho, Gooding.
- W107 TMR feeder schools in English and Spanish. R. J. Norell*¹, M. Chahine², and M. E. de Haro Marti³, ¹University of Idaho, Idaho Falls, ²University of Idaho, Twin Falls, ³University of Idaho, Gooding.
- W108 Educating Oklahoma producers on radio frequency identification. P. K. Camfield*, A. Preator, D. Stephens, and J. Townsend, Oklahoma Panhandle State University, Goodwell.
- W109 The integration of beef cattle into a peanut and cotton crop rotation that involves a perennial grass: A farm scale demonstration. R. O. Myer*¹, D. Zhao¹, K. S. Balkcom², C. L. Mackowiak¹, J. L. Foster¹, D. L. Wright¹, J. J. Marois¹, J. A. Howe², G. C. Lamb¹, A. R. Blount¹, and M. K. Maddox¹, ¹University of Florida, Marianna, ²Auburn University, Headland, AL.
- W110 Incorporation of Tifton 85 greenchop in least-cost rations for Florida dairy producers. J. Clavijo*¹, Y. Newman¹, L. Ortega², C. Staples¹, A. Adesogan¹, and L. Sollenberger¹, ¹University of Florida, Gainesville, ²National Mango Board, Orlando.

- W111 Master goat producer's training certification program at Tuskegee University. O. U. Bolden-Tiller*, S. Solaiman, and N. K. Gurung, *Tuskegee University, Tuskegee, AL*.
- W112 Influence of citronella and geranium essence treatment on milk aroma. S. Carpino¹, G. Belvedere¹, T. Rapisarda*¹, G. Azzaro¹, and G. Licitra^{1,2}, ¹CoRFiLaC, Regione Siciliana, Ragusa, Italy, ²D.A.C.P.A. University of Catania, Italy.

Forages and Pastures Silages

- W113 Relationship of corn silage dry matter content to density in bunker silos. K. E. Griswold*¹, P. H. Craig², and S. K. Dinh¹, ¹Penn State Cooperative Extension, Lancaster, ²Penn State Cooperative Extension, Dauphin.
- W114 Biomass yield and nutritive value of three forages for silage. R. L. Holness*, N. C. Whitley, and K. Baldwin, *North Carolina A&T State University, Greensboro*.
- W115 Selection of bacterial strains to improve ensiling of alfalfa under sub-optimal conditions. S. Hansen*, A. Smith, and T. Rehberger, *Agtech Products Inc., Waukesha, WI*.
- W116 Effect of additive inclusion on dry matter loss of sugarcane silage. L. Borgatti*¹, A. Conrado¹, J. Pavan Neto¹, P. Meyer², C. Marino¹, and P. Rodrigues¹, ¹University of São Paulo, Pirassununga, São Paulo, Brazil, ²Brazilian Institute of Geography and Statistics, Pirassununga, São Paulo, Brazil.
- W117 Effects of microbial inoculants and dry matter content at harvest on the fermentation, aerobic stability and digestion of NDF of two corn silage hybrids. M. C. Santos*¹, L. T. Tatit², M. C. Der Bedrosian¹, W. Hu¹, O. G. Pereira³, L. A. Williams¹, M. A. Gilinsky¹, and L. Kung Jr.¹, ¹University of Delaware, Newark, ²Univerisdade de Sao Paulo, Piracicaba, SP, Brazil, ³Universidade Federal de Vicosa, Vicosa, MG, Brazil.
- W118 Using molecular techniques to identify and differentiate bacterial species and strains used in commercial silage inoculants. N. D. Walker*¹, M. E. Quintino Cintora¹, R. Schmidt², and R. Charley², ¹Lallemand Animal Nutrition, Montreal, Quebec, Canada, ²Lallemand Animal Nutrition, Milwaukee, WI.
- W119 Sorghum forage as an alternative to corn silage in dairy cows feeding. S. Colombini, G. Galassi, G. M. Crovetto*, and L. Rapetti, *University of Milan, Milan, Italy*.
- W120 Nutritive value and fermentation profile of sorghum silages with urea and two storage periods. F. E. P. Fernandes¹, R. Garcia*¹, A. J. V. Pires², O. G. Pereira¹, and C. S. Fernandes¹, ¹Federal University of Viçosa, Viçosa, MG, Brazil, ²State University of Bahia, Itapetinga, Ba, Brazil, ³Fapemig, Belo Horizonte, MG, Brazil.
- W121 Elephantgrass with and without wilting, added of cassava meal in silage production. R. Garcia*¹, A. C. Oliveira¹, A. J. V. Pires², O. G. Pereira¹, and F. E. P. Fernandes¹, ¹Federal University of Viçosa, Viçosa, MG, Brazil, ²State University of Bahia, Itapetinga, Ba, Brazil.
- W122 Effects of ensiling corn and sorghum silages under normal or adverse conditions on proportions of long chain fatty acids. B. C. do Amaral¹, S. C. Kim², O. F. Zacaroni¹, A. T. Adesogan¹, and C. R. Staples*¹, ¹University of Florida, Gainesville, ²Gyeongsang National University, Jinju, South Korea.
- W123 Nutritive value of corn hybrids for silage production according to the maturity stage. M. Zopollatto*¹, L. G. Nussio¹, J. O. Sarturi², G. B. Mourão¹, A. P. Duarte³, C. M. M. Bittar¹, and V. P. Santos¹, ¹University of Sao Paulo/ESALQ, Piracicaba, SP, Brazil, ²University of Nebraska, Lincoln, ³Apta Regional, Assis, SP, Brazil.
- W124 Nutritional quality of sunflower silage associated with additives. R. H. de Tonissi e Buschinelli de Goes*¹, K. A. de Souza¹, E. S. Myagi³, R. A. Patussi¹, K. C. da Silva Brabes¹, A. C. Martinez², C. O. de Abreu², E. R. de Oliveira¹, and D. D. Alves⁴, ¹Universidade Federal da Grande Dourados, Dourados, Mato Grosso do Sul, Brazil, ²Universidade Estadual de Maringá, Umuarama, Paraná, Brazil, ³Universidade Federal de Goiás, Goiânia, Goiás, Brazil, ⁴Universidade Estadual de Montes Claros, Janaúba, Minas Gerais, Brazil.
- W125 In situ dry degradation coefficients of whole crop barley silage treated with *Lactobacillus plantarum* or mixed with *Pediococcus pentosaceus* plus *Propionibacter freudenreichii*. M. Vatandoost, M. Danesh Mesgaran*, A. Heravi Mousavi, and A. R. Vakili, *Ferdowsi University of Mashhad, Mashhad, Iran*.
- W126 The effect of propionic acid or propionate ammonium on chemical composition and in situ dry matter degradation of whole crop barley silage. M. Vatandoost, M. Danesh Mesgaran*, A. Heravi Mousavi, and A. R. Vakili, *Ferdowsi University of Mashhad, Mashhad, Iran*.
- W127 Antioxidant activity and white blood cells on plasma of lambs fed with Manzarina. H. E. Rodríguez-Ramírez*^{1,2}, C. Rodríguez-Muela¹, R. Bocourt-Salabarría³, C. Chávez-Hernández², O. Ruiz-Barrera¹, C. Hernández-Gómez¹, R. Jasso-Ibarra², and C. Holguín-Licón¹, ¹Universidad Autónoma de Chihuahua, Chihuahua, México, ²INIFAP, Campo Experimental Delicias, Delicias, Chihuahua, México, ³Instituto de Ciencia Animal, Habana, Cuba.

- W128 Inoculant-treated corn silage quality and performance of lactating cows. A. Ghaempour¹, G. R. Ghorbani¹, M. Khorvash¹, and A. Nikkhah^{*2}, ¹*Isfahan University of Technology, Isfahan, Iran*, ²*Zanjan University, Zanjan, Iran*.
- W129 Fitted models for description of cumulative gas production profiles from silages of sunflower and corn. R. Mello^{*1}, A. L. R. Magalhães², F. C. Breda¹, A. J. Regazzi³, A. C. de Queiroz³, and J. L. Nörnberg⁴, ¹*Universidade Federal de Roraima, Boa Vista, Roraima, Brazil*, ²*Universidade Federal Rural de Pernambuco - Unidade Acadêmica de Garanhuns, Garanhuns, Pernambuco, Brazil*, ³*Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil*, ⁴*Universidade Federal de Santa Maria, Santa Maria, Rio Grande do Sul, Brazil*.
- W130 Nitrogenous compounds and fermentation characteristics of king grass - leucaena silages. T. Clavero* and R. Razz, *Universidad del Zulia, Maracaibo, Estado Zulia, Venezuela*.
- W131 The effect of sewage irrigation on mineral composition and in-vitro digestibility of two corn forage varieties. E. Yosef^{*1}, E. Zukermann², J. Miron¹, M. Nikbahat¹, and D. Ben-Ghedalia¹, ¹*The Volcani Center, ARO, Bet Dagan, Israel*, ²*Extension Service-Ministry of Agriculture and Rural Development, Bet Dagan, Israel*.
- W132 Biomin® BioStabil Mays enhanced the fermentation and the aerobic stability of corn silage under tropical laboratory conditions. A. Rodríguez^{*1}, Y. Acosta-Aragón², and E. Valencia¹, ¹*University of Puerto Rico, Mayaguez, PR*, ²*Biomin GmbH, Austria*.

International Animal Agriculture

- W133 Dairy farm milk quantity, quality, and revenue within a private organization in Central Thailand. S. Yeamkong¹, S. Koonawootrittriron¹, M. A. Elzo^{*2}, and T. Suwanasopee¹, ¹*Kasetsart University, Bangkok, Thailand*, ²*University of Florida, Gainesville*.
- W134 Hormonal profile in superovulated buffalo heifers using pFSH and LH. A. M. Osman* and S. H. Shehata, *Assiut University, Assiut, Egypt*.
- W135 Semen quantity and quality of dairy bulls raised in tropical Central Thailand. T. Kongnoi¹, S. Koonawootrittriron¹, M. A. Elzo^{*2}, and T. Suwanasopee¹, ¹*Kasetsart University, Bangkok, Thailand*, ²*University of Florida, Gainesville*.
- W136 Effect of proportion of females on number of piglets born alive and pre-weaning growth traits in Pietrain swine in Thailand. T. Punsanit¹, S. Koonawootrittriron¹, T. Suwanasopee¹, and M. A. Elzo^{*2}, ¹*Kasetsart University, Bangkok, Thailand*, ²*University of Florida, Gainesville*.
- W137 The effects of four kinds of NSP enzymes based β -glucanase and xylanase on the performance and meat yield of broilers fed wheat/barley-based diet. H. Shirzadi, H. Moravej*, and M. Shivazad, *Tehran University, Karaj, Tehran, Iran*.
- W138 Consumers' preference for egg shell and yolk colour in Nigeria: A case study of Isolo and Alimosho local government area of Lagos State Nigeria. A. A. Mako^{*1}, O. K. Awobajo¹, O. I. Abiola-Olagunju¹, I. O. Ewebiyi¹, R. O. Ettu¹, R. A. Hamzat², and A. O. Akinsoyinu³, ¹*Tai Solarin University of Education, Ijebu-Ode, Ogun State, Nigeria*, ²*Quadbis Farms, Ibadan, Oyo State, Nigeria*, ³*University of Ibadan, Ibadan, Oyo State, Nigeria*.
- W139 Elaboration of ruminant supplements with byproducts and residues of bio-ethanol produced on farm settings. H. O. Patino^{*1}, B. P. Ospina², E. C. Mallmann³, and A. Roa⁴, ¹*Dep. Zootecnia, UFRGS, Porto Alegre, RS, Brazil*, ²*Latin American and Caribbean Consortium to support Cassava Research and Development, CLAYUCA, Cali, Valle del Cauca, Colombia*, ³*Usinas Sociais Inteligentes, USI, Porto Alegre, RS, Brazil*, ⁴*Soil Net LLC, Madison, WI*.
- W140 Factors affecting milk production in Brazil. R. P. Lana^{*1,2}, G. Guimarães^{1,2}, A. V. Guimarães¹, and M. A. Santos¹, ¹*Universidade Federal de Viçosa - UFV, Viçosa, MG, Brazil*, ²*Conselho Nacional de Desenvolvimento Científico e Tecnológico - CNPq, Brasília, DF, Brazil*.
- W141 Bulk tank milk quality in Brazil - 2007/2008. L. M. Fonseca^{*1,2}, R. Rodrigues^{1,2}, M. M. O. P. Cerqueira^{1,2}, M. O. Leite^{1,2}, M. R. Souza^{1,2}, and C. F. A. M. Penna^{1,2}, ¹*Federal University of Minas Gerais (UFMG), School of Veterinary Medicine, Department of Food Technology and Inspection, Belo Horizonte, MG, Brazil*, ²*Laboratory of Milk Quality Analysis, UFMG, Belo Horizonte, MG, Brazil*.
- W142 Multivariate analysis applied to milk quality evaluation in Brazil. A. M. G. Oliveira^{1,4}, L. M. Fonseca^{*1,2}, I. B. M. Sampaio¹, and Célia L. L. F. Ferreira³, ¹*Federal University of Minas Gerais (UFMG), School of Veterinary Medicine, Department of Food Technology and Inspection, Belo Horizonte, MG, Brazil*, ²*Laboratory of Milk Quality Analysis, UFMG, Belo Horizonte, MG, Brazil*, ³*Federal University of Viçosa, Viçosa, MG, Brazil*, ⁴*LANAGRO, Ministério da Agricultura, Pecuária e Abastecimento, Pedro Leopoldo, MG, Brazil*.
- W143 Azidiol in tablet form as a preservative for milk quality analysis. J. F. Castro¹, L. M. Fonseca^{*1,2}, R. Rodrigues^{1,2}, and C. S. P. Fonseca¹, ¹*Federal University of Minas Gerais (UFMG), School of Veterinary Medicine, Department of Food Technology and Inspection, Belo Horizonte, MG, Brazil*, ²*Laboratory of Milk Quality Analysis, UFMG, Belo Horizonte, MG, Brazil*.

Nonruminant Nutrition Feed Additives II

- W144 Effect of dietary medicinal plants or an organic acid on ileal nutrient digestibility of Ross broiler chickens. H. Ziaei*¹, M. Bashtani², M. A. Karimi Torshizi³, H. Farhangfar², H. Naeemipour², and A. Zeinali², ¹*Agricultural Research Center, Birjand, Iran*, ²*Birjand University, Birjand, Iran*, ³*Tarbiat Modares University, Tehran, Iran*.
- W145 Effect of a dietary herbal medicine and an organic acid on bone characteristics of Ross broiler chickens. H. Ziaei*¹, M. Bashtani², M. A. Karimi Torshizi³, A. Zeinali², H. Naeemipour², and H. Farhangfar², ¹*South Khorasan Agricultural and Natural Resources Researches Center, Birjand, Khorasan, Iran*, ²*Birjand University, Birjand, Khorasan, Iran*, ³*Tarbiat Modares University, Tehran, Iran*.
- W146 The effect of ractopamine and ileal digestible lysine levels on growth performance and carcass characteristics of finishing pigs. D. Fontes*², E. C. Almeida¹, E. T. Fialho¹, M. A. Zangeronimo¹, N. O. Amaral¹, L. M. Pereira, Jr.¹, and P. B. Rodrigues¹, ¹*University Federal of Lavras, Lavras, MG, Brazil*, ²*University Federal Minas Gerais, Belo-Horizonte, Brazil*.
- W147 Influence of ractopamine on carcass characteristics and economic viability of finishing pigs fed ad libitum or restricted feeding system. E. T. Fialho*, V. S. Cantarelli, E. C. Almeida, M. G. Zangeronimo, N. O. Amaral, and L. V. C. Girão, *University Federal of Lavras, Lavras, MG, Brazil*.
- W148 Effects of probiotics in lactating sow diets on litter growth performance. M. L. F. Silva, J. A. F. Lima, E. T. Fialho*, N. O. Amaral, V. S. Cantarelli, P. F. A. Souza, and C. H. T. Barbosa, *University Federal of Lavras, Lavras, MG, Brazil*.
- W149 Effects of ginger root powder on growth performance and antioxidant status of broiler chickens. G. F. Zhang¹, Z. B. Yang*¹, Y. Wang², W. R. Yang¹, X. Y. Zhao³, and S. Z. Jiang¹, ¹*Shandong Agricultural University, Tai-an, Shandong, China*, ²*Agriculture and Agri-Food Canada, Lethbridge Research Centre, Lethbridge, AB, Canada*, ³*Tsinghua University, Beijing, China*.
- W150 Effects of long term dietary supplementation of betaine, CLA or both to mice on growth and viscera weight. L. González-Valero, J. M. Rodríguez-López, M. Lachica, and I. Fernández-Figares*, *Spanish Research Council, CSIC, Granada, Spain*.
- W151 The effect of dietary laminarin and fucoidan in the diet of the weanling piglet on performance, selected faecal microbial populations and volatile fatty acid concentrations. P. McDonnell and J. V. O'Doherty*, *Lyons Research Farm, University College Dublin, Newcastle, Co Dublin, Ireland*.
- W152 *Acanthopanax senticosus* extract improved growth performance and antioxidative capacity in weaned piglets. X. Wu¹, F. Y. Yan¹, Y. L. Yin*¹, X. F. Kong¹, T. J. Li¹, R. L. Huang¹, and L. X. Chen², ¹*The Chinese Academy of Sciences, Changsha, China*, ²*Guang An Biological Technique Company, China*.
- W153 Weaned piglet responses to *Escherichia coli* K88+ oral challenge when receiving yeast fermentation products: growth performance and gastrointestinal measurements. E. Kiarie*¹, S. Bhandari¹, M. Scott², D. O. Krause¹, and C. M. Nyachoti¹, ¹*University of Manitoba, Winnipeg, MB, Canada*, ²*Diamond V, Cedar Rapids, IA*.
- W154 Effect of multi-microbe probiotic product processed by high drying temperature and antibiotic on performance, nutrient digestibility, fecal and intestinal microflora and intestinal morphology of weanling pigs. J. Y. Choi¹, P. L. Shinde¹, Y. X. Yang¹, I. K. Kwon¹, C. S. Ra¹, W.-T. Cho², and B. J. Chae*¹, ¹*Kangwon National University, Chuncheon, Republic of Korea*, ²*Genebiotech Co. Ltd., Seoul, Republic of Korea*.
- W155 Effects of dietary supplementaion of talc on growth performance and meat quality in finishing pigs. H. D. Jang*¹, J. H. Lee¹, J. H. Jung¹, H. J. Jung², I. B. Chung², and I. H. Kim¹, ¹*Dankook University, Cheonan, Choongnam, Korea*, ²*National Institute of Animal Science, RDA, Cheonan, Choongnam, Korea*.
- W156 Effects of dietary wild-ginseng adventitious root meal on growth performance, blood characteristics and meat quality in broiler chicks. H. D. Jang*¹, E. J. Han², W. K. Jeon³, K. Y. Paek², S. D. Lee⁴, J. C. Park⁴, and I. H. Kim¹, ¹*Dankook University, Cheonan, Choongnam, Korea*, ²*Chungbuk University, Cheongju, Chungbuk, Korea*, ³*Korea Institute of Oriental Medicine, Daejeon, Korea*, ⁴*National Institute of Animal Science, RDA, Cheonan, Choongnam, Korea*.
- W157 Effects of the Chinese herb extract supplementation on growth performance, blood characteristics and meat quality in growing-finishing pigs. T. X. Zhou*, J. S. Yoo, J. P. Wang, L. Yan, and I. H. Kim, *Dankook University, Cheonan, Choongnam, Korea*.
- W158 Effects of anion emission rock powder supplementation on growth performance, nutrient digestibility, blood characteristic and fecal gas emission of weaning pigs. J. H. Lee*, J. S. Yoo, H. D. Jang, and I. H. Kim, *Dankook University, Cheonan, Choongnam, Korea*.
- W159 Effects of delta-aminolevulinic acid and antibiotics on the growth performance, nutrient digestibility, hematological status, and immune responses of weanling pigs. J. P. Wang*¹, J. S. Yoo¹, J. H. Lee¹, R. Noble², S. H. Oh², and I. H. Kim¹, ¹*Dankook University, Cheonan, Choongnam, Korea*, ²*North Carolina A&T State University, Greensboro,*
- W160 Utilization of delta-aminolevulinic acid for livestock: Blood characteristics and immune organ weights in broilers. L. Yan*, Y. J. Chen, H. J. Kim, J. P. Wang, and I. H. Kim, *Dankook University, Cheonan, Choongnam, Korea*.

- W161 Effects of supplementation with a combination of delta-aminolevulinic acid and chito-oligosaccharide supplementation on the growth performance, nutrient digestibility, blood parameters and appearance of diarrhea in weanling pigs. T. X. Zhou*¹, Y. J. Chen¹, J. H. Lee¹, C. Y. Lee², B. C. Park³, and I. H. Kim¹, ¹Dankook University, Cheonan, Choongnam, Korea, ²Regional Animal Industry Center, Jinju National University, Jinju, Gyeongnam, Korea, ³CJ Feed Inc., Incheon, Gyeonggi, Korea.
- W162 Effects of AROMEX-ME supplementation in high and low nutrient density diets on growth performance, nutrient digestibility, blood characteristic, carcass trait and fecal malodor emission in growing-finishing pigs. H. J. Kim*¹, J. P. Wang¹, L. Yan¹, H. J. Jung², I. B. Chung², and I. H. Kim¹, ¹Dankook University, Cheonan, Choongnam, Korea, ²National Institute of Animal Science, RDA, Cheonan, Choongnam, Korea.
- W163 Effects of complex probiotics supplementation on growth performance, fecal gas emission and meat quality in finishing pigs. J. H. Jung*¹, H. J. Kim¹, S. M. Hong¹, C. Y. Lee², and B. C. Park³, ¹Dankook University, Cheonan, Choongnam, Korea, ²Jinju National University, Jinju, Gyeongnam, Korea, ³CJ Feed Inc., Incheon, Gyeonggi, Korea.
- W164 Effects of essential oils supplementation and difference stocking density on performance of growing-finishing pigs. J. H. Lee*¹, J. S. Yoo², H. D. Jang¹, J. C. Park², S. D. Lee², and I. H. Kim¹, ¹Dankook University, Cheonan, Choongnam, Korea, ²National Institute of Animal Science, RDA, Cheonan, Choongnam, Korea.
- W165 Effects of yucca and *Bacillus subtilis* on nutrient digestibility, fecal noxious gas content and meat quality in finishing pigs. J. H. Lee*¹, H. J. Kim¹, S. M. Hong¹, S. H. Oh², R. Noble², and I. H. Kim¹, ¹Dankook University, Cheonan, Choongnam, Korea, ²North Carolina A&T State University, Greensboro.
- W166 Effect of Siberian Ginseng (*Acanthopanax senticosus*) and *Eucommia ulmoides* on growth performance and immune functions in broiler chickens. S. Y. Kang, Y. H. Ko, S. H. Sohn, Y. S. Moon, C. Y. Lee, and I. Jang*, *Jinju National University, Jinju, Gyeongnam, Korea.*
- W167 Effects of dietary supplementation of Biacton™ on growth performance of pigs from weaning through finishing phases. K. Bregendahl and M. Z. Fan*, *University of Guelph, Guelph, Ontario, Canada.*
- W168 Effects of dehydrated chicory root powder on growth, nutrient utilization and manure odor in weanling pigs. M. Z. Fan*, T. Archbold, Y. Shen, C. Yang, and T. C. Rideout, *University of Guelph, Guelph, Ontario, Canada.*
- W169 Different enzymatic activities of sixty-two isolated lactic acid bacteria of chicken digestive tract. H. R. Taheri*¹, H. Moravej¹, F. Tabandeh², M. Zaghari¹, and M. Shivazad¹, ¹University of Tehran, Karaj, Tehran, Iran, ²National Institute of Genetic Engineering and Biotechnology, Tehran, Iran.
- W170 Effects of sanguinarine on growth performance, serum biochemical indices and HSP70 of weaned piglets. X. H. Zhou, X. Wu, K. Yao, D. Zhou, R. L. Huang, and Y. L. Yin*, *Chinese Academy of Sciences, Changsha, China.*
- W171 Effects of low doses of encapsulated cinnamaldehyde on the performance and antioxidant status of weaned piglets. C. Moynat, C. Ionescu*, and D. Bravo, *Pancosma, Geneva, Switzerland.*
- W172 Efficacy of a combination of essential oils in weaned pigs. I. Aragonés*¹, K. Wendler², E. McCartney³, J. Sánchez¹, and M. I. Gracia¹, ¹Imasde Agroalimentaria, S.L., Spain, ²Delacon Biotechnik GmbH, Austria, ³EU Pen&Tec Consulting S.C.P., Spain.
- W173 Effects of yeast fermentation products on fecal consistency and gut microbial population in weaned piglets challenged with *Escherichia coli* K88⁺. S. K. Bhandari*¹, E. Kiarie¹, M. Scott², D. O. Krause¹, and C. M. Nyachoti¹, ¹University of Manitoba, Winnipeg, Manitoba, Canada, ²Diamond V, Cedar Rapids, IA.
- W174 Effects of *Pediococcus acidilactici* and *Saccharomyces cerevisiae boulardii* on the ileal microbiota of piglets two weeks after weaning. J.-P. Brousseau*^{1,2}, F. Beaudoin¹, D. Roy¹, and M. Lessard², ¹Agriculture and Agri-Food Canada, Sherbrooke, Quebec, Canada, ²University Laval, Quebec, Quebec, Canada.
- W175 Effects of acidifiers on growth performance and intestine health in weanling piglets. P. Li^{1,2}, H. J. Zhang¹, Y. Miao³, S. G. Wu*¹, H. Y. Yue¹, and G. H. Qi¹, ¹Feed Research Institute of Chinese Academy of Agricultural Sciences, Beijing, China, ²Institute of Animal Husbandry and Veterinary Science, Tianjin Academy of Agricultural Sciences, China, ³Beijing General Station of Animal Husbandry and Veterinary, China.
- W176 Plant active compounds or extracts can be effective as antioxidants in vitro. C. Ionescu*¹, J. Seppey², D. Bravo¹, M. Grogg², X. Simonnet², N. Marcon³, and A.-F. Grogg³, ¹Pancosma, Geneva, Switzerland, ²Médiplant, Conthey, Switzerland, ³HESSO, Sion, Switzerland.
- W177 Effect of dietary acids on growth performance of weanling pigs-a cooperative study. J. E. Pettigrew*, O. Adeola, M. J. Azain, S. D. Carter, G. L. Cromwell, G. M. Hill, D. C. Mahan, and P. S. Miller, *NCCC-42 Committee on Swine Nutrition.*
- W178 Effects of feeding *Lathyrus sativus* on broiler performance. M. Eslami* and B. Ahmadipour, *Ramin Agricultur and Natural Resources University, Ahwaz, Khouzestan, Iran.*
- W179 Effects of dietary Biomate (Artemisia, Acanthopanax and garlic) on performance in lactating sows. S.-M. Hong*¹, M.-J. Kim¹, M.-B. Cho¹, B.-U. Yang¹, M.-J. Kim¹, I.-H. Kim¹, and S.-H. Oh², ¹Dankook University, Cheonan, Chungnam, South Korea, ²North Carolina A&T State University, Greensboro.

- W180 Effects of dietary probiotics of endospores and complex enzyme supplementation on growth performance in pigs. M.-J. Kim^{*1}, B.-U. Yang¹, M.-B. Cho¹, M.-J. Kim¹, S.-M. Hong¹, I.-H. Kim¹, T. Barrios², and S.-H. Oh², ¹Dankook University, Cheonan, Chungnam, South Korea, ²North Carolina A&T State University, Greensboro.
- W181 Comparison of Bio-Mos[®] and carbadox on growth performance during the early nursery phases of weanling pigs. J. L. Pierce^{*}, R. F. Gilliam, and C. A. Moran, *Alltech, Inc., Nicholasville, KY.*
- W182 The effect of ractopamine supplemented for 14 or 28 days on growth performance of finishing pigs. E. T. Fialho^{*}, L. V. C. Girão, M. G. Zangeronimo, N. O. Amaral, V. S. Cantarelli, R. C. Wolp, and P. B. Rodrigues, *University Federal of Lavras, Lavras, MG, Brazil.*
- W183 Effects of natural clay enterosorbent on vulva sizes and reproductive organ weights of postweaning female pigs fed zearalenone contaminated diets. Z. B. Yang^{*1}, S. Z. Jiang¹, W. R. Yang¹, H. Zao¹, C. C. Chen², and F. Chi³, ¹Shandong Agricultural University, Taian, Shandong, PRC, ²Chaoyang University Technology, Taichung, Taiwan, ROC, ³Amlan International, Chicago, IL.
- W184 Effects of natural clay enterosorbent on nutrient digestibility of postweaning female pigs fed zearalenone contaminated diets. Z. B. Yang^{*1}, S. Z. Jiang¹, W. R. Yang¹, H. Zao¹, C. C. Chen², and F. Chi³, ¹Shandong Agricultural University, Taian, Shandong, PRC, ²Chaoyang University Technology, Taichung, Taiwan, ROC, ³Amlan International, Chicago, IL.
- W185 Evaluation of the efficacy of a commercial purified phyllosilicate to reduce the toxicity of zearalenone + deoxynivalenol in gilts. K. Bond¹, C. K. Maune¹, J. R. Stoltz¹, R. J. Malone¹, and D. Zaviezo^{*2}, ¹Trilogy Analytical Laboratory, Washington, MO, ²Special Nutrients, Miami, FL.
- W186 Effects of dietary levels of tylosin on growth performance and efficiency of nutrient utilization in growing pigs. M. Z. Fan^{*1}, T. Archbold¹, K. Bregendahl¹, C. Yang¹, X. Yang¹, R. Bagg², G. Vessie², P. Dick², and D. Anderson², ¹University of Guelph, Guelph, Ontario, Canada, ²Elanco Animal Health Canada Inc., Guelph, Ontario, Canada.
- W187 Effect of the combined use of ractopamine and chromium picolinate on growth performance and carcass traits of finishing pigs. E. Toledo^{*}, K. Gomezjurado, A. García-Rendón, G. Cárdenas, and A. Borbolla, *Departamento de Producción Animal: Cerdos, Facultad de Medicina Veterinaria y Zootecnia, Universidad Nacional Autónoma de México, Ciudad de México, Distrito Federal, México.*

Physiology and Endocrinology Livestock and Poultry

- W188 Early prediction tools for the selection of reproductive traits on spring born crossbred Angus heifers. R. A. Franco^{*1}, G. Scaglia², W. S. Swecker³, and M. L. Wahlberg¹, ¹Department of Animal and Poultry Sciences, Virginia Tech, Blacksburg, ²Louisiana State University AgCenter-Iberia Station, Jeanerette, ³Virginia-Maryland Regional College of Veterinary Medicine, Virginia Tech, Blacksburg.
- W189 Endometrial gene expression of estradiol, progesterone, and oxytocin receptors in anestrous Bos indicus cows treated with progesterone. O. G. Sa Filho^{*}, D. M. Guerra, and J. L. M. Vasconcelos, *FMVZ/UNESP, Botucatu, SP, Brazil.*
- W190 Controlling the onset of a new estrous cycle utilizing a persistent follicle. J. P. N. Martins^{*}, R. Policelli, and J. R. Pursley, *Michigan State University, East Lansing.*
- W191 Embryo transfer following treatment of cystic ovaries in cattle. C. E. Ferguson^{*1}, F. M. LeMieux¹, D. J. Kesler², and R. A. Godke³, ¹McNeese State University, Lake Charles, LA, ²University of Illinois, Urbana, ³Louisiana State University, Baton Rouge.
- W192 GnRH affects emergence of a new follicular wave in cows with cystic ovaries. E. Dirandeh, H. Kohram^{*}, T. Saberifar, and A. Zare Shahneh, *University of Tehran, Iran.*
- W193 Immediate and carryover effects of Gram-negative or Gram-positive toxin-induced mastitis on follicular functions in cows. Y. Lavon^{*1}, G. Leitner², R. Meidan¹, U. Moallem³, E. Klipper¹, and D. Wolfenson¹, ¹The Hebrew University, Rehovot, Israel, ²The Veterinary Institute, Bet-Dagan, Israel, ³Agricultural Research Org, Bet-Dagan, Israel.
- W194 Do progesterone changes during early lactation in Holsteins, Jerseys and their crosses affect subsequent reproductive performance? S. M. Sheer^{*}, K. L. Brown, B. G. Cassell, and F. C. Gwazdauskas, *Virginia Tech, Blacksburg.*
- W195 Pregnancy success and luteal function of lactating Holstein cows after hCG on day 5 after insemination. E. Urzua¹, C. G. Gutierrez¹, A. Garza², C. Corona³, G. Mapes³, and J. Hernandez-Ceron^{*1}, ¹Facultad de Medicina Veterinaria y Zootecnia, Universidad Nacional Autónoma de México, México, ²Beta San Gabriel S.A. de C.V., Torreón, México, ³Intervet Schering Plough Animal Health, México.
- W196 Plasma LH concentrations and CL function in Holstein cows given porcine LH, GnRH, or estradiol benzoate. M. G. Colazo^{*1}, T. O. Ree², A. G. A. Lamont³, J. P. Kastelic⁴, R. J. Mapletoft⁵, and D. J. Ambrose^{1,3}, ¹Alberta Agriculture and Rural Development, Edmonton, AB, Canada, ²Lakeland College, Vermilion, AB, Canada, ³University of Alberta, Edmonton, AB, Canada, ⁴Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, ⁵University of Saskatchewan, Saskatoon, SK, Canada.
- W197 Prostaglandin (PG) E1 or E2 (PGE1, PGE2) luteal implants prevent luteolysis in cows. C. W. Weems^{*1}, Y. S. Weems¹, R. C. Vann², S. P. Ford³, D. A. Neuendorff⁴, A. W. Lewis⁴, T. A. Welsh⁵, T. M. Nett⁶, P. J. Bridges⁷, and R. D. Randel⁴, ¹University of Hawaii, Honolulu, ²Mississippi State University, Raymond, ³University of Wyoming, Laramie, ⁴Texas AgriLife Res., Overton, ⁵Texas A&M University, College Station, ⁶Colorado State University, Fort Collins, ⁷University of Kentucky, Lexington.

- W198 The effect of a shortened dry period on follicular dynamic in early lactation Holstein cows. S. Safa¹, A. Heravi Moussavi^{*1}, M. Danesh Mesgaran¹, and A. Soleimani^{1,2}, ¹Department of Animal Science, Ferdowsi University of Mashhad, Iran, ²Islamic Azad University- Kashmar Branch, Iran.
- W199 Characteristic of the largest follicle of the waves emerged after treatment with GnRH during estrous cycle of Iranian Holstein cows. E. Dirandeh and H. Kohram*, University of Tehran, Karaj, Tehran, Iran.
- W200 Subclinical mastitis effects on steroid concentrations and gene expression in theca cells of preovulatory follicles in cows. Y. Lavon^{*1}, G. Leitner², R. Meidan¹, E. Klipper¹, and D. Wolfenson¹, ¹The Hebrew University, Rehovot, Israel, ²The Veterinary Institute, Bet-Dagan, Israel.
- W201 Effect of dry period lengths on complete blood count in early lactating Holstein cows. A. Soleimani^{*1,2}, A. Heravi Moussavi¹, M. Danesh Mesgaran¹, A. Golian¹, and S. Safa¹, ¹Department of Animal Science, Ferdowsi University of Mashhad, Iran, ²Islamic Azad University-Kashmar Branch, Iran.
- W202 Evaluation of sperm motility in stored semen collected from boars fed a diet supplemented with organic selenium. S. Speight, M. Estienne*, A. Harper, and R. Crawford, Virginia Polytechnic Institute and State University, Blacksburg.
- W203 Effect of melatonin on in vitro manipulated rat oocytes and embryos. S. Nandi^{*1,2}, V. Girish Kumar², and F. C. Gwazdauskas³, ¹National Institute of Animal Nutrition and Physiology, Bangalore, India, ²Karnataka Veterinary Animal and Fishery Sciences University, Bangalore, India, ³Department of Dairy Science, Virginia Polytechnic Institute and State University, Blacksburg.
- W204 17 β -estradiol and spontaneous myometrial contractions in ovariectomized rats. O. Yildiz-Gulay^{*1}, A. Bulbul², M. S. Gulay¹, K. Altunbas³, and O. Ozden-Akkaya³, ¹Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Department of Physiology, Burdur, Turkey, ²Afyonkarahisar Kocatepe University, Faculty of Veterinary Medicine, Department of Physiology, Afyonkarahisar, Turkey, ³Afyonkarahisar Kocatepe University, Faculty of Veterinary Medicine, Department of Histology and Embryology, Afyonkarahisar, Turkey.
- W205 Stability of reference genes in mouse liver after immunity stimulation. X. L. Dong, J. Q. Wang*, D. P. Bu, H. Y. Wei, and L. Y. Zhou, State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China.
- W206 Detection of alternative splicing form of PRL mRNA in the chicken anterior pituitary gland. N. Kansaku^{*1}, T. Sasanami², T. Ohkubo³, G. Hiyama^{1,4}, and D. Zadworny⁴, ¹Azabu University, Sagamihara, Japan, ²Shizuoka University, Shizuoka, Japan, ³Kagawa University, Miki-cho, Japan, ⁴McGill University, Montreal, QC, Canada
- W207 Culture of chicken germline stem cells. J. N. Petite*, J. Angerman-Stewart, R. Wysocki, and P. E. Mozdziak, Department of Poultry Science, North Carolina State University, Raleigh.

Production, Management and the Environment

General

- W208 Biodegradation of genetically modified seeds and plant tissues during composting with manure. T. Reuter^{*1}, T. W. Alexander¹, K. Stanford², and T. A. McAllister¹, ¹Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, ²Alberta Agriculture and Rural Development, Lethbridge, AB, Canada.
- W209 Arrangements of *Acacia decurrens*, *Acacia melanoxylon* and *Alnus acuminata* as silvopasture systems in a high tropic ecosystem. A. Conde^{*1}, L. L. Betancourt¹, C. J. Jaramillo¹, A. Umaña¹, D. Barrera¹, and D. R. Chamorro², ¹Universidad de La Salle, Bogotá, Colombia, ²Corpoica, Bogotá, Colombia.
- W210 Influence of *Acacia mangium* on soil chemical characteristics in a silvopastoral system in northwestern Venezuela. T. Clavero* and R. Razz, Centro de Transferencia de Tecnología en Pastos y Forrajes, Universidad del Zulia, Maracaibo, Estado Zulia, Venezuela.
- W211 Discrimination and classification of the new co-products from bio-energy production using infrared spectroscopy with multivariate techniques-AHCA and PCA: Comparison among blend DDGS, wheat DDGS and corn DDGS and between wheat and wheat DDGS, and corn and corn DDGS. D. Damiran and P. Yu*, College of Agriculture and Bioresources, University of Saskatchewan, Saskatoon, SK, Canada.
- W212 Biochemical profile of Maguey silage. G. Álvarez-Fuentes*, J. C. García-López, J. M. Pinos-Rodríguez, Y. Jasso-Pineda, and F. M. Tristán-Patiño, Universidad Autónoma de San Luis Potosí, San Luis Potosí, SLP, México.
- W213 Copper and zinc accumulation in dairy production systems. T. Downing*, K. Stiglbauer, M. Gamroth, and J. Hart, Oregon State University, Corvallis.
- W214 Growth performance, carcass yield and economical evaluation of two genotypes of quails under two housing systems. D. Cardoso-Jiménez¹, R. Rojo-Rubio¹, A. Z. M. Salem^{*1,2}, S. Rebollar-Rebollar¹, J.L. Martínez-Benítez¹, and J. Hernández-Martínez¹, ¹Centro Universitario UAEM-Temascaltepec, Universidad Autónoma del Estado de México, Toluca-Tejupilco, Estado de México, México, ²Department of Animal Production, Faculty of Agriculture (El-Shatby), Alexandria University, Alexandria, Egypt.

- W215 The effects of management and environmental factors on broiler breeder performance in Iran. H. Hosain*¹, M. Moradi Shahrabak², A. Noshari¹, M. Zaghari², and M. B. Zandi², ¹Tehran Azad University, Karaj Tehran Iran, ²University of Tehran, Karaj Tehran Iran, ³Young Researchers Club, Sanandaj Kurdistan Tehran.
- W216 Effects of stocking rate of weaned to finishing pigs on bermudagrass ground cover. S. Pietrosevoli*¹, J. T. Green², and R. Vibart³, ¹Animal Science Department, North Carolina State University, Raleigh, ²Crop Science Department, North Carolina State University, Raleigh, ³AgResearch Limited, Grasslands Research Centre, New Zealand.
- W217 Suckling effect on the survival of crossbreed goats kids at weaning. L. F. D. Medeiros¹, D. H. Vieira², C. A. Oliveira¹, D. F. Guerson¹, G. M. Fagundes¹, J. P. F. Silveira³, R. S. B. Pinheiro³, V. L. Tierzo³, and J. L. C. B. Reis*⁴, ¹Rural Federal university of Rio de Janeiro, Seropedica, RJ, Brazil, ²Center of Creation of Animals of Laboratory, Rio de Janeiro, RJ, Brazil, ³São Paulo State University, Botucatu, SP, Brazil, ⁴University of Agrarian Sciences, University of Marília, Marília, SP, Brazil.
- W218 The effect of Clarifly™ larvacide in purchased grains on fly populations on dairy farms in northern Vermont. E. E. Osmanski*¹, R. E. Butzler², C. S. Ballard², and C. S. Mooney², ¹The University of Vermont, Burlington, ²William H. Miner Agricultural Research Institute, Chazy, NY.
- W219 Black soldier fly larvae grown on cow manure. M. Chahine*¹, M. E. de Haro Marti², S. St Hilaire³, O. Pozo¹, and R. E. Sheffield⁴, ¹University of Idaho, Twin Falls, ²University of Idaho, Gooding, ³Idaho State University, Pocatello, ⁴Louisiana State University, Baton Rouge.

Ruminant Nutrition Dairy Calves

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- W220 The influence of parity, sex and twinning on birth weight of Holstein calves. M. H. Fathi Nasri* and H. Farhangfar, *Department of Animal Science, The University of Birjand, Iran.*
- W221 Influence of altering conventional milk replacer feeding rate and protein source on pre- and post-weaning performance and health of dairy calves. D. Carlson*¹, S. Hayes¹, B. Ziegler², R. Larson², M. Raeth-Knight³, G. Golombeski³, J. Linn³, D. Ziegler⁴, and H. Chester-Jones⁴, ¹Milk Products, LLC, Chilton, WI, ²Hubbard Feeds Inc., Mankato, MN, ³University of Minnesota, St. Paul, ⁴University of Minnesota, Southern Research and Outreach Center, Waseca.
- W222 Effect of milk replacer carbohydrate source on performance and health of dairy calves. J. K. Bernard*¹ and A. F. Kertz², ¹University of Georgia, Tifton, ²ANDHIL LLC, St. Louis, MO.
- W223 Impact of glycerol in milk replacer on dairy calf performance. M. Raeth-Knight*¹, J. Linn¹, R. Larson², and J. Salzer¹, ¹University of Minnesota, St. Paul, ²Hubbard Feeds, Mankato, MN.
- W224 Effect of group penning on dairy calf performance. D. Carr* and A. Chestnut, *Vigortone Ag Products, Hiawatha, IA.*
- W225 Relationship between immunoglobulin G intake and serum immunoglobulin G concentrations in calves fed titrated levels of immunoglobulin G in colostrum replacers. J. M. Campbell*¹, J. C. Gawthrop², A. W. Riad², L. E. Russell¹, S. K. Hayes¹, J. D. Quigley¹, and J. D. Crenshaw¹, ¹APC, Inc., Ankeny, IA, ²CalfCare, North Manchester, IN.
- W226 Effects of protein sources in calf milk replacers on growth and fecal score of dairy calves. S. Y. Luan¹, J. Q. Wang*¹, D. P. Bu¹, H. T. Zhang¹, Z. F. Zhou¹, and A. F. Kertz², ¹State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, P. R. China, ²ANDHIL LLC, St. Louis, MO.
- W227 Effects of combining hydrolyzed wheat gluten and spray dried plasma in calf milk replacer (CMR) on calf performance. D. Wood*, J. Sowinski, and R. Blome, *Animix, Juneau, WI.*
- W228 Hydrolyzed proteins from animal origin can replace dried skim milk from milk replacer formula. M. Terré*¹, E. Borda², F. Boe¹, and A. Bach^{1,3}, ¹IRTA-Unitat de Remugants, Barcelona, Spain, ²BioinERICA, S.A., Barcelona, Spain, ³ICREA, Barcelona, Spain.
- W229 The effect of feeding alfalfa hay at different ages on pre- and post-weaning performance of Holstein calves. A. Ahangarani*, M. H. Fathi Nasri, H. Farhangfar, and A. Omid, *Department of Animal Science, The University of Birjand, Iran.*
- W230 Effects of supplementing a mix of nucleotides to dairy calves prior to weaning on respiratory afflictions and immune response during the postweaning period. A. Bach*^{1,2}, A. Ferrer², D. Martínez-Puig³, and J. Ahedo⁴, ¹ICREA, Barcelona, Spain, ²IRTA-Ruminant Production, Caldes de Montbui, Spain, ³Bioiberica, Barcelona, Spain, ⁴Rancho Las Nieves, Mallén, Spain.
- W231 The effect of vanilla flavoured calf starter on performance of Holstein calves. M. H. Fathi Nasri*, A. Riasi, A. Arab, M. Kamalalavi, V. Vosoughi, and H. Farhangfar, *Department of Animal Science, The University of Birjand, Iran.*
- W232 Flavor effects on feed intake and performance of calves. C. Montoro*¹, I. Ipharraguerre², and A. Bach^{1,3}, ¹IRTA-Ruminant Production, Caldes de Montbui, Spain, ²LUCTA S.A., Barcelona, Spain, ³ICREA, Barcelona, Spain.

- W233 Development of an animal model to evaluate oro-sensorial preferences in weaned calves. C. Montoro*¹, F. Boe¹, I. Ipharraguerre², and A. Bach^{1,3}, ¹IRTA-Ruminant Production, Caldes de Montbui, Spain, ²Lucta S.A., Barcelona, Spain, ³ICREA, Barcelona, Spain.

Ruminant Nutrition Dairy Heifers

- W234 Pre- and post weaning performance and health of heifer calves fed different levels of bovine spray dried animal plasma in a traditional milk replacer program. S. Hayes*¹, D. Carlson², D. Ziegler³, M. Raeth-Knight⁴, G. Golombeski⁴, B. Ziegler⁵, R. Larson⁵, J. Linn⁴, and H. Chester-Jones³, ¹APC, Inc., Ankeny, IA, ²Milk Products, Chilton, WI, ³University of Minnesota Southern Research and Outreach Center, Waseca, ⁴University of Minnesota, St. Paul, ⁵Hubbard Feeds, Inc., Mankato, MN.
- W235 Performance and health of post weaned Holstein heifer calves from 9 to 25 weeks of age fed grain mixes containing varying levels of bovine spray dried plasma protein during the initial transition to group pens. H. Chester-Jones*¹, S. Hayes², R. Larson³, B. Ziegler³, D. Ziegler¹, M. Raeth-Knight⁴, G. Golombeski⁴, and J. Linn⁴, ¹University of Minnesota Southern Research and Outreach Center, Waseca, ²APC, Inc., Ankeny, IA, ³Hubbard Feeds, Inc., Mankato, MN, ⁴University of Minnesota, St. Paul.
- W236 Performance of post weaned Holstein heifer calves fed limit or free-choice pelleted grain mixes with two differing fiber levels along with free-choice hay. D. Ziegler*¹, R. Larson², B. Ziegler², M. Raeth-Knight³, G. Golombeski³, H. Chester-Jones¹, and J. Linn³, ¹University of Minnesota Southern Research and Outreach Center, Waseca, ²Hubbard Feeds, Inc., Mankato, MN, ³University of Minnesota, St. Paul.
- W237 Correlation between future production performance and hepatic gene expression in postpubertal Holstein dairy heifers. J. Doelman*, N. G. Purdie, H. Cao, N. A. Karrow, and J. P. Cant, *University of Guelph, Guelph, ON, Canada.*
- W238 High protein level in the diet to dairy heifers from 10 to 22 months of age reduced milk yield in first lactation. M. Vestergaard*, M. B. Petersen, and K. Sejrsen, *Faculty of Agricultural Sciences, Aarhus University, Tjele, Denmark.*
- W239 Effects of limit feeding and ionophore supplementation on replacement heifer growth, rumen function and manure excretion. K. A. Kruse*, N. M. Esser, P. C. Hoffman, and D. K. Combs, *University of Wisconsin, Madison.*
- W240 Effect of feeding method on the behavior and growth of dairy heifers. A. M. Greter*¹, K. E. Leslie², G. J. Mason³, B. W. McBride³, and T. J. DeVries¹, ¹Department of Animal and Poultry Science, University of Guelph, Kemptville Campus, Kemptville, ON, Canada, ²Department of Population Medicine, Ontario Veterinary College, Guelph, ON, Canada, ³Department of Animal and Poultry Science, University of Guelph, Guelph, ON, Canada.
- W241 Wheat grain eases metabolic transitions in periparturient heifers. F. Ehsanbakhsh, H. Amanlou, D. Zahmatkesh, and A. Nikkhah*, *Zanjan University, Zanjan, Iran.*

Ruminant Nutrition Fat Supplementation

- W242 Effect of dietary lipids on selected strains of ruminal bacteria. R. B. Potu*¹, A. A. AbuGhazaleh¹, K. L. Jones¹, R. L. Atkinson¹, D. Hastings¹, J. D. Haddock¹, and S. Ibrahim², ¹Southern Illinois University, Carbondale, ²North Carolina A&T University, Greensboro.
- W243 Effects of docosahexaenoic acid and linoleic acid on rumen trans-vaccineic acid and microbe populations. D. Li, J. Q. Wang*, D. P. Bu, K. L. Liu, and P. Yu, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China.*
- W244 Effect of coconut oil on fermentation, digestion, and N flow in rumen-simulating fermenters. G. A. Harrison*, M. D. Meyer, and K. A. Dawson, *Alltech Biotechnology, Nicholasville, KY.*
- W245 Effects of different rates of continuous abomasal or pulse ruminal infusions of either free or protected nicotinic acid on plasma NEFA concentrations. J. Pescara*, J. Pires, and R. Grummer, *University of Wisconsin, Madison.*
- W246 Effects of infusing volatile fatty acids intraruminally on rumen and milk odd and branched-chain fatty acids. E. A. French* and L. E. Armentano, *University of Wisconsin, Madison.*
- W247 Effects of *trans*-monounsaturated and omega-6 fatty acids on performance of periparturient Holstein cows. C. Caldari-Torres*, M. C. Perdomo, C. A. Risco, C. R. Staples, and L. Badinga, *University of Florida, Gainesville.*
- W248 Effects of *trans*-monounsaturated and omega-6 fatty acids on uterine health and reproductive efficiency of transition Holstein cows. C. Caldari-Torres*, M. C. Perdomo, C. R. Staples, C. A. Risco, and L. Badinga, *University of Florida, Gainesville.*
- W249 The long-term effect of supplementation with fish oil or microalgae on the performance of grazing dairy cows. P. Vahmani*¹, E. Gnemmi², K. Glover², and A. Fredeen², ¹Dalhousie University, Halifax, NS, Canada, ²Nova Scotia Agricultural College, Truro, NS, Canada.

- W250 Effect of feeding rapeseeds on lactation performance in dairy cows and oxidative stability of milk and butter. O. Y. Tsisaryk*, Lviv National University of Veterinary Medicine and Biotechnologies, Lviv, Ukraine.
- W251 Performance and metabolic measures of lactating dairy cows fed diets supplemented with either mostly saturated or more unsaturated fatty acids. J. K. Bernard*¹ and A. F. Kertz², ¹The University of Georgia, Tifton, ²ANDHIL LLC, St. Louis, MO.
- W252 Effects of duodenal infusion of linolenic acid on nutrient digestion, milk production, and milk composition in dairy cows. Khas-Erdene¹, D. P. Bu¹, J. Q. Wang*¹, Q. S. Liu¹, L. Wang¹, H. Y. Wei¹, L. Y. Zhou¹, and J. K. Drackley², ¹State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, P. R. China, ²Department of Animal Sciences, University of Illinois, Urbana.
- W253 Effects of feeding different rumen-protected fat supplements on the fatty acid composition of milk. A. R. Sewell*, M. L. Eastridge, P. N. Gott, B. Mathew, and D. L. Palmquist, The Ohio State University, Columbus.
- W254 Fatty acids profile of milk fat from cows with different forage and lipids levels in the diet. M. A. Oliveira¹, M. M. Ladeira², I. G. Pereira³, B. N. Faria¹, and R. B. Reis*¹, ¹Veterinary School, Federal University of Minas Gerais, Brazil, ²Animal Science Department, Federal University of Lavras, Brazil, ³Animal Science Department, Federal University of Jequitinhonha and Mucury Valley, Brazil.
- W255 Milk fatty acid composition of dairy cows fed whole flaxseed or/and Ca-salts of flaxseed oil. C. Côrtes*¹, D. C. da Silva^{1,2}, R. Kazama^{1,2}, N. Gagnon¹, C. Benchaar¹, G. T. d. Santos^{2,3}, L. M. Zeoula^{2,3}, and H. V. Petit¹, ¹Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, ²Universidade Estadual de Maringá, Parana, Brazil, ³CNPq, Brazil.
- W256 The effect of nonstructural carbohydrate and addition of full fat roasted canola seed on milk fatty acid composition in lactating cows. M. Sari, A. A. Naserian*, and R. Valizadeh, Ferdowsi University of Mashhad, Mashhad, Iran.
- W257 Effect of coconut oil and lauric acid on ruminal protozoa and milk production and composition in dairy cows. A. Faciola*¹ and G. Broderick², ¹University of Wisconsin, Madison, ²U. S. Dairy Forage Research Center, Madison, WI.
- W258 Evaluation of camelina meal as a protein and omega-3 source for lactating dairy cattle. B. Hatch*, K. Boydston, P. Rezamand, and M. A. McGuire, University of Idaho, Moscow.
- W259 Assessment of whole Nutrasaff safflower seed as a fat supplement to lactating Holstein dairy cows. C. M. Dschaak*¹, J.-S. Eun¹, A. J. Young¹, and J. W. Bergman², ¹Utah State University, Logan, ²Safflower Technologies International, Sidney, MT.
- W260 Effects of protected fat supplements on total tract digestion and plasma metabolites of early lactation Holstein cows. M. Ganjkanlou*¹, K. Reza Yazdi¹, G. R. Ghorbani², M. Dehghan Banadaky¹, H. Morraveg¹, W. Z. Yang³, and A. Zali¹, ¹University of Tehran, Karaj-Tehran, Iran, ²Isfahan University of Technology, Isfahan, Iran, ³Lethbridge Research Centre, Lethbridge, AB, Canada.
- W261 Effect of lipids source and supplementation frequency on ingestive behavior of beef heifers grazing tropical grass. M. Cristina Araújo Santana¹, T. Teresinha Berchielli¹, R. Andrade Reis¹, A. Vaz Pires², G. Fiorentini¹, P. Henrique de Moura Dian¹, J. Cesar Martinez*¹, and M. Antonio Alvares Balsalobre³, ¹São Paulo State University, Jaboticabal, São Paulo, Brazil, ²São Paulo University, Piracicaba, São Paulo, Brazil, ³Bellman, Mirassol, São Paulo, Brazil.
- W262 Degree of dietary fatty acid saturation affects plasma glucose kinetics in growing beef steers. S. E. Cartiff*, V. Fellner, and J. H. Eisemann, North Carolina State University, Raleigh.
- W263 Seminal characteristics in beef bulls supplemented with rumen bypass fat. H. O. Patino*¹, M. M. H. Ramirez³, J. C. C. Angel¹, K. C. Swanson², and R. M. Gregory³, ¹Dep. Zootecnia, UFRGS, Porto Alegre, RS, Brazil, ²Dept. Animal and Poultry Science, University of Guelph, Guelph, ON, Canada, ³Faculdade Veterinária, UFRGS, Porto Alegre, RS, Brazil.

Ruminant Nutrition Metabolism

- W264 Malate and fumarate enhanced CLA production and reduced methane emission by rumen microbes when incubated with linoleic acid. G. L. Jin*¹, X. Z. Li², C. G. Yan², R. J. Long³, and M. K. Song¹, ¹Department of Animal Science, Chungbuk National University, Cheong-ju, Chungbuk, Korea, ²Animal Science department of Agriculture college, Yanbian University, Yanji, Jilin, China, ³International Centre for Tibetan Plateau Ecosystem Management, Lanzhou University, Lanzhou, Gansu, China.
- W265 Phosphate inhibits in vitro ruminal acetoclastic methanogenesis of maize-rich substrates with lactating Holstein dairy cow rumen liquor. H. J. Yang*¹, D. F. Zhang¹, Y. C. Cao¹, Y. H. Jiang¹, and J. Q. Wang², ¹Department of Animal Nutrition and Feed Science, College of Animal Science and Technology, Beijing, P.R. China, ²State key Laboratory of Animal Nutrition, Beijing Institute of Animal Science, China Academy of Agricultural Sciences, Beijing, P.R. China.
- W266 The effect of concentrate to forage ratios on methanogenes bacteria population in rumen fluid of Holstein steers determined by real-time PCR. A. R. Vakili*¹, M. Danesh Mesgaran¹, A. Heravi Moussavi¹, D. R. Y'ñez Ruiz³, and C. J. Newbold², ¹Dept. of Animal Science, Ferdowsi University of Mashhad, Mashhad, Iran, ²Institute of Biological, Environmental and Rural Sciences, Aberystwyth University, Aberystwyth, UK, ³Unidad de Nutrición Animal Estación Experimental del Zaidín (CSIC) Profesor Albareda, Spain.

- W267 Microbial growth, methane production and fermentation of a high-concentrate diet in Rusitec fermenters as affected by dilution rate and concentrate retention time. M. E. Martínez, M. J. Ranilla*, S. Ramos, M. L. Tejido, C. Saro, and M. D. Carro, *Departamento de Producción Animal, Universidad de León, León, Spain*.
- W268 Effect of diets supplemented by sucrose and/or starch on *Ruminococcus albus* populations in the rumen fluid of Holstein steers determined by real time-PCR. F. Rezaii, M. Danesh Mesgaran*, A. Vakili, A. Heravi Moussavi, and S. Ghovvati, *Dpt. of Animal Science (Excellence Center for Animal Science), Ferdowsi University of Mashhad, Iran*.
- W269 Synergistic fibrolysis by cellulolytic *Ruminococcus flavefaciens*, *Fibrobacter succinogenes*, and non-cellulolytic *Prevotella ruminicola* and *Prevotella bryantii*: study in semi-defined cultures. J. Chiquette* and K. Lauzon, *Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada*.
- W270 Role of inulin as a modifier in rumen fermentation. H. D. Umucalilar¹, N. Gulsen¹, A. Hayirli*², and M. S. Alatas¹, ¹*Department of Animal Nutrition and Nutritional Disorders, Faculty of Veterinary Medicine, Selçuk University, Konya, Turkey*, ²*Department of Animal Nutrition and Nutritional Disorders, Faculty of Veterinary Medicine, Atatürk University, Erzurum, Turkey*.
- W271 Role of lactulose as a modifier in rumen fermentation. N. Gulsen¹, H. D. Umucalilar¹, A. Hayirli*², and O. B. Citil¹, ¹*Department of Animal Nutrition and Nutritional Disorders, Faculty of Veterinary Medicine, Selçuk University, Konya, Turkey*, ²*Department of Animal Nutrition and Nutritional Disorders, Faculty of Veterinary Medicine, Atatürk University, Erzurum, Turkey*.
- W272 Lactic acid modulates DM degradation kinetics of barley grain in the rumen and decreases the risk of acidosis in dairy cows. S. Iqbal, Q. Zebeli*, A. Mazzolari, S. M. Dunn, and B. N. Ametaj, *University of Alberta, Edmonton, AB, Canada*.
- W273 Effect of condensed tannins and maceration on in vitro ruminal degradation of protein in legume hay. G. A. Broderick* and J. H. Grabber, *U.S. Dairy Forage Research Center, Madison, WI*.
- W274 Shift in in vitro microbial fermentation in response to condensed tannin supplementation in mixed ruminal cultures. C. M. Dschaak, J.-S. Eun*, Y.-M. Kim, F. H. Bhushan, and A. J. Young, *Utah State University, Logan*.
- W275 Deglycosylation of steroidal saponin to sapogenin by mixed rumen microbes and their enzymes. Y. Wang* and T. A. McAllister, *Agriculture & Agri-Food Canada Research Centre, Lethbridge, AB, Canada*.
- W276 Starch fermentation kinetics in rumen fluid and synthesis of end products. J. W. Cone*¹ and P. M. Becker², ¹*Animal Nutrition Group, Wageningen University, Wageningen, the Netherlands*, ²*Animal Sciences Group of Wur, Lelystad, the Netherlands*.
- W277 Empirical prediction of oxygen consumption by portal-drained viscera in ruminants: Meta-analysis approach. C. Loncke*¹, I. Ortigues-Marty¹, S. Amblard¹, J. Vernet¹, S. Léger², H. Lapiere³, D. Sauvant⁴, and P. Nozière¹, ¹*Institut National de la Recherche Agronomique - UR 1213, Theix, France*, ²*Université de Clermont Ferrand II - Laboratoire de Mathématiques, Aubière, France*, ³*Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada*, ⁴*Institut National de la Recherche Agronomique - AgroParisTech - UMR 791, Paris, France*.
- W278 Plasma acetate, glucose and leucine turnover rates and whole body protein synthesis in growing lambs. H. Sano, K. Chiba, A. Saito, K. Shibuya, and M. Al-Mamun*, *Iwate University, Morioka, Iwate, Japan*.
- W279 Mammary cell signaling responses to abomasal starch and casein infusions in lactating dairy cows. A. G. Rius*¹, J. Escobar², O. Becvar³, D. Kirovski⁴, and M. D. Hanigan¹, ¹*Dept. of Dairy Science, Virginia Polytechnic Institute and State University, Blacksburg*, ²*Dept. of Animal Science, Virginia Polytechnic Institute and State University, Blacksburg*, ³*College of Veterinary Medicine, Virginia Polytechnic Institute and State University, Blacksburg*, ⁴*Faculty of Veterinary Medicine, University of Belgrade, Belgrade, Serbia*.
- W280 Meta-analysis for the prediction of net portal absorption of amino acid nitrogen in ruminants. R. Martineau*¹, D. Sauvant², D. R. Ouellet¹, J. Vernet³, I. Ortigues-Marty³, and H. Lapiere³, ¹*Agriculture and Agri-Food Canada, Stn Lennoxville, Sherbrooke, QC, Canada*, ²*AgroParisTech INRA, Paris, France*, ³*UHR INRA Clermont-Ferrand, Theix, St-Genès Champanelle, France*.
- W281 Acute fasting-induced changes in motilin, luteinizing hormone and metabolites in goat wethers. O. Gazal¹, B. Kouakou*², W. Mboko¹, S. Bialka¹, and J. H. Lee², ¹*St. Cloud State University, St. Cloud, MN*, ²*Fort Valley State University, Fort Valley, GA*.
- W282 Effect of diet and the SGLT₁ inhibitor phlorizin on net intestinal glucose absorption in Holstein steers. A. L. Ballou*, S. W. El-Kadi, and D. L. Harmon, *University of Kentucky, Lexington*.
- W283 Plasma concentration of glucose-dependent insulinotropic polypeptide is negatively correlated with respiratory quotient in lactating dairy cows. A. E. Relling*¹, L. A. Crompton², S. C. Loerch¹, and C. K. Reynolds², ¹*The Ohio State University, Wooster*, ²*University of Reading, Reading, UK*.
- W284 Gluconeogenesis and carbon recycling in beef steers is modulated by energy-substrate supply. B. J. Bequette*¹, J. Sumner-Thomson¹, J. A. Moorefield¹, D. Hucht², M. Niland², and R. L. Baldwin VI², ¹*Department of Animal and Avian Sciences, University of Maryland, College Park*, ²*Bovine Genomic Laboratory, Animal and Nutrition Resources Institute USDA-ARS, Beltsville, MD*.
- W285 First-pass glucose uptake (FPU) in the intestine of kids fed casein- or soy protein-based milk diets. U. Schönhusen, A. Flöter, P. Junghans, C. C. Metges, and H. M. Hammon*, *Research Institute for the Biology of Farm Animals (FBN), Dummerstorf, Germany*.
- W286 Plasma leptin, feed intake and body fat reserves in ruminants. An updated overview. E. González-García*¹, N. Debus¹, Y. Chilliard², and F. Bocquier¹, ¹*INRA, Montpellier, France*, ²*INRA, Theix, St-Genes-Champanelle, France*.

- W287 Variation of basal expression of a sodium-dependent phosphate transporter between sections of cattle small intestine. A. P. Foote*¹, B. D. Lambert^{1,2}, and J. A. Brady², ¹Tarleton State University, Stephenville, TX, ²Texas AgriLife Research, Stephenville.
- W288 Insulin and essential amino acids have significant but independent effects on protein synthesis signaling in bovine mammary epithelial cells in-vitro. A. L. Bell*, J. A. D. R. N. Appuhamy, J. Escobar, and M. D. Hanigan, *Virginia Polytechnic Institute and State University, Blacksburg.*
- W289 Evaluation of the effects of ozonated water on the microbial ecology of the rumen *in vitro* and digestion of corn and alfalfa hay *in situ*. K. L. Neuhold*, S. K. Williams, K. K. Nightingale, and S. L. Archibeque, *Colorado State University, Department of Animal Sciences, Fort Collins.*

Ruminant Nutrition Vitamins and Minerals

- W290 The influence of feeding chelated trace minerals on dairy cattle performance and colostrum quality. A. Formigoni¹, S. Emanuele*², C. Sniffen³, G. Biagi¹, and M. Fustini¹, ¹DIMORFIPA-University of Bologna, Bologna, Italy, ²Balchem, New Hampton, NY, ³Fencrest LLC, Plymouth, NH.
- W291 Effect of zinc from zinc sulfate on trace mineral concentrations of milk in Varamini ewes. A. Zali and M. Ganjkanlou*, *University of Tehran, Tehran, Iran.*
- W292 Mineral status of semi-confined dairy cattle from Marcos Castellanos, Michoacán. E. Aguillón Trejo, E. Cruz Hernández, M. Huerta Bravo*, and R. Améndola Massiotti, *Universidad Autónoma Chapingo, Chapingo, México, México.*
- W293 Total mixed ration mineral content in California dairy farms. A. R. Castillo*¹, N. Silva del Rio¹, and N. St-Pierre², ¹University of California, Tulare, ²The Ohio State University, Columbus.
- W294 Effects of supplementation of beef cattle ration with rare earth elements on fermentation and digestion in batch culture. W. Z. Yang* and M. L. He, *Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.*
- W295 The effects of trace mineral source, water quality, and choline supplementation on performance and carcass characteristics of steers. J. S. Schutz*¹, J. L. Seabrook¹, K. L. Neuhold¹, J. J. Wagner¹, M. de Veth², and T. E. Engle¹, ¹Colorado State University, Fort Collins, ²Balchem Corporation, New Hampton, NY.
- W296 Effects of rumen protected choline on productive performance and blood metabolites of Holstein lactating cows. M. Dehghan-Banadaky*, F. Fatehi, and T. Ghasemi, *University of Tehran, Department of Animal Sci., Karaj, Iran.*
- W297 Effectiveness of different levels of dietary vitamin E to prevent milk fat depression in dairy cows fed rich soybean oil diet. L. Q. Wang, J. Q. Wang*, D. P. Bu, S. J. Liu, G. C. Luan, and L. Wang, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China.*

Ruminant Nutrition Experimental Methods

- W298 Water bath method for measuring NDF and ADF. A. C. Pereira, E. J. Bungenstab, J. C. Lin, and S. P. Schmidt*, *Auburn University, Auburn, AL.*
- W299 Analysis of fiber from coarsely ground corn plant components within in situ dacron bags. L. J. Nuzback, W. M. Rutherford, and F. N. Owens*, *Pioneer Hi-Bred International, Johnston, IA.*
- W300 Utilization of lignin extracted from different plant sources as standards in the spectrophotometric acetyl bromide lignin method. R. S. Fukushima*¹ and M. S. Kerley², ¹Universidade de Sao Paulo, Pirassununga, Sao Paulo, Brazil, ²University of Missouri, Columbia.
- W301 Degradation kinetics of N in rumen fluid determined with the gas production technique. J. W. Cone*¹, P. M. Becker², and M. A. M. Rodrigues³, ¹Animal Nutrition Group, Wageningen University, Wageningen, the Netherlands, ²Animal Sciences Group of WUR, Lelystad, the Netherlands, ³CECAV-UTAD, Vila Real, Portugal.
- W302 Effect of pH and nonforage fiber sources on microbial fermentation and nutrient flow from a dual-flow continuous culture system. M. Sari, A. Ferret*, S. Calsamiglia, M. Blanch, and M. C. Fuentes, *Universitat Autònoma de Barcelona, Bellaterra, Spain.*
- W303 In vivo and in vitro measurements of ruminal redox potential: A comparative study. C. Julien*¹, A. Troegeler-Meynadier¹, J. P. Marden^{1,2}, F. Enjalbert¹, and C. Bayourthe¹, ¹Université de Toulouse, INRA, Castanet-Tolosan, France, ²Lesaffre Feed Additives, Marquette-Lez-Lille, France.

- W304 Isolation and identification of urease from dairy rumen content by new culture-independent strategy. S. G. Zhao, J. Q. Wang*, D. P. Bu, K. L. Liu, H. Y. Wei, and L. Y. Zhou, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China.*
- W305 Cloning of a bifunctional xylanolytic enzyme gene from *Neocallimastix patriciarum*. J.-R. Liu*^{1,2}, C.-K. Pai³, Y.-F. Zeng¹, C.-H. Duan⁴, and M.-L. Li³, ¹*Institute of Biotechnology, National Taiwan University, Taipei, Taiwan, Republic of China*, ²*Department of Animal Science and Technology, National Taiwan University, Taipei, Taiwan, Republic of China*, ³*Department of Life Science, National Taiwan Normal University, Taipei, Taiwan, Republic of China*, ⁴*Institute of BioAgricultural Sciences, Academia Sinica, Taipei, Taiwan, Republic of China.*
- W306 Validation of a system for monitoring rumination in dairy cows. K. Schirmann*^{1,2}, M. A. G. von Keyserlingk¹, D. M. Veira³, D. M. Weary¹, and W. Heuwieser^{1,2}, ¹*Animal Welfare Program, Faculty of Land and Food Systems, The University of British Columbia, Vancouver, BC, Canada*, ²*Clinic for Animal Reproduction, Faculty of Veterinary Medicine, Freie Universität Berlin, Berlin, Germany*, ³*Agriculture and Agri-Food Canada, Agassiz, BC, Canada.*
- W307 The accuracy and precision of the hand-held Precision Xtra™ meter for measuring β -hydroxybutyrate in whole blood from dairy cows. T. M. Kaiser, S. E. Stebulis*, and R. R. Grummer, *University of Wisconsin, Madison.*
- W308 Re-evaluating the technique of estimating total internal fat using real-time ultrasound and carcass measurements in beef cattle. F. R. B. Ribeiro*¹, L. O. Tedeschi², J. R. Stouffer³, and G. E. Carstens², ¹*Texas A&M University, Commerce*, ²*Texas A&M University, College Station*, ³*Cornell University, Ithaca, NY.*
- W309 Determination of ruminal protein degradation kinetics of Soy Best® with and without soy gums using dynamic modeling and a single point in situ protein disappearance and simulations with the CPM Dairy nutrition model. L. O. Tedeschi¹, G. A. Holub¹, W. Chalupa², and C. A. Macgregor*³, ¹*Texas A&M University, College Station*, ²*University of Pennsylvania, Kennett Square*, ³*Grain States Soya Inc., West Point, NE.*
- W310 Assessing the ability of the Cornell Net Carbohydrate and Protein System to predict fecal and urinary nitrogen excretion in lactating dairy cows. R. J. Higgs*, L. E. Chase, and M. E. Van Amburgh, *Cornell University, Ithaca, NY.*

Small Ruminant Growth, Carcass Traits, Meat Quality, Nutrition

- W311 Behavioral aspects and body weight loss in the pre-slaughter management of ewes in distinct physiological stages and meat quality. R. S. B. Pinheiro, A. M. Jorge*, H. B. A. Souza, and J. P. F. da Silveira, *São Paulo State University, Botucatu, SP, Brazil.*
- W312 Effects of small ruminant species and origin in Ethiopia (Highland vs. Lowland areas) and lengths of rest and feeding on harvest measures. G. Abebe¹, G. Kannan², and A. L. Goetsch*³, ¹*Ethiopia Sheep and Goat Productivity Program, Addis Ababa, Ethiopia*, ²*Agricultural Experiment Station, Fort Valley State University, Fort Valley, GA*, ³*American Institute for Goat Research, Langston University, Langston, OK.*
- W313 Growth performance and carcass characteristics of goat kids fed diets containing sericea lespedeza. S. Solaiman*, J. Thomas, N. Gurung, Y. Dupree, and C. Drake, *Tuskegee University, Tuskegee, AL.*
- W314 Effects of level of barley and corn in concentrate diet fed to Boer kids on growth, meat quality and muscle fatty acid composition. M.-E. Brassard*¹, R. Gervais¹, C. Gariépy², P. Y. Chouinard¹, and D. Cinq-Mars¹, ¹*Université Laval, Québec, QC, Canada*, ²*Food Research and Development Centre, Saint-Hyacinthe, QC, Canada.*
- W315 Comparative postweaning growth among four groups of percentage Dorper and Katahdin wethers. W. R. Getz*, W. Kimble II, J. Mack, and T. Harris, *Georgia Small Ruminant Research and Extension Center, Fort Valley State University, Fort Valley, GA.*
- W316 Body composition of growing meat and lactating dairy goats. A. T. Ngwa¹, L. J. Dawson^{1,2}, R. Puchala¹, G. D. Detweiler¹, R. C. Merkel*¹, Z. Wang¹, K. Tesfai¹, T. Sahl¹, C. L. Ferrell³, and A. L. Goetsch¹, ¹*American Institute for Goat Research, Langston University, Langston, OK*, ²*College of Veterinary Medicine, Oklahoma State University, Stillwater*, ³*USDA, ARS, US Meat Animal Research Center, Clay Center, NE.*
- W317 Carcass traits of finishing lambs fed crude glycerin derived from biodiesel agro industry. J. F. Lage¹, P. V. R. Paulino*¹, L. G. R. Pereira², M. S. Duarte¹, J. P. I. S. Monnerat¹, E. Detmann¹, N. K. P. Souza¹, M. L. Chizzotti¹, and S. C. Valadares Filho¹, ¹*Universidade Federal de Viçosa, Viçosa, MG, Brazil*, ²*EMBRAPA – Semi-Árido, Petrolina, PE, Brazil.*
- W318 Effects of calcium salts of fatty acids on finishing lamb feedlot performance and carcass characteristics. J. L. Seabrook*, R. K. Peel, and T. E. Engle, *Colorado State University, Fort Collins.*
- W319 Physical and chemical qualities of meat of confined lambs receiving different concentrate:forage ratios in diet. R. S. B. Pinheiro, A. M. Jorge*, E. N. de Andrade, C. de L. Francisco, A. Polizel Neto, and J. P. F. da Silveira, *São Paulo State University, Botucatu, SP, Brazil.*

- W320 Effect of shed type and supplementation on fatty acid profile in lamb tissues. M. A. Brown*¹, Y. S. Peng², and J. P. Wu², ¹USDA-ARS, Grazinglands Research Laboratory, El Reno, OK, ²Gansu Agricultural University, Lanzhou, Gansu, PRC.
- W321 Fatty acid profile from the longissimus muscle of grazing Merino lambs with or without winter supplementation in Northern Patagonia. L. Villar*¹, E. Pavan², C. Giraudo¹, and F. Santini³, ¹INTA-EEA Bariloche, Bariloche, Rio Negro, Argentina, ²INTA-EEA Balcarce, Balcarce, Buenos Aires, Argentina, ³INTA-CIA Castelar, Hurlingham, Buenos Aires, Argentina.
- W322 Influence of feed deprivation time on physiological responses and microbial loads in meat goats. M. Vanguru, J. H. Lee, G. Kannan*, T. H. Terrill, and B. Kouakou, Fort Valley State University, Fort Valley, GA.
- W323 Chemical composition, in vitro degradability, and consumption of *Calliandra calothyrsus* and tropical grass hay mixtures by goats and sheep. A. A. Rodríguez*, G. Castro, V. Rivera, E. Valencia, and P. Randel, University of Puerto Rico.
- W324 The use of glycerin in lamb and ewe diets. M. Terré*¹, P. Casado², M. Salas¹, and A. Bach^{1,3}, ¹IRTA-Unitat de Remugants, Barcelona, Spain, ²General de Piensos de Soria S.A., Soria, Spain, ³ICREA, Barcelona, Spain.
- W325 Methane emission by goats consuming condensed tannin-containing forage at different frequencies. R. Puchala*¹, G. Anmut¹, A. L. Goetsch¹, T. Sahl¹, V. H. Varel², and J. Wells², ¹American Institute for Goat Research, Langston University, Langston, OK, ²USDA, ARS, US Meat Animal Research Center, Clay Center, NE.
- W326 The effects of feeding fresh citrus pulp to Merino wethers on wool growth and animal performance. Y. T. E. Fung, J. L. Sparkes, I. van Ekris, A. V. Chaves*, and R. D. Bush, Faculty of Veterinary Science, The University of Sydney, Sydney, NSW, Australia.
- W327 Voluntary intake of silage from corn hybrids harvested at two physiological stages. J. P. F. Silveira¹, R. Belintani*², V. L. Tierzo¹, D. H. Vieira³, T. F. Silveira⁵, P. R. L. Meirelles¹, L. F. D. Medeiros⁴, and C. Costa¹, ¹São Paulo State University, Botucatu, SP, Brazil, ²University of Agrarian Sciences - University of Marília, Marília, SP, Brazil, ³Center of Creation of Animals of Laboratory, Rio de Janeiro, RJ, Brazil, ⁴Rural Federal University of Rio de Janeiro, Seropedica, RJ, Brazil, ⁵Agricultural Municipal School Adolfo Alves Rezende, Campina Verde, MG, Brazil.
- W328 Effect of corn hybrid and ensiling process on voluntary intake of lambs. J. P. F. Silveira¹, R. Belintani*², V. L. Tierzo¹, P. R. L. Meirelles¹, D. H. Vieira³, P. Persichetti Junior¹, C. Costa¹, L. F. D. Medeiros⁴, and T. F. Silveira⁵, ¹São Paulo State University, Botucatu, SP, Brazil, ²University of Agrarian Sciences - University of Marília, Marília, SP, Brazil, ³Center of Creation of Animals of Laboratory, Rio de Janeiro, RJ, Brazil, ⁴Rural Federal University of Rio de Janeiro, Seropedica, RJ, Brazil, ⁵Agricultural Municipal School Adolfo Alves Rezende, Campina Verde, MG, Brazil.
- W329 Chemical composition, in vitro degradability, intake and digestibility of pigeon-pea (*Cajanus cajan* var. guerrero) and guinea-grass hay by goats. A. A. Rodríguez*, D. Carmona, L. González, E. Valencia, and P. Randel, University of Puerto Rico, Mayaguez, PR.
- W330 Effects of feeding peanut skins on growth performance and carcass traits of Kiko × Spanish growing male goat kids. A. Stone*¹, N. Gurung¹, S. Solaiman¹, D. Rankins Jr.³, G. Abdrahim², and W. McElhenney¹, ¹Tuskegee University, Tuskegee, AL, ²Alabama A & M University, Normal, ³Auburn University, Auburn, AL.
- W331 Effects of soybean small peptide on absorption of free amino acids and small peptide in lactating goats. L. Wang, Z.-J. Cao*, H. Liu, and S.-L. Li, College of Animal Science and Technology, China Agricultural University, Beijing, China.
- W332 Protein requirements of Boer crossbred kids. I. A. M. A. Teixeira*¹, K. T. Resende¹, J. M. Pereira Filho², R. C. Canesin¹, and T. T. Berchielli¹, ¹Universidade Estadual Paulista/Unesp, Jaboticabal, SP, Brazil, ²Universidade Federal de Campina Grande/UFCG, Patos, PB, Brazil.
- W333 Nitrogen balance of Saanen goats in early lactation fed diets with different protein:energy ratio. L. Rapetti*, S. Colombini, G. M. Crovetto, and G. Galassi, Department of Animal Science, University of Milan, Milan, Italy.
- W334 Nitrogen balance and ruminal and blood metabolites of Saanen dairy goats infused abomasally with different levels and combination of starch and pectin. M. Sari, A. A. Naserian*, R. Valizadeh, and S. Salari, Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran.
- W335 Efficiency of energy utilization by lactating Alpine goats. I. Tovar-Luna*^{1,2}, A. L. Goetsch¹, R. Puchala¹, T. Sahl¹, and H. C. Freetly³, ¹American Institute for Goat Research, Langston University, Langston, OK, ²Universidad Autónoma Chapingo, Unidad Regional Universitaria de Zonas Áridas, Bermejillo, Dgo., México, ³USDA, ARS, US Meat Animal Research Center, Clay Center, NE.
- W336 Blood mineral concentration of goats in semiarid rangelands of central zone in Mexico during the rainy and dry season. R. Rojo-Rubio*¹, A. Z. M. Salem^{1,2}, A. Olmedo-Juárez¹, A. Hernández-Rodríguez¹, B. Albarrán-Portillo¹, D. López-Aguirre¹, S. Rebollar-Rebollar¹, J. F. Vázquez-Armijo¹, D. Cardoso-Jiménez¹, and J. Hernández-Martínez¹, ¹Centro Universitario UAEM, Temascaltepec, Universidad Autónoma del Estado de México, Temascaltepec, Estado de México, México, ²Department of Animal Production, Faculty of Agriculture, Alexandria University, Alexandria, Egypt.

Swine Species

- W337 Anti-obesity effect of ethanol extract of seed sprouts in porcine preadipocytes. M.-Y. Lee¹, J.-J. Lee¹, H.-J. Lee², and S.-H. Oh^{*3}, ¹Department of Food and Nutrition, College of Natural Sciences, Chosun University, Gwangju, Chonnam, South Korea, ²Department of Nutrition and Culinary Science, Hankyong National University, Ansung, Gyeonggi, South Korea, ³Department of Animal Sciences, North Carolina A&T State University, Greensboro.
- W338 The relationship between ammonia concentration in the farrowing room and liver enzymes of sows exposed during lactation: A preliminary study. G. Rocha-Chavez^{*1}, J. M. Tapia-Gonzalez¹, M. A. Pinto², A. Sepulveda- Montes¹, S. Hernandez-Gutierrez¹, O. D. Montañez-Valdez¹, and M. Sanchez-Fabian¹, ¹CUSUR Univ de Guadalajara, Cd Guzman, Jalisco, Mexico, ²Private practice, Guadalajara, Jalisco, Mexico.
- W339 Variation in backfat depth and its relations to testicular hypertrophy and reproductive development in boars. D. O. Umlesiobi^{*}, *Field of Animal Reproductive Physiology, School of Agriculture and Environmental Sciences, Central University of Technology, Bloemfontein, South Africa.*
- W340 Performance of weanling pigs consuming varying levels of a genetically modified corn expressing an alpha-amylase. K. L. Price^{*1}, A. F. Harper¹, M. E. Persia², and J. Escobar¹, ¹Animal & Poultry Sciences, Virginia Polytechnic Institute and State University, Blacksburg, ²Syngenta Biotechnology, Inc., Research Triangle Park, NC.
- W341 A survey of North American sow farm reproductive management. R. Knox^{*1}, T. Safranski², D. Levis³, and W. Singleton⁴, ¹University of Illinois, Urbana, ²University of Missouri, Columbia, ³University of Nebraska, Concord, ⁴Purdue University, West Lafayette, IN.
- W342 Combined *Acanthopanax senticosus* extract and inulin improves growth performance, diarrhea and intestinal morphology in weaned piglets. X. Wu¹, Y. Yin^{*1}, F. Yan¹, X. Kong¹, R. Huang¹, T. Li¹, and L. Chen², ¹Laboratory of Animal Nutritional Physiology and Metabolic Process, Institute of Subtropical Agriculture, the Chinese Academy of Sciences, Changsha, Hunan, China, ²Guang An Biological Technique Company, China.
- W343 Microarray analysis of genes in small intestine of IUGR piglets. R. Chen, Y. Yin^{*}, J. Pan, Y. Gao, and X. Song, *Key Laboratory of Animal Nutritional Physiology and Metabolic Process, Institute of Subtropical Agriculture, the Chinese Academy of Sciences, Changsha, Hunan, China.*
- W344 Conjugated linoleic acid (CLA) isomers and its effect on proliferation of CD4 and CD8 T lymphocytes of pigs. J. R. Peralta-Quintana, S. Y. Moya-Camarena, J. Hernández, M. Reséndiz, V. Mata-Haro, and A. Pinelli-Saavedra^{*}, *Centro de Investigación en Alimentación y Desarrollo A.C., Hermosillo, Sonora, México.*
- W345 Dietary requirement of true digestible lysine for growing pigs. Y. Zhang^{*1,2}, Y. Yin¹, J. Li¹, R. Huang¹, and Y. Chen^{1,2}, ¹Key Laboratory of Subtropical Agro-ecology, Institute of Subtropical Agriculture, The Chinese Academy of Sciences, Changsha, Hunan, The People's Republic of China, ²The Graduate University of Chinese Academy of Sciences, Beijing, The People's Republic of China.
- W346 Effect of diet enriched with rapeseed or sunflower oil on fatty acid profile of backfat and intramuscular fat in gilts. G. Battacone^{*}, A. Nudda, M. G. Manca, C. Dimauro, and G. Pulina, *Dipartimento di Scienze Zootecniche, Università di Sassari, Sassari, Italy.*
- W347 Mechanisms for transcellular transport of glucose in swine small intestine. M. Al-Rammahi^{*1}, A. Moran¹, D. Batchelor¹, E. Coulter¹, N. Jones¹, C. Ionescu², D. Bravo², and S. Shirazi-Beechey¹, ¹Department of Veterinary Preclinical Sciences, University of Liverpool, Liverpool, UK, ²Pancosma SA, Geneva, Switzerland.
- W348 Expression of sweet taste receptor, gustducin and carbohydrate responsive gut hormones in swine small intestine. M. Al-Rammahi^{*1}, A. Moran¹, D. Batchelor¹, E. Coulter¹, N. Jones¹, C. Ionescu², D. Bravo², and S. Shirazi-Beechey¹, ¹Department of Veterinary Preclinical Sciences, University of Liverpool, Liverpool, UK, ²Pancosma SA, Geneva, Switzerland.
- W349 Microbiological and molecular analysis of bacterial community by probiotic mixture in weaning pig *in vivo* intestinal models. Y. S. Kim¹, Y. Kim¹, K. Y. Whang², S. H. Kim², and S. Oh^{*1}, ¹Division of Animal Science, Chonnam National University, Gwangju, Korea, ²Department of Food Bioscience and Division of Biotechnology, Korea University, Seoul, Korea.
- W350 Administration of probiotics influences enterotoxigenic *Escherichia coli* F4 attachment and expression of intestinal cytokines in weaned pigs. J.-F. Daudelin^{*1,2}, M. Lessard², F. Beaudoin², N. Bissonnette², E. Nadeau¹, and J. M. Fairbrother¹, ¹Reference laboratory for *E. coli* (ECL), Université de Montréal, St-Hyacinthe, Quebec, Canada, ²Dairy and Swine Research and Development Centre, Agriculture and Agri-Food Canada, Sherbrooke, Quebec, Canada.
- W351 Inclusion of live yeast *S. cerevisiae boulardii* (CNCM I-1079) in sow lactation diets: Effects on sows and nest performances. F. Mariella¹, A. Agazzi¹, G. Invernizzi¹, G. Savoini^{*1}, E. Chevaux², and Y. Le Treut², ¹University of Milan Faculty of Veterinary Medicine, Milan, Italy, ²Lallemand S.A.S., Blagnac, France.
- W352 Consumer preferences for U.S. pork in urban China. D. Ortega^{*1}, H. Wang¹, and L. Wu², ¹Purdue University, West Lafayette, IN, ²China Agricultural University, Beijing, P. R. China.
- W353 Gastrointestinal morphology of pigs farrowed in indoor versus outdoor management systems and weaned into an indoor, off-site nursery. E. Davis^{*1}, C. V. Maxwell², J. D. Spencer³, R. L. Moser³, J. Rehberger¹, and T. Rehberger¹, ¹Agtech Products, Inc., Waukesha, WI, ²University of Arkansas, Fayetteville, ³JBS United, Inc., Sheridan, IN.

- W354 The relationship between radiated heat loss and feed conversion in grower pigs. W. Caine*, L. Holt-Klemic, J. Aalhus, I. Larsen, T. Liu, J. Colyn, M. E. Dugan, W. Robertson, S. Landrey, and A. L. Schaefer, *Agriculture and Agri-Food Canada, Lacombe, Alberta, Canada.*
- W355 The effect of a *Bacillus* based direct fed microbial on the microbiota of grow-finish pigs. J. Rehberger*¹, E. Davis¹, C. V. Maxwell², and T. Rehberger¹, ¹*Agtech Products, Inc., Waukesha, WI*, ²*Department of Animal Science, University of Arkansas, Fayetteville.*
- W356 A preliminary comparison of the bacterial communities of foaming and non-foaming swine manure pits. J. Rehberger*, E. Davis, A. Baker, T. Parrott, A. Veldkamp, and T. Rehberger, *Agtech Products, Inc., Waukesha, WI.*
- W357 Effects of supplementing piglets post-weaning with an oral rehydration solution or lactic acid on growth and performance. L. Seefeldt*, S. I. Kehoe, and G. Onan, *University of Wisconsin, River Falls.*
- W358 Comparison of growth performance for pigs raised indoor and outdoor. T. White*, I. Martinez, T. Barrios, and S.-H. Oh, *Department of Animal Sciences, North Carolina Agricultural & Technical State University, Greensboro.*

SYMPOSIA AND ORAL SESSIONS

Animal Behavior and Well-Being Behavior-Nutrition Interaction

Chair: Ted Friend, Texas A&M University
510ac

- 10:30 AM 504 Behavior-nutrition interaction in goats. A. L. Goetsch*¹, T. A. Gipson¹, and A. R. Askar², ¹*American Institute for Goat Research, Langston University, Langston, OK*, ²*Animal and Poultry Nutrition Department, Desert Research Center, Cairo, Egypt.*
- 11:00 AM 505 Selection of tannins by sheep in response to gastro-intestinal nematode infections. J. J. Villalba*¹, F. D. Provenza¹, J. O. Hall², and L. D. Lisonbee¹, ¹*Utah State University, Department of Wildland Resources, Logan*, ²*Utah State University, Department of Animal, Dairy and Veterinary Sciences, Logan.*
- 11:15 AM 506 Feed volatile compounds affect lambs and ewes palatability. T. Rapisarda¹, A. Mereu², A. Cannas², V. Giovanetti³, S. Carpino*¹, and G. Licitra^{1,4}, ¹*CoRFiLaC, Regione Siciliana, Ragusa, Italy*, ²*Dipartimento di Scienze Zootecniche, University of Sassari, Italy*, ³*Agris Sardegna, DRPA, Olmedo, Italy*, ⁴*D.A.C.P.A. University of Catania, Italy.*
- 11:30 AM 507 Behavior-nutrition interactions in horses. D. Sigler*, *Department of Animal Science, Texas A&M University, College Station.*
- 12:00 PM 508 Effects of Protimax® and Betaine feed supplements on activity in dairy calves. S. C. Tutt*, G. Holub, T. H. Friend, S. M. Garey, and J. E. Sawyer, *Texas A&M University, College Station.*
- 12:15 PM 509 Effect of feeding method on the learning of feeding behavior in dairy heifers. A. M. Greter*¹, K. E. Leslie², G. J. Mason³, B. W. McBride³, and T. J. DeVries¹, ¹*Department of Animal and Poultry Science, University of Guelph, Kemptville Campus, Kemptville, ON, Canada*, ²*Department of Population Medicine, Ontario Veterinary College, Guelph, ON, Canada*, ³*Department of Animal and Poultry Science, University of Guelph, Guelph, ON, Canada.*

SYMPOSIUM

ASAS-ADSA Graduate Student Symposium

Decisions, Decisions, Decisions: How to make informed decisions on your future career opportunities to developing a successful research program.

Chair: Amy E. Radunz, The Ohio State University

Sponsors: ASAS and ADSA

511ad

- 10:30 AM 510 Extension employment opportunities following the completion of a M.S. degree in animal science. G. P. Lardy*, *North Dakota State University, Fargo.*
- 10:50 AM 511 Career opportunities in the animal science industry for graduate students. W. J. Platter*, *Elanco Animal Health.*
- 11:10 AM 512 Unique and non-traditional opportunities with an advance degree in animal science. J. L. Garrett*, *JG Consulting Services, Dowling, MI.*
- 11:30 AM Panel discussion

- 11:40 AM 513 Should I go get a Ph.D. and if so, is a post-doc warranted? M. Hogberg*, *Iowa State University, Ames.*
- 12:00 PM 514 Developing a competitive research program and securing tenure as a new faculty hire. B. W. Hess*, *University of Wyoming, Laramie.*
- 12:20 PM Panel discussion

Breeding and Genetics
Beef Cattle & Sheep Breeding
Chair: Janice M. Rumph, Michigan State University
513ef

- 10:30 AM 515 Genotype by region and season interactions for postweaning gain in beef cattle. J. L. Williams*¹, M. Lukaszewicz^{1,2}, I. Misztal¹, and J. K. Bertrand¹, ¹*University of Georgia, Athens*, ²*Institute of Genetics and Animal Breeding, Polish Academy of Sciences, Jastrzebiec, Poland.*
- 10:45 AM 516 Estimation of genetic parameters for mature weight in Angus cattle. R. B. Costa*¹, I. Misztal¹, J. K. Bertrand¹, and S. Northcut², ¹*University of Georgia, Athens*, ²*American Angus Association, St. Joseph, MO.*
- 11:00 AM 220 Identification of single nucleotide polymorphisms influencing feed efficiency and performance in multi-breed beef cattle using a candidate gene approach. M. K. Abo-Ismael*¹, M. J. Kelly¹, E. J. Squires¹, K. C. Swanson¹, J. D. Nkrumah², and S. P. Miller¹, ¹*University of Guelph, Guelph, ON, Canada*, ²*Igenity Livestock Production Business Unit, Merial Ltd., Duluth, GA.*
- 11:15 AM 517 Rate of maturing and proportion of mature body weight at puberty of crossbred cows. H. C. Freetly* and L. A. Kuehn, *USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE.*
- 11:30 AM 518 Breed comparison of post partum ovarian activity in cows. C. Disenhaus*¹, E. Cutullic¹, F. Blanc², and J. Agabriel³, ¹*INRA UMR1080 Dairy Production, 35000 Rennes, France*, ²*ENITAC, 63370 Lempdes, France*, ³*INRA UR1213 Unité de recherches sur les herbivores, Theix 63122, Saint-Genès-Champagnelle, France.*
- 11:45 AM 519 Prediction of wool fibre diameter from protein and metabolisable energy digestibility coefficients in crossbred sheep. A. E. O. Malau-Aduli*, R. E. Walker, and W. C. Bignell, *University of Tasmania, Hobart, Tasmania 7001, Australia.*
- 12:00 PM 520 Wool quality and growth traits of Tasmanian pasture-fed crossbred lambs and relationships with plasma metabolites. A. E. O. Malau-Aduli*, C. F. Ranson, and C. W. Bignell, *University of Tasmania, Hobart, Tasmania 7001, Australia.*
- 12:15 PM 521 Bayesian estimation of genetic parameters for body weight traits and litter size of Moghani sheep using Gibbs sampling. N. Ghavi Hossein-Zadeh*^{1,2}, ¹*University of Tehran, Karaj, Iran*, ²*University of Guilan, Rasht, Iran.*

Dairy Foods
Dairy Foods/Microbiology
Chair: James Steele, University of Wisconsin
513cd

- 10:30 AM 522 Molecular and technological characterization of lactic acid bacteria isolated from the Egyptian white pickled cheese. M. El Soda*, M. Mohammed, S. Anwar, and S. Awad, *Department of Dairy Science, Faculty of Agriculture, Alexandria University, Alexandria, Egypt.*
- 10:45 AM 523 Physiological and transcriptional response of *Lactobacillus casei* ATCC 334 to acid stress. R. Thompson*¹, V. Deibel^{2,3}, J. Steele², and J. Broadbent¹, ¹*Utah State University, Logan*, ²*University of Wisconsin, Madison*, ³*TracMicro, Madison, WI.*
- 11:00 AM 64 Growth of *Lactobacillus casei* at 8°C in Cheddar cheese extract requires supplementation. W. S. Tan*¹, M. F. Budinich¹, R. Ward², J. R. Broadbent², and J. L. Steele¹, ¹*University of Wisconsin, Madison*, ²*Utah State University, Logan.*
- 11:15 AM 525 CpG oligodeoxynucleotide from *Streptococcus thermophilus* regulates anti-inflammatory responses. T. Shimosato*¹, M. Tohno², T. Sato³, and H. Kitazawa², ¹*Shinshu University, Kamiina, Nagano, Japan*, ²*Tohoku University, Sendai, Miyagi, Japan*, ³*Yokohama City University, Yokohama, Kanagawa, Japan.*

- 11:30 AM 526 Survival of probiotic adjunct cultures added to low-fat, reduced-fat, and full fat cheddar cheese. C. J. Oberg*¹, L. Moyes¹, C. Brothersen², and D. J. McMahon², ¹*Microbiology Department, Weber State University, Ogden, UT*, ²*Western Dairy Center, Utah State University, Logan.*
- 11:45 AM 527 Intrinsic resistance and stress responses to hydrogen peroxide in bifidobacteria. T. S. Oberg*¹, S. C. Ingham², J. L. Steele², and J. R. Broadbent², ¹*Utah State University, Logan*, ²*University of Wisconsin, Madison.*
- 12:00 PM 528 Cholesterol removing ability and bile tolerance of lactic acid bacteria isolated from fermented yak milk. Y. Jiao¹, L. Zhang*², and H. Yi², ¹*Heilongjiang University of Chinese Medicine, Harbin, China*, ²*College of Food science and engineering, Harbin Institute of Technology, Harbin, China.*
- 12:15 PM 529 Factors affecting the total bacteria count of raw milk preserved with azidol (liquid or tablet) and bronopol. M. O. Leite*^{1,2}, N. J. Andrade³, M. M. O. P. Cerqueira^{1,2}, L. M. Fonseca^{1,2}, and R. Rodrigues^{1,2}, ¹*Federal University of Minas Gerais (UFMG), School of Veterinary Medicine, Department of Food Technology and Inspection, Belo Horizonte, MG, Brazil*, ²*Laboratory of Milk Quality Analysis, UFMG, Belo Horizonte, MG, Brazil*, ³*Federal University of Viçosa, Viçosa, MG, Brazil.*

Extension Education
Chair: Lane Ely, University of Georgia
511be

- 10:30 AM 530 A diagnostic tool to assess calf welfare and management on-farm. E. Vasseur*¹, J. Rushen², A. M. de Passillé², D. Lefebvre³, G. Fecteau⁴, and D. Pellerin¹, ¹*Université Laval, Quebec city, Quebec, Canada*, ²*Pacific Agri-Food Research Centre, Agriculture and Agri-Food Canada, Agassiz, British Columbia, Canada*, ³*Valacta, Dairy Production Centre of Expertise Quebec-Atlantic, Sainte-Anne-de-Bellevue, Quebec, Canada*, ⁴*Veterinary Faculty, Université de Montréal, Sainte-Hyacinthe, Quebec, Canada.*
- 10:45 AM 531 Expanding use of high accuracy AI sires in Missouri beef cattle enterprises. D. C. Busch*, N. R. Leitman, D. A. Mallory, J. F. Bader, D. J. Wilson, S. E. Poock, M. F. Smith, J. L. Parcell, and D. J. Patterson, *University of Missouri, Columbia.*
- 11:00 AM 532 On-line access to the Cattle Producer's Library for disseminating beef cattle educational information. J. C. Whittier¹, J. W. Oltjen*², J. A. Paterson³, D. R. Zobell⁴, and Western Beef Resource Committee⁵, ¹*Colorado State University, Fort Collins*, ²*University of California, Davis*, ³*Montana State University, Bozeman*, ⁴*Utah State University, Logan*, ⁵*WBRC, 12 Western USA States.*
- 11:15 AM 533 Using audience response software in equine extension programs. K. Martinson*, *University of Minnesota, St. Paul.*
- 11:30 AM 534 Partnering with outside entities to broaden extension's reach: Theory, practice, challenges, implications, and impact. E. A. Greene*¹, R. E. Greene², and R. L. Parsons¹, ¹*University of Vermont, Burlington*, ²*Kleine Lelli Consulting, Wayland.*
- 11:45 AM 535 Maximizing reach via the internet while providing tools for information dissemination in traditional extension environments. E. A. Greene*¹, A. S. Griffin², K. P. Anderson³, and C. D. Skelly⁴, ¹*University of Vermont, Burlington*, ²*University of Kentucky, Lexington*, ³*University of Nebraska, Lincoln*, ⁴*Michigan State University, Lansing.*

Growth and Development
Fetal Development
Chair: Tom Welsh, Texas A&M University
511cf

- 10:30 AM 536 Inadequate protein levels during gestation in gilts affect gestation body mass and fatness as well as offspring birth weight and insulin sensitivity at 10 wk of age. C.C. Metges*, I.S. Lang, S. Goers, P. Junghans, U. Hennig, B. Stabenow, F. Schneider, W. Otten, and C. Rehfeldt, *Research Institute for the Biology of Farm Animals (FBN), Dummerstorf, MV, Germany.*
- 10:45 AM 537 Dam parity influences offspring liveweight and abdominal adiposity. P. R. Kenyon*, H. T. Blair, S. T. Morris, E. C. Firth, and C. W. Rogers, *Massey University, Palmerston North, New Zealand.*
- 11:00 AM 538 Metabolic maturity at birth and neonate lamb survival and growth. I. The effects of maternal low dose dexamethasone treatment at two time points in late gestation. D. R. Miller*¹, R. B. Jackson¹, D. Blache², and J. R. Roche¹, ¹*Tasmanian Institute of Agricultural Research, Mt Pleasant, TAS, Australia*, ²*University of Western Australia, Perth, WA, Australia.*
- 11:15 AM 539 Metabolic maturity at birth and neonate lamb survival and growth. II. Association among maternal factors, litter type, lamb birth weight, plasma metabolic and endocrine factors, lamb survival and behavior. D. R. Miller*¹, D. Blache², R. B. Jackson¹, E. Downie¹, and J. R. Roche¹, ¹*Tasmanian Institute of Agricultural Research, Mt Pleasant, TAS, Australia*, ²*University of Western Australia, Perth, WA, Australia.*

- 11:30 AM 540 Maternal over-nutrition induces inflammatory response in large intestine of fetal sheep in late gestation. X. Yan*¹, M. Du¹, B. W. Hess¹, S. P. Ford¹, P. W. Nathanielsz^{1,2}, and M. J. Zhu¹, ¹University of Wyoming, Laramie, ²University of Texas Health Sciences Center, San Antonio.
- 11:45 AM 541 An *in vivo* comparison of muscles formed from broiler and layer chick somites. P. E. Mozdziak*, D. Hodgson, and J. N. Petite, Department of Poultry Science, North Carolina State University, Raleigh.

SYMPOSIUM
International Animal Agriculture
ASAS-EAAP Global Issues
Chair: Melvin Yokoyama, Michigan State University
Sponsors: ASAS, AMPA, and EAAP
510bd

- 10:30 AM Introduction: The impact of dynamic economic and environmental changes on livestock sectors in developing countries. M. Yokoyama.
- 10:40 AM 542 Animal agriculture in developing countries: Population pressures, income growth, climate change, and the management of global genetic resources. D. Gollin*, Williams College, Williamstown, MA.
- 11:10 AM 543 Adaptation of the livestock sector to global climate change: Opportunities and options for animal genetic resources and management systems in developing countries. S. Fernandez-Rivera*, Instituto Nacional de Investigaciones Forestales, Agrícolas y Pecuarias, Mexico City, D.F., Mexico.
- 11:40 AM 544 The role for animal genetic resources under global climate change conditions and rapid development of the livestock sector. I. Hoffmann*, FAO, Rome, Italy.
- 12:10 PM 545 The impact of global climate change, utilization of genetic resource management and livestock sector development on nutrition and health in developing countries. Y. Plante*¹ and H. Blackburn², ¹Agriculture and Agri-Food Canada, Saskatoon, SK, Canada, ²United States Department of Agriculture, Fort Collins, CO.

Lactation Biology 2
Chair: Darryl Hadsell, Baylor College of Medicine
512ae

- 10:30 AM 546 Prolactin, insulin and cortisone regulate expression of GLUT8 gene in bovine mammary explants. K. Zhao*, H. Y. Liu, and J. X. Liu, Institute of Dairy Science, Ministry of Education Key Laboratory of Molecular Animal Nutrition, Zhejiang University, Hangzhou, P. R. China.
- 10:45 AM 547 Effect of the milking-induced prolactin release on galactopoiesis in dairy cows. V. Lollivier*¹, R. M. Bruckmaier², P. Lacasse³, and M. Boutinaud¹, ¹INRA, AGROCAMPUS OUEST, UMR1080, St. Gilles, France, ²University of Bern, Bern, Switzerland, ³AAFC, Dairy and Swine R&D Centre, Sherbrooke, Canada.
- 11:00 AM 548 Effects of unilateral frequent milking of dairy heifers during early lactation. J. B. Wright*, E. H. Wall, and T. B. McFadden, University of Vermont, Burlington.
- 11:15 AM 549 Effects of reduced frequency of milk removal on gene expression in the bovine mammary gland. M. Littlejohn*¹, C. Walker¹, H. Ward², K. Lehnert², R. Snell², G. Verkerk¹, R. Spelman³, D. Clark¹, and S. Davis^{2,3}, ¹DairyNZ Ltd, Hamilton, New Zealand, ²ViaLactia Biosciences Ltd, Auckland, New Zealand, ³Livestock Improvement Corporation, Hamilton, New Zealand.
- 11:30 AM 550 The ability of exogenous growth hormone to maintain milk production during prolonged lactation in the mouse is more evident with reduced nursing frequency. D. L. Hadsell*¹, W. Olea¹, A. F. Parlow², and R. J. Collier³, ¹Baylor College of Medicine, Houston, TX, ²Harbor-UCLA Medical Center, Torrance, CA, ³The University of Arizona, Tucson.
- 11:45 AM 551 Mammary transcript profiles due to parturition dietary energy level and bacterial lipopolysaccharide challenge in dairy cows early postpartum. D. E. Graugnard*, S. L. Rodriguez-Zas, R. E. Everts, H. A. Lewin, J. K. Drackley, and J. J. Looor, University of Illinois, Urbana.
- 12:00 PM 552 Fluoxetine and phenelzine disrupt tight junctions in primary bovine mammary epithelial cells. L. L. Hernandez*¹, R. J. Collier², and N. D. Horseman¹, ¹University of Cincinnati, Cincinnati, OH, ²University of Arizona, Tucson.
- 12:15 PM 553 Detection of bioluminescent *Staphylococcus aureus* through bovine mammary gland tissue *ex vivo*. J. Curbelo*, K. Moulton, E. Schenck, and S. Willard, Mississippi State University, Mississippi State.

**Nonruminant Nutrition
Minerals and Vitamins
Chair: Gretchen Hill, Michigan State University
518**

- 10:30 AM 554 Effects of phytase supplementation on apparent and standardized total tract digestibility of P in corn, soybean meal, and distillers dried grains with solubles (DDGS) fed to growing pigs. F. N. Almeida* and H. H. Stein, *University of Illinois, Urbana*.
- 10:45 AM 555 Determination of the stability of Zn, Mn, Cu and Fe glycinate in aqueous solution by electrospray QqTOF mass spectrometry. S. Oguey*¹, V. Vacchina², R. Lobinski³, and D. Bravo¹, ¹*Pancosma, Geneva, Switzerland*, ²*UT2A, Pau, France*, ³*CNRS, Pau, France*.
- 11:00 AM 556 Analysis of Zn, Mn, Cu and Fe glycinate by size-exclusion liquid chromatography coupled to an inductively coupled plasma mass spectrometry detection. S. Oguey*¹, V. Vacchina², R. Lobinski³, and D. Bravo¹, ¹*Pancosma, Geneva, Switzerland*, ²*UT2A, Pau, France*, ³*CNRS, Pau, France*.
- 11:15 AM 557 Femurs are more accurate than fibulas as predictors of whole body bone mineral content in growing pigs. T. D. Crenshaw*, L. E. Hoffman, J. R. Danielson, and D. K. Schneider, *University of Wisconsin, Madison*.
- 11:30 AM 226 Calcium chloride and sodium nitrate as nutritional means to overcome the reduction in performance of pigs fed high potassium diets. J. Guimaraes*, D. Wey, C. Zhu, and C. F. M de Lange, *University of Guelph, Guelph, Ontario, Canada*.
- 11:45 AM 558 Effect of supplemented mined humate on growth, loin quality, and pathological status of liver and kidneys in pigs. C. M. Ballou*, Y. Zhao, Y. B. Kim, A. C. Chaytor, and S. W. Kim, *North Carolina State University, Raleigh*.
- 12:00 PM 559 Effects of EcoCare® Feed on mineral excretion of pigs during the finishing phase. T. Walraven*¹, S. Carter¹, M. Lachmann¹, J. Bundy¹, J. Jarrett¹, and B. De Rodas², ¹*Oklahoma State University, Stillwater*, ²*Land O'Lakes Purina Feed, Gray Summit, MO*.
- 12:15 PM 560 Effects of combining multiple dietary manipulations on growth performance and nutrient excretion of finishing pigs. T. Walraven*, S. Carter, J. Jarrett, M. Bible, and H. J. Kim, *Oklahoma State University, Stillwater*.

**SYMPOSIUM
Physiology and Endocrinology
Impact of Gonadal Steroids on Brain Development and Function
Chair: Fredrick Stormshak, Oregon State University
524**

- 10:30 AM Introduction. Fredrick Stormshak.
- 10:45 AM 561 Feedback and fitness: Consequences of non-classical estrogen receptor α signaling in the brain. J. E. Levine*, *Northwestern University, Evanston, IL*.
- 11:25 AM 562 Nongenomic actions of estrogens directly on the ovine pituitary facilitates LH secretion. T. Nett*¹, A. Arevalo-Arreguin¹, and T. Davis², ¹*Colorado State University, Fort Collins*, ²*University of Idaho, Moscow*.
- 12:05 PM 563 Actions of androgens in regulating sexual differentiation of the sheep brain and consequent effects on sexual behavior. C. E. Roselli*^{1,2} and F. Stormshak², ¹*Oregon Health and Science University, Portland*, ²*Oregon State University, Corvallis*.

**Production, Management and the Environment
General
Chair: Geoff Dahl, University of Florida
519**

- 10:30 AM 564 Heat stress does not alter immune status of Holstein calves but slick genotype confers reduced immune function. J. W. Bubolz*, S. Tao, B. C. do Amaral, M. J. Hayen, T. A. Olson, and G. E. Dahl, *University of Florida, Gainesville*.
- 10:45 AM 54 The effect of two calving seasons on cow and calf performance in western Canada. L. C. Girardin*¹, H. A. Lardner², A. D. Iwaasa³, S. L. Scott⁴, and S. H. Hendrick¹, ¹*University of Saskatchewan, Saskatoon, Saskatchewan, Canada*, ²*Western Beef Development Centre, Lanigan, Saskatchewan, Canada*, ³*Agriculture and Agri-food Canada - Semiarid Prairie Agricultural Research Centre, Swift Current, Saskatchewan, Canada*, ⁴*Agriculture and Agri-food Canada - Brandon Research Centre, Brandon, Manitoba, Canada*.

- 11:00 AM 565 Clinical stopping rules in sequential field trials. D. B. Nielsen* and C. Enevoldsen, *Faculty of Life Sciences, Department of Large Animal Clinical Sciences, University of Copenhagen, Denmark.*
- 11:15 AM 566 Modeling cow body shape for objective estimation of body condition score from digital images. G. Azzaro¹, M. Caccamo*¹, J. D. Ferguson², S. Battiato³, G. M. Farinella³, G. C. Guarnera³, G. Puglisi³, and G. Licitra^{1,4}, ¹CoRFiLaC, Regione Siciliana, Ragusa, Italy, ²University of Pennsylvania, Kennett Square, ³IPLAB, University of Catania, Italy, ⁴D.A.C.P.A., University of Catania, Italy.
- 11:30 AM 567 Effects of calf bedding acidification on microbial content and fly larvae density. M. S. Calvo*, T. L. Armitage, Y. E. Pan, A. Gerry, J. McGarvey, and F. M. Mitloehner, *University of California, Davis.*
- 11:45 AM 55 Evaluation of swine group-housing systems for breed-to-wean herds using a sow investment model. M. A. Fynn*, N. J. Lewis, M. L. Connor, and G. V. Johnson, *University of Manitoba, Winnipeg, Manitoba, Canada.*
- 12:00 PM 568 Effect of a plant extract on cutaneous inflammation in growing chicks challenged with phytohemagglutinin. J. C. Garcia-Lopez*, G. Alvarez-Fuentes, Y. Jazzo-Pineda, J. M. Pinos-Rodriguez, B. E. Balderad-Gonzalez, and H. I. Contreras-Treviño, *Universidad Autonoma De San Luis Potosi, San Luis Potosi, SLP, Mexico.*
- 12:15 PM 569 Nutritional value of fresh cocoa husk mucilage as a sole feed for African giant land snail (*Archachatina marginata*). R. A. Hamzat*¹ and J. Babayemi², ¹Ochaja Research Station, Cocoa Research Institute of Nigeria, Egume, Kogi State, Nigeria, ²Department of Animal Science, University of Ibadan, Ibadan, Oyo State, Nigeria.
- 12:30 PM 570 Acclimation to salinity and survival of Lahontan cutthroat trout *Oncorhynchus clarki henshawi*. J. P. Bigelow*^{1,2}, W. M. Rauw², and L. Gomez-Raya², ¹U.S. Fish and Wildlife Service, Lahontan National Fish Hatchery Complex, Reno, NV, ²University of Nevada, Reno.

Ruminant Nutrition

Dairy Calves

Chair: JoAnne Knapp, Fox Hollow Consulting, LLC

**Sponsor: Intervet/Schering-Plough Animal Health
516ab**

- 10:30 AM 571 Effects of fat concentration of a high protein milk replacer on calf performance and digestion. T. M. Hill*, H. G. Bateman II, J. M. Aldrich, and R. L. Schlotterbeck, *Akey, Lewisburg, OH.*
- 10:45 AM 572 Effects of free-access feeding and milk replacer acidification on calf performance and development of digestive anatomy. C. G. Todd*¹, T. J. DeVries², K. E. Leslie¹, J. M. Sargeant¹, N. G. Anderson³, and S. T. Millman⁴, 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, Fergus, ON, Canada, ⁴Veterinary Diagnostic and Production Animal Medicine, Iowa State University, Ames.
- 11:00 AM 573 Effect of weaning age and feeding rate of a high protein calf milk replacer on diet digestibility. T. M. Hill*, H. G. Bateman II, J. M. Aldrich, and R. L. Schlotterbeck, *Akey, Lewisburg, OH.*
- 11:15 AM 574 Effects of weaning strategy on calf performance and health status during transition. A. Bach*^{1,2}, A. Ferrer², and J. Ahedo³, ¹ICREA, Barcelona, Spain, ²Ruminant Production-IRTA, Caldes de Montbui, Spain, ³Rancho Las Nieves, Mallen, Spain.
- 11:30 AM 575 Determination of oro-sensorial preferences for energy ingredients in weaned calves. C. Montoro*¹, F. Boe¹, I. Ipharraguerre², and A. Bach^{1,3}, ¹IRTA-Ruminant Production, Caldes de Montbui, Spain, ²LUCTA S.A., Barcelona, Spain, ³ICREA, Barcelona, Spain.
- 11:45 AM 576 High dietary iron negatively impacts gene products important in iron and manganese metabolism in young calves. S. L. Hansen*, M. S. Ashwell, R. S. Fry, and J. W. Spears, *North Carolina State University, Raleigh.*

Ruminant Nutrition

Rumen Microbiology

Chair: Cathy Bandyk, Quality Liquid Feeds

516c

- 10:30 AM 577 Metagenomics analysis reveals shifts in functional profiles and population dynamics of rumen microbial communities in response to developmental and dietary changes. R. W. Li*¹, M. E. Sparks¹, Y. Huang², W. Li², E. E. Connor¹, R. L. Baldwin VI¹, C. Li¹, and T. Sonstegard¹, ¹Unisted States Department of Agriculture, Agricultural Research Service, Bovine Functional Genomics Laboratory, Beltsville, MD, ²University of California, San Diego.

- 10:45 AM 578 pH dynamics and bacterial community composition in the rumen of lactating dairy cows. A. Palmonari*¹, D. M. Stevenson², D. R. Mertens², C. W. Cruywagen³, and P. J. Weimer², ¹*DIMORFIPA, University of Bologna, Bologna, Italy*, ²*USDA-ARS-U.S. Dairy Forage Research Center, Madison, WI*, ³*Department of Animal Science, University of Stellenbosch, Stellenbosch, Republic of South Africa*.
- 11:00 AM 579 Effect of supplemental carbohydrate source and level on in vitro gas production estimates. A. Britos*¹, N. Pomiés¹, J. L. Repetto², and C. Cajarville¹, ¹*Department of Animal Nutrition, Faculty of Veterinary, UdelaR, Montevideo, Uruguay*, ²*Department of Bovines, Faculty of Veterinary, UdelaR, Montevideo, Uruguay*.
- 11:15 AM 56 Effect of ruminal protozoa on urea-nitrogen recycling in growing lambs fed varying dietary protein concentrations. D. Kiran* and T. Mutsvangwa, *University of Saskatchewan, Saskatoon, Saskatchewan, Canada*.
- 11:30 AM 580 Differential chemotaxis by entodiniomorphids and isotrichids toward glucose after incubation with emulsified polyunsaturated fatty acids. H. L. Diaz*, A. M. Stalford, K. N. Barr, and J. L. Firkins, *The Ohio State University, Department of Animal Sciences, Columbus*.
- 11:45 AM 581 From Redox potential field measurement to its bioenergetic meaning in the rumen. J. P. Marden*^{1,2}, E. Ungerfeld³, R. A. Kohn⁴, C. Julien¹, E. Auclair², R. Moncoulon¹, and C. Bayourthe¹, ¹*Université de Toulouse, INRA, Castanet-Tolosan, France*, ²*Lesaffre Feed Additives, Marquette-Lez-Lille, France*, ³*Agriculture and Agri-Food Canada, Lethbridge, Canada*, ⁴*University of Maryland, College Park*.

Ruminant Nutrition 2
Chair: Cathy Bandyk, Quality Liquid Feeds
514

- 10:30 AM 582 Pharmacological amounts of nicotinic acid can reduce isoproterenol-stimulated lipolysis in cattle, but also reduce feed intake. K. S. Spivey, E. C. Titgemeyer*, and B. J. Bradford, *Kansas State University, Manhattan*.
- 10:45 AM 583 Effects of niacin infusion on transcript and protein abundance of the niacin receptor GPR109A in bovine tissues. B. J. Bradford*, L. K. Mamedova, K. S. Spivey, and E. C. Titgemeyer, *Kansas State University, Manhattan*.
- 11:00 AM 584 Effects of encapsulated niacin on metabolism and production of periparturient dairy cows. S. D. Morey, B. J. Bradford*, L. K. Mamedova, and D. E. Anderson, *Kansas State University, Manhattan*.
- 11:15 AM 585 Effects of low vitamin A and D finishing diets on beef cattle carcass quality. C. L. Pickworth*, S. C. Loerch, and F. L. Fluharty, *The Ohio State University, Wooster*.
- 11:30 AM 586 Effects of extended zilpaterol hydrochloride withdrawal on performance, carcass traits, and shear-force value of steaks from finishing heifers. G. L. Parsons*¹, B. E. Depenbusch¹, C. D. Reinhardt¹, D. A. Yates², J. P. Hutcheson², and J. S. Drouillard¹, ¹*Kansas State University, Manhattan*, ²*Intervet Schering-Plough, Desoto, KS*.
- 11:45 AM 587 In vitro evaluation of four bacterial species as potential probiotics in the rumen. T. W. Priambodo, J. Hummel, S. Kehraus, and K.-H. Südekum*, *University of Bonn, Bonn, Germany*.
- 12:00 PM 588 Feeding behaviour of wethers fed a temperate pasture with different time of access to food and supplemented or not with additives. A. Pérez-Ruchel¹, J. L. Repetto*², M. Michelini¹, L. Pérez¹, G. Soldini¹, and C. Cajarville¹, ¹*Departamento de Nutrición Animal, Facultad de Veterinaria, Montevideo, Uruguay*, ²*Departamento de Bovinos, Facultad de Veterinaria, Montevideo, Uruguay*.
- 12:15 PM 61 Impact of feed waste on the nutrition and economics of wintering beef cows. B. J. Yaremcio*¹, E. K. Okine², M. Oba², and D. McCartney³, ¹*Alberta Agriculture and Rural Development, Canada*, ²*University of Alberta, Canada*, ³*Agriculture and Agri-Food Canada, Canada*.

Small Ruminant
Nutrition
Chair: Ken Andries, Kentucky State University
513ab

- 10:30 AM 589 The effects of replacing alfalfa hay with fresh citrus pulp on ruminal fermentation and ewe performance. J. L. Sparkes, Y. T. E. Fung, I. van Ekris, R. D. Bush, and A. V. Chaves*, *The University of Sydney, Faculty of Veterinary Science, Sydney, NSW, Australia*.
- 10:45 AM 590 Effect of yeast (*Saccharomyces cerevisiae*) culture supplementation to medium-quality hay on nutrient digestibilities by goats of two different body sizes. D. V. G. Krishna Mohan¹, J. Hummel², and K.-H. Südekum*², ¹*Sri Venkateswara Veterinary University, Tirupati, Andhra Pradesh, India*, ²*University of Bonn, Bonn, Germany*.

- 11:00 AM 591 Performance of lambs fed ensiled orange pulp treated with exogenous enzymes. H. Gado*¹, A. Z. M. Salem^{2,4}, H. Alser³, B. E. Borhami², and M. El-Adawy², ¹Faculty of Agriculture, Ain Shams University, Egypt, ²Faculty of Agriculture, Alexandria University, Egypt, ³Animal Production ARC, Ministry of Agriculture, Egypt, ⁴Universidad Autónoma del Estado de México, Centro Universitario UAEM, Temascaltepec, México.
- 11:15 AM 592 Effect of tea saponin and soybean oil on performance of growing lambs and protozoa community in the rumen. H. L. Mao*, J. K. Wang, and J. X. Liu, *Institute of Dairy Science, Ministry of Education Key Laboratory of Molecular Animal Nutrition, Zhejiang University, Hangzhou, P.R. China.*
- 11:30 AM 593 The effects of replacing dried citrus pulp with barley grain on the performance of Iranian Saanen kids. A. Naserian*, M. Mahdi Sargolzehi, and H. Gholizadeh, *Ferdowsi University of Mashhad, Mashhad/ Khorasan Razavi Province, Iran.*
- 11:45 AM 594 Empirical modeling of the utilization of energy and of the methane production in dairy goats. D. Sauvant* and S. Giger-Reverdin, *AgroParistech-INRA, Paris, France.*
- 12:00 PM 595 Evaluation of performance predictions of the Small Ruminant Nutrition System model using growth and body composition data of South African Mutton Merino and Dorper. A. Cannas*¹, A. Linsky², L. J. Erasmus², L. O. Tedeschi³, W. A. van Niekerk², and R. Coertze², ¹Dipartimento di Scienze Zootecniche, University of Sassari, Sassari, Sardinia, Italy, ²Department of Animal and Wildlife Sciences, University of Pretoria, Pretoria, South Africa, ³Department of Animal Science, Texas A&M University, College Station.
- 12:15 PM 596 Factors affecting dietary intake and colostrum production in ewes. A. G. Fahey*, T. F. Crosby, and T. M. Boland, *School of Agriculture, Food Science, and Veterinary Medicine, University College Dublin, Belfield, Dublin, Ireland.*

OTHER EVENTS

Mixed Models

520ad

10:30 AM–12:30 PM

SYMPOSIA AND ORAL SESSIONS

SYMPOSIUM

ADSA Production Division Symposium

Driving Forces in the Dairy Industry That Will Change Dairy Farm Management

Chair: John Vicini, Monsanto

524

- 2:00 PM Introduction. Karen Plaut (*Michigan State University*) and Tony Capuco (*USDA*).
- 2:05 PM 597 The dairy scientist's role in re-connecting the dairy food-chain. K. Murphy*, *Food-Chain Communications, Lee's Summit, MO.*
- 2:45 PM 598 The welfare of dairy cattle: Problems and solutions for the coming decade. M. A. G. von Keyserlingk*¹, R. Rushen², A. M. de Passillé², and D. M. Weary¹, ¹University of British Columbia, Vancouver, BC, Canada, ²Agriculture and Agri-Food Canada, Agassiz, BC, Canada.
- 3:25 PM Break
- 3:40 PM 599 Accelerating genetic improvement with SNP chips and DNA sequencing. C. P. Van Tassell*¹, P. M. VanRaden¹, G. R. Wiggins¹, L. K. Matukumalli^{1,2}, S. Schroeder¹, J. O'Connell^{1,3}, R. D. Schnabel⁴, J. F. Taylor⁴, E. J. Pollak⁵, M. Munson⁶, D. Bailey⁶, and T. S. Sonstegard¹, ¹USDA-ARS, Beltsville, MD, ²George Mason University, Manassas, VA, ³University of Maryland School of Medicine, Baltimore, ⁴University of Missouri, Columbia, ⁵Cornell University, Ithaca, NY, ⁶llumina, Inc., San Diego, CA.
- 4:20 PM 600 Affects of climate change and environmental regulation on management of dairy farms. W. Powers*¹ and D. Meyer², ¹Michigan State University, East Lansing, ²University of California, Davis.

Animal Health
Calf Health, Respiratory Disease, etc.
Chair: Isis Mullarky, Virginia Polytechnic Institute and State University
511cf

- 2:00 PM 601 Calf enteric mortality etiologies 2004–2008. T. J. Baldwin, D. J. Wilson*, R. T. Skirpstunas, J. D. Trujillo, and E. J. Kelly, *Utah State University, Logan.*
- 2:15 PM 602 Assessment of the health status of newborn dairy replacement and veal calves. K. Waalderbos*¹, K. Leslie¹, T. Duffield¹, T. DeVries², and B. McBride², ¹*Department of Population Medicine, University of Guelph, Guelph, Ontario, Canada*, ²*Department of Animal and Poultry Science, University of Guelph, Guelph, Ontario, Canada.*
- 2:30 PM 603 Targeting therapy to minimize antimicrobial use in pre-weaned dairy calves: effects on health and occurrence of antimicrobial resistance in fecal *Escherichia coli*. A. C. B. Berge, D. A. Moore*, T. E. Besser, and W. M. Sischo, *Washington State University, Pullman.*
- 2:45 PM 604 Factors affecting performance of pre-weaned dairy calves under Kuwait's environment: Effects of immunoglobulins and age on diseases and mortality. M. Razzaque*, T. Al-Mutawa, S. Abbas, and M. Bedair, *Aridland Agriculture and Greenery Department, Kuwait Institute for Scientific Research, Kuwait, Safat, Kuwait.*
- 3:00 PM 605 Associations between herd risk of high precalving NEFA and management, feed additive, and facility factors. T. F. Duffield*¹, M. Carson¹, M. Capel⁵, S. Godden², M. Overton³, J. Santos⁴, and S. J. LeBlanc¹, ¹*University of Guelph, Guelph, ON, Canada*, ²*University of Minnesota, Minneapolis*, ³*University of Georgia, Athens*, ⁴*University of Florida, Gainesville*, ⁵*Perry Veterinary Clinic, Perry, NY.*
- 3:15 PM 606 Associations between herd risk of high precalving NEFA and dietary factors. T. F. Duffield*¹, M. Carson¹, M. Capel⁵, S. Godden², M. Overton³, J. Santos⁴, and S. J. LeBlanc¹, ¹*University of Guelph, Guelph, ON, Canada*, ²*University of Minnesota, Minneapolis*, ³*University of Georgia, Athens*, ⁴*University of Florida, Gainesville*, ⁵*Perry Veterinary Clinic, Perry, NY.*
- 3:30 PM 607 Rumen metabolomic profile and hierarchical clustering analysis in dairy cows fed grading amounts of grain. Q. Zebeli, M. Lewis, S. M. Dunn, D. S. Wishart, and B. N. Ametaj*, *University of Alberta, Edmonton, Alberta, Canada.*
- 3:45 PM 608 Intrapulmonary *Mannheimia haemolytica* (MH) challenge increases nitrooxidative stress (NOxS) in heifers phenotypically selected for tumor necrosis factor- α (TNF- α) hyper-responsiveness. T. Elsasser*¹, J. Goff^{2,3}, R. Briggs², S. Kahl¹, H. Lehmkuhl², M. Ackerman³, C. Li¹, and R. Horst², ¹*USDA-ARS, Beltsville, MD*, ²*USDA-ARS, Ames, IA*, ³*Iowa State University, Ames.*
- 4:00 PM 609 Transcriptome analysis of muscle tissue from calves infected with bovine viral diarrhoea virus and *Mannheimia haemolytica*. R. L. Mills*, L. Carlos-Valdez, L. O. Burciaga-Robles, D. Stein, D. L. Step, R. W. Fulton, U. DeSilva, and C. R. Krehbiel, *Oklahoma State University, Stillwater.*
- 4:15 PM 610 Effect of times treated for bovine respiratory disease during preconditioning on gene expression in muscle and adipose tissue of beef heifers. J. Johnson*, D. R. Stein, L. O. Burciaga-Robles, B. P. Holland, D. L. Step, J. W. Ritchey, U. DeSilva, and C. R. Krehbiel, *Oklahoma State University, Stillwater.*
- 4:30 PM 611 Evaluation of enzymatically hydrolyzed yeast in vitro and in vivo for control of *Cryptosporidium parvum* infections in dairy calves. S. Jalukar*¹ and J. Nocek², ¹*Varied Industries Corporation, Mason City, IA*, ²*Spruce Haven Farm and Research Center, Auburn, NY.*
- 4:45 PM 612 Neem-tree extract as a feed-additive against ticks in sheep. S. Y. Landau*¹, D. R. Gardner², J. A. Pfister², E. L. Knoppel², D. Kababya¹, F. D. Provenza³, C. Peterson³, and J. J. Villalba³, ¹*Agricultural Research Organization, Bet Dagan, Israel*, ²*SDA-ARS Poisonous Plant Research Laboratory, Logan, UT*, ³*Utah State University, Logan.*

Beef Species
Health, Efficiency and Beef Quality
Chair: Ryon Walker, University of Minnesota
519

- 2:00 PM 613 mRNA expression of genes regulating oxidative phosphorylation in the muscle of beef cattle divergently ranked on residual feed intake. A. K. Kelly*¹, S. M. Waters², M. McGee², C Carberry^{1,2}, D. H. Crews Jr³, T. M. Boland¹, and D. A. Kenny¹, ¹*School of Agriculture, Food Science and Veterinary Medicine, University College Dublin, Belfield, Dublin 4, Ireland*, ²*Animal Bioscience Centre, Teagasc, Grange Beef Research Centre, Dunsany, Co. Meath, Ireland*, ³*Colorado State University, Fort Collins.*

- 2:15 PM 614 Relationship between metabolic hormones, metabolites and energetic efficiency in growing beef heifers. A. K. Kelly^{*1}, M. McGee², D. H. Crews Jr.³, T. M. Boland¹, and D. A. Kenny¹, ¹*School of Agriculture, Food Science and Veterinary Medicine, University College Dublin, Belfield, Dublin 4, Ireland*, ²*Teagasc, Grange Beef Research Centre, Dunsany, Co. Meath, Ireland*, ³*Colorado State University, Fort Collins.*
- 2:30 PM 615 Predicting body weight in beef heifers using various body measurements. A. G. Fahey^{*}, A. K. Kelly, R. P. McDonnell, and D. A. Kenny, *School of Agriculture, Food Science, and Veterinary Medicine, University College Dublin, Belfield, Dublin 4, Ireland.*
- 2:45 PM 616 Effect of residual feed intake on body composition traits in growing beef heifers. A. K. Kelly^{*1}, M. McGee², T. M. Boland¹, D. H. Crews Jr.³, and D. A. Kenny¹, ¹*School of Agriculture, Food Science and Veterinary Medicine, University College Dublin, Belfield, Dublin 4, Ireland*, ²*Teagasc, Grange Beef Research Centre, Dunsany, Co. Meath, Ireland*, ³*Colorado State University, Fort Collins.*
- 3:00 PM 617 The immune response of heifers divergently ranked for residual feed intake. A. G. Fahey^{*1}, B. Earley², A. K. Kelly¹, M. McGee³, and D. A. Kenny¹, ¹*School of Agriculture, Food Science, and Veterinary Medicine, University College Dublin, Belfield, Dublin 4, Ireland*, ²*Teagasc, Animal Bioscience Centre, Dunsany, Co. Meath, Ireland*, ³*Teagasc, Grange Beef Research Centre, Co. Meath, Ireland.*
- 3:15 PM 618 Rubber mats improve finishing beef cattle welfare. M. R. Elmore^{*}, M. F. Elischer, M. C. Claeys, and E. A. Pajor, *Purdue University, West Lafayette, IN.*
- 3:30 PM Break
- 3:45 PM 619 Feedlot growth performance and carcass characteristics of heifers treated for clinical signs of bovine respiratory disease during preconditioning. B. P. Holland^{*}, L. O. Burciaga-Robles, C. J. Richards, D. L. Step, and C. R. Krehbiel, *Oklahoma State University, Stillwater.*
- 4:00 PM 620 Effects of growing phase diet on fatty acid profile of beef steers. K. E. Hudelson^{*}, C. R. Krehbiel, G. W. Horn, J. W. Dillwith, M. P. McCurdy, R. D. Madden, and R. G. Mateescu, *Oklahoma State University, Stillwater.*
- 4:15 PM 621 Comparison of fatty acid profiles of longissimus muscle from Angus and Charolais finishing steers. A. K. Lunsford^{*}, J. W. Dillwith, C. R. Krehbiel, and R. G. Mateescu, *Oklahoma State University, Stillwater.*
- 4:30 PM 622 Fatty acid profile in beef meat and baby food based on beef meat. A. Nudda^{*1}, G. Battacone¹, R. Boe¹, M. G. Manca¹, M. Mele², A. Serra², and G. Pulina^{1,3}, ¹*Dipartimento di Scienze Zootecniche, University of Sassari, Italy*, ²*Dipartimento di Agronomia e Gestione dell'Agroecosistema, University of Pisa, Italy*, ³*Agricultural Research Agency of Sardinia - AGRIS Sardegna, Sassari, Italy.*

Breeding and Genetics
Breeding and Genetics Workshop
Chair: Ron Lewis, Virginia Tech
512ae

- 2:00 PM 624 Recent developments in genetic evaluation tools. D. Garrick^{*}, *Iowa State University, Ames.*
- 3:00 PM 623 Solving a dilemma in graduate education: Animal Breeding and Genetics Online. R. M. Lewis^{*1}, B. B. Lockee¹, M. S. Ames¹, G. C. Márquez¹, R. M. Enns², J. M. Rumph³, T. W. Wilkinson¹, and E. J. Pollak⁴, ¹*Virginia Tech, Blacksburg, VA, USA*, ²*Colorado State University, Fort Collins, CO, USA*, ³*Michigan State University, Lake City, MI, USA*, ⁴*Cornell University, Ithaca, NY, USA.*
- 4:00 PM Discussion/Q & A

Breeding and Genetics
Molecular Genetics II
Chair: Cathy Ernst, Michigan State University
510bd

- 2:00 PM 625 Development and validation of SNP markers comprising the IGENITY[®] profile for carcass traits and ADG in beef cattle. B. W. Woodward^{*} and J. D. Nkrumah, *Merial Ltd., Duluth, GA.*
- 2:15 PM 626 High-density SNP scan of production and product quality traits in beef cattle. R. M. Thallman^{*}, W. M. Snelling, M. F. Allan, C. L. Ferrell, H. C. Freetly, T. G. Jenkins, T. L. Wheeler, S. D. Shackelford, D. A. King, L. A. Kuehn, J. W. Keele, and G. L. Bennett, *USDA, ARS, USMARC, Clay Center, NE.*

- 2:30 PM 627 Whole genome candidate gene approaches to identifying gene SNP markers influencing fat deposition and carcass merit in beef cattle. C. Li^{*1,2}, M. Vinsky¹, R. Crews³, E. Okine², S. S. Moore², and D. H. Crews Jr.^{2,4}, ¹*Agriculture and Agri-Food Canada, Lacombe Research Centre, 6000 C&E Trail, Lacombe, Alberta, Canada*, ²*Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, Alberta, Canada*, ³*Agriculture and Agri-Food Canada, Lethbridge Research Centre, 5403-1st Avenue South, Lethbridge, Alberta, Canada*, ⁴*Colorado State University, Fort Collins.*
- 2:45 PM 628 Association of single nucleotide polymorphisms in the CAST gene associated with longissimus tenderness in beef cattle. E. Casas^{*}, T. L. Wheeler, S. D. Shackelford, G. L. Bennett, and T. P. L. Smith, *USDA, ARS U.S. Meat Animal Research Center, Clay Center, NE.*
- 3:00 PM 629 Reproductive responses of dairy cows to supplemental fat. J. D. Ferguson¹, D. W. Rensburg^{*1}, E. Block², and Z. Wu¹, ¹*University of Pennsylvania, New Bolton Center, Kennett Square*, ²*Arm and Hammer Animal Nutrition Group, Church & Dwight Co. Inc., Princeton, NJ.*
- 3:15 PM 630 Differential gene expression in Suffolk ewes exposed to subacute dietary nitrate. R. C. Cockrum^{*1}, K. J. Austin¹, P. A. Ludden¹, J. F. Taylor², J. W. Kim², S. C. Fahrenkrug³, J. R. Garbe³, and K. M. Cammack¹, ¹*University of Wyoming, Laramie*, ²*University of Missouri, Columbia*, ³*University of Minnesota, St. Paul.*
- 3:30 PM 631 Effects of high-sulfur water on growth performance and gene expression of steers fed forage-based diets. K. L. Kessler^{*1}, K. C. Olson², C. L. Wright², K. J. Austin¹, K. McInerney³, P. S. Johnson², and K. M. Cammack¹, ¹*University of Wyoming, Laramie*, ²*South Dakota State University, Brookings*, ³*University of Montana, Bozeman.*
- 3:45 PM 632 Development and independent validation of SNP markers comprising the IGENITY[®] profile for feed intake and efficiency in indicus-influenced beef cattle. B. W. Woodward^{*1}, J. D. Nkrumah¹, P. A. Lancaster², G. E. Carstens², and D. J. Johnston³, ¹*Merial Limited, Duluth, GA*, ²*Texas A&M University, College Station*, ³*University of New England, Armidale, NSW, Australia.*
- 4:00 PM 633 Impacts of contemporary group differences in dietary DM and ME on genomic association studies and validation of DNA marker profiles. J. D. Nkrumah^{*1} and J. A. Basarab², ¹*Merial Ltd., Duluth GA*, ²*Alberta Agriculture and Food, Lacombe, AB, Canada.*
- 4:15 PM 634 Effects of single nucleotide polymorphisms in stearoyl CoA desaturase and fatty acid synthase on milk yield, composition, and fatty acid profile in lactating Holstein cows. L. Clark^{*}, S. Moore, and M. Oba, *University of Alberta, Edmonton, Alberta, Canada.*
- 4:30 PM 635 Genetic regulation of milk β -carotene content. S. D. Berry^{*1}, S. R. Davis¹, E. M. Beattie¹, N. L. Thomas¹, A. K. Burrett¹, H. E. Ward¹, A. M. Stanfield¹, M. Biswas¹, A. E. Ankersmit-Udy¹, J. L. Barnett¹, Y. van der Does², A. H. K. MacGibbon², R. J. Spelman³, K. Lehnert¹, R. G. Snell¹, ¹*Vialactia Biosciences, Auckland, New Zealand*, ²*Fonterra Research Center, Palmerston North, New Zealand*, ³*LIC, Hamilton, New Zealand.*
- 4:45 PM 636 Analysis of quantitative trait loci affecting female fertility and twinning rate in Israeli Holsteins on chromosome 7. J. I. Weller^{*1}, G. Glick¹, M. Golik¹, E. Ezra², Y. Zeron³, E. Seroussi¹, and M. Ron¹, ¹*ARO, The Volcani Center, Bet Dagan, Israel*, ²*Israele Cattle Breeders Association, Caesaria, Israel*, ³*Sion, Shikmim, Israel.*
- 5:00 PM 222 Seasonal based genetic regulation of reproductive traits in a male turkey line. L. A. Case, *University of Guelph.*

SYMPOSIUM

Contemporary and Emerging Issues Joint with Extension Education

Science-Based Approaches to Address Consumer Concerns with the Processing and Marketing of Animal Products

Chair: Kerry Kaylegian, *Pennsylvania State University*

Sponsor: *Elanco Animal Health*

511ad

- 2:00 PM Opening remarks. Stephanie Clark (*Washington State Univ.*) and Kerry Kaylegian (*Pennsylvania State Univ.*).
- 2:05 PM 637 Effects of cattle production practices on environmental quality. F. M. Mitloehner^{*}, *University of California, Davis.*
- 2:25 PM 638 Effect of farm production practices on ruminant-derived foods: Fatty acid profile, product quality and human health outcomes. A. L. Lock^{*1}, J. Kraft¹, A. M. O'Donnell², and D. E. Bauman², ¹*University of Vermont, Burlington*, ²*Cornell University, Ithaca, NY.*
- 2:45 PM 639 Truth in labeling of dairy products: Legality, perception, and reality. J. S. Jonker^{*}, *National Milk Producers Federation, Arlington, VA.*
- 3:05 PM 640 Lactose intolerance and milk avoidance: An unnecessary risk for low calcium intake and poor bone health. D. A. Savaiano^{*}, *Purdue University, West Lafayette.*

3:25 PM		Break
3:35 PM	641	Dairy foods: Inherent and added nutrition for health benefits. N. Auestad*, <i>Dairy Management Inc./National Dairy Council, Rosemont, IL.</i>
3:55 PM	642	Meat product safety. E. W. Mills*, <i>Pennsylvania State University, University Park.</i>
4:15 PM		Panel discussion

SYMPOSIUM
CSAS Symposium
Functional Foods, Probiotics and Animal Health
Chair: Xin Zhao, McGill University
Sponsors: Chr. Hansen, EAAP, Monsanto, and Varied Industries Corp.
517b

2:00 PM		Introduction
2:05 PM	643	Postnatal development of the mucosal immune system in domestic animals and consequences on health in adulthood. M. Bailey*, <i>University of Bristol, Bristol, UK.</i>
2:35 PM	644	Use of probiotics and prebiotics to modulate intestinal health in monogastric farm animals. M. Lessard* ¹ , X. Zhao ² , and F. Guay ³ , ¹ <i>Dairy and Swine Research and Development Centre, Agriculture and Agri-Food Canada, Sherbrooke, Quebec, Canada,</i> ² <i>McGill University, Department of Animal Science, Montreal, Quebec, Canada,</i> ³ <i>Université Laval, Département des sciences animales, Quebec, Quebec, Canada.</i>
3:05 PM	645	A review of the use of direct-fed microbials to mitigate pathogens and enhance production in cattle. T. A. McAllister* ¹ , K. A. Beauchemin ¹ , J. Baah ¹ , R. M. Teather ¹ , and K. Stanford ² , ¹ <i>Agriculture and Agri-Food Canada Research Centre, Lethbridge, Alberta, Canada,</i> ² <i>Alberta Agriculture and Rural Development, Lethbridge, Alberta, Canada.</i>
3:35 PM	646	Influence of functional food on intestinal microbiota and their subsequent relationship with health. J. Escobar* and M. A. Ponder, <i>Virginia Polytechnic Institute and State University, Blacksburg.</i>
4:05 PM	647	Influence of fermented products on health. E. Farnworth*, <i>Food Research and Development Centre, Agriculture and Agri-Food Canada, Saint Hyacinthe, QC, Canada.</i>
4:35 PM		Closing

SYMPOSIUM
Dairy Foods
Challenges and Opportunities of Microencapsulation Technology in Application to Dairy Foods Symposium
Chair: Kasipathy Kailasapathy, University of Western Sydney
Sponsor: Lallemand
513ef

2:00 PM	648	Introduction to scientific principles and engineering technologies in microencapsulation as applicable to dairy foods. K. Kailasapathy*, <i>University of Western Sydney, Richmond, NSW, Australia.</i>
2:30 PM	649	Benefits of encapsulation of probiotics during processing and storage of dairy products. C. P. Champagne*, <i>Agriculture and Agri-Food Canada, St. Hyacinthe, QC, Canada.</i>
3:00 PM	650	Strategies to improve survival of probiotic bacteria using microencapsulation and to reduce the size of microcapsules for food applications. W.-K. Ding and N. P. Shah*, <i>Victoria University, Melbourne, Victoria, Australia.</i>
3:30 PM	651	Food protein micro/nano particles for controlled nutraceutical delivery in functional foods. L. Chen* ¹ and M. Subirade ² , ¹ <i>University of Alberta, Edmonton, AB, Canada,</i> ² <i>Université Laval, Quebec, QC, Canada.</i>
4:00 PM	652	Microencapsulation of recombinant enzymes for application in accelerated cheese ripening. B. H. Lee* ^{1,2} , ¹ <i>Agriculture and Agri-Food Canada, Food R&D Centre, St-Hyacinthe, QC, Canada,</i> ² <i>McGill University, Montreal, QC, Canada.</i>

SYMPOSIUM
Dairy Foods
Milk Protein and Enzymes Symposium
Chair: Rafael Jiménez-Flores, California Polytechnic State University
513cd

- 2:00 PM 653 Indigenous enzymes in mammalian milk: Scientific, technological and physiological significance. A. Kelly*, *University College Cork, Cork, Ireland.*
- 2:30 PM 654 Enzymes associated with the bovine milk-fat-globule membrane with special reference to xanthine oxidoreductase. J.-K. Jeong, J. Xu, and I. H. Mather*, *University of Maryland, College Park.*
- 3:00 PM 655 Proteolytic enzymes associated with somatic cell count and their relevance in raw milk and dairy products. L. B. Larsen*, *Institute of Food Science, Faculty of Agricultural Sciences, Aarhus University, Denmark.*
- 3:30 PM 656 Lipases and lipolysis in milk and dairy products. H. C. Deeth*, *School of Land, Crop and Food Sciences, University of Queensland, Brisbane, Queensland, Australia.*
- 4:00 PM 657 Native proteases in milk: Current knowledge and relevance to dairy industry. B. Ismail*¹ and S. Nielsen², ¹*University of Minnesota, St. Paul,* ²*Purdue University, West Lafayette, IN.*

SYMPOSIUM
Extension Education
Models for Dairy Production Decision Making
Chair: Tamilee Nennich, Purdue University
511be

- 2:00 PM Introduction. Tamilee Nennich.
- 2:05 PM 658 To keep or cull a cow: An economic decision. A. De Vries*, *University of Florida, Gainesville.*
- 2:35 PM 659 Modeling the economic impact of reproductive change. M. W. Overton*, *University of Georgia, Athens.*
- 3:05 PM 660 Modeling nutrition decisions. M. D. Hanigan*, *Virginia Polytechnic Institute and State University, Blacksburg.*
- 3:35 PM 661 A large Markovian linear program model for dairy herd decision-making. V. E. Cabrera*, *University of Wisconsin, Madison.*
- 4:05 PM 662 Impact of disease on dairy production decisions. D. Galligan*, *University of Pennsylvania, Kennett Square.*
- 4:35 PM Discussion

Forages and Pastures
Harvested Forages, Ensiling and Forage Utilization
Chair: Marie Krause, West Virginia University
510ac

- 2:00 PM 663 Can bacterial inoculants improve the quality of rust-infested corn silage? O. C. M. Queiroz*, A. T. Adesogan, and S. C. Kim, *University of Florida, Gainesville.*
- 2:15 PM 664 Amaferm level and form on digestibility of forage differing in quality. J. Nocek*¹ and H. Jensen², ¹*Spruce Haven Research Center, Auburn, NY,* ²*Biozyme Inc, St Joseph, MO.*
- 2:30 PM 665 The ability of enterococci to survive the ensiling process. S. N. Masiello* and C. S. Petersson-Wolfe, *Virginia Polytechnic Institute and State University, Blacksburg.*
- 2:45 PM 666 Expression of genes related to cell wall digestibility of tropical forages. S. S. Stabile¹, L. Jank², A. P. Bodini¹, N. S. Oliveira¹, L. V. Marçó¹, and L. F. P. Silva*¹, ¹*Universidade de São Paulo, Pirassununga, SP, Brazil,* ²*EMBRAPA, Campo Grande, MS, Brazil.*
- 3:00 PM 667 Effect of citrate synthase genes transformed into alfalfa on aluminum tolerance of its cells. F. Fan*, J. J. Li, Y. M. Wu, and J. X. Liu, *Zhejiang University, Hangzhou, P. R. China.*

- 3:15 PM 668 A survey of condensed tannin concentrations in vegetative and mature legume forages in western Canada. N. Berard¹, K. Ominski^{*1}, K. Wittenberg¹, D. Krause¹, T. McAllister², and Y. Wang², ¹University of Manitoba, ²Agriculture and Agri-Food Canada.
- 3:30 PM 669 Development of prediction equations to estimate hay intake of beef cows under limited access feeding times. T. S. Dennis^{*1}, T. D. Nennich¹, R. P. Lemenager¹, C. J. Fleenor¹, S. L. Lake², and L. J. Unruh-Snyder¹, ¹Purdue University, West Lafayette, IN, ²University of Wyoming, Laramie.
- 3:45 PM 670 Whole plant barley NDF digestibility and its relationship with chemical constituents and dry matter yield. M. L. Swift^{*1}, M. Oba², P. E. Juskwi¹, and J. H. Helm¹, ¹Alberta Agriculture and Rural Development, Lacombe, AB, Canada, ²University of Alberta, Edmonton, AB, Canada.
- 4:00 PM 671 Forage quality of biomass vs. conventional alfalfa cut at early bud or late flower maturity. H. G. Jung^{*1,2}, K. P. Rock², and J. F. S. Lamb^{1,2}, ¹USDA-ARS, St. Paul, MN, ²University of Minnesota, St. Paul.
- 4:15 PM 672 Nutritional evaluation of shrubs as fodder source for ruminants. J. Sultan^{*}, I.-U. Rahim, M. Yaqoob, and H. Nawaz, University of Agriculture, Faisalabad, Pakistan.

**Nonruminant Nutrition
Feed Additives
Chair: Janet Remus, Danisco Animal Nutrition
Sponsor: Diamond V Mills
518**

- 2:00 PM 673 Effects of supplementation of yeast culture to sow diets on reproductive performance and physiological changes in sows and nursing piglets. S. W. Kim^{*1}, C. Vasquez², A. Saraiva¹, and I. Yoon³, ¹North Carolina State University, Raleigh, ²Texas Tech University, Lubbock, ³Diamond V Mills, Cedar Rapids, IA.
- 2:15 PM 674 Effects of supplementation of yeast culture to diets of sows and offspring on growth and meat quality of offspring. A. C. Chaytor^{*1}, C. Vasquez², V. Fellner¹, I. Yoon³, and S. W. Kim¹, ¹North Carolina State University, Raleigh, ²Texas Tech University, Lubbock, ³Diamond V Mills, Cedar Rapids, IA.
- 2:30 PM 675 Use of a phytogenic feed additive in sows during the lactation. Y. Acosta Aragón¹, D. Uribe López², A. Pedroche Quevedo³, and T. Steiner^{*1}, ¹Biomin Holding GmbH, Herzogenburg, Lower Austria, Austria, ²Agropecuaria ALFA S.A., Cundinamarca, Colombia, ³NUTRECO S.A., Bogotá, Colombia.
- 2:45 PM 676 Selection of probiotic strains for combined competitive exclusion treatment in piglets. V. Klose^{*1}, K. Bayer¹, R. Bruckbeck¹, V. A. Sattler¹, A. P. Loibner¹, C. Mair², and G. Schatzmayr³, ¹BOKU-University, Vienna, Department IFA-Tulln, A-3430 Tulln, Austria, ²BOKU-University, Vienna, Department of Food Sciences and Technology, A-1180 Vienna, Austria, ³BIOMIN Research Center, A-3430 Tulln, Austria.
- 3:00 PM 677 Effects of NCG and arginine on organ weight and HSP70 expression in weaned piglets. X. Wu, Y. L. Gao, X. H. Zhou, R. L. Huang, and Y. L. Yin^{*}, The Chinese Academy of Sciences, Changsha, China.
- 3:15 PM 678 Digestible energy in resistant starch and dietary fiber sources fed to pigs. S. K. Cervantes-Pahm^{*}, B. G. Kim, and H. H. Stein, University of Illinois, Urbana.
- 3:30 PM 679 Feed additives for the amelioration of aflatoxicosis in growing pigs. A. F. Harper^{*1}, M. J. Estienne¹, J. B. Meldrum², R. J. Harrell³, and D. E. Diaz³, ¹Virginia Polytechnic Institute and State University, Blacksburg, ²VA-MD Regional College of Veterinary Medicine, Blacksburg, VA, ³Novus International, Inc., St. Charles, MO.
- 3:45 PM 680 Xylanase supplementation improves nutrient and energy digestibility in pigs fed corn-soybean meal diets containing 20% corn dried distiller's grains. J. A. Jendza^{*1}, A. Owusu-Asiedu², P. H. Simmins², and O. Adeola¹, ¹Purdue University, West Lafayette, IN, ²Danisco Animal Nutrition, Marlborough, UK.
- 4:00 PM 681 Effect of processing method and enzyme supplementation on the apparent metabolizable energy (AME_e) of different oilseed meals. B. Jayaraman^{*} and D. M. Anderson, Nova Scotia Agricultural College, Truro, Nova Scotia, Canada.
- 4:15 PM 682 Effects of dietary aflatoxin on performance of growing barrows. S. M. Rustemeyer^{*1}, W. R. Lamberson², D. R. Ledoux², R. R. Cockrum¹, K. L. Kessler¹, K. J. Austin¹, and K. M. Cammack¹, ¹University of Wyoming, Laramie, ²University of Missouri, Columbia.
- 4:30 PM 683 Effects of adding a pelleted protein supplement to processed corn in diets for nursery pigs. S. M. Williams^{*}, E. F. Mader, S. M. Rogers, S. Issa, A. C. Fahrenholz, L. J. McKinney, J. D. Hancock, and K. C. Behnke, Kansas State University, Manhattan.
- 4:45 PM 684 Effect of a dry organic acid blend on pig performance during the Paylean[®] phase of growth. R. J. Harrell^{*1}, F. Navarro¹, J. Zhao¹, M. Vazquez-Anon¹, B. R. Hinson², G. L. Allee², and C. D. Knight¹, ¹Novus International, Inc., St. Charles, MO, ²University of Missouri, Columbia.

**Physiology and Endocrinology
Livestock Physiology
Chair: Rhonda C. Vann, Mississippi State University
513ab**

- 2:00 PM 53 Plant-based diets enriched with linseed oil or marine algae and organic selenium modify sperm fertility parameters in broiler breeders over the reproductive cycle. C. Coss^{*1,2}, C. Brèque^{1,2}, R. Gervais², C. Lessard^{1,2}, D. Venne³, M. R. Lefrançois², P. Y. Chouinard², G. Vandenberg², and J. L. Bailey^{1,2}, ¹*Centre de recherche en biologie de la reproduction, Québec, QC, Canada*, ²*Département des sciences animales, Université Laval, Québec, QC, Canada*, ³*Couvoir Scott Ltée, Scott Jonction, QC, Canada*.
- 2:15 PM 685 Evaluation of sperm fertilizing capability in stored semen collected from boars fed a diet supplemented with organic selenium. S. Speight^{*1}, M. Estienne¹, B. Whitaker², A. Harper¹, R. Crawford¹, and J. Knight¹, ¹*Virginia Polytechnic Institute and State University, Blacksburg*, ²*Ferrum College, Ferrum, VA*.
- 2:30 PM 686 Use of infrared thermal imaging of the muzzle as a measure of body temperature in sheep and cattle. R. W. Godfrey^{*1}, R. C. Ketring¹, S. S. Robinson¹, and S. T. Willard², ¹*University of the Virgin Islands, Agricultural Experiment Station, St Croix, VI*, ²*Mississippi State University, Department of Animal and Dairy Sciences and Department of Biochemistry and Molecular Biology, Mississippi State*.
- 2:45 PM 687 Relationship of rumen temperature with estrus in beef cows. C. L. Bailey^{*}, M. J. Prado-Cooper, E. C. Wright, and R. P. Wettemann, *Oklahoma Agricultural Experiment Station, Stillwater*.
- 3:00 PM 688 Influence of blood sulfate concentrations on uterine pH. G. A. Perry^{*}, B. L. Perry, S. D. Fields, J. A. Walker, and C. L. Wright, *Dept. Anim. and Range Sci., South Dakota State University, Brookings*.
- 3:15 PM 689 Impact of long-term genetic selection for age at puberty on postpartum reproductive physiology in cows. G. A. Bridges^{*1}, N. C. Amyes², M. C. Berg², M. J. D'Occhio³, and M. L. Day⁴, ¹*Purdue University, West Lafayette, IN*, ²*AgResearch, Ruakura Research Centre, Hamilton, New Zealand*, ³*The University of Queensland, Brisbane, Australia*, ⁴*The Ohio State University, Columbus*.
- 3:30 PM Break
- 3:45 PM 690 Liver transcript profiles due to prepartum dietary energy level and bacterial lipopolysaccharide challenge in dairy cows early postpartum. D. E. Graugnard^{*}, S. L. Rodriguez-Zas, R. E. Everts, H. A. Lewin, J. K. Drackley, and J. J. Looor, *University of Illinois, Urbana*.
- 3:45 PM 691 Heat stress abatement for dry cows: Does cooling improve immunity status? B. C. do Amaral, S. Tao^{*}, J. Bubolz, J. Hayen, and G. E. Dahl, *University of Florida, Gainesville*.
- 4:00 PM 692 Association between seasonality, cleavage timing and gene expression in bovine oocytes. Z. Roth^{*} and M. Gendelman, *Faculty of Agriculture, The Hebrew University of Jerusalem, Israel*.
- 4:15 PM 693 Cytochrome P450 activity, liver blood flow and progesterone clearance in dairy cows fed a high starch versus a high fiber diet. C. O. Lemley^{*1}, K. A. Vonnahme², K. M. Krause¹, and M. E. Wilson¹, ¹*West Virginia University, Morgantown*, ²*North Dakota State University, Fargo*.
- 4:30 PM 694 The effect of high and low doses of naloxone on the ovulation rate of Suffolk ewes during the breeding season. V. O. Fuentes^{*}, A. Bernal-Canseco, and P. I. Fuentes-Castro, *Centro Universitario de los Altos Universidad de Guadalajara, Tepatitlan, Jalisco, Mexico*.

**Physiology and Endocrinology
Metabolic Physiology
Chair: Rhonda C. Vann, Mississippi State University
514**

- 2:00 PM 695 Tumor necrosis factor alpha increases triglyceride content and alters transcript abundance of metabolic genes in the liver of lactating dairy cattle. B. J. Bradford^{*}, L. K. Mamedova, J. E. Minton, J. S. Drouillard, and B. J. Johnson, *Kansas State University, Manhattan*.
- 2:15 PM 696 Effects of feeding colostrum on somatotrophic axis, metabolic traits and vital signs of Holstein bull calves. D. Qadimi, A. Zare Shahne, A. Nikkhah, M. Moradi, and R. Masoumi^{*}, *University of Tehran, Iran*.
- 2:30 PM 697 Continuously infused obestatin increased pancreatic β -cell function in response to an intravenous glucose tolerance test. J. R. Roche^{*1}, A. J. Sheahan¹, L. M. Chagas¹, J. K. Kay¹, and R. C. Boston², ¹*DairyNZ, Hamilton, NZ*, ²*University of Pennsylvania, Kennett Square*.

- 2:45 PM 698 Residual feed intake and heat production of Holstein cows throughout lactation. A. Brosh*¹, A. Asher¹, J. Miron², A. Shabtay¹, G. Adin³, U. Moallem², Y. Aharoni¹, and A. Arieli⁴, ¹*Agricultural Research Organization, Ramat Yishay, Israel*, ²*Agricultural Research Organization, Bet-Dagan, Israel*, ³*Extension Service, Ministry of Agriculture, Bet-Dagan, Israel*, ⁴*Hebrew University of Jerusalem, Faculty of Agricultural, Rehovot, Israel*.
- 3:00 PM 699 IGF-1 concentrations following sustained release growth hormone treatment in ewes. T. A. Wilmoth*, J. M. Koch, C. O. Lemley, and M. E. Wilson, *West Virginia University, Morgantown*.
- 3:15 PM 700 Transcriptional adaptations in mesenteric and subcutaneous adipose tissue from non-lactating cows in response to plane of dietary energy. M. Mukesh, J. K. Drackley, P. Ji*, M. Bionaz, S. L. Rodriguez-Zas, R. E. Everts, H. A. Lewin, and J. J. Loor, *University of Illinois, Urbana*.
- 3:30 PM 701 Effect of plane of nutrition and feed deprivation on insulin responses in dairy cattle during late gestation. K. M. Schoenberg*, R. M. Ehrhardt, and T. R. Overton, *Cornell University, Ithaca, NY*.
- 3:45 PM 702 The acute phase response: Differentiating corticotrophin-releasing hormone (CRH)- versus lipopolysaccharide (LPS)-induced proinflammatory cytokine and acute phase protein profiles in beef calves. J. A. Carroll*¹, L. E. Hulbert¹, N. C. Burdick^{1,2}, L. C. Caldwell^{2,3}, M. A. Ballou⁴, J. D. Arthington⁵, R. C. Vann⁶, A. N. Loyd^{2,3}, T. H. Welsh Jr.², and R. D. Randel³, ¹*Livestock Issues Research Unit, USDA-ARS, Lubbock, TX*, ²*Texas AgriLife Research, Texas A&M System, College Station*, ³*Texas AgriLife Research Center, Texas A&M System, Overton*, ⁴*Department of Animal and Food Sciences, Texas Tech University, Lubbock*, ⁵*University of Florida - IFAS, Range Cattle Research and Education Center, Ona*, ⁶*MAFES, Mississippi State University, Raymond*.
- 4:00 PM 703 Fibroblast growth factor 21 (FGF21) expression is increased in hepatic tissue of feed-restricted cows and during the transition from pregnancy to lactation. K. J. Harvatine*¹ and Y. R. Boisclair², ¹*Penn State University, University Park*, ²*Cornell University, Ithaca, NY*.
- 4:15 PM 704 Expression of thyroid hormone responsive spot 14 and a homologous protein (MIG12) are dynamically regulated in adipose tissue of dairy cows during modification of energy balance. K. J. Harvatine*¹, Y. R. Boisclair², and D. E. Bauman², ¹*Penn State University, University Park*, ²*Cornell University, Ithaca, NY*.
- 4:30 PM 705 TNF α and factors related to insulin signaling in adipose tissue of dry- and early lactating dairy cows. H. Sadri^{1,2}, A. van Dorland¹, G. R. Ghorbani², H. R. Rahmani², and R. M. Bruckmaier*¹, ¹*University of Bern, Vetsuisse Faculty, Veterinary Physiology, Bern, Switzerland*, ²*Isfahan University of Technology, Department of Animal Science, Isfahan, Iran*.
- 4:45 PM 706 Differential effects of propionate on mRNA abundance of adiponectin receptors and G protein-coupled receptor GPR41 in bovine subcutaneous and perirenal adipose tissue explants *in vitro*. A. Hosseini*, H. Sauerwein, and M. Mielenz, *University of Bonn, Bonn, Germany*.

**Ruminant Nutrition
Dairy 2
Chair: Paul Kononoff, University of Nebraska
516c**

- 2:00 PM 707 Effect of grain type and processing method on rumen fermentation and milk rumenic acid production. R. Mohammed*¹, J. J. Kennelly¹, J. K. G. Kramer², K. A. Beauchemin³, C. S. Stanton⁴, and J. J. Murphy⁴, ¹*University of Alberta, Edmonton, AB, Canada*, ²*Agriculture and Agri-Food Canada, Guelph, ON, Canada*, ³*Agriculture and Agri-Food Canada, Lethbridge, AB, Canada*, ⁴*Teagasc, Moorepark, Co. Cork, Ireland*.
- 2:15 PM 62 A temporal characterization of the rumen epithelium response to dramatic shifts in dietary fermentable carbohydrates. M. A. Steele*, O. AlZahal, S. E. Hook, S. Greenwood, and B. W. McBride, *University of Guelph, Guelph, Ontario, Canada*.
- 2:30 PM 708 Feeding dairy cows barley grain treated with lactic acid and heat increased milk fat content and prevented the decline of rumen pH to sub-clinical ruminal acidosis (SARA) values. Q. Zebeli*, S. M. Dunn, and B. N. Ametaj, *University of Alberta, Edmonton, AB, Canada*.
- 2:45 PM 709 Overfeeding energy prepartum dramatically affects periparturient expression of mRNA transcripts in subcutaneous adipose tissue compared with controlling energy intake prepartum. N. A. Janovick*¹, J. J. Loor¹, P. Ji¹, R. E. Everts¹, H. A. Lewin^{1,2}, S. L. Rodriguez-Zas¹, and J. K. Drackley¹, ¹*University of Illinois, Urbana*, ²*Institute for Genomic Biology, Urbana, IL*.
- 3:00 PM 710 Effect of antioxidant and energy density on antioxidant status and postpartum performance in transition cows. Y. M. Wang*, C. Wang, J. H. Wang, and J. X. Liu, *Institute of Dairy Science, Zhejiang University, Hangzhou, P. R. China*.
- 3:15 PM 711 Effects of replacing corn grain with molasses on ruminal fermentation and milk component production in dairy cows. C. A. Martel*, E. C. Titgemeyer, and B. J. Bradford, *Kansas State University, Manhattan*.

- 3:30 PM 712 Effects of feeding increasing levels of wet corn gluten feed on digestibility, rumen pH, and VFA concentrations of lactating Holstein cows. C. R. Mullins*¹, L. K. Mamedova¹, K. N. Grigsby², and B. J. Bradford¹, ¹*Kansas State University, Manhattan*, ²*Cargill Inc., Blair, NE*.
- 3:45 PM 713 Effects of wet corn gluten feed inclusion rates on productivity of lactating Holstein cows. C. R. Mullins*¹, K. N. Grigsby², and B. J. Bradford¹, ¹*Kansas State University, Manhattan*, ²*Cargill Inc., Blair, NE*.
- 4:00 PM 714 Response of lactating dairy cows to high protein distillers grains or three other protein supplements. K. A. Christen*¹, D. J. Schingoethe¹, K. F. Kalscheur¹, A. R. Hippen¹, K. Karges², and M. L. Gibson², ¹*South Dakota State University, Brookings*, ²*Dakota Gold Research Association, Sioux Falls, SD*.
- 4:15 PM 715 Lactation performance and amino acid utilization of early lactating cows fed regular or de-oiled dried distillers grains with solubles. K. Mjoun*, K. F. Kalscheur, A. R. Hippen, and D. J. Schingoethe, *South Dakota State University, Brookings*.
- 4:30 PM 716 Effects of forage type on nitrogen utilization in dairy cows consuming diets high in wet distillers grains with solubles. A. M. Gehman* and P. J. Kononoff, *University of Nebraska, Lincoln*.
- 4:45 PM 717 Effect of management and milk yield on the incidence of lameness in dairy cattle. C. Lira Diaz and J. K. Margerison*, *Massey University, Palmerston North, New Zealand*.
- 5:00 PM 718 Competition at the feed bunk affects DMI and feeding behavior of metritic dairy cows. K. L. Proudfoot*, D. M. Weary, and M. A. G. von Keyserlingk, *University of British Columbia, Vancouver, BC, Canada*.

**Ruminant Nutrition
Minerals
Chair: Allen Young, Utah State University
516ab**

- 2:00 PM 719 **ADSA Pioneer:** Thirty-eight years of vitamin D and calcium research: From dairy cows to humans. R. L. Horst*, *Heartland Assays, Inc., Ames, IA*.
- 2:30 PM 720 The optimum dietary Ca concentration to minimize the risk of hypocalcaemia in dairy cows is affected by dietary cation-anion difference. M. Oba*¹, A. Oakley¹, and G. Tremblay², ¹*University of Alberta, Edmonton, AB, Canada*, ²*Agriculture and Agri-Food Canada, Quebec, QC, Canada*.
- 2:45 PM 721 Effects of copper deficiency on gene expression profiles of copper transporters and chaperones in steers. R. S. Fry*¹, M. S. Ashwell¹, S. L. Hansen¹, T. E. Engle², H. Han², and J. W. Spears¹, ¹*North Carolina State University, Raleigh*, ²*Colorado State University, Fort Collins*.
- 3:00 PM 722 Strategic use of naturally selenium-rich milling coproducts to manage selenium deficiency. J. B. Taylor*, *USDA, Agricultural Research Service, Dubois, ID*.
- 3:15 PM 723 Effects of nutritional plane and selenium supply on intestinal mass, cellularity, and proliferation in the ewe. A. M. Meyer*¹, J. J. Reed¹, T. L. Neville¹, L. R. Coupe¹, J. B. Taylor², L. P. Reynolds¹, D. A. Redmer¹, K. A. Vonnahme¹, and J. S. Caton¹, ¹*North Dakota State University, Fargo*, ²*USDA-ARS, U.S. Sheep Experiment Station, Dubois, ID*.
- 3:30 PM 724 Mineral balances in California dairy farms. A. R. Castillo*¹, N. St-Pierre², and N. Silva del Rio¹, ¹*University of California, Cooperative Extension, Merced*, ²*The Ohio State University, Columbus*.
- 3:45 PM 725 Effects of trace mineral amount and source on aspects of oxidative status and immune function in dairy cows. T. Yasui*¹, R. M. Ehrhardt¹, G. R. Bowman², M. Vázquez-Añón², J. D. Richards², C. A. Atwell², T. D. Wineman², and T. R. Overton¹, ¹*Cornell University, Ithaca, NY*, ²*Novus International, St. Charles, MO*.
- 4:00 PM 726 Impact of phosphorus form on utilization in lactating dairy cows. K. J. Lager*, M. J. Brouk, B. J. Bradford, and J. P. Harner, *Kansas State University, Manhattan*.
- 4:15 PM 727 Effect of 4-Plex® on milk production, reproduction and claw integrity of dairy cows. J. M. DeFrain*¹, M. T. Socha¹, D. J. Tomlinson¹, and D. Kluth², ¹*Zinpro Corporation, Eden Prairie, MN*, ²*Standard Dairy Consultants, Omaha, NE*.
- 4:30 PM 728 Metabolic and productive responses to supplemental chromium in early-lactation heat-stressed cows. M. Mirzaei¹, G. R. Ghorbani¹, M. Khorvash¹, H. R. Rahmani¹, and A. Nikkhah*^{2,1}, ¹*Isfahan University of Technology, Isfahan, Iran*, ²*Zanjan University, Zanjan, Iran*.

OTHER EVENTS

Mixed Models
520ad
2:00 PM–5:00 PM

Thursday, July 16

SYMPOSIA AND ORAL SESSIONS

Animal Behavior and Well-Being 2

Chair: Marina von Keyserlingk, University of British Columbia
511ad

- 8:30 AM 729 Behavior-nutrition interaction in swine. J. N. Marchant-Forde*, *USDA-ARS, West Lafayette, IN.*
- 9:00 AM 730 Effect of distance moved during loading, lairage time, and distance moved to stun on blood lactate concentration of pigs in a commercial slaughter plant. L. N. Edwards*¹, T. Grandin¹, T. E. Engle¹, M. J. Ritter², A. Sosnicki³, B. A. Carlson¹, and D. B. Anderson¹, ¹*Colorado State University, Fort Collins*, ²*Elanco Animal Health, Greenfield, IN*, ³*PIC, Hendersonville, TN.*
- 9:15 AM 218 The effect of animal location during transit on heart rate of pigs transported to slaughter using two vehicle types. J. A. Correa*¹, H. Gonyou², R. Bergeron³, S. Torrey⁴, T. Crowe⁵, T. Widowski³, J. P. Laforest¹, C. Dewey³, N. Lewis⁶, and L. Faucitano⁴, ¹*Laval University, Quebec, Quebec, Canada*, ²*Prairie Swine Centre, Saskatoon, Saskatchewan, Canada*, ³*University of Guelph, Guelph, Ontario, Canada*, ⁴*Agriculture and Agri-Food Canada, Sherbrooke, Quebec, Canada*, ⁵*University of Saskatchewan, Saskatoon, Saskatchewan, Canada*, ⁶*University of Manitoba, Winnipeg, Manitoba, Canada.*
- 9:30 AM 731 Validation of saliva sampling techniques in swine in order to assess stress responses. S. M. Hayne*¹, N. J. Cook², and H. W. Gonyou^{1,3}, ¹*Prairie Swine Centre, Saskatoon, SK, Canada*, ²*Alberta Agriculture and Rural Development, Edmonton, AB, Canada*, ³*University of Saskatchewan, Saskatoon, SK, Canada*
- 9:45 AM 732 Influence of season on the behaviour of market weight pigs transported 2 hours to slaughter. S. Torrey*¹, S. Hayne², R. Bergeron³, L. Faucitano¹, T. Widowski³, N. Lewis⁴, T. Crowe⁵, C. Dewey³, and H. Gonyou^{2,5}, ¹*Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada*, ²*Prairie Swine Centre, Saskatoon, SK, Canada*, ³*University of Guelph, Guelph, ON, Canada*, ⁴*University of Manitoba, Winnipeg, MB, Canada*, ⁵*University of Saskatchewan, Saskatoon, SK, Canada.*
- 10:00 AM 733 Effects of linoleic and α -linolenic acid intake on pig behaviour, and its relationship with brain DHA. J. E. Bolhuis, I. van Kerkhof, and W. J. J. Gerrits*, *Wageningen University, Wageningen, the Netherlands.*
- 10:15 AM 734 The motivation of gestating sows for environmental enrichment in a stall. M. R. Elmore*¹, J. P. Garner¹, A. K. Johnson², R. D. Kirkden¹, E. G. Patterson-Kane¹, B. T. Richert¹, and E. A. Pajor¹, ¹*Purdue University, West Lafayette, IN*, ²*Iowa State University, Ames.*
- 10:30 AM 219 Utilization of electrolytes to encourage early feed and water consumption in weanlings. A. K. Gigiel*, N. J. Lewis, and M. L. Connor, *University of Manitoba, Winnipeg, Manitoba, Canada.*
- 10:45 AM 735 Effect of premolar eruption on growth and behaviour of weaned piglets. A. L. Tucker* and T. M. Widowski, *University of Guelph, Guelph, ON, Canada.*
- 11:00 AM 736 Pen and stall-housed gestating sows prefer unlocked to locked free-access stalls. L. M. W. Jones*¹, J. P. Garner¹, J. N. Marchant-Forde^{2,1}, and E. A. Pajor¹, ¹*Purdue University, West Lafayette, IN*, ²*USDA Livestock Behavior Research Unit, West Lafayette, IN.*
- 11:15 AM 737 Making sense of fear testing– Validating common behavioral tests used in swine. D. C. Lay Jr.*¹ and J. P. Garner², ¹*Agricultural Research Service - USDA, West Lafayette, IN*, ²*Purdue University, West Lafayette, IN.*

Breeding and Genetics
Dairy Breeding IV - Crossbreeding
Chair: Janice M. Rumph, Michigan State University
510bd

- 8:30 AM 738 Jersey × Holstein crossbred cows compared to pure Holstein cows for fertility and survival during the first three lactations. B. J. Heins*, L. B. Hansen, A. R. Hazel, A. J. Seykora, D. G. Johnson, and J. G. Linn, *University of Minnesota, Saint Paul.*
- 8:45 AM 739 Jersey × Holstein crossbred cows compared to pure Holstein cows for production, SCS, and udder measurements during the first three lactations. B. J. Heins*, L. B. Hansen, A. R. Hazel, A. J. Seykora, D. G. Johnson, and J. G. Linn, *University of Minnesota, Saint Paul.*
- 9:00 AM 740 Positive percent heterosis for fat-corrected milk per day of life from Holstein-Jersey diallel. R. D. Shanks*¹, B. G. Cassell², K. M. Olson², A. J. McAllister³, and S. P. Washburn⁴, ¹*University of Illinois, Urbana*, ²*Virginia Polytechnic Institute and State University, Blacksburg*, ³*University of Kentucky, Lexington*, ⁴*North Carolina State University, Raleigh.*
- 9:15 AM 741 Energy balance in first lactation Holsteins, Jerseys, and reciprocal crosses estimated using random regression. K. M. Olson*, B. G. Cassell, and M. D. Hanigan, *Virginia Polytechnic Institute and State University, Blacksburg.*
- 9:30 AM 742 Calving traits, gestation length, and birth weight of Montbeliarde sires mated to Holstein or Jersey × Holstein crossbreds. B. J. Heins, L. B. Hansen*, A. R. Hazel, A. J. Seykora, D. G. Johnson, and J. G. Linn, *University of Minnesota, Saint Paul.*
- 9:45 AM Break
- 10:00 AM 743 Montbeliarde-sired crossbred cows compared to pure Holstein cows for body weight, body condition score, hip height, dry matter intake, and production during the first 150 days of first lactation. A. R. Hazel*, B. J. Heins, L. B. Hansen, A. J. Seykora, D. G. Johnson, and J. G. Linn, *University of Minnesota, Saint Paul.*
- 10:15 AM 744 A comparative study of Holstein and Jersey crossbred cows in 14 Australian dairy herds. M. F. Pyman*, G. A. Anderson, and K. L. Macmillan, *University of Melbourne, Werribee, Victoria, Australia.*
- 10:30 AM 745 Preliminary analysis of NRF-Holstein crossbred cattle in Israel. E. Ezra¹, Y. Zeron², and J. I. Weller*³, ¹*Israel Cattle Breeders Association, Caesaria, Israel*, ²*Sion, Shikmim, Israel*, ³*ARO, The Volcani Center, Bet Dagan, Israel.*
- 10:45 AM 746 Brown Swiss × Holstein crossbreds compared to pure Holsteins for production, SCS, milking speed, days to first breeding and days open. S. Bloettner*¹, M. Wensch-Dorendorf¹, H. H. Swalve¹, B. J. Heins², and L. B. Hansen², ¹*Group Animal Breeding, Halle (Saale), Saxony-Anhalt, Germany*, ²*Department of Animal Breeding, Saint Paul, MN.*
- 11:00 AM 747 Brown Swiss × Holstein crossbreds compared to pure Holsteins for body weight, back fat thickness and udder measurements during the first two lactations. S. Bloettner*¹, M. Wensch-Dorendorf¹, H. H. Swalve¹, J. Guehne², B. J. Heins³, and L. B. Hansen³, ¹*Group Animal Breeding, Halle (Saale), Saxony-Anhalt, Germany*, ²*Technical College for Agriculture, Haldensleben, Saxony-Anhalt, Germany*, ³*Department of Animal Science, St. Paul, MN.*

Dairy Foods
Dairy Foods Processing/Enzymes
Chair: Nana Farkye, CalPoly State University
513cd

- 8:30 AM 748 **ADSA Pioneer:** Whey—From gutter to gold. P. J. Jelen*, *University of Alberta, Edmonton, AB, Canada.*
- 9:00 AM 749 Protein-interactions in heat-treated milk and effect on rennet coagulation. P. Kethireddipalli*, D. G. Dalgleish, and A. R. Hill, *University of Guelph, Guelph, ON, Canada.*
- 9:15 AM 750 Effect of processing aids on mineral balance and fouling during ultrafiltration of cheese whey. C. Marella*, L. E. Metzger, and K. Muthukumarappan, *South Dakota State University, Brookings.*
- 9:30 AM 751 Impact of bleaching on the flavor of whey protein concentrate. A. E. Croissant*¹, J. Kang¹, R. E. Campbell¹, E. Bastian², and M. A. Drake¹, ¹*North Carolina State University, Raleigh*, ²*Glanbia Nutritionals, Twin Falls, ID.*
- 9:45 AM Break
- 10:00 AM 753 Development of rapid method for measurement of lactose in model solutions using a hand-held blood glucose biosensor. J. Amamcharla*, K. Shah, and L. Metzger, *South Dakota State University, Brookings.*

- 10:15 AM 754 Persistency of conjugated linoleic acid and vaccenic acid on Sardo cow cheese. G. A. Gagliostro*¹, M. Martínez², V. I. Cejas³, M. A. Rodríguez³, and M. Balán⁴, ¹*Instituto Nacional de Tecnología Agropecuaria, Balcarce, Buenos Aires, Argentina*, ²*Instituto Nacional de Tecnología Agropecuaria, Salta, Argentina*, ³*Instituto Nacional de Tecnología Industrial, PTM Miguelete, Buenos Aires, Argentina*, ⁴*PRODEO S.R.L., Chivilcoy, Buenos Aires, Argentina*.
- 10:30 AM 755 Dairy food intake among historically African American college campus students. A. M. Patterson* and S. A. Ibrahim, *North Carolina A&T State University, Greensboro*.

Forages and Pastures
Grazing and Pasture Utilization
Chair: Paul Beck, University of Arkansas
514

- 8:30 AM 756 Effect of fall grazing system on annual ryegrass quality and beef cattle performance. J. M. Kelzer*¹, S. Bird², R. D. Mathison², P. R. Peterson¹, and R. S. Walker³, ¹*University of Minnesota, St. Paul*, ²*University of Minnesota, Grand Rapids*, ³*University of Minnesota, Andover*.
- 8:45 AM 757 Economic potential of stocker cattle grazing legume-interseeded bermudagrass. J. Guretzky*, R. Reuter, J. Biermacher, J. Springer, T. Butler, H. Aljoe, J. Rogers, and B. Cook, *The Noble Foundation, Ardmore, OK*.
- 9:00 AM 758 Economic feasibility of stocker cattle grazing tall fescue infected with a novel endophyte in the Southern Great Plains of the USA. J. T. Biermacher*¹, R. Reuter¹, B. J. Cook¹, M. A. Islam², A. Hopkins¹, J. H. Bouton¹, and T. J. Butler¹, ¹*Samuel Roberts Noble Foundation, Ardmore, OK*, ²*University of Wyoming, Laramie*.
- 9:15 AM 759 Utilization of switchgrass in a dual purpose stocker cattle and bioenergy system. J. A. Guretzky, J. T. Biermacher, R. R. Reuter, J. R. Blanton Jr.*¹, J. Mosali, M. Kering, and B. J. Cook, *The Samuel Roberts Noble Foundation, Ardmore, OK*.
- 9:30 AM 760 Effects of supplemental cottonseed meal versus part-time annual ryegrass grazing on performance of beef heifers grazing stockpiled limpograss pastures. J. M. B. Vendramini* and J. D. Arthington, *University of Florida, Ona*.
- 9:45 AM 761 Prediction of rumen function measures from plant constituents in lactating cows fed pasture-based diets. R. E. Vibart*, B. A. Barrett, and D. Pacheco, *AgResearch Limited, Palmerston North, New Zealand*.
- 10:00 AM 762 Prediction of nitrogen utilization efficiency from plant constituents in lactating cows fed pasture-based diets. R. E. Vibart*, B. A. Barrett, and D. Pacheco, *AgResearch Limited, Palmerston North, New Zealand*.
- 10:15 AM 763 Effects of stocking rate and supplementation on lactation and reproduction in pasture-based dairy systems in Eastern North Carolina. R. E. Vibart*¹, S. P. Washburn², G. A. Benson², and J. T. Green², ¹*AgResearch Limited, Palmerston North, New Zealand*, ²*North Carolina State University, Raleigh*.
- 10:30 AM 764 Sequence grazing of perennial and annual cool-season grasses to extend the grazing season for stocker calves. B. K. Northup¹, W. A. Phillips*¹, and A. A. Hopkins², ¹*USDA-ARS Grazinglands Research Laboratory, El Reno, OK*, ²*Noble Foundation Inc., Ardmore, OK*.
- 10:45 AM 765 Comparison of fescues versus orchardgrass— Forage characteristics and stocker performance. M. H. Ramos*¹, J. W. Lehmkuhler², and K. A. Albrecht³, ¹*University of Missouri, Columbia*, ²*University of Kentucky, Lexington*, ³*University of Wisconsin, Madison*.
- 11:00 AM 766 Use of N fertilization versus interseeded legume—Forage characteristics and stockers performance. M. H. Ramos*¹, J. W. Lehmkuhler², and K. A. Albrecht³, ¹*University of Missouri, Columbia*, ²*University of Kentucky, Lexington*, ³*University of Wisconsin, Madison*.
- 11:15 AM 767 Performance of Holstein steers, beef steers and beef heifers under rotational grazing. M. H. Ramos*¹, J. W. Lehmkuhler², and K. A. Albrecht³, ¹*University of Missouri, Columbia*, ²*University of Kentucky, Lexington*, ³*University of Wisconsin, Madison*.

Horse Species
Chair: Rhonda Hoffman, Middle Tennessee State University
513ef

- 8:30 AM Introductions
- 8:45 AM 768 The welfare of horses during transport. J. Woods*, *J. Woods Livestock Services*.
- 9:45 AM Break
- 10:00 AM 769 Expression of intestinal monosaccharide transporters and the sweet taste receptor in equine small intestine. D. Arora*, M. Al-Rammahi, K. Salmon, C. Proudman, and S. Shirazi-Beechey, *University of Liverpool, Liverpool, UK*.
- 10:15 AM 770 Fatty acid synthesis in equine adipose and liver tissue explants. J. K. Suagee*¹, B. A. Corl¹, M. V. Crisman², J. G. Wearn², L. J. McCutcheon³, and R. J. Geor³, ¹*Virginia Polytechnic Institute and State University, Blacksburg*, ²*Virginia-Maryland Regional College of Veterinary Medicine, Blacksburg*, ³*Michigan State University, East Lansing*.
- 10:30 AM 771 Effects of the insulin sensitizing drug, pioglitazone, on genes regulating glucose and fat metabolism in horses. J. K. Suagee*¹, R. J. Geor³, L. J. McCutcheon³, J. G. Wearn², M. V. Crisman², B. A. Corl², and M. W. Hulver¹, ¹*Virginia Polytechnic Institute and State University, Blacksburg*, ²*Virginia-Maryland Regional College of Veterinary Medicine, Blacksburg*, ³*Michigan State University, East Lansing*.
- 10:45 AM 772 The use of a handheld glucometer for measuring glucose concentrations from whole blood collected from the horse. C. D. Gunkel*, J. S. Drouillard, and T. L. Slough, *Kansas State University, Manhattan*.
- 11:00 AM Break
- 11:15 AM 773 The effect of consuming endophyte-infected tall fescue on lameness in the horse. K. C. Gradert*¹, J. M. Bormann¹, S. F. DeWitt², L. W. Lomas³, J. M. Kouba¹, and T. L. Slough¹, ¹*Kansas State University, Manhattan*, ²*Woodside Equine Clinic, Ashland, VA*, ³*Southeast Agricultural Research Center, Parsons, KS*.
- 11:30 AM 774 The use of thermal imaging to monitor temperature in the hoof of horses consuming endophyte-infected tall fescue. K. C. Gradert*¹, J. M. Bormann¹, S. F. DeWitt², L. W. Lomas³, J. M. Kouba¹, and T. L. Slough¹, ¹*Kansas State University, Manhattan*, ²*Woodside Equine Clinic, Ashland, VA*, ³*Southeast Agricultural Research Center, Parsons, KS*.

Nonruminant Nutrition
Fats and Oils
Chair: Charles Starkey, DSM Nutritional Products
516ab

- 8:30 AM 775 Effect of rice oil supplementation in diets for weanling pigs. G. J. M. M. Lima*¹, L. Wortmann², and A. Mior², ¹*Embrapa, Concordia, SC, Brazil*, ²*Helmut Tessmann Vegetable Oils, Camaquã, RS, Brazil*.
- 8:45 AM 776 Apparent and true ileal digestibility of acid hydrolyzed ether extract in various feed ingredients fed to growing pigs. B. G. Kim*, D. Y. Kil, and H. H. Stein, *University of Illinois, Urbana*.
- 9:00 AM 777 The impact of dried distillers grains with solubles withdrawal programs on swine carcass fatty acid profiles and bacon quality. J. Stevens, A. Schinckel, B. Richert, and M. Latour*, *Purdue University, West Lafayette, IN*.
- 9:15 AM 778 Analysis of iodine value in pork fat by Fourier transform near infrared spectroscopy for pork fat quality assessment. R. A. Cocciardi*¹, J. M. Benz², H. Li¹, S. S. Dritz², J. M. DeRouche², M. D. Tokach², J. L. Nelssen², R. D. Goodband², and A. W. Duttlinger², ¹*Bruker Optics Inc., Billerica, MA*, ²*Kansas State University, Manhattan*.
- 9:30 AM 779 The role of linoleic and α -linolenic acid for synthesis of long chain polyunsaturated fatty acids in liver and brain: A model study with growing pigs. W. Smink, J. Van Baal, R. Hovenier, and W. J. J. Gerrits*, *Wageningen University, Wageningen, the Netherlands*.
- 9:45 AM 780 Comparing oxidation of fatty acids in pigs fed starch, animal fat or soy oil using ¹³C labeled fatty acids. J. J. G. C. van den Borne¹, E. M. A. M. Bruininx¹, E. van Heugten², J. van Milgen³, and W. J. J. Gerrits*¹, ¹*Wageningen University, Wageningen, the Netherlands*, ²*North Carolina State University, Raleigh*, ³*INRA, UMR1079, Systèmes d'Elevage, Nutrition Animale et Humaine, St Gilles, France*.
- 10:00 AM 781 Essential oil micro encapsulation increases stability during pelleting and premix and feed storage. D. Bravo, C. Ionescu*, A. Vienne, and S. Oguey, *Pancosma, Geneva, Switzerland*.

Production, Management and the Environment

Beef

Chair: Joe Dalton, University of Idaho

513ab

- 8:30 AM 782 An evaluation of residual feed intake estimates obtained with computer models versus empirical regression. C. B. Williams*, C. L. Ferrell, and T. G. Jenkins, *USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE.*
- 8:45 AM 783 Influence of feed management on random herd curves from random regression test-day model. M. Caccamo*¹, R. F. Veerkamp², J. D. Ferguson³, R. Petriglieri¹, F. La Terra¹, and G. Licitra^{1,4}, ¹CoRFiLaC, Regione Siciliana, Ragusa, Italy, ²Animal Breeding and Genomics Centre, ASG, WageningenUR, Lelystad, The Netherlands, ³University of Pennsylvania, Kennett Square, ⁴D.A.C.P.A. University of Catania, Italy.
- 9:00 AM 784 Effects of programmed growth on yearling Brangus and Angus heifers. I. Performance and body composition. B. R. Austin, M. J. Hersom*, and J. V. Yelich, *University of Florida, Gainesville.*
- 9:15 AM 785 Effects of programmed growth on yearling Brangus and Angus heifers. II. Puberty and reproductive performance. B. R. Austin, M. J. Hersom*, and J. V. Yelich, *University of Florida, Gainesville.*
- 9:30 AM 786 Predicting the success of fixed-time AI from passive monitoring of body temperature in beef heifers. J. A. Small*^{1,4}, A. D. Kennedy², L. M. Pfeifer³, and J. Singh³, ¹Agriculture and Agri-Food Canada, Brandon, MB, Canada, ²University of Manitoba, Winnipeg, MB, Canada, ³University of Saskatchewan, Saskatoon, SK, Canada, ⁴Nova Scotia Agricultural College, Truro, NS, Canada.
- 9:45 AM 787 Does fertility-associated antigen on sperm collected from Nellore (*Bos indicus*) bulls affect fertility at first-service timed AI? J. C. Dalton*¹, L. Deragon², J. L. M. Vasconcelos³, and A. Ahmadzadeh⁴, ¹University of Idaho, Caldwell, ²Alta Genetics Brazil, Uberaba, MG, Brazil, ³FMVZ-UNESP, Botucatu, SP, Brazil, ⁴University of Idaho, Moscow.
- 10:00 AM 788 Mastitis in beef bulls caused by *Arcanobacterium pyogenes*. S. C. Nickerson*¹, E. Rollin², D. T. Ensley², and R. D. Berghaus², ¹University of Georgia, College of Agricultural and Environmental Sciences, Department of Animal and Dairy Science, Athens, ²University of Georgia, College of Veterinary Medicine, Department of Population Health, Athens.

Ruminant Nutrition

Dairy 3

Chair: Allen Young, Utah State University

511cf

- 8:30 AM 789 Short-term changes in forage dry matter affect milk production responses in dairy cows. D. R. Mertens*¹ and P. Berzaghi², ¹US Dairy Forage Research Center, Madison, WI, ²University of Padua, Italy.
- 8:45 AM 790 Meta-analysis of influence of dietary NDF on energy partitioning in dairy cows. D. Sauvant*¹, O. Martin¹, and D. Mertens², ¹Agroparistech-INRA, Paris, France, ²US Dairy Forage Center, Madison, WI.
- 9:00 AM 791 Effect of feeding low-starch, low-forage diets to mid-lactation dairy cows on lactational performance and ruminal characteristics. E. R. Myers*¹, H. M. Dann², K. W. Cotanch², C. S. Mooney², R. J. Grant², A. L. Lock³, and K. Yagi³, ¹University of Vermont, Burlington, ²William H. Miner Agricultural Research Institute, Chazy, NY, ³ZEN-NOH National Federation of Agriculture Co-Operative Associations, Tokyo, Japan.
- 9:15 AM 792 Assessment of dietary ratios of red clover and corn silages on milk production and milk quality in dairy cows. J. M. Moorby*, N. M. Ellis, D. W. R. Davies, and D. R. Davies, *Institute of Biological, Environmental and Rural Sciences, Aberystwyth, UK.*
- 9:30 AM 793 Determining fiber requirements in dairy cows by modeling digestive responses to dietary physically effective NDF. Q. Zebeli*^{1,2}, D. Mansmann^{1,2}, H. Steingass², W. Drochner², and B. N. Ametaj¹, ¹University of Alberta, Edmonton, AB, Canada, ²University of Hohenheim, Stuttgart, Germany.
- 9:45 AM 794 Nutritional value of bahiagrass, bahiagrass-alfalfa, or brown mid rib sorghum baleage for lactating Holstein cows. M. E. McCormick*¹, V. R. Moreira¹, D. C. Blouin², and K. J. Han¹, ¹Louisiana State University Agricultural Center, Southeast Research Station, Franklinton, ²Louisiana State University Department of Experimental Statistics, Baton Rouge.
- 10:00 AM 795 Diurnal patterns of rumen pH and function in dairy cows on high quality temperate pastures of the South Island of New Zealand. J. Gibbs* and J. Laporte, *Lincoln University, Canterbury, New Zealand.*
- 10:15 AM 796 Effect of pre-grazing herbage mass and daily herbage allowance on rumen, plasma and milk fatty acids. R. A. Palladino¹, M. O'Donovan², J. J. Murphy², M. McEvoy^{1,2}, and D. A. Kenny*¹, ¹University College Dublin, Belfield, Dublin, Ireland, ²Teagasc, Fermoy, Co. Cork, Ireland.

- 10:30 AM 797 Comparison of energy expenditure, physical activity and feeding behavior in dairy cows grazing pasture grass or fed the same grass indoors. L. D. Kaufmann¹, A. Munger¹, M. Rerat¹, P. Junghans², S. Gors², C. C. Metges², and F. Dohme^{*1}, ¹Agroscope Liebefeld-Posieux, Research Station ALP, Posieux, FR, Switzerland, ²Research Institute for the Biology of Farm Animals (FBN), Dummerstorf, Germany.
- 10:45 AM 798 Relationship between milk fat and nutrition in lactating Holstein cows. M. Vazirigohar*, A. Nejati Javaremi, and A. Nikkhah, *University of Tehran, Karaj, Tehran, Iran.*
- 11:00 AM 799 Profitability and milk yield response to protein supplementation in mid-lactation dairy cows. A. E. O. Malau-Aduli* and J. C. Beattie, *School of Agricultural Science, University of Tasmania, Hobart, Tasmania, Australia.*
- 11:15 AM 800 Pigeon peas as a supplement for lactating dairy cows fed corn silage based diets. V. A. Corriher^{*1}, G. M. Hill¹, J. K. Bernard¹, T. Jenkins², and B. G. Mullinix¹, ¹University of Georgia, Tifton, ²Clemson University, Anderson, SC.

**Ruminant Nutrition
Research Methods
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511be**

- 8:30 AM 57 Comparison of NRC-2001 chemical approach with biological approach (in situ animal study) in the determination of digestible nutrients and energy values of dry distillers grains with solubles in ruminants. W. G. Nuez Ortin* and P. Yu, *University of Saskatchewan, Saskatoon, SK, Canada.*
- 8:45 AM 801 Everting the omasum into the reticulum to identify the sensory receptors in the omasum of the sheep. W. L. Grovum*, *Department of Biomedical Sciences, Ontario Veterinary College, University of Guelph, Guelph, Ontario, Canada.*
- 9:00 AM 802 Standardization of an in vitro method using *Streptomyces griseus* enzyme to predict rumen undegraded protein. I. Schadt^{*1}, P. J. Van Soest², and G. Licitra^{1,3}, ¹CoRFiLaC, Regione Siciliana, Ragusa, Italy, ²Cornell University, Ithaca, NY, ³D.A.C.P.A. University of Catania, Italy.
- 9:15 AM 803 Methodology to improve the sensitivity and repeatability of in vitro gas production. D. R. Mertens*, *US Dairy Forage Research Center, Madison, WI.*
- 9:30 AM 804 Effect of lignin linkages with other plant cell wall components on in vitro and in vivo NDF digestibility of forages. E. Raffrenato^{*1}, R. Fievisohn², K. W. Cotanch², R. J. Grant², L. E. Chase¹, and M. E. Van Amburgh¹, ¹Cornell University, Ithaca, NY, ²W. H. Miner Agricultural Research Institute, Chazy, NY.
- 9:45 AM 805 Do the time of access to food, the supplementation with additives and the graze affect ruminal inocula used for *in vitro* gas production trials? A. Perez-Ruchel¹, A. Britos¹, E. Almanza¹, J. L. Repetto², N. Pomies¹, and C. Cajarville^{*1}, ¹Departamento de Nutrici3n Animal, Facultad de Veterinaria, Montevideo, Uruguay, ²Departamento de Bovinos, Facultad de Veterinaria, Montevideo, Uruguay.
- 10:00 AM 806 *In vitro* assessment of effects of microalgae type, protection of microalgae, and dilution rate on dry matter disappearance and methane emission in a rumen simulation system. R. Kinley^{*1}, K. Glover¹, R. Teather², S. Iverson³, and A. Fredeen¹, ¹Nova Scotia Agricultural College, Truro, Nova Scotia, Canada, ²Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada, ³Dalhousie University, Halifax, Nova Scotia, Canada.
- 10:15 AM 807 Comparing real-time PCR to purine analysis in regard to estimation of bacterial crude protein. E. Castillo-Lopez*, J. Miner, and P. Kononoff, *University of Nebraska, Lincoln.*
- 10:30 AM 808 Evaluation of supplementation or controlled-release capsule (CRC) to supply *n*-alkane as an intake marker in steers fed switchgrass or alfalfa hay. S. Chavez*, C. Lane, M. Braxton, A. Bruner, E. Leonard, J. Burns, and G. Huntington, *North Carolina State University, Raleigh.*

SYMPOSIUM
Swine Species
Environmental Concerns Based on Swine Production
Chair: Brett R. White, University of Nebraska-Lincoln
Sponsor: Land O'Lakes
510ac

8:30 AM		Introduction
8:35 AM	809	Research and extension needs in air and water quality. D. J. Meisinger*, <i>US Pork Center of Excellence, Ames, IA.</i>
8:50 AM	810	Occupational and environmental concerns in swine production. K. Donham*, <i>University of Iowa, Iowa City.</i>
9:30 AM	811	The potential ability of swine nutrition to influence environmental factors positively. S. T. Petersen*, <i>Land O'Lakes Purina Feed LLC, Shoreview, MN.</i>
10:10 AM		Break
10:25 AM	812	Potential of anaerobic digestion to address current environmental concerns on swine operations. D. I. Massé*, <i>Agriculture and Agri-Food Canada, Sherbrooke, Québec, Canada.</i>
11:05 AM	813	Fate and transport of zoonotic bacterial, viral, and parasitic pathogens during swine manure treatment, storage, and land application. C. Ziemer* ¹ , J. Bonner ² , Task Force Members for CAST Special Publication No. 29 ² , D. Cole (cochair) ³ , and J. Vinjé (cochair) ⁴ , ¹ <i>National Soil Tilth Lab ARS-USDA, Ames, IA</i> , ² <i>Council for Agricultural Science and Technology, Ames, IA</i> , ³ <i>Georgia Division of Public Health, Atlanta, GA</i> , ⁴ <i>Centers for Disease Control and Prevention, Atlanta, GA.</i>

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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 the author index will reflect these discrepancies. Efforts have been made to make this index consistent; however, error from author entry contributes to inaccuracies.

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Sunday, July 12

Room	8:00 am–12:00 pm	12:00 pm–1:00 pm	1:00 pm–5:00 pm	Evening
Exhibit Hall 220cde		Exhibitor/Poster Setup		
510ac			(3:00–5:00 pm) Late Breaking/ Original Research Abstracts	
510bd			(1:00–3:00 pm) 2009 and 2010 Program Committee Meeting	
511a	(10:00–11:00 am) SAD Officers and Advisor Meeting/(11:30 am–12:00 pm) SAD Quiz Bowl Seating Test		SAD Quiz Bowl Room 1	SAD Quiz Bowl Final
511d	(11:00 am–12:00 pm) SAD Quiz Bowl Officials Meeting		SAD Quiz Bowl Room 2	
511cf	Triennial Reproduction Symposium: Challenges and Opportunities Facing Livestock Reproduction in the 21st Century			
515ab	Pre-Load			
515c	Speaker Ready			
517ab				7:00 pm Opening Session
517cd				8:00 pm Opening Reception
521a	Hospitality Room			
522		SAD Undergraduate Midday Mixer		(5:00–6:30 pm) ASAS Retirees Gathering
523a				(5:00–6:00 pm) ADSA Dairy Foods Division Council Meeting
523b			(2:00–3:00 pm) ADSA Produc- tion Division Council Meeting/ (3:00–4:00 pm) ADSA Pro- duction Division Nominating Committee	

Monday, July 13

Room	7:30 am–9:30 am	9:30 am–12:30 pm	12:30 pm–2:00 pm	2:00 pm–5:00 pm	Evening (4:00–6:00 pm) Exhibitor Reception
Exhibit Hall 220cde	Poster presentations	(8:00 am–6:00 pm) Commercial Exhibits			
510ac		National ADSA Dairy Foods Graduate Student Competition		Meat Science and Muscle Biology Symposium: Balancing Live Cattle Performance and Beef Quality	
510bd		Production, Management and the Environment: Environment		ADSA Southern Section Symposium: Dairy Replacement Health Challenges in the Southeastern U.S.	
511ad		ASAS Cell Biology Symposium: REDOX Regulation of Cell Function		Companion Animals Symposium: Dietary Supplements in Companion & Exotic Animal Nutrition - Use, Regulations & Safety	
511be		Bioethics Symposium: A Scientist's Guide to Approaching Bioethics	(12:30–1:00 pm) ASAS Graduate Student Open Forum	Bioethics Workshop: Working through Bioethical Issues in Practice	
511cf		Animal Health: Mastitis, Lameness, and Stress		Animal Health: Immunity and Swine Health	
512ae		Teaching/Undergraduate and Graduate Education Symposium: Enhancing the Undergraduate Writing Experience		(2:00–4:00 pm) Swine Species	(5:00–6:00 pm) ADSA Town Hall Meeting
513ab		(9:30–11:15 am) ADSA-ASAS Northeast Section Graduate Student Competition / (11:30 am–12:15 pm) ADSA Southern Section Graduate Student Competition		JAS/IJS Reviewer Workshop	
513cd		National ADSA Production Oral MS Student Competition		Dairy Foods Symposium: Milk Protein Fractionation	
513ef		National ADSA Production Oral PhD Student Competition			
514		CSAS Graduate Student Competition 1		CSAS Graduate Student Competition 2	
515ab		Pre-Load			

Monday, July 13

Room	7:30 am–9:30 am	9:30 am–12:30 pm	12:30 pm–2:00 pm	2:00 pm–5:00 pm	Evening
515c			Speaker Ready		
516ab		Ruminant Nutrition: Growing Cattle and Beef Breeding Herd		Ruminant Nutrition: Feedlot, Byproduct Feeds	
516c		Ruminant Nutrition: Ruminant Nutrition: Dairy 1		Physiology and Endocrinology: Dairy Cattle Reproduction	
517b		Alpha Beef Cattle Nutrition Symposium: Alternative Energy Sources in High Energy Diets for Beef Cattle: Challenges, Benefits, and Management Options		Ruminant Nutrition Symposium: Forage Digestibility Estimates: Obtaining and Applying Meaningful Values	
517c					
518		Nonruminant Nutrition: Feed Ingredients		Nonruminant Nutrition Symposium: Improving the Nutritional Value of Alternative Feed Ingredients	
519		Breeding & Genetics: Dairy Cattle Breeding I		Food Safety	
520ad		(8:30 am–9:15 am) ADSA-SAD Business Meeting / (11:00 am–12:45 pm) ADSA-SAD Undergraduate Competition: Dairy Foods		(2:00–4:00 pm) ADSA-SAD Undergraduate Competition: Dairy Production	
520be		(9:30–10:45 am) ADSA-SAD Activities Symposium		ADSA-SAD Undergraduate Competition: Original Research	
520c		(9:30–10:30 am) ADSA-SAD Interviews for Outstanding Student and Advisor Awards			
520f		(9:30–10:30 am) ADSA-SAD Judging of Yearbooks, Scrapbooks, Annual Reports			
521a		Hospitality Room			

Monday, July 13

Room	7:30 am–9:30 am	9:30 am–12:30 pm	12:30 pm–2:00 pm	2:00 pm–5:00 pm	Evening
522			Michigan State University Luncheon		
523a				(4:30–6:00 pm) John's Interest Group	
523b				(2:00–3:30 pm) Discover Steering Committee	
524		Breeding & Genetics: Molecular Genetics I		Breeding and Genetics Symposium: Whole Genome Selection - The New Frontier?	
525a		(10:30 am–12:30 pm) ARPAS Exam	ACAS Annual Meeting	(2:00–4:00 pm) ARPAS Exam	

Tuesday, July 14

Room	7:30 am–9:30 am	9:30 am–12:30 pm	12:30 pm–2:00 pm	2:00 pm–5:00 pm	Evening
Exhibit Hall 220cde	Poster presentations	(8:00 am–5:00 pm) Commercial Exhibits			
510ac		Breeding and Genetics: Genomic Evaluation		Breeding & Genetics: Dairy Cattle Breeding III	
510bd		Production, Management and the Environment: Dairy		Breeding & Genetics: Swine Breeding	
511ad		Companion Animals	ARPAS Business Meeting	ARPAS Symposium: Feed Management: ARPAS, NRCS, and The National Project	
511be		Growth and Development: Physiology of Growth In vivo and In vitro		Animal Behavior and Well-Being I	
511cf		Animal Health Symposium: Emerging Foreign Animal and Zoonotic Diseases		Small Ruminant: Production, Management, Lactation	
512ae		Lactation Biology 1		Teaching/Undergraduate and Graduate Education: Teaching Issues	(5:00–6:00 pm) The ASAS Open Forum: Échangez vos idées à Montréal
513ab		(11:30 am–12:30 pm) ADSA Production Division Business Meeting		(3:30–5:00 pm) ASAS JAS Forum (Division/Associate Editors and Authors)	
513cd		Small Ruminant Symposium: Organic and Grass-Fed Small Ruminant Challenges and Opportunities		Dairy Foods: Oral Session 1	(5:00–6:00 pm) USDA-ARS Staff Update Session
513ef		(9:30–10:30 am) ADSA Foundation Lecture - Production / (10:30–11:30 am) Danisco Award Lecture / (11:30 am–12:30 pm) ADSA Dairy Foods Division Business Meeting		Dairy Foods: Oral Session 2	
514		Meat Science and Muscle Biology Symposium: The Effects of By-product Feeding on Meat Quality Traits		Meat Science and Muscle Biology: Pork and Beef Quality	
515ab		Pre-Load			
515c		Speaker Ready			

Tuesday, July 14

Room	7:30 am–9:30 am	9:30 am–12:30 pm	12:30 pm–2:00 pm	2:00 pm–5:00 pm	Evening
516ab		Ruminant Nutrition 1		Beef Species Symposium: Population Data Analyses to Evaluate Trends in Animal Production Systems	
516c		Ruminant Nutrition: Fat Supplementation		Ruminant Nutrition: Feed Additives	
517a					(7:00 pm) ADSA Awards Program
517b		CSAS Symposium: Nutrition - Behavior Interactions in Ruminants		Ruminant Nutrition Symposium: Using Molecular Techniques to Advance Research in Ruminant Nutrition	
517c				Growth and Development Sym- posium: Fetal Programming in Animal Agriculture	
518		Nonruminant Nutrition: Amino Acids and Energy		Animal Health Symposium: Animal Well Being: Tackling the Issue of Cow Longevity	
519				Physiology and Endocrinology: Estrous Synchronization of Beef Cattle	
520ad		(8:30–9:30 am) ADSA-Student Business Meeting–Elec. of Officers/(9:30–11:00 am) ADSA-SAD Student Career Roundtable		(2:30–3:30 pm) ADSA-SAD Committee Meeting – Old and New Officers and Advisors	
520be				(2:00–3:00 pm) ADSA-SAD Award and Club Photos/(3:00– 5:00 pm) ADSA Award Photos	(5:00–7:00 pm) ADSA Award Photos
520c		(11:45 am–2:00 pm)		(3:00–5:00 pm) ADSA Award Donor Dinner Setup	(5:00–6:30 pm) ADSA Award Donor Dinner
520f		ADSA-SAD Awards Luncheon			
521a		Hospitality Room			

Tuesday, July 14

Room	7:30 am–9:30 am	9:30 am–12:30 pm	12:30 pm–2:00 pm	2:00 pm–5:00 pm	Evening
522			ASAS GS Lunch and Learn		
523a			ADSA DF Division Milk Proteins & Enzyme Committee		
523b			ADSA DF Division Program Planning Lunch		
524		Forages and Pastures Symposium: Forage Management Strategies to Offset High Input Costs		Nonruminant Nutrition Symposium: Mineral-Mineral Interactions: Implications for Nutrition	
525a		(10:30 am–12:30 pm) ARPAS Exam			
525b			NE ASAS/ADSA Business Meeting & Awards Luncheon		

Wednesday, July 15

Room	7:30 am–9:30 am	9:30 am–10:30 am	10:30 am–12:30 pm	12:30 pm–2:00 pm	2:00 pm–5:00 pm
Exhibit Hall 220cde	Poster presentations		(8:00 am–2:00 pm) Commercial Exhibits / (2:00 pm–5:00 pm) Exhibit Teardown		
510ac			Animal Behavior and Well-Being Symposium: The Behavior* Nutrition Interaction		Forages and Pastures: Harvested Forages, Ensiling and Forage Utilization
510bd			International Animal Agriculture Symposium: ASAS-EAAP Global Issues		Breeding and Genetics: Molecular Genetics II
511ad			ASAS/ADSA Graduate Student Symposium: Decisions, Decisions, Decisions. How to make informed decisions on your future career opportunities to developing a successful research program.		Contemporary and Emerging Issues Joint with Extension Education Symposium: Science-Based Approaches to Address Consumer Concerns with the Processing and Marketing of Animal Products
511be			Extension Education		Extension Education Symposium: Models for Dairy Production Decision Making
511cf			Growth and Development: Fetal Development		Animal Health: Calf Health, Respiratory Disease, etc.
512ae			Lactation Biology		Breeding & Genetics Workshop
513ab		ASAS Business Meeting	Small Ruminant: Nutrition		Physiology and Endocrinology: Livestock Physiology
513cd		(10:00–10:30 am) ADSA Business Meeting	Dairy Foods: Oral Session 3: Dairy Foods/Microbiology		Milk Protein & Enzymes Symposium
513ef			Breeding and Genetics: Beef Cattle & Sheep Breeding		Dairy Foods Symposium: Challenges and Opportunities of Microencapsulation Technology in Application to Dairy Foods
514			Ruminant Nutrition 2		Physiology and Endocrinology: Metabolic Physiology
515ab	Pre-Load				
515c	Speaker Ready				
516ab			Ruminant Nutrition: Dairy Calves		Ruminant Nutrition: Minerals
516c			Ruminant Nutrition: Rumen Microbiology		Ruminant Nutrition: Dairy 2

Wednesday, July 15

Room	7:30 am–9:30 am	9:30 am–10:30 am	10:30 am–12:30 pm	12:30 pm–2:00 pm	2:00 pm–5:00 pm
517b					CSAS Symposium: Functional Foods, Probiotics and Animal Health
518			Nonruminant Nutrition: Minerals and Vitamins		Nonruminant Nutrition: Feed Additives
519			Production, Management and the Environment: General		Beef Species: Health, Efficiency and Beef Quality
520ad			(10:30 am–5:00 pm) Mixed Models Workshop		
520be				(12:30–2:30 pm) Feed Analysis Consortium	
521a	Hospitality Room				
522					(4:30–6:00 pm) Closing Reception
523a			(11:30 am–12:30 pm) ADSA-ASAS Joint Executive Committee Meeting		
524			Physiology and Endocrinology Symposium: Impact of Gonadal Steroids on Brain Development and Function		ADSA Production Division Symposium: Driving Forces in the Dairy Industry That Will Change Dairy Farm Management
525a					(2:00–4:00 pm) ARPAS Exam

Thursday, July 16

Room	8:30 am–11:30 am
510ac	Swine Species Symposium: Environmental Concerns Based on Swine Production
510bd	Breeding and Genetics: Dairy Breeding IV - Crossbreeding
511ad	Animal Behavior and Well-Being 2
511be	Ruminant Nutrition Research Methods
511cf	Ruminant Nutrition: Dairy 3
512ae	Mixed Models
513ab	Production, Management and the Environment: Beef
513cd	Dairy Foods: Dairy Foods Processing/Enzymes
513ef	Horse Species
514	Forages and Pastures: Grazing and Pasture Utilization
515ab	Pre-Load
515c	Speaker Ready
516ab	Nonruminant Nutrition: Fats and Oils
521a	Hospitality Room
525a	(8:30 am–5:00 pm) Writers' Workshop

NOTES

NOTES

Future Meeting Dates

2010

Denver, Colorado

ADSA®-ASAS-PSA-Western ASAS

July 11-15

2011

New Orleans, Louisiana

ADSA®-ASAS

July 11-14