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All session rooms shown in the scientific program are in the convention center, and all poster sessions will be held in Hall A-B. Scheduling and locations are subject to change without notice, so please check the onsite newsletter each morning for changes.

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Tuesday, July 9

POSTER PRESENTATIONS

SYMPOSIA AND ORAL SESSIONS

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SYMPOSIA AND ORAL SESSIONS

Monday, July 8

SYMPOSIA AND ORAL SESSIONS

Teaching/Undergraduate and Graduate Education Workshop: Teaching and Learning in the Animal Sciences—New Grounds for the 21st Century
Chair: Michel A. Wattiaux, University of Wisconsin-Madison
105-106 (plenary); 107, 108, 109 (breakouts)

8:00 AM		**Continental breakfast**
8:30 AM		**Welcome, introduction, and workshop orientation** Jean Bertrand
8:40 AM		**Survey: Views and perceptions on teaching and learning in the animal sciences in institutions of higher education**
9:00 AM	1	**How to incorporate high-impact practices in the animal sciences curriculum.** N. Cockett*[1] and D. Buchanan[2], [1]*Utah State University*, *Logan*, [2]*North Dakota State University*, *Fargo*.
9:50 AM		**Move to breakout sessions**
10:00 AM		**Breakout session activities**
11:00 AM		**Program break/return to plenary session**
11:15 AM		**Reports from breakout sessions**
12:30 PM		**Lunch**
1:00 PM	2	**Courses and high-impact practices to equip students with knowledge, skills, and experiences for the 21st century: Views of animal sciences faculty.** M. A. Wattiaux* and P. Crump, *University of Wisconsin-Madison*, *Madison*.
1:40 PM		**Break**
1:45 PM	3	**How to incorporate active learning practices in animal sciences classrooms.** D. K. Aaron* and C. A. Tilghman, *University of Kentucky*, *Lexington*.
2:35 PM		**Move to breakout sessions**
2:40 PM		**Breakout session activities**
3:40 PM		**Return to plenary session**
3:45 PM		**Reports from breakout sessions**
5:00 PM		**Next steps and workshop evaluation**

Triennial Growth Symposium: Vitamin D—Establishing the Basics to Dispel the Hype
Chair: Thomas Crenshaw, University of Wisconsin
Sponsors: DSM Nutritional Products and Zoetis Animal Health
Wabash Ballroom 1

8:00 AM		**Introduction and symposium overview** T. Crenshaw, J. A. Cuarón, and G. Litta
8:10 AM	4	**Vitamin D: Bones and beyond.** H. Deluca* and L. Plum, *Department of Biochemistry, University of Wisconsin-Madison*, *Madison*.
9:00 AM	5	**Basics for establishment of 2011 vitamin D guidelines in humans.** C. M. Weaver*, *Purdue University, Department of Foods and Nutrition*, *West Lafayette, IN*.
9:30 AM	6	**Novel roles for FGF23 signaling in vitamin D and phosphate homeostasis.** B. Lanske*, *Harvard School of Dental Medicine*, *Boston, MA*.

10:10 AM		**Discussion of the basics**
10:30 AM		**Break**
10:30 AM	7	**The rise and fall of clinical cases of vitamin D deficiency in commercial swine operations.** D. M. Madson*, *Department of Veterinary Diagnostic and Production Animal Medicine, Iowa State University*, *Ames*.
10:55 AM	8	**Basis for establishment of the 2012 vitamin D requirements in swine.** C. Lauridsen*, *Aarhus University, Department of Animal Science*, *Tjele, Denmark*.
11:20 AM		**Pig bone trait responses to maternal vitamin D intake depend on nursery diet vitamin D and P concentrations.** L. A. Rortvedt-Amundson**, University of Wisconsin-Madison*, *Madison*.
11:40 AM		**Discussion and summary of requirements**
11:55 AM		**Lunch**
1:10 PM	9	**Analytical methods to measure vitamin D in blood, feed and tissues: Application to diagnosis of vitamin D deficiency and excess in livestock.** R. L. Horst*, *Heartland Assays LLC*, *Ames, IA*.
1:30 PM		**Supplemental vitamin D3 from various sources increased serum 25(OH)D3 but not growth of pre-weaning and nursery pigs.** J. R. Flohr*, *Kansas State University, Manhattan.*
1:50 PM	10	**Novel roles for vitamin D in animal health and immunity.** D. R. Barreda*, *University of Alberta, Department of Agricultural, Food and Nutritional Science, and Department of Biological Sciences*, *Edmonton, Canada*.
2:15 PM	11	**The role of vitamin D in skeletal muscle development and growth.** J. D. Starkey*, *Texas Tech University*, *Lubbock*.
2:35 PM	12	**Practical applications of vitamin D supplements in swine diets.** G. Weber*, *DSM Nutritional Products*, *Basel, Switzerland*.
2:55 PM	13	**Practical application for use of dietary vitamin D to promote structural soundness in swine.** M. A. Pérez-Alvarado, D. Braña, and J. A. Cuarón*, *Centro Nacional de investigación Disciplinaria en Fisiología Animal, INIFAP*, *México*.
3:15 PM		**Discussion and summary of practical applications**
3:40 PM		**Acknowledgments and adjourn**

Tuesday, July 9

POSTER PRESENTATIONS

Ruminant Nutrition: Feed Additives, Minerals, and Vitamins I

T1 **Effect of supplementation with dehydrated molasses lick blocks on performance of growing dairy-beef steers grazing pasture.**
J. B. Aveling[1], M. R. Walton[2], and K. Stelwagen*[3], [1]*Ballance Agri-Nutrients*, *Tauranga, New Zealand*, [2]*Kaitaringa Farms Ltd*, *Waiotira, New Zealand*, [3]*SciLactis Ltd*, *Hamilton, New Zealand*.

T2 **Trace minerals: A new approach in nutritional requirements.**
L. F. C. Silva*, S. C. Valadares Filho, P. P. Rotta, M. I. Marcondes, F. A. Sales, E. C. Martins, A. T. Tokunaga, and D. F. T. Sathler, *Universidade Federal de Vicosa*, *Vicosa, Minas Gerais, Brazil*.

T3 **Intake, duodenal flow, and intestinal digestibility of amino acids from canola meal or corn and wheat distillers grains in growing beef heifers.**
C. Li[1,2], L. Xu[2,4], S. Ding*[2,3], K. A. Beauchemin[2], and W. Z. Yang[2], [1]*College of Animal Science and Technology, Inner Mongolia University for the Nationalities*, *Tongliao, Inner Mongolia, China*, [2]*Research Centre, Agriculture and Agri-Food Canada*, *Lethbridge, AB, Canada*, [3]*Department of Agricultural, Food and Nutritional Science, University of Alberta*, *Edmonton, AB, Canada*, [4]*College of Food Science and Engineering, Inner Mongolia Agricultural University*, *Hohhot, Inner Mongolia, China*.

T4 **Effects of cottonseed meal and dried distillers grains supplementation on rice straw utilization by Brahman steers.**
J. C. McCann*, J. E. Sawyer, and T. A. Wickersham, *Texas A&M University*, *College Station*.

T5 **Impact of chromium supplementation on lactating beef cows.**
M. J. Faulkner*[1], P. M. Walker[1], A. L. Wagner[2], R. E. Hall[2], and R. L. Atkinson[3], [1]*Illinois State University*, *Normal*, [2]*Cooperative Research Farms*, *Richmond, VA*, [3]*Southern Illinois University*, *Carbondale*.

T6 **Effects of two experimental direct-fed microbial products on performance and carcass characteristics of finishing beef cattle.**
E. M. Domby*[1], U. Y. Anele[1], K. K. Gautam[1], C. H. Ponce[1], J. S. Schutz[1], M. Garner[2], and M. L. Galyean[1], [1]*Texas Tech University*, *Lubbock*, [2]*MicroBios Inc.*, *Ithaca, NY*.

T7 **Influence of organic chromium and tannins extract supplementation on performance of bull calves during the first 50 days in the feedlot.**
A. Montoya[1], J. J. Bermudez[2], and R. Barajas*[1], [1]*Facultad de Medicina Veterinaria y Zootecnia, Universidad Autonoma de Sinaloa*, *Culiacan, Sinaloa, Mexico*, [2]*Ganaderia Integral Vizur, S.A. de C.V*, *Culiacan, Sinaloa, Mexico*.

T8 **Influence of tannins extract supplementation on feedlot performance and plasma urea nitrogen of nonimplanted growing heifers.**
B. J. Cervantes[1], A. Camacho[2], J. A. Vazquez[3], M. A. Espino[2], T. J. Heras[2], L. R. Flores[2], J. J. Lomeli[2], and R. Barajas*[2], [1]*Ganadera Los Migueles, S.A. de C.V*, *Culiacan, Sinaloa, Mexico*, [2]*Facultad de Medicina Veterinaria y Zootecnia, Universidad Autonoma de Sinaloa*, *Culiacan, Sinaloa, Mexico*, [3]*CUALTOS, Universidad de Guadalajara*, *Tepatitlan, Jalisco, Mexico*.

T9 **Influence of tannins extract and organic chromium supplementation on carcass characteristics of finishing bulls.**
A. Montoya[1], M. A. Espino[1], B. J. Cervantes[2,1], M. Verdugo[1], and R. Barajas*[1], [1]*Facultad de Medicina Veterinaria y Zootecnia, Universidad Autonoma de Sinaloa*, *Culiacan, Sinaloa, Mexico*, [2]*Ganadera Los Migueles, S.A. de C.V*, *Culiacan, Sinaloa, Mexico*.

T10 **Influence of tannins extract and organic chromium supplementation on feedlot performance.**
A. Montoya*[1], J. J. Bermudez[2], and R. Barajas[1], [1]*Facultad de Medicina Veterinaria y Zootecnia, Universidad Autonoma de Sinaloa*, *Culiacan, Sinaloa, Mexico*, [2]*Ganaderia Integral Vizur, S.A. de C.V*, *Culiacan, Sinaloa, Mexico*.

T11 **Interaction of tannin extract and zilpaterol hydrochloride supplementation on feedlot performance of bulls.**
R. Barajas*[1], B. J. Cervantes[2], M. A. Espino[1], A. Camacho[1], M. Verdugo[1], L. R. Flores[1], and J. A. Romo[1], [1]*Facultad de Medicina Veterinaria y Zootecnia, Universidad Autonoma de Sinaloa*, *Culiacan, Sinaloa, Mexico*, [2]*Ganadera Los Migueles, S.A. de C.V*, *Culiacan, Sinaloa, Mexico*.

T12 **Influence of zinc methionine and zilpaterol hydrochloride supplementation on feedlot performance and carcass characteristics of yearling-finishing bulls.**
M. Verdugo[1], B. J. Cervantes[2], M. A. Espino[1], J. A. Romo[1], and R. Barajas*[1], [1]*Facultad de Medicina Veterinaria y Zootecnia, Universidad Autonoma de Sinaloa*, *Culiacan, Sinaloa, Mexico*, [2]*Ganadera Los Migueles, S.A. de C.V*, *Culiacan, Sinaloa, Mexico*.

T13 **Effect of direct-fed microbials on ruminal fermentation and lactate utilization in steers consuming a high concentrate diet.**
N. M. Kenney*, S. M. Wingard, E. S. Vanzant, D. L. Harmon, and K. R. McLeod, *University of Kentucky*, *Lexington*.

T14 **Influence of feeding chelated chromium and enzymatically hydrolyzed yeast on growth performance, dietary energetics, and carcass characteristics in feedlot cattle.**
B. Sánchez-Mendoza*[1], A. Montelongo[1], A. Plascencia[1], R. Ware[2], and R. Zinn[3], [1]*UABC*, *Mexicali, BC, Mexico*, [2]*Varied Industries Corporation*, *Mason City, IA*, [3]*University of California*, *Davis*.

T15 **Influence of feeding yeast cell wall extract on growth performance of feedlot cattle during periods of elevated ambient temperature.**
M. Montano*[1], A. Plascencia[1], N. Torrentera[1], R. Ware[2], and R. Zinn[3], [1]*UABC*, *Mexicali, BC, Mexico*, [2]*Varied Industries Corporation*, *Mason City, IA*, [3]*University of California*, *Davis*.

T16 **Effect of level and source of supplemental tannin on growth-performance of Holstein steers during the late finishing phase.**
C. Rivera*[1], A. Plascencia[1], N. Torrentera[1], and R. Zinn[2], [1]*UABC*, *Mexicali, BC, Mexico*, [2]*University of California*, *Davis*.

T17 **Influence of supplemental urea withdrawal during the late finishing phase on growth performance and digestive function in feedlot cattle.**
D. May*[1], J. Calderon[1], M. Montano[1], A. Plascencia[1], and R. Zinn[2], [1]*UABC*, *Mexicali, BC, Mexico*, [2]*University of California*, *Davis*.

T18 **Evaluation of maternal trace mineral source on cow/calf performance and the subsequent feedlot performance of beef calves.**
R. L. Stewart*[1], T. J. Wistuba[2], G. I. Zanton[2], and A. L. Jones[3], [1]*University of Georgia*, *Athens*, [2]*Novus International*, *St. Charles, MO*, [3]*University of Georgia*, *Tifton*.

T19 **Influence of abomasal infusion of phenylalanine on characteristics of digestion of a steam-flaked wheat-based finishing diet fed to Holstein steers.**
A. A. Vite[1], A. G. Alvarez*[1], A. P. Marquez[1], M. F. Montano[1], N. G. Torrentera[1], and R. Zinn[2], [1]*UABC*, *Mexicali, BC, Mexico*, [2]*University of California*, *Davis*.

T20 **Effects of postruminal amino acid supply on dietary protein flow from the rumen in forage based diet using a continuous culture system.**
M. M. Masiero*, J. H. Porter, M. S. Kerley, and W. J. Sexten, *University of Missouri*, *Columbia*.

T21 **Phosphorus excretion in beef steers as affected by increasing levels of corn gluten feed supplementation.**
D. D. Harmon*[1], E. A. Riley[1], A. L. Zezeski[1], J. K. Smith[1], H. L. M. Tucker[2], S. J. Neil[1], B. D. Dalton[1], and M. A. McCann[1], [1]*Virginia Polytechnic Institute and State University, Department of Animal and Poultry Sciences*, *Blacksburg*, [2]*Virginia Polytechnic Institute and State University, Department of Dairy Science*, *Blacksburg*.

T22 **Effect of Bovamine on lactation performance by dairy cows.**
L. F. Ferraretto* and R. D. Shaver, *University of Wisconsin-Madison*, *Madison*.

T23 **Use of plasma lysine to assess postruminal amino acid bioavailability in rumen bypass lysine from Megamine-L.**
E. Evans*[1], N. Clark[2], and E. Block[3], [1]*Essi Evans Technical Advisory Services Inc.*, *Bowmansville, ON, Canada*, [2]*Atlantic Dairy and Forage Institute*, *Fredericton Junction, NB, Canada*, [3]*Arm & Hammer Animal Nutrition*, *Princeton, NJ*.

T24 **Lactational performance and ruminal fermentation profiles of dairy cows fed different corn silage hybrids ensilaged without or with microbial inoculant.**
M. N. McDonald[1], M. S. Holt[1], A. J. Young[1], J.-S. Eun*[1], and K. E. Nestor[2], [1]*Department of Animal, Dairy, and Veterinary Sciences, Utah State University*, *Logan*, [2]*Mycogen Seeds*, *Indianapolis, IN*.

T25 **Efficacy of various adsorbents to reduce aflatoxin M1 levels in milk of lactation cows fed aflatoxin B1.**
M. Savari[1], M. Dehghan-Banadaky*[1], K. Rezayazdi[1], and M. Javan-Nikkhah[2], [1]*Department of Animal Science, University College of Agriculture and Natural Resources, University of Tehran*, *Karaj, Tehran, Iran*, [2]*Plant Protection Department, University College of Agriculture and Natural Resources, University of Tehran*, *Karaj, Tehran, Iran*.

T26 **Effect of yeast probiotic (*Saccharomyces cerevisiae*) in milk or starter on growth performance, fecal score and rumen parameters of dairy calves.**
M. Hoseinabadi, M. Dehghan-Banadaky*, and A. Zali, *Department of Animal Science, University College of Agriculture and Natural Resources, University of Tehran*, *Karaj, Tehran, Iran*.

T27 **Effects of rare earth-chitosan chelate on blood biochemical parameters in lactating dairy cows.**
R. X. Hu[1,2], J. Q. Wang*[1], D. P. Bu[1], J. B. Cheng[1], F. D. Li[2], H. Y. Zhao[1], S. H. Dong[1], and C. Y. Ren[1,2], [1]*State Key Lab of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agriculture Sciences*, *Beijing, China*, [2]*College of Animal Science and Technology, Gansu Agricultural University*, *Lanzhou, Gansu, China*.

T28 **Effects of rare earth-chitosan chelate on performance and milk composition in dairy cows.**
R. X. Hu[1,2], J. Q. Wang*[1], D. P. Bu[1], J. B. Cheng[1], F. D. Li[2], H. Y. Zhao[1], S. H. Dong[1], and C. Y. Ren[1,2], [1]*State Key Lab of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agriculture Sciences*, *Beijing, China*, [2]*College of Animal Science and Technology, Gansu Agricultural University*, *Lanzhou, Gansu, China*.

T29 **Effect of dietary N-carbamoyl glutamate on milk production and nitrogen utilization in high yielding dairy cows.**
B. Chacher[1,2], W. Zhu*[1,2], J. A. Ye[1,2], D. M. Wang[1,2], and J. X. Liu[1,2], [1]*Institute of Dairy Science, College of Animal Sciences*, [2]*MoE Key Laboratory of Molecular Animal Nutrition, Zhejiang University*, *Hangzhou, China*.

T30 **Predicting prolamin and ruminal starch digestibility in corn silage and high moisture corn using near infrared spectroscopy.**
K. Foerder* and J. Horst, *Agri-King Inc.*, *Fulton, IL*.

T31 **Mineral containing dehydrated molasses lick blocks precalving provide a viable alternative for addressing mineral imbalances during calving in pasture-based New Zealand dairy cows.**
M. H. Oliver*[1,2], S. Rossenrode[1], and J. B. Aveling[3], [1]*UniServices Ltd., University of Auckland*, *Auckland, New Zealand*, [2]*Liggins Institute, University of Auckland*, *Auckland, New Zealand*, [3]*Ballance Agri-Nutrients*, *Tauranga, Bay of Plenty, Tauranga, New Zealand*.

T33 **Milk and milk quality evaluated on a commercial Holstein dairy following an OmniGen-AF dry cow and early lactation feeding strategy.**
A. E. Holland*[1], J. D. Chapman[1], and L. O. Ely[2], [1]*Prince Agri Products Inc.*, *Quincy, IL*, [2]*University of Georgia*, *Athens*.

T34 **Interaction between forage source and monensin on the formation of biohydrogenation intermediates in continuous cultures.**
Y. Sun*[1], T. C. Jenkins[2], and A. L. Lock[1], [1]*Michigan State University*, *East Lansing*, [2]*Clemson University*, *Clemson, SC*.

T35 **Lysine loss during aerobic exposure of a corn silage based ration with mechanical extracted soybean meal with gums and various rumen-protected lysine products.**
D. A. Sapienza*[1] and C. A. Macgregor[2], [1]*Sapienza Analytica LLC*, *Slater, IA*, [2]*Grain States Soya Inc.*, *West Point, NE*.

T36 **Consequences of supplementing lactating Holstein cows with an exogenous amylase on milk performance and rumen fermentation.**
A. Bach*[1,2], E. Azem[3], W. Steinberg[3], and V. Glitsø[4], [1]*ICREA, Institut de Recerca i Estudis Avançats*, *Barcelona, Spain*, [2]*Department of Ruminant Production, IRTA*, *Caldes de Montbui, Spain*, [3]*DSM Nutritional Products*, *Basel, Switzerland*, [4]*Novozymes*, *Bagsvaerd, Denmark*.

T37 **Apparent synthesis of riboflavin and niacin in rumen of lactating dairy cows fed alfalfa or orchardgrass silages.**
D. S. Castagnino*[1,3], K. L. Kammes[2], M. S. Allen[2], R. Gervais[3], P. Y. Chouinard[3], D. E. Santschi[4], and C. L. Girard[1], [1]*Agriculture and Agri-Food Canada*, *Sherbrooke, Quebec, Canada*, [2]*Department of Animal Science, Michigan State University*, *East Lansing*, [3]*Departement de Sciences Animales, Universite Laval*, *Quebec, Quebec, Canada*, [4]*Valacta, Dairy Production Centre of Expertise in Quebec and the Atlantic Regions*, *Ste-Anne-de-Bellevue, Quebec, Canada*.

T38 **The effect of a feed additive on the feeding value of a silage-based TMR exposed to air.**
M. Windle* and L. Kung, *University of Delaware, Newark*.

T39 **Effects of treatment with propylene glycol in fat transition cows.**
V. Bjerre-Harpøth*, A. C. Storm, T. Larsen, and M. Larsen, *Department of Animal Science, Aarhus University*, *Foulum, Tjele, Denmark*.

Ruminant Nutrition: Feeding, Ruminal Fermentation, and Efficiency of Production I

T40 **Effects of restricted versus conventional dietary adaptation over periods of 6 and 9 days on rumen papillae of feedlot Nellore cattle.**
A. Perdigão[1], M. D. B. Arrigoni[1], D. D. Millen*[2], C. L. Martins[1], R. S. Barducci[1], M. T. Cesar[1], D. D. Estevam[2], T. V. B. Carrara[2], D. V. F. Vicari[2], and R. F. Pessin[1], [1]*São Paulo State University (UNESP)*, *Botucatu, São Paulo, Brazil*, [2]*São Paulo State University (UNESP)*, *Dracena, São Paulo, Brazil*.

T41 **Effects of restricted versus conventional dietary adaptation over periods of 9 or 14 days on total tract digestibility of NDF and TDN of feedlot Nellore cattle.**
D. H. M. Watanabe[2], A. L. N. Rigueiro[2], R. S. Barducci[1], C. L. Martins[1], M. D. B. Arrigoni[1], M. C. S. Pereira[2], J. Silva[2], T. V. B. Carrara[1], F. Perna Junior[3], M. C. S. Franzói[1], and D. D. Millen*[2], [1]*São Paulo State University (UNESP)*, *Botucatu, São Paulo, Brazil*, [2]*São Paulo State University (UNESP)*, *Dracena, São Paulo, Brazil*, [3]*University of São Paulo (USP)*, *Pirassununga, São Paulo, Brazil*.

T42 **Potential proteolytic bacteria adherent to soybean meal in the rumen revealed by PCR-DGGE.**
D. Jin[2], J. Q. Wang*[1,2], D. P. Bu[2], and S. G. Zhao[2], [1]*Agronomy College of Heilongjiang August First Land Reclamation University*, *Da qing, Heilongjiang, China*, [2]*Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*.

T43 **Effect of changing ratios of corn silage and alfalfa on ruminal fiber digestion in high producing lactating cows.**
F. Lopes*, D. E. Cook, and D. K. Combs, *Department of Dairy Science, University of Wisconsin*, *Madison*.

T44 **Dry matter intake and nutrient intake of crossbred cattle ¾ Zebu x ¼ Holstein fed different levels of calcium and phosphorus in the diet.**
L. F. Prados*, S. C. Valadares Filho, S. A. Santos, D. Zanetti, A. N. Nunes, L. D. S. Mariz, F. C. Rodrigues, P. M. Amaral, A. S. F. Veiga, E. Detmann, and F. A. S. Silva, *Universidade Federal de Viçosa*, *Viçosa, Minas Gerais, Brazil*.

T45 **Relationship of residual feed intake with heart rate and heat production in Nellore steers.**
A. S. Chaves*[1], M. L. Nascimento[1], R. R. Tullio[2], M. M. Alencar[2], A. N. Rosa[3], and D. P. D. Lanna[1], [1]*University of Sao Paulo/ESALQ*, *Piracicaba, SP, Brazil*, [2]*Embrapa Cattle Southeast*, *Sao Carlos, SP, Brazil*, [3]*Embrapa Beef Cattle*, *Campo Grande, MS, Brazil*.

T46 **Does the processing method affect cell wall and dry matter degradability of wheat grain.**
H. Karkhaneh*, K. Rezayazdi, M. Dehghan-Banadaki, and A. Zali, *University of Tehran, Tehran, Iran*.

T47 **The effect of three different dietary starch concentration on some reproductive parameters in lactating dairy cows.**
G. Y. Mecitoglu[1], E. Karakaya[1], I. Cetin[2], C. Kara[2], A. Orman[3], H. Gencoglu*[2], A. Keskin[1], A. Gumen[1], and I. Turkmen[2], [1]*Department of Obstetrics and Gynecology, Faculty of Veterinary Medicine University of Uludag*, *Bursa, Turkey*, [2]*Department of Animal Nutrition and Nutritional Diseases, Faculty of Veterinary Medicine. University of Uludag*, *Bursa, Turkey*, [3]*Department of Zootechnics, Faculty of Veterinary Medicine University of Uludag*, *Bursa, Turkey*.

T48 **Use of simple static models to estimate in vitro methane production.**
A. Woldeghebriel*, A. Duncan, and M. Worku, *North Carolina A&T State University*, *Greensboro*.

T49 **Development of equations to estimate microbial contamination in ruminal incubation residues of tropical forage using ^{15}N as a marker.**
P. A. S. Machado, S. A. Santos, S. C. V. Filho, E. Detmann, L. F. Prados, P. M. Amaral*, L. F. C. Silva, A. C. B. Menezes, F. A. C. Villadiego, and P. P. Rotta, *Universidade Federal de Vicosa*, *Vicosa, MG, Brazil*.

T50 **Influence of offering hay free-choice concurrently with total mixed ration on residual feed intake rank differences of beef bulls.**
E. El-Haroun[1,3], M. Abo-Ismail*[3], H. Salim[2], G. Vander Voort[3], M. McMorris[1], and S. Miller[3], [1]*Beef Improvement Opportunities*, *Guelph, Ontario, Canada*, [2]*Department of Animal and Poultry Science, Cairo University*, *Giza, Egypt*, [3]*Centre for Genetic Improvement of Livestock, Department of Animal and Poultry Science, University of Guelph*, *Guelph, Ontario, Canada*.

T51 **Model for estimating enteric methane emissions from black goat.**
Y. Na*, W. Jeong, O. Yi, S. Hwang, and S Lee, *Department of Animal Science and Technology, Konkuk University*, *Seoul, Republic of Korea*.

T52 **Effects of forage sources on the gene expression related to milk protein synthesis in the mammary gland of lactating Holstein cows.**
X. Zhang[1], C. Ao*[1], M. Gao[2], E. Khas[1], H. Zhang[1], L. Song[1], and R. Du[2], [1]*Inner Mongolia Agricultural University*, *Hohhot, Inner Mongolia, China*, [2]*Inner Mongolia Academy of Agricultural & Animal Husbandry Sciences*, *Hohhot, Inner Mongolia, China*.

T53 **Relationship of flight speed, rectal temperature and infrared thermography of eye with feed efficiency of Nellore beef cattle.**
A. M. Mobiglia[1], F. R. Camilo[1], V. R. M. Couto[1], E. G. Moraes[2], H. F. Oliveira[1], L. F. N. Souza[2], J. T. Neves Neto[1], T. S. Almeida[1], J. C. Pimenta[1], and J. J. R. Fernandes*[1,2], [1]*Escola de Veterinaria e Zootecnia da UFG*, *Goiânia, Goiás, Brazil*, [2]*Nelore Qualitas*, *Goiânia, Goiás, Brazil*.

T54 **Bone morphometry and densitometry of goats of different genders subjected to feed restriction.**
N. C. D. Silva*[1], K. T. Resende[1], M. H. M. R. Fernandes[1], H. C. Bonfá[2], D. C. Soares[1], R. F. Leite[1], F. O. M. Figueiredo[1], M. M. Freire[3], B. R. S. M. Oliveira[4], and I. A. M. A. Teixeira[1], [1]*Unesp Univ Estadual Paulista*, *Jaboticabal, São Paulo, Brazil*, [2]*Universidade Federal de Viçosa*, *Viçosa, Minas Gerais, Brazil*, [3]*Universidade Federal de Alagoas*, *Maceió, Alagoas, Brazil*, [4]*Unesp Univ Estadual Paulista*, *Araçatuba, São Paulo, Brazil*.

T55 **The National Animal Nutrition Program (NANP): Modeling Subcommittee goals and progress.**
M. D. Hanigan*[1], C. R. Angel[2], C. F. M. de Lange[3], E. Kebreab[4], J. P. McNamara[5], L. O. Tedeschi[6], N. L. Trottier[7], and M. J. VandeHaar[7], [1]*Virginia Tech*, *Blacksburg*, [2]*University of Maryland*, *College Park*, [3]*University of Guelph*, *Guelph, ON, Canada*, [4]*University of California*, *Davis*, [5]*Washington State University*, *Pullman*, [6]*Texas A&M*, *College Station*, [7]*Michigan State University*, *East Lansing*.

T56 **Effects of stage of gestation and diet on maternal fat deposition.**
P. P. Rotta*[1], S. C. Valadares Filho[1], T. R. Santos[1], L. F. Costa e Silva[1], M. I. Marcondes[1], B. C. Carvalho[2], A. A. G. Lobo[1], J. V. F. Souza[1], M. A. S. Novaes[1], M. F. L Ferreira[1], and J. S. A. A. Santos[1], [1]*Universidade Federal de Vicosa*, *Vicosa, Brazil*, [2]*Empresa Brasileira de Pesquisa Agropecuaria*, *Brazil*.

T57 **Effects of different diets on the gene expression of enzymes related to fatty acid synthesis in the mammary gland of lactating dairy cows.**
H. Zhang, C. Ao*, L. Song, E. Khas, and X. Zhang, *Department of Animal Science of Inner Mongolia Agricultural University*, *Huhhot, Inner Mongolia, China*.

T58 **Effects of stage of gestation and diet on dairy cow placentomes.**
P. P. Rotta*[1], S. C. Valadares Filho[1], T. R. Santos[1], L. F. Costa e Silva[1], M. I. Marcondes[1], M. M. Campos[2], F. A. S. Silva[1], J. R. Oliveira[1], A. C. B. Menezes[1], E. C. Martins[1], and F. A. C. Villadiego[1], [1]*Universidade Federal de Vicosa*, *Vicosa, Brazil*, [2]*Empresa Brasileira de Pesquisa Agropecuaria*, *Brazil*.

T59 **Rumen epithelial adaptation during the transition period is associated with structural changes and transcriptomic signatures.**
M. A. Steele*[1], O. AlZahal[1], C. Zettler[1], J. C. Matthews[2], and B. W. McBride[1], [1]*University of Guelph*, *Guelph, Ontario, Canada*, [2]*University of Kentucky*, *Lexington*.

T60 **Effects of stage of gestation and diet on maternal and fetal growth in dairy cows.**
P. P. Rotta*[1], S. C. Valadares Filho[1], T. R. Santos[1], L. F. Costa e Silva[1], M. I. Marcondes[1], F. S. Machado[2], L. H. R. Silva[1], B. C. Silva[1], F. A. C. Villadiego[1], M. V. Pacheco[1], D. E. C. Marquez[1], and R. H. M. Ortega[1], [1]*Universidade Federal de Vicosa*, *Vicosa, Brazil*, [2]*Empresa Brasileira de Pesquisa Agropecuaria*, *Brazil*.

T61 **Determination of particle size distribution and physically effective fiber in total mixed ration from 14 dairy farms in the Comarca Lagunera, Mexico.**
P. A. Robles-Trillo*[1], E. Vazquez-Martínez[1], F. G. Veliz-Deras[1], C. A. Meza-Herrera[2], and P. Cano-Ríos[1], [1]*Universidad Autonoma Agraria Antonio Narro*, *Torreon, Coahuila, Mexico*, [2]*Unidad Universitaria de Zonas Aridas. Universidad Autonoma de Chapingo*, *Bermejillo, Durango, Mexico*.

T62 **Relation between ultrasound and carcass measurements in Girolando steers fed spineless cactus.**
R. A. S. Pessoa*[1], J. R. C. Silva[1], A. S. C. Veras[1], M. A. Ferreira[1], I. Ferraz[2], and P. C. Vasconcelos[1], [1]*Universidade Federal Rural de Pernambuco*, *Recife, Pernambuco, Brazil*, [2]*Instituto Agrono de Pernambuco*, *Recife, Pernambuco, Brazil*.

T63 **Effects of grain source and alfalfa hay particle size on feed sorting, feeding behavior, and chewing activity in mid-lactation Holstein dairy cows.**
S. M. Nasrollahi[1], G. R. Ghorbani[1], M. Khorvash[1], W. Z. Yang[2], and Z. He*[2], [1]*Isfahan University of Technology*, *Department of Animal Sciences, Isfahan University of Technology, Isfahan, Iran*, [2]*Lethbridge*, *Agriculture and Agri-Food Canada, Research Centre, Lethbridge, AB, Canada*.

Ruminant Nutrition: Protein, Energy, and By-Products Supplementation I

T64 **Effect of level and source of supplemental protein on rate of ruminal methane production and methanogen concentration in *Bos taurus* and *Bos indicus* steers fed low-quality forage.**
N. L. Bell*[1], R. C. Anderson[2], S. L. Murray[1], J. C. McCann[1], K. K. Weldon[1], A. D. G. Wright[3], J. E. Sawyer[1], and T. A. Wickersham[1], [1]*Texas A&M University*, *College Station*, [2]*USDA/ARS Southern Plains Agricultural Research Center*, *College Station, TX*, [3]*University of Vermont*, *Burlington*.

T65 **Whole cottonseed can replace barley straw in TMR fed beef heifers at finishing period.**
S. P. Iraira[1], J. L. Ruíz de la Torre[1], M. Rodríguez-Prado[1], M. Pérez[2], X. Manteca[1], S. Calsamiglia*[1], and A. Ferret[1], [1]*SNiBA, Universitat Autònoma Barcelona*, *Bellaterra, Spain*, [2]*Unitat de Qualitat i Carn-IRTA*, *Girona, Spain*.

T66 **Effects of basal diet and degradable intake protein level on the growth response to slow release urea in beef steers.**
V. B. Holder*[1], J. S. Jennings[2], K. M. McLeod[1], J. M. Tricarico[3], and D. L. Harmon[1], [1]*University of Kentucky*, *Lexington*, [2]*Alltech Inc.*, *Brookings, SD*, [3]*Innovation Center for the U.S. Dairy*, *Rosemont, IL*.

T67 **In situ disappearance in lactating beef cows of dried distillers grains subjected to different levels of heat damage.**
K. P. Coffey*, A. N. Young, E. B. Kegley, D. Philipp, P. Hornsby, and J. Hollenback, *University of Arkansas Division of Agriculture*, *Fayetteville*.

T68 **Raw soybeans in a whole corn diet for feedlot heifers.**
A. J. Pordomingo, N. A. Juan, G. Volpi Lagreca*, and R. Beierbach, *National Institute Agricultural Research (INTA)*, *Anguil, La Pampa, Argentina*.

T69 **Effect of supplemental protein amount and degradability on intake and digestion in *Bos indicus* and *Bos taurus* steers fed rice straw.**
K. K. Weldon*, J. C. McCann, J. E. Sawyer, and T. A. Wickersham, *Texas A&M University*, *College Station*.

T70 **Effect of degradability and level of protein supplementation on ruminal fermentation in *Bos indicus* and *Bos taurus* steers fed rice straw.**
K. K. Weldon*, J. C. McCann, J. E. Sawyer, and T. A. Wickersham, *Texas A&M University*, *College Station*.

T71 **Effect of amount and degradability of protein supplements on nitrogen metabolism in *Bos indicus* and *Bos taurus* steers fed rice straw.**
K. K. Weldon*, J. C. McCann, J. E. Sawyer, and T. A. Wickersham, *Texas A&M University*, *College Station*.

T72 **Effect of different substitute levels of ground corn by coarsely ground wheat on ruminal fermentation, milk yield and composition in dairy cows.**
Y. Guo*, Y. Zou, X. Xu, Z. Yang, S. Li, and Z. Cao, *State Key Laboratory of Animal Nutrition, College of Animal Science and Technology, China Agricultural University*, *Beijing, China*.

T73 **Effects of feeding a corn straw or mixed forage diet to lactating cows on rumen fermentation parameters using a wireless data logger.**
C. F. Qin[1,2], D. P. Bu[1], J. Q. Wang*[1], P. Sun[1], P. H. Zhang[2], X. W. Zhao[1], J. N. Li[1], and P. Zhang[1], [1]*State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*, [2]*Hunan Provincial Key Laboratory for Genetic Improvement of Domestic Animal, College of Animal Science and Technology, Hunan Agricultural University*, *Changsha, Hunan, China*.

T74 **Effect of feeding a corn straw or mixed forage diet on mixed-rumen bacterial fatty acid profiles in lactating cows.**
C. F. Qin[1,2], J. Q. Wang[1], D. P. Bu*[1], P. Sun[1], P. H. Zhang[2], M. Yi[1], S. K. Jiang[1], and J. N. Li[1], [1]*State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*, [2]*Hunan Provincial Key Laboratory for Genetic Improvement of Domestic Animal, College of Animal Science and Technology, Hunan Agricultural University*, *Changsha, Hunan, China*.

T75 **Effect of fed a corn straw or mixed forage diet on fatty acid extraction in mammary gland of lactation dairy cows.**
H. Y. Chen[1,2], D. P. Bu*[1], F. D. Li[2], X. M. Nan[1], X. W. Zhao[2], and H. Hu[1], [1]*Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*, [2]*Gansu Agricultural University*, *Lanzhou, Gansu, China*.

T76 **Effect of replacing timothy silage with alfalfa silage in dairy cow diets on enteric methane production.**
F. Hassanat*[1], R. Gervais[2], P. Y. Chouinard[2], H. Petit[1], D. Massé[1], and C. Benchaar[1], [1]*Agriculture and Agri-Food Canada, Dairy and Swine Research and Development Centre*, *Sherbrooke, QC, Canada*, [2]*Département des Sciences Animales, Université Laval*, *Québec, QC, Canada*.

T77 **The optimal ratio of canola meal and dried distillers grain proteins in high producing Holstein cow diets.**
N. Swanepoel*[1,2], P. H. Robinson[1], and L. J. Erasmus[2], [1]*Department of Animal Science, University of California*, *Davis*, [2]*Department of Animal and Wildlife Sciences, University of Pretoria*, *Pretoria, South Africa*.

T78 **Intake, milk yield, and blood acid-base balance of cows in response to marine algae meal.**
N. M. Lopes[1], R. A. N. Pereira[2], and M. N. Pereira*[1], [1]*Universidade Federal de Lavras*, *Lavras, MG, Brazil*, [2]*Empresa de Pesquisa Agropecuaria de Minas Gerais*, *Lavras, MG, Brazil*.

T80 **Starch digestion variation between in vitro and in situ digestion techniques.**
C. R. Heuer*[1,2], J. P. Goeser[1], and R. D. Shaver[2], [1]*Rock River Laboratory Inc.*, *Watertown, WI*, [2]*University of Wisconsin-Madison*, *Madison*.

T81 **Geometric mean diameter fails to reflect diversity in size of particles in processed maize grain.**
L. J. Nuzback, W. J. Seglar, M. Laubach, T. Hageman, and F. N. Owens*, *DuPont Pioneer*, *Johnston, IA*.

T82 **Performance and digestion of dairy cows in response to exogenous amylase.**
A. S. R. Andreazzi[2], N. N. Morais Junior[1], R. F. Lima[1], A. C. S. Melo[1], R. B. Reis[2], R. A. N. Pereira[3], and M. N. Pereira*[1], [1]*Universidade Federal de Lavras*, *Lavras, MG, Brazil*, [2]*Universidade Federal de Minas Gerais*, *Belo Horizonte, MG, Brazil*, [3]*Empresa de Pesquisa Agropecuária de Minas Gerais*, *Lavras, MG, Brazil*.

T83 **Effects of single or pulse dose of sugar on in vitro DMd and NDFd digestibility of corn silage.**
D. N. Lobão da Silva*[1], R. S. Younker[2], and N. B. Litherland[1], [1]*University of Minnesota*, *Saint Paul*, [2]*Milk Specialties*, *Eden Prairie, MN*.

T84 **Feeding of a sugar alcohol during summer months to Holstein cows during transition phase to support subsequent lactation performance.**
J. A. Davidson*, C. M. Klein, and B. L. Miller, *Purina Animal Nutrition Center*, *Gray Summit, MO*.

T85 **Relationships between circulating plasma amino acid concentrations and milk protein production in lactating dairy cows.**
R. A. Patton*[1], H. Lapierre[2], and C. Parys[3], [1]*Nittany Dairy Nutrition Inc.*, *Mifflinburg, PA*, [2]*Dairy and Swine Research and Development Centre, Agriculture and Agri-Food Canada*, *Sherbrooke, Quebec, Canada*, [3]*Evonik Industries AG*, *Hanau, Germany*.

T86 **Hepatic gene expression and post-ruminal protein supply in lactating dairy cattle.**
H. Tucker*[1], M. Hanigan[2], and S. Donkin[1], [1]*Purdue University*, *West Lafayette, IN*, [2]*Virginia Polytechnic Institute and State University*, *Blacksburg*.

T87 **Kelp meal (*Ascophyllum nodosum*) did not improve milk yield but increased milk iodine in early lactation organic Jersey cows during the winter season.**
N. T. Antaya*, A. F. Brito, N. L. Whitehouse, N. E. Guindon, and S. Werner, *University of New Hampshire*, *Durham*.

T88 **Influence of maize kernel maturity on chemical characteristics, prolamin content, and in vitro starch digestion.**
W. J. Seglar*, M. Pauli, A. Patterson, L. Nuzback, and F. N. Owens, *DuPont Pioneer*, *Johnston, IA*.

T89 **Range in starch content and digestibility of common starch sources in US and Japan and their effect on in vitro microbial biomass production when incorporated into total mixed rations.**
K. W. Cotanch*[1], H. M. Dann[1], J. W. Darrah[1], R. J. Grant[1], Y. Koba[2], and K. Hirano[2], [1]*William H. Miner Agricultural Research Institute*, *Chazy, NY*, [2]*ZEN-NOH National Federation of Agricultural Cooperatives*, *Tokyo, Japan*.

T90 **Kelp meal (*Ascophyllum nodosum*) did not improve milk yield or mitigate heat stress but increased milk iodine in mid lactation organic Jersey cows during the grazing season.**
N. T. Antaya*[1], A. F. Brito[1], K. J. Soder[2], N. L. Whitehouse[1], N. E. Guindon[1], A. D. B. Pereira[1], and C. C. Muir[1], [1]*University of New Hampshire*, *Durham*, [2]*USDA-ARS, Pasture Systems and Watershed Management Research Unit*, *University Park, PA*.

T91 **Effects of partial replacement of corn grain with alkaline pretreated corn stover on production of lactating dairy cows.**
D. E. Cook*[1], M. J. Cecava[2], P. H. Doane[2], M. B. Hall[3], and D. K. Combs[1], [1]*University of Wisconsin-Madison*, *Madison*, [2]*ADM Research*, *Decatur, IL*, [3]*USDA-ARS, US Dairy Forage Research Center*, *Madison, WI*.

T92 **Effects of dietary starch content and NDF source on intake and milk production by dairy cows.**
S. M. Fredin*, L. F. Ferraretto, M. S. Akins, and R. D. Shaver, *University of Wisconsin*, *Madison, WI*.

T93 **Metabolic profile and onset of puberty of growing dairy heifers fed increased dietary fat from dried distillers grains.**
J. L. Anderson*[1], K. F. Kalscheur[1], J. A. Clapper[1], G. A. Perry[1], D. H. Keisler[2], A. D. Garcia[1], and D.J. Schingoethe[1], [1]*South Dakota State University*, *Brookings*, [2]*University of Missouri*, *Columbia*.

T94 **Lactation performance of cows fed soybean meal or canola meal supplements.**
F. E. Contreras-Govea*[1], S. Bertics[1], G. A. Broderick[2], A. Faciola[3], and L. E. Armentano[1], [1]*University of Wisconsin-Madison, Department of Dairy Science*, *Madison*, [2]*US Dairy Forage Research Center*, *Madison, WI*, [3]*University of Nevada, Department of Agriculture, Nutrition, and Veterinary Sciences*, *Reno*.

T95 **Utilization of byproducts from human food production as feedstuffs for dairy cattle and relationship to greenhouse gas emissions and environmental efficiency.**
K. L. Russomanno, T. F. Christoph, R. J. Higgs, and M. E. Van Amburgh*, *Cornell University*, *Ithaca, NY*.

T96 **The effects of different ratio of metabolizable protein to metabolizable energy on dry matter intake, average daily gain, and nutrient digestibility in Holstein heifers.**
H. R. Motalebei, M. Dehghan-Banadaky*, K. Rezayazdi, and H. Kohram, *Department of Animal Science, University of Tehran*, *Karaj, Tehran, Iran*.

Undergraduate Student Competition
ADSA-SAD Undergraduate Poster Competition: Original Research

T98 **Feeding 5-hydroxy-L-tryptophan (5-HTP) to transition rats increases serum serotonin (5-HT) and calcium and down-regulates mRNA expression of calcium transporters in the gut.**
C. Cronick*, J. Laporta, S. Weaver, and L. L. Hernandez, *University of Wisconsin*, *Madison*.

T99 **Mammary clock regulation and function.**
E. Erickson*, J. Crodian, M. Schutz, T. Casey, and K. Plaut, *Purdue University*, *West Lafayette, IN*.

T100 **Potential for compost bedded pack barns in sustainable organic dairy farming systems.**
H. A. Mussell*[1], J. L. Taraba[2], and J. M. Bewley[1], [1]*University of Kentucky, Department of Food and Animal Sciences*, *Lexington*, [2]*University of Kentucky, Agricultural Engineering*, *Lexington*.

T101 **Effects of microbial fermentation products on milk production in dairy cows during heat stress.**
R. M. Wagner*[1], S. I. Kehoe[1], and D. DuBourdieu[2], [1]*University of Wisconsin-River Falls*, *River Falls*, [2]*R&D Lifesciences*, *Menomonie, WI*.

Graduate Student Competition
ADSA Dairy Foods Division Poster Competition

T102 **Effect of micellar casein concentrate fortification on the acidification, physical and rheological properties of nonfat Greek-style yogurt.**
D. D. Bong* and C. I. Moraru, *Department of Food Science, Cornell University*, *Ithaca, NY*.

T103 **The effect of feed solids concentration and inlet temperature on the flavor of spray-dried whey protein concentrate.**
C. W. Park*[1], E. Bastian[2], B. E. Farkas[1], and M. A. Drake[1], [1]*North Carolina State University*, *Raleigh*, [2]*Glanbia Nutritionals Inc.*, *Twin Falls, ID*.

T104 **Enzyme hydrolysis of lactose in milk and dairy co-products.**
X. E. Li* and M. A. Drake, *North Carolina State University*, *Raleigh*.

T105 **Impact of gravity separation of raw milk on shelf-life of pasteurized fluid milk.**
S. L. Beckman* and D. M. Barbano, *Cornell University*, *Ithaca, NY*.

T106 **The influence of solids concentration and bleaching agent on bleaching efficacy and flavor of sweet whey powder.**
M. G. Jervis* and M. A. Drake, *North Carolina State University*, *Raleigh*.

T107 **Detection of fat and protein differences between mid-infrared instruments used for milk producer payment testing.**
M. C. Adams* and D. M. Barbano, *Cornell University*, *Ithaca, NY*.

T108 **Measuring consumer emotional response to flavored and unflavored milk.**
E. Arnade*, S. Duncan, J. Dunsmore, R. Rudd, and S. O'Keefe, *Virginia Tech*, *Blacksburg*.

T109 **Oxidative stability evaluation of milk from cow fed with dried distillers grains with solubles by sensory and chemical analysis.**
G. Li*, E. Testroet, S. Clark, and D. Beitz, *Iowa State University*, *Ames*.

T110 **Role of exopolysaccharide-producing starters in biofilm formation on dairy separation membranes.**
N. Garcia-Fernandez*, A. N. Hassan, and S. Anand, *Midwest Dairy Foods Research Center, Dairy Science Department, South Dakota State University*, *Brookings*.

T111 **Solubility and antihypertensive activity of whey protein hydrolysate subjected to Maillard-induced glycosylation.**
K. Ruud*, Q. Wang, and B. Ismail, *University of Minnesota*, *St. Paul*.

Graduate Student Competition
ADSA Production Division Poster Competition, MS

T113 **Effect of dietary unsaturated fatty acids on ruminal fermentation in dairy cows.**
J. E. Freitas*[1], M. D. S. Oliveira[2], B. C. Venturelli[1], E. F. Jesus[2], R. Gardinal[1], G. D. Calomeni[1], J. R. Gandra[1], V. G. C. Lacuna[1], V. P. Bettero[2], C. S. Takiya[1], R. V. Barletta[1], and F. P. Rennó[1], [1]*University of São Paulo*, *Pirassununga, São Paulo, Brazil*, [2]*State University Julio de Mesquita*, *Jaboticabal, São Paulo, Brazil*.

T114 **Effects of nutritional prepartum supplementation upon maternal-kid behavior (1).**
N. E. Hernandez-Macias*[1], V. Contreras-Villarreal[1], O. Angel-Garcia[1], J. M. Guillen-Muñoz[1], P. A. Robles-Trillo[1], G. Arellano-Rodriguez[1], R. Rodriguez-Martinez[1], M. Mellado[1], C. A. Meza-Herrera[2], and F. G. Veliz[1], [1]*Universidad Autonoma Agraria Antonio Narro*, *Torreon, Coahuila, Mexico*, [2]*URUZA-UACh*, *Bermejillo, Durango, Mexico*.

T115 **Use of estradiol to induce reproductive activity in anestrous goats.**
V. Contreras-Villarreal*[1], O. Angel-Garcia[1], J. M. Guillen-Munoz[1], P. A. Robles-Trillo[1], M. A. de Santiago-Miramontes[1], G. Arellano-Rodriguez[1], R. Rodriguez-Martinez[1], M. Mellado[1], C. A. Meza-Herrera[2], and F. G. Veliz[1], [1]*Universidad Autonoma Agraria Antonio Narro*, *Torreon, Coahuila, Mexico*, [2]*URUZA-UACh*, *Bermejillo, Durango, Mexico*.

T116 **Effects of nutritional prepartum supplementation upon maternal-kid behavior (2).**
N. E. Hernandez-Macias*[1], V. Contreras-Villarreal[1], O. Angel-Garcia[1], J. M. Guillen-Munoz[1], P. A. Robles-Trillo[1], G. Arellano-Rodriguez[1], R. Rodriguez-Martinez[1], M. Mellado[1], C. A. Meza-Herrera[2], and F. G. Veliz[1], [1]*Universidad Autonoma Agraria Antonio Narro*, *Torreon, Coahuila, Mexico*, [2]*URUZA-UACh*, *Bermejillo, Durango, Mexico*.

T117 **Effects of tamoxifen on estrogen and progesterone receptor expression in prepubertal female calves.**
H. L. M. Tucker*[1], C. L. M. Parsons[1], S. Ellis[2], and R. M. Akers[1], [1]*Dairy Science Department, Virginia Polytechnic Institute and State University*, *Blacksburg*, [2]*Animal and Veterinary Sciences Department, Clemson University*, *Clemson, SC*.

T118 **Effect of fatty acids n-3 and n-6 supplementation on blood parameters of Holstein cows during transition period and early lactation.**
R. Gardinal*[1], J. R. Gandra[1], G. D. Calomeni[1], L. C. Verdurico[1], R. D. Mingoti[1], R. V. Barletta[1], J. E. Freitas[1], C. E. Araújo[1], T. H. A. Vendramini[1], E. Ferreira de Jesus[2], and F. P. Rennó[1], [1]*Department of Nutrition and Animal Production, Faculty of Veterinary Medicine, University of São Paulo*, *Pirassununga, São Paulo, Brazil*, [2]*Department of Animal Science, State University Julio de Mesquita UNESP, Jaboticabal*, *Jaboticabal, São Paulo, Brazil*.

T119 **Ruminal dynamics and neutral detergent fiber digestibility of dairy cows fed with different sources of unsaturated fatty acids.**
R. Gardinal*[1], J. E. Freitas[1], M. D. S. Oliveira[2], B. C. Venturelli[1], E. F. Jesus[2], G. D. Calomeni[1], L. C. Verdurico[1], V. G. C. Lacuna[1], V. P. Bettero[2], T. H. A. Vendramini[1], R. V. Barletta[1], and F. P. Rennó[1], [1]*Department of Nutrition and Animal Production, Faculty of Veterinary Medicine, University of São Paulo*, *Pirassununga, São Paulo, Brazil*, [2]*Department of Animal Science, State University Julio de Mesquita – UNESP, Jaboticabal*, *Jaboticabal, São Paulo, Brazil*.

T120 **Follicular dynamics of Holstein cows fed with supplemental sources of n-3 and n-6 fatty acids during transition period and early lactation.**
G. D. Calomeni*[1], J. R. Gandra[1], R. Gardinal[1], J. E. Freitas[1], L. C. Verdurico[1], E.F. Jesus[2], C.S. Takiya[1], R.D. Mingotti[1], T. H. A. Vendramini[1], R. V. Barletta[1], and F. P. Rennó[1], [1]*Department of Nutrition and Animal Production, Faculty of Veterinary Medicine, University of São Paulo*, *Pirassununga, São Paulo, Brazil*, [2]*Department of Animal Science, State University Julio de Mesquita – UNESP Jaboticabal*, *Jaboticabal, São Paulo, Brazil*.

T121 **Ruminal dynamics of dairy cows fed with different sources of unsaturated fatty acids.**
G. D. Calomeni*[1], J. E. Freitas[1], R. Gardinal[1], M. D. S. Oliveira[2], B. C. Venturelli[1], E. F. Jesus[2], C. S. Takiya[1], V. G. C. Lacuna[1], V. P. Bettero[2], T. H. A. Vendramini[1], R. D. Mingoti[1], F. Zanferrari[1], R. V. Barletta[1], and F. P. Rennó[1], [1]*Department of Nutrition and Animal Production, Faculty of Veterinary Medicine, University of São Paulo*, *Pirassununga, São Paulo, Brazil*, [2]*Department of Animal Science, State University Julio de Mesquita – UNESP Jaboticabal*, *Jaboticabal, São Paulo, Brazil*.

T122 **Effect of different fatty acid profiles on milk fat depression in dairy cattle fed diets below 4% fat.**
C. M. Stoffel* and L. E. Armentano, *Department of Dairy Science, University of Wisconsin-Madison*, *Madison*.

T123 **Increasing dietary cation-anion difference improves feed efficiency in lactating dairy cows.**
M. E. Iwaniuk* and R. A. Erdman, *University of Maryland*, *College Park*.

T124 **Sodium bicarbonate is more effective than potassium carbonate as a DCAD source for improving feed efficiency in lactating dairy cows.**
M. E. Iwaniuk* and R. A. Erdman, *University of Maryland*, *College Park*.

T125 **Quality of corn silage inoculated with *L. buchneri* and *P. pentosaceus*.**
K. N. Kaletsch*[1], S. H. Ward[1], J. K. Ward[2], J. D. Davis[2], and A. J. Geiger[1], [1]*Department of Animal and Dairy Sciences*, *Mississippi State*, [2]*Department of Agriculture and Biological Engineering*, *Mississippi State*.

T126 **Effect of stocking density in the prepartum period on innate immune parameters and hemogram of dairy cows.**
A. Dresch*[1], J. Moraes[1], P. Silva[2], H. Hooper[1], C. Spies[1], P. Lau[1], K. Lobeck[2], K. Machado[1], M. Ballou[3], M. Endres[2], and R. Chebel[1], [1]*Department of Veterinary Population Medicine*, *University of Minnesota, St Paul*, [2]*Department of Animal Science*, *University of Minnesota, St Paul*, [3]*Department of Food and Animal Sciences*, *Texas Tech University, Lubbock*.

T127 **Effects of residual feed intake classification on feed efficiency, ultrasound, and feeding behavior traits in growing Santa Gertrudis heifers.**
J. A. Ramirez*[1], G. E. Carstens[1], J. G. Moreno[1], L. O. Tedeschi[1], J. C. Bailey[1], J. Jorgenson[2], and D. D. DeLaney[2], [1]*Texas A&M University*, *College Station*, [2]*King Ranch*, *Kingsville, TX*.

TUESDAY POSTERS

Graduate Student Competition
ADSA Production Division Poster Competition, PhD

T129 **Hepatic gluconeogenesis in dairy cows as affected by dietary starch level and supplementation with monensin during early lactation.**
M. M. McCarthy*[1], T. Yasui[1], S. H. Pelton[1], C. M. Ryan[1], G. D. Mechor[2], and T. R. Overton[1], [1]*Cornell University*, *Ithaca, NY*, [2]*Elanco Animal Health*, *Greenfield, IN*.

T130 **Effect of postruminal propionate infusion on expression of key genes for gluconeogenesis in the liver of lactating dairy cows.**
Q. Zhang*, H. A. Tucker, K. E. Boesche, J. E. Sibray, S. L. Koser, and S. S. Donkin, *Purdue University*, *West Lafayette, IN*.

T131 **Regulation of pyruvate carboxylase expression by fatty acid cocktails in Madin-Darby bovine kidney cells.**
K. E. Boesche*, S. L. Koser, and S. S. Donkin, *Department of Animal Sciences, Purdue University*, *West Lafayette, IN*.

T132 **Lying time, lameness and leg injuries on freestall farms in China.**
Y. Liang*[1,2], Y. Wang[3], G. I. Zanton[2], M. A. Vazquez-Anon[2], D. M. Weary[1], and M. A. G. von Keyserlingk[1], [1]*Animal Welfare Program, University of British Columbia*, *Vancouver, Canada*, [2]*Novus International Inc.*, *St. Louis, MO*, [3]*Novus International Inc.*, *China*.

T133 **Colostrum replacer feeding regimen, addition of sodium bicarbonate, and milk replacer: The combined effects on absorptive efficiency of IgG in neonatal calves.**
R. G. Cabral*[1], M. A. Cabral[1], C. E. Chapman[1], D. M. Haines[2], and P. S. Erickson[1], [1]*University of New Hampshire*, *Durham*, [2]*Western College of Veterinary Medicine, University of Saskatchewan*, *Saskatoon, SK, Canada*.

T134 **Serotonin (5-HT) increases gene expression of fatty acid enzymes and activates pAMPK in the mammary gland of transition rats.**
J. Laporta*, S. Weaver, C. Cronick, K. E. Merriman, T. L. Peters, and L. L. Hernandez, *University of Wisconsin-Madison*, *Madison*.

T135 **Effect of induced subclinical hypocalcemia (SCH) on physiological parameters and function of immune cells in dairy cows.**
N. Martinez*, L. D. P. Sinedino, R. S. Bisinotto, E. S. Ribeiro, G. C. Gomes, F. S. Lima, L. F. Greco, J. P. Driver, C. A. Risco, and J. E. P. Santos, *University of Florida*, *Gainesville*.

T136 **Modification of AOAC method to measure total starch in animal feeds.**
S. D. Ranathunga*, J. L. Anderson, K. J. Herrick, and K. F. Kalscheur, *South Dakota State University*, *Brookings*.

T137 **Concentrations of luteinizing hormone and ovulatory responses in dairy cows before timed AI.**
S. L. Pulley*[1], D. H. Keisler[2], and J. S. Stevenson[1], [1]*Kansas State University*, *Manhattan*, [2]*University of Missouri*, *Columbia*.

T138 **Discovery of genomic markers for gut health in dairy calves.**
G. Liang*[1], N. Malmuthuge[1], H. Bao[1], X. Sun[1], P. Stothard[1], T. B. McFadden[2], P. J. Griebel[3], and L. L. Guan[1], [1]*Department of Agricultural, Food and Nutritional Science*, *Edmonton, AB, Canada*, [2]*Divison of Animal Sciences, University of Missouri*, *Columbia*, [3]*Vaccine and Infectious Disease Organization, University of Saskatchewan*, *Saskatoon, SK, Canada*.

T139 **Effects of an adjustable fan and mister cooling system with different motor size and water output on core body temperature (CBT) of lactating dairy cows.**
S. D. Anderson*[1], J. D. Allen[2], R. J. Collier[1], and J. F. Smith[1], [1]*The University of Arizona*, *Tucson*, [2]*Northwest Missouri State University*, *Maryville*.

T140 **The effect of induced ascites syndrome on blood gas parameters and internal organ weights in broilers.**
M. Naghous[1], A. Pakdel[2], R. V. Torshizi[3], and H. Bazdidi*[1], [1]*Dept. of Animal Science, Faculty of Agriculture, Birjand University*, *Birjand, Iran*, [2]*Dept. of Animal Science, University College of Agriculture & Natural Resources, University of Tehran*, *Karaj, Iran*, [3]*Dept. of Animal Science, Faculty of Agriculture, Tarbiat Modares University*, *Tehran, Iran*.

T141 **The relationship between growth curve and ascites syndrome in broilers.**
M. Naghous[1], A. Pakdel[2], R. V. Torshizi[3], and H. Bazdidi*[1], [1]*Dept. of Animal Science, Faculty of Agriculture, Birjand University*, *Birjand, Iran*, [2]*Dept. of Animal Science, University College of Agriculture & Natural Resources, University of Tehran*, *Karaj, Iran*, [3]*Dept. of Animal Science, Faculty of Agriculture, Tarbiat Modares University*, *Tehran, Iran*.

T142 **Performance, gut morphology and meat quality characteristics of broilers fed diets with probiotics supplementation. .**
M. D. Olumide*, O. A. Adebiyi, and D. E. Bamisaye, *University of Ibadan*, *Ibadan, Oyo State, Nigeria*.

T143 **Evaluating the effectiveness of *Bacillus subtilis* (DMF) and yeast cell wall (YCW) in the performance of broiler chickens.**
M. Aronovich*[2], L. A. M. Keller[1], J. R. Sartori[3], J. E. Butolo[5], and A. N. Andrade[4], [1]*University Federal Rural of Rio de Janeiro (UFRRJ)*, *Seropédica, RJ, Brazil*, [2]*Agricultural Development Company of the Rio de Janeiro State (PESAGRO)*, *Niteroi, RJ, Brazil*, [3]*Universidade Estadual de São Paulo (UNESP)*, *Botucatu, SP, Brazil*, [4]*Lesaffre Feed Additives (SAF)*, *Rio de Janeiro, RJ, Brazil*, [5]*JEB Instituto de Biociências*, *São Paulo, SP, Brazil*.

T144 **In vitro anthelmintic activity of crude aqueous extracts of *Pithecellobium dulce* and *Lysiloma acapulcensis* againts gastrointestinal nematodes in small ruminants.**
A. Olmedo[1], R. Rojo*[1], J. Arece[3], A. Salem[2], E. Morales[2], F. Aviles[1], J. Hernández[1], B. Albarrán[1], and F. Vázquez[1], [1]*Centro Universitario UAEM Temascaltepec*, *Temascaltepec, Estado de México, México*, [2]*Facultad de Medicina Veterinaria y Zootecnia, UAEM*, *Toluca, Estado de México, México*, [3]*Estación experimental Indio Hatuey*, *Central España Republicana, Matanzas, Cuba*.

T145 **Anthelmintic and immunomodulating effects of *Moringa olifera* extracts in goats.**
M. Worku*, K. Gyenai, H. Ismael, and J. Reddy, *North Carolina Agricultural and Technical State University*, *Greensboro*.

T146 **Sericea lespedeza diets modulate gene expression and rumen microbial diversity in goats.**
A. Abdalla, M. Worku*, H. Mukhtar, and N. Whitley, *North Carolina Agricultural and Technical State University*, *Greensboro*.

T147 **Influence of probiotics on innate immune response in goats.**
K. Gyenai*[1], M. Worku[1], M. Tajkarimi[2], and S. Ibrahim[1], [1]*North Carolina Agricultural and Technical State University*, *Greensboro*, [2]*University of North Carolina at Greensboro*, *Greensboro*.

T148 **Evaluation of the protective effect of pelleted beet pulp as a substitution for ground corn fed to dairy cows during a subacute ruminal acidosis challenge.**
Y. Guo*, Y. Zou, S. Li, Z. Cao, X. Xu, and Z. Yang, *State Key Laboratory of Animal Nutrition, College of Animal Science and Technology, China Agricultural University*, *Beijing, China*.

T149 **Milk components predicted by mid-infrared spectrometry as indicators of the udder health status of the dairy cow.**
C. Bastin*, A. Lainé, and N. Gengler, *University of Liège, Gembloux Agro-Bio Tech, Animal Science Unit*, *Gembloux, Belgium*.

T150 **Gliotoxin occurrence in pre- and postfermented corn, sorghum and wet brewer's grains silage in Sao Paulo, Brazil.**
L. A. M. Keller*[1,2], M. Aronovich[3], L. R. Cavaglieri[4], and C. A. R. Rosa[1,2], [1]*University Federal Rural of Rio de Janeiro (UFRRJ)*, *Seropédica, RJ, Brazil*, [2]*Conselho Nacional de Pesquisas Cientificas (CNPq)*, *Belo Horizonte, MG, Brazil*, [3]*Agricultural Development Company of the Rio de Janeiro State (PESAGRO)*, *Niteroi, RJ, Brazil*, [4]*Universidad Nacional de Río Cuarto (UNRC)*, *Rio Cuarto, Cordoba, Argentina*.

T151 **Evaluation of β-hydroxybutyrate blood concentration in early lactation in a grazing Jersey herd and its effect on milk yield and reproduction.**
A. Saborio-Montero* and J. M. Sanchez, *University of Costa Rica, Animal Nutrition Research Center*, *San Jose, Costa Rica*.

T152 **Evaluation of the accuracy of an electronic beta-hydroxybutyrate meter using fresh and stored whole blood and serum from dairy cows.**
J. L. Gordon*, S. J. LeBlanc, and T. F. Duffield, *University of Guelph*, *Guelph, Ontario, Canada*.

T153 **Application of sodium chlorate to reduce coliform bacteria in rumen and feces of sheep: 1. Effects on ruminal and fecal coliforms.**
C. Arzola*[1], R. Copado[1], F. Rodriguez[1], C. Rodriguez-Muela[1], J. Salinas[2], A. Corral[1], O. Ruiz[1], and H. Gaytan[1], [1]*Universidad Autonoma de Chihuahua*, *Chihuahua, Chih., Mexico*, [2]*Universidad Autonoma de Tamaulipas*, *Cd. Victoria, Tamaulipas, Mexico*.

T154 **Sodium chlorate to reduce the carriage of coliforms in rumen and feces of sheep: 2. Effects on ruminal and fecal bacterial diversity.**
R. Copado*[1], C. Arzola[1], S. V. R. Epps[2], F. Rodriguez[1], C. Rodriguez-Muela[1], J. Salinas[3], A. Corral[1], O. Ruiz[1], and H. Gaytan[1], [1]*Universidad Autonoma de Chihuahua*, *Chihuahua, Chih., Mexico*, [2]*Department of Veterinary Integrative Bioscience, Texas A&M University*, *College Station*, [3]*Universidad Autonoma de Tamaulipas*, *Cd. Victoria, Tamaulipas, Mexico*.

T155 **Effects of spray-dried whole colostrum and spray-dried plasma on veal calf health and performance.**
D. Wood*, R. Blome, and J. Sowinski, *Animix*, *Juneau, WI*.

T156 **Growth and health costs used to evaluate OmniGen-AF feeding strategies in Jersey heifer calves reared on a commercial dairy.**
A. E. Holland*[1], J. D. Chapman[1], L. O. Ely[2], and Y. Q. Wang[3], [1]*Prince Agri Products Inc.*, *Quincy, IL*, [2]*University of Georgia*, *Athens*, [3]*OmniGen Research LLC*, *Corvallis, OR*.

T157 **Ex vivo and in vitro effects of *Lactobacillus rhamnosus* in the control of gastrointestinal infections in calves.**
F. Fàbregas*[1], S. Genís[1], A. Bach[1,2], and A. Arís[1], [1]*Department of Ruminant Production-IRTA*, *Caldes de Montbui, Spain*, [2]*ICREA*, *Barcelona, Spain*.

T158 **Application of intravaginal lactic acid bacteria improved reproductive performance of Holstein dairy cows.**
Q. Deng[1], J. F. Odhiambo[2], U. Farooq[1], T. Lam[1], S. Sharma[1], S. M. Dunn[1], Y. Wang[1], M. Gänzle[1], and B. N. Ametaj*[1], [1]*Department of Agricultural, Food and Nutritional Science, University of Alberta*, *Edmonton, Alberta, Canada*, [2]*Department of Animal Science, University of Wyoming*, *Laramie*.

T159 **Application of intravaginal lactic acid bacteria modified prostaglandin production of periparturient Holstein dairy cows.**
Q. Deng[1], J. F. Odhiambo[2], U. Farooq[1], T. Lam[1], S. Sharma[1], S. M. Dunn[1], Y. Wang[1], M. Gänzle[1], and B. N. Ametaj*[1], [1]*Department of Agricultural, Food and Nutritional Science, University of Alberta*, *Edmonton, Alberta, Canada*, [2]*Department of Animal Science, University of Wyoming*, *Laramie*.

T160 **The effect of late pregnancy supplementation of ewes with trace mineral on ewe hematology and lamb vigor.**
M. Mallaki*, M. A. Norouzian, A. A. Khadem, and M. M. Bardzardi, *The University of Tehran*, *Tehran, Iran*.

T161 **From animal breeding to bio-medical research: Day-blind sheep as an animal model for restoration of visual function using gene therapy.**
E. Gootwine*[1], R. Ofri[2], E. Averbukh[3], H. Honig[1], A. Rosov[1], R. Ezra-Elia[2], A. Obolensky[3], E. Yamin[3], W. W. Hauswirth[4], and E. Banin[3], [1]*Institute of Animal Science, the Volcani Center*, *Bet Dagan, Israel*, [2]*Koret School of Veterinary Medicine, Hebrew University of Jerusalem*, *Jerusalem, Israel*, [3]*Hadassah Hebrew University of Jerusalem Medical Center*, *Jerusalem, Israel*, [4]*University of Florida*, *Gainesville*.

T162 **OmniGen-AF supplementation improves leukocyte responses and hematology of multiparous peripartum cows.**
C. R. Nightingale*[1], M. D. Sellers[1], A. R. Pepper-Yowell[1], J. D. Chapman[2], D. L. O'Connor[2], and M. A. Ballou[1], [1]*Texas Tech University*, *Lubbock*, [2]*Prince Agri Products Inc.*, *Quincy, IL*.

T163 **Water treatment by magnetic field on production and blood gas level in dairy cow .**
G. B. Neto*[1], N. J. Ramos[1], P. M. Graça[1], J. R. E. Filho[2], M. C. M. Coelho[2], and S. S. Luz[3], [1]*Agencia Paulista de Tecnologia dos Agronegocios*, *Ribeirão Preto, São Paulo, Brazil*, [2]*Faculdade de Ciencias Agrarias e Veterinarias da Universidade Estadual Paulista*, *Jaboticabal, São Paulo, Brazil*, [3]*Faculdade de Zootecnia e Engenharia de Alimentos da Universidade de São Paulo*, *Pirassununga, São Paulo, Brazil*.

T164 **Evaluation of chlorine stability in a novel teat dip disinfectant system.**
L. L. Timms*[1], M. Pawlak[2], and C. Durham[2], [1]*Iowa State University*, *Ames*, [2]*Zurex Pharmagra*, *Middleton, WI*.

T165 **Development and evaluation of experimental chlorine technology pre and postmilking teat dips on teat end and teat skin condition and health.**
L. L. Timms*[1], M. Pawlak[2], and C. Durham[2], [1]*Iowa State University*, *Ames*, [2]*Zurex Pharmagra*, *Middleton, WI*.

T166 **Evaluation of experimental chlorine technology pre and post milking teat dips vs. a commercial hydrogen peroxide pre dip and iodine barrier post milking teat dip on teat end and teat skin condition and health .**
E. Smith[1], L. L. Timms*[1], M. Pawlak[2], and C. Durham[2], [1]*Iowa State University*, *Ames*, [2]*Zurex Pharmagra*, *Middleton, WI*.

T167 **Supplementation of organic selenium and its effect on productive and reproductive performance in grazing dairy cows in Costa Rica.**
J. Sanchez-Salas*[1], J. A. Elizondo-Salazar[1], C. Orozco-Vidaorreta[2], and E. Viquez-Matei[3], [1]*Estacion Experimental Alfredo Volio Mata. Facultad de Ciencias Agroalimentarias*, *Universidad de Costa Rica*, [2]*Alltech, Inc.*, *Costa Rica*, [3]*Alimentos Balanceados*, *Cooperativa de Productores de Leche Dos Pinos, Costa Rica*.

T169 **Inhibition of nuclear factor kappa B in duodenal mucosa of piglets by a grape seed and grape marc meal extract.**
D. K. Geßner[1], A. Fiesel[1], M. Lohölter*[2], B. Eckel[2], and K. Eder[1], [1]*Institute of Animal Nutrition and Nutrition Physiology, Universität Gieesen, Germany*, [2]*Dr. Eckel GmbH, Niederzissen, Germany*.

T170 **Degradation of ergopeptines by *Rhodococcus erythropolis* MTHt3.**
M. Thamhesl*[1], E. Apfelthaler[2], E. Kunz-Vekiru[2], I. Schöner[3], H. Schwartz[3], F. Berthiller[3], R. Krska[2], G. Schatzmayr[1], and W.-D. Moll[1], [1]*Biomin Research Center*, *Tulln, Austria*, [2]*Christian Doppler Laboratory for Mycotoxin Research, Department for Agrobiotechnology (IFA-Tulln), University of Natural Resources and Life Sciences, Vienna*, *Tulln, Austria*, [3]*Christian Doppler Laboratory for Mycotoxin Metabolism, Department for Agrobiotechnology (IFA-Tulln), University of Natural Resources and Life Sciences, Vienna*, *Tulln, Austria*.

Beef Species

T171 **The impact of grazing toxic tall fescue on bull growth, fat deposition and blood flow.**
S. K. Duckett*[1], G. E. Aiken[2], H. M. Stowe[1], M. C. Miller[1], S. M. Calcatera[1], M. D. Owens[1], J. G. Andrae[1], and S. L. Pratt[1], [1]*Clemson University*, *Clemson, SC*, [2]*ARS-Forage-Animal Production Research Unit*, *Lexington, KY*.

T172 **Finishing residual feed intake is positively correlated with backgrounding growth of metabolically imprinted Angus-sired steers.**
J. K. Smith*, S. P. Greiner, and M. A. McCann, *Virginia Polytechnic Institute and State University, Department of Animal and Poultry Sciences*, *Blacksburg*.

T173 **Early metabolic imprinting for improved feed efficiency of backgrounded Angus-sired steers.**
J. K. Smith*, S. P. Greiner, and M. A. McCann, *Virginia Polytechnic Institute and State University, Department of Animal and Poultry Sciences*, *Blacksburg*.

T174 **Comparison of serial and parallel beef fabrication methods in a traceable supply chain.**
T. Foster*[1], D. Buskirk[1], and J. Schweihofer[2], [1]*Michigan State University*, *East Lansing*, [2]*Michigan State University Extension*, *East Lansing*.

T175 **Effect of supplement and resynchronization protocol on body weight, body condition score, and estrus appearance of Charolais cows grazing Buffelgrass in Northeastern Mexico.**
E. Garza Brenner*[1], H. Bernal Barragán[1,3], E. Gutiérrez Ornelas[1,3], F. Sánchez Dávila[1], A. S. Juárez Reyes[2,3], and E. Olivares Sáenz[1], [1]*Universidad Autónoma de Nuevo León*, *San Nicolás de los Garza, Nuevo León, México*, [2]*Universidad Juárez del Estado de Durango*, *Durango, México*, [3]*Red Internacional de Nutrición y Alimentación Animal*, *México*.

T176 **Influence of previous experience on performance and grazing behavior in beef heifers.**
G. A. Perry*, E. L. Larimore, and J. A. Walker, *Department of Animal Science, South Dakota State University*, *Brookings*.

T177 **Immunocastration effect on performance in feedlot cattle.**
G. Z. Miguel*[1,3], R. O. Roça[2], C. T. Santos[3], M. H. de Faria[4], F. D. de Resende[4], G. R. Siqueira[4], J. M. Homem[3], A. D. Moreira[5], and B. R. C. C. Lima[6], [1]*Fundação de Amparo à Pesquisa do Estado de São Paulo*, *São Paulo, SP, Brazil*, [2]*FCA / Universidade Estadual Paulista*, *Botucatu, SP, Brazil*, [3]*FMVZ / Universidade Estadual Paulista*, *Botucatu, SP, Brazil*, [4]*Agência Paulista de Tecnologia dos Agronegócios*, *Colina, SP, Brazil*, [5]*FCAV / Universidade Estadual Paulista*, *Jaboticabal, SP, Brazil*, [6]*Dep Tecnologia de Alimentos / Universidade Federal Fluminense*, *Niteroi, RJ, Brazil*.

T178 **Correlations of visual scores and ultrasound carcass traits with economically relevant traits in Nellore cattle.**
R. C. Gomes*[1], P. H. Cancian[2], F. Manicardi[2], A. C. Ianni[2], M. N. Bonin[2], P. R. Leme[2], and S. L. Silva[2], [1]*Embrapa Beef Cattle*, *Campo Grande, MS, Brazil*, [2]*Faculdade de Zootecnia e Engenharia de Alimentos, Universidade de Sao Paulo*, *Pirassununga, SP, Brazil*.

Breeding and Genetics: Applications and Methods in Animal Breeding—Beef

T179 **Genetic analysis of female weights via random regression and multiple trait models in a multibreed beef cattle population.**
B. Y. Coy[1,2], C. A. Martinez[1], C. Manrique[2], and M. A. Elzo*[1], [1]*University of Florida*, *Gainesville*, [2]*Universidad Nacional de Colombia*, *Bogota, Colombia*.

T180 **Ranking of Nellore cattle at agricultural shows: Genetic and phenotypic parameters with production traits.**
M. E. Z. Mercadante*[1], E. A. Simielli Filho[1], J. A. V. Silva[2], T. R. Pinheiro[3], A. L. Grion[1], and L. A. Josahkian[4], [1]*Centro APTA Bovinos de Corte, Instituto de Zootecnia*, *Sertaozinho, Sao Paulo, Brazil*, [2]*Faculdade de Medicina Veterinária e Zootecnia, UNESP*, *Botucatu, Sao Paulo, Brazil*, [3]*AVAL*, *Goiania, Goias, Brazil*, [4]*ABCZ*, *Uberaba, Minas Gerais, Brazil*.

T181 **Genetic parameters and genetic trends for preweaning growth in an Angus-Brahman cattle population in the Colombian tropics.**
O. D. Vergara[1], M. A. Elzo*[2], R. M. Patino[3], A. Calderon[1], and R. Almanza[4], [1]*University of Cordoba*, *Monteria, Colombia*, [2]*University of Florida*, *Gainesville*, [3]*University of Sucre*, *Sincelejo, Colombia*, [4]*Gencaribe Hacienda Abastecedora de Carnes SA*, *Planeta Rica, Colombia*.

T182 **Population structure and relation among inbreeding coefficient and breeding values in Guzera beef cattle.**
D. G. F. Guidolin*[1,3], N. V. Grupioni[2,3], N. C. Tramonte[2,3], I. Urbinati[3,5], T. C. S. Chud[2,3], R. B. Lobo[4], and D. P. Munari[3,5], [1]*Coordenacao de Aperfeicoamento de Pessoal de Nivel Superior, CAPES*, *Brasilia, DF, Brazil*, [2]*Fundacao de Amparo a Pesquisa do Estado de Sao Paulo, FAPESP*, *Sao Paulo, SP, Brazil*, [3]*Universidade Estadual Paulista Julio de Mesquita Filho, UNESP*, *Jaboticabal, SP, Brazil*, [4]*Associacao Nacional de Criadores e Pesquisadores, ANCP*, *Ribeirao Preto, SP, Brazil*, [5]*Conselho Nacional de Desenvolvimento Cientifico e Tecnologico, CNPq*, *Brasilia, DF, Brazil*.

T183 **Genetic parameters and trends for productive, reproductive and carcass traits in Guzera beef cattle.**
D. G. F. Guidolin*[1,3], N. V. Grupioni[2,3], N. C. Tramonte[2,3], P. A. Bernardes[3,5], G. B. Nascimento[1,3], G. Vargas[1,3], R. B. Lobo[4], and D. P. Munari[3,5], [1]*Coordenacao de Aperfeicoamento de Pessoal de Nivel Superior, CAPES*, *Brasilia, DF, Brazil*, [2]*Fundacao de Amparo a Pesquisa do Estado de Sao Paulo, FAPESP*, *Sao Paulo, SP, Brazil*, [3]*Universidade Estadual Paulista Julio de Mesquita Filho, UNESP*, *Jaboticabal, SP, Brazil*, [4]*Associacao Nacional de Criadores e Pesquisadores, ANCP*, *Ribeirao Preto, SP, Brazil*, [5]*Conselho Nacional de Desenvolvimento Cientifico e Tecnologico, CNPq*, *Brasilia, DF, Brazil*.

T184 **Genetic trend on growth traits in Hanwoo.**
Y.-S. Choi*[1], S.-W. Kim[1], K.-S. Kim[1], S.-K. Lee[1], D.-J. Yu[1], A.-A Yun[1], M.-J. Ku[1], D.-H. Park[1], J.-W. Lee[2], and W.-H. Kim[1], [1]*Livestock Research Institute Jeollanamdo Agricultural Research & Extension Service (JARES)*, *Gangin-gun, Jeollanamdo, Republic of Korea*, [2]*Chonnam National University*, *Gwangju, Republic of Korea*.

T185 **Genetic and phenotypic (co)variance component estimation of reproductive traits in a multibreed beef cattle population.**
Y. Mu*, T. Caldwell, G. Vander Voort, J. Jamrozik, R. Ventura, and S. Miller, *Centre for Genetic Improvement of Livestock, Department of Animal and Poultry Science, University of Guelph, Guelph, ON, Canada*.

T186 **Genetic analysis of a temperament trait in a Nellore cattle population in Brazil.**
F. L. Silva*[1], L. C. A. Regitano[3], F. Penagaricano[2], A. L. Paco[5], T. Sonstegard[4], L. L. Coutinho[1], M. A. Mudadu[3], M. M. Alencar[3], G. J. M. Rosa[2], and G. B. Mourao[1], [1]*ESALQ, USP*, *Piracicaba, SP, Brazil*, [2]*Department of Animal Sciences, University of Wisconsin*, *Madison*, [3]*Embrapa Pecuaria Sudeste*, *Sao Carlos, SP, Brazil*, [4]*USDA-ARS-ANRI-BFGL*, *Beltsville, MD*, [5]*UNESP*, *Jaboticabal, SP, Brazil*.

T187 **The effects of winter hair coat shedding of Angus dams on adjusted weaning weight of calves.**
K. Fleetwood*[1], G. Hansen[1], T. Smith[2], J. Parish[2], and J. P. Cassady[1], [1]*North Carolina State University*, *Raleigh*, [2]*Mississippi State University*, *Mississippi State*.

T188 **Characterization and genetic selection for beef tenderness in polled Nellore cattle.**
C. U. Magnabosco*[1], E. C. Eifert[1], C. S. Prado[2], E. S. Miyagi[2], L. C. Moreira[2,1], L. M. Castro[2,1], A. F. Nakagawa[3], and R. D. Sainz[1,4], [1]*Embrapa*, *Brasília, DF, Brazil*, [2]*Universidade Federal de Goiás*, *Goiânia, GO, Brazil*, [3]*Guaporé Pecuária*, *Pontes e Lacerda, MT, Brazil*, [4]*University of California*, *Davis*.

T189 **Genetic association between heifers rebreeding and reproductive traits in Nellore heifers.**
R. B. Costa[1,2], A. P. N. Terakado*[1,3], and L. G. Albuquerque[1,3], [1]*Universidade Estadual Paulista (UNESP) - FCAV*, *Jaboticabal, SP, Brazil*, [2]*Fundacao de Amparo a Pesquisa do Estado de Sao Paulo (FAPESP)*, *Sao Paulo, SP, Brazil*, [3]*Conselho Nacional de Desenvolvimento Cientifico e Tecnologico (CNPq)*, *Brasilia, DF, Brazil*.

T190 **Evaluation of sire breed type on growth and carcass characteristics utilizing multigenerational Angus sired calves versus Charolais-sired calves.**
J. Bailey*, M. J. Canal, T. R. Howard, G. T. Gentry, and M. D. Garcia, *Louisiana State University, Baton Rouge*.

T191 **Genetic association between carcass, growth and visual scores traits in Hereford × Nellore cattle.**
A. P. N. Terakado*, R. B. Costa, D. R. Ayres, R. Carvalheiro, and L. G. Albuquerque, *Universidade Estadual Paulista (UNESP) - Faculdade de Ciencias Agrarias e Veterinarias*, *Jaboticabal, Sao Paulo, Brazil*.

T192 **Evaluation of growth and performance characteristics of crossbred calves sired by Charolais, Simmental, or Braunvieh sires.**
M. S. Mizell*, T. Page, K. Harborth, M. Canal, A. Canal, and M. D. Garcia, *Louisiana State University*, *Baton Rouge*.

T193 **An evaluation of 55 years of performance trends from the Dean Lee Research Station performance bull test.**
T. R. Howard, S. DeRouen, K. Harborth, K. Bondioli, and M. D. Garcia*, *Louisiana State University*, *Baton Rouge*.

T194 **Multivariate heavy-tailed distribution modeling of residuals in estimation of genetic parameters of carcass traits in beef cattle.**
S. O. Peters[1,2], K. Kizilkaya[3,4], D. J. Garrick[3], R. L. Fernando[3], E. J. Pollak[5], M. De Donato[1,6], T. Hussain[1,7], and I. G. Imumorin*[1], [1]*Cornell University*, *Ithaca, NY*, [2]*Berry College*, *Mt Berry, GA*, [3]*Iowa State University*, *Ames*, [4]*Adnan Menderes University*, *Aydin, Turkey*, [5]*US Meat Animal Research Center*, *Clay Center, NE*, [6]*Universidad de Oriente*, *Cumana, Sucre, Venezuela*, [7]*University of Veterinary and Animal Sciences*, *Lahore, Pakistan*.

T195 **Heritability and correlations of immune response parameters in cattle treated for bovine respiratory disease.**
R. R. Cockrum*[1], S. E. Speidel[1], J. L. Salak-Johnson[2], C. C. L. Chase[3], R. K. Peel[1], R. L. Weaber[4], H. Van Campen[1], G. H. Loneragan[5], J. J. Wagner[1], P. Boddhireddy[6], M. G. Thomas[1], K. Prayaga[6], and R. M. Enns[1], [1]*Colorado State University*, *Fort Collins*, [2]*University of Illinois*, *Urbana*, [3]*South Dakota State University*, *Brookings*, [4]*Kansas State University*, *Manhattan*, [5]*Texas Tech University*, *Lubbock*, [6]*Zoetis*, *Kalamazoo, MI*.

Breeding and Genetics: Genomic Selection

T196 **Genome-wide association study of cholesterol and poly- and monounsaturated fatty acids of beef from crossbred cattle.**
L. N. Schiermiester*, C. M. Ahlberg, J. T. Howard, C. Calkins, and M. L. Spangler, *University of Nebraska*, *Lincoln*.

T197 **Genome-wide association study of protein and mineral content of beef from crossbred cattle.**
C. M. Ahlberg*, L. N. Schiermiester, J. T. Howard, C. Calkins, and M. L. Spangler, *University of Nebraska*, *Lincoln*.

T198 **Association between single nucleotide polimorphisms and sexual precocity in Nellore heifers.**
I. C. Regatieri[1,3], R. Espigolan[1,3], R. B. Costa[1,3], F. Baldi[1], and L. G. Albuquerque*[1,2], [1]*Universidade Estadual Paulista (UNESP) - FCAV*, *Jaboticabal, SP, Brazil*, [2]*Conselho Nacional de Desenvolvimento Cientifico e Tecnologico(CNPq)*, *Brasilia, DF, Brazil*, [3]*Fundacao de Amparo a Pesquisa do Estado de Sao Paulo (FAPESP)*, *Sao Paulo, SP, Brazil*.

T199 **Genome-wide associations study for Nelore and Angus Heifers with low and high ovarian follicle count.**
M. G. Favoreto*[1], B. Loureiro[1], R. L. Ereno[1], A. G. Pupulim[1], A. S. Carmo[2], J. Buratini[1], and C. M. Barros[1], [1]*UNESP - Universidade Estadual Paulista*, *Botucatu, SP, Brazil*, [2]*DEOXI biotecnologia*, *Araçatuba, SP, Brazil*.

T200 **An SNP association study evaluating modern Charolais sired calves versus multigenerational Angus sired calves for growth and carcass traits.**
J. Bailey*, M. S. Mizell, A. Canal, T. R. Howard, R. Hill, T. Page, and M. D. Garcia, *Louisiana State University*, *Baton Rouge*.

T201 **SNP associated with growth and performance of yearling bulls on a forage performance bull test.**
T. R. Howard, M. S. Mizell, K. Harborth, M. Canal, A. Canal, K. Bondioli, T. Page, and M. D. Garcia*, *Louisiana State University*, *Baton Rouge*.

T202 **Genomic-polygenic evaluation of multibreed Angus-Brahman cattle for feed efficiency and postweaning growth using actual and imputed Illumina 50k SNP genotypes.**
M. A. Elzo*[1], M. G. Thomas[2], C. A. Martinez[1], G. C. Lamb[1], D. D. Johnson[1], I. Misztal[3], D. O. Rae[1], J. G. Wasdin[1], and J. D. Driver[1], [1]*University of Florida*, *Gainesville*, [2]*Colorado State University*, *Fort Collins*, [3]*University of Georgia*, *Athens*.

T203 **Genetic parameters and single nucleotide polymorphism of feed utilization in beef cattle.**
D. Gonzalez-Pena*, N. V. L. Serão, J. E. Beever, D. B. Faulkner, and S. L. Rodriguez-Zas, *University of Illinois at Urbana-Champaign*, *Urbana*.

T204 **Genomic variants and genetic parameters of feed efficiency from univariate and multivariate analyses.**
C. Zavala*, N. V. L. Serão, D. González-Peña, and S. Rodriguez-Zas, *University of Illinois at Urbana-Champaign*, *Urbana*.

T205 **Accuracy of genomic predictions in Nelore cattle with different marker densities.**
P. Boddhireddy*[1], R. B. Iobo[2], K. Prayaga[1], P. Barros[1], and S. DeNise[1], [1]*Zoetis Inc.*, *Kalamazoo, MI*, [2]*Technical Centre of Genetic Evaluation (CTAG)*, *Ribeirão Preto, Brazil*.

T206 **Genomic evaluation and identification of a haplotype affecting fertility for Ayrshire dairy cattle.**
T. A. Cooper*, G. R. Wiggans, D. J. Null, and J. L. Hutchison, *Animal Improvement Programs Laboratory, Agricultural Research Service, USDA*, *Beltsville, MD*.

T207 **Regression metamodels of an optimal genomic testing strategy in dairy cattle when selection intensity is low.**
A. De Vries*[1], J. B. Cole[2], and D. T. Galligan[3], [1]*University of Florida*, *Gainesville*, [2]*Animal Improvement Programs Laboratory, ARS, USDA*, *Beltsville, MD*, [3]*University of Pennsylvania*, *Kennett Square*.

T208 **Prioritizing sequence polymorphisms for potential association with phenotype.**
W. M. Snelling*[1], G. L. Bennett[1], R. M. Thallman[1], A. K. Lindholm-Perry[1], L. A. Kuehn[1], T. G. McDaneld[1], S. D. Kachman[2], M. L. Spangler[2], H. Koshinsky[3], and T. S. Kalbfleisch[4,5], [1]*USDA, ARS, U.S. Meat Animal Research Center*, *Clay Center, NE*, [2]*University of Nebraska*, *Lincoln*, [3]*Eureka Genomics Inc.*, *Hercules, CA*, [4]*Intrepid Bioinformatics*, *Louisville, KY*, [5]*University of Louisville*, *Louisville, KY*.

T209 **Accuracy of mixed model methods for genomic prediction and variance component estimation of additive and dominance effects using SNP markers.**
S. Wang, G. Hu*, C. Wang, and Y. Da, *Department of Animal Science, University of Minnesota, St. Paul*.

T210 **Bias in genomic evaluations attributable to unknown parent group estimates.**
S. Tsuruta*, D. A. L. Lourenco, and I. Misztal, *University of Georgia*, *Athens*.

T211 **Accounting for heterogeneous pleiotropy in whole genome selection models.**
N. M. Bello*[1], J. P. Steibel[2], and R. J. Tempelman[2], [1]*Kansas State University*, *Manhattan*, [2]*Michigan State University*, *East Lansing*.

T212 **Comparison of milk fatty acids composition from buffalo, camel, cow, goat, and yak.**
J. H. Yang, D. P. Bu*, J. Q. Wang, L. Ma, J. X. Zhang, and J. T. Chen, *Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*.

T213 **Characterizing the relationship between peroxidase activity and enzymatic bleaching in fluid whey.**
R. E. Campbell*[1], P. D. Gerard[2], and M. A. Drake[1], [1]*North Carolina State University*, *Raleigh*, [2]*Clemson University*, *Clemson, SC*.

T214 **Factors that influence the required membrane area of a multi-stage microfiltration process to separate serum protein and lactose from micellar casein in skim milk.**
E. E. Hurt* and D. M. Barbano, *Northeast Dairy Foods Research Center, Department of Food Science, Cornell University*, *Ithaca, NY*.

T215 **The impact of bleaching on functionality of whey protein isolate.**
T. J. Smith*, E. A. Foegeding, and M. A. Drake, *North Carolina State University*, *Raleigh*.

T216 **Optimizing methods for improved raw milk analysis by NIR spectroscopy.**
T. J. Reuter*[1], X. Xiong[2], G. Rolland[2], and T. C. Schoenfuss[1], [1]*University of Minnesota*, *St. Paul*, [2]*BHI Labortechnik AG*, *Flawil, St. Gallen, Switzerland*.

T217 **The mechanism of resistance to plasmin activity through protein succinylation: A model study using β-casein.**
H. Bhatt*[2,1], A. Cucheval[1], C. Coker[1], H. Patel[3], A. Carr[2], and R. Bennett[2], [1]*Fonterra Research & Development Centre*, *Palmerston North, Manawatu, New Zealand*, [2]*Institute of Food, Nutrition and Human Health, Massey University*, *Palmerston North, Manawatu, New Zealand*, [3]*Dairy Science Department, South Dakota State University*, *Brookings*.

T218 **Effect of processing and storage temperatures on the physical stability of sodium-caseinate-stabilized emulsions.**
Y. C. Liang*[1,2], H. Patel[3], L. Matia-Merino[2], A. Q. Ye[4], G. Gillies[1], and M. Golding[2,4], [1]*Fonterra Research and Development Centre*, *Palmerston North, New Zealand*, [2]*Institute of Food, Nutrition and Human Health, Massey University*, *Palmerston North, New Zealand*, [3]*Dairy Science Department, South Dakota State University*, *Brookings*, [4]*Riddet Institute, Massey University*, *Palmerston North, New Zealand*.

T219 **Effect of reconstitution temperatures on the solubility of different protein fractions present in milk protein concentrates (MPC 80).**
H. Patel*[1,2], [1]*Dairy Science Department, South Dakota State University*, *Brookings*, [2]*Animal Sciences and Industry*, *Kansas State University, Manhattan*.

T220 **Comparison of the in vitro digestion of raw pasture milk and commercial HTST and UHT pasteurized milk.**
D. X. Ren[1,2], D. L. Van Hekken*[1], M. H. Tunick[1], and P. M. Tomasula[1], [1]*USDA, ARS, ERRC, Dairy and Functional Foods Research Unit*, *Wyndmoor, PA*, [2]*Zhejiang University, Institute of Dairy Science, College of Animal Science*, *Hangzhou, China*.

T221 **Computer simulation to predict energy use, greenhouse gas emissions and costs for production of extended shelf-life milk using microfiltration.**
P. M. Tomasula, W. C. F. Yee, A. J. McAloon, and L. M. Bonnaillie*, *USDA, ARS, ERRC, Dairy and Functional Foods Research Unit*, *Wyndmoor, PA*.

T222 **Effect of preheating temperature and time on the properties of evaporated milk.**
B. Chen*, A. Grandison, and M. Lewis, *University of Reading*, *Reading, Berkshire, UK*.

T223 **Predicting color change of skim milk during high pressure thermal processing.**
A. F. Devi[1,2], R. Buckow*[2], Y. Hemar[3], and S. Kasapis[1], [1]*School of Applied Sciences, RMIT University*, *Melbourne, VIC, Australia*, [2]*CSIRO Animal, Food and Health Sciences*, *Werribee, VIC, Australia*, [3]*School of Chemical Sciences, The University of Auckland*, *Auckland, New Zealand*.

T224 **Feed substrates influence biofilm formation on reverse osmosis (RO) membranes and their cleaning efficacy.**
S. Marka* and S. Anand, *Dairy Science Department, Midwest Dairy Foods Research Center, South Dakota State University*, *Brookings*.

T225 **Characterization of some changes in composition and physicochemical properties of casein micelles from cream to buttermilk.**
M. Looney*[1], Y. Pouliot[2], M. Britten[3], and R. Jiménez-Flores[1], [1]*Dairy Products Technology Center, California Polytechnic State University*, *San Luis Obispo*, [2]*STELA Dairy Research Center, Institute of Nutrition and Functional Foods (INAF), Laval University*, *Quebec City, QC, Canada*, [3]*Food Research and Development Center (FRDC), Agriculture and Agri-Food Canada*, *St-Hyacinthe, QC, Canada*.

T226 **Investigation of the mechanism of membrane fouling in cold microfiltration of skim milk: A proteomics study.**
T. J. Tan* and C. I. Moraru, *Department of Food Science, Cornell University*, *Ithaca, NY*.

T227 **Evaluation of thermization and CO_2 addition as methods of raw milk preservation.**
P. R. Rocha, V. P. Voltarelli, V. O. Gaino, C. M. V. B. de Rensis, and P. C. B. Vianna*, *Universidade Norte do Paraná (UNOPAR)*, *Londrina/PR/Brazil*.

T228 **Utilizing clean label starches in yogurts processed with challenging temperature and homogenization pressures.**
B. Roa*, A. Perez, E. Yildiz, I. Potrebko, T. Shah, and L. Carr, *Ingredion Incorporated*, *Bridgewater, NJ*.

T229 **Proteomic evaluation of milk fat globule membrane proteins and bovine health status.**
M. Vaiente*, L. Tomanek, M. Yeung, and R. Jimenez-Flores, *California Polytechnic State University*, *San Luis Obispo*.

T230 **Production of sodium chloride nanoparticles by nanospray drying method.**
M. Moncada*[1], K. Aryana[1,2], C. E. Astete[3], and C. Sabliov[3], [1]*School of Animal Sciences, Louisiana State University Agricultural Center*, *Baton Rouge*, [2]*Department of Food Science, Louisiana State University Agricultural Center*, *Baton Rouge*, [3]*Biological and Agricultural Engineering, Louisiana State University Agricultural Center*, *Baton Rouge*.

Dairy Foods: General Topics

T231 **Physiochemical property, microstructure and probiotic survivability of nonfat goat milk yogurt using heat-treated whey protein concentrate as fat replacer.**
T. H. Zhang[1], J. McCarthy[2], G. R. Wang[2], Y. Liu[2], and M. R. Guo*[2], [1]*Jilin University*, *Changchun, Jilin, China*, [2]*University of Vermont*, *Burlington*.

T232 **Do dairy cattle classified as high immune responders yield nutritionally better milk compared with average and low immune response cows?**
K. Fleming*, M. Corredig, D. Hodgins, F. Miglior, and B. Mallard, *University of Guelph*, *Guelph, Ontario, Canada*.

T233 **Physicochemical and sensory properties of milk supplemented with dispersible nanopowdered oyster shell during storage (II).**
Y. K. Lee*, M. A. Mijan, and H. S. Kwak, *Sejong University*, *Seoul, South Korea*.

T234 **Comparison of physicochemical properties in nanopowdered red ginseng and powdered red ginseng (I).**
K. H. Choi*, M. A. Mijan, and H. S. Kwak, *Sejong University*, *Seoul, South Korea*.

T235 **Isolation of lactic acid bacteria from Xin Jiang fresh cheese and the studies of property.**
L. Zhang, Y. Zhang*, and X. Xu, *Harbin Institute of Technology*, *College of Food Science and Engineering, Harbin Institute of Technology, Harbin, China*.

T236 **Effects of mineral content of bovine drinking water: Does iron affect milk quality?**
G. R. Mann, S. E. Duncan*, S. F. O'Keefe, K. A. Knowlton, A. D. Dietrich, R. E. James, C. Martel, and X. Feng, *Virginia Polytechnic Institute and State University*, *Blacksburg*.

T238 **Tetracycline residues in pasteurized goat milk.**
R. Attaie* and A. Mora-Gutierrez, *Prairie View A&M University*, *Prairie View, TX*.

T384 **Assessment of consumer perceptions, preferences, and behaviors with fluid milk from different packaging.**
M. Paterson*[1], S. Clark[1], and M. Bozic[2], [1]*Iowa State University*, *Ames*, [2]*University of Minnesota*, *St. Paul*.

Dairy Foods: Dairy Products I

T239 **Evaluation of sensory properties of goat milk ice creams formulated with three different levels of caprine milk fat.**
C. McGhee, B. P. Gupta*, J. Jones, and Y. W. Park, *Fort Valley State University*, *Fort Valley, GA*.

T241 **Influences and mechanisms of heat-related processes during manufacture of milk powder on coagulation quality of milk.**
X. Han*, L. Zhang, and W. Wang, *Harbin Institute of Technology*, *College of Food Science and Engineering, Harbin Institute of Technology, Harbin, China*.

T242 **Light-protective packaging effectiveness to enhance sensory and nutrient stability of extended shelf life milk and n-3 enriched milk.**
D. Johnson, S. E. Duncan*, W. N. Eigel, and S. F. O'Keefe, *Virginia Tech*, *Blacksburg*.

T243 **Properties of whey protein isolate-maltodextrin conjugates as affected by powder acidity during the Maillard reaction.**
W. Wang* and Q. Zhong, *The University of Tennessee*, *Knoxville*.

T244 **Caseinomacropeptide index for cheese whey detection in pasteurized milk in Brazil.**
P. R. Lobato[1], M. E. R. Fortini[1], R. S. Conrrado[1], M. M. O. P. Cerqueira[1,2], L. M. Fonseca*[1,2], M. O. Leite[1,2], R. Rodrigues[1], M. R. Souza[1], and C. F. A. M. Penna[1], [1]*Department of Food Technology and Inspection, School of Veterinary Medicine, Universidade Federal de Minas Gerais (UFMG)*, *Belo Horizonte, MG, Brazil*, [2]*CNPq*, *Brasilia, DF, Brazil*.

T245 **Milk mineral harvest from dairy streams using filtration technology.**
L. Mealy*, C. Marella, A. Biswas, and L. Metzger, *Midwest Dairy Foods Research Center, South Dakota State University*, *Brookings*.

T246 **Characterization of whey protein films incorporated with oregano essential oil (*Origanum vulgare*).**
S. P. L. F. de Oliveira[1], I. M. B. Dianin[1], A. P. Bilck[1], C. M. V. B. de Rensis[1], L. C. Bertan[2], and P. C. B. Vianna*[1], [1]*Universidade Norte do Paraná (UNOPAR)*, *Londrina/PR/Brazil*, [2]*Universidade Federal da Fronteira Sul (UFFS)*, *Laranjeiras do Sul/PR/Brazil*.

T247 **Effect of Sicilian pasture feeding management on content of α-tocopherol and β-carotene in cow milk.**
V. M. Marino*[1], I. Schadt[1], S. Carpino[1], M. Caccamo[1], S. La Terra[1], C. Guardiano[1], and G. Licitra[1,2], [1]*CoRFiLaC*, *Ragusa Mare, Ragusa, Italy*, [2]*DISPA*, *Catania, Italy*.

T249 **Whey permeate used as salt substitute in processed foods.**
S. Chizonda*, E. M. Dixon, Y. Jiang, and J. C. Allen, *North Carolina State University*, *Raleigh*.

Forages and Pastures: Animal Responses

T250 **Application of a rising plate meter to estimate forage yield on dairy farms in Pennsylvania.**
A. N. Hafla*, K. J. Soder, M. Rubano, and R. Stout, *USDA-Agricultural Research Service-Pasture Systems and Watershed Management Research Unit*, *University Park, PA*.

T251 **Case study: Dairies utilizing ultra-high stock density grazing in the Northeast.**
K. J. Soder*[1], M. Hautau[2], A. N. Hafla[1], M. D. Rubano[1], B. Moyer[2], and R. Stout[1], [1]*USDA-ARS*, *University Park, PA*, [2]*The Pennsylvania State University*, *University Park*.

T252 **Feed efficiency by dairy cows in China: A farm survey result.**
C. Wang*[1,2], J. X. Liu[2], N. B. Wei[1], Q. M. Xu[1], and H. P. S. Makkar[3], [1]*Zhejiang Agriculture and Forestry University*, *Hangzhou-Lin'an, China*, [2]*Institute of Dairy Science, Zhejiang University*, *Hangzhou, China*, [3]*Animal Production and Health Division, FAO of the United Nations*, *Rome, Italy*.

T253 **Silage management on high-producing dairy farms in Brazil.**
R. C. Amaral*[1], T. Gama[1], I. De Oliveira[2], and T. F. Bernardes[2], [1]*DeLaval*, *Campinas, São Paulo, Brazil*, [2]*University of Lavras*, *Lavras, Minas Gerais, Brazil*.

T254 **Modelling the effect of white clover protein degradability on milksolids production and nitrogen excretion.**
E. N. Khaembah*[1], P. Gregorini[1], P. C. Beukes[1], and G. P. Cosgrove[2], [1]*DairyNZ*, *Hamilton, Waikato, New Zealand*, [2]*AgResearch*, *Palmerston North, Manawatu, New Zealand*.

T255 **Effect of cow genotype and level of supplementation at pasture on milk performance of animals under a simplified rotational grazing system.**
A. I. Roca-Fernandez*[1,2], L. Delaby[2], S. Leurent[3], Y. Gallard[3], and M. E. Lopez-Mosquera[4], [1]*Agrarian Research Centre of Mabegondo*, *La Coruña, Galicia, Spain*, [2]*INRA Agro-Campus Ouest UMRPL*, *Saint Gilles-Rennes, Bretagne, France*, [3]*INRA Experimental Farm Le Pin au Haras*, *Borculo-Exmes, Normandy, France*, [4]*University of Santiago de Compostela*, *Lugo, Galicia, Spain*.

T256 **Effect of forage proportion on milk fatty acids profile of Holstein-Friesian cows under Galician conditions (NW Spain).**
A. I. Roca-Fernández*[1], A. González-Rodríguez[1], O. P. Vázquez-Yáñez[1], and J. A. Fernández-Casado[2], [1]*Agrarian Research Centre of Mabegondo*, *La Coruña, Galicia, Spain*, [2]*Agrarian and Fitopathologic Laboratory of Galicia*, *La Coruña, Galicia, Spain*.

T257 **Effect of forage proportion on sward characteristics and milk performance of Holstein-Friesian cows under Galician conditions (NW Spain).**
A. I. Roca-Fernández*, A. González-Rodríguez, and O. P. Vázquez-Yáñez, *Agrarian Research Centre of Mabegondo*, *La Coruña, Galicia, Spain*.

T258 **Stocking strategies and stocking rate to enhance forage utilization, gain per animal, and gain per unit land area from rye-ryegrass pastures.**
F. Rouquette*, J. Kerby, G. Nimr, and K. Norman, *Texas A&M AgriLife Research*, *Overton*.

T259 **Effects of supplement or fertilizer on forage quality, and performance of stocker cattle grazing warm-season pastures in South Mississippi.**
J. D. Rivera*[1] and R. W. Lemus[2], [1]*South MS Branch Experiment Station, Mississippi Agriculture and Forestry Experiment Station*, *Poplarville*, [2]*Department of Plant and Soil Sciences, Mississippi State University*, *Starkville*.

T260 **Nutritional assessment and productive response in tropical sheep fed with conserved agricultural byproducts in Ecuador.**
A. Sánchez-Laiño*[1,2], J. Avellaneda-Cevallos[1,2], D. Zambrano-Gracia[1], E. Torres-Navarrete[1,2], L. Montenegro-Vivas[1], and I. Espinoza-Guerra[1], [1]*Facultad de Ciencias Pecuarias*, *Quevedo, Los Ríos, Ecuador*, [2]*Dirección de Investigación Científica y Tecnológica*, *Quevedo, Los Ríos, Ecuador*.

T261 **Effect of Next Enhance with or without Rumensin on performance of growing steers grazing cool-season annual pasture.**
P. Beck*[1], H. Gray[1], B. Stewart[1], and T. Wistuba[2], [1]*University of Arkansas Division of Agriculture*, *Hope*, [2]*Novus International Inc.*, *St. Charles, MO*.

T262 **Calf response to summer legumes as a creep grazing option in bermudagrass pastures.**
R. M. Martin*[1], R. S. Walker[2], G. Scaglia[3], B. Buckley[4], M. W. Alison[5], K. J. Han[6], G. Gentry[7], and W. D. Pitman[2], [1]*LSU Agcenter School of Animal Sciences*, *Baton Rouge*, [2]*LSU AgCenter Hill Farm Research Station*, *Homer*, [3]*LSU AgCenter Iberia Research Station*, *Jeanerette*, [4]*LSU AgCenter Red River Research Station*, *Bossier City*, [5]*LSU AgCenter Macon Ridge Research Station*, *Winnsboro*, [6]*LSU AgCenter Southeast Research Station*, *Franklinton*, [7]*LSU AgCenter Dean Lee Research Station*, *Alexandria*.

T263 **Responses to creep feeding protein to calves for cow-calf pairs grazing limpograss pastures during summer in Florida.**
A. D. Aguiar*[1], J. M. B. Vendramini[1], J. D. Arthington[1], L. E. Sollenberger[2], M. Hersom[2], J. D. Sanchez[1], and W. L. Ladeira[1], [1]*Range Cattle Research Education Center*, *Ona, FL*, [2]*University of Florida*, *Gainesville*.

T264 **Heifer growth and reproductive performance following two levels of fall pasture allocation.**
B. L. Bailey[1], T. C. Griggs[2], and K. M. Krause*[1], [1]*Division of Animal and Nutritional Sciences, West Virginia University*, *Morgantown*, [2]*Division of Plant and Soil Science, West Virginia University*, *Morgantown*.

T265 **Stocker steer performance on tall fescue or meadow fescue alone or in binary mixture with white clover.**
M. R. Schaefer*, K. A. Albrecht, and D. M. Schaefer, *University of Wisconsin-Madison*, *Madison*.

T266 **Bovine lateral saphenous veins exposed to ergopeptine alkaloids do not relax.**
J. L. Klotz[1], A. Pesqueira*[2], A. F. Branco[3], and D. L. Harmon[2], [1]*USDA-ARS, Forage-Animal Production Research Unit*, *Lexington, KY*, [2]*Department of Animal and Food Sciences, University of Kentucky*, *Lexington*, [3]*Universidade Estadual de Maringa*, *Brazil*.

T267 **Effect of fescue toxicosis on ruminal kinetics, nitrogen and energy balance in Holstein steers.**
A. F. Koontz*[1], D. H. Kim[1], A. P. Foote[1], J. L. Klotz[2], K. R. McLeod[1], and D. L. Harmon[1], [1]*Department of Animal and Food Sciences, University of Kentucky, Lexington*, [2]*USDA-ARS, Forage-Animal Production Research Unit, Lexington, KY*.

T268 **The fatty acid profile and retention time in the rumen in cattle grazing tropical grasses.**
D. F. A. Costa*[1], P. Isherwood[1], S. Quigley[1], S. R. McLennan[2], J. De Souza[3], J. Gibbs[4], X. Q. Sun[5], and D. P. Poppi[1], [1]*The University of Queensland*, *Gatton, Queensland, Australia*, [2]*The University of Queensland*, *Brisbane, Queensland, Australia*, [3]*University of Sao Paulo*, *Piracicaba, Sao Paulo, Brazil*, [4]*Lincoln University*, *Lincoln, Canterbury, New Zealand*, [5]*Northwest A&F University*, *Yangling, Shaanxi, China*.

T269 **Effects of forage type and season on rumen parameters of grazing cattle.**
D. F. A. Costa*[1], P. Isherwood[1], S. Quigley[1], S. R. McLennan[2], and J. De Souza[3], [1]*The University of Queensland*, *Gatton, Queensland, Australia*, [2]*The University of Queensland*, *Brisbane, Queensland, Australia*, [3]*University of Sao Paulo*, *Piracicaba, Sao Paulo, Brazil*.

T270 **Interactions between grazing management and a low level of energy supplementation on ingestive behavior of beef cattle.**
L. R. D. Agostinho Neto*, J. R. R. Dorea, V. N. Gouvea, D. F. A. Costa, A. V. Pires, M. G. M. F. Santos, and F. A. P. Santos, *University of Sao Paulo*, *Piracicaba, Sao Paulo, Brazil*.

T271 **Interactions between grazing management and a low level of energy supplementation in beef cattle.**
L. R. D. Agostinho Neto[1], J. R. R. Dorea*[1], V. N. Gouvea[1], D. F. A. Costa[1], A. V. Pires[1], L. G. R. Pereira[2], and F. A. P. Santos[1], [1]*University of Sao Paulo*, *Piracicaba, Sao Paulo, Brazil*, [2]*Empresa Brasileira de Pesquisa Agropecuaria*, *Juiz de Fora, Minas Gerais, Brazil*.

Growth and Development I

T272 **Effects of resistant starch in milk replacer on fecal volatile fatty acids and pH and performance in neonatal Holstein calves.**
C. C. Williams*, B. F. Jenny, B. L. Fisher, A. H. Dolejsiova, E. L. Chartier, and E. Eckelkamp, *LSU AgCenter*, *Baton Rouge, LA*.

T273 **Effects of a simplified feeding program on growth and rumen development of dairy calves.**
C. Julien*[1,2], B. Gestes[1,2], C. Lacroux[3], C. Bayourthe[1,2], and F. Enjalbert[1,2], [1]*INRA, UMR*, *Castanet-Tolosan, France*, [2]*Université de Toulouse, INPT ENSAT, INP-ENVT, UMR1289 TANDEM*, *Castanet-Tolosan, France*, [3]*UMR INRA ENVT 1225, Interactions Hôte Agent Pathogène, Ecole Nationale Vétérinaire de Toulouse*, *Toulouse, France*.

T274 **Comparison of planes of nutrition on growth performance and rumen papillae development of dairy calves.**
J. A. Davidson*[1], B. L. Miller[1], H. C. Puch[1], T. J. Earleywine[2], K. M. O'Diam[3], and K. M. Daniels[3], [1]*Purina Animal Nutrition Center*, *Gray Summit, MO*, [2]*Land O'Lakes Animal Milk Products*, *Shoreview, MN*, [3]*Ohio Agricultural Research and Development Center, The Ohio State University*, *Wooster*.

T275 **Whole oats effects on digestive system development in neonatal dairy calves.**
F. X. Suarez-Mena*[1], A. J. Heinrichs[1], T. M. Hill[2], and C. M. Jones[1], [1]*The Pennsylvania State University*, *University Park*, [2]*Nurture Research Center, Provimi North America*, *Lewisburg, OH*.

T276 **Puberty attainment is affected by growth performance before 4 mo of age in dairy heifers.**
V. Lollivier[1,2], F. Dessauge[1], M. Boutinaud*[1], and Y. Le Cozler[1,2], [1]*INRA UMR1348 PEGASE*, *Saint Gilles, France*, [2]*Agrocampus Ouest, UMR1348 PEGASE*, *Rennes, France*.

T277 **The effect of various dilutions, milk replacer dry matter, and volume amounts on calf growth and performance.**
T. J. Earleywine, B. L. Miller, W. S. Bowen Yoho*, and T. E. Johnson, *Land O' Lakes, Inc.*, *Webster City, IA*.

T278 **The effect of varying fatty acid profile on growth and performance of calves fed milk replacer.**
B. L. Miller*, T. J. Earleywine, W. S. Bowen Yoho, and T. E. Johnson, *Land O' Lakes Inc.*, *Webster City, IA*.

T279 **Efficiency of IgG absorption in fresh or pasteurized colostrum of various qualities.**
S. L. Gelsinger*, C. M. Jones, and A. J. Heinrichs, *The Pennsylvania State University*, *State College*.

T280 **Performance of crossbred Holstein bull and heifer calves slaughtered 8-month old.**
M. Vestergaard*[1], P. Spleth[2], A. Mikkelsen[3], C. F. Børsting[3], and M. Kargo[1,2], [1]*Aarhus University*, *Foulum, Denmark*, [2]*Knowledge Centre Agriculture*, *Aarhus, Denmark*, [3]*Cattle Research Centre*, *Tjele, Denmark*.

T281 **Comparison of two nutritional programs from birth to 84 d of age in Holstein steers: Body composition, body weight, and stature.**
K. M. Daniels*[1], K. M. O'Diam[1], C. J. O'Diam[1], T. J. Earleywine[2], H. C. Puch[3], B. L. Miller[3], and J. A. Davidson[3], [1]*Department of Animal Sciences, Ohio Agricultural Research and Development Center, The Ohio State University*, *Wooster*, [2]*Land O'Lakes Animal Milk Products Co*, *Shoreview, MN*, [3]*Purina Animal Nutrition Center*, *Gray Summit, MO*.

Dairy Foods: Microbiology I

T282 **Survival of *Bifidobacterium animalis* ssp. *lactis* BB-12 in yogurt drink is influenced by timing of probiotic addition.**
Z. Ba*, E. J. Furumoto, and R. F. Roberts, *Department of Food Science, Pennsylvania State University*, *University Park*.

T283 **Pectin-whey protein microparticles containing probiotics: Release and survival of *Lactobacillus acidophilus* La5 in simulated gastrointestinal conditions.**
C. Gebara, K. S. Chaves, M. C. E. Ribeiro, F. N. Souza, C. R. F. Grosso, and M. L. Gigante*, *University of Campinas*, *Campinas, SP/Brazil*.

T284 **Influence of some medicinal spices on the bile tolerance of *Streptococcus thermophilus* ST-M5.**
M. Sanchez-Vega*[1] and K. Aryana[1,2], [1]*School of Animal Sciences, Louisiana State University Agricultural Center*, *Baton Rouge*, [2]*Department of Food Science, Louisiana State University Agricultural Center*, *Baton Rouge*.

T285 **Effect of month on the composition and quality of milk from Holstein cows in a hot-arid environment.**
J. Méndez*[1], M. Mellado[1], F. G. Véliz[1], M. A. de Santiago[1], J. E. García[1], and A. Zúñiga[1], [1]*Autonomous Agrarian University Antonio Narro*, *Saltillo, Mexico*, [2]*Autonomous Agrarian University Antonio Narro*, *Torreon, Mexico*.

T286 **Development of a pilot test system for demonstration and evaluation of CIP cleaning.**
Y. Yu* and R. F. Roberts, *Department of Food Science, The Pennsylvania State University*, *University Park*.

T287 **Development of a fresh cheese model to evaluate novel antilisterials.**
M. L. Van Tassell*[1], L. Vazquez-Portalatin[2], S. R. Takhar[1], and M. J. Miller[1], [1]*University of Illinois at Urbana-Champaign*, *Urbana*, [2]*University of Puerto Rico at Mayaguez*, *Mayaguez*.

T288 **Antimicrobial susceptibility profile and toxigenic genes detection in *Staphylococcus* spp. samples isolated from Brazilian artisanal cheeses.**
D. L. S. Oliveira[1], L. S. Carmo[2], L. B. Acurcio[1], R. D. Castro[1], F. M. Sant'Anna[1], C. F. A. M. Penna[1], M. O. Leite[1], L. M. Fonseca[1], S. H. C. Sandes[3], A. M. Silva[4], M. M. O. P. Cerqueira*[1], and M. R. Souza[1], [1]*Departmento de Tecnologia e Inspecao de Produtos de Origem Animal, Escola de Veterinaria, Universidade Federal de Minas Gerais*, *Belo Horizonte, Minas Gerais, Brazil*, [2]*Fundacao Ezequiel Dias*, *Belo Horizonte, Minas Gerais, Brazil*, [3]*Departamento de Genetica, Instituto de Ciencias Biologicas, Universidade Federal de Minas Gerais*, *Belo Horizonte, Minas Gerais, Brazil*, [4]*Universidade Federal de Sao Joao Del Rey*, *Sete Lagoas, Brazil*.

T289 **Analysis of a genetically distinct strain of the monomorphic subspecies *Bifidobacterium animalis* ssp. *lactis,* the complete genome of *Bifidobacterium animalis* ssp. *lactis* ATCC 27673.**
J. R. Loquasto*[1], R. Barrangou[1,2], E. G. Dudley[1], B. Stahl[2], and R. F. Roberts[1], [1]*Department of Food Science, Penn State University*, *University Park*, [2]*DuPont Danisco USA Inc.*, *Madison, WI*.

T290 **Microbiological quality of nonfat dry milk and skim milk powder produced in the United States.**
A. K. A. Ali*, K. E. Smith, K. J. Burrington, and J. A. Lucey, *Wisconsin Center for Dairy Research, University of Wisconsin–Madison*, *Madison*.

T292 **Development of a rapid SNP-typing assay to differentiate *Bifidobacterium animalis* ssp. *lactis* strains used in probiotic-supplemented dairy products.**
S. Lomonaco*[2], E. J. Furumoto[1], J. R. Loquasto[1], P. Morra[2], and R. F. Roberts[1], [1]*Department of Food Science, Penn State University*, *University Park*, [2]*Dipartimento di Scienze Veterinarie Università degli Studi di Torino*, *Grugliasco TO, Italy*.

Nonruminant Nutrition: Amino Acids and Energy
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T293 **The National Animal Nutrition Program.**
G. L. Cromwell*[1], T. J. Applegate[2], D. C. Beitz[3], M. L. Galyean[4], M. B. Hall[5], M. D. Hanigan[6], J. Odle[7], W. P. Weiss[8], and C. K. Baer[9], [1]*University of Kentucky*, *Lexington*, [2]*Purdue University*, *West Lafayette, IN*, [3]*Iowa State University*, *Ames*, [4]*Texas Tech University*, *Lubbock*, [5]*USDA/ARS*, *Madison, WI*, [6]*Virginia Tech University*, *Blacksburg*, [7]*North Carolina State University*, *Raleigh*, [8]*The Ohio State University*, *Columbus*, [9]*U.S. Department of Agriculture*, *Washington, DC*.

T294 **The National Animal Nutrition Program: Feed composition committee.**
P. S. Miller*[1], R. N. Dilger[2], W. P. Dozier[3], M. B. Hall[4], A. N. Hristov[5], V. R. Moreira[6], M. L. Nelson[7], N. R. St-Pierre[8], and W. P. Weiss[9], [1]*University of Nebraska*, *Lincoln*, [2]*University of Illinois*, *Urbana-Champaign*, [3]*Auburn University*, *Auburn, AL*, [4]*USDA/ARS*, *Madison, WI*, [5]*Pennsylvania State University*, *University Park*, [6]*Louisiana State University*, *Baton Rouge*, [7]*Washington State University*, *Pullman*, [8]*The Ohio State University*, *Columbus*, [9]*The Ohio State University*, *Wooster*.

T295 **Accuracy of predicting digestible energy of corn for growing pigs from various data sources.**
R. Allen, A. Hassen*, B. Smith, M. Hinds, C. Iiams, D. Rice, D. Sevenich, F. Owens, D. Jones, and T. Sauber, *DuPont Pioneer*, *Johnston, IA*.

T296 **Energy and amino acid digestibility of camelina meal fed to finishing pigs.**
R. K. Kahindi*[1], T. A. Woyengo[2], P. A. Thacker[3], and C. M. Nyachoti[1], [1]*University of Manitoba*, *Winnipeg, MB, Canada*, [2]*University of Alberta*, *Edmonton, AB, Canada*, [3]*University of Saskatchewan*, *Saskatoon, SK, Canada*.

T297 **Effect of levels of digestible lysine and ractopamine on the performace of castrated pigs from 70 to 97 kg.**
D. O. Fontes*[1], I. S. Fernandes[1], D. M. S. Junior[1], L. P. O. Souza[1], B. O. Rosa[1], I. J. Silva[1], A. P. L. Brustolini[1], V. S. Cantarelli[1,2], and G. M. Salum[1], [1]*Federal University of Minas Gerais*, *Belo Horizonte, Minas Gerais, Brazil*, [2]*Federal University of Lavras*, *Lavras, Minas Gerais, Brazil*.

T298 **Determination of digestible and metabolizable energy concentrations in oilseed meals fed to growing pigs.**
A. R. Son* and B. G. Kim, *Konkuk University*, *Seoul, Republic of Korea*.

T299 **Energy value of dried distillers grains with solubles and oilseed meals for pigs.**
C. Kong* and O. Adeola, *Purdue University*, *West Lafayette, IN*.

T300 **Amino acid digestibility in copra expeller and palm kernel expeller by growing pigs.**
A. R. Son*[1], Y. Hyun[2], J. K. Htoo[3], and B. G. Kim[1], [1]*Konkuk University*, *Seoul, Republic of Korea*, [2]*Farm Story Dodram B&F*, *Seoul, Republic of Korea*, [3]*Evonik Industries AG*, *Hanau, Germany*.

T301 **Digestible tryptophan:lysine ratios and different protein sources in diets for barrows from 70 to 95 kg.**
C. Pereira[1], M. Hannas*[1], H. Rostagno[1], L. Albino[1], R. Rodrigueiro[2], J. Htoo[3], and J. Barrera[4], [1]*Federal University of Viçosa*, *Viçosa, Minas Gerais, Brazil*, [2]*Evonik Industries, Health & Nutrition, Animal Nutrition Services*, *São Paulo, São Paulo, Brazil*, [3]*Evonik Industries AG, Health & Nutrition, Animal Nutrition Services*, *Hanau-Wolfgang, Germany*, [4]*University of Tolima*, *Tolima, Peru*.

T302 **Digestible lysine and methionine + cystine levels on breast meat quality of broilers at 21 days old.**
C. H. F. Domingues*[1,3], K. F. Duarte[2,3], E. T. Santos[3], D. M. C. Castiblanco[3], T. C. O. Quadros[3], S. Sgavioli[3], J. C. R. Alva[3], T. G. Petrolli[3], O. M. Junqueira[4], and J. D. Messana[2,3], [1]*Fundacao de Amparo a Pesquisa do Estado de Sao Paulo FAPESP*, *Sao Paulo, SP, Brazil*, [2]*Coordenacao e Aperfeicoamento de Pessoal de Nivel Superior CAPES/PNPD*, *Brasilia, DF, Brazil*, [3]*Universidade Estadual Paulista Julio de Mesquita Filho*, *Jaboticabal, SP, Brazil*, [4]*Universidade Federal de Goias*, *Jatai, GO, Brazil*.

T303 **Determination of optimum amino acid to calorie ratio for grower and finisher pigs.**
A. Hassen*, B. Smith, C. Iiams, D. Rice, F. Owens, D. Jones, and T. Sauber, *DuPont Pioneer*, *Johnston, IA*.

T304 **Digestible tryptophan:lysine ratios and different protein sources in diets for barrows from 30 to 65 kg.**
C. Pereira[1], M. Hannas*[1], H. Rostagno[1], L. Albino[1], R. Rodrigueiro[2], J. Htoo[3], and G. Viana[1], [1]*Federal University of Viçosa*, *Viçosa, Minas Gerais, Brazil*, [2]*Evonik Industries, Health & Nutrition, Animal Nutrition Services*, *São Paulo, São Paulo, Brazil*, [3]*Evonik Industries AG, Health & Nutrition, Animal Nutrition Services*, *Hanau-Wolfgang, Germany*.

T305 **Oral administration of amino acids as energy sources for newborn piglets.**
N. E. Manzke[1], L. B. Scapini[2], W. Loyola[3], M. Kutschenko[4], J. M. Fontana[5], E. T. Nogueira[4], E. G. Xavier[1], A. Coldebella[3], and G. J. M. M. Lima*[3], [1]*Universidade Federal de Pelotas*, *Pelotas, RS, Brazil*, [2]*Universidade Federal do Parana*, *Palotina, PR, Brazil*, [3]*EMBRAPA*, *Concordia, SC, Brazil*, [4]*Ajinomoto*, *Sao Paulo, SP, Brazil*, [5]*Granja Fontana*, *Charrua, RS, Brazil*.

T306 **Effect of dietary lysine to energy ratio on growth performance and sensory characteristics of indigenous Venda chickens.**
O. J. Alabi*, J. W. Ng'ambi, and D. Norris, *University of Limpopo*, *Mankweng, Polokwane, South Africa*.

T307 **Evaluation of dietary glutamic acid plus glutamine levels on the growth performance of piglets.**
D. Lescano[1], L. Albino[1], M. Hannas[1], S. Salguero[1], M. Kutschenko[2], E. Nogueira[2], and H. Rostagno*[1], [1]*Federal University of Viçosa*, *Viçosa, MG, Brazil*, [2]*Ajinomoto of Brazil Ajinomoto Animal Nutrition*, *São Paulo, SP, Brazil*.

T308 **Effect of different space allocation and energy levels on growth performance and nutrient digestibility in growing-finishing pigs.**
J. Li, J. P. Lee, and I. H. Kim*, *Department of Animal Resource & Science, Dankook University*, *Cheonan, Choognam, South Korea*.

Nonruminant Nutrition: Vitamins and Minerals

T309 **Effect of vitamin E supplementation on its hepatic concentration in broiler chicken.**
M. A. Pompeu*[1], N. C. Baião[1], L. J. C. Lara[1], V. M. Barbosa[3], J. S. R. Rocha[1], P. C. Cardeal[1], R. C. Andrade[1], C. E. Cunha[1], C. W. R. Gondim[1], and L. F. L. Cavalcanti[1,2], [1]*Universidade Federal de Minas Gerais*, *Belo Horizonte, Minas Gerais, Brazil*, [2]*Texas A&M*, *College Station*, [3]*Universidade Federal da Bahia*, *Salvador, Bahia, Brazil*.

T313 **Effects of a dietary antioxidant blend and vitamin E on growth performance and meat quality in broilers fed a high oxidants diet.**
T. Lu*[1], R. A. Dalloul[1], J. Zhao[2], and A. F. Harper[1], [1]*Virginia Tech*, *Blacksburg*, [2]*Novus International Inc.*, *St. Charles, MO*.

T314 **Pig bone trait responses to maternal vitamin D intake depend on nursery diet vitamin D and P concentrations.**
L. A. Rortvedt-Amundson* and T. D. Crenshaw, *University of Wisconsin-Madison*, *Madison*.

T315 **True total-tract digestibility of P in monocalcium phosphate for 15- and 25-kg pigs.**
H. Zhai* and O. Adeola, *Purdue University*, *West Lafayette, IN*.

Physiology and Endocrinology I

T316 **Effects of supplementation with different PUFA during the postpartum periods influence ovarian follicle size and number in lactating dairy cows.**
E. Dirandeh*[1], A. Towhidi[1], Z. Ansari Pirsaraei[2], M. Ganjkhanlou[1], S. Zeinoaldini[1], T. Saberifar[1], A. Rezaei Roodbari[1], M. A. Roodbari Shahmiri[3], and A. R. Zarenezhad[3], [1]*University of Tehran*, *Karaj, Alborz, Iran*, [2]*Sari Agricultural Sciences & Natural Resources University*, *Sari, Mazandaran, Iran*, [3]*Mahdasht Milk & Meat Company*, *Sari, Mazandaran, Iran*.

T317 **Feeding n-6 fatty acids during 40 dpp and shift to n-3 fatty acids from 40 to 120 dpp can improve fertility in lactating dairy cows.**
E. Dirandeh*[1], A. Towhidi[1], Z. Ansari Pirsaraei[2], M. Ganjkhanlou[1], S. Zeinoaldini[1], A. Rezaei Roodbari[3], M. A. Roodbari Shahmiri[3], and A. R. Zarenezhad[3], [1]*University of Tehran*, *Karaj, Alborz, Iran*, [2]*Sari Agricultural Sciences & Natural Resources University*, *Sari, Mazandaran, Iran*, [3]*Mahdasht Milk & Meat Company*, *Sari, Mazandaran, Iran*.

T318 **Presynchronization with PGF2a and GnRH on the same day, 7 d prior to Ovsynch, allowed for similar pregnancies/AI compared with Presynch-10/Ovsynch.**
J. P. Martins*[1], M. J. T. Acevedo[1], T. O. Cunha[1], C. Piterini[1], M. R. Yousuf[1], K. Nobis[2], and J. R. Pursley[1], [1]*Department of Animal Science, Michigan State University*, *East Lansing*, [2]*Nobis Dairy Farm*, *St. Johns, MI*.

T319 **Effect of cloprostenol during early corpora lutea development on circulating concentrations of progesterone in breeding age dairy heifers.**
J. P. Martins*, M. J. T. Acevedo, C. Piterini, T. O. Cunha, and J. R. Pursley, *Department of Animal Science, Michigan State University*, *East Lansing*.

T320 **Comparison of 200 µg of GnRH versus 1000 IU hCG in Beefmaster and Brahman Cattle using an Ovsynch protocol.**
C. E. Ferguson*[1], G. Richey[1], A. McDuff[1], and D. J. Kesler[2], [1]*McNeese State University*, *Lake Charles, LA*, [2]*University of Illinois*, *Champaign-Urbana*.

T321 **Effect of prostaglandin F2α on growth of *Mycoplasma bovis* associated with bovine mastitis.**
A. Ahmadzadeh*[1], L. Fox[2], M. McGuire[1], and K. Carnahan[1], [1]*University of Idaho*, *Moscow*, [2]*Washington State University*, *Pullman*.

T322 **Inclusion of bovine somatotropin in fixed-time AI protocols for *Bos indicus* beef cows.**
J. P. Albuquerque[1], R. F. Cooke[2], H. P. Dias[1], I. C. Bueno[1], A. D. P. Rodrigues[1], and J. L. M. Vasconcelos*[1], [1]*UNESP - Faculdade de Medicina Veterinária e Zootecnia*, *Botucatu, São Paulo, Brazil*, [2]*Oregon State University, Eastern Oregon Agricultural Research Center*, *Burns*.

T325 **Establishment of primary culture of omasal epithelial cells from newborn calves and detection of function for peptide absorption.**
Q. B. Xu*[1,2], H. Y. Liu[1,2], Y. M. Xie[1,2], Y. M. Wu[1,2], and J. X. Liu[1,2], [1]*Institute of Dairy Science, College of Animal Sciences*, *Hangzhou, China*, [2]*MoE Key Laboratory of Molecular Animal Nutrition, Zhejiang University*, *Hangzhou, China*.

T326 **Prepartum supplementation of beef cows: Hepatic and muscle gene expression of the offspring at weaning.**
M. Carriquiry*[1], J. Laporta[1], F. Pereyra[1], A. Astessiano[1], G. Quintans[2], and R. Perez-Clariget[1], [1]*Facultad de Agronomia, UDELAR*, *Montevideo, Uruguay*, [2]*Instituto Nacional de Investigaciones Agropecuarias*, *Treinta y Tres, Uruguay*.

T327 **Morphometry of the tubular compartment in insulated boar testis.**
K. Yagoda*[1], F. Melo[2], and J. Parrish[1], [1]*University of Wisconsin-Madison*, *Madison*, [2]*Federal University of Goias Campus Jatai*, *Jatai, Goias, Brazil*.

T328 **Impact of increased oxidative stress through excessive accumulation of adipose tissue on circulating adiponectin concentrations in dairy cows.**
S. Häussler*[1], S. P. Singh[1], L. Laubenthal[1], L. Locher[3], J. Winkler[2], U. Meyer[2], S. Dänicke[2], and H. Sauerwein[1], [1]*Institute of Animal Science, Physiology and Hygiene Group, University of Bonn*, *Bonn, Germany*, [2]*Institute of Animal Nutrition, Friedrich-Loeffler-Institute (FLI)*, *Braunschweig, Germany*, [3]*University of Veterinary Medicine, Foundation*, *Hannover, Germany*.

T329 **The effect of heat stress on lipolytic response of bovine primary adipocytes.**
M. P. Faylon*[1], L. H. Baumgard[1], R. P. Rhoads[2], and D. M. Spurlock[1], [1]*Iowa State University of Science and Technology*, *Ames*, [2]*Virginia Polytechnic Institute and State University*, *Blacksburg*.

T330 **Once-daily milking during a feed restriction does not alter transcription of key lipid metabolism genes in adipose tissue of grazing dairy cows.**
T. M. Grala[1], J. R. Roche[1], C. V. C. Phyn[1], A. G. Rius[1], R. H. Boyle[1], R. G. Snell[2], and J. K. Kay*[1], [1]*DairyNZ*, *New Zealand*, [2]*University of Auckland*, *New Zealand*.

T331 **GPR109A mRNA abundance in two different fat depots of dairy cattle considering nicotinic acid and transition period related changes.**
P. Friedrichs[1], L. Locher[2], K. Huber[2], S. Dänicke[3], H. Sauerwein*[1], and M. Mielenz[1,4], [1]*Institute of Animal Science, Physiology & Hygiene Unit, University of Bonn*, *Bonn, Germany*, [2]*Department of Physiology, University of Veterinary Medicine*, *Hannover, Germany*, [3]*Institute of Animal Nutrition, Friedrich-Loeffler-Institute (FLI), Federal Research Institute for Animal Health*, *Braunschweig, Germany*, [4]*Leibniz Institute for Farm Animal Biology (FBN), Department of Nutritional Physiology*, *Dummerstorf, Germany*.

T332 **Evaluation of the IDEXX pregnancy detection assay for milk samples.**
B. Lawson*[1], D. Ray[1], K. Velek[2], E. Martel[2], R. Linscott[2], P. McCoy[1], M. Tate[1], J. Lawrence[2], and W. Silvia[1], [1]*University of Kentucky*, *Lexington*, [2]*IDEXX Laboratories Inc.*, *Westbrook, ME*.

T333 **Gestational form of supplemental selenium (Se) affects gene expression in the newborn calf testis. II. Spermatogenesis.**
C. R. Skees*, P. J. Bridges, J. D. Patterson, and J. C. Matthews, *Department of Animal and Food Sciences, University of Kentucky*, *Lexington*.

T334 **Effect of implants on steroidogenic capacity of bovine granulosa cells.**
A. D. Stapp*[1], C. A. Gifford[1], K. B. Parker[1], B. I. Gómez[1], D. M. Hallford[2], and J. A. Hernandez Gifford[1], [1]*Oklahoma State University*, *Stillwater*, [2]*New Mexico State University*, *Las Cruces*.

T335 **Effects of heat stress and plane of nutrition on liver insulin responsiveness in lactating cows.**
G. Xie*[3], M. V. Skrzypek[1], S. R. Sanders[1], L. H. Baumgard[2], and R. P. Rhoads[3], [1]*University of Arizona*, *Tucson*, [2]*Iowa State University*, *Ames*, [3]*Virginia Tech University*, *Blacksburg*.

T336 **Progesterone, TNF-α, IGF-1, and PGF2α concentrations in blood plasma of beef cows within 14 days after transfer of embryos.**
J. Copeland*[1], J. Batton[1], E. J. Cuadra[1], T. H. Elsasser[2], B. Johnson[3], J. E. Larson[4], M. C. Mason[1], and J. Yoonsung[5], [1]*Alcorn State University, Alcorn State, MS*, [2]*USDA-ARS, Bovine Functional Genomics Laboratory, Beltsville, MD*, [3]*Coastal Plain Branch Experiment Statio, Newton, MS*, [4]*Mississippi State University, Mississippi State*, [5]*Prairie View A&M University, Prairie View, TX*.

T337 **Effect of an essential fatty acid (EFA)-deficient diet on luteal and uterine function in pseudopregnant (PSP) rats and prostaglandins (PG) E1, E2, and F2a (PGF2a, PGE1; PGE2) in nonpregnant (NP) and pregnant (P) ewes.**
C. W. Weems*[1], Y. S. Weems[1], and R. R. Magness[2], [1]*Dept. of Human Nutrition, Food, and Animal Sciences, University of Hawaii, Honolulu*, [2]*Dept. of Obstetrics and Gynecology, University of Wisconsin, Madison*.

T338 **Effects of FSH stimulation on β-catenin accumulation in bovine granulosa cells.**
K. B. Parker*[1], C. A. Gifford[1], A. D. Stapp[1], B. I. Gomez[1], D. M. Hallford[2], and J. A. Hernandez Gifford[1], [1]*Department of Animal Science, Oklahoma State University*, *Stillwater, OK, USA*, [2]*Department of Animal and Range Sciences, New Mexico State University*, *Las Cruces, NM, USA*.

T339 **Combined effect of cytological endometritis and cyclicity on fertility of dairy cows.**
A. Vieira-Neto*[2], W. R. Butler[3], R. O. Gilbert[3], and K. N. Galvão[1], [1]*University of Florida*, *Gainesville*, [2]*Universidade do Estado de Santa Catarina*, *Lages, SC, Brazil*, [3]*Cornell University*, *Ithaca, NY*.

T340 **Effect of propionate, palmitate and insulin on chemerin gene expression in monolayer cultures of bovine hepatocytes.**
S. G. Roh*[1], S. Kitayama[1], Y. Suzuki[1], K. H. So[1], K. J. Yi[1], E. Yamauchi[1], S. Haga[2], and K. Katoh[1], [1]*Lab of Animal Physiology, Graduate School of Agriculture Science, Tohoku University*, *Sendai, Miyagi-ken, Japan*, [2]*NARO Institute of Livestock and Grassland Science*, *Japan*.

T341 **Gene expression in Holstein bull testicular testis after scrotal insulation.**
J. R. Schindler* and J. J. Parrish, *University of Wisconsin*, *Madison*.

T342 **Effect of induction of ovulation, early in lactation, on uterine health and fertility in dairy cows.**
J. H. Bittar*[1], P. Pinedo[3], K. E. Hencken[1], C. C. Barbosa[1], M. Gobikrushanth[1], S. Croyle[1], C. A. Risco[1], A. Vieira-Neto[2], J. E. Santos[1], and K. N. Galvão[1], [1]*University of Florida*, *Gainesville*, [2]*Universidade do Estado de Santa Catarina*, *Lages, SC, Brazil*, [3]*Texas A&M University*, *Amarillo*.

T343 **Temporal gene expression profiling of liver from peripartal dairy cows during spring and summer.**
H. Akbar[1], U. Bernabucci[2], L. Basiricò[2], P. Morera[2], and J. J. Loor*[1], [1]*University of Illinois*, *Urbana*, [2]*Università degli Studi della Tuscia*, *Viterbo, Italy*.

T344 **Chronic uterine infusion of melatonin or melatonin receptor antagonist during mid-gestation alters ovine placental nitrites and superoxide dismutase activity.**
K. E. Brockus*[1], L. E. Camacho[2], K. A. Vonnahme[2], and C. O. Lemley[1], [1]*Mississippi State University*, *Mississippi State*, [2]*North Dakota State University*, *Fargo*.

T345 **Follicular dynamics in Holstein heifers subjected to 5-d protocols to synchronize ovulation.**
H. Ayres*[1,3], L. M. Vieira[1], R. M. Ferreira[1], E. O. S. Batista[1], R. V. Sala[1], J. P. Barbuio[3], F. P. Rennó[1], J. E. P. Santos[2], and P. S. Baruselli[1], [1]*Department of Animal Reproduction, University of São Paulo*, *São Paulo, Brazil*, [2]*Department of Animal Sciences, University of Florida*, *Gainesville*, [3]*MSD Animal Health*, *São Paulo, Brazil*.

T346 **Associations between plasma anti-Müllerian hormone (AMH) and fertility responses of seasonally calving grazing dairy cows.**
E. S. Ribeiro*[1], R. L. A. Cerri[2], R. S. Bisinotto[1], F. S. Lima[1], L. F. Greco[1], A. Morrison[3], A. Kumar[3], W. W. Thatcher[1], and J. E. P. Santos[1], [1]*Department of Animal Sciences, University of Florida*, *Gainesville*, [2]*Department of Land and Food Systems, University of British Columbia*, *Vancouver, BC, Canada*, [3]*Ansh Labs Inc.*, *Webster, TX*.

T347 **Comparison of four methods to determine pregnancy success in beef cattle.**
G. A. Perry*[1], M. F. Smith[2], and K. G. Pohler[2], [1]*Department of Animal Science*, *South Dakota State University, Brookings*, [2]*Division of Animal Science, University of Missouri*, *Columbia*.

T348 **The relation of two apoptosis-related proteins (bax and bcl-2) to adipocyte cell size in bovine adipose tissue.**
D. Germeroth[1], M. Steyer[2], T. Ettle[3], M. Rodehutscord[2], H. Sauerwein[1], and S. Häussler*[1], [1]*Institute of Animal Science, Physiology and Hygiene Group, University of Bonn*, *Bonn, Germany*, [2]*Institute of Animal Nutrition, University of Hohenheim*, *Hohenheim, Germany*, [3]*Bavarian State Research Center for Agriculture, Institute of Animal Nutrition and Feed Management*, *Grub, Germany*.

T349 **Niacin increases adiponectin secretion in differentiated bovine preadipocytes in vitro via G-protein coupled receptor 109A.**
C. Kopp[1], S. P. Singh[1], H. Sauerwein*[1], and M. Mielenz[2], [1]*Institute of Animal Science, Physiology & Hygiene Unit, University of Bonn*, *Bonn, Germany*, [2]*Leibniz Institute for Farm Animal Biology (FBN), Department of Nutritional Physiology*, *Dummerstorf, Germany*.

T350 **Effect of storage time on the viability of cryopreserved bovine spermatozoa.**
A. I. Gallegos*[1], S. A. Ericsson[1], H. D. Blackburn[2], S. F. Spiller[2], B. J. Warnock[1], M. K. Meador[1], M. W. Smith[1], and P. H. Purdy[2], [1]*Sul Ross State University*, *Alpine, TX*, [2]*USDA-ARS-National Animal Germplasm Program*, *Fort Collins, CO*.

T351 **Effect of exogenous eCG during the first or second service during the Ovsynch protocol upon the pregnancy per insemination of lactating Holstein cows.**
K. G. Gonzalez-Garcia*[1], C. Leyva[1], C. A. Cancino[1], J. L. Morales[1], M. Mellado[2], F. G. Veliz[2], and C. A. Meza-Herrera[3], [1]*Universidad Autonoma Agraria Antonio Narro Unidad Laguna*, *Torreon, Coahuila, Mexico*, [2]*Universidad Autonoma Agraria Antonio Narro*, *Saltillo, Coahuila, Mexico*, [3]*Universidad Autonoma Chapingo, URUZA*, *Bermejillo, Durango, Mexico*.

T352 **Visual analytics of bovine nutriphysiogenomics datasets.**
M. J. Khan*[1], M. Welge[1,2], C. Bushell[1,2], M. Berry[1,2], L. Gatzke[1,2], and J. J. Loor[1], [1]*University of Illinois*, *Urbana*, [2]*National Center for Supercomputing Applications*, *Urbana, IL*.

Production, Management and the Environment: Diet and Forage

T353 **Effect of vitamin E and R-carnitine on beef cattle finishing performance and profitability.**
E. Ponce-Cruz[1], J. R. Garduño-Juárez[1], G. Aranda-Osorio*[1], O. Hernandez-Mendo[2], J. C. Garcia-Ortiz[1], M. Cordoba-Alvarez[1], and J. M. Monzon Armenta[1], [1]*Universidad Autonoma Chapingo*, *Texcoco, Mexico*, [2]*Colegio de Postgraduados*, *Montecillo, Mexico*.

T354 **Influence of prepartum dietary energy on cow and progeny performance.**
T. B. Wilson*, D. B. Faulkner, and D. W. Shike, *University of Illinois*, *Urbana-Champaign*.

T355 **Effect of ration composition on income over feed cost and milk yield.**
M. H. Buza*, L. A. Holden, R. A. White, and V. A. Ishler, *The Pennsylvania State University*, *University Park*.

T356 **Evaluation of Kemtrace brand chromium propionate on milk production by Holstein cows under heat stress conditions in Pennsylvania.**
J. Ferguson*, *University of Pennsylvania*, *Kennett Square*.

T357 **Evaluation of KemTRACE brand chromium propionate on reproductive performance of Holstein cows in Pennsylvania.**
J. Ferguson*, *University of Pennsylvania*, *Kennett Square*.

T358 **Supplementation with soybean oil increases milk fat and improves milk fatty acid profile in heat-stressed dairy goat.**
S. Hamzaoui*[1], A. A. K. Salama[1,2], G. Caja[1], E. Albanell[1], and X. Such[1], [1]*Group of Ruminant Research (G*, *Bellaterra, Spain*, [2]*Animal Production Research Institute*, *Dokki, Giza, Egypt*.

T359 **Effects of dietary sea urchin shell powder supplementation on growth performance and ammonia emissions in broilers.**
C. M. Kim[1], S. C. Kim[2], S. M. Amanullah[2], D. H. Kim[3], H. J. Lee[3], J. H. Choi[4], and I. H. Choi*[5], [1]*Division of Science Education, Chemistry Education Major, Daegu University*, *Gyeongsan, South Korea*, [2]*Department of Animal Science (Inst. Agric. & Life Sci.), Gyeongsang National University*, *Jinju, South Korea*, [3]*Division of Applied Life Science (BK*, *Jinju, South Korea*, [4]*Department of Chemistry, Hanyang University*, *Seoul, South Korea*, [5]*Department of Companion Animal & Animal Resources Science, Joongbu University*, *Geumsan, South Korea*.

T360 **Effect of oral supplementation with colostrum and cross-fostering on gilt's litter performance focused on low birth weight piglets.**
R. Muns*[1], C. Silva[2], X. Manteca[1], and J. Gasa[1], [1]*Servei de Nutrició i Benestar Animal (SNiBA), Departament de Ciència Animal i dels Aliments, Universitat Autònoma de Barcelona*, *Barcelona, Catalonia, Spain*, [2]*Departamento de Zootecnia, Universidade Estadual de Londrina*, *Londrina, Paraná, Brazil*.

T361 **Forage intake by grazing lactating cows kept in creep-feeding system.**
V. R. M. Couto*[1], M. F. Paulino[2], N. F. De Paula[2], E. Detmann[2], S. C. Valadares Filho[2], I. M. De Oliveira[2], I. F. S. Maciel[2], C. H. A. Cabral[2], E. Arnhold[1], and J. J. R. Fernandes[1], [1]*Universidade Federal de Goias*, *Goiania, Goias, Brazil*, [2]*Universidade Federal de Vicosa*, *Vicosa, Minas Gerais, Brazil*.

T362 **Heart rate and energy expenditure in pure and crossbred beef cows grazing two allowances of native pastures in Uruguay.**
A. Espasandin*[1], P. Batista[1], P. Soca[1], M. do Carmo[2], and M. Carriquiry[1], [1]*School of Agronomy, Udelar*, *Paysandu, Uruguay*, [2]*INIA-Tacuarembo*, *Tacuarembo, Uruguay*.

T363 **Effect of forage allowance on individual and per area production of primiparous beef cows grazing Campos native pastures.**
M. Claramunt[1], M. Carriquiry[3], and P. Soca*[2], [1]*Facultad de Veterinaria, Universidad de la Republica*, *Paysandu, Uruguay*, [2]*Facultad de Agronomia, Universidad de la Republica*, *Paysandu, Uruguay*, [3]*Facultad de Agronomia*, *Montevideo, Uruguay*.

T364 **Natural occurrence of mycotoxins and toxigenic fungi on corn and sorghum silage in Sao Paulo State, Brazil.**
C. A. R. Rosa*[1,2], L. A. K. Keller[1,2], M. Aronovich[3], and L. R. Cavaglieri[4], [1]*University Federal Rural of Rio de Janeiro (UFRRJ)*, *Seropédica, RJ, Brazil*, [2]*Conselho Nacional de Pesquisas Científicas (CNPq)*, *Belo Horizonte, MG, Brazil*, [3]*Agricultural Development Company of the Rio de Janeiro State (PESAGRO)*, *Niteroi, RJ, Brazil*, [4]*Universidad Nacional de Río Cuarto (UNRC)*, *Rio Cuarto, Cordoba, Argentina*.

Teaching/Undergraduate and Graduate Education: Teaching and Learning Tools for Animal Sciences

T377 **A learner-centered approach to teaching animal reproduction.**
J. Moro-Mendez*, *EARTH University*, *Guacimo, Limon, Costa Rica*.

T378 **Targeting global competencies in animal sciences: Reproduction cases on Mexico.**
J. J. Parrish* and R. L. Monson, *University of Wisconsin*, *Madison*.

T379 **Evaluation of relationships between questions on the IDEA survey for university and animal science courses.**
M. J. Anderson, K. J. Stutts, M. M. Beverly*, and S. F. Kelley, *Sam Houston State University*, *Huntsville, TX*.

T380 **Implementation of a hybrid-flexible instructional model in the animal sciences—Technical considerations to optimize student educational experience.**
M. C. Chakerian*, T. A. Evans, B. A. Wenner, R. W. Flood, M. R. Hendrick, H. N. Zerby, and J. M. Osborne, *The Ohio State University*, *Columbus*.

T381 **Student perception of horsemanship skills after completion of a horse judging course.**
M. Nicodemus*, T. Bova, and B. Tisdale, *Mississippi State University*, *Mississippi State*.

T382 **Reorganization of experiential learning activities into a single multi-section course.**
A. C. Dilger*, L. Redman, and W. L. Hurley, *University of Illinois*, *Urbana*.

T383 **Effect of correcting missed exam questions (regrading) as a learning tool in physiology courses.**
J. Winkler*, A. Sexten, A. Rhodes, and T. Rozell, *Kansas State University*, *Manhattan*.

SYMPOSIA AND ORAL SESSIONS

Graduate Student Competition
ADSA Dairy Foods Division Oral Competition
Chair: Beth Briczinski, National Milk Producers Federation, Arlington, VA
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9:30 AM 14 **Tracking heat-resistant, spore-forming bacteria in the milk chain: A farm-to-table approach.**
M. Estrada*, J. Stratton, and A. Bianchini, *University of Nebraska-Lincoln*, *Lincoln*.

9:45 AM 15 **Pulsed electric field treatment maintains the antiproliferative activity of the milk fat globule membrane on colon carcinoma cells.**
S. Xu*[1], M. Walkling-Ribeiro[2,1], M. W. Griffiths[2,1], and M. Corredig[1], [1]*University of Guelph*, *Guelph, ON, Canada*, [2]*Canadian Research Institute for Food Safety (CRIFS)*, *Guelph, ON, Canada*.

10:00 AM 16 **Effect of the heating of whey proteins in the presence of milk fat globule membrane extract or phospholipids from buttermilk.**
M. Saffon*[1], R. Jiménez-Flores[2], M. Britten[3], and Y. Pouliot[1], [1]*STELA Dairy Research Center, Institute of Nutrition and Functional Food (INAF), Laval University*, *Quebec City, QC, Canada*, [2]*Dairy Products Technology Center, California Polytechnic State University*, *San Luis Obispo*, [3]*Food Research and Development Center (FRDC), Agriculture and Agri-Food Canada*, *St-Hyacinthe, QC, Canada*.

10:15 AM 17 **Effect of ultra-high-pressure homogenization on physicochemical properties of pasteurized skim milk.**
M. S. Mohan*, R. Ye, and F. Harte, *Department of Food Science and Technology, University of Tennessee*, *Knoxville*.

10:30 AM 18 **Performance of modified milk protein concentrates in model high-protein nutrition bars.**
J. Banach*, S. Clark, and B. Lamsal, *Iowa State University*, *Ames*.

10:45 AM **Break**

11:00 AM 19 **Concentration of milk by ultrafiltration modifies the acid-induced gelation properties of casein micelles.**
Y. Li* and M. Corredig, *University of Guelph*, *Guelph, ON, Canada*.

11:15 AM 20 **The effects of sodium reduction, with and without KCl, on blue cheese.**
A. Pataky*[1], S. Rankin[2], Z. Vickers[1], and T. Schoenfuss[1], [1]*University of Minnesota*, *Saint Paul*, [2]*University of Wisconsin*, *Madison*.

11:30 AM 21 **Improving the quality of low sodium Cheddar cheese.**
M. Ozturk*[1], S. Govindasamy-Lucey[2], J. J. Jaeggi[2], M. E. Johnson[2], and J. A. Lucey[1,2], [1]*University of Wisconsin, Madison*, [2]*Wisconsin Center for Dairy Research, Madison*.

11:45 AM 22 **Influence of depletion flocculation and continuous phase viscosity on the stability of sodium-caseinate-stabilized emulsions.**
Y. C. Liang*[1,2], H. Patel[3], L. Matia-Merino[2], A. Q. Ye[4], G. Gillies[1], and M. Golding[2,4], [1]*Fonterra Research and Development Centre*, *Palmerston North, New Zealand*, [2]*Institute of Food, Nutrition and Human Health, Massey University*, *Palmerston North, New Zealand*, [3]*Dairy Science Department, South Dakota State University*, *Brookings*, [4]*Riddet Institute, Massey University*, *Palmerston North, New Zealand*.

Graduate Student Competition
ADSA Production Division Oral Competition, PhD
Chair: Thomas McFadden, University of Missouri
104

9:30 AM 23 **High feed efficiency for milk is associated with high feed nitrogen efficiency in dairy cows.**
C. Arndt*[1], M. A. Wattiaux[1], J. M. Powell[2], and M. J. Aguerre[1], [1]*Department of Dairy Science, University of Wisconsin*, *Madison*, [2]*USDA-Agricultural Research Service, US Dairy Forage Research Center, USDA-ARS*, *Madison, WI*.

9:45 AM 24 **Tumor necrosis factor-α injection promotes liver inflammation and decreases gluconeogenesis in early lactation dairy cows.**
K. Yuan*[1], J. K. Farney[1], L. K. Mamedova[1], L. M. Sordillo[2], and B. J. Bradford[1], [1]*Kansas State University*, *Manhattan*, [2]*Michigan State University*, *East Lansing*.

10:00 AM 25 **Efficacy of on-farm use of ultraviolet light for inactivation of bacteria in milk for calves.**
S. L. Gelsinger*, A. J. Heinrichs, C. M. Jones, R. J. Van Saun, C. M. Burns, and H. R. Lysczek, *The Pennsylvania State University*, *State College*.

10:15 AM 26 **Fatty acid profile differs between organic and conventionally produced milk independently of sampling time.**
B. H. Schwendel*[1], P. C. H. Morel[2], T. J. Wester[2], M. H. Tavendale[1], C. Deadman[3], B. Fong[3], N. M. Shadbolt[2], A. Thatcher[2], and D. E. Otter[1], [1]*Food Nutrition & Health Team, Food & Bio-based Products Group, AgResearch Grasslands*, *Palmerston North, New Zealand*, [2]*Animal Nutrition Group, Institute of Veterinary, Animal and Biomedical Sciences, Massey University*, *Palmerston North, New Zealand*, [3]*Fonterra Research Centre*, *Palmerston North, New Zealand*.

10:30 AM 27 **An in vitro assessment of the antibacterial effects of plant essential oils.**
K. A. E. Mullen*, A. R. Lee, R. L. Lyman, S. P. Washburn, and K. L. Anderson, *North Carolina State University*, *Raleigh*.

10:45 AM 28 **Low doses of recombinant bovine somatotropin (rbST) enhance fertility of dairy cows.**
E. S. Ribeiro*[1], R. G. S. Bruno[2], A. M. Farias[2], J. A. Hernandez-Rivera[2], G. C. Gomes[1], R. Surjus[1], G. Sasser[3], D. H. Keisler[4], W. W. Thatcher[1], T. R. Bilby[2], and J. E. P. Santos[1], [1]*Department of Animal Sciences, University of Florida*, *Gainesville*, [2]*Texas A&M AgriLife Research and Extension*, *Stephenville*, [3]*BioTracking LLC*, *Moscow, ID*, [4]*Department of Animal Sciences, University of Missouri*, *Columbia*.

11:00 AM 29 **Individual cow risk factors for development of ketosis in lactating dairy cattle.**
J. L. Gordon*[1], T. F. Duffield[1], T. H. Herdt[2], D. F. Kelton[1], and S. J. LeBlanc[1], [1]*University of Guelph*, *Guelph, ON, Canada*, [2]*Michigan State University*, *East Lansing*.

11:15 AM 30 **Postnatal changes in gut bacteria and mucosal immune system development in dairy calves.**
N. Malmuthuge*[1], G. Liang[1], T. B. McFadden[3], P. J. Griebel[2], and L. L. Guan[1], [1]*Department of Agricultural, Food and Nutritional Science, University of Alberta*, *Edmonton, AB, Canada*, [2]*Vaccine and Infectious Disease Organization, Univ. of Saskatchewan*, *Saskatoon, SK, Canada*, [3]*Divison of Animal Sciences, University of Missouri*, *Columbia*.

11:30 AM 31 **Management of dairy goats during the transition between lactations.**
G. Zobel*[1], K. Leslie[2], D. M. Weary[1], and M. A. G. von Keyserlingk[1], [1]*Animal Welfare Program, University of British Columbia*, *Vancouver, BC, Canada*, [2]*Population Medicine, University of Guelph*, *Guelph, ON, Canada*.

Ruminant Nutrition: Beef: Minerals, Vitamins, and Additives
Chair: Allan Chestnut, Vigortone Ag Products
Sagamore 1

9:30 AM 32 **Comparison of NRC and industry dietary trace mineral standards for yearling feedlot steers.**
C. J. Berrett*, J. J. Wagner, K. L. Neuhold, E. Caldera, and T. E. Engle, *Colorado State University, Fort Collins*.

9:45 AM 33 **Effects of BovaZyme WP enzyme supplementation on frothy bloat and performance in stocker cattle grazing winter wheat.**
W. E. Pinchak*[1], D. W. Pitta[1,2], J. Miller[1], G. M. Shipp[3], and J. D. Fulford[1], [1]*Texas A&M AgriLife Research*, *Vernon*, [2]*School of Veterinary Medicine University of Pennsylvania*, *Kennett Square*, [3]*Texas A&M AgriLife Research*, *Amarillo*.

10:00 AM 34 **Individual ad libitum intake of mineral mix by beef cows is less than NRC recommendations and form of selenium (Se) in mineral mix affects Se levels of cows and suckling calves.**
J. D. Patterson*, W. R. Burris, J. A. Boling, and J. C. Matthews, *University of Kentucky*, *Lexington*.

10:15 AM 35 **Effects of dietary ferric ammonium citrate on performance and carcass quality of beef cattle fed 20, 40, or 60% distillers grains with solubles.**
M. E. Drewnoski[2], S. J. Morine*[1], and S. L. Hansen[1], [1]*Iowa State University*, *Ames*, [2]*University of Idaho*, *Moscow*.

10:30 AM 36 **Feeding ferric citrate to decrease risk of sulfur toxicity: effects on trace mineral absorption and trace mineral status of steers.**
M. E. Drewnoski*[2] and S. L. Hansen[1], [1]*Iowa State University*, *Ames*, [2]*University of Idaho*, *Moscow*.

10:45 AM 37 **Phytonutrients or calcified marine algae as natural alternatives to monensin in beef feedlot diets.**
F. M. Hagg*[1,2], L. J. Erasmus[2], R. H. Van der Veen[1], E. Haasbroek[2], S. Taylor[3], and C. Oguey[4], [1]*Allied Nutrition*, *Pretoria, South Africa*, [2]*University of Pretoria*, *Pretoria, South Africa*, [3]*Celtic Sea Minerals*, *Cork, Ireland*, [4]*Pancosma*, *Geneva, Switzerland*.

11:00 AM 38 **Interaction between supplemental zinc and zilpaterol in feedlot steers.**
C. L. Van Bibber-Krueger*, K. A. Miller, C. C. Aperce, C. A. Alvarado-Gilis, J. M. Gonzalez, and J. S. Drouillard, *Kansas State University*, *Manhattan*.

11:15 AM 39 **Influence of supplementing vitamin C to cattle fed a high sulfur diet late in the finishing period on meat color and tenderness.**
D. J. Pogge*, S. M. Lonergan, and S. L. Hansen, *Iowa State University*, *Ames*.

11:30 AM 40 **Effect of a supplemental zinc complex on beef cattle performance and plasma and liver trace mineral concentrations.**
O. N. Genther* and S. L. Hansen, *Iowa State University*, *Ames*.

11:45 AM 41 **Influence of lipid-extracted algae on intake and digestibility of a concentrate diet.**
M. K. Beckman*, L. N. Tracey, C. L. Shelley, K. L. Norman, K. H. Marchetti, E. J. Scholljegerdes, C. A. Löest, S. A. Soto-Navarro, and S. L. Ivey, *New Mexico State University, Las Cruces*.

12:00 PM 42 **The effect of *Aspergillus oryzae* extract on feedlot performance and carcass merit in yearling steers fed steam-flaked corn based finishing diets.**
K. A. White*[1], J. J. Wagner[1], T. E. Engle[1], D. R. Woerner[1], R. K. Peel[1], T. C. Bryant[2], J. S. Jennings[3], and K. M. Brennan[3], [1]*Animal Sciences Department, Colorado State University*, *Fort Collins*, [2]*JBS Five Rivers Cattle Feeding*, *Greeley, CO*, [3]*Alltech Inc.*, *Nicholasville, KY*.

12:15 PM 43 **Effect of supplementing gestating and lactating beef cows with supranutritional concentrations of vitamin D on cow production and pre-weaning growth of the calf.**
J. P. Schoonmaker*[1], M. Engstrom[2], K. N. Condron[1], C. N. Shee[1], and R. P. Lemenager[1], [1]*Purdue University*, *West Lafayette, IN*, [2]*DSM Nutritionals*, *Parsippany, NJ*.

Bioethics Symposium I
The Hunger Games: Should "Big Ag" Be Left Standing?
Chair: Candace Croney, Purdue University
Wabash Ballroom 3

9:30 AM **Introduction.**
Candace Croney.

9:35 AM 44 **"Valuing" alternative agricultural systems: What do consumers perceive about different labels and where do they get their information?**
N. J. O. Widmar*, C. Croney, and M. G. S. McKendree, *Purdue University, W. Lafayette, IN*.

10:05 AM 45 **Farm size and animal welfare.**
D. M. Weary* and M. A. G. von Keyserlingko, *Animal Welfare Program, Faculty of Land and Food Systems, University of British Columbia*, *Vancouver, BC, Canada*.

10:50 AM 46 **Can the fox guard the hen house? Can big corporations be socially responsible?**
T. Grandin*, *Colorado State University*, *Fort Collins*.

11:20 AM 47 **Bioethical implications of retailer decisions and agreements with activists: HSUS-UEP agreement.**
J. C. Swanson*, *Michigan State University*, *East Lansing*.

Breeding and Genetics: Applications and Methods in Animal Breeding—Beef
Chair: J. R. Tait, USDA-ARS, U. S. Meat Animal Research Center
Wabash Ballroom 1

9:30 AM 48 **Population structure and identification of lineages in a Brazilian Guzerat metapopulation.**
J. C. C. Panetto*[1], M. G. C. D. Peixoto[1], G. G. Santos[1], F. A. T. Bruneli[1], R. S. Verneque[1], M. A. Machado[1], A. L. S. Azevedo[1], D. R. L. Reis[1], L. A. Silva[1], A. A. Egito[2], and M. R. S. Carvalho[3], [1]*Embrapa Gado de Leite*, *Juiz de Fora, MG, Brazil*, [2]*Embrapa Gado de Corte*, *Campo Grande, MS, Brazil*, [3]*Universidade Federal de Minas Gerais*, *Belo Horizonte, MG, Brazil*.

9:45 AM 49 **Genetic relationships among milk production and teat and udder scores in cows sired by seven prominent beef cattle breeds.**
L. A. Kuehn* and H. C. Freetly, *USDA-ARS, US Meat Animal Research Center, Clay Center, NE*.

10:00 AM 50 **Genetic parameters for udder quality in Hereford cattle.**
H. L. Bradford*, D. W. Moser, J. M. Bormann, and R. L. Weaber, *Kansas State University*, *Manhattan*.

10:15 AM 51 **Phenotypic relationships between docility and reproduction in Angus heifers.**
K. L. Otteman*[1], J. M. Bormann[1], K. C. Olson[1], J. R. Jaeger[1], S. Johnson[1], B. Downey[2], D. M. Grieger[1], J. W. Waggoner[1], D. W. Moser[1], and R. L. Weaber[1], [1]*Kansas State University*, *Manhattan*, [2]*Cowney Ranch Inc.*, *Wamego, KS*.

10:30 AM 52 **Docility and heifer pregnancy heritability estimates in Angus heifers.**
K. L. Otteman*, J. M. Bormann, D. W. Moser, and R. L. Weaber, *Kansas State University*, *Manhattan*.

10:45 AM 53 **The effect of sire breed on birth weight, preweaning ADG, and adjusted 205-d weight of calves from commercial Angus dams mated to Angus, Braunvieh, and Hereford sires.**
C. L. Ferring*, G. A. Hansen, and J. P. Cassady, *North Carolina State University, Raleigh*.

11:00 AM 54 **Breed × sex effects on birth weight in Brahman-Simmental embryo transfer calves.**
J. A. Dillon*[1], R. M. Thallman[2], J. O. Sanders[1], and D. G. Riley[1], [1]*Texas A&M AgriLife Research*, *College Station*, [2]*US Meat Animal Research Center*, *Clay Center, NE*.

11:15 AM 55 **Phenotypic and genetic correlations as well as linear relationships of performance, carcass, feed efficiency, and economic characteristics of beef feedlot steers.**
K. M. Retallick*[1], D. B. Faulkner[2], S. L. Rodriguez-Zas[1], J. D. Nkrumah[3], and D. W. Shike[1], [1]*University of Illinois*, *Urbana*, [2]*University of Arizona*, *Tucson*, [3]*Pfizer Animal Genetics*, *Kalamazoo, MI*.

11:30 AM 56 **Genotype by environment interaction effects on crossbred lambs at finishing.**
G. C. Márquez*[1], W. Haresign[2], M. H. Davies[3], R. Roehe[4], L. Bünger[4], G. Simm[4], and R. M. Lewis[1,4], [1]*Virginia Tech*, *Blacksburg*, [2]*Aberystwyth University*, *Aberystwyth, UK*, [3]*ADAS Rosemaund*, *Preston Wynne, UK*, [4]*Scottish Agricultural College*, *Edinburgh, UK*.

Cell Biology Symposium: The Immune System in Pregnancy
Chairs: Larry Reynolds, North Dakota State University, and Akio Miyamoto, Obihiro University of Agriculture and Veterinary Medicine, Obihiro, Japan
Sponsor: Elanco Animal Health
101-102

9:30 AM 57 **Tolerance of the maternal immune system to the fetal semi-allograft.**
M. G. Petroff*, S. M. Alam Khorshed, C. Linscheid, and S. Jasti, *Department of Anatomy and Cell Biology, University of Kansas Medical Center*, *Kansas City, KS*.

10:15 AM 58 **The immune system in CL formation/angiogenesis/lymphangiogenesis and its role in establishment of pregnancy.**
A. Miyamoto*[1], K. Shirasuna[2], S. Haneda[1], T. Shimizu[1], and M. Matsui[1], [1]*Obihiro University of Agriculture and Veterinary Medicine*, *Obihiro, Japan*, [2]*Jichi Medical University*, *Tochigi, Japan*.

11:00 AM 59 **Effects of maternal obesity on placental and gut inflammation and immune function.**
M. Zhu*[1], H. Wang[2], M. Du[3], and S. P. Ford[2], [1]*School of Food Science, Washington State University*, *Pullman*, [2]*Department of Animal Science, University of Wyoming*, *Laramie*, [3]*Department of Animal Science, Washington State University*, *Pullman*.

George C. Fahey Companion Animal Nutrition Symposium I: Effect of Dietary Format on Nutrition, Food Management, and Food Safety
Chair: Katherine Kerr, University of Illinois, Urbana
Sponsor: ASAS Foundation George C. Fahey Appreciation Club
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9:30 AM 60 **Introduction—Defining natural pet foods.**
K. R. Kerr*, *Department of Animal Sciences and Division of Nutritional Sciences, University of Illinois*, *Urbana*.

9:40 AM 61 **From wild to captive diets: Metabolic flexibility of cats.**
A. Verbrugghe*, *Ontario Veterinary College, University of Guelph*, *Guelph, ON, Canada*.

10:20 AM 62 **What is natural? Marketing versus science of natural pet diets.**
P. R. Buff*, R. A. Carter, and J. H. Kersey, *The Nutro Company*, *Franklin, TN*.

11:00 AM **Break**

11:10 AM 63 **Potential health benefits of phytochemicals in pets.**
P. Nguyen*[1], B. Paragon[2], H. Hazewinkel[3], V. Leray[1], G. Blanchard[4], S. Serisier[5], and A. André[1], [1]*National College of Veterinary Medicine, Food Science and Engineering Nantes-Atlantique (Oniris)*, *Nantes, France*, [2]*National Veterinary School of Alfort*, *Maisons-Alfort, France*, [3]*Utrecht University*, *Utrecht, the Netherlands*, [4]*Animal Nutrition Expertise*, *Antony, France*, [5]*Royal Canin R & D*, *Aimargues, France*.

11:50 AM 64 **Ramifications of the food safety modernization act on the pet food industry, along with new technologies to control salmonella in pet food.**
C. Knueven*[1] and G. Aldrich[2], [1]*Research and Development, Jones-Hamilton Co*, *Walbridge, OH*, [2]*Grain Science & Industry, Kansas State University*, *Manhattan*.

Ruminant Nutrition: Dairy: General Topics
Chair: Richard Kohn, University of Maryland
110

9:30 AM 65 **The effect of feeding rumen-bypass protein on milk yield and composition in Irish dairy cows.**
M. R. Sheehy*[1,2], F. J. Mulligan[1], P. A. McLaughlin[2], O. Brennan[2], S. Taylor[2], and A. G. Fahey[3], [1]*School of Veterinary Medicine, University College Dublin*, *Dublin, Ireland*, [2]*Devenish Nutrition Ltd*, *Belfast, UK*, [3]*School of Agriculture and Food Science*, *Dublin, Ireland*.

9:45 AM 66 **Rescue from diet-induced milk fat depression in monensin-supplemented dairy cows.**
D. E. Rico*[1], A. W. Holloway[2], and K. J. Harvatine[1], [1]*The Pennsylvania State University*, *University Park*, [2]*Elanco Animal Health*, *Greenfield, IN*.

10:00 AM 67 **Behavior of dairy cattle housed on differing freestall bed types compared with cattle kept at pasture.**
J. Lau[1], J. K. Margerison*[1], M. Hedley[1], D. Horne[1], J. Hanley[1], N. Powell[2], and A. Shilton[2], [1]*Institue of Agriculture and Environment, Massey University*, *Palmerston North, New Zealand*, [2]*School of Engineering & Advanced Technology, College of Sciences, Massey University*, *Palmerston North, New Zealand*.

10:15 AM 68 **Effects of amount of palmitic and stearic fed to mid-lactation dairy cows on intake, milk yield, and diet digestibility.**
D. N. Lobão da Silva*[1], R. S. Younker[2], and N. B. Litherland[1], [1]*University of Minnesota*, *Saint Paul*, [2]*Milk Specialties*, *Eden Prairie, MN*.

10:30 AM 69 **Effects of dietary starch content and corn particle size on intake, digestion and milk production by dairy cows.**
S. M. Fredin*, S. J. Bertics, and R. D. Shaver, *University of Wisconsin*, *Madison*.

10:45 AM 70 **Effect of time of storage on ammonia nitrogen concentration and ruminal in vitro starch digestibility of high moisture corn—A field survey.**
L. F. Ferraretto*, R. D. Shaver, and P. C. Hoffman, *University of Wisconsin-Madison*, *Madison*.

11:00 AM 71 **Using a systems model approach to assess the potential effect of changes in gene expression in adipose tissue of dairy cattle on production and reproductive efficiency.**
S. Shields and J. McNamara*, *Washington State University*, *Pullman*.

11:15 AM 72 **Effects of feeding millet silage cultivars on performance of lactating dairy cows.**
T. Brunette*[1], B. Baurhoo[2], and A. Mustafa[1], [1]*McGill University*, *Ste-Anne-De-Bellevue, QC, Canada*, [2]*Belisle Solution Nutrition*, *St-Mathias, QC, Canada*.

11:30 AM 73 **Variability in the concentrations of free and esterified fatty acids in corn silage and byproduct feeds.**
C. M. Klein[1], J. C. Ploetz[1], T. C. Jenkins[2], and A. L. Lock*[1], [1]*Michigan State University*, *East Lansing*, [2]*Clemson University*, *Clemson, SC*.

Lactation Biology I
Chair: Monique Rijnkels, Baylor College of Medicine
108

9:30 AM 76 **Effects of milking frequency on integrin signaling in mammary glands of dairy cows.**
R. Murney*[1], K. Stelwagen[2], T. T. Wheeler[1], J. K. Margerison[3], and K. Singh[1], [1]*AgResearch Limited*, *Ruakura Research Centre, Hamilton, New Zealand*, [2]*SciLactis Limited*, *Waikato Innovation Park, Hamilton, New Zealand*, [3]*Massey University*, *Palmerston North, New Zealand*.

9:45 AM 77 **Prolactin-inhibitor cabergoline enhanced the mammary remodeling during drying-off in dairy cows.**
M. Boutinaud*[1], N. Isaka[4], A. Deflandre[4], E. Gandemer[1,2], P.-G. Marnet[2,3], F. Dessauge[1,2], and V. Lollivier[2,3], [1]*INRA, UMR1348 PEGASE*, *Saint Gilles, France*, [2]*AGROCAMPUS UMR1348 PEGASE*, *Rennes, France*, [3]*Université Européenne de Bretagne*, *Rennes, France*, [4]*CEVA Santé Animale*, *Libourne, France*.

10:00 AM 78 **Efficacy of cabergoline to reduce udder pressure and milk leakage after dry-off in dairy cows.**
S. Bertulat*[1], N. Isaka[2], A. Deflandre[2], A. Lopez[2], T. Hetreau[3], and W. Heuwieser[1], [1]*Clinic for Animal Reproduction, Freie Universität Berlin*, *Berlin, Germany*, [2]*CEVA Santé Animale*, *Libourne, France*, [3]*Centre d'élevage Lucien Biset*, *Poisy, France*.

10:15 AM 79 **The effects of continuous light on milk yield, milk composition, IGF-1 and prolactin in dairy cows.**
S. Ferneborg*[1], E. Ternman[1], A. A. K. Salama[2], G. Caja[2], and S. Agenäs[1], [1]*Department of Animal Nutrition and Management, Swedish University of Agricultural Sciences*, *Uppsala, Sweden*, [2]*Group of Ruminant Research (G2R), Universitat Autonoma de Barcelona*, *Bellaterra, Spain*.

10:30 AM 80 **Timing of first milking and colostrum feeding affect serotonin (5-HT) concentrations in cows and calves.**
J. J. Gross[2], J. Laporta[1], R. M. Bruckmaier[2], and L. L. Hernandez*[1], [1]*University of Wisconsin*, *Madison*, [2]*University of Bern*, *Bern, Switzerland*.

10:45 AM 81 **Essential amino acid deficiencies and imbalances regulate milk protein synthesis through mTOR signaling in lactating bovine mammary glands.**
J. Doelman*[1], R. V. Curtis[2], M. Carson[1], J. J. M. Kim[2], J. P. Cant[2], and J. A. Metcalf[1], [1]*Nutreco Canada AgResearch*, *Guelph, ON, Canada*, [2]*Department of Animal and Poultry Science, University of Guelph*, *Guelph, ON, Canada*.

11:00 AM 82 **Effects of arginine concentration on the in vitro expression of casein and mTOR pathway related genes in mammary epithelial cells from dairy cattle.**
M. Z. Wang*[1,2], B. L. Xu[1], H. R. Wang[1], D. P. Bu[2], J. Q. Wang[2], and J. J. Loor[3], [1]*College of Animal Science and Technology, Yangzhou University*, *Yangzhou, Jiangsu, China*, [2]*State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*, [3]*Department of Animal Sciences and Division of Nutritional Sciences, University of Illinois*, *Urbana*.

11:15 AM 83 **Enhancing mammary involution during early stages of the dry period by infusing mammary serum amyloid A3.**
A. Domenech[1], S. Parés*[1], A. Bach[1,2], and A. Arís[1], [1]*Department of Ruminant Production, Institut de Recerca i Tecnologia Agroalimentàries (IRTA), Torre Marimon*, *Caldes de Montbui, Barcelona, Spain*, [2]*Institució Catalana de Recerca i Estudis Avançats (ICREA)*, *Barcelona, Barcelona, Spain*.

11:30 AM 84 **Lack of circulating serotonin (5-HT) in TPH1-deficient mice down-regulates serum calcium and mammary gland gene expression of calcium transporters.**
J. Laporta*, K. E. Merriman, S. Weaver, C. Cronick, T. L. Peters, and L. L. Hernandez, *University of Wisconsin*, *Madison*.

11:45 AM 85 **Importance of progesterone and prolactin profiles, and of parturition on the composition of colostrum obtained before and after parturition.**
J. J. Gross[1], E. C. Kessler[1], V. Bjerre-Harpoth[2], and R. M. Bruckmaier*[1], [1]*Veterinary Physiology, Vetsuisse Faculty University of Bern*, *Bern, Switzerland*, [2]*Department of Animal Science, Aarhus University*, *Foulum, Denmark*.

12:00 PM 86 **Feeding entrainment of the mammary circadian rhythm in FVB mice.**
L. Ma*, Y. Ying, A. Clarke, P. Bartell, and K. J. Harvatine, *Penn State University*, *University Park*.

12:15 PM 87 **Proteomic profiling of bovine mammary gland response to milk removal or increased milking frequency indicates roles for prolactin and leptin signaling.**
M. G. H. Stevens*[1], E. H. Wall[2], P. A. Bentley[3], A. Ruiz-Sanchez[3], and T. B. McFadden[1,3], [1]*University of Missouri*, *Columbia*, [2]*University of Vermont*, *Burlington*, [3]*University of Alberta*, *Edmonton, AB, Canada*.

Meat Science and Muscle Biology: Effects of Nutrients and Supplements on Animal Growth Performance and Meat Quality
Chair: Paul Kuber, Ohio State University
120-121

9:30 AM 88 **Effect of dietary vitamin D3 supplementation on meat quality of naked neck chickens.**
M. Mabelebele*[1,2], J. W. Ngambi[2], D. Norris[2], and O. J. Alabi[2], [1]*University of New England*, *New South Wales, Armidale, Australia*, [2]*University of Limpopo*, *Polokwane, South Africa*.

9:45 AM 89 **Effects of supplemental lysine and methionine with zilpaterol hydrochloride on feedlot performance, carcass characteristics of finishing feedlot cattle.**
A. D. Hosford*[1], W. Rounds[2], J. E. Hergenreder[1], M. J. Anderson[2], M. A. Jennings[1], T. L. Harris[1], S. N. Aragon[1], and B. J. Johnson[1], [1]*Department of Animal and Food Science, Texas Tech University*, *Lubbock*, [2]*Kemin Industries Inc., North America*, *Des Moines, IA*.

10:00 AM 90 **Effects of supplemental lysine and methionine with zilpaterol hydrochloride administration on finishing feedlot cattle tenderness.**
A. D. Hosford*[1], W. Rounds[2], J. E. Hergenreder[1], M. J. Anderson[2], M. A. Jennings[1], T. L. Harris[1], S. N. Aragon[1], and B. J. Johnson[1], [1]*Department of Animal and Food Science, Texas Tech University*, *Lubbock*, [2]*Kemin Industries Inc., North America*, *Des Moines, IA*.

10:15 AM 91 **Influence of multi exogenous enzymes on performance and carcass characteristics in growing rabbits.**
H. Gado*[1] and A. Z. M. Salem[2], [1]*Animal Production Department, Faculty of Agriculture, Ain Shams University*, *Qalubia, Egypt*, [2]*Facultad de Medicina Veterinaria y Zootecnia, Universidad Autonoma del Estado de Mexico*, *Mexico*.

10:30 AM 92 **Influence of different forms of lipid supplements and frequencies of fed on physical characteristics of heifer meat.**
M. C. A. Santana*[1], R.A. Reis[2], A. V. Pires[3], T.T. Berchielli[2], V.C. Modesto[2], P. H. M. Dian[4], M. A. A. Balsalobre[5], and G. T. Pereira[2], [1]*EMATER*, *Goiânia, Goiás, Brazil*, [2]*São Paulo State University*, *Jaboticabal, Sao Paulo, Brazil*, [3]*Sao Paulo University*, *Piracicaba, São Paulo, Brazil*, [4]*Camilo Castelo Branco University*, *Descalvado, São Paulo, Brazil*, [5]*Bellman*, *Mirassol, São Paulo, Brazil*.

10:45 AM 93 **Performance, carcass, economics of production, hematological status, and organoleptic evaluation of broilers fed with graded levels of cowpea testa-based diets.**
P. O. Fakolade*[1], B. O. Alabi[1], A. A. Amao[1], and A. H. Ekeocha[2], [1]*Osun State University*, *Osogbo, Osun, Nigeria*, [2]*University of Ibadan*, *Ibadan, Oyo, Nigeria*.

11:00 AM **Break**

11:15 AM 94 **Effects of feeding flaxseed or sunflower-seed in high forage diets on biohydrogenation intermediates in adipose tissues of yearling steers.**
C. Mapiye*[1], T. D. Turner[1], D. C. Rolland[1], J. A. Basarab[2], V. S. Baron[1], T. A. McAllister[3], H. C. Block[4], B. Uttaro[1], J.L. Aalhus[1], and M. E. R. Dugan[1], [1]*Agriculture and Agri-Food Canada, Lacombe Research Centre*, *Lacombe, AB, Canada*, [2]*Alberta Agriculture and Rural Development, Lacombe Research Centre*, *Lacombe, AB, Canada*, [3]*Agriculture and Agri-Food Canada, Lethbridge Research Centre*, *Lethbridge, AB, Canada*, [4]*Agriculture and Agri-Food Canada, Brandon Research Centre, Brandon*, *Manitoba, Canada*.

11:30 AM 95 **Growth, carcass traits and meat color stability in steers finished on a potato-based versus a corn-based ration.**
K. J. Thornton*, M. J. Colle, J. A. Macumber, M. E. Doumit, R. Richard, C. W. Hunt, and G. K. Murdoch, *University of Idaho*, *Moscow*.

11:45 AM 96 **Influence of *Salix babylonica* extract and exogenous enzymes on meat quality in growing lambs.**
J. Cayetano[1], A. Z. M. Salem*[1], H. Gado[2], and R. Rojo[3], [1]*Facultad de Medicina Veterinaria, Universidad Autonoma del Estado de Mexico*, *Mexico*, [2]*Animal Production Department, Faculty of Agriculture, Ain Shams University*, *Qalubia, Egypt*, [3]*CU-UAEM Temascaltepec, Universidad Autonoma del Estado de Moxico*, *Mexico*.

12:00 PM 97 **Effects of alternative cattle finishing strategies on meat quality characteristics.**
K. J. Phelps*[1], K. A. Miller[1], C. L. Van Bibber-Krueger[1], A. K. Sexten[1], J. S. Jennings[2], J. S. Drouillard[1], and J. M. Gonzalez[1], [1]*Kansas State University*, *Manhattan*, [2]*Alltech Inc.*, *Nicholasville, KY*.

12:15 PM 98 **Gene expression of lipogenic enzymes present in muscle of young bulls fed ground soybean or rumen-protected lipid with or without ionophore.**
M. M. Ladeira[1,2], D. M. Oliveira[1], A. Chalfun Junior[1], M. L. Chizzotti[1], H. G. Barreto[1], T. C. Coelho[1], P. D. Teixeira[1], C. C. Coelho[1], and D. R. Casagrande*[1], [1]*Federal University of Lavras*, *Lavras, MG, Brazil*, [2]*Purdue University*, *West Lafayette, IN*.

Nonruminant Nutrition: Gut Health
Chair: David Bravo, Pancosma, Switzerland
Sagamore 7

9:30 AM 99 **Effect of enterotoxigenic *Escherichia coli* on Na+-dependent glucose transporter-1 mRNA abundance in piglet jejunal segments infused with customized glycans.**
A. D. Woodward*, X. Chen, M. G. Gänzle, and R. T. Zijlstra, *University of Alberta*, *Edmonton, Alberta, Canada*.

9:45 AM 100 **Effect of glycan infusion on cytokine expression in piglet jejunal segments challenged with enterotoxigenic *Escherichia coli*.**
A. D. Woodward*, X. Chen, M. G. Gänzle, and R. T. Zijlstra, *University of Alberta*, *Edmonton, Alberta, Canada*.

10:00 AM 101 **Dietary inclusion of low doses of microencapsulated zinc oxide affects inflammatory cytokine and tight junction protein expression in the ileum of piglets.**
E. Grilli*[1], B. Tugnoli[1], F. Vitari[2], and A. Piva[1], [1]*DIMEVET, University of Bologna*, *Ozzano Emilia, Italy*, [2]*Department of Health, Animal Science and Food Safety, University of Milan*, *Milan, Italy*.

10:15 AM 102 **Effects of dietary clays on performance and barrier function of chicks challenged with *Salmonella enterica* serovar Typhimurium.**
J. A. S. Almeida*, J. J. Lee, P. Utterback, R. N. Dilger, and J. E. Pettigrew, *University of Illinois*, *Urbana*.

10:30 AM 103 ***Bacillus licheniformis* and sodium butyrate protective effects on oxidative stress-induced inflammation in IPEC-J2 porcine intestinal epithelial cells.**
A. Ortiz*[1], P. Gálfi[2], E. Paszti-Gere[2], A. Jerzsele[2], M. Puyalto[1], and J. J. Mallo[1], [1]*Norel S.A*, *Madrid, Spain*, [2]*Szent István University*, *Budapest, Hungary*.

10:45 AM 104 **Effect of acute water and feed deprivation event on mucin, cytokine, and tight junction gene expression in weaned pigs.**
N. Horn*[1], G. Miller[3], K. M. Ajuwon[1], F. Ruch[2], and O. Adeola[1], [1]*Purdue University*, *West Lafayette, IN*, [2]*Enzyvia LLC*, *Sheridan, IN*, [3]*Biomatrix*, *Princeton, MN*.

11:00 AM 105 **Effect of dietary fructo-oligosaccharide with different polymerization degree on the cellular immune response in weaned pigs.**
V. Halas*[1], I. Nochta[2], T. Tuboly[3], Cs. Szabó[1], and L. Babinszky[4], [1]*Kaposvár University*, *Kaposvár, Hungary*, [2]*Provimi*, *Zichyújfalu, Hungary*, [3]*Szent István University*, *Budapest, Hungary*, [4]*University of Debrecen*, *Debrecen, Hungary*.

11:15 AM 106 **Astragalus polysaccharide reduces inflammatory response by decreasing permeability of LPS-stimulated Caco2 cells.**
X. Wang, Y. Li, X. Yang, and J. Yao*, *College of Animal Science and Technology, Northwest A&F University*, *Yangling, Shaanxi, China*.

Nonruminant Nutrition: Trace Minerals
Chair: Hans Stein, University of Illinois
Sagamore 6

9:30 AM 107 **Oxygen consumption and respiratory control ratio (RCR) of broilers with and without growth enhancing levels of mineral supplementation challenged with *Eimeria maxima*.**
G. Acetoze*[1], R. Kurzbard[1], J. J. Ramsey[2], K. C. Klasing[1], and H. A. Rossow[3], [1]*Department of Animal Science, University of California*, *Davis*, [2]*School of Veterinary Medicine, University of California*, *Davis*, [3]*School of Veterinary Medicine, University of California*, *Tulare*.

9:45 AM 108 **Retention and digestibility of Zn, Cu, Mn, and Fe in pigs fed diets containing inorganic or organic minerals.**
Y. Liu*[1], Y. L. Ma[2], J. M. Zhao[2], M. Vazquez-Añón[2], and H. H. Stein[1], [1]*University of Illinois*, *Urbana*, [2]*Novus International Inc.*, *St. Charles, MO*.

10:00 AM 109 **Microencapsulated zinc oxide on piglet growth performance and intestinal architecture.**
E. Grilli*[1], B. Tugnoli[1], F. Vitari[2], A. Piva[1], and A. Prandini[3], [1]*DIMEVET, University of Bologna*, *Ozzano Emilia, Italy*, [2]*Department of Health, Animal Science and Food Safety, University of Milan*, *Milan, Italy*, [3]*ISAN, Università Cattolica Sacro Cuore*, *Piacenza, Italy*.

10:15 AM 110 **Effect of dietary zinc and copper sources on wean-to-finish pig performance.**
J. Morales[1], C. Rapp*[2], and T. L. Ward[3], [1]*Pig Champ Pro Europa*, *Segovia, Spain*, [2]*Zinpro Animal Nutrition Inc.*, *Boxmeer, the Netherlands*, [3]*Zinpro Corporation*, *Eden Prairie, MN*.

10:30 AM 111 **Effects of selenium-enriched exopolysaccharides produced by *Enterobacter cloacae* Z0206 on growth performance, antioxidant status, and immune functions in weaning piglets.**
Z. Q. Lu*, G. X. Wu, M. Huang, F. Q. Wang, and Y. Z. Wang, *Institute of Feed Science, Zhejiang University*, *Hangzhou, Zhejiang, China*.

10:45 AM 112 **Effects of chromium-loaded chitosan nanoparticles on growth, carcass characteristics, pork quality, and lipid metabolism in finishing pigs.**
M. Q. Wang*, Y. D. He, C. Wang, H. Li, S. Y. Chen, W. J. Tao, and S. S. Ye, *Animal Science College of Zhejiang University*, *Hangzhou, Zhejiang, China*.

Ruminant Nutrition Symposium: Advancements in Enhancing Cell Wall Digestibility and its Contribution to Improve Ruminant Production
Chair: Guillermo Scaglia, LSU AgCenter
Sagamore 2

9:30 AM 113 **Improving cell wall digestion and animal performance with fibrolytic enzymes.**
A. T. Adesogan*, J. J. Romero, and Z. X. Ma, *Department of Animal Sciences, IFAS, University of Florida*, *Gainesville*.

10:15 AM 114 **Effects of neutral detergent fiber concentration and digestion characteristics on energy intake and partitioning of lactating cows.**
M. S. Allen*, *Michigan State University*, *East Lansing*.

11:00 AM 115 **Nutritional strategies to optimize feeding brown midrib corn silage to dairy and beef cattle.**
J.-S. Eun*, M. S. Holt, A. J. Young, and D. R. ZoBell, *Department of Animal, Dairy, and Veterinary Sciences, Utah State University*, *Logan*.

11:45 AM 116 **The utility of lipid extracted algae as a protein source in forage or starch-based ruminant diets.**
S. L. Ivey* and L. N. Tracey, *New Mexico State University*, *Las Cruces*.

Swine Species
Chair: Scott Radcliffe, Purdue University
105-106

9:30 AM 117 **Dietary protease increases amino acid digestibility of various proteinaceous feedstuffs in growing pigs.**
J. Escobar*, J. Lunnemann, J. Xue, K. Eckert, N. Odetallah, and M. Vazquez-Añón, *Novus International Inc.*, *St. Charles, MO*.

9:45 AM 118 **Protease and carbohydrase supplementation increased carcass weight and profit of finishing pigs.**
J. Escobar*, Y. Ma, N. Odetallah, and M. Vazquez-Añón, *Novus International Inc.*, *St. Charles, MO*.

10:00 AM 119 **Causes of in-transit losses of pigs.**
K. Zurbrigg*[1] and A. van Dreumel[2], [1]*Ontario Ministry of Agriculture, Food and Rural Affairs*, *Elora, ON, Canada*, [2]*Animal Health Laboratory, University of Guelph*, *Guelph, ON, Canada*.

10:15 AM 120 **Effect of pig insemination technique and semen preparation on profitability.**
D. Gonzalez-Pena*, N. V. L. Serão, J. Pettigrew, R. Knox, and S. L. Rodriguez-Zas, *University of Illinois at Urbana-Champaign*, *Urbana*.

10:30 AM 121 **Use of exogenous hormones on estrus synchronization and the reproductive life of female pigs.**
L. J. Parazzi*[1], T. A. Del Santo[1], A. Arruda[2], S. M. M. K. Martins[1], A. F. C. Andrade[1], and A. S. Moretti[1], [1]*University of São Paulo (FMVZ-VNP)*, *Pirassununga, São Paulo, Brasil*, [2]*University of Guelph*, *Guelph, Ontario, Canada*.

10:45 AM 122 **Gestational heat stress alters postnatal thermoregulation.**
J. S. Johnson*[1], M. V. Sanz-Fernandez[1], S. K. Stoakes[1], M. Abuajamieh[1], J. W. Ross[1], M. C. Lucy[2], T. J. Safranski[2], R. P. Rhoads[3], and L. H. Baumgard[1], [1]*Department of Animal Science, Iowa State University*, *Ames*, [2]*Division of Animal Sciences, University of Missouri*, *Columbia*, [3]*Department of Animal and Poultry Sciences, Virginia Polytechnic Institute and State University*, *Blacksburg*.

11:00 AM 123 **Comparison of cathelicidin expression, cytokine and gut microbes between Jinhua and Landrace pigs experimentally challenged with *Escherichia coli* K88.**
Y. Gao*[1,2], X. Huang[1,2], H. Yi[2], Y. Rong[1,2], and Y. Wang[1,2], [1]*Institute of Feed Science/College of Animal Science, Zhejiang University*, [2]*Key laboratory of Animal Nutrition and Feed Science, Ministry of Agriculture*, *Hangzhou, China*.

11:15 AM 124 **Whole-genome association analysis for feed efficiency traits in Duroc pigs.**
S. Jiao*[1], J. Cassady[1], C. Maltecca[1], K. Gray[2], and J. Holl[2], [1]*North Carolina State University*, *Raleigh*, [2]*Smithfield Premium Genetics*, *Roanoke Rapids, NC*.

Teaching/Undergraduate and Graduate Education: Graduate Education in a Shifting Research Landscape
Chair: Shawn S. Donkin, Purdue University
107

9:30 AM 125 **Mentoring graduate students for success in a shifting research landscape.**
R. Randel*, *Texas A&M AgriLife Research*, *Overton*.

10:00 AM 126 **Adjusting to the other side of the table: Experiences as a newer mentor.**
B. J. Bradford* and L. K. Mamedova, *Kansas State University*, *Manhattan*.

10:30 AM 127 **Making the transition from academia to industry researcher: Perspectives on similar and unique skill sets.**
A. E. Wertz-Lutz*, *ADM Alliance Nutrition*, *Quincy, IL*.

11:00 AM 128 **An undergraduate research experience: Team dynamics and mentoring.**
B. J. Bequette*, *University of Maryland*, *College Park*.

11:30 AM 129 **Effective personal development planning for scientists and graduate students.**
B. Rittgers*, *Elanco Animal Health*, *Greenfield, IN*.

12:00 PM **Panel discussion**

Breeding and Genetics: Applications and Methods in Animal Breeding—Dairy I
Chair: Bruce Golden, California Polytechnic State University
Wabash Ballroom 2

10:30 AM 130 **The correlation analysis between Holstein body conformation traits and milk production traits in the Shanghai region.**
K. Zhu[1,2], G. L. Liu*[1,2], L. M. Huang[1], C. B. Zhang[2], and F. S. Fu[2], [1]*State Key Laboratory of Dairy Biotechnology, Shanghai Bright Holstan Co. Ltd*, *Shanghai, China*, [2]*Shanghai Dairy Breeding Center Co. Ltd*, *Shanghai, China*.

10:45 AM 131 **Heterosis and effect of breed proportion for milk production traits in crosses between Danish Holstein, Danish Red, and Danish Jersey.**
E. Norberg*[1], K. Byskov[2], and M. Kargo[1,2], [1]*Centre for Quantitative Genetics and Genomics, Department of Molecular Biology and Genetics, Aarhus University*, *Tjele, Denmark*, [2]*Knowledge Centre for Agriculture, Agro Food Park*, *Aarhus N, Denmark*.

11:00 AM 132 **Genetic parameters for body condition score and body weight in Canadian Holsteins.**
A. Sewalem*[1], R. Cue[2], K. Wade[2], H. Delgado[2], D. Lefebvre[3], R. R. Lacroix[2], J. Dubuc[4], and E. Bouchard[4], [1]*Agriculture and Agri-Food Canada*, *Guelph, ON Canada*, [2]*Department of Animal Science, McGill University*, *Montreal, QC, Canada*, [3]*Department of Research and Development, Valacta, Centre d'Expertise en Production Laitière*, *Bellevue, Québec, Canada*, [4]*University of Montreal*, *St-Hyacinthe*.

11:15 AM 133 **Lactation profile and genetic parameters of locomotion score and lameness in dairy cattle.**
A. Kougioumtzis[1], G. E. Valergakis[1], G. Oikonomou[1,2], G. Arsenos[1], and G. Banos*[1,3], [1]*Faculty of Veterinary Medicine, Aristotle University of Thessaloniki*, *Thessaloniki, Greece*, [2]*College of Veterinary Medicine, Cornell University*, *Ithaca, NY*, [3]*SRUC/Roslin Institute*, *Edinburgh, UK*.

11:30 AM 134 **Multi-trait analysis of bovine leukosis incidence, somatic cell score, and milk yield in US Holstein cattle.**
E. A. Abdalla*[1], G. J. M. Rosa[1], K. A. Weigel[2], and T. Byrem[3], [1]*Department of Animal Sciences, University of Wisconsin-Madison*, *Madison*, [2]*Department of Dairy Science, University of Wisconsin-Madison*, *Madison*, [3]*Antel BioSystems Inc.*, *Lansing, MI*.

11:45 AM 135 **Effect of genetic selection for Johne's disease resistance on the prevalence in dairy cattle using an epidemiological model.**
K. J. E. van Hulzen[1], A. P. Koets[1], M. Nielen[1], H. C. M. Heuven*[1,2], J. A. M. van Arendonk[2], and D. Klinkenberg[1], [1]*Faculty of Veterinary Medicine, Utrecht University*, *Utrecht, the Netherlands*, [2]*Animal Breeding and Genomics Centre, Wageningen University*, *Wageningen, the Netherlands*.

12:00 PM 136 **Genetic analysis of processed in-line mastitis indicator data.**
L. P. Sørensen* and P. Løvendahl, *Aarhus University, Department of Molecular Biology and Genetics, Center for Quantitative Genetics and Genomics*, *Tjele, Denmark*.

Nonruminant Nutrition: Nutrition and Physiology
Chair: Ryan Dilger, University of Illinois
Sagamore 6

11:00 AM 137 **Effects of mesenteric infusion of 0, 61, and 120 mmol/h of volatile fatty acids on hepatic metabolism in fasted pigs.**
U. Krogh*, A. C. Storm, and P. K. Theil, *Aarhus University, Department of Animal Science*, *Foulum, Tjele, Denmark*.

11:15 AM 138 **Leucine pulse stimulates protein synthesis and suppresses protein degradation pathways in muscle of neonatal pigs fed continuously.**
C. Boutry*[1], S. El-Kadi[2], A. Suryawan[1], S. Wheatley[1], R. Orellana[1], H. Nguyen[1], and T. Davis[1], [1]*USDA/ARS Children's Nutrition Research Center*, *Houston, TX*, [2]*Virginia Tech*, *Blacksburg*.

11:30 AM 139 **Temporal proteomic analysis reveals defects in small intestinal development of porcine fetuses with intrauterine growth restriction during gestation.**
X. Wang[1], C. Liu[1], G. Lin[1], C. Feng[2], T. Wang[1], D. Li[1], G. Wu[1,3], and J. Wang*[1], [1]*State Key Laboratory of Animal Nutrition, China Agricultural University*, *Beijing, China*, [2]*Department of Obstetrics and Gynecology, China-Japan Friendship Hospital*, *Beijing, China*, [3]*Department of Animal Science, Texas A&M University*, *College Station*.

11:45 AM 140 **Identification of porcine short-chain fatty acid receptors, GPR41 and GPR43, and their expression pattern in different development stages.**
G. Li*, H. Su, Z. Zhou, and W. Yao, *Laboratory of Gastrointestinal Microbiology, Nanjing Agricultural University*, *Nanjing, Jiangsu, China*.

12:00 PM 141 **Effect of breed on the expression of sirtuins (Sirt1-7) and antioxidant capacity in porcine brain.**
Y. Ren*, T. Shan, L. Zhu, J. Huang, and Y. Wang, *Institute of Feed Science, Zhejiang University*, *Hangzhou, Zhejiang Province, China*.

Undergraduate Student Competition
ADSA-SAD Undergraduate Competition: Dairy Foods
Chair: Mary Sowerby, University of Florida
201

11:00 AM 142 **Goat milk: An alternative to cow milk.**
C. A. Becker*, N. D. Schock, and J. M. Bewley, *University of Kentucky*, *Lexington*.

11:15 AM 143 **Dairy options for lactose intolerant consumers.**
A. R. Davis*, D. R. Winston, and B. A. Corl, *Virginia Tech*, *Blacksburg*.

11:30 AM 144 **Addition of fiber to dairy foods.**
R. E. Brown* and C. C. Williams, *Louisiana State University*, *Baton Rouge*.

11:45 AM 145 **Pulsed electric field: A novel method of dairy product processing.**
C. Widener* and J. Fain, *Clemson University*, *Clemson, SC*.

12:00 PM 146 **Innovations in milk packaging.**
L. M. Kapanick* and D. R. Olver, *Pennsylvania State University*, *University Park*.

Undergraduate Student Competition
ADSA-SAD Undergraduate Competition: Dairy Production
Chair: Dale Olver, Pennsylvania State University
203

1:30 PM 147 **Cow comfort: An important element of the 21st century dairy operation.**
A. Gibson* and L. Fox, *Washington State University*, *Pullman*.

1:45 PM 148 **Thermal variation effect on dairy calf rearing.**
A. C. Thompson*, D. M. Amaral-Phillips, and J. M. Bewley, *University of Kentucky*, *Lexington*.

2:00 PM 149 **A survey on the challenges and opportunities regarding the transition from conventional to automatic milking systems in the northeastern United States.**
A. R. Ervin*, R. Peters, T. McCoy, and K. M. Moyes, *University of Maryland*, *College Park*.

2:15 PM 150 **Sexed semen, genomics, and crossbreeding as tools for increasing the value of dairy herd genetics and cull dairy animals.**
T. L. Boyd*, D. R. Winston, and B. G. Cassell, *Virginia Tech*, *Blacksburg*.

2:30 PM **Break**

2:45 PM 151 **What lies within the rumen?**
S. M. Vignes* and C. C. Williams, *Louisiana State University*, *Baton Rouge*.

3:00 PM 152 **Rumination monitoring: A management tool for early detection of metabolic disorders.**
K. Carraway*, M. Brauneis, N. Engwall, and J. Fain, *Clemson University*, *Clemson, SC*.

3:15 PM 153 **The Fodder System.**
K. Supa* and B. Richards, *Delaware Valley College*, *Doylestown, PA*.

3:30 PM 154 **Effects of group housing and pairing calves before weaning.**
D. L. Grove* and D. R. Olver, *Pennsylvania State University*, *University Park*.

Graduate Student Competition
ADSA Production Division Oral Competition, MS
Chair: Thomas McFadden, University of Missouri
104

2:00 PM 155 **Effects of urea on uterine response to interferon-tau in presence of progesterone.**
J. Spencer*[1], K. Austin[2], K. Carnahan[1], and A. Ahmadzadeh[1], [1]*University of Idaho*, *Moscow*, [2]*University of Wyoming*, *Laramie*.

2:15 PM 156 **Effect of bedding surface on the welfare of preweaned Jersey calves.**
C. A. Kurman* and P. D. Krawczel, *University of Tennessee*, *Knoxville*.

2:30 PM 157 **The effects of D-α-tocopherol and dietary energy on growth and health of dairy calves.**
L. A. Krueger*[1], K. Onda[1], M. Osman[1], M. R. O'Neil[1], R. L. Stuart[2], H. D. Tyler[1], B. Nonnecke[3,1], and D. C. Beitz[1], [1]*Department of Animal Science, Iowa State University*, *Ames*, [2]*Stuart Products Inc.*, *Bedford, TX*, [3]*Ruminant Diseases and Immunology Research Unit, National Animal Disease Center, Agricultural Research Service, USDA*, *Ames, IA*.

2:45 PM 158 **Metabolic and oxidant profiles of periparturient pastured dairy cows milked in an automatic milking system.**
M. F. Elischer*, J. M. Siegford, and E. L. Karcher, *Michigan State University*, *East Lansing*.

3:00 PM 159 **Nutritional value and silage fermentation parameters of leaves and roots of yacón (*Smallanthus sonchifolius*) mixture as alternative supplementation of cattle in Colombia.**
L. Bernal*, *Universidad de La Salle*, *Bogotá, Colombia*.

3:15 PM 160 **Low cost on-farm predictors of individual cow risk for ketosis and fatty liver.**
Z. Sawall* and N. B. Litherland, *University of Minnesota*, *St. Paul*.

3:30 PM 161 **Mass loading of antibiotic resistance genes in feces of prophylactically treated dairy cattle.**
B. F. Willing*, L. R. Caudle, A. Pruden-Bagchi, and K. F. Knowlton, *Virginia Polytechnic Institute and State University*, *Blacksburg*.

3:45 PM 162 **Effect of oral administration of *Megasphaera elsdenii* on performance of Holstein cows during early lactation.**
K. D. Stevens*, M. L. Eastridge, S. K. Finney, and S. N. LeShure, *The Ohio State University*, *Columbus*.

4:00 PM 163 **Effect of heat stress in utero on calf performance and health through the first lactation.**
A. P. A. Monteiro*, S. Tao, I. M. Thompson, and G. E. Dahl, *University of Florida*, *Gainesville*.

4:15 PM 164 **Association between dairy calf management practices and calf immune status.**
A. Bartier*, C. Windeyer, and L. Doepel, *University of Calgary*, *Calgary, Alberta, Canada*.

4:30 PM 165 **Effects of acute feed restriction combined with targeted use of increasing LH in FSH preparations on superovulation and embryo quality in lactating dairy cows.**
R. W. Bender*, K. S. Hackbart, A. R. Dresch, P. D. Carvalho, L. M. Vieira, P. M. Crump, J. N. Guenther, R. D. Shaver, D. K. Combs, and M. C. Wiltbank, *University of Wisconsin-Madison*, *Madison*.

4:45 PM 166 **Description of weighing errors and times during preparation of a ration.**
Y. Trillo*[1], A. Lago[2], and N. Silva-del-Rio[1], [1]*Veterinary Medicine Teaching and Research Center, University of California Davis*, *Tulare*, [2]*DairyExperts*, *Tulare, CA*.

Beef Species
Chair: Andy D. Herring, Texas A&M University
101-102

2:00 PM 167 **Evaluation of multiple ancillary therapies utilized in combination with an antimicrobial in newly received high-risk calves treated for bovine respiratory disease.**
B. K. Wilson*[1], C. L. Maxwell[1], D. L. Step[2], C. J. Richards[1], and C. R. Krehbiel[1], [1]*Department of Animal Science, Oklahoma State University*, *Stillwater*, [2]*Department of Veterinary Clinical Sciences, Oklahoma State University*, *Stillwater*.

2:15 PM 168 **Interactions of rectal temperature status and vaccine type with sire on weight gain and feed intake in *Bos indicus* crossbred steers following Bovine Viral Diarrhea Virus challenge.**
C. A. Runyan*[1], X. Fang[1], E. D. Downey[1], T. B. Hairgrove[2], J. E. Sawyer[3], J. G. Moreno[1], J. F. Ridpath[4], and A. D. Herring[1], [1]*Texas A&M University*, *College Station*, [2]*Texas Agrilife Extension*, *College Station*, [3]*Texas Agrilife Research*, *College Station*, [4]*USDA-ARS*, *Ames, IA*.

2:30 PM 169 **Using DNA paternity testing to evaluate commercial bull performance.**
D. J. Drake[2], K. L. Weber[1], and A. L. Van Eenennaam*[1], [1]*Department of Animal Science, University of California*, *Davis*, [2]*University of California Cooperative Extension*, *Yreka*.

2:45 PM 170 **Field assessment of progeny from sires with divergent residual feed intake genetic test results.**
K. L. Weber*[1], B. Welly[1], J. A. Rendon[2], C. Antwi[3], G. Acetoze[1], E. Kebreab[1], E. D. M. Mendes[4], and A. L. Van Eenennaam[1], [1]*University of California, Davis*, *Davis*, [2]*Universidad Autonoma de San Luis Potosi*, *San Luis Potosi, Mexico*, [3]*Kwame Nkrumah University of Science & Technology*, *Kumasi, Ghana*, [4]*Embrapa*, *Corumba, MS, Brazil*.

3:00 PM 171 **Relationships between residual feed intake EPD and metabolic variables of progeny from Red Angus sires divergent for maintenance energy EPD.**
C. M. Welch*[1], S. E. Speidel[2], W. J. Price[1], J. K. Ahola[2], J. B. Hall[1], G. K. Murdoch[1], D. H. Crews[2], C. S. Schneider[1], and R. A. Hill[1], [1]*University of Idaho*, *Moscow*, [2]*Colorado State University*, *Fort Collins*.

3:15 PM 172 **Factors influencing feed efficiency of beef cows of varying proportion of Brahman influence.**
S. W. Coleman* and J. P. S. Neel, *USDA ARS*, *El Reno, OK*.

3:30 PM 173 **The effect of heterosis of dam and crossbreeding on progeny's feed efficiency, performance and carcass characteristics.**
K. M. Retallick*[1], D. B. Faulkner[2], S. L. Rodriguez-Zas[1], J. D. Nkrumah[3], and D. W. Shike[1], [1]*University of Illinois*, *Urbana*, [2]*University of Arizona*, *Tucson*, [3]*Pfizer Animal Genetics*, *Kalamazoo, MI*.

3:45 PM 174 **Relationship among performance, carcass, and feed efficiency characteristics and their ability to predict economic value in the feedlot.**
K. M. Retallick*[1], D. B. Faulkner[2], S. L. Rodriguez-Zas[1], J. D. Nkrumah[3], and D. W. Shike[1], [1]*University of Illinois*, *Urbana*, [2]*University of Arizona*, *Tucson*, [3]*Pfizer Animal Genetics*, *Kalamazoo, MI*.

4:00 PM 175 **Grass-finishing high-value beef: A pilot project in northern United States.**
P. Lammers*[1], M. Honeyman[2], R. Dewell[2], and S. Millman[2], [1]*Illinois State University*, *Normal*, [2]*Iowa State University*, *Ames*.

Bioethics Symposium II: Is Modern Animal Agriculture Ethically Defensible?
Chair: Candace Croney, Purdue University
Wabash Ballroom 3

2:00 PM **Introduction.**
Candace Croney.

2:05 PM 176 **The food morality movement: The race to the moral high ground.**
K. Murphy*, *Food-Chain Communications LLC*, *Lees Summit, MO*.

2:50 PM 177 **Consumer perception of production process attributes for pork and lunchmeat products.**
M. G. S. McKendree*, N. J. O. Widmar, and C. C. Croney, *Purdue University*, *West Lafayette, IN*.

3:20 PM 178 **An analysis of perceived obligations by consumers across animal species: Livestock, pet, or neither?**
M. G. S. McKendree*, C. C. Croney, and N. J. O. Widmar, *Purdue University*, *West Lafayette, IN*.

3:50 PM 179 **Industry stakeholder views on dairy cattle welfare.**
B. A. Ventura*, M. A. G. von Keyserlingk, and D. M. Weary, *Animal Welfare Program, Faculty of Land and Food Systems, University of British Columbia*, *Vancouver, BC Canada*.

Breeding and Genetics: Applications and Methods in Animal Breeding—Pigs
Chair: Scott Newman, Genus plc
Wabash Ballroom 2

2:00 PM 180 **Survival analysis of mice divergently selected for heat loss.**
A. S. Bhatnagar* and M. K. Nielsen, *University of Nebraska-Lincoln*, *Lincoln*.

2:15 PM 181 **Genome-wide association mapping including phenotypes from relatives without genotypes for three traits in broiler chickens.**
H. Wang*[1], I. Misztal[1], I. Aguilar[2], A. Legarra[3], W. Muir[4], R. Fernando[5], and R. Hawken[6], [1]*University of Georgia*, *Athens*, [2]*INIA*, *Las Brujas, Uruguay*, [3]*INRA*, *Toulouse, France*, [4]*Purdue University*, *West Lafayette, IN*, [5]*Iowa State University*, *Ames, IA*, [6]*Cobb-Vantress Inc.*, *Siloam Springs, AR*.

2:30 PM 182 **Accuracy of estimation of genomic breeding values in pigs using low density genotypes and imputation.**
Y. M. Badke*[1], R. O. Bates[1], C. W. Ernst[1], J. Fix[3], and J. P. Steibel[1,2], [1]*Department of Animal Science, Michigan State University*, *East Lansing*, [2]*Department of Fisheries & Wildlife, Michigan State University*, *East Lansing*, [3]*National Swine Registry*, *West Lafayette, IN*.

2:45 PM 183 **Estimation of US Yorkshire breed composition using genomic data.**
Y. Huang*[1], R. O. Bates[1], C. W. Ernst[1], J. S. Fix[2], and J. P. Steibel[1,3], [1]*Department of Animal Science, Michigan State University*, *East Lansing*, [2]*National Swine Registry*, *West Lafayette, IN*, [3]*Department of Fisheries and Wildlife, Michigan State University*, *East Lansing*.

3:00 PM 184 **Genome-wide association for human nose score of boar taint using single-SNP analysis.**
Y. G. Tesfayonas*[1,2], [1]*Wageningen University*, *Wageningen, the Netherlands*, [2]*Swedish University of Agriculture Sciences*, *Uppsala, Sweden*.

3:15 PM 185 **Identification of a major QTL associated with N-specific IgG response in piglets experimentally infected with porcine reproductive and respiratory syndrome virus.**
A. S. Hess*[1], B. R. Trible[2], Y. Wang[2], N. J. Boddicker[1], R. R. R. Rowland[2], J. K. Lunney[3], and J. C. M. Dekkers[1], [1]*Iowa State University*, *Ames*, [2]*Kansas State University*, *Manhattan*, [3]*USDA, ARS, BARC, APDL*, *Beltsville, MD*.

3:30 PM 186 **eQTL analysis of blood RNA from pigs challenged with PRRSV reveal numerous differentially expressed transcripts associated with viral load QTL region.**
J. P. Steibel*[1], I. Choi[4], M. Arceo[1,3], C. W. Ernst[1], N. Raney[1], Z. Hu[2], C. K. Tuggle[2], N. Boddicker[2], J. Dekkers[2], R. R. R. Rowland[5], and J. K. Lunney[4], [1]*Michigan State University*, *East Lansing*, [2]*Iowa State University*, *Ames*, [3]*North Carolina State University*, *Raleigh*, [4]*BARC-USDA*, *Beltsville, MD*, [5]*Kansas State University*, *Manhattan*.

3:45 PM 187 **Include birth weight in your breeding goal in the right way.**
R. Bergsma* and E. F. Knol, *TOPIGS Research Center IPG B.V*, *Beuningen, the Netherlands*.

4:00 PM 188 **Genetic analysis of pig survival in a crossbred population.**
M. Dufrasne*[1,2], I. Misztal[3], S. Tsuruta[3], K. A. Gray[4], and N. Gengler[1], [1]*Gembloux Agro-Bio Tech, University of Liege*, *Gembloux, Belgium*, [2]*FRIA*, *Brussels, Belgium*, [3]*Department of Animal and Dairy Science, University of Georgia*, *Athens*, [4]*Smithfield Premium Genetics Group*, *Rose Hill, NC*.

4:15 PM 189 **Survival from birth to weaning in gilts.**
A. J. Cross*[1], M. Knauer[1], A. DeDecker[3], K. Gray[2], J. Holl[5], S. Callahan[4], and JP Cassady[1], [1]*North Carolina State University*, *Raleigh*, [2]*Smithfield Premium Genetics*, *Rose Hill, NC*, [3]*Murphy-Brown LLC*, *Rose Hill, NC*, [4]*Virginia Polytechnic Institute and State University*, *Blacksburg*, [5]*PIC North America*, *Hendersonville, TN*.

4:30 PM 190 **Genetic parameters of maternal traits related to sow feed efficiency during lactation.**
D. M. Thekkoot*[1], R. A. Kemp[2], M. F. Rothschild[1], and J. C. M. Dekkers[1], [1]*Iowa State University*, *Ames*, [2]*Genesus Inc.*, *Manitoba, Canada*.

4:45 PM 191 **Random regression models for daily feed intake in Danish Duroc pigs.**
A. B. Strathe*[1,2], T. Mark[1], J. Jensen[3], B. Nielsen[2], D. N. Do[1], and H. N. Kadarmideen[1], [1]*Department of Clinical Veterinary and Animal Sciences, Faculty of Health and Medical Sciences, University of Copenhagen*, *Frederiksberg C, Denmark*, [2]*Danish Agriculture & Food Council, Pig Research Centre*, *Copenhagen V, Denmark*, [3]*Department of Molecular Biology and Genetics, Aarhus University*, *Tjele, Denmark*.

Dairy Foods: Cheese
Chair: Tonya Schoenfuss, University of Minnesota
103

2:00 PM 192 **Proteolysis and texture development in Prato cheese made with different coagulants.**
C. Merheb-Dini*[1], L. S. Alves[1], E. Gomes[2], R. da Silva[2], and M. L. Gigante[1], [1]*Faculty of Food Engineering, University of Campinas - UNICAMP*, *Campinas, SP, Brazil*, [2]*Instituto de Biociências, Letras e Ciências Exatas, UNESP - Univ Estadual Paulista*, *São José do Rio Preto, SP, Brazil*.

2:15 PM 193 **Application of an improved powder X-ray diffraction method to evaluate cheese crystals.**
G. Tansman*[1], P. S. Kindstedt[1], and J. M. Hughes[2], [1]*Department of Nutrition and Food Sciences*, *University of Vermont, Burlington*, [2]*Department of Geology*, *University of Vermont, Burlington*.

2:30 PM 194 **The effect of the exopolysaccharide producing cultures and adjunct cultures isolated from the Egyptian dairy environment on the texture and sensory characteristics of fat-free Cheddar Cheese.**
M. El Soda* and N. Ahmed, *Faculty of Agriculture, Alexandria University*, *Alexandria, Egypt*.

2:45 PM 195 **Effect of milk protein concentration on the microstructure and properties of full-fat Cheddar cheese during ripening.**
K. Soodam*[1,2], L. Ong[1,2], S. E. Kentish[1], and S. L. Gras[1,2], [1]*Department of Chemical and Biomolecular Engineering, The University of Melbourne*, *Melbourne, Victoria, Australia*, [2]*Bio21 Molecular Science and Biotechnology Institute, The University of Melbourne*, *Melbourne, Victoria, Australia*.

3:00 PM **Break**

3:15 PM 196 **Evaluation of an alternative method for the rapid and direct determination of sodium in cheese.**
J. A. Stankey*, C. Akbulut, J. Romero, and S. Govindasamy-Lucey, *Wisconsin Center for Dairy Research*, *Madison*.

3:30 PM 197 **Proteolysis and microstructure of salt-reduced Cheddar cheese.**
A. Sheibani*, M. M. Ayyash, T. Vasiljevic, and V. Mishra, *Victoria University*, *Melbourne, Victoria, Australia*.

Companion Animals: Companion and Captive Exotic Animals
Chair: Greg Aldrich, Kansas State University
122-123

2:00 PM 200 **Ingredient composition of diets offered to black-and-white ruffed lemurs (*Varecia variegata*) from surveyed United States zoological institutions.**
B. C. Donadeo*[1], K. R. Kerr[1], C. L. Morris[2,3], and K. S. Swanson[1], [1]*University of Illinois at Urbana-Champaign*, *Urbana*, [2]*Omaha's Henry Doorly Zoo & Aquarium*, *Omaha, NE*, [3]*Iowa State University*, *Ames*.

2:15 PM 201 **Amino acid composition and standardized digestibility of whole prey diet items intended for captive exotic and domestic felids.**
K. R. Kerr*[1,2], P. L. Utterback[2], C. M. Parsons[2], and K. S. Swanson[1,2], [1]*Division of Nutritional Sciences, University of Illinois*, *Urbana*, [2]*Department of Animal Sciences, University of Illinois*, *Urbana*.

2:30 PM 202 **The effects of L-carnitine on energy expenditure and fuel selection in adult Miniature Dachshunds, Beagles, and Labrador Retrievers measured using indirect calorimetry.**
D. Minikhiem*, K. Shoveller, J. DiGennaro, and L. Fortener, *Procter and Gamble*, *Mason, OH*.

2:45 PM **Break**

3:00 PM 203 **Effect of photoperiod on feline adipose transcriptome profiles as assessed by RNA sequencing (RNA-seq).**
A. Mori*[1], K. L. Keppen[1], and K. S. Swanson[1,2], [1]*Department of Animal Sciences, University of Illinois*, *Urbana*, [2]*Division of Nutritional Sciences, University of Illinois*, *Urbana*.

3:15 PM 205 **Potato pulp as a dietary fiber source in high quality dog foods.**
M. R. Panasevich*[1], R. N. Dilger[1,2], K. S. Swanson[1,2], L. Guérin-Deremaux[3], G. L. Lynch[4], and G. C. Fahey[1,2], [1]*University of Illinois Department of Animal Sciences*, *Urbana*, [2]*University of Illinois Division of Nutritional Sciences*, *Urbana*, [3]*Roquette Fréres, Biology and Nutrition Department*, *Lestrem, France*, [4]*Roquette America Inc.*, *Geneva, IL*.

3:30 PM 206 **Mannoheptulose has acute effects on post-prandial energy expenditure, respiratory quotient and insulin response in adult Beagles fed diets with different macronutrient contents.**
L. L. McKnight*[1], E. A. Flickinger[2], J. France[1], G. Davenport[2], and A. K. Shoveller[2,1], [1]*University of Guelph*, *Guelph, ON, Canada*, [2]*Procter & Gamble Pet Care*, *Mason, OH*.

3:45 PM **Break**

4:00 PM 207 **In vitro fermentation characteristics of coconut endosperm and chicory pulp fibers using canine fecal inoculum.**
M. R. C. de Godoy*[1], Y. Mitsuhashi[2], L. Bauer[1], G. C. Fahey[1], P. R. Buff[2], and K. S. Swanson[1], [1]*Department of Animal Sciences, University of Illinois*, *Urbana*, [2]*The Nutro Company*, *Franklin, TN*.

4:15 PM 208 **Pheromones and an interomone change the physiology and behavior of anxious dogs.**
W. G. Thompson* and J. J. McGlone, *Texas Tech University*, *Lubbock*.

Dairy Foods Symposium: New Approaches to Lower Sodium in Cheese and Techniques to Address Quality Challenges
Chair: David McCoy, Dairy Research Institute
Sponsor: Dairy Research Institute
120-121

2:00 PM **Introduction.**
D. McCoy.

2:05 PM 209 **Sodium reduction and public health—Why, how much, and current trends.**
J. Nicholls*, *National Dairy Council*, *Rosemont, IL*.

2:35 PM 210 **Lower sodium cheeses—Consumer acceptance and flavor differences.**
M. A. Drake*, *North Carolina State University*, *Raleigh*.

3:05 PM 211 **Lower sodium cheeses—Changes in the microbiology and safety.**
D. J. McMahon*, *Western Dairy Center, Utah State University*, *Logan*.

3:35 PM **Break**

3:50 PM 212 **Process cheese products—Approaches to manufacturing consumer acceptable process cheese products with less sodium.**
L. E. Metzger* and A. Kommineni, *South Dakota State University*, *Brookings*.

4:20 PM 213 **Unwanted gas formation in cheese—Newer information on causes and determining the composition of the cheese microbiota.**
J. Steele*, *University of Wisconsin-Madison*, *Madison*.

Milk Protein and Enzymes Symposium: Role of Enzymes in Dairy Processing
Chair: Rafael Jimenez-Flores, California Polytechnic State University
Sagamore 7

2:00 PM 214 **Enzymes in milk—A dynamic system.**
D. E. Otter*, *AgResearch Ltd*, *Palmerston North, New Zealand*.

2:30 PM 215 **EAAP-ADSA Speaker Exchange Presentation: Use of phospholipases to modify phospholipid functionality in dairy processing.**
R. Ipsen*, *Department of Food Science, University of Copenhagen*, *Frederiksberg C, Denmark*.

3:00 PM 216 **Oligosaccharides from lactose: Enzymatic synthesis and nutritional functionality.**
M. Gänzle*, *University of Alberta, Edmonton, Canada*.

3:30 PM 217 **Utilization of enzymes to influence the functionality of milk proteins.**
U. Kulozik*, *Technische Universität München, Chair for Food Process Engineering and Dairy Technology*, *Freising-Weihenstephan, Bavaria, Germany*.

Physiology and Endocrinology: Regulation of Estrus
Chair: José Santos, University of Florida
108

2:00 PM 218 **Use of digital infrared thermography to measure the skin temperature changes in estrus synchronized dairy cows.**
S. Talukder*[1], L. Ingenhoff[1], K. L. Kerrisk[1], S. C. Garcia[1], and P. Celi[1,2], [1]*The University of Sydney*, *Narellan, Australia*, [2]*The University of Melbourne*, *Parkville, Victoria, Australia*.

2:15 PM 219 **Presynchronizing PGF2α and GnRH injections before a fixed-time artificial insemination CO-Synch + CIDR program.**
S. L. Hill*[1], S. L. Pulley[1], K. C. Olson[1], J. R. Jaeger[1], R. M. Breiner[1], V. R. G. Mercadante[2], G. C. Lamb[2], and J. S. Stevenson[1], [1]*Kansas State University*, [2]*University of Florida*.

2:30 PM 220 **Influence of estrus at fixed-time AI on accessory sperm numbers and embryonic development.**
E. L. Larimore*[1], S. G. Kruse[2], B. J. Funnell[2], S. L. Bird[2], O. L. Swanson[1], G. A. Bridges[2], and G. A. Perry[1], [1]*Department of Animal Science, South Dakota State University*, *Brookings*, [2]*North Central Research and Outreach Center, University of Minnesota*, *Grand Rapids*.

2:45 PM 221 **Reducing handling in the 5-day timed AI program in dairy cows.**
J. S. Stevenson*, S. L. Pulley, and S. L. Hill, *Kansas State University*, *Manhattan*.

3:00 PM 222 **Effect of presynchronization using Ovsynch or a single GnRH injection 7 d before an Ovsynch56 protocol on fertility of lactating dairy cows at first service.**
P. D. Carvalho*, J. N. Guenther, M. J. Fuenzalida, M. C. Amundson, M. C. Wiltbank, and P. M. Fricke, *Department of Dairy Science, University of Wisconsin-Madison*, *Madison*.

3:15 PM 223 **Relationship of follicle size and concentrations of estradiol among cows that do and do not exhibit estrus during a fixed-time AI protocol.**
O. L. Swanson*[1], E. L. Larimore[1], B. L. Perry[1], G. D. Djira[2], R. A. Cushman[3], and G. A. Perry[1], [1]*Department of Animal Science, South Dakota State University*, *Brookings*, [2]*Department of Mathematics and Statistics, South Dakota State University*, *Brookings*, [3]*USDA-ARS, U.S. Meat Animal Research Center*, *Clay Center, NE*.

3:30 PM 224 **Progesterone supplementation to dairy cows lacking a corpus luteum (CL) at the initiation of the Ovsynch protocol.**
R. S. Bisinotto*, N. Martinez, F. S. Lima, T. L. C. Pinto, R. S. Surjus, G. C. Gomes, E. S. Ribeiro, L. F. Greco, W. W. Thatcher, and J. E. P. Santos, *University of Florida*, *Gainesville*.

3:45 PM 225 **Resumption of postpartum ovarian cyclicity in dairy cows and its relationship with acute phase proteins, uterine health and lipolysis during the transition period.**
C. C. Brauner*[1], A. R. T. Krause[1], M. E. Lima[1], E. G. Xavier[2], A. Schneider[1], E. Schmitt[3], E. Schwegler[1], M. M. Weschenfelder[1], P. Montagner[1], F. A. B. Del Pino[1], M. N. Corrêa[1], and L. F. M. Pfeifer[3], [1]*Universidade Federal de Pelotas, NUPEEC*, *Pelotas, RS, Brazi*, [2]*Granjas 4 Irmãos S/A*, *Rio Grande, RS, Brazil*, [3]*Empresa Brasileira de Pesquisa Agropecuária EMBRAPA*, *Porto Velho, RO, Brasil*.

4:00 PM 226 **A missense mutation in growth differentiation factor-9 (GDF9) increases ovulation rate in sheep.**
M. P. Mullen* and J. P. Hanrahan, *Animal and Grassland Research and Innovation Centre, Teagasc*, *Athenry, Co. Galway, Ireland*.

4:15 PM 227 **Effect of exogenous FSH on endogenous FSH secretion and testicular development in prepubertal bulls.**
B. R. Harstine*[1], L. H. Cruppe[1], F. M. Abreu[1], M. D. Utt[1,3], R. S. Cipriano[1], C. Premanandan[2], J. M. DeJarnette[3], and M. L. Day[1], [1]*Department of Animal Sciences, The Ohio State University*, *Columbus*, [2]*Department of Veterinary Biosciences, The Ohio State University*, *Columbus*, [3]*Select Sires Inc.*, *Plain City, OH*.

4:30 PM 228 **Effect of estradiol benzoate on estrus intensity, estrus response and fertility in CIDR-treated crossbred heifers.**
M. U. Mehmood*[1], A. Y. Qamar[1], N. Ahmad[1], A. Sattar[1], and M. Abdullah[2], [1]*Department of Theriogenology, University of Veterinary and Animal Sciences*, *Lahore, Punjab, Pakistan*, [2]*Department of Livestock Production, University of Veterinary and Animal Sciences*, *Lahore, Punjab, Pakistan*.

Physiology and Endocrinology Symposium: The Next Generation of Metabolic Endocrinology
Chair: Kevin Harvatine, Penn State University
105-106

2:00 PM 229 **Novel insights in to the biology of the emerging metabolic regulator FGF21.**
A. C. Adams* and A. Kharitonenkov, *Eli Lilly & Co*, *Indianapolis, IN*.

2:40 PM 230 **Biology of the novel hormone fibroblast growth factor-21 in the transition dairy cow.**
Y. R. Boisclair*, S. L. Giesy, and L. S. Caixeta, *Cornell University*, *Ithaca, NY*.

3:15 PM 231 **Role of adiponectin and visfatin in chicken growth and reproduction.**
R. Ramachandran*, S. Krzysik-Walker, O. Ocon-Grove, R. Vasilatos-Younken, G. Hendricks, and J. A. Hadley, *Department of Animal Science, Pennsylvania State University*, *University Park*.

3:50 PM 232 **Characterization of serum adiponectin during lactation in dairy cows supplemented with conjugated linoleic acids.**
S. P. Singh*[1], S. Häussler[1], S. Dänicke[2], M. Mielenz[3,1], and H. Sauerwein[1], [1]*Institute of Animal Science, Physiology and Hygiene Group, University of Bonn*, *Bonn, Germany*, [2]*Institute of Animal Nutrition, Friedrich-Loeffler-Institute (FLI), Federal Research Institute for Animal Health*, *Braunschweig, Germany*, [3]*Leibniz Institute for Farm Animal Biology (FBN), Department of Nutritional Physiology*, *Dummerstorf, Germany*.

4:05 PM 233 **Daily injection of tumor necrosis factor alpha in the first week of lactation decreases milk production and promotes health disorders in Holstein dairy cows.**
J. K. Farney*, K. Yuan, L. K. Mamedova, and B. J. Bradford, *Kansas State University*, *Manhattan*.

4:20 PM 234 **Inflammation and endoplasmic reticulum (ER) stress gene network expression in liver of peripartal Holstein cows fed two levels of dietary energy prepartum.**
M. J. Khan*[1], E. Trevisi[2], D. E. Graugnard[1], G. Bertoni[2], and J. J. Loor[1], [1]*University of Illinois*, *Urbana*, [2]*Universita Cattolica del Sacro Cuore*, *Piacenza, Italy*.

Production, Management and the Environment: Diet and Forage I
Chair: Stephanie Ward, Mississippi State University
Wabash Ballroom 1

2:00 PM 235 **Effect of dried distillers grains with solubles on nitrogen emissions from soil-applied beef manure.**
J. Roth* and W. Powers, *Michigan State University*, *East Lansing*.

2:15 PM 236 **Effects of PN Beef supplements and exogenous growth promotants on feedlot performance and carcass characteristics.**
K. J. Phelps*[1], K. A. Miller[1], C. L. Van Bibber-Krueger[1], C. A. Alvarado-Gilis[1], A. K. Sexten[1], J. S. Jennings[2], J. M. Gonzalez[1], and J. S. Drouillard[1], [1]*Kansas State University*, *Manhattan*, [2]*Alltech Inc.*, *Nicholasville, KY*.

2:30 PM 237 **Effect of dietary nitrate supplementation on dairy cattle enteric methane and nitrous oxide emissions.**
Q. Wang[1], C. J. Neumeier*[1], G. Getachew[2], D. H. Putnam[2], A. R. Castillo[3], and F. M. Mitloehner[1], [1]*Department of Animal Science, University of California, Davis*, *Davis*, [2]*Department of Plant Science, University of California, Davis*, *Davis*, [3]*University of California Cooperative Extension*, *Merced*.

2:45 PM 238 **Effect of dietary protein concentration on utilization of dairy manure nitrogen for plant growth, leachate nitrate-N losses, and ammonia emissions from lysimeters.**
C. Lee[1], G. W. Feyereisen[2], A. N. Hristov*[1], C. J. Dell[3], J. P. Kaye[4], and D. B. Beegle[4], [1]*Department of Animal Sciences, The Pennsylvania State University*, *University Park*, [2]*USDA-ARS-SWMRU*, *St. Paul, MN*, [3]*USDA-ARS-PSWMRU*, *University Park, PA*, [4]*Department of Crop and Soil Sciences, The Pennsylvania State University*, *University Park*.

3:00 PM 239 **Effect of abomasal ferrous lactate infusion on phosphorus digestion and absorption in lactating dairy cows.**
X. Feng*, K. F. Knowlton, A. D. Dietrich, and S. Duncan, *Virginia Polytechnic Institute and State University*, *Blacksburg*.

3:15 PM **Break**

3:30 PM 240 **Effects of supplemented chromium propionate on milk performance and disease occurrence status in transition cows.**
C. Wang*[1,3], K. Wang[1], Z. Y. Duan[2], Y. Lao[2], D. M. Wang[1], and J. X. Liu[1], [1]*Institute of Dairy Science, Zhejiang University*, *Hangzhou, China*, [2]*Kemin Industries (Zhuhai) Co. Ltd*, *Zhuhai, China*, [3]*Zhejiang Agriculture & Forestry University*, *Lin'an, China*.

3:45 PM 241 **Transfer of dietary aflatoxin B1 to milk aflatoxin M1 and effect of adding absorbent on the transfer and lactation performance of dairy cows.**
J. L. Xiong*[1], Y. M. Wang[2], Y. Li[1,3], and J. X. Liu[1], [1]*Institute of Dairy Science, Zhejiang University*, *Hangzhou, China*, [2]*Novus International Trading (Shanghai) Co., Ltd*, *Shanghai, China*, [3]*Department of Animal Science, Zhoukou Vocational and Technical College*, *Zhoukou, China*.

4:00 PM 242 **Effect of stocking density in the prepartum period on health and productive parameters of Jersey cows.**
A. Dresch*[1], P. Silva[2], H. Hooper[1], C. Spies[1], P. Lau[1], K. Lobeck[2], K. Machado[1], M. Endres[2], and R. Chebel[1], [1]*Department of Veterinary Population Medicine*, *University of Minnesota, St Paul*, [2]*Department of Animal Science*, *University of Minnesota, St Paul*.

4:15 PM 243 **Supranutritional doses of selenium and vitamin E reduce the negative effects of heat stress in sheep by reducing systemic and respiratory oxidative stress.**
S. S. Chauhan*[1,2], P. Celi[3,2], B. J. Leury[2], F. Liu[2], and F. R. Dunshea[2], [1]*Department of Animal Husbandry*, *Himachal Pradesh, Shimla (HP), India*, [2]*Melbourne School of Land and Environment, The University of Melbourne*, *Parkville, VIC, Australia*, [3]*Faculty of Veterinary Science, University of Sydney*, *Narellan, NSW, Australia*.

Ruminant Nutrition: General Topics
Chair: Shawn Archibeque, Colorado State University
Sagamore 2

2:00 PM 244 **Effect of rice bran and legume inclusion in a straw diet on intake, digestibility, nitrogen retention, digesta kinetics and methane production of beef cattle.**
M. Pen*, D. B. Savage, J. V. Nolan, and R. S. Hegarty, *School of Environmental and Rural Science, University of New England*, *Armidale, NSW, Australia*.

2:15 PM 245 **In vitro gas production and DM digestibility of two malt barley varieties sown with different seeding and N fertilization rates in seven sites across Canada.**
S. Ding*[1,2], M. Oba[2], M. L. Swift[3], W. Z. Yang[1], and T. A. McAllister[1], [1]*Lethbridge Research Centre*, *Lethbridge, AB, Canada*, [2]*Department of Agricultural, Food and Nutritional Science, University of Alberta*, *Edmonton, AB, Canada*, [3]*Alberta Agriculture and Rural Development*, *Lacombe, AB, Canada*.

2:30 PM 246 **Biomass yield and nutritive value assessment of *Chloris gayana* grown in a tropical region.**
S. Uwituze*[1], O. Twajamahoro[1], G. Uwimana[2], and M. Mutimura[2], [1]*National University of Rwanda*, *Butare, Rwanda*, [2]*Rwanda Agriculture Board*, *Kigali, Rwanda*.

2:45 PM 247 **Dietary exposure to ergot alkaloids decreases contractility of bovine mesenteric vasculature.**
A. M. Egert*[1], D. H. Kim[1], D. L. Harmon[1], and J. L. Klotz[2], [1]*University of Kentucky*, *Lexington*, [2]*USDA-ARS, FAPRU*, *Lexington, KY*.

3:00 PM 248 **Steam-explored rice straw produced in an industrial-scale reactor as a feed ingredient for lactating dairy cow.**
Y. J. Su[1], G. L. Liu*[1,2], X. K. Zhang[1], C. G. Zhang[1], and G. Yang[1], [1]*State Key Laboratory of Dairy Biotechnology, Shanghai Bright Holstan Co. Ltd*, *Shanghai, China*, [2]*Shanghai Dairy Breeding Center Co. Ltd*, *Shanghai, China*.

3:15 PM 249 **Volatile fatty acids accumulated in rumen contributed to the low dietary physically effective NDF induced subacute ruminal acidosis.**
F. Li, J. Yao*, Z. Li, S. Li, and K. Liu, *College of Animal Science and Technology, Northwest A&F University*, *Yangling, Shaanxi, China*.

3:30 PM 250 **Visceral chemical composition and cellularity of beef cows grazing different herbage allowances of native pastures.**
A. Casal, A. L. Astessiano*, A. I. Trujillo, and M. Carriquiry, *Facultad de Agronomia, UdelaR*, *Montevideo, Uruguay*.

3:45 PM 251 **Substitution of polymer coated urea for soybean meal on growth performance and blood parameters in feedlot lambs fed corn stalks.**
A. Chegeni*[1,2], Y. L. Li[1], C. G. Jiang[1], and Q. Y. Diao[1], [1]*Feed Research Institute, Chinese Academy of Agricultural Sciences*, *Beijing, China*, [2]*Lorestan Agricultural and Natural Resources Research Center*, *Khorramabad, Lorestan, Iran*.

4:00 PM 252 **Effect of conservation and maturity of primary growth grass/clover on chewing activity and fecal particle size in heifers.**
A. S. Koch*[1], P. Nørgaard[1], and M. R. Weisbjerg[2], [1]*Dept. of Veterinary Clinical and Animal Science, University of Copenhagen*, *Copenhagen, Denmark*, [2]*Dept. of Animal Science, Aarhus University*, *Foulum, Denmark*.

4:15 PM 253 **Effect of weaning age and milk feeding level on pre and post weaning growth performance of Sahiwal calves.**
S. A. Bhatti*[1], A. T. Cheema[1], G. Akbar[2], P. C. Wynn[3], M. Sarwar[1], and H. M. Warriach[3], [1]*Institute of Animal Nutrition and Feed Technology, University of Agriculture*, *Faisalabad, Pakistan*, [2]*Livestock Production Research Institute*, *Bahadurnagar, Okara, Pakistan*, [3]*EH Graham Centre (NSW Industry and Investment and Charles Sturt University)*, *Wagga Wagga, Australia*.

4:30 PM 254 **Investigating the nutritive value of Mexican sunflower leaves for ruminant animals.**
A. H. Ekeocha*[1] and A. O. Akinsoyinu[2], [1]*Ondo State University of Science and Technology*, *Okitipupa, Ondo, Nigeria*, [2]*University of Ibadan*, *Ibadan, Oyo, Nigeria*.

4:45 PM 812 **Evaluation of a high forage total mixed ration in mid- to late-lactation dairy cows.**
D. Gadeken*, C. Hulstein, D. P. Casper, K. Kalscheur, and J. Anderson, *Dairy Science Department, South Dakota State University*, *Brookings*.

Small Ruminant: Production, Management, and Cell Biology
Chair: Tilahun Sahlu, Langston University
109

2:00 PM 816 **Use of pelleted sericea lespedeza (*Lespedeza cuneata*) for natural control of coccidiosis in weaned goats.**
T. H. Terrill*[1], D. S. Kommuru[1], S. Desai[1], J. E. Miller[2], J. M. Burke[3], and J. A. Mosjidis[4], [1]*Fort Valley State University*, *Fort Valley, GA*, [2]*Louisiana State University*, *Baton Rouge*, [3]*USDA/ARS*, *Booneville, AR*, [4]*Auburn University*, *Auburn, AL*.

2:15 PM 817 **Sericea lespedeza as an aid in the control of *Eimeria* spp. in lambs.**
M. Acharya*[1], J. Burke[1], J. Miller[1], T. Terrill[1], and J. Mosjidis[1], [1]*University of Arkansas*, *Fayetteville*, [2]*USDA, Agricultural Research Service*, *Booneville, AR*, [3]*Louisiana State University*, *Baton Rouge*, [4]*Fort Valley State University*, *Fort Valley, GA*, [5]*Auburn University*, *Auburn, AL*.

2:30 PM 818 **The relationship of OPP infection to performance and TMEM154 genotype in a Midwestern sheep flock.**
T. W. Murphy*[1], T. A. Taylor[1], and D. L. Thomas[1], [1]*Department of Animal Sciences, University of Wisconsin-Madison*, *Madison*, [2]*Research Animal Resources Center, University of Wisconsin-Madison*, *Madison*.

2:45 PM 819 **Effect of feeding a pelletized diet containing 21% ground pumpkin seeds on BW, fecal egg count, and blood hematocrit in Katahdin cross lambs.**
E. N. Escobar, J. Rodriguez*, A. N. Gideon, V. Purnell-Cropper, and H. Taylor, *University of Maryland Eastern Shore*, *Princess Anne, MD*.

3:00 PM 820 **Effect of ground pumpkin seeds (*Cucurbita* sp.) fed in a pelletized diet on BW, fecal egg counts, and blood hematocrit in experimentally *Haemonchus contortus* infected meat goat kids.**
E. N. Escobar*, J. Rodriguez, A. N. Gideon, V. Purnell-Cropper, and H. Taylor, *University of Maryland Eastern Shore*, *Princess Anne, MD*.

3:15 PM 821 **Safety and efficacy of low-dose, subacute exposure of mature ewes to sodium chlorate.**
J. B. Taylor*[1], R. S. Dungan[2], and D. J. Smith[3], [1]*USDA, ARS, US Sheep Experiment Station*, *Dubois, ID*, [2]*USDA, ARS, Northwest Irrigation and Soils Research Laboratory*, *Kimberly, ID*, [3]*USDA, ARS, Biosciences Research Laboratory*, *Fargo, ND*.

3:30 PM 822 **Cyclical and mild heat stress does not reduce dry matter intake but decreases average daily gain in Afshari lambs.**
E. Mahjoubi*[1], L. H. Baumgard[2], H. Amanlou[1], H. R. Mirzaei[1], N. Aghaziarati[1], M. H. Yazdi[1], G. R. Noori[1], and M. G. Khan[1], [1]*Zanjan University*, *Zanjan, Iran*, [2]*Iowa State University*, *Ames*.

3:45 PM 823 **The relationship between metatarsal and metacarpal condyle length and claw size in sheep—A postmortem study.**
S. Azarpajouh*[1], M. Mehdizadeh[2], and A. Mohamadnia[3], [1]*University of Missouri-Columbia*, *Columbia*, [2]*Shahrekord University*, *Shahrekord, Iran*, [3]*Ferdowsi University*, *Mashad, Iran*.

4:00 PM 824 **Doe fitness traits among four meat goat breeds in a reconstituted herd on humid, subtropical pasture.**
R. Browning*[1], J. Groves[1], M. L. Leite-Browning[2], L. Moore[1], and M. Byars[1], [1]*Tennessee State University*, *Nashville*, [2]*Alabama A&M University*, *Huntsville*.

4:15 PM 825 **Modeling the body composition of growing Santa Inês ewe lambs.**
L. F. L. Cavalcanti*[2,1], I. Borges[2], V. L. Silva[2], and L. O. Tedeschi[1], [1]*Texas A&M University*, *College Station*, [2]*Universidade Federal de Minas Gerais*, *Belo Horizonte, Minas Gerais, Brazil*.

4:30 PM 826 **Time limits of postmortem cell survival in goat ear skin stored at room temperature.**
M. Singh*, X. Ma, G. Kannan, and E. Amoah, *Fort Valley State University*, *Fort Valley, GA*.

4:45 PM 827 **Validation of the role of chromium in reducing body fat by determining the expression of multiple transcripts involved in fatty acid biosynthesis in domestic goat.**
M. Sadeghi and M. J. Najafpanah*, *University of Tehran*, *Tehran, Iran*.

Undergraduate Student Competition
ADSA-SAD Undergraduate Competition: Original Research
Chair: Kas Ingawa, Dairy Records Management Systems-NCSU
201

2:00 PM 255 **Leptospirosis and erythrocyte patterns: An exploration through nonlinear dynamics.**
C. A. Comyn*[1], S. P. Washburn[1], and V. Cortese[2], [1]*North Carolina State University Department of Animal Science*, *Raleigh*, [2]*Zoetis, Cattle-Equine Immunology and Biologics*, *Simpsonville, KY*.

2:15 PM 256 **Effect of milk feeding frequency and weaning age on growth and intake of dairy calves.**
S. A. McCullough*[1], T. S. Dennis[1], S. E. Fraley[1], B. Houin[2], and T. D. Nennich[1], [1]*Purdue University*, *West Lafayette, IN*, [2]*Homestead Dairy*, *Plymouth, IN*.

2:30 PM 257 **Characterization of quarter milking pulsation and take-off in a conventional milking parlor.**
S. M. Smith*, J. M. Bewley, K. J. McQuerry, and C. L. Wood, *University of Kentucky*, *Lexington*.

2:45 PM 258 **Variation in milk production within dairy herds.**
S. K. Finney*, M. L. Eastridge, W. P. Weiss, and N. R. St-Pierre, *The Ohio State University*, *Columbus*.

3:00 PM 259 **Choosing appropriate temperature-humidity indices to predict the incidence of heat stress in lactating dairy cattle by analyzing local weather data for central Iowa.**
E. Hodges*, P. J. Berger, and G. Takle, *Iowa State University*, *Ames*.

3:15 PM **Break**

3:30 PM 260 **Correlations among nutritional status of the dairy cow during early gestation and subsequent growth and cardiac measurements of her offspring.**
D. K. Hardin*, B. E. Voelz, H. M. Kerr, K. A. Barton, C. O. Lemley, and J. E. Larson, *Mississippi State University*, *Mississippi State*.

3:45 PM 261 **High moisture corn increased hepatic gene expression for anapleurotic and gluconeogenic enzymes compared with dry corn for Holstein cows in the postpartum period.**
C. M. Ylioja*, R. J. Rockwell, and M. S. Allen, *Michigan State University*, *East Lansing*.

4:00 PM 262 **The association of telomere length and body weight in lactating Holsteins.**
I. W. Haagen*, C. D. Dechow, and D. E. Brown, *Penn State University*, *University Park*.

4:15 PM 263 **The effects of corn silage inclusion in pre-weaned calf diets.**
S. Retz*[1], S. I. Kehoe[1], K. McFarland[2], and G. Suen[2], [1]*University of Wisconsin-River Falls*, *River Falls*, [2]*University of Wisconsin-Madison*, *Madison*.

Teaching/Undergraduate and Graduate Education: Learning Styles and Student Success
Chair: Barry Bradford, Kansas State University
107

2:00 PM 264 **Developing critical academic and social connections for incoming students prior to the first day of classes using a combination of innovative programs .**
H. D. Tyler* and J. A. Sterle, *Iowa State University*, *Ames*.

2:15 PM 265 **Learning style preferences of animal science undergraduates.**
C. Mortensen* and A. Thoron, *University of Florida*, *Gainesville*.

2:30 PM 266 **Motivation for undergraduate students to participate in an equine study abroad course.**
C. Brady*[1], J. Peters[2], M. Voigt[1], and M. Russell[2], [1]*Department of Youth Development and Agricultural Education, Purdue University*, *West Lafayette, IN*, [2]*Department of Animal Sciences, Purdue University*, *West Lafayette, IN*.

2:45 PM 267 **Student perceptions of sustainable and organic agriculture.**
L. Unruh Snyder*[1], T. Durham[2], A. Davis[4], and T. Irani[3], [1]*North Carolina State University*, *Raleigh*, [2]*Florida Gulf Coast*, *Fort Myers*, [3]*University of Florida*, *Gainesville*, [4]*Purdue University*, *West Lafayette, IN*.

3:00 PM 268 **Student engagement in learning anytime/anywhere: Enhancing learning with technology in the animal sciences.**
J. M. Osborne*, B. A. Wenner, T. A. Evans, M. C. Chakerian, R. W. Flood, M. R. Hendrick, and H. N. Zerby, *The Ohio State University*, *Columbus*.

3:15 PM 269 **Predicting the quality of an undergraduate animal science course using the IDEA survey.**
M. J. Anderson, K. J. Stutts, M. M. Beverly, and S. F. Kelley*, *Sam Houston State University*, *Huntsville, TX*.

Trace Mineral Nutrition Symposium
Chair: Jeff Cohen, Micronutrients
Sponsor: Micronutrients
Sagamore 1

2:00 PM **Introduction**
F. Steward, *Micronutrients, Indianapolis, IN.*

2:10 PM 270 **The role of trace minerals in feed stability and swine production.**
M. D. Lindemann*, *University of Kentucky*, *Lexington*.

2:50 PM 271 **Exploring cellular trace mineral metabolism in bovine and porcine tissues.**
R. S. Fry*[1], J. W. Spears[2], M. S. Ashwell[2], and S. L. Hansen[3], [1]*Provimi North America*, *Brookville, OH*, [2]*North Carolina State University*, *Raleigh*, [3]*Iowa State University*, *Ames*.

3:30 PM **Break**

3:50 PM	272	**Relative bioavailability, immune function, and antimicrobial effects of trace minerals.** K. C. Klasing* and V. J. Iseri, *University of California*, *Davis*.
4:30 PM	273	**Practical applications of trace minerals in dairy cattle.** T. R. Overton* and T. Yasui, *Cornell University*, *Ithaca, NY*.
5:10 PM		**Discussion and questions**

Wednesday, July 10

POSTER PRESENTATIONS

Dairy Foods: Chemistry and Processing II

W1 **Microfiltration and ultrafiltration process to produce micellar casein concentrate and milk protein concentrates with 80% protein content.**
P. Salunke, C. Marella*, and L. E. Metzger, *Dairy Science Department, Midwest Dairy Foods Research Center, South Dakota State University*, *Brookings*.

W2 **Understanding shear-induced aggregation in partially crystalline oil-in-water emulsions.**
G. Fuller*[1,2], T. Considine[1], M. Golding[2], L. Matia-Merino[2], and A. MacGibbon[1], [1]*Fonterra Co-operative Group Limited*, *Palmerston North, New Zealand*, [2]*Massey University*, *Palmerston North, New Zealand*.

W3 **Effect of Maillard-induced glycosylation on the molecular configuration of whey protein and its solubility and thermal stability for beverage applications.**
Q. Wang* and B. Ismail, *University of Minnesota*, *St Paul*.

W4 **Development of a multiclass method for determination of 38 veterinary drugs in milk by ultra-high-performance liquid chromatography-tandem mass spectrometry.**
R. W. Han[1,3], N. Zheng[1,2], J. Q. Wang*[1,2], Z. N. Yu[3], X. M. Xu[1,2], Y. P. Zhen[1,2], X. Y. Qu[1,2], and L. C. Huang[1,2], [1]*State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*, [2]*Ministry of Agriculture–Milk and Dairy Product Inspection Center (Beijing)*, *Beijing, China*, [3]*College of Food Science and Engineering, Qingdao Agricultural University*, *Qingdao, Shandong, China*.

W5 **A UPLC-MS/MS method to simultaneouly determine aflatoxin M1, ochratoxin A, zearalenone and α-zearalenol in milk.**
L. C. Huang[1,3], N. Zheng[1,2], J. Q. Wang*[1,2], J. B. Cheng[1,3], R. W. Han[1,2], X. M. Xu[1,2], and S. L. Li[1,2], [1]*State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*, [2]*Ministry of Agriculture–Milk and Dairy Product Inspection Center (Beijing)*, *Beijing, China*, [3]*College of Animal Science and Technology, Anhui Agricultural University*, *Hefei, China*.

W6 **Comparison of amino acid composition of milk from different species.**
J. X. Zhang[2,3], J. Q. Wang*[1,2], D. P. Bu[2], J. H. Yang[2], L. Ma[2], and J. T. Chen[2], [1]*Agronomy College of Heilongjiang August First Land Reclamation University*, *Heilongjiang, China*, [2]*Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*, [3]*Xinjiang Agricultural University*, *Urumqi, China*.

W7 **Determination of milk composition using near-infrared transflectance spectrum.**
L. Ma[1,2], J. Q. Wang*[1], D. P. Bu[1], J. H. Yang[1], J. X. Zhang[1], and J. T. Chen[1], [1]*Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*, [2]*Inner Mongolia Agricultural University*, *Huhhot, Inner Mongolia, China*.

W8 **Evolution of milk calcium content during the year.**
C. Hurtaud*[1], M. Johan[1], S. Leurent[2], Y. Gallard[2], and L. Delaby[1], [1]*INRA-Agrocampus Ouest UMR 1348 PEGASE*, *Saint-Gilles, France*, [2]*INRA Domaine du Pin-au-Haras*, *Exmes, France*.

W9 **Quantitative analysis of supercritical carbon dioxide (sc-CO2) treated β-lactoglobulin tryptic peptides.**
C. Kembel* and R. Jimenez-Flores, *California Polytechnic State University*, *San Luis Obispo*.

W10 **AFM imaging and analysis of phospholipid monolayers.**
J. Cuthbert*[1], S. Gallier[2], D. Gragson[1], and R. Jimenez-Flores[1], [1]*California Polytechnic State University*, *San Luis Obispo*, [2]*Massey University*, *Palmerston North, New Zealand*.

W11 **Correlation between solubility and solubility index of high protein milk protein concentrates.**
H. Patel*[1], P. Salunke[1], and J. Amamcharla[2], [1]*Dairy Science Department, South Dakota State University*, *Brookings*, [2]*Animal Sciences and Industry, Kansas State University*, *Manhattan*.

W12 **Phospholipids from milk help cancer prevention in skin cell culture.**
L.-A. Nguyen*[1], L. H. Laiho[1], and R. Jiménez-Flores[2], [1]*California Polytechnic State University, Biomedical Engineering Department*, *San Luis Obispo*, [2]*Dairy Products Technology Center*, *San Luis Obispo*.

W13 **Reduction of aflatoxin M1 content during manufacture and storage of Egyptian Domiati cheese.**
M. Motawee*, *National Organization for Drug Control and Research*, *Cairo, Egypt*.

W14 **Limited glycerolysis and transesterification reactions to change the fatty acid composition and crystallization properties of butterfat.**
D. Sanchez-Macias[2,1], A. Laubscher*[1], and R. Jimenez-Flores[1], [1]*California Polytechnic State University*, *San Luis Obispo*, [2]*Agroindustrial Engineering Department*, *Universidad Nacional del Chimborazo. Riobamba, Ecuador*.

W15 **The effects of microfluidization on the particle size distribution of liposomal aggregates between whey buttermilk and commercial sweet buttermilk.**
T. Nguyen* and R. Jimenez-Flores, *California Polytechnic State University*, *San Luis Obispo*.

W16 **Fast and easy screening of whey protein types using a novel portable infrared spectroscopy.**
T. Wang* and L. Rodriguez-Saona, *The Ohio State University*, *Columbus*.

W17 **Effect of transglutaminase treatment on the functionality of MPC and MCC: Functional properties.**
P. Salunke*, C. Marella, and L. E. Metzger, *Dairy Science Department, Midwest Dairy Foods Research Center, South Dakota State University*, *Brookings*.

W18 **Effect of transglutaminase treatment on the functionality of MPC and MCC: Yogurt formulation.**
P. Salunke*, C. Marella, and L. E. Metzger, *Dairy Science Department, Midwest Dairy Foods Research Center, South Dakota State University*, *Brookings*.

W19 **Adiponectin concentrations in cow milk during induced negative energy balance.**
S. P. Singh*[1], S. Häussler[1], J. J. Gross[2], R. M. Bruckmaier[2], and H. Sauerwein[1], [1]*Institute of Animal Science, Physiology and Hygiene Group, University of Bonn*, [2]*Veterinary Physiology, Vetsuisse Faculty University of Bern*.

W20 **Effect of transglutaminase treatment on the functionality of MPC and MCC: Imitation mozzarella cheese manufactured in twin screw cooker.**
P. Salunke*, C. Marella, and L. E. Metzger, *Dairy Science Department, Midwest Dairy Research Center, South Dakota State University*, *Brookings*.

Ruminant Nutrition: Fats, Fatty Acids, Oils, and Glycerin Supplementation I

W21 **Investigation of microbial diversity in the feces of cattle fed different diets.**
M. Kim*[1], J. Kim[2], L. Kuehn[1], J. Bono[1], E. Berry[1], N. Kalchayanand[1], H. Freetly[1], A. Benson[2], and J. Wells[1], [1]*USDA, ARS, U.S. Meat Animal Research Center*, *Clay Center, NE*, [2]*University of Nebraska*, *Lincoln*.

W22 **Reproductive performance of beef heifers supplemented with saturated or unsaturated rumen bypass fat.**
N. M. Long*[1], T. A. Burns[1], S. K. Duckett[1], and D. W. Schafer[2], [1]*Department of Animal and Veterinary Science, Clemson University*, *Clemson, SC*, [2]*Department of Animal Science, University of Arizona*, *Tucson*.

W23 **Effect of crude glycerin on carcass and meat characteristics of Nellore bulls.**
E. H. C. B. van Cleef[1], J. M. B. Ezequiel[2], A. P. D'Aurea[2], J. B. D. Sancanari[2], D. A. V. Silva[2], F. B. O. Scarpino[2], and R. M. P. Pardo*[3], [1]*Kansas State University*, *Manhattan*, [2]*São Paulo State University*, *Jaboticabal, São Paulo, Brazil*, [3]*Sucre University*, *Sincelejo, Colombia*.

W24 **Effect of essential oils, monensin, and tylosin on performance and carcass characteristics of finishing heifers.**
J. S. Schutz*[1], M. L. Hubbert[1], C. J. Redding[1], J. D. Caballero[2], P. J. Guiroy[3], and C. A. Loest[2], [1]*Clayton Livestock Research Center, New Mexico State University*, *Clayton*, [2]*Animal and Range Sciences, New Mexico State University*, *Las Cruces*, [3]*Cargill Incorporated*, *Minneapolis, MN*.

W25 **Traditional and novel feed additives for beef cattle.**
F. G. Ribeiro*[1,2], C. C. Coutinho[1,2], D. C. Rivaroli[1,3], A. Cominotte[1,4], E. Rodrigues[1], A. M. Jorge[1], E. A. Filgueiras[5,2], and R. D. Sainz[6,7], [1]*Universidade Estadual de São Paulo*, *Botucatu, SP, Brazil*, [2]*CAPES - Coordenação de Aperfeiçoamento de Pessoal de Nível Superior*, *Brasília, DF, Brazil*, [3]*CNPq - Conselho Nacional de Desenvolvimento Científico e Tecnológico*, *Brasília, DF, Brazil*, [4]*FAPESP - Fundação de Amparo à Pesquisa do Estado de São Paulo*, *São Paulo, SP, Brazil*, [5]*Universidade Federal de Goiás*, *Goiânia, GO, Brazil*, [6]*Embrapa*, *Goiânia, GO, Brazil*, [7]*University of California*, *Davis*.

W26 **Effect of essential oils (Next Enhance 300) on fermentation characteristics of rumen microbiota in continuous culture.**
N. F. Johnson*[1], M.C. Westerhold[1], M. S. Kerley[1], W. J. Sexten[1], and T. J. Wistuba[2], [1]*University of Missouri*, *Columbia*, [2]*Novus International Inc.*, *St. Charles, MO*.

W27 **Supplementation of rumen-protected PUFA in corn-fed beef steers.**
C. M. Warner*, S. L. Archibeque, T. E. Engle, J. J. Wagner, D. R. Woerner, I. N. Roman-Muniz, and H. Han, *Colorado State University*, *Fort Collins*.

W28 **Effects of extracts of cashew nut shell and castor oil on in vitro ruminal fermentation, gas production kinetics, and methane production.**
C. T. Marino[2], M. J. Ruiz-Moreno[1], T. M. Schulmeister[1], F. M. Ciriaco*[1], D. D. Henry[1], V. R. G. Mercadante[1], G. C. Lamb[1], and N. DiLorenzo[1], [1]*North Florida Research and Education Center, University of Florida*, *Marianna*, [2]*Universidade de São Paulo, FMVZ*, *Pirassununga, Brazil*.

W29 **Production performance parameters of early lactation dairy cows fed a diet supplemented with Megalac or a fatty acid prill containing high levels of palmitic acid.**
E. Block*[1], L. Kung[2], and C. Merrill[2], [1]*Arm & Hammer Animal Nutrition*, *Princeton, NJ*, [2]*University of Delaware*, *Newark*.

W30 **Effect of feeding milk fat rich in conjugated linoleic acid on immune response in BALB/c mice.**
D. P. Bu, R. C. Zhang, and J. Q. Wang*, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*.

W31 **Does supplementing essential fatty acids in the late gestation and the preweaning periods influence future productivity of Holstein heifers?**
M. Garcia*, L. F. Greco, W. W. Thatcher, J. E. P. Santos, and C. R. Staples, *University of Florida*, *Gainesville*.

W32 **Performance and health responses of dairy calves offered different milk replacer allowances.**
A. Bach*[1,2], M. Terré[2], and A. Pinto[2], [1]*ICREA, Institut de Recerca i Estudis Avançats*, *Barcelona, Spain*, [2]*Department of Ruminant Production, IRTA*, *Caldes de Montbui, Spain*.

W33 **Consequences of essential oils (cinnamaldehyde and garlic oil) on rumen fermentation and performance of lactating dairy cattle.**
M. Blanch*[1], A. Viso[1], and A. Bach[2,3], [1]*Novus International Inc.*, *St Charles, MO*, [2]*ICREA*, *Barcelona, Spain*, [3]*Department of Ruminant Production, IRTA*, *Caldes de Montbui, Spain*.

W34 **Milk fatty acid profile in dairy cows fed with fatty acids unsaturated sources.**
R. V. Barletta*[1], J. E. Freitas[1], M. D. S. Oliveira[2], R. Gardinal[1], V. G. C. Lacuna[1], V. P. Bettero[2], B. C. Benevento[1], B. C. Venturelli[1], E. Ferreira de Jesus[2], G. D. Calomeni[1], J. R. Gandra[1], and F. P. Rennó[1], [1]*University of São Paulo*, *São Paulo, SP, Brazil*, [2]*University Jlio de Mesquita*, *Jaboticabal, SP, Brazil*.

W35 **Incorporation of n-6 and n-3 fatty acids into plasma lipid fractions of lactating cows: acute effect of abomasal infusions of linoleic and linolenic acids.**
L. C. Nagengast*, C. L. Preseault, J. C. Ploetz, C. M. Klein, and A. L. Lock, *Michigan State University*, *East Lansing*.

W36 **Performance, intestinal modulation and blood parameters of calves supplemented with an essential oils blend.**
F. H. R. Santos[1,2], M. R. Paula*[1,4], D. Lezier[1,3], J. T. Silva[1,3], G. Santos[1,3], and C. M. M. Bittar[1,3], [1]*ESALQ/USP*, *Piracicaba, Sao Paulo, Brazil*, [2]*Fapesp*, *Sao Paulo, Sao Paulo, Brazil*, [3]*CNPq*, *Brasilia, DF, Brazil*, [4]*Capes*, *Brasilia, DF, Brazil*.

W37 **Glycerol to improve alfalfa utilization: Effects on in vitro gas production and microbial protein synthesis.**
Á. R. Alfonso Ávila*[1,2], É. Charbonneau[2], C. Lafrenière[1], and R. Berthiaume[3], [1]*Agriculture and Agri-Food Canada*, *Sherbrooke, QC, Canada*, [2]*Département des Sciences Animales, Université Laval*, *Québec, QC, Canada*, [3]*Valacta*, *Ste-Anne-de-Bellevue, QC, Canada*.

W38 **Effect of feeding reduced fat dried distillers grains with solubles on lactation performance of Holstein cows.**
E. Castillo-Lopez*[1], K. M. Algya[1], T. J. Klopfenstein[1], D. Hostetler[1], K. Karges[2], S. C. Fernando[1], and P. J. Kononoff[1], [1]*University of Nebraska-Lincoln*, *Lincoln*, [2]*Dakota Gold Research Association*, *Sioux Falls, SD*.

W39 **Use of crude glycerin for dairy cows.**
M. I. Marcondes*[1], T. R. Pereira[1], M. Valverde da Silva[2], T. E. da Silva[1], A. S. Trece[1], and W. L. Cardoso[1], [1]*Universidade Federal de Viçosa*, *Viçosa, Minas Gerais, Brazil*, [2]*Master Alimentos LTDA*, *Rio Pomba, Minas Gerais, Brazil*.

W40 **Performance, digestion, milk fatty acids, and plasma amino acids in response to the supplementation of methionine and plant extracts to dairy cows.**
G. G. S. Salvati[1], N. N. Morais Junior[1], F. C. F. Lopes[3], R. A. N. Pereira[2], and M. N. Pereira*[1], [1]*Universidade Federal de Lavras*, *Lavras, MG, Brazil*, [2]*Empresa de Pesquisa Agropecuária de Minas Gerais*, *Lavras, MG, Brazil*, [3]*Empresa Brasileira de Pesquisa Agropecuária*, *Juiz de Fora, MG, Brazil*.

W41 **Sources of rumen protected fat supplementation on milk yield and composition and ruminal parameters of dairy cows grazing a tropical pasture.**
F. Batistel*[1], J. De Souza[1], K. C. Welter[2], M. M.V. Silva[1], A. V. Pires[1], V. N. Gouvea[2], D. F. A. Costa[1], and F. A. P. Santos[1], [1]*University of São Paulo*, *Piracicaba, SP, Brazil*, [2]*University of São Paulo*, *Pirassununga, SP, Brazil*.

Ruminant Nutrition: Feed Additives, Minerals, and Vitamins II

W42 **Effect of a live-yeast-based product on colostrum quality and milk yield in first month of lactation on a private dairy farm.**
C. Julien*[1,2], A. Fernandez[3], and J. P. Marden[3], [1]*INRA, UMR1289 TANDEM, Tissus Animaux Nutrition Digestion Ecosystème et Métabolisme*, *Castanet-Tolosan, France*, [2]*Université de Toulouse, INPT ENSAT, INP-ENVT, UMR1289 TANDEM*, *Castanet-Tolosan, France*, [3]*Lesaffre Feed Additives*, *Marcq-en-Baroeul, France*.

W43 **Sugar cane silage additive for high production dairy cows.**
B. T. C. Silveira, M. I. Marcondes, K. G. Ribeiro*, O. G. Pereira, M. G. F. Teixeira, and L. L. Cardoso, *Universidade Federal de Viçosa*, *Viçosa, Minas Gerais, Brazil*.

W44 **Effects of evaporative cooling prepartum and vitamin E supplementation on performance of Holstein cows during summer in Florida.**
G. C. Gomes*[1], J. E. Zuniga[1], L. F. Greco[1], L. D. P. Sinedino[1], E. S. Ribeiro[1], N. Martinez[1], R. S. Bisinotto[1], F. S. Lima[1], E. Karakaya[1], M. A. Engstrom[2], J. E. P. Santos[1], and C. R. Staples[1], [1]*University of Florida*, *Gainesville*, [2]*DSM*, *Belvidere, NJ*.

W45 **Macromineral maintenance requirements for Holstein young calves.**
J. P. P. Rodrigues*[1], J. C. M. Lima[1], M. I. Marcondes[1], M. Campos[2], F. S. Machado[2], A. S. Trece[1], M. M. D. Castro[1], B. P. Moreira[1], and P. G. Castro[1], [1]*Universidade Federal de Viçosa*, *Viçosa, Minas Gerais, Brazil*, [2]*Embrapa Gado de Leite*, *Juiz de Fora, Minas Gerais, Brazil*.

W46 **In vitro study on the effects of sodium-calcium malate and live yeast on ruminal fermentation and methane production.**
J. Alcañiz*[1], A. Ortiz[1], M. D. Carro[3], M. J. Ranilla[2], and J. J. Mallo[1], [1]*NOREL S.A*, *Madrid, Spain*, [2]*Universidad de León*, *León, Spain*, [3]*Universidad Politécnica de Madrid*, *Madrid, Spain*.

W47 **Yeast supplementation of lactating dairy cows during summer.**
G. G. S. Salvati[1], N. N. Morais Junior[1], F. F. Cardoso[1], A. C. S. Melo[1], M. Aronovich[3], R. A. N. Pereira[2], and M. N. Pereira*[1], [1]*Universidade Federal de Lavras*, *Lavras, MG, Brazil*, [2]*Empresa de Pesquisa Agropecuária de Minas Gerais*, *Lavras, MG, Brazil*, [3]*Empresa de Pesquisa Agropecuária do Estado do Rio de Janeiro*, *Niterói, RJ, Brazil*.

W48 **Strategies to modify the biohydrogenation pathways of polyunsaturated fatty acids in the rumen.**
A. Siurana[1], A. Ferret[1], M. Rodriguez[1], V. Fievez[2], D. Bravo[3], and S. Calsamiglia*[1], [1]*Autonomous University of Barcelona*, *Spain*, [2]*Ghent University*, *Ghent, Belgium*, [3]*Pancosma*, *Geneva, Switzerland*.

W49 **Effect of rumen-protected choline top-dressed during the transition period on milk yield and composition in Holstein dairy cows on two commercial dairies.**
M. C. Amundson*[1], P. D. Carvalho[1], R. W. Bender[1], R. R. Grummer[1,2], R. D. Shaver[1], and P. M. Fricke[1], [1]*University of Wisconsin-Madison*, *Madison*, [2]*Balchem Corporation*, *New Hampton, NY*.

W50 **Effects of a commercial feed additive on production losses during acute heat stress conditions in Holstein dairy cows.**
K. A. Davison*[1], R. O. Rodrigues[1], J. A. Davidson[2], N. M. Barkley[1], A. L. Kenny[1], E. C. Adkins[1], and M. R. Waldron[1], [1]*University of Missouri*, *Columbia*, [2]*Purina Animal Nutrition Center*, *Gray Summit, MO*.

W51 **Effect of dietary and metabolizable protein in early lactation on the lactational performance and metabolism of dairy cows.**
H. M. Dann*[1], P. Ji[1], K. W. Cotanch[1], H. M. Gauthier[1], M. P. Carter[1], S. Y. Morrison[1], J. Darrah[1], Y. Koba[2], and R. J. Grant[1], [1]*William H. Miner Agricultural Research Institute*, *Chazy, NY*, [2]*ZEN-NOH National Federation of Agricultural Cooperative Associations*, *Tokyo, Japan*.

W52 **Influence of an antioxidant supplementation on production and health status of dairy cows.**
J. McNamara[1], S. Shields*[1], and E. von Hemiendahl[2], [1]*Washington State University*, *Pullman*, [2]*Lohmann Animal Health GmbH*, *Cuxhaven, Germany*.

W53 **Verifying consistent bioavailability values in rumen-protected lysine.**
M. R. Culbertson*[1], M. J. Poss[1], F. D. Valdez[1], and D. A. Sapienza[2], [1]*Kemin Industries Inc.*, *Des Moines, IA*, [2]*Sapienza Analytica LLC*, *Slater, IA*.

W54 **Effect of supplying limiting amino acids in diets with reduced CP on milk and protein yield.**
M. A. C. Danes*[1], G. A. Broderick[1], and C. Parys[2], [1]*University of Wisconsin*, *Madison*, [2]*Evonik Industries AG*, *Hanau, Germany*.

W55 **Baseline bovine plasma concentrations of free amino acids during lactation.**
T. A. Burnett*[1], A. M. L. Madureira[1], G. Wu[2], J. R. Thompson[1], and R. L. A. Cerri[1], [1]*University of British Columbia*, *Vancouver, BC, Canada*, [2]*Texas A&M University*, *College Station*.

W56 **An evaluation of amino acid utilization in lactating dairy cows consuming DDGS and different levels of fat.**
H. A. Paz* and P. J. Kononoff, *University of Nebraska-Lincoln*, *Lincoln*.

W57 **Estimation of the metabolizable methionine contribution of four rumen-protected products using the AUC methodology.**
L. Faivre[1], Y. Mercier[1], E. Devillard[1], and B. K. Sloan*[2], [1]*Adisseo France*, *Commentry, France*, [2]*Adisseo North and Central America*, *Alpharetta, GA*.

W58 **A controlled on farm evaluation of methionine for lactating dairy cows.**
N. N. Morais Junior[1], G. G. S. Salvati[1], R. C. Oliveira[1], R. A. N. Pereira[2], and M. N. Pereira*[1], [1]*Universidade Federal de Lavras*, *Lavras, MG, Brazil*, [2]*Empresa de Pesquisa Agropecuária de Minas Gerais*, *Lavras, MG, Brazil*.

W59 **Forages fertilized with selenium as a way to supplement lactating dairy cows.**
R. Seboussi*[1], G. F. Tremblay[2], P. Y. Chouinard[1], Y. Chorfi[3], G. Bélanger[2], Y. Couture[3], V. Ouellet[1], and E. Charbonneau[1], [1]*Université Laval*, *Québec, QC, Canada*, [2]*Agriculture and Agri-Food Canada*, *Québec, QC, Canada*, [3]*Université de Montréal*, *St-Hyacinthe, QC, Canada*.

W60 **Effect of feeding various dosages of *Saccharomyces cerevisiae* fermentation product on serum markers of the innate and adaptive immune system of multiparous dairy cows.**
C. M. Shriver-Munsch[1], E. M. Zaworski[1], A. N. Fadden[1], W. K. Sanchez[2], I. Yoon[2], and G. Bobe*[1,3], [1]*Oregon State University*, *Corvallis*, [2]*Diamond V Mills*, *Cedar Rapids, IA*, [3]*Linus Pauling Institute*, *Corvallis, OR*.

W61 **Effect of feeding various dosages of *Saccharomyces cerevisiae* fermentation product on serum concentrations of macrominerals of multiparous dairy cows.**
A. N. Fadden[1], E. M. Zaworski[1], C. M. Shriver-Munsch[1], W. K. Sanchez[2], I. Yoon[2], and G. Bobe*[1,3], [1]*Oregon State University*, *Corvallis*, [2]*Diamond V Mills*, *Cedar Rapids, IA*, [3]*Linus Pauling Institute*, *Corvallis, OR*.

W62 **Effect of feeding various dosages of *Saccharomyces cerevisiae* fermentation product on serum indicators of feed intake of multiparous dairy cows.**
E. M. Zaworski[1], A. N. Fadden[1], C. M. Shriver-Munsch[1], W. K. Sanchez[2], I. Yoon[2], and G. Bobe*[1,3], [1]*Oregon State University*, *Corvallis*, [2]*Diamond V Mills*, *Cedar Rapids, IA*, [3]*Linus Pauling Institute*, *Corvallis, OR*.

W63 **Effect of applying a bacterial inoculant to corn silage on the performance of lactating dairy cows.**
O. C. M. Queiroz[1], F. C. Basso[2], R. Daetz[1], A. Schlaefli[1], J. J. Romero[1], J. H. Shin[1], F. H. Kamada[2], U. Carneiro[2], and A. T. Adesogan*[1], [1]*Department of Animal Sciences, IFAS University of Florida*, *Gainesville*, [2]*Department of Animal Sciences, UNESP*, *Jaboticabal, Sao Paulo, Brazil*.

W64 **Use of virginiamycin and rumen-protect fat, and its association in the diet of crossbred dairy cows grazing tropical pastures.**
R. C. Silva[1], B. Pessim[3], L. A. Souza[3], J. A. Alves Neto[1], J. M. B. Benatti*[1], A. D. Moreira[1], A. F. Campos[1], P. H. Gonçalves[3], R. D. Signoretti[2], and G. R. Siqueira[2], [1]*Universidade Estadual Paulista – FCAV*, *Jaboticabal, São Paulo, Brazil*, [2]*Agencia Paulista de Tecnologia dos Agronegócios - Alta Mogiana*, *Colina, Sâo Paulo, Brazil*, [3]*Centro Universitário de Barretos*, *Barretos, São Paulo, Brazil*.

W65 **Influence of an antioxidant supplementation on adipose and liver transcriptome in early lactation dairy cattle.**
J. McNamara*[1], S. Shields[1], J. Thomson[2], and E. von Heimendahl[3], [1]*Washington State University*, *Pullman*, [2]*Montana State University*, *Bozeman*, [3]*Lohmann Animal Health GmbH*, *Cuxhaven, Germany*.

W66 **Effect of *Saccharomyces cerevisiae* live cells on milk yield and digestibility of buffalo cows.**
F. Masucci[1], G. De Rosa[1], C. M. A. Barone[1], P. Parente[1], M. L. Varricchio[1], A. Di Francia[1], and E. Chevaux*[2], [1]*Università di Napoli Federico II, Dipartimento di Agraria*, *Portici (NA), Italy*, [2]*Lallemand SAS*, *Blagnac, France*.

W67 **Effects of arginine concentration on the in vitro expression of casein and mTOR pathway related genes in mammary epithelial cells from dairy cattle.**
M. Z. Wang[1,2], B. L. Xu[1], D. P. Bu[2], J. Q. Wang[2], and J. J. Loor*[3], [1]*Yangzhou University*, *Yangzhou, China*, [2]*State Key Laboratory of Animal Nutrition*, *Beijing, China*, [3]*University of Illinois*, *Urbana*.

W68 **Essential amino acid signal on translation regulation pathways in mammary tissue.**
S. I. Arriola Apelo*[1], L. M. Singer[1], X. Lin[2], and M. D. Hanigan[1], [1]*Department of Dairy Science, Virginia Polytechnic Institute and State University*, *Blacksburg*, [2]*Animal Science and Technology College, Shandong Agriculture University*, *Shandong Province, China*.

W69 **Effects of two different ruminant methionine technologies on milk and milk component production across a range of metabolizable methionine adequacy.**
R. S. Ordway*[1], C. G. Schwab[2,3], B. K. Sloan[4], and N. L. Whitehouse[2], [1]*Balchem Corporation*, *New Hampton, NY*, [2]*University of New Hampshire*, *Durham*, [3]*Schwab Consulting LLC*, *Boscobel, WI*, [4]*Adisseo North and Central America*, *Alpharetta, GA*.

W70 **Performance and health of Holstein dairy calves fed Peptide Powder 80 or hydrolyzed wheat protein as alternative protein sources in milk replacers.**
H. Chester-Jones*[1], D. Dean[2], D. Ziegler[1], K. Halpin[2], M. Raeth-Knight[3], and D. Carlson[4], [1]*University of Minnesota Southern Research and Outreach Center*, *Waseca*, [2]*International Ingredient Corporation*, *St. Louis, MO*, [3]*University of Minnesota*, *St. Paul*, [4]*Milk Products*, *Chilton, WI*.

W71 **Effects of feeding LysiPEARL and rumen-protected lysine sources on plasma lysine concentration in lactating dairy cows.**
W. D. Weich*[1], K. F. Kalscheur[1], F. R. Valdez[2], and C. A. Macgregor[3], [1]*South Dakota State University*, *Brookings*, [2]*Kemin Industries, Inc.*, *Des Moines, IA*, [3]*Soy Best*, *West Point, NE*.

W72 **Impact of fiber and monensin in texturized calf starters when fed in the nursery phase on calf health and performance in both the nursery and grower phases.**
D. Ziegler*[1], B. Ziegler[2], H. Chester-Jones[1], D. Schimek[2], and M. Raeth-Knight[3], [1]*University of Minnesota Southern Research and Outreach Center*, *Waseca*, [2]*Hubbard Feeds Inc.*, *Mankato, MN*, [3]*University of Minnesota*, *St. Paul*.

W73 **Manual manipulation of calf starter for calves fed milk replacer: Effects on growth, starter intake, and weaning.**
N. E. Guindon, R. G. Cabral*, N. T. Antaya, N. L. Whitehouse, and P. S. Erickson, *University of New Hampshire*, *Durham*.

W74 **Effect of 2-hydroxy-4-methylthio-butanoic acid (HMTBa) on ruminal fermentation, digestibility, and performance of lactating dairy cows.**
C. Lee[1], J. Oh*[1], A. N. Hristov[1], and G. I. Zanton[2], [1]*Department of Animal Science, The Pennsylvania State University*, *University Park*, [2]*Novus International Inc.*, *St. Charles, MO*.

W75 **Yeast-derived microbial protein supplementation of dairy calves.**
V. A. Silveira[1], K. P. Freire[1], A. V. Siqueira[1], P. A. M. Barros Junior[1], I. M. Lima[2], M. S. Zoni[3], W. Giardini[4], R. Almeida*[2], and M. N. Pereira[1], [1]*Universidade Federal de Lavras*, *Lavras, MG, Brazil*, [2]*Universidade Federal do Paraná*, *Curitiba, PR, Brazil*, [3]*Milkonsult*, *Castro, PR, Brazil*, [4]*Alltech do Brasil*, *Araucária, PR, Brazil*.

W76 **Effect of supplementing vitamin E and β-carotene to prepartum Holstein cattle on health and reproductive responses.**
D. Wang[1], M. Garcia*[1], R. S. Bisinotto[1], N. Martinez[1], F. S. Lima[1], L. F. Greco[1], J. H. Shin[1], A. M. M. DiCalaça[1], A. L. Ranieri[1], B. L. Artiaga[1], E. K. Ganda[1], G. C. Gomes[1], L. F. V. Becker[1], S. C. Soares[1], V. S. Rezende[1], M. A. Engstrom[2], J. E. P. Santos[1], and C. R. Staples[1], [1]*University of Florida*, *Gainesville*, [2]*DSM*, *Parsippany, NJ*.

W77 **Optimal lysine and methionine concentrations for milk protein production as determined with the latest versions of Dairy NRC (2001) and AMTS-Cattle.**
N. L. Whitehouse*[1], C. G. Schwab[1,2], T. Tylutki[3], and B. K. Sloan[4], [1]*University of New Hampshire*, *Durham*, [2]*Schwab Consulting LLC*, *Boscobel, WI*, [3]*Integrated Solutions for Sustainable Agriculture*, *Cortland, NY*, [4]*Adisseo North and Central America*, *Alpharetta, GA*.

W78 **Lactational and systemic response of lactating dairy cows to duodenal infusions of lysine, methionine, and branched-chain amino acids.**
S. C. Li*[1], D. P. Bu[2], Y. D. Zhang[2], and J. Q. Wang[2], [1]*University of Manitoba*, *Winnipeg, MB, Canada*, [2]*State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*.

W79 **Influence of combination of *Salix babylonica* extract with mineral/vitamin mixture on in vitro gas production kinetics and dry matter degradability of total mixed ration.**
A. Z. M. Salem*[1], M. M. Y. Elghandour[1], H. Gado[2], L. M. Camacho[3], R. Rojo[4], and J. L. Borquez[1], [1]*Facultad de Medicina Veterinaria y Zootecnia*, *Universidad Autonoma del Estado de Mexico, Mexico*, [2]*Animal Production Department, Faculty of Agriculture, Ain Shams University*, *Qalubia, Egypt*, [3]*Facultad de Medicina Veterinaria y Zootecnia, Universidad Autonoma de Guerrero*, *MexicoCd. Altamirano, Guerrero, Mexico*, [4]*CU-UAEM Temascaltepec, Universidad Autonoma del Estado de Mexico*, *Mexico*.

Ruminant Nutrition: Feeding, Ruminal Fermentation, and Efficiency of Production II

W80 **Effects of different feeding frequencies on feedlot performance and carcass traits of feedlot Nellore cattle.**
T. V. B. Carrara*[2,3], J. Silva[2], M. C. S. Pereira[2], A. L. N. Rigueiro[2], D. H. M. Watanabe[2], D. D. Estevam[2], D. P. Silva[2], D. V. F. Vicari[2], C. A. Oliveira[2], I. C. Batista Junior[2], M. D. B. Arrigoni[1], F. T. V. Pereira[2], D. J. C. Oliveira[4], G. P. Mateus[4], D. D. Millen[2], [1]*São Paulo State University (UNESP)*, *Botucatu, Brazil*, [2]*São Paulo State University (UNESP)*, *Dracena, Brazil*, [3]*Supported by FAPESP*, *São Paulo, Brazil*, [4]*APTA*, *Andradina, São Paulo, Brazil*.

W81 **Growth performance and carcass traits in Alpine male goat kids supplemented with hydroponic green fodder from wheat and corn.**
M. Guerrero Cervantes*[1,4], A. S. Juárez Reyes[1,4], F.G. Ríos Rincón[2,4], M. A. Cerrillo Soto[1,4], H. Bernal Barragán[3,4], and C. Angulo Montoya[3], [1]*Universidad Juárez del Estado de Durango*, *Durango, Durango. México*, [2]*Universidad Autónoma de Sinaloa*, *Culiacán, Sinaloa. México*, [3]*Universidad Autónoma de Nuevo Léon*, *San Nicolás de los Garza, Nuevo Léon. México*, [4]*Red Internacional de Nutrición y Alimentación en Rumiantes*, *México*.

W82 **Molecular cloning and characterization of a novel cellulase with xylanase activity from a metagenomic library of goat rumen.**
C. Y. Fan[1], H. Q. Jiang[1], Y. H. Zhang[1], X. Z. Sun[1], and J. B. Cheng*[1,2], [1]*College of Animal Science and Technology, Anhui Agricultural University*, *Hefei, China*, [2]*State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*.

W83 **Effects of restricted versus conventional dietary adaptation over periods of 6 and 9 days on feedlot performance and carcass characteristics of Nellore cattle.**
A. Perdigão*[1], M. D. B. Arrigoni[1], D. D. Millen[2], R. S. Barducci[1], M. A. Factori[1], L. M. N. Sarti[1], M. C. S. Franzoi[1], L. C. Vieira Junior[1], M. T. Cesar[1], F. A. Ribeiro[1], D. F. Broleze[1], A. L. C. Brichi[1], and R. F. Pessin[1], [1]*São Paulo State University (UNESP)*, *Botucatu, Brazil*, [2]*São Paulo State University (UNESP)*, *Dracena, Brazil*.

W84 **Effect of calf conditioning either before or at weaning during the dry season in northeast Mexico.**
R. G. Altamirano*[1], E. G. Ornelas[2,4], H. B. Barragán[2,4], R. A. Ramírez[2], and E. C. Gallegos[3], [1]*Instituo Nacional de Investigaciones Forestales, Agrícolas y Pecuarias (INIFAP), Campo Experimental Las Huastecas*, *Altamira, Tamaulipas, México*, [2]*Universidad Autónoma de Nuevo León, Facultad de Agronomía*, *General Escobedo, Nuevo León, México*, [3]*Universidad Nacional Autónoma de México, Fac. Medicina Veterinaria y Zootecnia*, *Martínez de la Torre, Veracruz, México*, [4]*Red Internacional de Nutrición y Alimentación en Rumiantes*, *México, D.F., México*.

W85 **Effect of TMR particle size or rumen pH on diet and feed preference in lactating dairy cows.**
A. D. Kmicikewycz* and A. J. Heinrichs, *Pennsylvania State University*, *University Park*.

W86 **Nutritional maintenance requirements and true absorption coefficients of calcium and phosphorus in ¾ Zebu × ¼ Holstein crossbred bulls.**
L. F. Prados*, S. C. Valadares Filho, A. N. Nunes, E. Detmann, D. Zanetti, D. R. Costa, S. A. Santos, L. D. S. Mariz, P. M. Amaral, L. C. Alves, and A. C. B. Menezes, *Universidade Federal de Viçosa*, *Viçosa, Minas Gerais, Brazil*.

W87 **Dynamic shifts of rumen functional bacteria associated with forage types by quantitative real-time PCR.**
X. L. Hu, J. Q. Wang*, S. G. Zhao, J. W. Zhao, and D. P. Bu, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*.

W88 **Effects of a corn straw or mixed forage diet on mRNA expression of genes related to glucose metabolism in the liver of dairy cows.**
W. Q. Li[1,2], D. P. Bu[1], J. Q. Wang*[1], X. M. Nan[1], and L. Y. Zhou[1], [1]*Institute of Animal Science, Chinese Academy of Agricultural Science*, *Beijing, China*, [2]*College of Life Science, Henan Agricultural University*, *Zhengzhou, China*.

W89 **PCR-DGGE analysis reveals distinct diversity in the rumen bacterial community of dairy cows fed a corn straw or mixed forage diet.**
D. Jin, D. P. Bu*, S. G. Zhao, and J. Q. Wang, *Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*.

W90 **Comparison of purine bases and nitrogen-15 for quantifying microbial protein synthesis using three marker systems and different sampling sites in cattle fed diets with sugar cane or corn silage.**
P. P. Rotta*[1], S. C. Valadares Filho[1], E. Detman[1], F. A. C. Villadiego[1], E. M. G. Burgos[1], A. A. G. Lobo[1], and J. A. Bendassoli[2], [1]*Universidade Federal de Vicosa*, *Viçosa, Brazil*, [2]*Universidade de Sao Paulo*, *Sao Paulo, Brazil*.

W91 **Characterization of the dynamics in rumen bacterial community of cows fed three different diets using PCR-DGGE and qPCR.**
D. Jin[1], D. P. Bu*[1], S. G. Zhao[1], J. Q. Wang[1], and Z. T. Yu[2], [1]*Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*, [2]*Department of Animal Sciences, The Ohio State University*, *Columbus*.

W92 **Heart rate and milk production of dairy cows fed with three different strategies in early lactation.**
D. A. Mattiauda*, P. Chilibroste, M. Carriquiry, J. P. Marchelli, and A. C. Espasandin, *Departamento de Produccion y Pasturas, Facultad de Agronomia, UdelaR*, *Uruguay*.

W93 **Assessment of in vitro fermentation characteristics of grass-legume mixed pasture forages with their different composition ratios using continuous cultures.**
C. T. Noviandi[1], K. Neal[1], J.-S. Eun*[1], D. R. ZoBell[1], M. D. Peel[2], and B. L. Waldron[2], [1]*Department of Animal, Dairy, and Veterinary Sciences, Utah State University*, *Logan*, [2]*Forage and Range Research Laboratory, USDA-ARS*, *Logan, UT*.

W94 **Cost structure and economic assessment of Spanish Assaf dairy sheep farms.**
M. J. Milan[1], F. Frendi[1], R. Gonzalez-Gonzalez[2], and G. Caja*[1], [1]*Ruminant Research Group (G2R), Universitat Autonoma de Barcelona*, *Bellaterra, Spain*, [2]*GEO, Benavente*, *Zamora, Spain*.

W95 **Effects of feeding teff hay-based diets on growth performance and ruminal fermentation profiles of growing beef steers and dairy heifers.**
J. E. Creech[1], J. M. Vera[2], C. T. Noviandi[2], J.-S. Eun*[2], A. J. Young[2], and D. R. ZoBell[2], [1]*Department of Plants, Soils, and Climate, Utah State University*, *Logan*, [2]*Department of Animal, Dairy, and Veterinary Sciences, Utah State University*, *Logan*.

W96 **Comparison of in situ versus in vitro methods of fiber digestion at 120 and 288 hours to quantify the indigestible NDF fraction of corn silage samples.**
R. W. Bender*, D. E. Cook, F. Lopes, and D. K. Combs, *University of Wisconsin-Madison*, *Madison*.

W97 **Composition of gain and its relationship to residual feed intake and gain.**
M. L. Nascimento*[1], A. S. Chaves[1], R. R. Tullio[2], M. M. Alencar[2], A. N. Rosa[3], and D. P. D. Lanna[1], [1]*University of Sao Paulo*, *Piracicaba, SP, Brazil*, [2]*Embrapa Cattle Southeast*, *Sao Carlos, SP, Brazil*, [3]*Embrapa Beef Cattle*, *Campo Grande, MS, Brazil*.

W98 **Estimation of bacterial protein in rumen digesta using DNA markers.**
C. J. R. Jenkins*, E. Castillo-Lopez, S. C. Fernando, and P. J. Kononoff, *University of Nebraska*, *Lincoln*.

W99 **Effect of a commercially available natural plant extract on intake and milk production of dairy cows.**
Y. Ying, M. Niu, A. R. Clarke, and K. J. Harvatine*, *Penn State University*, *University Park*.

W100 **Productive performance, hepatic function and nutrients utilization of dairy cows fed with *Jatropha curcas* L. seed meal treated with sodium hydroxide.**
A. S. Oliveira*[1], J. G. Souza[1], C. V. Araujo[1], A. Takaoka[1], D. C. Moura[3], M. C. Souza[1], E. Peron[1], J. T. Zervoudakis[3], L. S. Cabral[3], S. Mendonca[2], L. F. Moreno[1], P. H. N. Cruz[1], L. M.G. Olini[1], K. R. R. Amorim[1], F. G. Ribeiro[1], [1]*Mato Grosso Federal University, Campus Sinop*, *Sinop, Mato Grosso, Brazil*, [2]*Brazilian Agricultural Research Corporations*, *Brasilia, DF, Brazil*, [3]*Mato Grosso Federal University, Campus Cuiaba*, *Cuiaba, Mato Grosso, Brazil*.

W101 **Effects of heat stress and plane of nutrition on fecal composition of lactating dairy cows.**
J. D. Allen*[1,2], L. W. Hall[2], G. Xie[2,4], R. J. Collier[2], L. H. Baumgard[3], and R. P. Rhoads[2,4], [1]*Northwest Missouri State University*, *Maryville*, [2]*University of Arizona*, *Tucson*, [3]*Iowa State University*, *Ames*, [4]*Virginia Polytechnic Institute and State University*, *Blacksburg*.

W102 **Long-term performance of growing dairy heifers fed increased dietary fat from dried distillers grains.**
J. L. Anderson*, K. F. Kalscheur, A. D. Garcia, and D. J. Schingoethe, *South Dakota State University*, *Brookings*.

W103 **Validation and recovery rates of an indirect calorimetry headbox system used to measure heat production of cattle.**
A. J. Foth*[1], T. Brown-Brandl[2], H. C. Freetly[2], M. D. Hayes[2], and P. J. Kononoff[1], [1]*University of Nebraska-Lincoln*, *Lincoln*, [2]*USDA Meat Animal Research Center*, *Clay Center, NE*.

W104 **Energy requirement of Holstein calves.**
J. C. M. Lima[1], J. P. P. Rodrigues[1], M. I. Marcondes*[1], F. S. Machado[2], A. S. Treece[1], M. M. D. Castro[1], J. L. C. Dias[1], and T. Araújo[1], [1]*Universidade Federal de Viçosa*, *Viçosa, Minas Gerais, Brazil*, [2]*Embrapa Gado de Leite*, *Juiz de Fora, Minas Gerais, Brazil*.

W105 **Brown marmorated stink bug odor compounds do not transfer into milk in lactating dairy cattle by feeding bug-contaminated corn silage.**
R. L. Baldwin*[1], A. Zhang[2], S. W. Fultz[3], S. Abubeker[2], C. Harris[2], E. E. Connor[1], and D. L. Van Hekken[4], [1]*USDA, ARS, BFGL*, *Beltsville MD*, [2]*USDA, ARS, IIBBL*, *Beltsville MD*, [3]*University of Maryland Extension*, *Frederick*, [4]*USDA, ARS, EERC*, *Wyndmoor, PA*.

W106 **Effects of restricted versus conventional dietary adaptation over periods of 9 and 14 days on total-tract digestibility of dry matter and starch of feedlot Nellore cattle.**
A. L. N. Rigueiro[2], D. H. M. Watanabe[2], M. C. S. Pereira[2], J. Silva[2], T. V. B. Carrara[1], M. C. S. Franzoi[1], R. S. Barducci[1], M. D. B. Arrigoni[1], F. Perna Junior[4], M. Caetano[3], D. P. D. Lanna[3], and D. D. Millen*[2], [1]*São Paulo State University (UNESP)*, *Botucatu, São Paulo, Brazil*, [2]*São Paulo State University (UNESP)*, *Dracena, São Paulo, Brazil*, [3]*University of São Paulo (USP)*, *Piracicaba, São Paulo, Brazil*, [4]*University of São Paulo (USP)*, *Pirassununga, São Paulo, Brazil*.

Ruminant Nutrition: Protein, Energy, and By-Products Supplementation II

W107 **Improvements in feed efficiency via rumen-protected amino acid supplementation limited by ration formulation software.**
T. R. McGill* and M. D. Hanigan, *Virginia Polytechnic Institution and State University*, *Blacksburg*.

W108 **The effect of a two ration feeding regimen on feed intake, milk production and composition, and plasma hormones and metabolites in dairy cows.**
M. Niu*, Y. Ying, P. A. Bartell, and K. J. Harvatine, *Penn State University*, *University Park*.

W110 **Developing techniques to determine the metabolizable methionine content of ruminant products.**
R. S. Ordway*[1], C. G. Schwab[2,3], B. K. Sloan[4], and N. L. Whitehouse[2], [1]*Balchem Corporation*, *New Hampton, NY*, [2]*University of New Hampshire*, *Durham*, [3]*Schwab Consulting LLC*, *Boscobel, WI*, [4]*Adisseo North and Central America*, *Alpharetta, GA*.

W111 **The effect of various dietary metabolizable proteins to metabolizable energy ratios on ovarian follicular activities in prepubertal Holstein heifers.**
H. R. Motalebei, M. Dehghan-Banadaky*, K. Rezayazdi, and H. Kohram, *Department of Animal Science, University of Tehran*, *Karaj, Tehran, Iran*.

W112 **Ruminal fermentation profile of cows fed diets containing dried distillers grains with solubles associated with risk factors for milk fat depression.**
H. A. Ramirez Ramirez* and P. J. Kononoff, *University of Nebraska-Lincoln*, *Lincoln*.

W113 **The protein binding capacity of protein-precipitable phenolics from 10 warm-season perennial forage legumes.**
H. D. Naumann*[1,2], J. P. Muir[2], B. D. Lambert[2,3], A. E. Hagerman[4], and L. O. Tedeschi[1], [1]*Texas A&M University*, *College Station*, [2]*Texas A&M AgriLife Research*, *Stephenville*, [3]*Tarleton State University*, *Stephenville, TX*, [4]*Miami University*, *Oxford, OH*.

W114 **Ruminal degradability in vitro by sub-products of the biodiesel industry.**
A. L. Silva, M. I. Marcondes*, F. C. Sousa, L. S. Knupp, C. M. Velloso, C. S. Cunha, and J. P. P. Rodrigues, *Universidade Federal de Viçosa*, *Viçosa, Minas Gerais, Brazil*.

W115 **Urinary and blood characteristics in cattle fed low-quality tropical forage in response to infrequent nitrogen supplementation.**
L. M. A. Rufino*, E. Detmann, J. P. P. Rodrigues, L. H. R. Silva, S. C. Valadares Filho, M. F. Paulino, and M. O. Franco, *Universidade Federal de Viçosa*, *Viçosa, Minas Gerais, Brazil*.

W116 **Small intestinal digestion of raw cornstarch in cattle is increased by duodenal infusion of non-essential amino acids or casein.**
D. W. Brake*, E. C. Titgemeyer, E. A. Bailey, and D. E. Anderson, *Kansas State University*, *Manhattan*.

W117 **Relationships between malt characteristics and feed value of malt barley grain.**
S. Ding*[1,2], M. Oba[2], M. L. Swift[3], W. Z. Yang[1], and T. A. McAllister[1], [1]*Lethbridge Research Center, Agriculture and Agri-Food Canada*, *Lethbridge, AB, Canada*, [2]*Department of Agricultural, Food and Nutritional Science, University of Alberta*, *Edmonton, AB, Canada*, [3]*Alberta Agriculture and Food*, *Lacombe, AB, Canada*.

W118 **Investigation of dietary fiber as a potential source of trace mineral antagonism in ruminants.**
G. I. Zanton* and P. Fisher, *Novus International Inc.*, *St. Charles, MO*.

W119 **Forage intake and digestibility by Katahdin ewes offered bermudagrass hay supplemented with apple cider vinegar.**
W. B. Smith*[1], E. A. Backes[1,2], J. D. Caldwell[2], K. P. Coffey[1], and A. N. Young[1], [1]*Department of Animal Science, University of Arkansas Division of Agriculture*, *Fayetteville*, [2]*Department of Agriculture and Environmental Science, Lincoln University*, *Jefferson City, MO*.

W120 **Evaluation of microwave irradiation effects on ruminal and post-ruminal degradation of guar meal.**
S. N. Garajeh[2,1], A. Taghizadeh*[1], N. M. Sis[2], F. P. Khajehdizaj[1], and B. B. Nobari[1], [1]*Department of Animal Science, Faculty of Agriculture, University of Tabriz*, *Tabriz, Eastern Azerbaijan, Iran*, [2]*Department of Animal Science, Shabestar branch, Islamic Azad University*, *Shabestar, Iran*.

W121 **Effect of feeding a corn straw or mixed forage diet on rumen fermentation parameters and ruminal papillae morphology in dairy cows.**
X. X. Weng[1,2], J. Q. Wang*[1,2], D. P. Bu[1], Y. D. Zhang[1], and F. D. Li[2], [1]*State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*, [2]*College of Animal Science and Technology, Gansu Agricultural University*, *Lanzhou, China*.

W122 **Effects of pistachio by-product as a replacement for alfalfa hay on milk fatty acid composition in Saanen dairy goats fed a diet containing fish oil.**
M. H. Ghaffari[1], A. M. Tahmasbi[1], M. Khorvash[2], A. H. Ghaffari[1], and S. Kargar*[2], [1]*Faculty of Agriculture, Excellence Center in Animal Science, Ferdowsi University of Mashhad*, *Mashhad, Iran*, [2]*Department of Animal Sciences, Faculty of Agriculture, Isfahan University of Technology*, *Isfahan, Iran*.

W123 **Effects of pistachio by-product as a replacement for alfalfa hay on ruminal fermentation, blood metabolites, and milk yield and composition in Saanen dairy goats fed a diet containing fish oil.**
M. H. Ghaffari[1], A. M. Tahmasbi[1], M. Khorvash[2], A. Naserian[1], and S. Kargar*[2], [1]*Faculty of Agriculture, Excellence Center in Animal Science, Ferdowsi University of Mashhad*, *Mashhad, Iran*, [2]*Department of Animal Sciences, College of Agriculture, Isfahan University of Technology*, *Isfahan, Iran*.

W124 **Effects of pistachio by-products as a replacement for alfalfa hay on rumen bacteria involved in biohydrogenation of Baluchi male sheep.**
M. H. Ghaffari[1], A. M. Tahmasbi[1], A. H. Ghaffari[1], A. Naserian[1], and S. Kargar*[2], [1]*Faculty of Agriculture, Excellence Center in Animal Science, Ferdowsi University of Mashhad*, *Mashhad, Iran*, [2]*Department of Animal Sciences, College of Agriculture, Isfahan University of Technology*, *Isfahan, Iran*.

W125 **Effects of pistachio by-products as a replacement for alfalfa hay in the diet of sheep on ruminal fermentation.**
M. H. Ghaffari[1], A. M. Tahmasbi[1], M. Khorvash[2], S. A. H. Ghaffari[1], and S. Kargar*[2], [1]*Faculty of Agriculture, Excellence Center in Animal Science, Ferdowsi University of Mashhad*, *Mashhad, Iran*, [2]*Department of Animal Sciences, College of Agriculture, Isfahan University of Technology*, *Isfahan, Iran*.

W126 **Substitution of ground corn with different levels of coarsely ground wheat in the diets of dairy cows on feed intake, nutrient digestion, microbial N supply, and plasma metabolite profiles.**
Y. Guo*, Y. Zou, S. Li, Z. Cao, X. Xu, and Z. Yang, *State Key Laboratory of Animal Nutrition, College of Animal Science and Technology, China Agricultural University*, *Beijing, China*.

W127 **Particle size distribution of corn can predict starch degradability in rumen.**
Y. Zou*, Z. Yang, S. Li, and Z. Cao, *State Key Laboratory of Animal Nutrition, College of Animal Science and Technology, China Agricultural University*, *Beijing, China*.

W128 **Ruminal fermentation kinetics of finishing feedlot beef diets with increasing levels of whole cottonseed.**
V. N. Gouvea*[1], J. T. Neves Neto[2], D. B. Galvani[3], M. V. C. Ferraz Junior[1], J. A. Faleiro Neto[1], M. V. Bieh[4], J. J. R. Fernandes[2], and A. V. Pires[4], [1]*University of São Paulo*, *Pirassununga, SP, Brazil*, [2]*Federal University of Goiás*, *Goiânia, GO, SP, Brazil*, [3]*EMBRAPA Goats and Sheep*, *Sobral, CE, Brazil*, [4]*University of São Paulo*, *Piracicaba, SP, Brazil*.

W129 **Animal performance and fractional volatile fatty acid absorption rate through the rumen wall in lactating cows receiving a corn straw or mixed forage diet.**
X. X. Weng[2,3], J. Q. Wang*[1,2], D. P. Bu[2], Y. D. Zhang[2], and F. D. Li[3], [1]*Agronomy College of Heilongjiang August First Land Reclamation University*, *Da qing, Heilongjiang, China*, [2]*State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*, [3]*College of Animal Science and Technology, Gansu Agricultural University*, *Lanzhou, China*.

W130 **The use of Propolis in calf feeding: Effect on fecal score, health score and feed consumption behavior.**
P. Peravian*, K. Rezayazdi, G. Nehzati, and M. Dehghan-Banadaki, *University of Tehran*, *Tehran, Iran*.

W131 **Effects of three different diets on productive performance and archenteric pH values of dairy cows at late lactation.**
J. N. Li[1,2], D. P. Bu[1], J. Q. Wang*[1], P. Sun[1], F. D. Li[2], C. F. Qin[1], and P. Zhang[1], [1]*State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*, [2]*College of Animal Science and Technology, Gansu Agricultural University*, *Lanzhou, Gansu, China*.

W132 **Influence of diets with different protein sources on productive performance and rumen microbial communities in dairy cattle.**
J. W. Zhao[1,2], D. P. Bu[1], J. Q. Wang*[1], S. G. Zhao[1], and C. F. Qin[1], [1]*State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*, [2]*College of Animal Science and Technology, Inner Mongolia University for the Nationalities*, *Tongliao, Inner Mongolia, China*.

W133 **Screening and analysis of dipeptidyl peptidase IV from microbial metagenomic library in the rumen of dairy cow.**
J. W. Zhao[1,2], J. Q. Wang*[1], S. G. Zhao[1], P. Sun[1], D. P. Bu[1], X. L. Hu[1], Y. F. Lu[1], D. D. Wang[1], and D. Jin[1], [1]*State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*, [2]*College of Animal Science and Technology, Inner Mongolia University for the Nationalities*, *Tongliao, Inner Mongolia, China*.

W134 **Adhesion molecules of the immune system of dairy cows fed with n-3 and n-6 fatty acid sources in the transition period and early lactation.**
L. C. Verdurico*, J. R. Gandra, R. D. Mingoti, R. V. Barletta, J. E. Freitas Junior, L. Oliveira, G. D. Calomeni, R. Gardinal, C. S. Takyia, T. H. Vendramini, and F. P. Renno, *Universidade de Sao Paulo*, *Pirassununga, Sao Paulo, Brazil*.

W135 **Regulation of pancreatic amylase synthesis by leucine and phenylalanine is associated with the changes in mRNA abundance and/or phosphorylation of 4E-BP1.**
Z. Yu, K. Liu, Y. Liu, M. Xu, and J. Yao*, *College of Animal Science and Technology, Northwest A&F University*, *Yangling, Shaanxi, China*.

W136 **Microbial protein synthesis in sheep supplemented with extracts of *Salix babylonica* and exogenous enzymes.**
K. I. Valdes[1], A. Z. M. Salem*[1], M. Gonzalez-Ronquillo[1], R. Rojo[2], H. Gado[3], N. Rivero[1], and N. Odongo[4], [1]*Facultad de Medicina Veterinaria, Universidad Autonoma del Estado de Mexico*, *Mexico*, [2]*CU-UAEM Temascaltepec*, *Mexico*, [3]*Department of Animal Production, Faculty of Agriculture, Ain Shams University*, *Qalubia, Egypt*, [4]*Animal Production and Health Section, Joint FAO/IAEA Division of Nuclear Techniques in Food and Agriculture*, *International Atomic Energy Agency, Vienna, Austria*.

W137 **Changes in the relative population size of target ruminal bacteria following a grain-induced challenge in beef cattle receiving viable and nonviable active dried yeast.**
R. Mohammed[1], D. Vyas*[1], A. Uwizeye[1], W. Z. Yang[1], K. A. Beauchemin[1], and N. Walker[2], [1]*Agriculture and Agri-Food Canada*, *Lethbridge, Alberta, Canada*, [2]*AB Vista*, *Marlborough, Wiltshire, UK*.

W138 **Effect of ensiling high moisture corn with aspen wood byproducts on in situ dry matter disappearance of the final ensiled product.**
E. Caldera*, J. J. Wagner, and T. E. Engle, *Colorado State University*, *Fort Collins*.

W139 **Neutrophil (PMN) expression of extracellular trap formation and immunometabolic genes in response to prepartal energy intake and postpartal intramammary lipopolysaccharide challenge in postpartal dairy cows.**
K. M. Moyes*[1], D. E. Graugnard[2], J. K. Drackley[2], M. J. Khan[2], M. Bionaz[2], and J. J. Loor[2], [1]*University of Maryland*, *College Park*, [2]*University of Illinois*, *Urbana*.

Animal Behavior and Well-Being I

W140 **The effect of feeding competition on pre- and postweaning performance of dairy calves.**
E. K. Miller-Cushon*[1], R. Bergeron[2], K. E. Leslie[3], G. J. Mason[4], and T. J. DeVries[1], [1]*Department of Animal and Poultry Science, University of Guelph, Kemptville Campus*, *Kemptville, ON, Canada*, [2]*Department of Animal and Poultry Science, University of Guelph, Campus d'Alfred*, *Alfred, ON, Canada*, [3]*Department of Population Medicine, University of Guelph*, *Guelph, ON, Canada*, [4]*Department of Animal and Poultry Science, University of Guelph*, *Guelph, ON, Canada*.

W141 **Measurement of feeding motivation in limit-fed dairy heifers.**
A. M. Greter[1], T. F. Duffield[2], B. W. McBride[3], T. M. Widowski[3], and T. J. DeVries*[1], [1]*Dept. of Animal and Poultry Science, University of Guelph, Kemptville Campus*, *Kemptville, ON, Canada*, [2]*Dept. of Population Medicine, University of Guelph*, *Guelph, ON, Canada*, [3]*Dept. of Animal and Poultry Science, University of Guelph*, *Guelph, ON, Canada*.

W142 **Do limit-fed heifers prefer supplementary long or short straw?**
A. M. Greter[1], T. F. Duffield[2], B. W. McBride[3], T. M. Widowski[3], and T. J. DeVries*[1], [1]*Dept. of Animal and Poultry Science, University of Guelph, Kemptville Campus*, *Kemptville, ON, Canada*, [2]*Dept. of Population Medicine, University of Guelph*, *Guelph, ON, Canada*, [3]*Dept. of Animal and Poultry Science, University of Guelph*, *Guelph, ON, Canada*.

W143 **The effect of calving environment on the behavior, metabolism, and milk yield of Holstein heifers.**
S. Y. Morrison*, P. Ji, H. M. Gauthier, S. E. Williams, and H. M. Dann, *William H. Miner Agricultural Research Institute*, *Chazy, NY*.

W144 **Rumination and feeding behavior before and after calving.**
K. Schirmann*, N. Chapinal, L. A. Vickers, D. M. Weary, and M. A. G. von Keyserlingk, *Animal Welfare Program, Faculty of Land and Food Systems, The University of British Columbia*, *Vancouver, BC, Canada*.

W146 **Social constraints and motivation of dairy cows to work for access to pasture.**
A. C. Andressa[1,2], J. A. Fregonesi*[2], D. M. Weary[1], and M. A. G. von Keyserlingk[1], [1]*Univerisity of British Columbia*, *Vancouver, British Columbia, Canada*, [2]*Universidade Estadual de Londrina*, *Londrina, Paraná, Brazil*.

W148 **Combined wavelet and linear regression techniques to model cattle behavioral responses to changes in forage allowance.**
M. S. Gadberry*[1], W. Whitworth[2], and G. Montgomery[2], [1]*University of Arkansas, Cooperative Extension Service*, *Little Rock*, [2]*University of Arkansas, Southeast Research and Extension Center*, *Monticello*.

W149 **Determinants of body temperature and feed intake in beef cattle during summer heat.**
A. K. Curtis*, B. Scharf, P. A. Eichen, M. S. Kerley, J. R. Russell, and D. E. Spiers, *Division of Animal Sciences, University of Missouri*, *Columbia*.

W150 **Influence of pen-shade on feedlot performance of *Bos indicus* growing heifers under hot weather conditions.**
J. A. Vazquez[1], B. J. Cervantes[2], A. Camacho[3], M. A. Espino[3], T. J. Heras[3], L. R. Flores[3], J. J. Lomeli[3], and R. Barajas*[3], [1]*CUALTOS, Universidad de Guadalajara*, *Tepatitlan, Jalisco, Mexico*, [2]*Ganadera Los Migueles, S.A. de C.V*, *Culiacan, Sinaloa, Mexico*, [3]*Facultad de Medicina Veterinaria y Zootecnia, Universidad Autonoma de Sinaloa*, *Culiacan, Sinaloa, Mexico*.

W151 **Behavior of horses kept in large groups in a feedlot environment.**
J. H. Higginson Cutler*[1], M. Robertshaw[1], E. A. Pajor[2], L. J. Keeling[3], L. Burwash[4], C. Dewey[1], and D. B. Haley[1], [1]*University of Guelph*, *Guelph, ON, Canada*, [2]*University of Calgary*, *Calgary, AB, Canada*, [3]*Swedish University of Agricultural Sciences*, *Uppsala, Sweden*, [4]*Alberta Agriculture, Food and Rural Development*, *Airdrie, AB, Canada*.

W152 **Barrow approachability to a novel object when selected for feed efficiency.**
J. Colpoys*[1], N. Gabler[1], A. Keating[1], S. Millman[2], J. Siegford[3], and A. Johnson[1], [1]*Animal Science, Iowa State University*, *Ames*, [2]*Veterinary Diagnostics and Production Animal Medicine, Iowa State University*, *Ames*, [3]*Animal Science, Michigan State University*, *East Lansing*.

W153 **Influence of dietary flavors on sheep feeding behavior and nutrient digestibility.**
J. J. Villalba*[1], A. Mereu[2], and I. R. Ipharraguerre[2], [1]*Utah State University*, *Logan*, [2]*Lucta, S.A*, *Montornés del Vallés, Spain*.

W154 **Metabolic profile of sheep and their lambs in an artificial nursing system.**
L. H. Díaz-García*, L. P. López-Huitrado, A. Muro-Reyes, H. Gutiérrez-Bañuelos, and J. A. López-Román, *Universidad Autónoma de Zacatecas*, *Zacatecas, México*.

W155 **Individual behavior of lambs confined in enriched environment.**
J. P. A. Lorenço[1], P. A. Bustos MacLean*[1], N. Mora[1], J. M. Malheiros[2], T. Zunino[1], C. G. Titto[3], B. S. Lala[1], and F. A. F. Macedo[1], [1]*State University of Maringa*, *Maringa, PR, Brazil*, [2]*Faculty of Agriculture and Veterinary Sciences*, *Jaboticabal, SP, Brazil*, [3]*University of São Paulo, FZEA/USP*, *Pirassununga, SP, Brazil*.

W156 **Creation and persistence of conditioned aversion to grape leaves and sprouts for grazing sheep in vineyards.**
C. L. Manuelian[1], E. Albanell[1], M. Rovai[1], A. A. K. Salama[1,2], and G. Caja*[1], [1]*Group of Ruminant Research (G2R), Universitat Autonoma de Barcelona*, *Bellaterra, Spain*, [2]*Animal Production Research Institute*, *Dokki, Giza, Egypt*.

W157 **Feed management of psittacines in captivity using energy requirement equations.**
V. M. Pereira, T. S. G. Carvalho, D. L. Assis, F. M. O. B. Saad, and C. E. P. Saad*, *Federal University of Lavras*, *Lavras, Minas Gerais, Brazil*.

Undergraduate Student Competition
ASAS Undergraduate Student Poster Competition

W158 **Comparison of pre-race behaviors of Thoroughbred race horses on finish order and finish type.**
A. McDuff*, K. William, J. Gregory, and C. E. Ferguson, *McNeese State University*, *Lake Charles, LA*.

W159 **Alleviation of pain associated with disbudding.**
A. Mathias*, J. Gilliam, D. Stein, and M. Calvo-Lorenzo, *Oklahoma State University*, *Stillwater*.

W160 **Factors affecting neonatal dairy calf mortality in a hot-arid environment.**
E. L. Lopez Rodriguez*, M. Mellado, F. G. Veliz, M. A. S. Miramontes, and J. E. Garcia, *Autonomous Agrarian University Antonio Narro*, *Torreon, Coahuila, Mexico*.

W161 **GALNT13, a positional candidate gene on bovine chromosome 2 for heifer pregnancy, is only expressed in nervous tissue.**
J. N. LaMastro*[1], W. A. Khan[1,2], S. O. Peters[2,3], O. O. Ajayi[1], M. De Donato[1,4], W. Bai[1,5], and I.G. Imumorin[1], [1]*Cornell University*, *Ithaca, NY*, [2]*University of Veterinary and Animal Sciences*, *Lahore, Pakistan*, [3]*Berry College*, *Mt. Berry, GA*, [4]*Universidad de Oriente*, *Cumana, Sucre, Venezuela*, [5]*Shenyang Agricultural University*, *Shenyang, China*.

W162 **Combining ruminally protected choline and flaxseed in cattle diets to increase assimilation of n-3 fatty acids from the diet.**
C. P. Weiss*, C. L. Van Bibber-Krueger, K. A. Miller, C. A. Alvarado-Gilis, and J. S. Drouillard, *Kansas State University*, *Manhattan*.

W163 **Kyphosis induced by maternal vitamin D intake is not explained by a reduction in vertebrae body mineral content of pigs at birth or weaning.**
L. M. Vanderwerff*, L. A. Rortvedt-Amundson, and T. D. Crenshaw, *University of Wisconsin*, *Madison*.

W164 **Effect of sex, pen density and season on feedlot performance.**
J. H. Moss*, C. L. Maxwell, and C. R. Krehbiel, *Department of Animal Science, Oklahoma State University*, *Stillwater*.

W165 **Phosphorus status of grazing beef cattle in Virginia's Chesapeake Bay watershed.**
S. J. Neil*, D. D. Harmon, and M. A. McCann, *Virginia Polytechnic Institute and State University*, *Blacksburg*.

W166 **Effect of anabolic implants on adrenal cortisol synthesis in beef cattle.**
K. A. Branham*[1], J. O. Ellison[1], B. I. Gomez[1], A. D. Stapp[1], C. A. Gifford[1], C. R. Kreihbel[1], B. C. Bernhard[1], C. L. Maxwell[1], D. M. Hallford[2], and J. A. Hernandez Gifford[1], [1]*Oklahoma State University*, *Stillwater*, [2]*New Mexico State University*, *Las Cruces*.

W167 **Expression of WNT signaling transcripts at specific stages of follicle development in bovine granulosa cells.**
A. J. Potts*[1], A. D. Stapp[1], B. I. Gómez[1], K. B. Parker[1], C. A. Gifford[1], D. M. Hallford[2], and J. A. Hernandez Gifford[1], [1]*Oklahoma State University*, *Stillwater*, [2]*New Mexico State University*, *Las Cruces*.

W168 **Solubility of copper sulfate and three sources of dicopper chloride trihydroxide.**
C. S. Park* and B. G. Kim, *Konkuk University*, *Seoul, Republic of Korea*.

W169 **Effects of poor maternal nutrition on GH, IGF-I, insulin, and leptin concentrations in pregnant ewes.**
M. E. Forella*, K. N. Peck, M. L. Hoffman, A. R. Fox, K. E. Govoni, and S. A. Zinn, *Department of Animal Science, University of Connecticut*, *Storrs*.

W170 **In vitro fermentation of high forage substrate with addition of direct fed microbials and/or monensin.**
K. E. Roberts*, K. M. Anderson, N. M. Kenney, K. R. McLeod, and E. S. Vanzant, *University of Kentucky*, *Lexington*.

W171 **Effects of poor maternal nutrition on gene expression in bone marrow stromal cells from lambs.**
D. M. Kaelin*, S. Neupane, M. L. Hoffman, K. N. Peck, S. A. Zinn, and K. E. Govoni, *University of Connecticut*, *Storrs*.

W172 **Effects of maternal dietary yeast supplementation on foal growth and development.**
E. R. Share*, J. M. Reddish, and K. Cole, *Department of Animal Sciences, The Ohio State University*, *Columbus*.

W173 **Effects of poor maternal nutrition during gestation on gene expression in renal adipose tissue of lambs.**
A. M. Bush*, M. L. Hoffman, K. N. Peck, S. A. Zinn, and K. E. Govoni, *Department of Animal Science, University of Connecticut*, *Storrs*.

W174 **Uterine flux of estrone sulfate in an ovine maternal nutrient restriction model during melatonin supplementation.**
L. J. Grossner*[1], L. E. Camacho[2], D. M. Hallford[3], K. A. Vonnahme[2], and C. O. Lemley[1], [1]*Mississippi State University*, *Mississippi State*, [2]*North Dakota State University*, *Fargo*, [3]*New Mexico State University*, *Las Cruces*.

W175 **Reproductive indices of quail hatching eggs under semi-intensive management system.**
O. T. F. Abanikannda, A. M. Adeyeye*, A. O. Leigh, and A. A. Olubunmi, *Lagos State University*, *Ojo, Lagos, Nigeria*.

W176 **Effects of maternal 25-hydroxycholecalciferol (25OHD3) supplementation on fetal bone development in pigs.**
K. K. McFadden*[1], M. L. Hoffman[1], J. D. Starkey[2], J. D. Coffey[2], E. A. Hines[2], C. W. Starkey[2], and K. E. Govoni[1], [1]*University of Connecticut*, *Storrs*, [2]*Texas Tech University*, *Lubbock*.

W177 **Pituitary genomic expression profiles of steers are altered by grazing of high (HE) versus low (LE) endophyte-infected pastures.**
R. M. Hegge*, J. A. Boling, and J. C. Matthews, *University of Kentucky*, *Lexington*.

W178 **Excess estrus in meat goats: 1-year summary.**
B. A. Schulte*, L. S. Wilbers, J. D. Caldwell, C. Clifford-Rathert, and A. K. Wurst, *Lincoln University*, *Jefferson City, MO*.

W179 **Physicochemical analyzes of longissimus dorsi muscle for checking the quality of meat from cattle Nellore (*Bos indicus*) selected for production.**
J. M. Malheiros*[1], W. A. Baldassini[2], L. A. L. Chardulo[3], J. A. V. Silva[2], and L. G. Albuquerque[1], [1]*UNESP-FCAV*, *Jaboticabal, SP, Brazil*, [2]*UNESP-FMVZ*, *Botucatu, SP, Brazil*, [3]*UNESP-IB*, *Botucatu, SP, Brazil*.

W180 **Bioanalytical methods for calcium proteomic study on tenderness longissimus muscle of Nellore cattle (*Bos indicus*).**
W. A. Baldassini[1], J. M. Malheiros*[2], L. A. L. Chardulo[2], J. A. V. Silva[2], L. G. Albuquerque[2], and P. M. Padilha[3], [1]*UNESP/FMVZ, Sao Paulo State University*, *Botucatu, Brazil*, [2]*UNESP/FCAV, Sao Paulo State University*, *Jaboticabal, Brazil*, [3]*SUNESP/IB, Sao Paulo State University*, *Botucatu, Brazil*.

W181 **The effects of selecting for the myostatin F94L polymorphism on reproductive traits in pubertal heifers.**
E. D. Forbes*[1], O. L. Swanson[2], A. K. McNeel[3], R. G. Tait[3], T. P. L. Smith[3], G. L. Bennett[3], T. A. Hoagland[1], S. A. Zinn[1], C. A. Lents[3], G. A. Perry[2], and R. A. Cushman[3], [1]*University of Connecticut*, *Storrs*, [2]*South Dakota State University*, *Brookings*, [3]*US Meat Animal Research Center*, *Clay Center, NE*.

Breeding and Genetics: Applications and Methods in Animal Breeding—Dairy

W182 **Epidemiology of synchronization programs for breeding management in US dairy herds.**
A. H. Souza*[1,2], P. A. Carvalho[1], R. D. Shaver[1], M. C. Wiltbank[1], and V. Cabrera[1], [1]*Department of Dairy Science, University of Wisconsin*, *Madison*, [2]*Ceva Sante Animale*, *Libourne, France*.

W183 **Effects of different stall type and bedding materials on lactation length, milk yield and some health problems in dairy herds.**
N. K. Kara*[1], A. Galiç[2], and M. Koyuncu[1], [1]*Uludag University*, *Bursa, Turkey*, [2]*Akdeniz University*, *Antalya, Turkey*.

W184 **Genetic and phenotypic trends for milk yield in Holstein populations in Mexico.**
H. O. Toledo[1], F. J. Ruiz[2], C. G. Vazquez[1], J. M. Berruecos[1], and M. A. Elzo*[3], [1]*Universidad Nacional Autonoma de Mexico*, *Ciudad de Mexico, DF, Mexico*, [2]*INIFAP*, *Queretaro, Queretaro, Mexico*, [3]*University of Florida*, *Gainesville*.

W185 **Genetic parameter estimates for rump traits and teat length in a multibreed dairy cattle population in Thailand.**
B. Wongprom[1], S. Koonawootrittriron[1], M. A. Elzo*[2], and T. Suwanasopee[1], [1]*Kasetsart University*, *Bangkok, Thailand*, [2]*University of Florida*, *Gainesville*.

W186 **Genotype by environment interaction effect on lactation pattern and milk production traits in an Ethiopian dairy cattle population.**
G. Gebreyohannes[1], S. Koonawootrittriron[1], M. A. Elzo*[2], and T. Suwanasopee[1], [1]*Kasetsart University*, *Bangkok, Thailand*, [2]*University of Florida*, *Gainesville*.

W187 **Impact of sire by region interaction on first-lactation traits of dairy cows raised under tropical conditions in Thailand.**
P. Yodklaew[1], S. Koonawootrittriron[1], M. A. Elzo*[2], and T. Suwanasopee[1], [1]*Kasetsart University*, *Bangkok, Thailand*, [2]*University of Florida*, *Gainesville*.

W188 **Optimal age at first calving for US dairy cattle.**
J. B. Cole, J. L. Hutchison*, D. M. Bickhart, and D. J. Null, *Animal Improvement Programs Laboratory, Agricultural Research Service, USDA*, *Beltsville, MD*.

W189 **Evaluation of genetic advance of production traits in Shenxing dairy farm from 2002 to 2012.**
G. Yao[1], H. Liming[2], L. Guanglei*[1,2], Z. Changbin[1], and F. Fengshou[1], [1]*Shanghai Dairy Breeding Center Co., Ltd*, *Shanghai, China*, [2]*State Key Laboratory of Dairy Biotechnology, Shanghai Bright Holstan Co., Ltd*, *Shanghai, China*.

W190 **Genetic parameters for test-day milk, fat, protein and mozzarella yield using random regression models in buffaloes.**
N. Hurtado-Lugo*[1,2], R. Aspilcuelta[1], G. M. F. de Camargo[1], M. Cerón[2], and H. Tonhati[1], [1]*State University of São Paulo, Faculty of Agriculture and Veterinary Sciences*, *Jaboticabal, São Paulo, Brazil*, [2]*University of Antioquia*, *Medellín, Antioquia, Colombia*.

W191 **Rate of genetic progress and breeding values in commercial dairy herds using young versus daughter proven sires.**
C. D. Dechow*[1] and G. W. Rogers[2], [1]*Penn State University*, *University Park*, [2]*Geno Global Ltd*, *Hamar, Norway*.

W192 **Evaluation of sources of variation and estimation of productive parameters using multi-trait animal models in dairy buffaloes in Pakistan.**
S. M. Suhail*[1,2], M. S. Qureshi[2], I. Ahmed[2], H. Akbar[1], M. J. Khan[1], and J. J. Loor[1], [1]*University of Illinois*, *Urbana*, [2]*KPK Agricultural University*, *Peshawar, Pakistan*.

W193 **Development of a Monte Carlo simulation model to quantify genetic progress from an emerging in vitro fertilized embryo transfer dairy reproduction system.**
K. Kaniyamattam*, J. Schneider, and A. De Vries, *University of Florida*, *Gainesville*.

W194 **Heritability estimates of performance and health traits of Holstein calves.**
M. Mousa*[1,2], A. Seykora[2], H. Chester-Jones[3], D. Ziegler[3], and J. Cole[4], [1]*Department of Animal Production, Faculty of Agriculture, Assiut University*, *Assiut, Egypt*, [2]*Department of Animal Science, University of Minnesota*, *Saint Paul*, [3]*University of Minnesota, SORC*, *Waseca*, [4]*Animal Improvement Programs Laboratory, ARS-USDA*, *Beltsville, MD*.

Breeding and Genetics: Applications and Methods in Animal Breeding—Pigs, Poultry, Sheep, and Horses

W195 **Genetic analysis of the stayability for running of Thoroughbred horses.**
J. A. V. Silva*, L. H. Kato, A. M. Maiorano, R. A. Curi, and M. D. S. Mota, *Faculdade de Medicina Veterinaria e Zootecnia, UNESP*, *Botucatu, Sao Paulo, Brasil*.

W196 **Population parameters in Quarter Horses in Brazil.**
M. D. S. Mota, R. A. Curi, G. L. Pereira, A. C. Verdugo, and J. A. V. Silva*, *Faculdade de Medicina Veterinaria e Zootecnia, UNESP*, *Botucatu, Sao Paulo, Brasil*.

W197 **Understanding the impact of frozen semen on swine production systems.**
D. Gonzalez-Pena*, N. V.L. Serão, R. Knox, and S. L. Rodriguez-Zas, *University of Illinois at Urbana-Champaign*, *Urbana*.

W198 **Estimation of the additive and dominance Variances in South African Duroc pigs.**
D. Norris* and J. W. Ngambi, *University of Limpopo*, *Sovenga, South Africa*.

W199 **Accounting for population structure when predicting litter size in commercial pig lines.**
L. Tusell*[1], S. Forni[2], P. Pérez[1], and D. Gianola[1], [1]*Dept. of Animal Sciences, University of Wisconsin*, *Madison*, [2]*Genus Plc*, *Hendersonville, TN*.

W200 **Partitioning of within-litter birth weight variation and its distribution in piglets.**
T. J. Zindove*[1], E. F. Dzomba[1], A. T. Kanengoni[2], and M. Chimonyo[1], [1]*University of KwaZulu-Natal*, *Pietermaritzburg, KwaZulu-Natal, South Africa*, [2]*Agricultural Research Council*, *Pretoria, Gauteng, South Africa*.

W201 **Genetic analysis of longitudinal measurements of feed intake in Piétrain sire lines.**
M. Dufrasne*[1,2], V. Jaspart[3], J. Wavreille[4], and N. Gengler[1], [1]*Gembloux Agro-Bio Tech, University of Liege*, *Gembloux, Belgium*, [2]*FRIA*, *Brussels, Belgium*, [3]*Walloon Pig Breeding Association*, *Ciney, Belgium*, [4]*Walloon Agricultural Research Centre*, *Gembloux, Belgium*.

W202 **General and specific combining abilities for reproductive and growth performance of three color variants of Nigerian indigenous turkeys.**
M. A. Adeleke*[1], R. O. Ojo[1], S. O. Peters[2], and M. O. Ozoje[1], [1]*Department of Animal Breeding and Genetics, Federal University of Agriculture*, *Abeokuta, Ogun State, Nigeria*, [2]*Department of Animal Science, Berry College*, *Mount Berry, GA*.

W203 **Quail chick weight prediction using pre-hatch egg measurements and indices.**
O. T. F. Abanikannda*, A. O. Leigh, and A. M. Adeyeye, *Lagos State University*, *Ojo, Lagos, Nigeria*.

W204 **Genetic parameters of body weight at multiple ages in meat-type quails.**
L. Silva*[1,2], D. González-Pena[2], J. Ribeiro[1], A. Crispim[1], S. Rodriguez-Zas[2], and R. Torres[1], [1]*Departament of Animal Sciences, Universidade Federal de Viçosa*, *Viçosa, MG, Brazil*, [2]*Departament of Animal Sciences, University of Illinois at Urbana-Champaign*, *Urbana*.

W205 **Genetic relationships between cloacal gland area and fertility traits in meat quail.**
L. Silva*[1,2], D. González-Pena[2], G. Caetano[1], R. Pacheco[1], S. Rodriguez-Zas[2], and R. Torres[1], [1]*Department of Animal Sciences, Universidade Federal de Viçosa*, *Viçosa, MG, Brazil*, [2]*Department of Animal Sciences, University of Illinois at Urbana Champaign*, *Urbana*.

W206 **Genetic variation in Afec-Assaf ewes differing in their lamb survival rate at birth.**
A. Lam, A. Rosov, E. Seroussi, and E. Gootwine*, *Institute of Animal Science, The Volcani Center*, *Bet Dagan, Israel*.

W207 **Factor analysis of biometric traits among the Djallonke sheep of Northern Ghana.**
P. T. Birteeb[1], S. O. Peters[2], and M. O. Ozoje*[3], [1]*Department of Animal Sciences, University for Development Studies*, *Tamale, Ghana*, [2]*Department of Animal Science, Berry College*, *Mount Berry, GA*, [3]*Department of Animal Breeding and Genetics, Federal University of Agriculture*, *Abeokuta, Nigeria*.

W208 **Evaluation of economic traits in Romanov × Iranian fat-tail sheep breed in the first generation (F1).**
M. J. Najafpanah*[1,2], H. Mousapour[2], N. Feiz[1], M. H. Moradi[2], and B. Ghorbani[1], [1]*Center of Advance Research and Development of Elite Affairs*, *Tehran, Iran*, [2]*University of Tehran*, *Tehran, Iran*.

W209 **Phenotypic and genetic changes of ewe economic traits in the Makooei sheep.**
H. M. Shahrbabak*[1], H. Mohammadi[2], and A. H. F. Khaltabadi[3], [1]*Department of Animal Science, Academic of Agronomy and Animal Science, University College of Agriculture & Natural Resources University of Tehran*, *Karaj, Alborz, Iran*, [2]*Department of Animal Sciences, Faculty of Agriculture, University of Tabriz*, *Tabriz, Iran*, [3]*Department of Animal Science, Faculty of Agriculture, University of Arak*, *Arak, Iran*.

W210 **Estimation of genetic trends for live weight traits in Raeini goats.**
H. M. Shahrbabak*[1], H. Mohammadi[2], and A. H. F. Khaltabadi[3], [1]*Department of Animal Science, Academic of Agronomy and Animal Science, University College of Agriculture & Natural Resources, University of Tehran*, *Karaj, Alborz, Iran*, [2]*Department of Animal Science, Faculty of Agriculture, University of Tabriz*, *Tabriz, Iran*, [3]*Department of Animal Science, Faculty of Agriculture, University of Arak*, *Arak, Iran*.

W211 **Linear models versus threshold models for predicting direct and maternal genetic effects on number of lambs weaned in Iranian Makooei sheep.**
H. M. Shahrbabak*[1], H. Mohammadi[2], and A. H. F Khaltabadi[3], [1]*Department of Animal Science, Academic of Agronomy and Animal Science, University College of Agriculture & Natural Resources, University of Tehran*, *Karaj, Alborz, Iran*, [2]*Department of Animal Science, Faculty of Agriculture, University of Tabriz*, *Tabriz, Iran*, [3]*Department of Animal Science, Faculty of Agriculture, University of Arak*, *Arak, Iran*.

W212 **Effect of egg weight on hatching weight and incubation period in Giant African land snail (*Archachatina marginata*).**
J. A. Abiona*, Y. F. Sokoya, A. O. Osinowo, A. O. Ladokun, and M. O. Abioja, *Federal University of Agriculture, Abeokuta*, *Abeokuta, Ogun State, Nigeria*.

W213 **Effect of Chy-Max M on proteolysis during ripening of natural cheese, and functionality of process cheese.**
A. C. Biswas*, C. Marella, and L. E. Metzger, *Dairy Science Department, South Dakota State University*, *Brookings*.

W214 **High pressure processing of Queso Fresco: Effects on textural and rheological properties over 12 wk of storage.**
D. L. Van Hekken*[1], M. H. Tunick[1], N. Farkye[2], and P. M. Tomasula[1], [1]*USDA, Agricultural Research Service*, *Wyndmoor, PA*, [2]*California Polytechnic State University*, *San Luis Obispo*.

W215 **Reducing fat levels in Cheddar-like goat cheese: Effect on proteolysis and rheological properties over 6 months of refrigerated storage.**
D. L. Van Hekken*[1], Y. W. Park[2], and M. H. Tunick[1], [1]*USDA, Agricultural Research Service*, *Wyndmoor, PA*, [2]*Fort Valley State University*, *Fort Valley, GA*.

W216 **Influence of temperature and milk on W1/O/W2 double emulsions made with anhydrous milk fat.**
D. B. Clayton and D. J. McMahon*, *Western Dairy Center, Utah State University*, *Logan*.

W217 **Cheese milk fortification with denatured whey/buttermilk blend—Effect on rennet gel characteristics.**
M.-P. Gauvin*[1], M. Britten[2], and Y. Pouliot[1], [1]*STELA Dairy Research Center, Institute on Nutrition and Functional Foods (INAF), Université Laval*, *Quebec, Quebec, Canada*, [2]*Food Research and Development Center (FRDC), Agriculture and Agri-Food Canada*, *St-Hyacinthe (Québec), Canada*.

W218 **Physicochemical and sensory properties of Prato cheese made with different coagulants.**
L. S. Alves[1], C. Merheb-Dini*[1], E. Gomes[2], R. da Silva[2], and M. L. Gigante[1], [1]*Faculty of Food Engineering, University of Campinas - UNICAMP*, *Campinas, SP, Brazil*, [2]*Instituto de Biociências, Letras e Ciências Exatas, UNESP - Univ Estadual Paulista*, *São José do Rio Preto, SP, Brazil*.

W219 **The effect of cation substitution on the flavor of reduced-fat, reduced-sodium Cheddar cheese.**
H. H. Chang*[1], E. J. Kang[1], R. E. Miracle[1], D. J. McMahon[2], and M. A. Drake[1], [1]*North Carolina State University*, *Raleigh*, [2]*Utah State University*, *Logan*.

W220 **Comparison of physicochemical properties of Asiago cheese added with nanopowdered red ginseng and powdered red ginseng during ripening (II).**
K. H. Choi*, P. Ganesan, and H. S. Kwak, *Sejong University*, *Seoul, South Korea*.

W221 **Monitoring water-soluble compounds of Swiss cheese before cold room by attenuated total reflectance-Fourier transform infrared spectroscopy (ATR-FTIR).**
N. Cheng*, W. J. Harper, and C. Wick, *Ohio State University*, *Columbus*.

W222 **Survival of free and microencapsulated *Lactobacillus acidophilus* La5 in probiotic Prato cheese during simulated gastrointestinal conditions.**
C. Gebara, M. C. E. Ribeiro*, K. S. Chaves, F. N. Souza, C. R. F. Grosso, and M. L. Gigante, *Faculty of Food Engineering, University of Campinas*, *Campinas, SP/Brazil*.

W223 **Evaluation of flavor variation in Swiss cheese from five factories using SIFT-MS, descriptive sensory analysis, and consumer sensory testing.**
K. Taylor[1], M. Leidheiser[1], M. A. Drake[2], S. Barringer[1], and W. J. Harper*[1], [1]*The Ohio State University*, *Columbus*, [2]*North Carolina State University*, *Raleigh*.

W224 **Gas formation and growth characteristics of an oligotrophic *Lactobacillus* species isolated from Cheddar cheese.**
F. Ortakci*[1], C. Oberg[2,1], J. Broadbent[1], T. Oberg[1], and D. McMahon[1], [1]*Western Dairy Center, Utah State University*, *Logan*, [2]*Weber State University*, *Ogden, UT*.

W225 **Effect of oil-based and microencapsulated n-3 fatty acids on physical and chemical properties of processed cheese.**
M. Rouse, C. A. Boeneke, K. V. O'Brien*, and K. Aryana, *Louisiana State University*, *Baton Rouge*.

W226 **Variability of volatile organic compounds profile during the manufacture of Swiss-type cheeses using selected ion flow tube mass spectrometry.**
H. Z. Castada* and W. J. Harper, *Department of Food Science and Technology, The Ohio State University*, *Columbus*.

W227 **Tracking the progression of thermoduric bacteria during the manufacture of Cheddar cheese—A case study.**
K. Bhanduriya*, S. Anand, and L. Metzger, *Midwest Dairy Foods Research Center, Dairy Science Department, South Dakota State University*, *Brookings*.

W228 **Causative organisms for slit defects in Cheddar cheese samples—A case study.**
K. Bhanduriya*, S. Anand, and L. Metzger, *Midwest Dairy Food Research Center, Dairy Science Department, South Dakota State University*, *Brookings*.

W229 **Impact of cation substitution on composition and microbiology of reduced-fat Cheddar cheese.**
D. J. McMahon*[1], C. J. Oberg[2,1], L. V. Moyes[2,1], M. A. Drake[3], and N. Farkye[4], [1]*Western Dairy Center, Utah State University*, *Logan*, [2]*Department of Microbiology, Weber State University*, *Ogden, UT*, [3]*Department of Food, Bioprocessing, and Nutrition Sciences, North Carolina State University*, *Raleigh*, [4]*Dairy Products Technology Center, California State Polytechnic University*, *San Luis Obispo*.

W230 **Production of reduced-fat Majorero cheese using supercritical CO_2.**
D. Sanchez-Macias*[1,2], A. Laubscher[1], N. Castro[3], A. Arguello[3], and R. Jimenez-Flores[1], [1]*California Polytechnic State University*, *San Luis Obispo*, [2]*Agroindustrial Engineering Department, Universidad Nacional del Chimborazo*, *Riobamba, Ecuador*, [3]*Department of Animal Sciences, Universidad de Las Palmas de Gran Canaria*, *Arucas, Spain*.

W231 **Effect of post manufacture thermal dip treatment on proteolysis of commercial string cheese during refrigerated storage.**
M. K. Hsu* and P. S. Tong, *California Polytechnic State University*, *San Luis Obispo*.

W232 **Effect of partial substitution of sodium chloride with potassium chloride on physicochemical composition and sensory acceptance of Minas frescal cheese.**
J. M. V. Pires, A. T. B. Vieira, J. B. Miazaki, A. M. T. Roque, P. C. B. Vianna, and C. M. V. B. De Rensis*, *Universidade Norte do Paraná*, *Londrina, Paraná, Brazil*.

W234 **Effects of chelating agents on texture of low-fat Cheddar cheese.**
M. Poveda*, M. Arnold, and N. Farkye, *California Polytechnic University-San Luis Obispo*, *San Luis Obispo*.

W235 **Heating curd grains during cheese-making could affect the appearance of fat and the phospholipids content in cheese.**
D. Sánchez-Macías[1,2], A. Laubscher[1], N. Castro[3], A. Argüello[3], and R. Jimenez-Flores*[1], [1]*Dairy Products Technology Center California Polytechnic State University*, *San Luis Obispo*, [2]*Agroindustrial Engineering department, Universidad Nacional del Chimborazo*, *Riobamba, Ecuador*, [3]*Department of Animal Science, Universidad de Las Palmas de Gran Canaria*, *Arucas, Las Palmas, Spain*.

W449 **Evaluation of off-flavor development in Alpine cheese using selected ion flow tube mass spectrometry (SIFT-MS).**
E. Berusch, K. Taylor, and W. J. Harper*, *The Ohio State University, Columbus*.

Companion Animals: Comparative Animal Nutrition

W236 **Compositional analysis of various whole grains and whole grain dog treats.**
A. N. Beloshapka*[1], P. R. Buff[3], and K. S. Swanson[1,2], [1]*Department of Animal Sciences, University of Illinois*, *Urbana*, [2]*Division of Nutritional Sciences, University of Illinois*, *Urbana*, [3]*The Nutro Company*, *Franklin, TN*.

W237 **Increasing dietary water content increases voluntary physical activity in healthy adult cats.**
P. Deng*[1], M. Pallotto[1], and K. Swanson[1,2], [1]*Department of Animal Sciences, University of Illinois*, *Urbana*, [2]*Division of Nutritional Sciences, University of Illinois*, *Urbana*.

W238 **Chemical composition of dietary items consumed by two lemur species (*Varecia variegata* and *Propithecus diadema*) in the Analamazaotra Special Reserve, Madagascar.**
B. C. Donadeo*[1], V. R. A. Randrianindrina[2], K. R. Kerr[1], S. L. Burke[3], E. E. Louis[3], C. L. Morris[3,4], and K. S. Swanson[1], [1]*University of Illinois at Urbana-Champaign*, *Urbana*, [2]*Université d'Antananarivo*, *Antananarivo, Madagascar*, [3]*Omaha's Henry Doorly Zoo & Aquarium*, *Omaha, NE*, [4]*Iowa State University*, *Ames*.

W239 **Inclusion of fresh pork pancreas in raw pork-meat based diets for African wildcats (*Felis silvestris tristrami*) does not affect macronutrient digestibility.**
C. L. Morris*[1,2], S. L. Burke[2], and C. L. Bexten[2], [1]*Iowa State University*, *Ames*, [2]*Omaha's Henry Doorly Zoo and Aquarium*, *Omaha, NE*.

W240 **Neither enzymes nor synbiotic supplementation influenced nutrient digestibility or fecal characteristics of dogs.**
B. S. Obeidat*, K. K. Guatam, and M. A. Ballou, *Texas Tech University*, *Lubbock*.

W241 **Prediction of metabolizable energy value of extruded dog food: Comparing values generated by equations proposed in the literature and values obtained in vivo.**
F. S. Ebina, R. C. S. Ogoshi, M. G. Zangeronimo, P. B. Rodrigues, F. M. O. B. Saad, and C. E. P. Saad*, *Federal University of Lavras*, *Lavras, Minas Gerais, Brazil*.

W242 **Prediction of digestible and metabolizable energy value in Brazilian extruded dog foods.**
F. S. Ebina[1], J. S. Dos Reis[1], J. Franca[2], C. E. P. Saad[1], and F. M. O. B. Saad*[1], [1]*Federal University of Lavras*, *Lavras, Minas Gerais, Brazil*, [2]*Federal University of Uberlandia*, *Uberlandia, Minas Gerais, Brazil*.

Dairy Foods: Dairy Products II

W243 **Joint R&D prospects for dairy development in India.**
J. Parekh*, *Dairy Consultant*, *Mumbai, India*.

W244 **Improving the textural properties of non-fat yogurt by addition of milk-based protein additives.**
B. Delikanli and T. Ozcan*, *Uludag University*, *Bursa, Turkey*.

W245 **Viability of probiotic bacteria in lactose-hydrolyzed milk.**
F. R. Zamariano, D. V. Tenan, P. C. B. Vianna, and C. M. V. B. De Rensis*, *Universidade Norte do Paraná*, *Londrina, Paraná, Brazil*.

W246 **Encapsulation yield, gastrointestinal resistance and storage stability of *Lactobacillus acidophilus* microencapsulated by spray-drying using sweet whey and skim milk.**
G. M. Maciel, K. S. Chaves*, C. R. F. Grosso, and M. L. Gigante, *Faculty of Food Engineering, University of Campinas*, *Campinas, SP/Brazil*.

W247 **Selective methodology for enumeration of *Lactobacillus acidophilus* in yogurt and Prato cheese.**
K. S. Chaves*[1], C. Gebara[1], M. C. E. Ribeiro[1], A. L. N. Gandara[2], and M. L. Gigante[1], [1]*Faculty of Food Engineering, University of Campinas*, *Campinas, SP/Brazil*, [2]*Technical High School of Campinas, University of Campinas*, *Campinas, SP/Brazil*.

W248 **Effects of various chain lengths inulin on the properties of yogurt with *Lactobacillus rhamnosus*.**
Z. Canbulat and T. Ozcan*, *Uludag University*, *Bursa, Turkey*.

W249 **Effect of chymosin on the functional and rheological properties of fresh Kou Wan Lao.**
G. Ling*[1] and J. Yan[1], [1]*Key Lab of Dairy Science, Ministry Education, College of Food Science, Northeast Agricultural University*, *Harbin, Heilongjiang, China*, [2]*Key Lab of Dairy Science, Ministry Education, College of Food Science, Northeast Agricultural University*, *Harbin, Heilongjiang, China*.

W250 **Preliminary studies on the use of a novel electromagnetic fluid conditioner to modify the functional properties of nonfat yogurt.**
S. Menard, S. Bala, J. K. Amamcharla*, and K. Schmidt, *Department of Animal Sciences and Industry, Kansas State University*, *Manhattan*.

W251 **Microbiological and physical-chemical characteristics of fermented milk beverages.**
E. H. P. Andrade, M. O. Leite*, M. M. O. P. Cerqueira, L. M. Fonseca, C. F. A. M. Penna, M. R. Souza, T. Roza, B. S. Assis, M. F. S. Resende, A. F. Drummond, and N. M. A. Silva, *Universidade Federal de Minas Gerais*, *Belo Horizonte, Minas Gerais, Brazil*.

W252 **Assessment of the viability of *Lactobacillus casei* in carbonated milk beverage.**
C. S. Jadão, S. A. M. Floriano, C. M. V. B. de Rensis, G. A. N. Costa, and P. C. B. Vianna*, *Universidade Norte do Paraná (UNOPAR)*, *Londrina, PR, Brazil*.

W253 **Production and sensory evaluation of high γ-aminobutyric acid-enriched fermented milk by *Lactobacillus plantarum*.**
T. Yan[2], C. Man[1], Y. Shan[1], J. Wang[2], X. Yang[2], Y. Deng[2], Y. Guo[2], M. Guo*[3], and Y. Jiang[1,2], [1]*National Dairy Engineering and Technology Research Center, Northeast Agricultural University*, *Harbin, Heilongjiang, China*, [2]*Department of Food Science, Northeast Agricultural University*, *Harbin, Heilongjiang, China*, [3]*Department of Nutrition and Food Sciences, The University of Vermont*, *Burlington*.

W450 **Sensory analysis of commercial packed vanilla ice creams using traditional sensory method and E-tongue in Taiwan.**
C. H. Chang[1], C.-S. Chen[2], G. C. C. Chuang[3], and B. K. Liou*[1], [1]*Central Taiwan University of Science and Technology*, *Taichung City, Taiwan*, [2]*Tungnan University*, *New Taipei City, Taiwan*, [3]*China University of Science and Technology*, *Taipei City, Taiwan*.

Forages and Pastures: Silages and Fermentation

W254 **Effects of aerobic exposure of corn silage on fermentation end-products and intake.**
A. A. Rodríguez*, D. Luciano, E. Pacheco, and L. C. Solórzano, *University of Puerto Rico, Mayaguez Campus*, *Mayaguez, Puerto Rico*.

W256 **Biological and chemical additives on the fermentation and aerobic stability of corn silage.**
N. Da Silva, I. De Oliveira, M. Bastos, A. Do Rego, C. Avila, and T. Bernardes*, *University of Lavras*, *Lavras, Minas Gerais, Brazil*.

W257 **Effect of applying potassium sorbate or sodium benzoate at two rates on the fermentation and aerobic stability of corn silage.**
I. De Oliveira[1], N. Da Silva[1], J. Dos Santos[1], O. Pereira[2], A. Evangelista[1], and T. Bernardes*[1], [1]*University of Lavras*, *Lavras, Minas Gerais, Brazil*, [2]*University of Viçosa*, *Viçosa, Minas Gerais, Brazil*.

W258 **Feeding corn silage improves nursing performance of Awassi ewes when used as a source of forage.**
B. S. Obeidat*[1,2], M. S. Awawdeh[1], R. T. Kridli[1], H. J. Al-Tamimi[1], M. A. Ballou[2], M. A. Abu Ishmais[1], F. A. Al-Lataifeh[1], and H. S. Subih[2], [1]*Jordan University of Science and Technology*, *Irbid, Jordan*, [2]*Texas Tech University*, *Lubbock*.

W259 **The effects of an exogenous protease on the fermentation and nutritive value of poorly processed or well-processed corn silage.**
M. Windle*[1], C. Merrill[1], M. Agarussi[1], L. Rosa[1], K. Freedman[1], C. Asay[1], N. Walker[2], and L. Kung[1], [1]*University of Delaware*, *Newark*, [2]*AB Vista*, *Marlborough, United Kingdom*.

W260 **The effect of an exogenous protease on the fermentation and nutritive value of corn silage.**
M. Windle*[1], C. Merrill[1], L. Rosa[1], M. Agarussi[1], R. Savage[1], C. Asay[1], N. Walker[2], and L. Kung[1], [1]*University of Delaware*, *Newark*, [2]*AB Vista*, *Marlborough, United Kingdom*.

W261 **Impact of grain deposition on maize plant composition and feeding value.**
P. Walker*[1], M. J. Faulkner[1], T. D. Kaufman[1], L. Brown[2], and F. N. Owens[2], [1]*Illinois State University*, *Normal*, [2]*DuPont Pioneer*, *Bloomington, IL*.

W262 **Impact of orientation of planted maize seeds on composition and feeding value of maize plants.**
T. D. Kaufman*[1], P. Walker[1], L. Brown[2], L. Nuzback[2], and F. N. Owens[2], [1]*Illinois State University*, *Normal*, [2]*DuPont Pioneer*, *Bloomington, IL*.

W263 **Effect of different silage additives on the fermentation and aerobic stability of corn silage.**
K. G. Arriola[1], O. C. M. Queiroz[1], J. J. Romero[1], M. A. Zarate[1], L. G. Paranhos[1], E. Muñiz[2], Z. X. Ma*[1], and A. T. Adesogan[1], [1]*Department of Animal Sciences, University of Florida*, *Gainesville*, [2]*Embrapa Tabuleiros Costeiros*, *Aracaju, SE, Brazil*.

W264 **Comparison of nutritional and digestive differences of corn cultivars grown in cooler climates and harvested as fresh forage in western Canada.**
S. Abeysekara, K. Theodoridou*, D. A. Christensen, and P. Yu, *Department of Animal and Poultry Science, University of Saskatchewan*, *Saskatoon, SK, Canada*.

W265 **Effects of varying silage inoculant technology on fermentation characteristics of corn silage during short and long term storage in mini-silos. .**
Z. Sawall*[1], L. Roth[2], and N. B. Litherland[1], [1]*University of Minnesota*, *St. Paul*, [2]*Provimi*, *Elk River, MN*.

W266 **Effect of bacterial inoculants on the fermentation, aerobic stability and spoilage losses of corn silage produced in farm-scale silos.**
O. C. M. Queiroz[1], F. C. Basso[2], R. Daetz[1], A. Schlaefli[1], and A. T. Adesogan*[1], [1]*Department of Animal Sciences, University of Florida*, *Gainesville*, [2]*Department of Animal Sciences - UNESP*, *Jaboticabal,Sao Paulo, Brazil*.

W267 **A mixture of homo- and hetero-fermentative lactic acid producing-bacterial strains enhanced the fermentation characteristics of sugar cane silage.**
A. A. Rodríguez*, P. Ramos, and L. C. Solórzano, *University of Puerto Rico*, *Mayaguez, Puerto Rico*.

W268 **Effect of alfalfa as hay or silage and roughage:concentrate ratio on in vitro fermentation.**
Y. J. Tian[1,2], Z. J. Cao[1,2], and S. L. Li*[1,2], [1]*College of Animal Science and Technology, China Agricultural University*, *Beijing, China*, [2]*State Key Laboratory of Animal Nutrition*, *Beijing, China*.

W269 **Interaction effects of a *Salix babylonica* extract with exogenous enzymes on in vitro gas production of a total mixed ration.**
A. Z. M. Salem*[1], H. Gado[2], H. Ammar[3], M. A. Rodriguez[1], L. M. Camacho[4], M. M. Y. Elghandour[1], and N. Odongo[5], [1]*Facultad de Medicina Veterinaria, Universidad Autonoma del Estado de Mexico*, *Mexico*, [2]*Animal Production Department, Faculty of Agriculture, Ain Shams University*, *Qalubia, Egypt*, [3]*Ecole superieure dagriculture de Mograne*, *Mograne-Zaghouan- Tunisia*, [4]*Facultad de Medicina Veterinaria y Zootecnia, Universidad Autonoma de Guerrero*, *Cd. Altamirano, Guerrero, Mexico*, [5]*Animal Production and Health Section, Joint FAO/IAEA Division of Nuclear Techniques in Food and Agriculture*, *International Atomic Energy Agency, Vienna, Austria*.

W270 **Aerobic stability, pH and yeast population of sugarcane ensiled with different particle sizes.**
A. F. Campos*[1], G. R. Siqueira[1,2], N. M. Jeronimo[2,3], F. D. Resende[1,2], and R. A. Reis[1], [1]*Sao Paulo State University*, *Jaboticabal, Sao Paulo, Brazil*, [2]*Agencia Paulista de Tecnologia dos Agronegocios*, *Colina, Sao Paulo, Brazil*, [3]*Centro Universitario de Barretos*, *Barretos, Sao Paulo, Brazil*.

W271 **Chemical composition, fermentative losses, and the dynamics of yeasts and lactic acid bacteria populations of sugarcane ensiled at different particle sizes—Year 2.**
A. F. Campos*[1], G. R. Siqueira[1,2], N. M. Jeronimo[2,3], F. D. Resende[1,2], and R. A. Reis[1], [1]*Sao Paulo State University*, *Jaboticabal, Sao Paulo, Brazil*, [2]*Agencia Paulista de Tecnologia dos Agronegocios*, *Colina, Sao Paulo, Brazil*, [3]*Centro Universitario de Barretos*, *Barretos, Sao Paulo, Brazil*.

W272 **Ensiling characteristics and aerobic stability of guinea grass fermented with microbial inoculants.**
A. A. Rodríguez*, E. Martínez, C. Rosario, A. Almeida, C. Ocasio, E. Delgado, and L. C. Solórzano, *University of Puerto Rico*, *Mayagüez, PR*.

W273 **Characterization of nutritive value and aerobic stability of passion fruit (*Passiflora edulis*) rind silage.**
I. Espinoza-Guerra*[1], J. Avellaneda-Cevallos[1,2], A. Sánchez-Laiño[1,2], L. Montenegro-Vivas[1], G. Quintana-Zamora[1,2], D. Zambrano-Gracia[1], M. Medina-Villacís[3], M. Peña-Galeas[1,2], and L. López-Intriago[1,2], [1]*Facultad de Ciencias Pecuarias*, *Quevedo, Los Ríos, Ecuador*, [2]*Dirección de Investigación Científica y Tecnólgica*, *Quevedo, Los Ríos, Ecuador*, [3]*Unidad de Estudios a Distancia*, *Quevedo, Los Ríos, Ecuador*.

W274 **Effects of different shoot height on fermentation quality and digestibility of barley silage.**
D. H. Kim*[1], S. C. Kim[2], H. J. Lee[1], S. M. Amanullah[2], Y. J. Jae[1], Y. M. Song[3], H. Y. Kim[3], and I. H. Choi[4], [1]*Division of Applied Life science, Gyeongsang National University*, *Jinju, South Korea*, [2]*Department of Animal Science (Inst. Agric. Life Sci.), Gyeonsang National University*, *Jinju, South Korea*, [3]*Department of Animal Resource Technology, Gyeongsang National University of Science and Technology*, *Jinju, South Korea*, [4]*Department of Companion Animal & Animal Resource Science, Joongbu University*, *Geumsan, South Korea*.

W275 **Effects of the additives on fermentation quality of barley silage.**
H. J. Lee[1], D. H. Kim[1], H. Yoon[1], S. M. Amanullah[2], S. C. Kim*[2], and I. H. Choi[3], [1]*Division of Applied Life Science (BK21 program)*, *Jinju, South Korea*, [2]*Department of Animal Science (Inst. Agric. Life Sci.), Gyeongsang National University*, *Jinju, South Korea*, [3]*Department of Companion Animal & Animal Resource Sciences, Joongbu University*, *Geumsan, South Korea*.

W276 **Effects of microbial inoculants on alfalfa, ryegrass, and grass clover mixture silages on silage pH, dry matter loss, and aerobic stability.**
A. Lanckriet*[1], J. Jatkauskas[2], V. Vrotniakiene[2], E. French[3], and T. Hemling[4], [1]*DeLaval N.V*, *Drongen, Belgium*, [2]*Lithuanian University of Health Sciences*, *Baisogala, Lithuania*, [3]*DeLaval Inc.*, *Waunakee, WI*, [4]*DeLaval Inc.*, *Kansas City, MO*.

Growth and Development II

W277 **Effect of age at weaning and creep feeding on carcass composition and IGF-I concentrations in 5-month-old females calves.**
C. Viñoles*[1], A. L. Astessiano[2], D. Guggeri[1], A. Meikle[3], and M. Carriquiry[2], [1]*Instituto Nacional de Investigación Agropecuaria*, *Tacuarembó, Uruguay*, [2]*Facultad de Agronomía*, *Montevideo, Uruguay*, [3]*Facultad de Veterinaria*, *Montevideo, Uruguay*.

W278 **Effect of palmitoleic acid on body composition and adipocyte cell size in obese sheep.**
S. K. Duckett*, M. C. Miller, G. Volpi Lagreca, M. Alende, T. A. Burns, A. Wright, J. G. Andrae, and N. M. Long, *Clemson University*, *Clemson, SC*.

W279 **Palmitoleic (C16:1) acid alters glucose and insulin metabolism in obese lambs.**
T. A. Burns*, N. M. Long, M. Alende, G. Volpi Lagreca, A. K. G. Kadegowda, M. C. Miller, and S. K. Duckett, *Clemson University*, *Clemson, SC*.

W280 **Influence of maternal linseed supplementation on brain and muscles fatty acid composition in newborn lambs.**
A. Nudda, B. Gianni, R. Boe, M. Lovicu, N. P. P. Macciotta*, and G. Pulina, *Dipartimento di Agraria, Sezione di Scienze Zootecniche, Universita di Sassari*, *Sassari, Italy*.

W281 **Uptake of palmitoleic (13C16:1) acid in blood and adipose tissue of obese lambs.**
T. A. Burns*, A. K. G. Kadegowda, M. C. Miller, A. M. Wright, and S. K. Duckett, *Clemson University*, *Clemson, SC*.

W282 **Nutritionally mediated prenatal growth restriction is associated with reduced somatotroph cell density in the late gestation ovine fetus.**
N. Craig[1], N. P. Evans*[1], M. Bellingham[1], C. L. Adam[2], J. M. Wallace[2], and J. E. Robinson[1], [1]*Institute of Biodiversity, Animal Health and Comparative Medicine, University of Glasgow*, *Glasgow, UK*, [2]*Rowett Institute of Nutrition and Health, University of Aberdeen*, *Aberdeen, UK*.

W285 **Development of gravid uterus components in function of days of gestation and feeding level in pregnant Nellore cows.**
M. P. Gionbelli[1], M. S. Duarte[1], S. C. Valadares Filho[1,2], H. C. Freetly[3], P. V. R. Paulino[1], F. C. Rodrigues[1], B. C. Silva[1], T. R. Santos[1], D. F. T. Sathler[1], M. G. Machado[1], and M. I. Marcondes*[1,2], [1]*Universidade Federal de Vicosa*, *Vicosa, Minas Gerais, Brazil*, [2]*INCT de Ciencia Animal*, *Vicosa, Minas Gerais, Brazil*, [3]*USDA/Meat Animal Research Center*, *Clay Center, NE*.

W286 **Residual feed intake and hormonal parameters in Nellore cattle.**
R. H. Branco*[1], C. F. Nascimento[1], E. Magnani[1], L. F. Oliveira[2], S. F. M. Bonilha[1], and J. N. S. G. Cyrillo[1], [1]*Centro APTA Bovinos de Corte, Instituto de Zootecnia*, *Sertaozinho, Sao Paulo, Brazil*, [2]*Departamento de Zootecnia, Universidade Estadual Paulista*, *Jaboticabal, Sao Paulo, Brazil*.

W287 **Residual feed intake studies in cattle reveal a potential role for gonadotropin releasing hormone (GnRH) in regulating feed efficiency.**
S. D. Perkins*, C. D. Foradori, C. L. Bratcher, L. A. Kriese-Anderson, and T. D. Brandebourg, *Auburn University*, *Auburn, AL*.

W288 **Fatty acids profile of muscle and fat from Nelore bulls classified for residual feed intake.**
S. F. M. Bonilha*[1], K. Zorzi[2], R. H. Branco[1], M. M. C. Silva[3], J. N. S. G. Cyrillo[1], and M. E. Z. Mercadante[1], [1]*Centro APTA Bovinos de Corte, Instituto de Zootecnia*, *Sertãozinho, São Paulo, Brazil*, [2]*Departamento de Zootecnia, Universidade Estadual do Norte Fluminense*, *Campos do Goytacazes, Rio de Janeiro, Brazil*, [3]*Departamento de Zootecnia, Universidade Federal de Viçosa*, *Viçosa, Minas Gerais, Brazil*.

Lactation Biology I

W289 **Changes in parathyroid hormone-related protein concentrations in bovine milk from the early stage of lactation.**
K. Onda*, R. Sato, K. Kazama, H. Ochiai, and Y. Wada, *Azabu University School of Veterinary Medicine*, *Sagamihara, Japan*.

W290 **SND1 regulates milk protein synthesis of dairy cow mammary epithelial cells in vitro.**
W. W. Bi, C. C. Luo, Y. Lin, X. J. Gao*, and Q. Z. Li, *Key Laboratory of Dairy Science of Education Ministry, Northeast Agricultural University*, *Harbin, China*.

W291 **Heat-induced stress and response of bovine mammary epithelial cells.**
H. Hu, D. P. Bu, J. Q. Wang*, L. Y. Zhou, and X. M. Nan, *Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*.

W292 **Study on differential intake free amino acids of mammary gland in dairy cows.**
X. Y. Wang, N. Zhang, Q. Z. Li*, and X. J. Gao, *Key Laboratory of Dairy Science of Education Ministry, Northeast Agricultural University*, *Harbin, China*.

W293 **Prolactin-inhibitor cabergoline hastened the mammary involution during drying-off in dairy cows.**
M. Boutinaud*[1,2], N. Isaka[4], A. Deflandre[4], E. Gandemer[1,2], P.-G. Marnet[1,2], F. Dessauge[1,2], and V. Lollivier[1,2], [1]*INRA UMR1348 PEGASE*, *Saint Gilles, France*, [2]*Agrocampus UMR1348 PEGASE*, *Rennes, France*, [3]*Université Européenne de Bretagne*, *Rennes, France*, [4]*CEVA Santé Animale*, *Libourne, France*.

W294 **Effects of omitting the dry period on plasma progesterone and prolactin during lactogenesis and on colostrum IgG content in dairy cows.**
R. S. Zbinden[1], H. A. van Dorland[1], G. Remmelink[3], B. Kemp[2], A. T. M. van Knegsel[2], and R. M. Bruckmaier*[1], [1]*Veterinary Physiology, Vetsuisse Faculty University of Bern*, *Bern, Switzerland*, [2]*Adaptation Physiology Group, Wageningen University*, *Wageningen, the Netherlands*, [3]*Livestock Research, Wageningen University and Research Centre*, *Lelystad, the Netherlands*.

W295 **Characterization of mammary circadian rhythms of wild-type C57BL/6J mice and the role of thyroid hormone responsive spot 14 (S14) in circadian regulation of milk fat synthesis.**
L. Ma*, Y. Ying, A. Clarke, P. Bartell, and K. J. Harvatine, *Penn State University*, *University Park*.

W296 **Suitability of refractometer and densimeter for on-farm determination of colostrum quality in dairy cows and heifers.**
J. J. Gross*, E. C. Kessler, and R. M. Bruckmaier, *Veterinary Physiology, Vetsuisse Faculty University of Bern*, *Bern, Switzerland*.

W297 **PPARgamma agonists and antagonists fail to overcome *trans*-10, *cis*-12 conjugated linoleic acid (CLA) inhibition of lipogenesis and lipogenic gene expression in bovine mammary epithelial cell culture.**
D. E. Oliveira*[3,1], K. J. Harvatine[1], Y. R. Boisclair[2], and D. E. Bauman[2], [1]*Penn State University*, *University Park*, [2]*Cornell University*, *Ithaca, NY*, [3]*Santa Catarina State University*, *Lages, Santa Catarina, Brazil*.

W298 **The inflammatory response of primary bovine mammary epithelial cells to *Staphylococcus aureus* strains reflects the molecular background of the bacteria.**
C. Zbinden[1,3], R. Stephan[2], S. Johler[2], R. M. Bruckmaier*[1], and O. Wellnitz[1], [1]*Veterinary Physiology Vetsuisse Faculty, University of Bern*, *Bern, Switzerland*, [2]*Institute for Food Safety and Hygiene, Vetsuisse Faculty, University of Zurich*, *Zurich, Switzerland*, [3]*Graduate School for Cellular and Biomedical Sciences, University of Bern*, *Bern, Switzerland*.

W299 **Identification and characterization of microRNAs in a dairy cattle mammary gland epithelial cell line.**
X. M. Nan[1], D. P. Bu*[1], J. Q. Wang[1], J. J. Loor[2], and H. Hu[1], [1]*State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*, [2]*Mammalian NutriPhysioGenomics, Department of Animal Sciences and Division of Nutritional Sciences, University of Illinois*, *Urbana*.

W300 **Evaluation of udder development shortly before parturition.**
V. Bjerre-Harpøth*[1], E. C. Kessler[2], J. J. Gross[2], and R. M. Bruckmaier[2], [1]*Department of Animal Science, Aarhus University*, *Foulum, Tjele, Denmark*, [2]*Veterinary Physiology, Vetsuisse Faculty, University of Bern*, *Bern, Switzerland*.

W301 **Adiponectin receptor gene expression and adiponectin regulation of glucose uptake and cell growth in mammary epithelial cells.**
I. S. Yuh*[1,2] and L. G. Sheffield[3], [1]*Department of Animal Biotechnology, College of Animal Life Sciences, Kangwon National University*, *Chunchon, Republic of Korea*, [2]*Institute of Animal Resources, Kangwon National University*, *Chunchon, Republic of Korea*, [3]*Department of Dairy Science, University of Wisconsin*, *Madison*.

Meat Science and Muscle Biology I

W302 **Effect of rib fat thickness on meat quality attributes of Nellore young bulls.**
E. E. Dallantonia, J. F. Lage*, L. R. Simonetti, E. San Vito, E. A. Oliveira, M. Machado, L. M. Delevatti, M. B. Abra, and T. T. Berchielli, *Universidade Estadual Paulista*, *Jaboticabal, Sao Paulo, Brazil*.

W303 **Fatty acid profile and sensory analysis of meat from Nellore steers fed with different levels of whole raw soybeans.**
N. R. B. Cônsolo*, A. S. C. Pereira, R. Gardinal, J. E. Freitas Junior, J. R. Gandra, C. S. Takiya, F. P. Rennó, and G. D. Calomeni, *Universidade de São Paulo*, *Pirassununga, São Paulo, Brazil*.

W304 **Using near-infrared reflectance spectroscopy to predict chemical composition with a wide range of variability in beef.**
H. W. Su*[1], K. Sha[1,2], L. Zhang[1,3], Q. Zhang[4], Y. L. Xu[1,3], R. Zhang[5], H. P. Li[1], and B. Z. Sun[1], [1]*Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*, [2]*College of Food and Wine, Yantai Research Institute of China Agricultural University*, *Yantai, Shandong, China*, [3]*Department of Food Science and Engineering, Gansu Agricultural University*, *Lanzhou, Gansu, China*, [4]*Department of Animal Sciences, Purdue University*, *West Lafayette, IN*, [5]*Beijing Zhongnong Boya Technology Development Co. Ltd*, *Beijing, China*.

W305 **Effects of anti-gonadotropin-releasing factor (GnRF) vaccine and band castration on carcass quality in beef cattle under North American management practices.**
S. Marti*[1,2], M. Devant[2], S. Amatayakul-Chantler[3], J. A. Jackson[4], E. D. Janzen[5], and K. S. Schwartzkopf-Genswein[1], [1]*Agriculture and Agri-Food Canada*, *Lethbridge, Alberta, Canada*, [2]*IRTA-Ruminant Production*, *Caldes de Montbui, Barcelona, Spain*, [3]*Veterinary Medicine R&D, Zoetis*, *Parkville, Victoria, Australia*, [4]*Veterinary Medicine R&D, Zoetis*, *Kalamazoo, MI*, [5]*University of Calgary Veterinary Medicine*, *Calgary, Alberta, Canada*.

W309 **Meat characteristics of lambs fed fresh or dehydrated spineless cactus (*Opuntia ficus-indica*).**
M. I. Aguilar-Yanez[1], O. Hernandez-Mendo[1], G. Aranda-Osorio*[2], I. Guerrero-Legarreta[3], and M. M. Crosby-Galvan[1], [1]*Colegio de Postgraduados*, *Montecillo, Mexico*, [2]*Universidad Autonoma Chapingo*, *Texcoco, Mexico*, [3]*Universidad Autonoma Metropolitana*, *Iztapalapa, Mexico*.

W310 **Effect of fat source addition on the profile of main fatty acids in the longissimus muscle and subcutaneous fat of feedlot steers.**
G. Fiorentini*[1,2], I. P. C. Carvalho[1,2], J. F. Lage[1,2], L. G. Rossi[1,2], L. Delevatti[1], C. S. Ribeiro Junior[1], and T. T. Berchielli[1,3], [1]*Universidade Estadual Paulista (UNESP) - FCAV*, *Jaboticabal, SP, Brazil*, [2]*Fundação de Amparo à Pesquisa do Estado de São Paulo (FAPESP)*, *São Paulo, SP, Brazil*, [3]*Instituto Nacional de Ciência e Tecnologia em Ciência Animal (INCT-CA)*, *Brasília, DF, Brazil*.

W311 **Fatty acid profile of meat from Nellore young bulls fed crude glycerin replacing energy sources on concentrate.**
J. F. Lage*, E. San Vito, A. F. Ribeiro, R. A. Silva, E. E. Dallantonia, L. R. Simonetti, L. M. Delevatti, R. A. Reis, and T. T. Berchielli, *Universidade Estadual Paulista*, *Jaboticabal, Sao Paulo, Brasil*.

W312 **Lipid oxidation and color of meat and subcutaneous fat from young bulls fed crude glycerin replacing energy sources on concentrate.**
J. F. Lage*, E. San Vito, R. A. Silva, A. F. Ribeiro, M. Machado, L. M. Delevatti, L. R. Simonetti, E. E. Dallantonia, R. A. Reis, and T. T. Berchielli, *Universidade Estadual Paulista*, *Jaboticabal, Sao Paulo, Brazil*.

W313 **Effect of supplementation of an extract rich in flavonoids on meat quality in young Friesian bulls.**
M. M. Campo[1], B. A. Refat[2], A. R. Seradj[2], J. Crespo[3], and J. Balcells*[2], [1]*Dept. Animal Production and Food Science, University of Zaragoza*, *Zaragoza, Spain*, [2]*Dept. Animal Production, University of Lleida*, *Lleida, Spain*, [3]*Interquim, S.A. (Ferrer HealthTech)*, *Barcelona, Spain*.

W314 **Meat quality traits of young bulls finished in feedlot with sources of fiber and crude glycerin.**
M. Machado, A. F. Ribeiro*, L. R. Simonetti, E. E. Dallantonia, J. F. Lage, E. A. Oliveira, E. San Vito, R. A. Silva, A. J. Neto, and T. T. Berchielli, *São Paulo State University*, *Jaboticabal, SP, Brazil*.

W315 **Predicting percent empty body fat in calf-fed Holstein steers using carcass measurements.**
J. E. Hergenreder*[1], M. J. Anderson[1], L. D. Luque[2], P. D. Bass[3], W. Nichols[5], R. J. Delmore[2], J. L. Beckett[4], and B. J. Johnson[1], [1]*Animal and Food Science Department, Texas Tech University*, *Lubbock*, [2]*Animal Science Department, California Polytechnic State University*, *San Luis Obispo*, [3]*Certified Angus Beef*, *Wooster, OH*, [4]*Beckett Consulting Services*, *Fallbrook, CA*, [5]*Merck Animal Health*, *Summit, NJ*.

Dairy Foods: Microbiology II

W316 **Preliminary study of bacteriocin production in tina bacterial biofilms.**
N. Fuca*[1], C. Pediliggieri[1], M.-N. Madec[2], V. Chuat[2], S. Lortal[2], F. Valence-Bertel[2], and G. Licitra[1], [1]*CoRFiLaC*, *Ragusa, Italy*, [2]*INRA UMR 1253 - Science et Technologie du Lait et de l'Oeuf*, *Rennes Cedex, France*.

W317 **Effect of *Lactobacillus acidophilus* NS on plasma cholesterol level in diet-induced obese mice.**
M. Song*[1], S. Park[2], H. J. Lee[3], B. J. Min[3], S. U. Jung[3], S. H. Park[3], E. Kim[2], and S. Oh[1], [1]*Division of Animal Science, Chonnam National University*, *Gwangju, Republic of Korea*, [2]*Department of Biological Sciences, Chonnam National University*, *Gwangju, Republic of Korea*, [3]*Research & Business Development Center, Nong Shim Co. Ltd*, *Seoul, Republic of Korea*.

W318 **Comparative genome analysis of *Lactobacillus curvatus* strains isolated from cheese and fermented sausage.**
C. J. Oberg*[1,2], M. D. Culumber[1], T. S. Oberg[2], J. R. Broadbent[2], D. J. McMahon[2], and J. L. Steele[3], [1]*Weber State University*, *Ogden, UT*, [2]*Western Dairy Center, Utah State University*, *Logan*, [3]*University of Wisconsin*, *Madison*.

W319 **Genomic analysis of *Lactobacillus* WDC04, a novel species associated with late gas production in cheese.**
C. J. Oberg*[1,2], M. D. Culumber[1], T. S. Oberg[2], F. Ortakci[2], J. R. Broadbent[2], and D. J. McMahon[2], [1]*Weber State University*, *Ogden, UT*, [2]*Western Dairy Center, Utah State University*, *Logan*.

W320 **Comparative analysis of blp gene clusters in bacteriocin-producing strains of *Streptococcus thermophilus*.**
J. Renye* and G. Somkuti, *Agricultural Research Service, USDA*, *Wyndmoor, PA*.

W321 **Influence of phospholipids on the viability of *Streptococcus thermophilus* and *Lactobacillus delbrueckii* ssp. *bulgaricus* under acid stress.**
B. Chinnasamy*, S. Clark, and A. Mendonca, *Iowa State University*, *Ames*.

W322 **Influence of the tina wooden vats biofilm composition on milk microbial growth under Ragusano cheese-making conditions.**
S. Carpino*[1], I. Schadt[1], V. Giummarra[1], and G. Licitra[1,2], [1]*CoRFiLaC, Regione Siciliana*, *Ragusa, Italy*, [2]*DISPA, Catania University*, *Catania, Italy*.

W323 **Growth of specific lactic acid bacteria (PCR-DGGE) in relation to volatile compounds (SMart Nose and GC/MS) in biofilm inoculated milk under Ragusano cheese-making conditions.**
S. Carpino*[1], I. Schadt[1], T. Rapisarda[1], C. Randazzo[2], and G. Licitra[1,3], [1]*CoRFiLaC, Regione Siciliana*, *Ragusa, Italy*, [2]*DiGeSA, Catania University*, *Catania, Italy*, [3]*DISPA, Catania University*, *Catania, Italy*.

W324 **Influence of different concentrations of lactose on the growth of *Lactobacillus delbrueckii* ssp. *bulgaricus* LB-12 and *Streptococcus thermophilus* ST-M5.**
B. Mena*[1] and K. Aryana[1,2], [1]*School of Animal Sciences, Louisiana State University Agricultural Center*, *Baton Rouge*, [2]*Department of Food Science, Louisiana State University Agricultural Center*, *Baton Rouge*.

W325 **Influence of whey protein isolate on growth of *Streptococcus thermophilus* ST-M5.**
L. Vargas*[1] and K. Aryana[1,2], [1]*School of Animal Sciences, Louisiana State University Agricultural Center*, *Baton Rouge*, [2]*Department of Food Science, Louisiana State University Agricultural Center*, *Baton Rouge*.

W326 **Effect of several health beneficial spices on the bile tolerance of *Lactobacillus bulgaricus* LB-12.**
M. Sanchez-Vega*[1] and K. Aryana[1,2], [1]*School of Animal Sciences, Louisiana State University Agricultural Center*, *Baton Rouge*, [2]*Department of Food Science, Louisiana State University Agricultural Center*, *Baton Rouge*.

Nonruminant Nutrition: Feed Additives

W327 **Evaluation of coated and powder sodium butyrate in diets for broilers reared with reused litter during a commercial production cycle.**
J. Hernandez*[1], G. Afanador[1], C. Ariza-Nieto[2], and Y. Avellaneda[2,1], [1]*Universidad Nacional de Colombia*, *Bogota Colombia*, [2]*Corpoica*, *Mosquera Colombia*.

W328 **Effect of oregano essential oils (*Lippia origanoides* Kunth) on lipid peroxidation in eggs enriched with n-3 fatty acids during storage.**
R. E. Ortiz*[1,2], G. Afanador[1], Y. Avellaneda[1,2], D. Vasquez[2], and C. Ariza-Nieto[2], [1]*Universidad Nacional de Colombia*, *Bogotá, Colombia*, [2]*Corpoica, Bogotá, Colombia*.

W329 **Evaluation of Optifeed Poultry in the diet of female broiler chickens.**
V. Noirot*, M. Champagnac, P. Etienne, and D. Éclache, *Laboratoires Phodé*, *Terssac, France*.

W330 **Effect of a blend of plant extracts with controlled release on the performances of heat stressed broiler.**
V. Noirot*, M. Champagnac, P. Etienne, and D. Éclache, *Laboratoires Phodé*, *Terssac, France*.

W331 **Effect of two chemotypes of oregano essential oil on growth performance and nutrient balance of broilers.**
C. Ariza-Nieto[1], W. Marquez[1], G. Afanador*[2], J. S. Knott[3], and R. W. Fent[3], [1]*CORPOICA*, *Bogota, Colombia*, [2]*Universidad Nacional*, *Bogota, Colombia*, [3]*Ralco Nutrition Inc.*, *Marshall, MN*.

W332 **An intimate combination of a high intensity sweetener and a phytonutrient improves performance of weaned piglets.**
C. Oguey[1], A. L. Wagner[2], and C. Bruneau*[1], [1]*Pancosma S.A*, *Le Grand Saconnex, Geneva, Switzerland*, [2]*Cooperative Research Farms*, *Richmond, VA*.

W333 **Effects of lactulose supplementation on production performance in sows and piglets.**
S. C. Kim, K. H. Kim, and I. H. Kim*, *Department of Animal Resource & Science, Dankook University*, *Cheonan, Choognam, South Korea*.

W334 **Effect of propolis on the growth performance, nutrient digestibility, blood profiles, fecal microflora, fecal score, and intestinal morphology in weanling pigs.**
B. R. Lee, J. Li, and I. H. Kim*, *Department of Animal Resource & Science, Dankook University*, *Cheonan, Choognam, South Korea*.

W335 **Effect of phytogenics on growth performance, calcium and phosphorus digestibility, and bone calcium and phosphorus contents in broilers.**
Z. F. Zhang, B. R. Lee, and I. H. Kim*, *Department of Animal Resource & Science, Dankook University*, *Cheonan, Choognam, South Korea*.

W336 **Effects of microencapsulated organic acids and pure botanicals (Aviplus-S) supplementation on reproductive performance, nutrient digestibility, and fecal scores in lactating sows and piglets.**
J. H. Cho, H. Y. Beak, and I. H. Kim*, *Department of Animal Resource & Science, Dankook University*, *Cheonan, Choognam, South Korea*.

W337 **Evaluation of Flavomycin 4 (bambermycins) and Stafac 20 (virginiamycin) in growing-finishing pigs' growth performance and carcass characteristics under different environmental temperatures.**
S. K. Baidoo*[1], J. A. Jendza[1], and R. Cabrera[2], [1]*University of Minnesota, Southern Research and Outreach Center*, *Waseca*, [2]*Huvepharma Inc.*, *Chapel Hill, NC*.

W338 **Effect of antimicrobials on energy and phosphorus utilization in pigs.**
K. McCormick* and O. Adeola, *Purdue University*, *West Lafayette, IN*.

W339 **Effects of turmeric and curcumin addition to diets on growth performance and immune response of nursery pigs.**
M. R. Bible*, S. D. Carter, K. F. Coble, H. J. Kim, and T. M. Walraven, *Oklahoma State University*, *Stillwater*.

W340 **Effect of supplementing a nucleotide-rich yeast extract without or with in-feed antibiotics on performance and total-tract nutrient digestibilities in weaned piglets.**
S. M. Waititu*[1], J. M. Heo[1], R. Patterson[1,2], and C. M. Nyachoti[1], [1]*University of Manitoba*, *Winnipeg, MB, Canada*, [2]*Canadian Bio-Systems Inc.*, *Calgary, AB, Canada*.

W341 **Effect of two chemotypes of oregano essential oils on lipid peroxidation of broiler breast meat during storage.**
C. Ariza-Nieto*[1], D. Vasquez[1], G. Afanador[2], J. S. Knott[3], and R. W. Fent[3], [1]*CORPOICA*, *Bogota, Colombia*, [2]*Universidad Nacional*, *Bogota, Colombia*, [3]*Ralco Nutrition Inc.*, *Marshall, MN*.

W342 **Do phytogenics interact with exogenous xylanase when fed to broiler chicks?**
V. Pirgozliev[1,3], D. M. Bravo*[2], and S. P. Rose[3], [1]*Avian Science Research Centre, Scottish Agricultural College*, *Ayr, UK*, [2]*Pancosma*, *Geneva, Switzerland*, [3]*National Institute of Poultry Husbandry, Harper Adams University College*, *Newport, UK*.

W343 **Effects of Healthy Edge technology on sow and litter performance.**
S. D. Carter*[1], B. de Rodas[2], K. F. Coble[1], H. J. Kim[1], M. R. Bible[1], and G. Willis[2], [1]*Oklahoma State University*, *Stillwater*, [2]*Purina Animal Nutrition Center*, *Gray Summit, MO*.

Nonruminant Nutrition: Gut Health

W344 **Effect of glutamic acid plus glutamine on the intestinal morphology of piglets.**
D. Lescano[1], L. Albino[1], M. Hannas[1], S. Salguero[1], M. Kutschenko[2], E. Nogueira[2], and H. Rostagno*[1], [1]*Federal University of Viçosa*, *Viçosa, MG, Brazil*, [2]*Ajinomoto of Brazil Ajinomoto Animal Nutrition*, *São Paulo, SP, Brazil*.

W345 **Intestinal health of weaned piglets fed diets containing purified cellulose.**
M. V. Marujo, M. C. Thomaz, V. V. Almeida*, M. M. Lima, E. Daniel, D. J. Rodrigues, F. R. Castelini, M. S. F. Oliveira, and Y. V. S. Guillen, *FCAV/UNESP*, *Jaboticabal, SP, Brazil*.

W346 **Effects of nucleotides on growth performance, blood profiles, and fecal microflora in weanling pigs.**
Z. F. Zhang[1], A. V. Rolando[2], and I. H. Kim*[1], [1]*Department of Animal Resource & Science, Dankook University*, *Cheonan, Choognam, South Korea*, [2]*DSM Nutritional Products Philippines Inc.*, *Bonifacio Global City, Taguig, Philippines*.

W347 **Dietary supplementation with a novel *Lactobacillus acidophilus* fermentation prototype improved nursery pig performance and gut health.**
J. W. Frank*, A. Brainard, M. Wright, and M. Scott, *Diamond V*, *Cedar Rapids, IA*.

W348 **Eugenol affects the integrity of the mucus layer and susceptibility to enteric pathogens.**
M. Wlodarska[1,2], B. B. Finlay[1,2], and D. M. Bravo*[3], [1]*Michael Smith Laboratories, University of British Columbia*, *Vancouver, BC, Canada*, [2]*Department of Microbiology and Immunology, University of British Columbia*, *Vancouver, BC, Canada*, [3]*Pancosma*, *Geneva, Switzerland*.

W349 **Effect of dietary resistant starch content on nutrient digestibility, fecal microbial diversity and body weight in piglets.**
H. Lu*[1], H. Yan[1], R. Potu[1], M. G. Ward[1], C. C. Pelkman[2], C. H. Nakatsu[1], O. Adeola[1], and K. M. Ajuwon[1], [1]*Purdue University*, *West Lafayette, IN*, [2]*Ingredion Incorporated*, *Bridgewater, NJ*.

W350 **Influence of whole wheat feeding on the development of coccidiosis in broilers.**
Y. Singh, T.J. Wester, A. L. Molan, G. Ravindran, and V. Ravindran*, *Massey University*, *Palmerston North, New Zealand*.

W351 **Effects of whey protein on intestinal integrity in heat-stressed growing pigs.**
M. V. Sanz-Fernandez*[1], S. C. Pearce[1], V. Mani[1], N. K. Gabler[1], D. C. Beitz[1], L. Metzger[2], J. F. Patience[1], R. P. Rhoads[3], and L. H. Baumgard[1], [1]*Iowa State University*, *Ames*, [2]*South Dakota State University*, *Brookings*, [3]*Virginia Polytechnic Institute and State University*, *Blacksburg*.

Physiology and Endocrinology II

W352 **Heat stress affects the intestinal temperature in growing pigs.**
N. Arce, M. Cota, B. A. Araiza, M. Cervantes, and A. Morales*, *Instituto de Ciencias Agrícolas, UABC*, *Mexicali, BC, México*.

W353 **Energy supplementation effect on follicular population and gonadotropin plasma concentration in prepubertal Nellore heifers.**
M. C. Miguel*, H. Costa, J. Souza, R. Cipriano, J. L. Delfino, D. Giraldo, N. Romanello, D. Oliveira, M. A. Maioli, S. P. Gobbo, D. Pinheiro, and G. Nogueira, *Sao Paulo State University (UNESP)*, *Aracatuba, Sao Paulo, Brazil*.

W354 **Calf fetal nutrition in grasslands: Muscle fiber characteristics and gene expression at birth.**
M. Carriquiry*, V. Guiterrez, P. Machado, A. L. Astessiano, and A. C. Espasandin, *Facultad de Agronomia, UDELAR*, *Montevideo, Uruguay*.

W355 **Changes in plasma leptin in newborn and postnatal beef calves.**
N. M. Long*[1] and D. W. Schafer[2], [1]*Department of Animal and Veterinary Science, Clemson University*, *Clemson, SC*, [2]*Department of Animal Science, University of Arizona*, *Tucson*.

W356 **Use of eCG and a progesterone to induce reproductive activity in anestrous goats.**
V. Contreras-Villarreal[1], O. Angel-Garcia[1], J. M. Guillen-Muñoz[1], P. A. Robles-Trillo[1], M. A. De Santiago-Miramontez[1], G. Arellano-Rodriguez[1], R. Rodriguez-Martinez[1], M. Mellado[1], C. A. Meza-Herrera[2], and F. G. Veliz*[1], [1]*Universidad Autonoma Agraria Antonio Narro*, *Toreon, Coahuila, Mexico*, [2]*URUZA-UACh*, *Bermejillo, Durango*.

W357 **Impact of low body condition score and the time of exposure on the sexual response of female goats to "male effect.".**
L. I. Vélez[1], J. J. A. Maldonado[1], A. U. Chavez[1], G. J. C. López[2], F. G. Véliz*[3], C. A. Meza-Herrera[4], R. Rodríguez Martínez[3], and G. H. Salinas[1], [1]*INIFAP Laguna*, *Matamoros, Coahuila México*, [2]*INIFAP Zacatecas*, *Calera, Zacatecas México*, [3]*Universidad Autónoma Agraria Antonio Narro Unidad Laguna*, *Torreon, Coahuila, México*, [4]*Universidad Autónoma Chapingo Unidad Regional Universitaria de Zonas Aridas*, *Bermejillo, Durango, México*.

W358 **Reproductive performance of Holstein cows with retained fetal membranes treated with ceftiofur hydrochloride, 17-β-estradiol, and oxytocin.**
R. Solano-Gurza*, M. Mellado, F. G. Veliz, M. A. S. Miramontes, and J. E. Garcia, *Universidad Autonoma Agraria Antonio Narro*, *Torreon Coahuila, México*.

W359 **Incorporation of sexed semen into reproductive management of range cow-calf operations.**
R. F. Cooke*[1], D. W. Bohnert[1], B. I. Cappellozza[1], T. DelCurto[2], and C. J. Mueller[2], [1]*Oregon State University–Eastern Oregon Agricultural Research Center*, *Burns*, [2]*Oregon State University–Eastern Oregon Agricultural Research Center*, *Union*.

W360 **Use of a single injection of long-acting recombinant bovine FSH to superovulate Holstein heifers.**
P. D. Carvalho*, K. S. Hackbart, R. W. Bender, A. R. Dresch, G. M. Baez, J. N. Guenther, A. H. Souza, and P. M. Fricke, *Department of Dairy Science, University of Wisconsin-Madison*, *Madison*.

W361 **Characterization of follicular fluid adiponectin and its relationship with blood adiponectin during estrous cycle in cattle.**
S. P. Singh*[1], S. Häussler[1], D. Tesfaye[2], M. Hölker[2], K. Schellander[2], and H. Sauerwein[1], [1]*Institute of Animal Science, Physiology and Hygiene Group, University of Bonn*, *Bonn, Germany*, [2]*Institute of Animal Science, Animal Breeding and Husbandry Group, University of Bonn*, *Bonn, Germany*.

W362 **Effects of excessive energy intake and supplementation with chromium propionate on serum glucose and insulin concentrations of non-lactating dairy cows.**
T. Leiva[1], R. F. Cooke[2], A. Aboin[1], D. B. Araujo[3], and J. L. M. Vasconcelos*[1], [1]*UNESP - Faculdade de Medicina Veterinária e Zootecnia*, *Botucatu, São Paulo, Brazil*, [2]*Oregon State University–Eastern Oregon Agricultural Research Center*, *Burns, OR, USA*, [3]*Kemin Agrifoods South America*, *Indaiatuba, São Paulo, Brazil*.

W363 **Effect of time of insemination relative to ovulation on pregnancy rate of Nelore cows submitted to TAI protocols.**
M. M. Filho, J. R. Naves*, R. G. Rezende, T. Santin, T. K. Nishimura, V. B. Nunes, and E. H. Madureira, *São Paulo University*, *São Paulo, Brazil*.

W364 **Enhancing peri-compaction bovine embryo glucose metabolism in vitro in preparation for a hypoxic uterine environment.**
V. A. Absalón-Medina*, S. H. Cheong, R. O. Gilbert, and W. R. Butler, *Cornell University*, *Ithaca, NY*.

W365 **Conjugated linoleic acid (CLA) does not improve post-thaw performance of expanded-stage in vitro produced bovine embryos.**
V. A. Absalón-Medina*, S. H. Cheong, R. O. Gilbert, and W. R. Butler, *Cornell University*, *Ithaca, NY*.

W366 **Excess dietary protein rich in RUP alters ovulatory ovarian follicle growth and circulating steroid hormone concentrations in nonpregnant, nonlactating beef cows.**
P. J. Gunn*[1], R. P. Lemenager[2], E. G. Taylor[2], and G. A. Bridges[3], [1]*Department of Animal Science, Iowa State University*, *Ames*, [2]*Department of Animal Sciences, Purdue University*, *West Lafayette, IN*, [3]*North Central Research and Outreach Center, University of Minnesota*, *Grand Rapids*.

W367 **Sexual stimulation of male goats with high and low testosterone doses during natural sexual resting periods.**
O. Ángel-García[1], C. A. Meza-Herrera[2], J. M. Guillen-Muñoz[1], P. A. Robles-Trillo[1], C. Leyva[1], R. Rodríguez-Martínez[1], F. G. Véliz[1], and G. Arellano-Rodríguez*[1], [1]*Universidad Autónoma Agraria Antonio Narro*, *Torreón, Coahuila, México*, [2]*URUZA-Universidad Autónoma Chapingo*, *Bermejillo, Durango*.

W368 **Sexual behavior of bucks treated with testosterone with different male:female ratios is not affected by environmental variables.**
O. Ángel-García[1], C. A. Meza-Herrera[2], J. M. Guillen-Muñoz[1], C. Leyva[1], M. Mellado[1], R. Rodríguez-Martínez[1], J. R. Luna-Orozco[3], F. G. Véliz[1], and G. Arellano-Rodríguez*[1], [1]*Universidad Autónoma Agraria Antonio Narro*, *Torreón, Coahuila, México*, [2]*URUZA-Universidad Autónoma de Chapingo*, *Bermejillo, Durango, México*, [3]*CBTa #1*, *Torreón, Coahuila, México*.

W369 **Effects of progesterone concentration and FSH administration on follicle number and oocyte competence.**
S. G. Kruse*[1], B. J. Funnell[1], S. L. Bird[1], H. P. Dias[2], M. L. Day[3], and G. A. Bridges[1], [1]*North Central Research and Outreach Center, University of Minnesota*, *Grand Rapids*, [2]*São Paulo State University*, *Botucatu, São Paulo, Brazil*, [3]*The Ohio State University*, *Columbus*.

W370 **Gestational form of supplemental selenium affects gene expression in the newborn calf testis. I. Steroidogenesis.**
S. R. Garbacik*, J. C. Matthews, K. L. Cerny, and P. J. Bridges, *Department of Animal and Food Sciences, University of Kentucky*, *Lexington*.

W371 **Factors affecting ovulation within three weeks postpartum in dairy cows.**
M. M. Vercouteren[3], J. H. Bittar[1], L. I. Barbia[1], M. Gobikrushanth[1], C. A. Risco[1], J. E. Santos[1], A. Vieira-Neto[2], and K. N. Galvão*[1], [1]*University of Florida*, *Gainesville*, [2]*Universidade do Estado de Santa Catarina*, *Lages, SC, Brazil*, [3]*Utrecht University*, *Utrecht, the Netherlands*.

W372 **Physiological and transcriptional adaptations in skeletal muscle of Holstein cows in response to plane of dietary protein during early lactation.**
P. Ji*[1], J. J. Loor[2], H. M. Gauthier[1], S. Y. Morrison[1], F. T. da Rosa[3], and H. M. Dann[1], [1]*The William H. Miner Agricultural Research Institute*, *Chazy, NY*, [2]*University of Illinois at Urbana-Champaign*, *Urbana*, [3]*Federal University of Pelotas*, *RS, Brazil*.

W373 **Hepatic purinergic signaling gene network expression in dairy cattle during the peripartal period.**
J. Seo, J. S. Osorio*, and J. J. Loor, *University of Illinois*, *Urbana*.

W374 **Five-day Resynch programs in dairy cows including the CIDR at two stages post-artificial insemination.**
S. L. Pulley*, S. L. Hill, and J. S. Stevenson, *Kansas State University*, *Manhattan*.

W375 **Effect of early or late resynchronization on reproductive performance of dairy cows observed for estrus.**
L. D. P. Sinedino*[1], F. S. Lima[1], R. L. A. Cerri[2], and J. E. P. Santos[1], [1]*University of Florida*, *Gainesville*, [2]*University of British Columbia*, *Vancouver, BC, Canada*.

W376 **Increasing proestrus decreases pregnancy loss in lactating dairy cows submitted to E2/P4 timed artificial insemination programs.**
M. H. C. Pereira[1], A. D. P. Rodrigues[1], L. F. S. P. Barbosa[1], M. C. Wiltbank[2], and J. L. M. Vasconcelos*[3], [1]*Aluno do Programa de Pos-Graduacao em Zootecnia da FMVZ/UNESP*, *Botucatu, Sao Paulo, Brazil*, [2]*Department of Dairy Science, University of Wisconsin-Madison*, *Madison*, [3]*DPA/FMVZ/UNESP*, *Botucatu, Sao Paulo, Brazil*.

W377 **Effect of milk ingestion on LH and leptin plasma concentration in preweaning Nellore calves.**
G. Nogueira*, M. C. Miguel, H. Costa, J. Souza, R. Cipriano, J. L. Delfino, D. Giraldo, N. Romanello, D. Oliveira, M. A. Maioli, S. P. Gobbo, and D. Pinheiro, *Sao Paulo State University (UNESP)*, *Aracatuba, Sao Paulo, Brazil*.

W378 **Prepartum insulin resistance in dairy cows increases offspring birth weight and insulin concentrations.**
L. H. Dauten*, B. E. Sullivan, and H. M. White, *University of Connecticut*, *Storrs*.

W379 **The influence of bPL and IGF-1 on the negative energy balance during the pre-parturition period of dairy cows.**
M. M. Weschenfelder[1], P. Montagner[1], A. R. Krause[1], E. Schwegler[1], F. A. B. Del Pino[1], E. G. Xavier[3], F. T. Rosa[1], E. Schmitt[2], A. Schneider[1], C. C. Brauner[1], and M. N. Correa*[1], [1]*Federal University of Pelotas - NUPEEC - Department of Veterinary Clinics*, *Pelotas, Rio Grande do Sul, Brazil*, [2]*EMBRAPA*, *Porto Velho, Rondonia, Brazil*, [3]*Granja 4 Irmaos*, *Pelotas, Rio Grande do Sul, Brazil*.

W380 **Semen quality of bulls supplemented with protected fat and/or vitamin C and selenium.**
M. M. Guardieiro, F. L. M. Silva, P. L. J. Monteiro, A. B. Nascimento, G. M. Chinelato, W. Arruda, N. M. B. Ferreira, L. R. D. Agostinho Neto, G. B. Mourão, and R. Sartori*, *University of São Paulo*, *Piracicaba, SP, Brazil*.

W381 **Reproductive performance of *Bos indicus* heifers with reduced serum progesterone concentration at the onset of a 5-d Co-Synch + CIDR program.**
M. V. Biehl*[1,2], A. V. Pires[1], M. V. C. Ferraz Junior[2], D. D. Nepomuceno[1], E. M. Ferreira[1], R. S. Gentil[1], L. H. Cruppe[3], and M. L. Day[3], [1]*University of Sao Paulo*, *Piracicaba, Sao Paulo, Brazil*, [2]*University of Sao Paulo*, *Pirassununga, Sao Paulo, Brazil*, [3]*The Ohio State University*, *Columbus*.

W382 **Estradiol benzoate-based protocol versus GnRH-based protocol for timed AI in dairy cattle.**
P. L. J. Monteiro*[1], R. S. Surjus[1], A. B. Nascimento[1], A. P. Lemes[1], A. B. Prata[1], M. C. Wiltbank[2], and R. Sartori[1], [1]*University of São Paulo*, *Piracicaba, SP, Brazil*, [2]*University of Wisconsin-Madison*, *Madison*.

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W383 **Effects of fenceline contact at weaning and length of preconditioning period on preconditioning performance and morbidity during the feedlot receiving period.**
J. E. Anderson*, K. W. Harborth, M. D. Garcia, R. S. Walker, C. C. Williams, and T. G. Page, *Louisiana State University AgCenter*, *Baton Rouge*.

W384 **The effect of breed group and production system on performance of steer in the Colombian Caribbean Coast.**
R. Patiño*[1], L. Salazar[1], C. Villalba[1], K. González[1], F. Porras[1], E. van Cleef[2], and O. Vergara[3], [1]*University of Sucre*, *Sincelejo, Sucre, Colombia*, [2]*Kansas State University*, *Manhattan*, [3]*University of Cordoba*, *Montéria, Colombia*.

W385 **Effects of implant management during the stocker phase on grazing performance, subsequent feedlot performance, and carcass characteristics of beef steers.**
J. D. Rivera*[1], H. B. Jones[2], M. L. Galyean[3], and G. K. Blue[4], [1]*South MS Branch Experiment Station, Mississippi Agriculture and Forestry Experiment Station*, *Poplarville*, [2]*Coastal Research and Extension Center*, *Biloxi, MS*, [3]*Department of Animal and Food Sci., Texas Tech University*, *Lubbock*, [4]*Elanco*, *Lawrenceburg, TN*.

W386 **Fatty acid profiles, meat quality, and sensory attributes of organic versus conventional dairy-beef.**
E. A. Bjorklund* and B. J. Heins, *University of Minnesota, West Central Research and Outreach Center*, *Morris*.

W387 **Growth measurements, carcass characteristics, and profitability of organic versus conventional dairy-beef steers.**
E. A. Bjorklund* and B. J. Heins, *University of Minnesota, West Central Research and Outreach Center*, *Morris*.

W388 **Effect of seasonality on subclinical mastitis and milk composition of a ¾ Holstein × Zebu herd of Minas Gerais State, Brazil.**
C. V. G. Ladeira[1,4], S. V. Teixeira[1], N. Silva[2], G. M. Costa[3], D. S. Rodrigues[1], L. G. A. Ladeira[1], P. Oliveira[1], T. C. Gouveia[1], R. Rodrigues[2], L. M. Fonseca[2], M. O. Leite[2], and M. M. O. P. Cerqueira*[2], [1]*Empresa de Pesquisa Agropecuaria de Minas Gerais, EPAMIG*, *Belo Horizonte, Minas Gerais, Brazil*, [2]*Escola de Veterinaria, Universidade Federal de Minas Gerais*, *Belo Horizonte, Minas Gerais, Brazil*, [3]*Departamento de Medicina Veterinaria, Universidade Federal de Lavras*, *Lavras, Minas Gerais, Brazil*, [4]*FAPEMIG CVZ APQ03680/10*, *Belo Horizonte, Minas Gerais, Brazil*.

W389 **Identification of phenotypic predictors of milk yield losses in response to once-daily milking: Preliminary results.**
J. Flament*[1], S. Pochet[2], and H. Larroque[3], [1]*Agrocampus Ouest, UMR1348 PEGASE*, *Rennes, France*, [2]*INRA, UR342 URTAL*, *Poligny, France*, [3]*INRA, SAGA*, *Toulouse, France*.

W390 **The effect of body condition score change 15 days prior to calving on lactation curve and production parameters in grazing dairy cows in Ireland.**
M. R. Sheehy*[1,2], F. J. Mulligan[1], M. M. Schutz[3], M. A. Crowe[1], S. P. M. Aungier[1], and A. G. Fahey[4], [1]*School of Veterinary Medicine, University College Dublin*, *Dublin, Ireland*, [2]*Devenish Nutrition Ltd*, *Belfast, United Kingdom*, [3]*Dept. of Animal Sciences, Purdue University*, *West Lafayette, IN*, [4]*School of Agriculture and Food Science, University College Dublin*, *Dublin, Ireland*.

W391 **Comparison of different types of roofings in individual houses for calves through thermal comfort indexes.**
R. S. Marçola, P. A. Bustos MacLean*, G. T. Santos, and O. R. Barbosa, *State University of Maringa*, *Maringa, Parana, Brazil*.

W392 **Effects of parity and pregnancy status on body weight changes of dairy cows in early lactation.**
M. L. S. Canha[1], S. L. Viechnieski[2], and R. Almeida*[1], [1]*Universidade Federal do Paraná*, *Curitiba, PR, Brazil*, [2]*StarMilk Farm*, *Céu Azul, PR, Brazil*.

W393 **Ovarian activity and oocyte quality associated to serum and follicular fluid biochemical profile of crossbreed dairy cows during postpartum in summer and winter.**
B. G. Alves[2], K. A. Alves[2], R. M. Santos*[1], M. C. Martins[1], L. S. Braga[1], T. H. Silva[1], B. G. Alves[1], A. C. Lucio[1], T. V. Silva[1], M. E. Beletti[1], J. O. Jacomini[1], and M. L. Gambarini[2], [1]*Universidade Federal de Uberlândia*, *Uberlândia, Minas Gerais, Brazil*, [2]*Universidade Federal de Goiás*, *Goiânia, Goiás, Brasil*.

W394 **Interference of the production system on milk quality.**
A. L. Silva, M. I. Marcondes, D. C. Jácome, M. B. Boto, I. M. Batalha, T. R. Pereira, and J. P. P. Rodrigues*, *Universidade Federal de Viçosa*, *Viçosa, Minas Gerais, Brazil*.

W395 **Methane emission from dairy calves, heifers and dry cows.**
D. P. Bu[1], X. L. Wang[2], L. H. Baumgard[1], J. Q. Wang*[1], and L. Y. Zhou[1], [1]*State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*, [2]*Department of Animal Science, Iowa State University*, *Ames*.

W396 **Ruminant methane emission during heat stress.**
D. P. Bu[1], X. L. Wang[1], L. H. Baumgard[2], J. Q. Wang*[1], and L. Y. Zhou[1], [1]*State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*, [2]*Department of Animal Science, Iowa State University*, *Ames*.

W397 **Effect of feed delivery frequency on the behavior and productivity of lactating dairy cows.**
K. D. Hart*[1], B. W. McBride[2], T. F. Duffield[3], and T. J. DeVries[1], [1]*Dept. of Animal and Poultry Science, University of Guelph, Kemptville Campus*, *Kemptville, ON, Canada*, [2]*Dept. of Animal and Poultry Science, University of Guelph*, *Guelph, ON, Canada*, [3]*Dept. of Population Medicine, University of Guelph*, *Guelph, ON, Canada*.

W398 **Associations between herd-level feeding and housing management practices, feed sorting, and productivity of freestall-housed dairy cows.**
A. D. Sova[1], B. W. McBride[2], S. L. LeBlanc[3], and T. J. DeVries*[1], [1]*Dept. of Animal and Poultry Science, University of Guelph, Kemptville Campus*, *Kemptville, ON, Canada*, [2]*Dept. of Animal and Poultry Science, University of Guelph*, *Guelph, ON, Canada*, [3]*Dept. of Population Medicine, University of Guelph*, *Guelph, ON, Canada*.

W399 **Associations between daily variability in ration characteristics and measures of productivity in freestall-housed cows.**
A. D. Sova[1], B. W. McBride[2], S. L. LeBlanc[3], and T. J. DeVries*[1], [1]*Dept. of Animal and Poultry Science, University of Guelph, Kemptville Campus*, *Kemptville, ON, Canada*, [2]*Dept. of Animal and Poultry Science, University of Guelph*, *Guelph, ON, Canada*, [3]*Dept. of Population Medicine, University of Guelph*, *Guelph, ON, Canada*.

W400 **Effect of vaccination against foot-and-mouth disease on growth performance of Korean native goat (*Capra hircus coreanae*).**
N. Jo[1], J. Jung*[1], J. Lee[1], S. Jeong[1], J. Jeong[1], L. Sun[1], H. Sung[2], K. Son[1], and S. Seo[1], [1]*Division of Animal Biosystem Sciences, Chungnam National University*, *Daejeon, Republic of Korea*, [2]*Adbiotech*, *Seoul, Republic of Korea*.

W401 **Metabolism of broiler chickens as a function of the rearing period and environmental conditions.**
S. T. Nascimento*, A. S. C. Maia, M. D. Carvalho, and L. G. Leite, *São Paulo State University (UNESP)*, *Jaboticabal, São Paulo, Brazil*.

W402 **Methane emission associated to meteorological variables in lambs.**
A. S. C. Maia*, S. T. Nascimento, R. B. Silva, C. C. M. Costa, and M. D. Carvalho, *São Paulo State University (UNESP)*, *Jaboticabal, São Paulo, Brazil*.

W403 **Influence of trenbolone-estradiol implant level on feedlot performance of hair-sheep.**
R. Barajas*[1], B. Ortiz[1], and J. J. Alvarez[2], [1]*Facultad de Medicina Veterinaria y Zootecnia, Universidad Autonoma de Sinaloa*, *Culiacan, Sinaloa, Mexico*, [2]*Productores de Ovinos de Guanajuato, S.P.R. de R.L*, *Silao, Guanajuato, Mexico*.

W404 **Effects of nursery floor space allowance on body weight and organ characteristics in replacement gilts.**
S. R. Callahan*[1], M. J. Estienne[1], and A. E. DeDecker[2], [1]*Virginia Tech*, *Blacksburg*, [2]*Murphy-Brown LLC*, *Rose Hill, NC*.

W405 **Effect of oxytocin addition to reduced seminal doses using intra uterine AI technique on reproductive performance of sows serviced during summer and autumn in northwest Mexico.**
J. M. Romo*[1,2], J. A. Romo[1], H. R. Guemez[1,2], and R. Barajas[1], [1]*Facultad de Medicina Veterinaria y Zootecnia, Universidad Autonoma de Sinaloa*, *Culiacan, Sinaloa, Mexico*, [2]*Granja Porcina La Huerta*, *Culiacan, Sinaloa, Mexico*.

W406 **Effect of different gestation housing types on reproductive performance of sows.**
M. Song[1], S. K. Baidoo[2], J. Kim*[1], H. C. Park[1], and S. W. Seo[1], [1]*Chungnam National University*, *Daejon, South Korea*, [2]*Southern Research and Outreach Center, University of Minnesota*, *Waseca*.

W407 **Rectal temperature and infrared thermography of the eye in Nellore beef cattle.**
A. M. Mobiglia, F. R. Camilo, T. S. Almeida, M. D. Freitas Neto, V. R. M. Couto*, J. C. Pimenta, B. J. M. Lemos, and J. J. R. Fernandes, *Universidade Federal de Goias*, *Goiania, Goias, Brazil*.

W408 **Evaluation of a 3-dimensional camera system to measure feed intake.**
A. N. Shelley[1], D. N. Lau[1], A. E. Sterrett*[2], and J. M. Bewley[2], [1]*University of Kentucky, Department of Electrical and Computer Engineering*, *Lexington*, [2]*University of Kentucky, Department of Animal and Food Sciences*, *Lexington*.

W409 **Factors affecting rectal and vaginal temperature in Holstein × Zebu crossbred cows in northeastern Brazil.**
A. N. Costa[2], A. A. Araujo[2], J. V. Feitosa[2], P. A. Montezuma[2], and K. N. Galvão*[1], [1]*University of Florida*, *Gainesville*, [2]*Universidade Federal do Ceará*, *Fortaleza, CE, Brazil*.

W410 **Effects of seasonality on rectal temperature and conception rate in crossbred dairy cows.**
F. R. Souza[1], T. H. Silva[1], B. G. Alves[1], J. O. Jacomini[1], L. Z. Oliveira[2], and R. M. Santos*[1], [1]*Universidade Federal de Uberlândia*, *Uberlândia, Minas Gerais, Brazil*, [2]*UNIRP - Centro Universitário de Rio Preto*, *São José do Rio Preto, São Paulo, Brazil*.

W411 **An evaluation of electrical conductivity as a practical tool in mastitis detection.**
C. Meisar, J. Thayer, and K. Koudele*, *Andrews University*, *Berrien Springs, MI*.

W412 **Use of infrared thermography in determining the surface temperature of quail eggshell during incubation.**
T. C. Santos, P. A. Bustos MacLean*, A. E. Murakami, J. F. Mello, and C. Souza, *State University of Maringa*, *Maringa, Parana, Brazil*.

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W417 **Effect of chromium supplementation on performance of feedlot lambs.**
T. M. C. Leme*, E. A. L. Titto, C. G. Titto, C. A. S. Bonato, D. L. Jimenez Filho, and S. L. Silva, *Faculdade de Zootecnia e Engenharia de Alimentos, Universidade de São Paulo*, *Pirassununga, São Paulo, Brazil*.

W418 **Effects of levels of Boer goats and Dorper sheep on feed intake, digestibility, growth, and slaughter characteristics in the central highlands of Ethiopia.**
T. Mekonnen[1], K. Kefelegn[2], G. Abebe[3], and A. L. Goetsch*[4], [1]*Sirinka Agricultural Research Center*, *Sirinka, Ethiopia*, [2]*School of Animal and Range Sciences, Haramaya University*, *Haramaya, Ethiopia*, [3]*Ethiopia Sheep and Goat Productivity Improvement Program*, *Addis Ababa, Ethiopia*, [4]*American Institute for Goat Research, Langston University*, *Langston, OK*.

W421 **Effects of level and length of supplementation on carcass amounts and percentages of ash, N, water, total fat, and energy.**
R. C. Merkel*, T. A. Gipson, Z. Wang, and A. L. Goetsch, *E (Kika) de la Garza American Institute for Goat Research, Langston University*, *Langston, OK*.

W422 **Effect of *Jatropha curcas* meal (nontoxic) substituted for soybean meal on apparent digestibility and energy concentration of feed in growing Pelibuey sheep.**
A. Estrada-Angulo*[1], M. A. Angulo-Escalante[2], J. J. Portillo[1], R. Gutierrez-Dorado[3], A. Rubio-Angulo[1], C. Castro-Martinez[4], F. G. Rios[1], and A. Plascencia[5], [1]*FMVZ-UAS*, *Culiacan, Sinaloa, Mexico*, [2]*CIAD-Culiacan*, *Culiacan, Sinaloa, Mexico*, [3]*FCQB-UAS*, *Culiacan, Sinaloa, Mexico*, [4]*CIIDIR-IPN*, *Guasave, Sinaloa, Mexico*, [5]*IICV-UABC*, *Mexicali, Baja California, Mexico*.

W423 **Mineral requirements for growth of female Saanen goat kids.**
F. O. M. Figueiredo*, T. T. Berchielli, K. T. Resende, A. M. Mobliglia, and I. A. M. A. Teixeira, *Univ Estadual Paulista*, *Jaboticabal, Sao Paulo, Brazil*.

W424 **Effect of *Jatropha curcas* kernel (nontoxic) substituted for soybean meal on productivity and carcass characteristics in finishing Pelibuey sheep.**
A. Estrada-Angulo*[1], M. A. Angulo-Escalante[2], J. C. Robles[1], I. Contreras[3], H. Davila[1], L. E. Sanchez-Ramirez[1], H. Landeros-Lopez[1], B. I. Castro[1], F. G. Rios[1], and A. Plascencia[4], [1]*FMVZ-UAS*, *Culiacan, Sinaloa, Mexico*, [2]*CIAD-Culiacan*, *Culiacan, Sinaloa, Mexico*, [3]*FCQB-UAS*, *Culiacan, Sinaloa, Mexico*, [4]*IICV-UABC*, *Mexicali, BC, Mexico*.

W425 **Effects of short-term oligofructose-enriched inulin supplementation on growth performance and selected fecal characteristics of weanling Saanen kids.**
C. Kara*[1], Y. Meral[1], H. Biricik[1], A. Orman[2], H. Gencoglu[1], I. Cetin[1], D. Yesilbag[1], G. Deniz[1], and I. Turkmen[1], [1]*Uludag University, Faculty of Veterinary Medicine, Department of Animal Nutrition and Nutritional Diseases*, *Bursa, Turkey*, [2]*Uludag University, Faculty of Veterinary Medicine, Department of Zootechnics*, *Bursa, Turkey*.

W426 **Apparent digestibility of dry matter and nutrients from lambs fed diets with or without glycerin.**
E. M. de Oliveira*, J. M. B. Ezequiel, V. C. Santos, A. P. D'aurea, M. T. A. Costa, A. C. Homem Junior, V. B. Carvalho, J. R. Paschoaloto, E. H. Fernandes, and C. S. Costa, *Universidade Paulista Júlio de Mesquita - Unesp*.

W427 **Blood metabolite and rumen VFA concentrations of lambs fed a diet containing artichoke (*Cynara scolymus*).**
M. Dehghani-Sanij*, A. Afzalzadeh, K. Rezayazdi, and M. A. Norouzian, *University of Tehran*, *Tehran, Iran*.

W428 **Mineral metabolism in Saanen and Oberhasli goats during pregnancy.**
C. J. Härter*[1], A. R. Rivera[1], D. S. Castagnino[1], L. D. Lima[1], H. G. O. Silva[1], A. M. Nunes[1], S. Sgavioli[1], S. M. B. Artoni[1], A. Liesegang[2], N. St-Pierre[3], K. T. Resende[1], and I. A. M. A. Teixeira[1], [1]*Department of Animal Sciences, Universidade Estadual Paulista*, *Jaboticabal, SP, Brazil*, [2]*Institute of Animal Nutrition, University of Zurich*, *Zurich, Switzerland*, [3]*Department of Animal Sciences, The Ohio State University*, *Columbus*.

W429 **Mineral metabolism of dairy goats under feed restriction during pregnancy.**
C. J. Härter*[1], A. R. Rivera[1], D. S. Castagnino[1], L. D. Lima[1], H. G. O. Silva[1], A. M. Nunes[1], A. Liesegang[2], N. St-Pierre[3], K. T. Resende[1], and I. A. M. A. Teixeira[1], [1]*Department of Animal Sciences, Universidade Estadual Paulista*, *Jaboticabal, SP, Brazil*, [2]*Institute of Animal Nutrition, University of Zurich*, *Zurich, Switzerland*, [3]*Department of Animal Sciences, The Ohio State University*, *Columbus*.

W430 **Influence of reducing starch and increasing digestible fiber on hormonal and metabolic profile of lactating ewes.**
R. S. Gentil*[1], A. Cannas[2], A. V. Pires[1], E. M. Ferreira[1], D. M. Polizel[1], D. Eysink[1], M. V. Biehl[1], and I. Susin[1], [1]*Escola Superior de Agricultura Luiz de Queiroz/Universidade de São Paulo*, *Piracicaba, SP, Brazil*, [2]*University of Sassari*, *Sassari, Sardegna, Italy*.

W431 **Growth and carcass characteristics of ewe lambs fed high-concentrate diets containing increasing levels of calcium nitrate.**
A. P. A. Freire[1], R. A. Souza[1], D. M. Polizel[1], R. S. Gentil[1], A. V. Pires[1], R. C. Araujo[2], and I. Susin*[1], [1]*Escola Superior de Agricultura Luiz de Queiroz (ESALQ)/USP*, *Piracicaba, SP, Brazil*, [2]*GRASP Ind. e Com. LTDA*, *Curitiba, PR, Brazil*.

W432 **Rumen metabolism in lambs fed high-concentrate diets containing increasing levels of crude glycerin.**
D. M. Polizel, R. S. Gentil, E. M. Ferreira, R. A. Souza, A. P. A. Freire, J. A. Faleiro Neto, A. V. Pires, and I. Susin*, *Escola Superior de Agricultura Luiz de Queiroz (ESALQ)/USP*, *Piracicaba, SP, Brazil*.

W433 **Effect of supplementation with different protein levels on the performance of lambs grazing napiergrass (*Pennisetum purpureum*) pasture.**
I. F. F. Garcia*[1], F. A. P. Alvarenga[1], D. R. Casagrande[1], J. R. O. Perez[1], P. C. G. Dias Junior[1], V. C. Ferreira[2], and I. G. Pereira[2], [1]*Universidade Federal de Lavras*, *Lavras, Minas Gerais, Brazil*, [2]*Universidade Federal de Minas Gerais*, *Belo Horizonte, Minas Gerais, Brazil*.

W434 **Effect of a cellulase enzyme additive on hay intake and fiber digestion in goats.**
S. Hart*, *Langston University*, *Langston, OK*.

W435 **Effects of stocking rate and physiological state of meat goats grazing grass/forb pastures on forage intake, selection, and digestion, grazing behavior, and performance.**
A. R. Askar[1,2], R. Puchala*[1], T. A. Gipson[1], K. Tesfai[1], G. D. Detweiler[1], A. Asmare[1], A. Keli[3], T. Sahlu[1], and A. L. Goetsch[1], [1]*American Institute for Goat Research, Langston University*, *Langston, OK*, [2]*Animal and Poultry Nutrition Department, Desert Research Center*, *Cairo, Egypt*, [3]*Department of Animal Production and Pastoralism, National School of Agriculture*, *Meknes, Morocco*.

W436 **Performance and consumption patterns of vegetation for commercial crossbred meat goats and hair sheep used to clear woodlands.**
J. A. Pennington*[1], J. L. Wilkins[2], N. T. Witt[3], and J. D. Caldwell[4], [1]*Lincoln University*, *Neosho, MO*, [2]*Crowder College*, *Neosho, MO*, [3]*NRCS*, *Neosho, MO*, [4]*Lincoln University*, *Jefferson City, MO*.

W437 **Effects of continuous or rotational grazing schemes by yearling Katahdin ewes grazing toxic tall fescue in late spring through summer on available forage and forage quality.**
E. A. Backes*[1,2], J. D. Caldwell[1], B. C. Shanks[1], K. R. Ness[1], A. N. V. Stewart[1], C. A. Clifford-Rathert[1], A. K. Wurst[1], D. L. Kreider[2], and M. L. Looper[2], [1]*Lincoln University*, *Jefferson City, MO*, [2]*University of Arkansas*, *Fayetteville*.

Swine Species: Grow-Finish Pigs

W438 **Ractopamine hydrochloride on performance of heavy weight pigs.**
G. Borbolla-Sosa, I. E. Avila-Arres*, A. Pineda-Mejía, R. Martinez-Gamba, P. Arriaga-Montero, and A. Rodriguez, *National University of Mexico (UNAM), School of Veterinary Medicine, Department of Swine Medicine and Zootechnics*, *Mexico City, Mexico*.

W439 **The effect of body weight at feed change timing on carcass, meat and fat quality of heavy gilts.**
J. Suárez-Belloch[1], M. A. Sanz[2], M. Bellés[1], and M. A. Latorre*[1], [1]*IUCA. Facultad de Veterinaria, Universidad de Zaragoza*, *Spain*, [2]*Centro de Investigación y Tecnología Agroalimentaria de Aragón*, *Zaragoza, Spain*.

W440 **Nitrogen balance of immunocastrated pigs receiving diets with or without ractopamine.**
L. R. Silva, E. Lanferdini, L. G. M. Amaral, C. A. P. Garbossa, H. Silveira, and V. S. Cantarelli*, *Federal University of Lavras*, *Lavras, Minas Gerais, Brazil*.

W441 **Effects of lysine and ractopamine on performance, carcass characteristics and economic viability of male pigs immunocastrated during the growing and finishing phases.**
L. R. Silva, P. B. Faria, L. G. M. Amaral, M. L. T. Abreu, E. Lanferdini, and V. S. Cantarelli*, *Federal University of Lavras*, *Lavras, Minas Gerais, Brazil*.

W442 **Influence of ractopamine on the diets of swine stressed by heat.**
R. Philomeno[2], C. A. P. Garbossa[1], M. R. Junqueira[1], L. G. M. Amaral[1], R. A. Ferreira[1], and V. S. Cantarelli*[1], [1]*Federal University of Lavras*, *Lavras, Minas Gerais, Brazil*, [2]*Agroceres Multimix*, *Rio Claro, São Paulo, Brazil*.

W443 **Lysine levels in diets with different corn starch digestion kinetics for growing pig.**
N. O. Amaral[2], L. G. M. Amaral[1], F. M. Carvalho[1], H. Silveira[1], and V. S. Cantarelli*[1], [1]*Federal University of Lavras*, *Lavras, Minas Gerais, Brazil*, [2]*Federal Institute of Education, Science and Technology*, *Machado, Minas Gerais, Brazil*.

W444 **The effect of immunocastration on growth performance and meat quality of heavy gilts .**
M. A. Latorre*[1], A. Daza[2], A. Olivares[3], and C. J. López-Bote[3], [1]*Universidad de Zaragoza*, *Zaragoza, Spain*, [2]*Universidad Politécnica de Madrid*, *Madrid, Spain*, [3]*Universidad Complutense de Madrid*, *Madrid, Spain*.

W445 **Performance of growing-finishing pigs fed brewers rice and dried distillers brewers yeast.**
T. Dokes and O. Gekara*, *University of Arkansas Pine Bluff*, *Pine Bluff*.

W446 **Effects of vegetable oils and residue of winemaking on performance, carcass traits, and pork quality.**
T. M. Bertol*[1], R. M. L. de Campos[2], E. A. P. de Figueiredo[1], and V. L. Kawski[1], [1]*Embrapa Suínos e Aves*, *Concórdia, SC, Brazil*, [2]*Fundação Universidade Federal do Vale do São Francisco*, *Petrolina, PE, Brazil*.

Swine Species: Sow Productivity

W447 **Effect of proportion of nonproductive sow days on lifetime production traits in swine under Thai tropical conditions.**
U. Noppibool[1], S. Koonawootrittriron[1], M. A. Elzo*[2], and T. Suwanasopee[1], [1]*Kasetsart University*, *Bangkok, Thailand*, [2]*University of Florida*, *Gainesville*.

W448 **Characteristics of lifetime preweaning production traits in Landrace and Yorkshire sows under tropical conditions.**
T. Jaichansukkit[1], T. Suwanasopee[1], M. A. Elzo*[2], and S. Koonawootrittriron[1], [1]*Kasetsart University*, *Bangkok, Thailand*, [2]*University of Florida*, *Gainesville*.

Graduate Student Competition
ADSA Southern Section Graduate Student Competition
Chair: Kas Ingawa, Dairy Records Management Systems-NCSU
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9:30 AM 274 **Supplementing a pasteurized milk balancer product to two feeding levels of pasteurized whole milk fed to Holstein calves.**
K. Glosson*[1], B. Hopkins[1], S. Davidson[1], G. Smith[1], T. Earleywine[2], and C. Ma[1], [1]*North Carolina State University*, *Raleigh*, [2]*Land O'Lakes Animal Milk Products*, *St. Paul, MN*.

9:45 AM 275 **Methane production in ruminal continuous cultures fed bermudagrass harvested at varying stages of maturity.**
K. M. Young*[1], N. S. Hill[2], A. Thompson[2], D. W. Hancock[2], J. G. Andrae[1], W. C. Stringer[1], and T. C. Jenkins[1], [1]*Clemson University*, *Clemson, SC*, [2]*University of Georgia*, *Athens*.

10:00 AM 276 **Effects of feeding calcareous marine algae to Holstein cows beginning prepartum on postpartum performance and serum metabolites.**
Z. Wu* and J. K. Bernard, *University of Georgia*, *Tifton*.

10:15 AM 277 **Changes in choline esters in blood and milk during early to mid lactation in dairy cows.**
V. M. Artegoitia*[1], J. M. Middleton[2], F. Harte[1], S. R. Campagna[2], and M. J. de Veth[3,4], [1]*Food Science and Technology, University of Tennessee*, *Knoxville*, [2]*Chemistry Department, University of Tennessee*, *Knoxville*, [3]*Animal Science, University of Tennessee*, *Knoxville*, [4]*Balchem Corporation*, *New Hampton, NY*.

10:30 AM 278 **Characterization of lying time, milk yield, and rumination time with different freestall bases.**
B. A. Wadsworth*, A. E. Sterrett, C. L. Wood, K. J. McQuerry, J. D. Clark, D. L. Ray, and J. M. Bewley, *University of Kentucky*, *Lexington*.

10:45 AM 279 **Direct fed-microbial supplementation and milk replacer effects on performance of Holstein calves.**
A. J. Geiger*[1], S. H. Ward[1], C. C. Williams[2], B. J. Rude[1], C. J. Cabrera[1], K. N. Kaletsch[1], and B. E. Voelz[1], [1]*Mississippi State University*, *Mississippi State*, [2]*Louisiana State University*, *Baton Rouge*.

Animal Behavior and Well-Being I
Chair: Randi Black, University of Tennessee, Knoxville
109

9:30 AM 280 **Determining effects of castration timing with or without analgesia on growth performance and behavior in beef cattle.**
A. C. Brown*[1], J. G. Powell[1], E. B. Kegley[1], J. T. Richeson[2], and M. S. Gadberry[1], [1]*University of Arkansas*, *Fayetteville*, [2]*West Texas A&M University*, *Canyon*.

9:45 AM 281 **Effects of pre- and postoperative carprofen on convalescence of calves following umbilical surgery.**
I. Schulze[1], J. Offinger[1], A. K. List[1], S. Kaestner[2], H. Meyer[1], and J. Rehage*[1], [1]*Clinic for Cattle, University of Veterinary Medicine Hannover*, *Hannover, Germany*, [2]*Clinic for Small Animals, University of Veterinary Medicine Hannover*, *Hannover, Germany*.

10:00 AM 282 **Effect of surgical castration of bull calves at different stages of maturity with or without analgesia on the acute phase response (APR) and complete blood count (CBC).**
H. D. Hughes*[1], J. G. Powell[2], E. B. Kegley[2], A. C. Brown[2], N. C. Burdick Sanchez[3], J. A. Carroll[3], and J. T. Richeson[1], [1]*Department of Agricultural Sciences, West Texas A&M University*, *Canyon*, [2]*Department of Animal Science, Division of Agriculture, University of Arkansas*, *Fayetteville*, [3]*USDA-ARS, Livestock Issues Research Unit*, *Lubbock, TX*.

10:15 AM 283 **Effect of a cooling gel on pain sensitivity and healing of hot-iron cattle brands.**
C. B. Tucker*[1], E. M. Mintline[1], J. Banuelos[1], K. A. Walker[2], B. Hoar[1], D. Drake[1], and D. M. Weary[2], [1]*University of California*, *Davis*, [2]*University of British Columbia*, *Vancouver, BC, Canada*.

10:30 AM 284 **Relationships of various feeding behavior indicia with divergent residual feed intake measurements in Japanese Black cattle.**
M. McGee*[1], J. A. Ramirez[2], G. E. Carstens[2], J. B. Hall[2], and R. A. Hill[1], [1]*University of Idaho*, *Moscow*, [2]*Texas A&M University*, *College Station*, [3]*University of Idaho Nancy M. Cummings Research, Education, and Extension Center*, *Carmen*.

10:45 AM 285 **Effects of supplementing endophyte-infected tall fescue with sainfoin and polyethylene glycol on the physiology and ingestive behavior of lambs.**
F. Catanese[1,2], R. A. Distel[1,2], and J. J. Villalba*[3], [1]*Centro de Recursos Naturales Renovables de la Zona Semiárida (CERZOS)*, *Bahia Blanca, Argentina*, [2]*Departamento de Agronomía, Universidad Nacional del Sur*, *Bahia Blanca, Argentina*, [3]*Utah State University*, *Logan*.

11:00 AM 286 **Behavior of beef cattle as affected by horn fly numbers.**
A. R. Mays*[1], M. A. Brown[2], and C. F. Rosenkrans[1], [1]*University of Arkansas*, *Fayetteville*, [2]*USDA-ARS, Grazinglands Research Laboratory*, *El Reno, OK*.

11:15 AM 287 **The behavior of cattle unloaded for feed, water and rest during long-distance transportation in Canada.**
H. E. Flint*[1], K. S. Schwartzkopf-Genswein[2], K. G. Bateman[1], and D. B. Haley[1], [1]*University of Guelph, Population Medicine*, *Guelph, Ontario, Canada*, [2]*Agriculture and Agri-Food Canada*, *Lethbridge, Alberta, Canada*.

11:30 AM 288 **Characterizing loads of cattle that stop for feed, water and rest during long-distance transportation in Canada.**
H. Flint[1], K. S. Schwartzkopf-Genswein[2], K. G. Bateman[1], and D. B. Haley*[1], [1]*University of Guelph*, *Guelph, ON, Canada*, [2]*Agriculture & Agri-Food Canada*, *Lethbridge, AB, Canada*.

11:45 AM 289 **Evaluation of temperament scoring methods for beef cattle.**
R. C. Vann*[1], D. G. Riley[2], D. A. Neuendorff[3], N. C. Burdick Sanchez[4], J. A. Carroll[4], T. H. Welsh[5,2], and R. D. Randel[3], [1]*MAFES-Brown Loam Exp. Station*, *Raymond, MS*, [2]*Department of Animal Science, Texas A&M University*, *College Station*, [3]*Texas A&M AgriLife Research*, *Overton*, [4]*Livestock Issues Research Unit, USDA-ARS*, *Lubbock, TX*, [5]*Texas A&M AgriLife Research*, *College Station*.

12:00 PM 290 **Effects of weaning, repeated handling and transport on immune- and inflammatory genes and stress hormones.**
W. R. Binion*, T. H. Friend, J. E. Sawyer, P. K. Riggs, K. J. Kochan, and J. T. Jaques, *Dept. of Animal Science, Texas A&M University*, *College Station*.

12:15 PM 291 **Genetic parameters of three methods of temperament evaluation of beef calves.**
S. E. Schmidt*[1,2], D. A. Neuendorff[1], D. G. Riley[2], R. C. Vann[3], S. T. Willard[4], T. H. Welsh[2], and R. D. Randel[1], [1]*Texas A&M AgriLife Research*, *Overton*, [2]*Texas A&M University*, *College Station*, [3]*MAFES-Brown Loam, Mississippi State University*, *Raymond*, [4]*Mississippi State University-Starkville*, *Starkville*.

Animal Health: Disease Assessment
Chair: Shollie Falkenberg, USDA-ARS, National Animal Disease Center, Ames, IA
Wabash Ballroom 2

9:30 AM 292 **Effect of intrauterine dextrose or iodine infusions on clinical cure and reproductive performance of lactating dairy cows with clinical metritis under certified organic management.**
M. G. Maquivar*[1,2], A. Barragan[2], J. Velez[2], H. Bothe[2], and G. M. Schuenemann[1], [1]*Department of Veterinary Preventive Medicine, The Ohio State University*, *Columbus*, [2]*Aurora Organic Dairy*, *Platteville, CO*.

9:45 AM 293 **Identification of biomarkers in milk for degree of physiological imbalance for lactating dairy cows.**
K. M. Moyes*[1], J. S. Osorio[2], V. Bjerre-Harpøth[1], B. M. Damgaard[1], V. M. Thorup[1], T. Larsen[1], J. J. Loor[2], and K. L. Ingvartsen[1], [1]*Aarhus University*, *Tjele, Denmark*, [2]*University of Illinois*, *Urbana*.

10:00 AM 294 **Use of digital infrared thermography and oxidative stress biomarkers as a diagnostic tool to diagnose interdigital dermatitis in sheep.**
S. Talukder*[1] and P. Celi[1,2], [1]*The University of Sydney*, *Narellan, NSW, Australia*, [2]*The University of Melbourne*, *Parkville, VIC, Australia*.

10:15 AM 295 **A clinical diagnostic scoring system for bovine respiratory disease in dairy calves.**
W. J. Love*[1], S. S. Aly[1,2], P. H. Kass[1], C. M. Drake[3], T. B. Farver[1], H. E. Crockford[2], J. H. Davis[2], A. L. Van Eenennaam[4], and T. W. Lehenbauer[1,2], [1]*Department of Population Health and Reproduction, School of Veterinary Medicine, University of California*, *Davis*, [2]*Veterinary Medicine Teaching and Research Center, School of Veterinary Medicine, University of California, Davis*, *Tulare*, [3]*Department of Statistics, University of California*, *Davis*, [4]*Department of Animal Science, University of California*, *Davis*.

10:30 AM 296 **Assessment of work shift transition of calving personnel on stillbirth in Holstein dairy cows.**
A. Hunter*, M. G. Maquivar, S. Bas, J. D. Workman, and G. M. Schuenemann, *Department of Veterinary Preventive Medicine, The Ohio State University*, *Columbus*.

10:45 AM 297 **Validation of two diagnostic methods for endometritis in postpartum dairy cows.**
J. Denis-Robichaud* and J. Dubuc, *Faculté de Médecine Vétérinaire, Université de Montréal*, *Saint-Hyacinthe, Québec, Canada*.

11:00 AM 298 **The effects of calving assistance on health, reproduction, and survival of Holstein dairy cows.**
M. Villettaz Robichaud*[1], D. L. Pearl[1], J. Rushen[2], A. M. de Passillé[2], S. M. Godden[3], S. J. LeBlanc[1], and D. B. Haley[1], [1]*University of Guelph*, *Guelph, ON, Canada*, [2]*Agriculture and Agri-Food Canada*, *Agassiz, BC, Canada*, [3]*University of Minnesota*, *St-Paul*.

11:15 AM 299 **Feeding behavior, milk yield, activity, and insulin sensitivity in lame dairy cows.**
S. Janssen[1], M. Heppelmann[1], U. Meyer[2], S. Daenicke[2], and J. Rehage*[1], [1]*Clinic for Cattle, University of Veterinary Medicine Hannover*, *Hannover, Germany*, [2]*Dept. Animal Nutrition, Friedrich-Loeffler-Institute*, *Braunschweig, Germany*.

11:30 AM 300 **Evaluation of milk leucocyte differential diagnosis for selective dry cow therapy .**
M. Hockett*[1] and R. Rodriguez[1,2], [1]*Advanced Animal Diagnostics*, *Morrisville, NC*, [2]*North Carolina State University*, *Raleigh*.

11:45 AM 301 **Development of a statistical model to predict metritis.**
G. U. Maier*[1], J. H. Bittar[1], C. A. Risco[1], N. Martinez[2], F. S. Lima[2], L. F. Greco[2], E. S. Ribeiro[2], J. E. Santos[2], M. M. Vercouteren[3], and K. N. Galvão[1], [1]*Department of Clinical Sciences, University of Florida*, *Gainesville*, [2]*Department of Animal Sciences, University of Florida*, *Gainesville*, [3]*Department of Animal Health, Utrecht University*, *Utrecht, the Netherlands*.

ARPAS Symposium:
Applied Nutrition of Ruminants—Current Status and Future Directions
Chair: Michael Galyean, Texas Tech University
Sagamore 1

9:30 AM 302 **Nutrient requirements: Derivation, validation, and application.**
M. L. Galyean*, *Texas Tech University*, *Lubbock*.

9:45 AM 303 **Applied nutrition of ruminants: Fermentation and digestive physiology.**
C. R. Krehbiel*, *Oklahoma State University*, *Stillwater*.

10:30 AM 304 **Carbohydrates and fat: Considerations as energy and more.**
M. B. Hall*[1] and M. L. Eastridge[2], [1]*US Dairy Forage Research Center, USDA-ARS*, *Madison, WI*, [2]*Department of Animal Science, The Ohio State University*, *Columbus*.

11:15 AM 305 **Applied protein nutrition of ruminants—Current status and future directions.**
F. N. Owens*[1], S. Qi[1], and D. A. Sapienza[2], [1]*DuPont Pioneer*, *Johnston, IA*, [2]*Sapienza Analytica*, *Slater, IA*.

12:00 PM 306 **Mineral and vitamin nutrition in ruminants.**
J. W. Spears*, *North Carolina State University*, *Raleigh*.

Breeding and Genetics: Applications and Methods in Animal Breeding—Dairy II
Chair: Alan Fahey, University College Dublin
105-106

9:30 AM 307 **Genetic correlations between feed intake and type traits in dairy cattle.**
G. Bilal*[1,2], R. I. Cue[2], and J. F. Hayes[2], [1]*Department of Livestock Production and Management, Faculty of Veterinary and Animal Sciences, Arid Agriculture University*, *Rawalpindi, Punjab, Pakistan*, [2]*Department of Animal Science, McGill University*, *Ste-Anne-de-Bellevue, Quebec, Canada*.

9:45 AM 308 **Genetic parameters for methane emissions predicted from milk mid-infrared spectra in dairy cows.**
P. B. Kandel*[1], M. L. Vanrobays[1], A. Vanlierde[2], F. Dehareng[2], E. Froidmont[2], P. Dardenne[2], E. Lewis[3], F. Buckley[3], M. Deighton[3], S. McParland[3], N. Gengler[1], and H. Soyeurt[1], [1]*University of Liege, Gembloux Agro-Bio Tech*, *Gembloux, Belgium*, [2]*Walloon Agricultural Research Center*, *Gembloux, Belgium*, [3]*Teagasc, Animal & Grassland Research and Innovation Center*, *Moorepark, Ireland*.

10:00 AM 309 **Genetics of body energy status of Holstein cows predicted by mid-infrared spectrometry.**
C. Bastin*[1], D. P. Berry[2], N. Gengler[1], and S. McParland[2], [1]*University of Liège, Gembloux Agro-Bio Tech, Animal Science Unit*, *Gembloux, Belgium*, [2]*Teagasc Moorepark Dairy Production Research Center*, *Fermoy, Co. Cork, Ireland*.

10:15 AM 310 **Heterogeneity across research stations in genetic variation and energy sink relationships for feed efficiency in lactating dairy cattle.**
R. J. Tempelman*[1], D. M. Spurlock[2], M. Coffey[3], R. F. Veerkamp[4], L. E. Armentano[5], K. A. Weigel[5], Y. deHaas[4], C. R. Staples[6], M. D. Hanigan[7], and M. J. Vandehaar[1], [1]*Michigan State University*, *East Lansing*, [2]*Iowa State University*, *Ames*, [3]*Scottish Agricultural College*, *Midlothian, UK*, [4]*Wageningen UR*, *Lelystad, the Netherlands*, [5]*University of Wisconsin*, *Madison*, [6]*University of Florida*, *Gainesville*, [7]*Virginia Tech*, *Blacksburg*.

10:30 AM 311 **Repeatability and genetic correlations of residual feed intake across stages of lactation in dairy cattle.**
G. Manafiazar*, T. McFadden, E. Okine, L. Goonewardene, and Z. Wang, *University of Alberta*, *Edmonton, Alberta, Canada*.

10:45 AM 313 **Effect of timed AI use on reproductive performance and culling rate in Wisconsin dairy herds.**
A. H. Souza*[1,2], P. A. Carvalho[1], R. D. Shaver[1], M. C. Wiltbank[1], and V. Cabrera[1], [1]*Department of Dairy Science, University of Wisconsin*, *Madison*, [2]*Ceva Sante Animale*, *Libourne, France*.

11:00 AM 312 **Individual and maternal heterosis in performance traits of Holstein and Jersey crosses with Sahiwal cattle.**
M. S. Khan*[1], F. Hassan[1], and S. A. Bhatti[2], [1]*Department of Animal Breeding and Genetics, University of Agriculture, Faisalabad, Pakistan*, [2]*Institute of Animal Nutrition and Feed Technology, University of Agriculture, Faisalabad, Pakistan*.

Breeding and Genetics: Genomic Selection in Beef
Chair: Ignacy Misztal, University of Georgia
101-102

9:30 AM 314 **Genomic divergence of indicine and taurine cattle identified through high-density SNP genotyping.**
L. R. Porto-Neto[2], T. S. Sonstegard*[1], G. Liu[1], D. Bickhart[3], C. Gondro[6], M. V. da Silva[4], Y. T. Utsunomiya[5], J. F. Garcia[5], and C. P. Van Tassell[1], [1]*USDA, ARS, Bovine Functional Genomics Laboratory*, *Beltsville, MD*, [2]*University of Queensland*, *Gatton, Queensland, Australia*, [3]*USDA, ARS, Animal Improvement Programs Laboratory*, *Beltsville, MD*, [4]*Embrapa Gado da Leite*, *Juiz da Fora, MG, Brazil*, [5]*UNESP*, *Aracatuba, SP, Brazil*, [6]*University of New England*, *Armidale, NSW, Australia*.

9:45 AM 315 **Accuracies of genomic predictions in Hereford using actual 50K, a 28K subset, or 28K imputed to 50K genotypes.**
M. Saatchi* and D. J. Garrick, *Iowa State University*, *Ames*.

10:00 AM 316 **Factors associated with recombination in beef cattle.**
Z.-Q. Weng*[1], M. Saatchi[1], R. Schnabel[2], J. Taylor[2], and D. Garrick[1], [1]*Iowa State University*, *Ames*, [2]*University of Missouri*, *Columbia*.

10:15 AM 318 **CAPN1 and GDF8 genetic marker effects on heifer performance, reproduction, and first calf performance traits in beef cattle.**
R. G. Tait*, R. A. Cushman, T. P. L. Smith, H. C. Freetly, and G. L. Bennett, *USDA-ARS, U.S. Meat Animal Research Center*, *Clay Center, NE*.

10:30 AM 317 **Genetic effects of GDF8 and CAPN1 for carcass and meat traits.**
G. L. Bennett*[1], R. G. Tait[1], S. D. Shackelford[1], T. L. Wheeler[1], D. A. King[1], E. Casas[1,2], and T. P. L. Smith[1], [1]*USDA, ARS, Roman L. Hruska U.S. Meat Animal Research Center*, *Clay Center, NE*, [2]*USDA, ARS, National Animal Disease Center*, *Ames, IA*.

10:45 AM 319 **Genome-wide association study of reproductive efficiency in female cattle.**
T. G. McDaneld*[1], L. A. Kuehn[1], M. G. Thomas[2], W. M. Snelling[1], E. J. Pollak[1], T. P. L. Smith[1], and J. W. Keele[1], [1]*USDA, ARS, U.S. Meat Animal Research Center*, *Clay Center, NE*, [2]*Colorado State University*, *Fort Collins*.

11:00 AM 320 **Molecular mechanism of neuropeptide Y affected by progesterone and estradiol on prepubertal Nellore heifers.**
J. Diniz-Magalhaes*[1], M. Maturana-Filho[1], J. L. M. Vasconcelos[2], and L. F. P. Silva[1], [1]*Universidade de Sao Paulo*, *Pirassununga, Sao Paulo, Brazil*, [2]*Universidade Estadual Paulista Julio de Mesquita Filho*, *Botucatu, Sao Paulo, Brazil*.

11:15 AM 321 **Model comparison in genome-wide association study of fertility traits of first service conception and heifer pregnancy in Brangus cattle.**
S. O. Peters*[1,2], K. Kizilkaya[3,4], D. J. Garrick[3], R. L. Fernando[3], J. M. Reecy[3], I. G. Imumorin[1], G. A. Silver[5], and M. G. Thomas[5,6], [1]*Cornell University*, *Ithaca, NY*, [2]*Berry College*, *Mt Berry, GA*, [3]*Iowa State University*, *Ames*, [4]*Adnan Menderes University*, *Aydin, Turkey*, [5]*New Mexico State University*, *Las Cruces*, [6]*Colorado State University*, *Fort Collins*.

11:30 AM 322 **Discovery and validation of single nucleotide polymorphisms with phenotypic associations in beef cattle grazing endophyte-infected tall fescue.**
B. Bastin*[1], C. Bagley[3], B. Campbell[1,2], A. Houser[3], C. Kojima[1], A. Saxton[1], J. Waller[1], and L. Wojakiewicz[1], [1]*University of Tennessee*, *Knoxville*, [2]*Virginia Tech University*, *Blacksburg*, [3]*Tennessee Tech University*, *Cookeville*.

CDGKV Inaugural Genetics Symposium
Chair: Ronnie Green, University of Nebraska
Sponsor: ASAS Foundation CDGKV Appreciation Club
Sagamore 7

The ASAS "CDGKV" Appreciation Club was recently established to provide funding for a cutting-edge genetics symposium at JAM. In the inaugural symposium, five scientists who were mentored by the honorees will discuss their mentorship styles and the long-term effects this group has had on the careers of their "progeny." Please join Drs. Cundiff, Notter, Green, Kuehn, and Van Tassell as they honor the "CDGKV" team and their impact on genetics research in animal science.

9:30 AM Larry Cundiff, *USDA ARS (retired), Leader of the Germ Plasm Evaluation Project, Roman L. Hruska U.S. Meat Animal Research Center, Clay Center, NE.*

10:00 AM Dave Notter, *Professor, Animal Breeding and Genetics, Virginia Tech, Blacksburg.*

10:30 AM Ronnie Green, *Vice President, University of Nebraska, Lincoln.*

11:00 AM Larry Kuehn, *Research Geneticist, Roman L. Hruska U.S. Meat Animal Research Center, Clay Center, NE.*

11:30 AM Curt Van Tassell, *Research Geneticist, USDA-ARS, Beltsville, MD.*

Ruminant Nutrition: Dairy: Intake, Grazing, and Supplementation
Chair: Guillermo Scaglia, LSU AgCenter
Sagamore 6

9:30 AM 331 **Residual feed intake is repeatable when high and low starch diets are fed to lactating Holstein dairy cows.**
S. E. Burczynski*, J. S. Liesman, R. J. Tempelman, J. C. Ploetz, M. S. Allen, A. L. Lock, and M. J. VandeHaar, *Michigan State University*, *East Lansing*.

9:45 AM 332 **The effect of offering differing combinations of forages and cereals on feed intake, total diet composition and the growth and development rates of dairy heifers.**
Z. Ullah*[1], J. K. Margerison[1], D. Simcock[2], and N. Lopez Villolobos[3], [1]*Institue of Agriculture and Environment, Massey University*, *Palmerston North, New Zealand*, [2]*Institute of Food Nutrition and Human Health, Massey University*, *Palmerston North, New Zealand*, [3]*Institute of Veterinary and Biological Sciences, Massey University*, *Palmerston North, New Zealand*.

10:00 AM 333 **Determination of the optimum dietary forage concentration when using canola meal as a primary protein source in lactating dairy cow diets.**
A. M. Schuler*, K. F. Kalscheur, D. P. Casper, and J. L. Anderson, *South Dakota State University*, *Brookings*.

10:15 AM 334 **Moment and allocation of corn silage on dry matter intake and milk production of grazing dairy cows.**
D. A. Mattiauda*[1], M. Carriquiry[1], S. Tamminga[2], F. Elizondo[1], and P. Chilibroste[1], [1]*Departamento de Produccion y Pasturas, Facultad de Agronomia, UdelaR*, *Paysandu, Uruguay*, [2]*Department of Animal Science, Wageningen University*, *Wageningen, the Netherlands*.

10:30 AM 335 **Predicting dry matter intake of Holstein calves.**
J. C. M. Lima[1], J. P. P. Rodrigues[1], M. I. Marcondes*[1], M. M. Campos[2], T. E. Silva[1], A. S. Treece[1], N. C. S. Gonzaga[1], and A. F. W. Oliveira[1], [1]*Universidade Federal de Viçosa*, *Viçosa, Minas Gerais, Brazil*, [2]*Embrapa Gado de Leite*, *Juiz de Fora, Minas Gerais, Brazil*.

10:45 AM 336 **Abrupt changes in forage dry matter of one to three days affect intake and milk yield in lactating dairy cows.**
J. Boyd*[1] and D. R. Mertens[2], [1]*US Dairy Forage Center*, *Madison, WI*, [2]*Mertens Innovation & Research LLC*, *Belleville, WI*.

11:00 AM 337 **Dry matter intake in crossbred dairy calves.**
A. L. Silva[1], M. I. Marcondes*[1], M. M. Campos[2], T. E. Silva[1], A. S. Trece[1], J. S. A. A. Santos[1], S. G. S. Moraes[1], and J. P. P. Rodrigues[1], [1]*Universidade Federal de Viçosa*, *Viçosa, Minas Gerais, Brazil*, [2]*EMBRAPA Gado de Leite*, *Juiz de Fora, Minas Gerais, Brazil*.

11:15 AM 338 **The study of ruminal degradation of canola meal in dairy cows.**
Y. J. Tian[1,2], Y. Zeng[1,2], Z. J. Cao[1,2], and S. L. Li*[1,2], [1]*College of Animal Science and Technology, China Agricultural University*, *Beijing, China*, [2]*State Key Laboratory of Animal Nutrition*, *Beijing, China*.

11:30 AM 339 **Meta-analysis: Effect of corn silage hybrid type on intake, digestion, and milk production by dairy cows.**
L. F. Ferraretto* and R. D. Shaver, *University of Wisconsin–Madison*, *Madison*.

11:45 AM 340 **Responses of late lactation cows to forage substitutes in diets supplemented with byproducts.**
M. B. Hall*[1] and L. E. Chase[2], [1]*US Dairy Forage Research Center, USDA-ARS*, *Madison, WI*, [2]*Department of Animal Science, Cornell University*, *Ithaca, NY*.

12:00 PM 341 **Performance of dairy cows as affected by dietary starch level and supplementation with monensin during early lactation.**
M. M. McCarthy*[1], T. Yasui[1], C. M. Ryan[1], G. D. Mechor[2], and T. R. Overton[1], [1]*Cornell University*, *Ithaca, NY*, [2]*Elanco Animal Health*, *Greenfield, IN*.

12:15 PM 342 **Effects of alfalfa hay particle size in diets supplemented with unsaturated fat: Feeding behavior and performance of dairy cows.**
A. Kahyani[1], G. R. Ghorbani[1], M. Khorvash[1], S. M. Nasrollahi[1], K. A. Beauchemin[2], and S. Ding*[2], [1]*Isfahan University of Technology, Department of Animal Sciences*, *Isfahan, Iran*, [2]*Lethbridge*, *Agriculture and Agri-Food Canada, Research Centre, Lethbridge, AB, Canada*.

Dairy Foods Symposium: Dietary Influence on Milk Synthesis of Health-Promoting Components in Bovine and Human Milk
Chair: Susan Duncan, Virginia Tech
Sponsor: Berg+Schmidt America LLC
122-123

9:30 AM **Introduction**
Susan Duncan.

9:35 AM 343 **Hot topics in human milk composition.**
M. K. McGuire*[1], K. Hunt[2], J. Williams[2], and M. A. McGuire[2], [1]*Washington State University*, *Pullman*, [2]*University of Idaho*, *Moscow*.

10:05 AM 344 **Increasing n-3 fatty acids in milk through pre- and post-harvest approaches: Challenges and opportunities.**
A. L. Lock*[1] and D. E. Bauman[2], [1]*Michigan State University*, *East Lansing*, [2]*Cornell University*, *Ithaca, NY*.

10:35 AM 345 **Influence of dietary pro- and prebiotics on the bovine rumen microbiome and milk synthesis.**
K. Griswold*[1], K. Harvatine[2], and T. R. Callaway[3], [1]*Kemin Industries Inc.*, *Des Moines, IA*, [2]*The Pennsylvania State University*, *University Park*, [3]*USDA-ARS*, *College Station, TX*.

11:05 AM 346 **Functional components in milk: Effects on processed dairy product quality and human health.**
S. Duncan*, *Virginia Tech*, *Blacksburg*.

11:35 AM **Panel discussion**

Extension Education
Chair: Todd Bilby, Merck Animal Health
110

9:30 AM 347 **The Missouri Show-Me-Select Replacement Heifer Program: Tracking reproductive performance of heifers and AI sires.**
J. M. Thomas*, J. M. Nash, N. T. Martin, B. D. Mayhan, M. F. Smith, S. E. Poock, and D. J. Patterson, *University of Missouri*, *Columbia*.

9:45 AM 348 **The Missouri Show-Me-Select Replacement Heifer Program: Tracking sales and economic impact.**
J. M. Thomas*, J. M. Nash, N. T. Martin, B. D. Mayhan, D. S. Brown, M. F. Smith, S. E. Poock, and D. J. Patterson, *University of Missouri*, *Columbia*.

10:00 AM 349 **Investment analysis of automated estrus detection technologies.**
K. A. Dolecheck*, G. Heersche, and J. M. Bewley, *University of Kentucky*, *Lexington*.

10:15 AM 350 **Development of a smartphone application tool to assess and reduce heat stress in livestock.**
B. Scharf*[1], P. A. Eichen[1], J. S. Travlos[2], and D. E. Spiers[1], [1]*Division of Animal Science, University of Missouri*, *Columbia*, [2]*Agricultural Electronic Bulletin Board, University of Missouri*, *Columbia*.

10:30 AM 351 **Estimation of U.S. dairy disease costs through stochastic simulation.**
D. Liang*[1], L. M. Arnold[1], M. M. Schutz[2], and J. M. Bewley[1], [1]*University of Kentucky*, *Lexington*, [2]*Purdue University*, *West Lafayette, IN*.

10:45 AM 352 **Quality Beef by the Numbers: Linking economic incentives with technology adoption.**
D. J. Patterson*, J. M. Thomas, M. F. Smith, and D. S. Brown, *University of Missouri*, *Columbia*.

11:00 AM 353 **Determining strategies for youth livestock exhibitors to be effective ambassadors for animal agriculture.**
K. Lancaster*, C. Brady, and M. Tucker, *Purdue University*, *West Lafayette, IN*.

11:15 AM 354 **Youth motivation to participate in animal-related career development events.**
C. Brady*, A. Fisher, and N. Knobloch, *Purdue University*, *West Lafayette, IN*.

Forages and Pastures Symposium: Forage Systems Adaptable to Dry Conditions
Chair: Steve Washburn, North Carolina State University
120-121

9:30 AM 355 **Between droughts and floods—Climatic effects on forage and livestock production systems.**
D. Niyogi*, *Purdue University*, *West Lafayette, IN*.

10:10 AM 356 **Foraging through the dry times: Novel approaches to improving drought tolerance in forage crops.**
M. J. Oliver*[1], A. Yobi[1], and J. C. Cushman[2], [1]*USDA-ARS-PGRU*, *Columbia, MO*, [2]*University of Nevada*, *Reno*.

10:50 AM **Break**

10:50 AM 357 **Field experience with drought-tolerant maize.**
S. Soderlund*, F. N. Owens, and C. Fagan, *DuPont Pioneer*, *LaSalle, CO*.

11:30 AM 358 **Using mixtures of summer forages for improved forage yields in dry conditions.**
C. Teutsch*, *Virginia Tech's Southern Piedmont AREC*, *Blackstone*.

Meat Science and Muscle Biology Symposium: Implants, Muscle Development and Meat Quality
Chair: Min Du, Washington State University
Sagamore 2

9:30 AM 359 **Cattle implants: Past and future.**
S. K. Duckett* and S. L. Pratt, *Clemson University*, *Clemson, SC*.

10:15 AM 360 **Implant and beta agonists affect beef palatability.**
M. F. Miller* and A. J. Garmyn, *Texas Tech University*, *Lubbock*.

11:00 AM 361 **Mechanisms of growth hormone and IGF-I stimulation of skeletal muscle growth in cattle.**
H. Jiang* and X. Ge, *Virginia Polytechnic Institute and State University*, *Blacksburg*.

11:45 AM 362 **Role of satellite cells in anabolic steroid-enhanced muscle growth in feedlot steers.**
W. R. Dayton* and M. E. White, *University of Minnesota*, *St. Paul*.

Nonruminant Nutrition: Enzymes
Chair: Xingen Lei, Cornell University
Wabash Ballroom 1

9:30 AM 363 **Apparent and standardized ileal amino acids digestibility of wheat-distillers dried grains with solubles without or with exogenous protease for broilers and turkeys.**
A. Adebiyi* and O. Olukosi, *Scottish Rural University College*, *Edinburgh, United Kingdom*.

9:45 AM 364 **Effect of a β-mannanase and a β-glucanase combined with a native β-mannanase in diets containing corn-soybean meal-dried distillers grains with solubles and soybean hulls on nursery pig performance.**
M. Meyers[1], D. Kelly[1], B. Richert[1], J. Ferrel*[2], and D. Anderson[2], [1]*Purdue University*, *West Lafayette, IN*, [2]*Elanco Animal Health*, *Greenfield, IN*.

10:00 AM 365 **Effects of dietary fiber and a xylanase and β-glucanase blend on performance and jejunal electrophysiological properties and transport associated gene expression in growing pigs.**
A. K. Agyekum*[1], J. S. Sands[1], A. Regassa[1], E. Kiarie[3], D. Weihrauch[2], W. K. Kim[1], and C. M. Nyachoti[1], [1]*Department of Animal Science, University of Manitoba*, *Winnipeg, Manitoba, Canada*, [2]*Department of Biological Sciences, University of Manitoba*, *Winnipeg, Manitoba, Canada*, [3]*DuPont Industrial Biosciences*, *Marlborough, Wiltshire, UK*.

10:15 AM 366 **Effect of xylanase and β-glucanase on performance, nutrients and energy digestibility and retentions and plasma metabolites in nursery pigs fed wheat-barley diets.**
E. Kiarie*[1], A. Péron[1], A. Owusu-Asiedu[1], P. H. Simmins[1], and C. M. Nyachoti[2], [1]*Dupont Industrial Biosciences-Danisco Animal Nutrition*, *Marlborough, Wiltshire, UK*, [2]*University of Manitoba*, *Winnipeg, MB, Canada*.

10:30 AM 367 **The effect of a combination phytase and carbohydrolase enzyme on performance and bone mineralization of pigs from 6 weeks to slaughter at 105 kg.**
P. G. Lawlor[1], P. Cozannet[2], D. P. Preveraud*[2], A. Preynat[2], W. F. Ryan[1], and P. B. Lynch[1], [1]*Pig Production Development Unit, Teagasc*, *Moorepark, Fermoy, Co Cork, Ireland*, [2]*Adisseo France S.A.S. CERN*, *Commentry, France*.

10:45 AM 368 **The efficacy of graded levels of a new 6-phytase from *Buttiauxella* spp. expressed in *Trichoderma reesei* on ileal amino acid digestibility in pigs fed a corn-soybean meal-wheat midds-corn DDGs-based diet.**
S. A. Adedokun*[1], A. Owusu-Asiedu[2], P. Plumstead[2], and O. Adeola[1], [1]*Department of Animal Sciences, Purdue University*, *West Lafayette, IN*, [2]*DuPont Industrial Biosciences-Danisco Animal Nutrition*, *Marlborough, UK*.

11:00 AM 369 **Effect of enzyme supplementation on the net energy content of dry extruded-expelled soybean meal fed to growing pigs.**
D. E. Velayudhan*, J. M. Heo, and C. M. Nyachoti, *University of Manitoba*, *Winnipeg, Manitoba, Canada*.

Physiology and Endocrinology: Nutrition and Immunology
Chair: Kyle Caires, Berry College
108

9:30 AM 370 **Assessment of oxidative stress biomarkers in exhaled breath condensate and blood of dairy heifer calves from birth to weaning.**
R. Ranade[1], S. Talukder[1], G. Muscatello[1], and P. Celi*[1,2], [1]*Faculty of Veterinary Science, The University of Sydney*, *Sydney, NSW, Australia*, [2]*Melbourne School of Land and Environment, The University of Melbourne*, *Parkville, VIC, Australia*.

9:45 AM 371 **Prenatal transportation alters the metabolic response of Brahman bull calves exposed to a lipopolysaccharide challenge.**
J. A. Carroll*[1], N. C. Burdick Sanchez[1], M. C. Roberts[2,4], D. M. Price[2,4], B. P. Littlejohn[2,4], R. C. Vann[3], T. H. Welsh[4], H. D. Hughes[5], J. T. Richeson[5], and R. D. Randel[2], [1]*Livestock Issues Research Unit, USDA-ARS*, *Lubbock, TX*, [2]*Texas A&M AgriLife Research, Texas A&M University System*, *Overton*, [3]*MAFES-Brown Loam, Mississippi State University*, *Raymond*, [4]*Texas A&M AgriLife Research, Texas A&M University System*, *College Station*, [5]*Department of Agricultural Sciences, West Texas A&M University*, *Canyon*.

10:00 AM 372 **Effects of an intramammary lipopolysaccharide challenge on metabolism and mammary immune response in hyperketotic dairy cows.**
M. Zarrin*[1,2], H. A. van Dorland[1], O. Wellnitz[1], and R. M. Bruckmaier[1], [1]*Veterinary Physiology, Vetsuisse Faculty, University of Bern*, *Bern, Bern, Switzerland*, [2]*Department of Animal Science, Yasouj University*, *Yasouj, Iran*, [3]*Graduate School for Cellular and Biomedical Sciences, University of Bern*, *Bern, Bern, Switzerland*.

10:15 AM 373 **Effects of supplemental amino acids and chromium propionate on metabolism and neutrophil function in peak lactation dairy cows.**
K. Yuan*, C. F. Vargas, L. K. Mamedova, E. C. Titgemeyer, and B. J. Bradford, *Kansas State University*, *Manhattan*.

10:30 AM 374 **Polymorphonuclear leukocyte transcriptomics in transition Holstein cows fed two levels of dietary energy prepartum.**
M. J. Khan*, D. E. Graugnard, S. L. Rodriguez-Zas, and J. J. Loor, *University of Illinois*, *Urbana*.

10:45 AM 375 **Efficacy of ampicillin trihydrate for therapy of metritis in lactating dairy cows.**
F. S. Lima*, A. Vieira-Neto, G. S. F. M. Vasconcellos, R. S. Bisinotto, N. Martinez, L. F. Greco, L. D. P. Sinedino, R. D. Mingoti, K. N. Galvão, C. A. Risco, W. W. Thatcher, and J. E. P. Santos, *University of Florida*, *Gainesville*.

11:00 AM 376 **Use of digital infrared thermography (IRT) and oxidative stress (OS) biomarkers as a diagnostic tool to diagnose interdigital dermatitis in sheep.**
S. Talukder*[1] and P. Celi[1,2], [1]*Faculty of Veterinary Science, The University of Sydney*, *Narellan, NSW, Australia*, [2]*Melbourne School of Land and Environment, The University of Melbourne*, *Parkville, VIC, Australia*.

11:15 AM 377 **Effect of cattle temperament as determined by exit velocity on lung respiratory lesions and liver disease.**
T. B. Schmidt*[1], J. W. Dailey[2], J. W. Waggoner[3], A. H. Voyles[4], C. D. Alexander[4], J. O. Buntyn[1], K. I. Domenech[1], M. Schneider[4], and J. A. Carroll[2], [1]*University of Nebraska-Lincoln*, *Lincoln*, [2]*USDA-ARS*, *Lubbock, TX*, [3]*Kansas State University*, *Garden City, KS*, [4]*Garden City Community College*, *Garden City, KS*.

11:30 AM 378 **Relationship between cattle temperament as determined by exit velocity and carcass merit in beef cattle.**
T. B. Schmidt*[1], J. W. Dailey[2], J. W. Waggoner[3], A. H. Voyles[4], C. D. Alexander[4], J. O. Buntyn[1], K. I. Domenech[1], M. Schneider[4], and J. A. Carroll[2], [1]*University of Nebraska-Lincoln*, *Lincoln*, [2]*USDA-ARS*, *Lubbock, TX*, [3]*Kansas State University*, *Garden City, KS*, [4]*Garden City Community College*, *Garden City, KS*.

Production, Management and the Environment: Management and Methods I
Chair: Shane Gadberry, University of Arkansas
107

9:30 AM 379 **Single nucleotide polymorphisms of lactate dehydrogenase B and body condition effects on beef cow productivity.**
T. L. Devine*, O. T. Alaamri, D. Philipp, M. L. Looper, and C. F. Rosenkrans, *Division of Agriculture, Department of Animal Science, University of Arkansas*, *Fayetteville*.

9:45 AM 380 **Production traits of spring- and fall-calving Senepol cows in the tropics.**
R. W. Godfrey* and A. J. Weis, *University of the Virgin Islands*, *St Croix, Virgin Islands*.

10:00 AM 381 **Evaluation of hair coat, tick burden and production traits of Senepol cows in the tropics.**
R. W. Godfrey* and A. J. Weis, *University of the Virgin Islands*, *St Croix, Virgin Islands*.

10:15 AM 382 **Evaluation of hair coat, tick burden and production traits of Senepol calves in the tropics.**
R. W. Godfrey* and A. J. Weis, *University of the Virgin Islands*, *St Croix, Virgin Islands*.

10:30 AM 384 **Effects of conventional and natural production programs on winter annual pasture and feedlot performance.**
C. L. Maxwell*[1], B. K. Wilson[1], B. T. Johnson[1], B. C. Bernhard[1], C. F. O'Neill[1], D. L. VanOverbeke[1], D. L. Step[3], E. A. DeVuyst[2], C. J. Richards[1], and C. R. Krehbiel[1], [1]*Department of Animal Science, Oklahoma State University*, *Stillwater*, [2]*Department of Agriculture Economics, Oklahoma State University*, *Stillwater*, [3]*Department of Veterinary Clinical Sciences, Oklahoma State University*, *Stillwater*.

10:45 AM **Break**

11:00 AM 383 **Effects of conventional and natural production programs on carcass characteristics and retail meat attributes.**
C. L. Maxwell*[1], B. K. Wilson[1], B. T. Johnson[1], B. C. Bernhard[1], C. F. O'Neill[1], K. J. Winn[1], K. R. McCullough[1], T. A. Harlan[1], M. M. Kinna[1], B. D. Bloomberg[1], D. L. VanOverbeke[1], C. J. Richards[1], D. L. Step[3], E. A. DeVuyst[2], C. R. Krehbiel[1], [1]*Department of Animal Science, Oklahoma State University*, *Stillwater*, [2]*Department of Agriculture Economics, Oklahoma State University*, *Stillwater*, [3]*Department of Veterinary Clinical Sciences, Oklahoma State University*, *Stillwater*.

11:15 AM 385 **Effects of suckling restriction, flushing and body condition score at calving on metabolic and endocrine profiles of primiparous beef cows grazing native pasture .**
P. Soca*[1], M. Carriquiry[2], M. Claramunt[3], G. Ruprechter[4], and A. Meikle[4], [1]*Departament of Animal Production and Pastures, EEMAC, School of Agronomy, Universidad de la Repblica*, *Paysandu, Uruguay*, [2]*Department of Animal Production and Pastures, School of Agronomy, Universidad de La Republica, Uruguay*, *Montevideo, Uruguay*, [3]*Department of Animal Production, School of Veterinary, Universidad de La Republica, Uruguay*, *Paysandu, Uruguay*, [4]*Laboratory of Nuclear Techniques, School of Veterinary, Universidad de La Republica, Uruguay*, *Montevideo, Uruguay*.

11:30 AM 386 **Effects of metabolic imprinting on growth performance of early-weaned beef steers.**
P. Moriel*[1], S. E. Johnson[3], M. Hersom[2], M. McCann[3], D. E. Gerrard[3], P. G. Martins[1], J. M. B. Vendramini[1], and J. D. Arthington[1], [1]*University of Florida*, *Ona*, [2]*University of Florida*, *Gainesville*, [3]*Virginia Tech University*, *Blacksburg*.

11:45 AM 387 **Effects of metabolic imprinting on growth performance of early-weaned beef heifers.**
P. Moriel*[1], S. E. Johnson[3], M. Hersom[2], P. G. Martins[1], J. M. B. Vendramini[1], and J. D. Arthington[1], [1]*University of Florida*, *Ona*, [2]*University of Florida*, *Gainesville*, [3]*Virginia Tech University*, *Blackburg*.

12:00 PM 388 **Effect of in utero heat stress on insulin response of calves after weaning.**
S. Tao*, A. P. A. Monteiro, M. J. Hayen, and G. E. Dahl, *University of Florida*, *Gainesville*.

Teaching/Undergraduate and Graduate Education: New Approaches to Animal Sciences Curriculum
Chair: Heather A. Tucker, Miner Agricultural Research Institute
104

9:30 AM 389 **Integrated Program for Reducing Bovine Respiratory Disease Complex (BRDC) in Cattle, Coordinated Agricultural Project (CAP): Translation of research into teaching programs in 2013.**
M. G. Thomas*[1], G. R. Hagevoort[2], T. T. Ross[2], R. M. Enns[1], H. Van Campen[1], A. L. Van Eenennaam[3], H. L. Neibergs[4], C. Chase[6], and J. E. Womack[5], [1]*Colorado State University*, *Fort Collins*, [2]*New Mexico State University*, *Las Cruces*, [3]*University of California, Davis*, *Davis*, [4]*Washington State University*, *Pullman*, [5]*Texas A&M University*, *College Station*, [6]*South Dakota State University*, *Brookings*.

9:45 AM 390 **Predicting instructor quality in undergraduate animal science courses using the IDEA survey.**
M. J. Anderson, K. J. Stutts, M. M. Beverly, and S. F. Kelley*, *Sam Houston State University*, *Huntsville, TX*.

10:00 AM 391 **Developing an undergraduate animal science beef cattle industry tour course to facilitate experiential learning.**
J. L. Wahrmund* and A. J. Cooper, *Department of Agricultural Sciences, Texas A&M University-Commerce*, *Commerce*.

10:15 AM 392 **Using case studies to provide a global perspective on reproductive management decision-making.**
K. G. Pohler*[1], A. Ball[2], and M. F. Smith[1], [1]*Division of Animal Sciences, University of Missouri*, *Columbia*, [2]*Division of Applied Social Sciences, University of Missouri*, *Columbia*.

10:30 AM 393 **Elements of mastitis unit integrated through blended learning.**
C. A. Allen* and W. L. Hurley, *University of Illinois*, *Urbana*.

10:45 AM 394 **Alternative class exercise for information retention and retrieving course materials.**
D. Masser[1], J. Falk[1], and A. Ahmadzadeh*[2], [1]*Dept. Ag Ed. & 4-H Youth Develop, University of Idaho*, *Moscow*, [2]*Dept. Animal & Vet. Sci., University of Idaho*, *Moscow*.

11:00 AM 395 **The captive wild animal management minor at the University of Missouri—A partnership between Animal Sciences and Fisheries and Wildlife Sciences.**
T. A. Strauch*, M. R. Ryan, and J. N. Spain, *University of Missouri*.

11:15 AM 396 **Developing a curriculum addressing legal issues in animal agriculture.**
E. Rumley*, *Animal Science, University of Arkansas*, *Fayetteville*.

Graduate Student Competition
ADSA-ASAS Northeast Section Graduate Student Competition
Chair: Kristen E. Govoni, University of Connecticut
103

11:00 AM 397 **The evaluation of a flavor enhancer on intake and production of high producing lactating dairy cows.**
C. Merrill*[1], M. C. Windle[1], W. F. Souza[2], I. R. Ipharraguerre[3], and L. Kung[1], [1]*University of Delaware*, *Newark*, [2]*Universidade Federal de Viçosa*, *Vicosa, Minas Gerais, Brazil*, [3]*Lucta S.A*, *Motornes de Valles, Spain*.

11:15 AM 398 **Poor maternal nutrition affects postnatal growth and development of lambs.**
K. N. Peck*, M. L. Hoffman, M. E. Forella, A. R. Fox, K. E. Govoni, and S. A. Zinn, *Department of Animal Science, University of Connecticut*, *Storrs*.

11:30 AM 399 **Poor maternal nutrition affects muscle fiber size in the semitendinosus muscle of lambs.**
J. S. Raja*, M. L. Hoffman, K. E. Govoni, K. Peck, S. A. Zinn, and S. A. Reed, *University of Connecticut*, *Storrs*.

11:45 AM 400 **Poor maternal nutrition during gestation alters satellite cell number and mRNA expression of genes involved in myogenesis and the somatotropic axis in the muscle of lambs.**
M. L. Hoffman*, R. C. Forbes, S. A. Reed, K. N. Peck, S. A. Zinn, and K. E. Govoni, *University of Connecticut*, *Storrs*.

Nonruminant Nutrition: Feed Additives
Chair: Brooke Humphrey, Cargill
Wabash Ballroom 1

11:30 AM 401 **Pre- and postweaning flavor exposure affects piglet performance after weaning.**
D. Solà-Oriol[1], L. Mesas[2], A. Ortiz*[2], J. J. Mallo[2], and J. F. Pérez[1], [1]*SNiBA. Departament de Ciència Animal i dels Aliments, Universitat Autònoma de Barcelona*, *Bellaterra, Spain*, [2]*Norel*, *Madrid, Spain*.

11:45 AM 402 **Effects of a dietary blend of antioxidants on carcass characteristics and meat quality in pigs fed a high oxidants diet.**
T. Lu*[1], A. F. Harper[1], J. Zhao[2], J. M. Scheffler[1], R. A. Dalloul[1], and M. J. Estienne[1], [1]*Virginia Tech*, *Blacksburg*, [2]*Novus International Inc.*, *St. Charles, MO*.

12:00 PM 403 **Efficacy of a purified enzyme to detoxify fumonisins in swine diets.**
U. Hofstetter*[1], K. Naehrer[1], and C. A. Mallmann[2], [1]*Biomin Holding GmbH*, *Herzogenburg, Austria*, [2]*Universidade Federal de Santa Maria*, *Santa Maria, Brazil*.

12:15 PM 404 **Effect of dietary propolis supplementation on growth performance, blood profiles, relative organ weight, and meat quality in broilers.**
H. L. Li*, H. C. Jang, and I. H. Kim, *Department of Animal Resource & Science, Dankook University*, *Cheonan, Choognam, South Korea*.

ADSA Foundation Scholar Lectures
Chair: Kenneth Kalscheur, South Dakota State University
Wabash Ballroom 3

9:30 AM **Introduction to ADSA Foundation Scholar Award in Dairy Foods.**
Kenneth Kalscheur.

9:40 AM **Manipulation of protein structures to design dairy ingredients and products with tailored functionality and nutrition.**
H. Patel*, *Dairy Science Department, South Dakota State University, Brookings.*

10:25 AM **Introduction to ADSA Foundation Scholar Award in Production.**
Kenneth Kalscheur.

10:35 AM **Immune modulation to enhance development and disease resistance.**
I. Kanevsky-Mullarky*, *Department of Dairy Science, Virginia Tech, Blacksburg.*

ADSA Multidisciplinary and International Leadership Keynote (MILK) Symposium: Colostrum Quality, Analytical Methods and Processing Challenges
Chairs: Milena Corredig, University of Guelph, and Eric Scholljegerdes, NMSU
101-102

2:00 PM 405 **The role of colostrum components on neonatal development and growth with emphasis on the calf.**
M. E. Van Amburgh*[1], H. M. Hammon[2], and F. Soberon[3], [1]*Cornell University*, *Ithaca, NY*, [2]*Leibniz Institute for Farm Animal Biology*, *Dummerstorf, Germany*, [3]*Shur-Gain USA, Nutreco Canada Inc.*, *Guelph, ON, Canada*.

2:30 PM 406 **Colostrum: Bioactive components and its role in transmitting maternal signals that regulate neonatal health and development.**
T. B. McFadden*, *University of Missouri*, *Columbia*.

3:00 PM 407 **Colostrum and human health.**
D. Haines*[1,2], W. Duff[3], and P. Chilibeck[3], [1]*Department of Veterinary Microbiology, The Western College of Veterinary Medicine, The University of Saskatchewan*, *Saskatchewan, Canada*, [2]*The Saskatoon Colostrum Co. Ltd*, *Saskatoon, Canada*, [3]*College of Kinesiology, University of Saskatchewan*, *Saskatchewan, Canada*.

3:30 PM 408 **Improving the value of colostrum through application of novel processing technology.**
H. Patel*[1] and T. Carroll[2], [1]*Dairy Science Department, South Dakota State University*, *Brookings*, [2]*Fonterra Research Center*, *Palmerston North, New Zealand*.

4:00 PM 409 **Bovine colostrum as a source of milk growth factors: Technological aspects.**
Y. Pouliot* and S. F. Gauthier, *STELA Dairy Research Center, Institute of Nutrition and Functional Foods (INAF), Université Laval*, *Québec, QC, Canada*.

Animal Behavior and Well-Being II
Chair: Cassandra Tucker, University of California, Davis
109

2:00 PM 410 **Group size alters postures, and maintenance, oral, locomotor, and social behaviors of veal calves.**
E. M. Abdelfattah*[2], M. M. Schutz[3], D. C. Lay[1], J. N. Marchant-Forde[1], and S. D. Eicher[1], [1]*USDA-ARS*, *W. Lafayette, IN*, [2]*Banha University*, *Moshtohor, Qalyubia, Egypt*, [3]*Purdue University*, *W. Lafayette, IN*.

2:15 PM 411 **Efficacy of radiant barrier covers in reducing heat in polyethylene calf hutches.**
W. R. Binion* and T. H. Friend, *Dept. of Animal Science, Texas A&M University*, *College Station*.

2:30 PM 412 **Adoption of practices to improve cow comfort on dairy farms.**
C. Nash*[1], D. Kelton[1], D. Pellerin[2], T. DeVries[3], A. M. de Passillé[4], J. Rushen[4], G. Charlton[4], E. Vasseur[5], and D. Haley[1], [1]*University University of Guelph*, *Guelph, ON, Canada*, [2]*Université Laval*, *Québec, QC, Canada*, [3]*University of Guelph – Kemptville Campus*, *Kemptville, ON, Canada*, [4]*Agriculture and Agri-Food Canada*, *Agassiz, BC, Canada*, [5]*University of Guelph – Alfred Campus*, *Alfred, ON, Canada*.

2:45 PM 413 **Effect of stocking density on lying behavior of dairy cows.**
K. M. Lobeck*, M. I. Endres, A. R. Dresch, and R. C. Chebel, *University of Minnesota*, *St. Paul*.

3:00 PM 414 **The effect of stall surface compressibility on dairy cow behavior.**
A. C. Main*[1], C. B. Tucker[2], N. B. Cook[3], T. F. Duffield[1], and D. B. Haley[1], [1]*University of Guelph*, *Guelph, ON, Canada*, [2]*University of California*, *Davis*, [3]*University of Wisconsin*, *Madison*.

3:15 PM 415 **Effect of parity on daily activity patterns prior to parturition in Holstein dairy cows.**
M. Titler*, M. G. Maquivar, S. Bas, E. Gordon, P. J. Rajala-Schultz, K. McCullough, and G. M. Schuenemann, *Department of Veterinary Preventive Medicine, The Ohio State University*, *Columbus, OH*.

3:30 PM 416 **Effect of cow genotype and milk production system on cow behavioral activities.**
A. I. Roca-Fernández*[1], C. P. Ferris[2], E. R. Vance[2], and A. González-Rodríguez[1], [1]*Agrarian Research Centre of Mabegondo*, *La Coruña, Galicia, Spain*, [2]*Agri-Food and Biosciences Institute*, *Hillsborough, United Kingdom*.

3:45 PM 417 **Thermal comfort and milk production of two dairy genotypes during the summer in central Chile.**
C. Herrera[1], R. Larrain[1], F. Gonzalez[1], T. L. Mader[2], and R. A. Arias*[3,4], [1]*Pontificia Universidad Catolica de Chile*, *Santiago, Chile*, [2]*University of Nebraska-Lincoln*, *Lincoln*, [3]*Universidad Catolica de Temuco*, *Temuco, Chile*, [4]*Nucleo de Investigacion en Produccion Alimentaria*, *Temuco, Chile*.

4:00 PM 418 **Effect of age and anatomical differences in dairy cattle craniums on placement and success of captive bolt for humane euthanasia of cattle.**
S. S. Aly*[1,2], T. W. Lehenbauer[1,2], S. Jenkins[2], M. Cuneo[3], J. D. Champagne[2], and J. P. Reynolds[4], [1]*Department of Population Health and Reproduction, School of Veterinary Medicine, University of California, Davis*, *Davis*, [2]*Veterinary Medicine Teaching and Research Center, School of Veterinary Medicine, University of California, Davis*, *Tulare*, [3]*William R. Pritchard Veterinary Medical Teaching Hospital, School of Veterinary Medicine, University of California*, *Davis*, [4]*The College of Veterinary Medicine, Western University*, *Pomona, CA*.

Animal Health: Intervention and Management Strategies
Chair: Kasey Moyes, University of Maryland
Wabash Ballroom 2

2:00 PM 419 **Comparison of milk and blood test strips and Fossomatic milk analysis for measurement of β-hydroxybutyrate in periparturient dairy cattle.**
D. J. Wilson*[1] and G. M. Goodell[2], [1]*Utah State University*, *Logan*, [2]*The Dairy Authority*, *Greeley, CO*.

2:15 PM 420 **Does every cow need antibiotic treatment at dry-off?**
P. J. Rajala-Schultz*[1] and A. H. Torres[2], [1]*Department of Veterinary Preventive Medicine, The Ohio State University*, *Columbus*, [2]*Dpto Produccion Animal y Tecnologia, DCV- UCLA*, *Tarabana, Estado Lara, Venezuela*.

2:30 PM 421 **Effect of intrauterine dextrose therapy on reproductive performance of lactating dairy cows with clinical endometritis under certified organic management.**
M. G. Maquivar*[1], A. Barragan[2], J. Velez[2], H. Bothe[2], and G. M. Schuenemann[1], [1]*Department of Veterinary Preventive Medicine, The Ohio State University*, *Columbus*, [2]*Aurora Organic Dairy*, *Platteville, CO*.

2:45 PM 422 **Effects of supplementation with tropical plants on the performance and parasite burden of goats.**
M. A. Zarate[1], J. J. Romero*[1], J. A. Sapora[1], N. J. Forman[1], J. A. Grace[1], M. G. Taylor[1], J. M. Kivipelto[1], A. S. Edison[2], C. H. Courtney[3], and A. T. Adesogan[1], [1]*Department of Animal Sciences, IFAS, University of Florida*, *Gainesville*, [2]*Department of Biochemistry and Molecular Biology, University of Florida*, *Gainesville*, [3]*Department of Pathobiology, College of Veterinary Medicine, University of Florida*, *Gainesville*.

3:00 PM 423 **Effects of electromagnetic field on testes and semen characteristics in male New Zealand White rabbits.**
O. Yildiz-Gulay*[1], M. S. Gulay[1], A. Ata[1], and A. Balic[2], [1]*Mehmet Akif Ersoy University, Faculty of Veterinary Medicine*, *Burdur, Turkey*, [2]*Sakarya Toyota Hospital*, *Sakarya, Turkey*.

3:15 PM 424 **Weights of abdominal fat depots in dairy cows.**
C. Raschka[1], L. Locher[1], A. Kinoshita[1], U. Meyer[2], S. Daenicke[2], K. Huber[3], and J. Rehage*[1], [1]*Clinic for Cattle, University of Veterinary Medicine Hannover*, *Hannover, Germany*, [2]*Dept. of Animal Nutrition, Friedrich-Loeffler-Institute*, *Braunschweig, Germany*, [3]*Dept. of Physiology, University of Veterinary Medicine Hannover*, *Hannover, Germany*.

3:30 PM 425 **Effects of hops (*Humulus lupulus* L.) β-acid extract on inulin fermentation and growth of *Streptococcus bovis*.**
B. E. Harlow*[1], L. M. Lawrence[1], and M. D. Flythe[2,1], [1]*University of Kentucky*, *Lexington*, [2]*United States Department of Agriculture, Agricultural Research Service, Forage-Animal Production Research Unit*, *Lexington, KY*.

3:45 PM 426 **Clinical ketosis and standing behavior in transition cows.**
A. J. Itle*, J. M. Huzzey, D. M. Weary, and M. A. G. von Keyserlingk, *Animal Welfare Program, Faculty of Land and Food Systems, University of British Columbia*, *2357 Main Mall, Vancouver, BC, Canada*.

4:00 PM 427 **Lactipro improves performance and health of calves after feedlot arrival.**
K. A. Miller*, C. L. Van Bibber-Krueger, and J. S. Drouillard, *Kansas State University*, *Manhattan*.

4:15 PM 428 **Relationship between post-milking standing time, lameness, milking order, and incidence of intramammary infection in dairy cows.**
M. E. A. Watters*[1], H. W. Barkema[2], K. E. Leslie[3], M. A. G. von Keyserlingk[4], and T. J. DeVries[1], [1]*Dept. of Animal and Poultry Science, University of Guelph, Kemptville Campus*, *Kemptville, ON, Canada*, [2]*Production Animal Health, University of Calgary*, *Calgary, AB, Canada*, [3]*Dept. Population Medicine, University of Guelph*, *Guelph, ON, Canada*, [4]*Animal Welfare Program, University of British Columbia*, *Vancouver, BC, Canada*.

4:30 PM 429 **Milk components as predictors for ruminal indigestion/acidosis in lactating dairy cows.**
S. Kirchman[1], P. J. Pinedo*[2], F. P. Maunsell[1], C. A. Risco[1], and G. A. Donovan[1], [1]*Department of Large Animal Clinical Sciences, College of Veterinary Medicine, University of Florida*, *Gainesville*, [2]*Texas A&M AgriLife Research & Extension Center-College of Veterinary Medicine & Biomedical Sciences, Texas A&M University System*, *Amarillo*.

Ruminant Nutrition: Beef: Efficiency of Production
Chair: Guillermo Scaglia, LSU AgCenter
Sagamore 6

2:00 PM 430 **Effects of cow size on dry matter and residual feed intake of lactating beef cows.**
R. S. Walker*[1], R. M. Martin[2], L. Gentry[3], G. Gentry[2], and G. Scaglia[4], [1]*LSU AgCenter Hill Farm Research Station*, *Homer, LA*, [2]*LSU AgCenter School of Animal Sciences*, *Baton Rouge, LA*, [3]*Louisiana Tech University*, *Ruston*, [4]*LSU Iberia Research Station*, *Jeanerette, LA*.

2:15 PM 431 **Effects of feeding a natural biopolymer (chitosan) on methane emissions and performance in beef cattle.**
D. D. Henry*[1], M. J. Ruiz-Moreno[1], F. M. Ciriaco[1], M. Kohmann[2], V. R. G. Mercadante[1], G. C. Lamb[1], and N. DiLorenzo[1], [1]*North Florida Research and Education Center, University of Florida*, *Marianna*, [2]*Department of Agricultural and Biological Engineering, University of Florida*, *Gainesville*.

2:30 PM 432 **Ruminal methanogens in steers that are negative or positive for residual gain.**
H. Freetly*, J. Wells, M. Kim, K. Hales, and A. Lindholm-Perry, *USDA, ARS, US Meat Animal Research Center*, *Clay Center, NE*.

2:45 PM 433 **Assessing body fat chemical composition in F1 Nellore × Angus bulls and steers through the use of biometric measures.**
M. A. Fonseca*[1,2], L. O. Tedeschi[1], S. C. Valadares Filho[2], N. F. De Paula[3], H. J. Fernandes[4], and L. D. Silva[2], [1]*Texas A&M University*, *Department of Animal Science, College Station*, [2]*Federal University of Vicosa*, *Department of Animal Science, Vicosa, Minas Gerais, Brazil*, [3]*Federal University of Mato Grosso*, *Department of Animal Science, Cuiaba, Mato Grosso, Brazil*, [4]*Mato Grosso do Sul State University*, *Department of Animal Science, Aquidauana, Mato Grosso do Sul, Brazil*.

3:00 PM 434 **High energy diet enhances stearoyl-CoA desaturase (SCD) expression in Hanwoo skeletal muscle.**
K. Y. Chung*, S. H. Lee, S. S. Chang, Y. M. Cho, E. M. Lee, and H. S. Kang, *Hanwoo Experiment Station, NIAS, RDA*, *Pyeongchang, Korea*.

3:15 PM 435 **Metabolic imprinting effect during early growth on extra cellular matrix construction in Wagyu (Japanese Black steers).**
A. Nomura*[1], R. Fujimura[1], A. Saito[4], S. Khounsakunalath[1], K. Saito[2], K. Sakuma[2], T. Abe[2], H. Hasebe[2], S. Kaneda[2], T. Etoh[1], Y. Shiotsuka[1], S. Maak[3], E. Albrecht[3], H. Takahashi[1], T. Gotoh[1], [1]*Kuju Agricultural Research Center, Kyushu University*, *Taketa, Oita, Japan*, [2]*National Livestock Breeding Center*, *Nishigo, Fukushima, Japan*, [3]*Leibniz Institute for Farm Animal Biology*, *Dummerstorf, Germany*, [4]*Zenrakuren*, *Tokyo, Japan*.

3:30 PM 436 **Metabolic imprinting effect in beef production: Influence of nutrition manipulation during an early growth stage on adipogenesis in the longissimus muscle in Wagyu (Japanese Black).**
R. Fujimura[1], K. Etoh[1], S. Khounsaknalath[1], K. Saito[2], K. Sakuma[2], K. Kaneda[2], T. Abe[2], T. Etoh[1], Y. Shiotsuka[1], H. Hasebe[2], H. Hasebe[2], S. Maak[3], A. Elke[3], H. Takahashi[1], T. Gotoh*[1], [1]*Kuju Agricultural Research Center, Kyushu University*, *Taketa, Oita, Japan*, [2]*National Livestock Breeding Center*, *Nishigo, Fukushima, Japan*, [3]*Leibniz Institute for Farm Animal Biology*, *Dummerstorf, Germany*, [4]*Zenrakuren*, *Tokyo, Japan*.

Beef Species Symposium: Nutrient Requirements of the Beef Female in Extensive Grazing Systems: Considerations for Revising the Beef NRC
Chair: Jack Whittier, Colorado State University
Sagamore 1

2:00 PM **Introduction and overview**
Jack Whittier

2:10 PM 437 **Difficulties associated with predicting forage intake by grazing beef cows.**
S. A. Gunter*[1], D. B. Faulkner[2], A. M. Meyer[3], E. J. Scholljegerdes[4], J. E. Sprinkle[5], S. A. Soto-Navarro[4], and S. W. Coleman[6], [1]*USDA-ARS*, *Woodward, OK*, [2]*University of Arizona*, *Oro Valley*, [3]*University of Wyoming*, *Laramie*, [4]*New Mexico State University*, *Las Cruces*, [5]*University of Arizona*, *Payson*, [6]*USDA-ARS*, *El Reno, OK*.

2:55 PM 438 **How well does the current metabolizable protein system account for protein supply and demand of beef females within extensive Western grazing systems?**
R. C. Waterman*[1], J. S. Caton[2], and C. A. Loest[3], [1]*USDA-Agricultural Research Service, Fort Keogh LARRL*, *Miles City, MT*, [2]*North Dakota State University, Department of Animal Sciences*, *Fargo*, [3]*New Mexico State University, Department of Animal and Range Sciences*, *Las Cruces*.

3:40 PM **Break**

3:55 PM 439 **Potential limitations of NRC in predicting energetic requirements of beef females within Western US grazing systems.**
M. K. Petersen*[1], C. Mueller[2], J. T. Mulliniks[3], A. J. Roberts[1], and T. Del Curto[2], [1]*USDA-ARS Ft Keogh Livestock & Range Research Laboratory*, *Miles City, MT*, [2]*OSU-Eastern Oregon Agricultural Research Center–Union Station*, *Union*, [3]*University of Tennessee*, *Knoxville*.

4:40 PM **Overview of National Research Support Program on Animal Nutrition.**
Gary Cromwell, University of Kentucky.

4:50 PM **Summary**
Ken Olson, South Dakota State University.

5:00 PM **Panel discussion**

Breeding and Genetics: Genomic Selection in Dairy I
Chair: Rob Tempelman, Michigan State University
105-106

2:00 PM 440 **In vivo and in vitro heat shock proteins gene expression in cattle.**
A. C. A. P. M. Geraldo*[1], L. J. Oliveira[1], A. M. F. Pereira[2], F. Moreira da Silva[3], and E. A. L. Titto[1], [1]*Faculdade de Zootecnia e Engenharia de Alimentos-Universidade de Sao Paulo*, *Pirassununga, Sao Paulo, Brazil*, [2]*Universidade de Evora*, *Evora, Portugal*, [3]*Universidade dos Acores*, *Angra do Heroismo-Terceira, Acores, Portugal*.

2:15 PM 441 **Comparison of genomic inbreeding within a family-based structure in Holstein cattle.**
D. W. Bjelland*[1], K. A. Weigel[1], A. Coburn[2], R. D. Wilson[2], and A. Lasecki[2], [1]*University of Wisconsin-Madison*, *Madison*, [2]*Genex Cooperative Inc./CRI*, *Shawano, WI*.

2:30 PM 442 **Genomic selection of Sahiwal cattle: A developing country perspective.**
M. Moaeen ud Din*, G. Bilal, and H. M. Waheed, *Animal Breeding and Genetics Lab, Faculty of Veterinary and Animal Sciences PMAS-Arid Agriculture University*, *Rawalpindi, Pakistan*.

2:45 PM 443 **Implementation of a routine genetic and genomic evaluation for mastitis resistance using producer-recorded health data and indicator traits in Canadian dairy cattle.**
J. Jamrozik[1], A. Koeck[1], G. J. Kistemaker[2], and F. Miglior*[2,3], [1]*CGIL, Dept. of Animal and Poultry Science, University of Guelph*, *Guelph, ON, Canada*, [2]*Canadian Dairy Network*, *Guelph, ON, Canada*, [3]*Guelph Food Research Centre, Agriculture and Agri-Food Canada*, *Guelph, ON, Canada*.

3:00 PM 444 **Genetic analysis of leukosis incidence in a US Holstein population including phenotypes from relatives without genotypes.**
E. A. Abdalla*[1], G. J. M. Rosa[1], K. A. Weigel[2], T. Byrem[3], and F. Penagaricano[1], [1]*Department of Animal Sciences, University of Wisconsin-Madison*, *Madison*, [2]*Department of Dairy Science, University of Wisconsin-Madison*, *Madison*, [3]*Antel BioSystems Inc.*, *Lansing, MI*.

3:15 PM 445 **Identification of loci associated with fertility traits via genome-wide association studies in the Holstein breed.**
M. K. Abo-Ismail*[1], S. P. Miller[1,2], M. Sargolzaei[1,3], D. A. Grossi[1], S. S. Moore[3], G. Plastow[3], P. Stothard[3], S. Nayeri[3], and F. Schenkel[1], [1]*Centre for Genetic Improvement of Livestock, University of Guelph*, *Guelph, ON, Canada*, [2]*Livestock Gentec, University of Alberta*, *Edmonton, AB, Canada*, [3]*L'Alliance Boviteq*, *Saint-Hyacinthe, QC, Canada*.

3:30 PM 446 **Analysis of health trait data from on-farm computer systems in the United States. I: Pedigree and genomic variance components estimation.**
K. L. Parker Gaddis*[1], J. B. Cole[2], J. S. Clay[3], and C. Maltecca[1], [1]*North Carolina State University*, *Raleigh*, [2]*Animal Improvement Programs Laboratory, Agricultural Research Service, USDA*, *Beltsville, MD*, [3]*Dairy Records Management Systems*, *Raleigh, NC*.

3:45 PM 447 **Analysis of health trait data from on-farm computer systems in the United States. II: Comparison of genomic analyses including two-stage and single-step methods.**
K. L. Parker Gaddis*[1], J. B. Cole[2], J. S. Clay[3], and C. Maltecca[1], [1]*North Carolina State University*, *Raleigh*, [2]*Animal Improvement Programs Laboratory, Agricultural Research Service, USDA*, *Beltsville, MD*, [3]*Dairy Records Management Systems*, *Raleigh, NC*.

George C. Fahey Companion Animal Nutrition Symposium II: Comparative Animal Nutrition
Chair: Mark Edwards, California Polytechnic State University
Sponsor: ASAS Foundation George C. Fahey Appreciation Club
104

2:00 PM 448 **Comparative animal nutrition: An adaptive strategy within a changing environment.**
M. S. Edwards*, *California Polytechnic State University*, *San Luis Obispo*.

2:15 PM 449 **A rhinoceros is not always like a horse: Case studies on using domestic animal nutrition models for zoo animal nutrition.**
M. L. Schlegel*, *San Diego Zoo Global*, *San Diego, CA*.

2:45 PM 450 **Unraveling the nutritional cost of avian immunity: A comparative approach.**
K. C. Klasing*, V. J. Iseri, and K. A. Lee, *University of California*, *Davis*.

3:15 PM **Break**

3:30 PM 451 **Comparative study of milk oligosaccharides in mammals.**
C. B. Lebrilla*, *Department of Chemistry and Department of Biochemistry and Molecular Medicine University of California*, *Davis*.

4:00 PM 452 **Comparative growth physiology on the land and in the sea: Animal science to marine mammal biology.**
J. P. Richmond*, *University of North Florida*, *Jacksonville*.

4:30 PM 453 **Cattle to cats: Comparative carbohydrate nutrition of widely diverse animal species.**
G. Fahey*, *University of Illinois*, *Urbana*.

Ruminant Nutrition: Dairy: Ruminal Fermentation and Health
Chair: Robbie Pritchard, South Dakota State University
120-121

2:00 PM 454 **Design and validation of primers to access rumen *Treponema saccharophilum* population in both in vitro and in vivo systems.**
J. Liu*[1,2], W. Zhu[1,2], Y. Y. Pu[1], J. K. Wang[1,2], and J. X. Liu[1,2], [1]*Institute of Dairy Science, College of Animal Sciences*, [2]*MoE Key Laboratory of Molecular Animal Nutrition, Zhejiang University*, *Hangzhou, Zhejiang, China*.

2:15 PM 455 **Effect of yeast-derived microbial protein in low and high forage diets on lactation performance of dairy cows.**
A. K. Manthey*[1], K. F. Kalscheur[1], A. D. Garcia[1], and K. Mjoun[2], [1]*South Dakota State University*, *Brookings*, [2]*Alltech*, *Brookings, SD*.

2:30 PM 456 **Effects of subacute ruminal acidosis on fecal pH and starch digestibility of Holstein cows.**
C. S. Fox*, S. Luan, M. R. Murphy, and F. C. Cardoso, *University of Illinois*, *Urbana-Champaign*.

2:45 PM 457 **Induction of subclinical ruminal acidosis leads to marked alterations in blood immunometabolic markers and minerals in lactating Jersey than Holstein cows file in response to.**
J. S. Osorio*[1], F. T. da Rosa[1], E. Trevisi[2], M. R. Murphy[1], F. Cardoso[1], and J. J. Loor[1], [1]*University of Illinois*, *Urbana*, [2]*Università Cattolica del Sacro Cuore*, *Piacenza, Italy*.

3:00 PM 458 **Evaluation of OmniGen AF in heat-stressed Holstein cows in lactation.**
L. W. Hall*[1], S. D. Anderson[1], F. A. Rivera[1], F. Villar[1], J. D. Chapman[2], N. M. Long[3], and R. J. Collier[1], [1]*University of Arizona*, *Tucson*, [2]*Prince Agri*, *Quincy, IL*, [3]*Clemson University*, *Clemson, SC*.

3:15 PM 459 **The effects of feeding time on the circadian pattern of feed intake, milk production, and plasma hormones and metabolites in dairy cows.**
M. Niu*, Y. Ying, P. A. Bartell, and K. J. Harvatine, *Penn State University*, *University Park*.

3:30 PM 460 **Effects of subacute ruminal acidosis on milk yield and milk composition of Holstein and Jersey dairy cows.**
K. J. Haerr*, S. Luan, M. R. Murphy, and F. C. Cardoso, *University of Illinois*, *Champaign-Urbana*.

3:45 PM 461 **Effects of *Saccharomyces cerevisiae* fermentation product on bacteria in the rumen and hindgut of lactating dairy cows during subacute ruminal acidosis (SARA).**
S. C. Li*[1], E. Khafipour[1], I. Yoon[2], M. Scott[2], and J. C. Plaizier[1], [1]*University of Manitoba*, *Winnipeg, MB, Canada*, [2]*Diamond V*, *Cedar Rapids, IA*.

4:00 PM 462 **Factors associated with the type and levels of mastitis pathogens isolated from milk samples collected from milk of organically and conventionally managed dairy cattle.**
Z. Ullah*[1], J. K. Margerison[1], D. Simcock[2], and N. Lopez Villolobos[3], [1]*Institute of Agriculture and Environment, Massey University*, *Palmerston North, New Zealand*, [2]*Institute of Food Nutrition and Human Health, Massey University*, *Palmerston North, New Zealand*, [3]*Institute of Veterinary and Biological Sciences, Massey University*, *Palmerston North, New Zealand*.

4:15 PM 463 **Associations of subclinical endometritis with energy metabolism and inflammation during the periparturient period and early lactation in dairy cows.**
T. Yasui*, K. McCann, R. O. Gilbert, D. V. Nydam, and T. R. Overton, *Cornell University*, *Ithaca, NY*.

4:30 PM 464 **Meta-genomics of rumen bacteria in cows exposed to different feeding strategies.**
H. M. Golder*[1,2], S. E. Denman[3], C. McSweeney[3], W. J. Wales[4], M. J. Auldist[4], A. R. Rabiee[1,2], P. Celi[2,5], and I. J. Lean[1,2], [1]*SBScibus*, *Camden, NSW, Australia*, [2]*University of Sydney, Faculty of Veterinary Science*, *Camden, NSW, Australia*, [3]*CSIRO Animal, Food and Health Services, Queensland Bioscience Precinct*, *St. Lucia, QLD, Australia*, [4]*Future Farming Systems Research Division, Department of Primary Industries*, *Ellinbank, VIC, Australia*, [5]*Melbourne School of Land and Environment, The University of Melbourne*, *Parkville, VIC, Australia*.

4:45 PM 465 **The influence of immunological stress on the limiting sequence and ratio of lysine, methionine and threonine in preruminant calves.**
N. Zhang*, H. Li, Y. Tu, C. Jiang, and Q. Diao, *Feed Research Institute, Chinese Academy of Agricultural Sciences*, *Beijing, China*.

Ruminant Nutrition: Dairy: Starch, Amino Acids, and By-Products Supplementation
Chair: Jong-Su Eun, Utah State University
122-123

2:00 PM 466 **The effect of arginine supplementation during pregnancy on uterine blood flow in dairy heifers.**
C. Yunta*[1], B. R. Mordhorst[2], K. A. Vonnahme[2], C. Parys[3], and A. Bach[1,4], [1]*Department of Ruminant Production-IRTA*, *Caldes de Montbui, Barcelona, Spain*, [2]*Center for Nutrition and Pregnancy, Department of Animal Science, North Dakota State University*, *Fargo*, [3]*Evonik Industries AG*, *Hanau, Germany*, [4]*ICREA*, *Barcelona, Spain*.

2:15 PM 467 **Protein source and amino acid balance for dairy calves fed milk replacer.**
G. H. Hwang*[1], J. J. Castro[1], A. Saito[2], D. A. Vermeire[3], and J. K. Drackley[1], [1]*University of Illinois*, *Urbana*, [2]*Zen-Raku-Ren*, *Tokyo, Japan*, [3]*Nouriche Nutrition Ltd*, *Lake St. Louis, MO*.

2:30 PM 468 **Effect of dietary starch concentration in primiparous dairy cows in early lactation.**
H. Gencoglu*[1], G. Yilmazbas-Mecitoglu[2], A. Keskin[2], I. Cetin[1], C. Kara[1], A. Orman[3], E. Karakaya[2], G. Deniz[1], A. Gumen[2], I. I. Turkmen[1], and R. D. Shaver[4], [1]*Department of Animal Nutrition and Nutritional Diseases, Faculty of Veterinary Medicine University of Uludag*, *Bursa Turkey*, [2]*Department of Obstetrics and Gynecology, Faculty of Veterinary Medicine University of Uludag*, *Bursa, Turkey*, [3]*Department of Zootechnics, Faculty of Veterinary Medicine University of Uludag*, *Bursa, Turkey*, [4]*Department of Dairy Science, University of Wisconsin-Madison*, *Madison*.

2:45 PM 469 **Milk fat depression caused by feeding distillers grains and corn oil to dairy cows was partially alleviated by supplementing potassium carbonate.**
K. C. Lamar* and W. P. Weiss, *The Ohio State University*, *Wooster*.

3:00 PM 470 **Effects of replacing soybean meal with canola meal for lactating dairy cows fed three different ratios of alfalfa to corn silage.**
A. Faciola*[1] and G. Broderick[2], [1]*University of Nevada*, *Reno*, [2]*ARS, USDA, USDFRC*, *Madison, WI*.

3:15 PM 471 **Milk production responses to a change in dietary starch concentration vary by production level in dairy cattle.**
J. C. Ploetz*, S. E. Burczynski, M. J. VandeHaar, M. S. Allen, and A. L. Lock, *Michigan State University*, *East Lansing*.

3:30 PM 472 **Interactive effects between dietary grain source and oil supplement on feeding behavior and lactational performance of Holstein cows.**
S. Kargar*[1,3], G. R. Ghorbani[1], M. Khorvash[1], and D. J. Schingoethe[2], [1]*Isfahan University of Technology, Isfahan, Iran*, [2]*South Dakota State University, Brookings*, [3]*University of Wisconsin-Madison, Madison*.

3:45 PM 473 **Effects of starch level and monensin in fresh cow diets on subclinical endometritis and indices of immune function.**
T. Yasui*[1], M. M. McCarthy[1], C. M. Ryan[1], R. O. Gilbert[1], M. J. B. Felippe[1], G. D. Mechor[2], and T. R. Overton[1], [1]*Cornell University*, *Ithaca, NY*, [2]*Elanco Animal Health*, *Greenfield, IN*.

4:00 PM 476 **Bacteria populations in grain-, sugar-, and histidine-challenged cattle.**
H. M. Golder*[1,2], S. E. Denman[3], C. McSweeney[3], A. R. Rabiee[1,2], P. Celi[2,4], and I. J. Lean[1,2], [1]*SBScibus*, *Camden, NSW, Australia*, [2]*University of Sydney, Faculty of Veterinary Science*, *Camden, NSW, Australia*, [3]*CSIRO Animal, Food and Health Services, Queensland Bioscience Precinct*, *St. Lucia, QLD, Australia*, [4]*Melbourne School of Land and Environment, The University of Melbourne*, *Parkville, VIC, Australia*.

4:15 PM 474 **Effects of starch and rumen-protected amino acid supplementation on rumen microbial protein synthesis and milk performance in lactating dairy cows fed corn stover.**
W. Zhu*[1], C. H. Tang[1], X. P. Sun[1], J. X. Liu[1], Y. M. Wu[1], Y. M. Yuan[2], and X. K. Zhang[2], [1]*College of Animal Sciences, Zhejiang University*, *Hangzhou, China*, [2]*Shanghai Bright Holstan Co., Ltd*, *Shanghai, China*.

4:30 PM 475 **Effects of varying periparturient dietary starch amount on primiparous dairy cow performance, lipid metabolism and health.**
Z. Sawall*[1], W. Weich[1], D. Lobao da Silva[1], T. Parrott[2], and N. B. Litherland[1], [1]*University of Minnesota*, *St. Paul*, [2]*Dupont Industrial Biosciences*, *Waukesha, WI*.

4:45 PM 477 **Effect of supplementing sunflower cake in dairy diet on milk production and composition.**
G. Pirlo*, L. Migliorati, M. Capelletti, F. Abeni, L. Degano, A. Bruni, M. Povolo, G. Cabassi, and G. Contarini, *Consiglio per la ricerca e sperimentazione in agricoltura (CRA)*, *Lodi, Italy*.

Dairy Foods: Dairy Products
Chair: Federico Harte, University of Tennessee
Wabash Ballroom 3

2:00 PM 478 **Effects of different levels of 2 selected gums addition on textural properties of goat milk yogurts.**
B. P. Gupta*[1], Y. W. Park[1], J. Jones[1], and S. Ibrahim[2], [1]*Fort Valley State University*, *Fort Valley, GA*, [2]*North Carolina A&T State University*, *Greensboro*.

2:15 PM 479 **Physico-chemical characteristics of fresh and corresponding pasteurized camel milks from intensive dairy farm in Saudi Arabia.**
E. Beaucher[1], N. Nogueira[1], B. Camier[1], J. Jardin[1], V. Briard-Bion[1], A. Musaad[2], G. Konuspayeva[2], B. Faye[2], and F. Gaucheron*[1], [1]*UMR 1253 Science et Technologie du Lait et de l'œuf, INRA-Agrocampus Ouest*, *Rennes, France*, [2]*Camel and Range Research Center*, *Al-Jouf, Sakaka, Saudi Arabia*.

2:30 PM 480 **Changes and formation mechanisms of oxidized-flavor of milk powder during heat related processes.**
L. Zhang* and Y. Li, *Harbin Institute of Technology*, *College of Food Science and Engineering, Harbin Institute of Technology, Harbin, China*.

2:45 PM 481 **Milk quality of Nguni cows of Southern Africa.**
M. Chimonyo*[1], M. Mapekula[2], and K. Dzama[3], [1]*University of KwaZulu-Natal*, *Pietermaritzburg, South Africa*, [2]*University of Fort Hare*, *Alice, South Africa*, [3]*University of Stellenbosch*, *Stellenbosch, South Africa*.

3:00 PM **Break**

3:15 PM 482 **Physicochemical characteristics of nonfat dry milk and skim milk powder produced in the United States.**
A. K. A. Ali*, K. E. Smith, K. J. Burrington, and J. A. Lucey, *Wisconsin Center for Dairy Research, University of Wisconsin-Madison*, *Madison*.

3:30 PM 483 **Impact of calcium reduction on the functional properties of milk protein concentrate 80.**
C. Marella*, A. Kommineni, P. Salunke, A. Biswas, and L. E. Metzger, *Midwest Dairy Foods Research Center, Dairy Science Department, South Dakota State University*, *Brookings*.

3:45 PM 484 **Impact of retentate preheating on the functionalities of milk protein concentrate.**
L. Rupp*[1], M. Molitor[2], and J. A. Lucey[1,2], [1]*University of Wisconsin-Madison, Department of Food Science*, *Madison*, [2]*Wisconsin Center for Dairy Research*, *Madison*.

4:00 PM 485 **Interactions between acidified dispersions of milk proteins with dextran or dextran sulfate.**
U. Pachekrepapol*, D. Horne, and J. Lucey, *University of Wisconsin-Madison*, *Madison*.

Lactation Biology II
Chair: Monique Rijnkels, Baylor College of Medicine
Wabash Ballroom 1

2:00 PM 486 **Using infrared thermography for detecting intramammary infections under practical and *E. coli* O55:B5 endotoxin challenge conditions in dairy ewes.**
A. Castro-Costa[1], G. Caja*[1], A. A. K. Salama[1], M. Rovai[1], C. Flores[1], and J. Aguiló[2], [1]*Ruminant Research Group (G2R), Department of Animal and Food Sciences, Universitat Autònoma de Barcelona*, *Bellaterra, Spain*, [2]*Group of Biomedical Applications (GBA), Department of Microelectronics and Electronic Systems, Universitat Autònoma de Barcelona*, *Bellaterra, Spain*.

2:15 PM 487 **Effect of corn grain and soybean meal with different processing methods on milk protein expression profiles in lactating dairy cow.**
S. S. Li*[1,2], J. S. Shen[1,2], D. X. Ren[1], and J. X. Liu[1,2], [1]*Institute of Dairy Science, College of Animal Sciences*, [2]*MOE Key Laboratory of Molecular Animal Nutrition, Zhejiang University*, *Hangzhou, China*.

2:30 PM 488 **Dietary anion-cation difference and day length affect milk calcium content.**
A. Boudon[1], M. Johan[1], A. Narcy[2], and C. Hurtaud*[1], [1]*INRA-Agrocampus Ouest UMR 1348 PEGASE*, *Saint-Gilles, France*, [2]*INRA URA*, *Nouzilly, France*.

2:45 PM 489 **Calf sex influences whole-lactation milk and component production in Holstein cows.**
A. J. Carpenter*[1], K. Hinde[2], J. S. Clay[3], and B. J. Bradford[1], [1]*Kansas State University*, *Manhattan*, [2]*Harvard University*, *Cambridge, MA*, [3]*Dairy Record Management Systems*, *Raleigh, NC*.

3:00 PM 490 **The effect of induced involution on DNA methylation upstream of milk protein genes, α-lactalbumin and β-lactoglobulin.**
S. Pryor*, J. Dobson, and K. Singh, *AgResearch*, *Hamilton, New Zealand*.

3:15 PM 491 **Udder cistern size affects lactation persistency and ability to adapt to once-daily milking in dairy cows.**
A. Molenaar*[1], G. Caja[2], S. Leath[1], H. Henderson[1], C. Cameron[1], M. Challies[1], K. Taukiri[1], T. Chikazhe[3], S. Kaumoana[3], B. Lannou[1], A. Dorleac[1], A. Guy[1], C. Gavin[1,4], and K. Singh[1], [1]*AgResearch Ruakura*, *Hamilton, New Zealand*, [2]*Group of Ruminant Research (G2R), Universitat Autonoma de Barcelona*, *Bellaterra, Spain*, [3]*AgResearch, Tokanui Dairy Research Farm*, *Te Awamutu, New Zealand*, [4]*Faculty of Science and Engineering, University of Waikato*, *Ruakura, New Zealand*.

3:30 PM 492 **The appearance of blood components in milk during the first hours of endotoxin induced mastitis follows two different chronological patterns.**
O. Wellnitz[1], C. Zbinden[1], J. Lüttgenau[2], H. Bollwein[2], and R. M. Bruckmaier*[1], [1]*Veterinary Physiology, Vetsuisse Faculty University of Bern*, *Bern, Switzerland*, [2]*Clinic of Reproductive Medicine, Vetsuisse Faculty University of Zurich*, *Zurich, Switzerland*.

3:45 PM 493 **Milk production during the colostral period is not related to the later production level in dairy cows.**
E. C. Kessler, R. M. Bruckmaier, and J. J. Gross*, *Veterinary Physiology, Vetsuisse Faculty University of Bern*, *Bern, Switzerland*.

4:00 PM 494 **Palmitate induces endoplasmic reticulum stress and oleate and sodium salicylate suppress oxidative stress in immortalized bovine mammary epithelial cells.**
L. K. Mamedova[1], S. R. Montgomery*[1], K. J. Harvatine[2], and B. J. Bradford[1], [1]*Kansas State University*, *Manhattan*, [2]*Pennsylvania State University*, *University Park*.

Dairy Foods: Microbiology
Chair: Sanjeev Anand, South Dakota State University
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2:00 PM 495 **Spore incidence in individual cows and correlation with weather in California.**
V. Arechiga* and R. Jimenez-Flores, *Dairy Products Technology Center, California Polytechnic State University*, *San Luis Obispo*.

2:15 PM 813 **Cytokine and regulatory T cell responses of lactic acid bacteria and probiotic organisms in human peripheral blood mononuclear cells.**
R. Ashraf*[1], O. N. Donkor[1], S. C. Smith[2], and T. Vasiljevic[1], [1]*Victoria University, School of Biomedical and Health Sciences, Werribee Campus, Melbourne, VIC, Australia*, [2]*Deakin University, School of Exercise and Nutrition Sciences, Faculty of Health, Gut Health SRC Molecular and Medical Research, Burwood, VIC, Australia*.

2:30 PM 496 **Aroma development in relation to microbial growth in milk under Ragusano cheese-making conditions using different wooden vats (tina).**
S. Carpino*[1], T. Rapisarda[1], I. Schadt[1], G. Belvedere[1], and G. Licitra[1,2], [1]*CoRFiLaC, Regione Siciliana*, *Ragusa, Italy*, [2]*DISPA, Catania University*, *Catania, Italy*.

2:45 PM 497 **Development of enzyme substrate assay for monitoring *E. coli*/*E. coli* O157:H7 in milk and milk products.**
R. Lawaniya*, N. Kumar, B. Arora, A. Khan, and M. Blahara, *National Dairy Research Institute, Department of Dairy Microbiology*, *Karnal, India*.

3:00 PM **Break**

3:15 PM 498 **Effect of drying methods on microencapsulated bacteria on secondary protein structure and glass transition temperature as studied by FTIR and DSC.**
D. Dianawati[1] and N. P. Shah*[2], [1]*Victoria University*, *Melbourne, Australia*, [2]*The University of Hong Kong*, *Pokfulam Road, Hong Kong*.

3:30 PM 499 **The relationship between *Streptococcus thermophilus* exopolysaccharide diversity and fermented milk viscosity.**
H. Yi*, L. Zhang, and L. Zhang, *College of Food Science and Engineering, Harbin Institute of Technology*, *Harbin, China*.

3:45 PM 500 **The growth and interaction of yeasts and lactic acid bacteria in milk fermentation.**
X. Han*, L. Zhang, H. Yi, and Q. Yi, *College of Food Science and Engineering, Harbin Institute of Technology*, *Harbin, China*.

Nonruminant Nutrition Symposium: Breaking the Mold: Formulating Monogastric Diets Without Traditional Ingredients
Chair: Kari Saddoris-Clemons, Boehringer-Ingelheim Vetmedica
Sagamore 2

2:00 PM **Introduction**
K. Saddoris-Clemons.

2:05 PM 501 **Alternative ingredients for diets—A global perspective.**
R. G. Campbell*, *Pork CRC, Willaston SA, Australia*.

2:40 PM 502 **Factors to consider when formulating diets with alternative ingredients.**
K. Adams*, *Akey/Cargill*, *Brookville, OH*.

3:15 PM 503 **Controlling feed cost by including alternative ingredients into swine diets.**
R. T. Zijlstra*[1] and E. Beltranena[1,2], [1]*University of Alberta*, *Edmonton, AB, Canada*, [2]*Alberta Agriculture and Rural Development*, *Edmonton, AB, Canada*.

3:50 PM 504 **Maintaining high quality swine and poultry diets with non-traditional ingredients.**
J. D. Hancock*, M. E. Morts, R. S. Beyer, and C. K. Jones, *Kansas State University*, *Manhattan*.

4:25 PM 505 **Algae, a by-product of the biofuel industry to replace soybean meal in swine and poultry diets.**
X. G. Lei*, *Cornell University*, *Ithaca, NY*.

Physiology and Endocrinology: Nutritional Physiology
Chair: Kevin Harvatine, Pennsylvania State University
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2:00 PM 506 **Control of cow hypocalcemia: Field application of ion-selective field effect transistor technology.**
E. M. Rodríguez*[1], A. Bach[1,2], N. Abramova[3], A. Bratov[3], A. Ipatov[3], and A. Arís[1], [1]*Department of Ruminant Production, IRTA*, *Caldes de Montbui, Spain*, [2]*ICREA*, *Barcelona, Spain*, [3]*BioMEMS Group, IMB-CNM, CSIC*, *Bellaterra, Spain*.

2:15 PM 507 **Calcium urinary excretion in dairy cows with different levels of glucose tolerance.**
E. Schwegler*[1], F. da Rosa[1], A. Silva[1], E. Oliveira[1], P. Montagner[1], M. Weschenfelder[1], A. Krause[1], C. Brauner[1], E. Schmitt[2], V. Rabassa[1], A. Schneider[1], E. Xavier[1], F. Del Pino[1], and M. Correa[1], [1]*Federal University of Pelotas*, *Pelotas, RS, Brazil*, [2]*Brazilian Agricultural Research Corporation, EMBRAPA-CPAFRO*, *Porto Velho, RO, Brazil*.

2:30 PM 508 **The association of postpartum calcium concentration with body weight change and milk production in dairy herds with automatic milking systems during the first 30 days in milk.**
L. S. Caixeta*[1], P. A. Ospina[1], S. K. Johnson[1], M. Capel[2], and D. V. Nydam[1], [1]*Cornell University*, *Ithaca, NY*, [2]*Perry Veterinary Clinic*, *Perry, NY*.

2:45 PM 509 **Effects of protein supplementation of fall calving cows during breeding and lactation on growth and concentrations of IGF-I in plasma of beef calves.**
K. J. McLean*, B. H. Boehmer, L. J. Spicer, and R. P. Wettemann, *Oklahoma Agricultural Experiment Station*, *Stillwater*.

3:00 PM 510 **Lipogenic-associated gene activity of adipose tissue from beef heifers and relation to production and reproductive traits.**
L. A. Rempel*, R. A. Cushman, T. G. McDaneld, J. R. Miles, L. A. Kuehn, and A. K. Lindholm-Perry, *USDA, ARS, U.S. Meat Animal Research Center*, *Clay Center, NE*.

3:15 PM 511 **Endocrine profile and hepatic gene expression in Holstein cows with different nutritional managements during early lactation.**
A. L. Astessiano*[1], P. Chilibroste[2], M. Fajardo[2], J. Laporta[1], J. Gil[3], D. Mattiauda[2], A. Meikle[4], and M. Carriquiry[1], [1]*School of Agronomy, UDELAR*, *Montevideo, Uruguay*, [2]*School of Agronomy, UDELAR*, *Paysandú (EEMAC), Uruguay*, [3]*School of Veterinary Medicine, UDELAR*, *Paysandú (EEMAC), Uruguay*, [4]*School of Veterinary Medicine, UDELAR*, *Montevideo, Uruguay*.

3:30 PM 512 **Effects of maintenance energy requirements of gestating beef cows on plasma concentrations thyroxine, triiodothyronine, and rectal temperature.**
B. H. Boehmer*, K. J. McLean, and R. P. Wettemann, *Oklahoma Agricultural Experiment Station*, *Stillwater*.

3:45 PM 513 **Comparisons of the transcriptome profiles of adipose tissue from beef and dairy cattle.**
J. Thomson*[1,2], P. Stothard[2], and J. P. McNamara[3], [1]*Montana State University*, *Bozeman*, [2]*University of Alberta*, *Edmonton, AB, Canada*, [3]*Washington State University*, *Pullman*.

4:00 PM 514 **Alterations in body mass and inflammometabolic indices in Holstein cows fed different levels of energy and receiving 2,4-thiazolidinedione.**
A. Hosseini*[1], E. Trevisi[2], F. T. da Rosa[1], G. Bertoni[2], J. K. Drackley[1], and J. J. Loor[1], [1]*University of Illinois*, *Urbana*, [2]*Università Cattolica del Sacro Cuore*, *Piacenza, Italy*.

4:15 PM 515 **Adipose tissue insulin sensitivity in response to level of dietary energy and 2,4-thiazolidinedione in Holstein cows.**
A. Hosseini*, J. S. Osorio, F. T. da Rosa, J. K. Drackley, and J. J. Loor, *University of Illinois*, *Urbana*.

4:30 PM 516 **Overfeeding energy increases visceral fat deposition and alters metabolic indices in Holstein cows.**
A. Hosseini*[1], E. F. Garrett[3], E. Trevisi[2], F. T. da Rosa[1], G. Bertoni[2], J. K. Drackley[1], and J. J. Loor[1], [1]*University of Illinois*, *Urbana*, [2]*Università Cattolica del Sacro Cuore*, *Piacenza, Italy*, [3]*Department of Veterinary Clinical Medicine, University of Illinois*, *Urbana*.

4:45 PM 517 **Level of dietary energy alters in vitro bovine adipose tissue insulin sensitivity and inflammatory response to TNF-α.**
A. Hosseini*[1], K. M. Moyes[2], F. T. da Rosa[1], J. K. Drackley[1], and J. J. Loor[1], [1]*University of Illinois*, *Urbana*, [2]*University of Maryland*, *College Park*.

Production, Management and the Environment: Management and Methods II
Chair: Al Rotz, USDA-ARS, Pennsylvania
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2:00 PM 518 **Production traits of Montbéliarde-sired crossbreds compared to pure Holsteins in both high-input and low-input research herds.**
A. R. Hazel*, B. J. Heins, and L. B. Hansen, *University of Minnesota*, *St. Paul*.

2:15 PM 519 **Fertility, survival, and mortality of Montbéliarde-sired crossbreds compared to pure Holsteins in two research herds.**
A. R. Hazel, B. J. Heins, and L. B. Hansen*, *University of Minnesota*, *St. Paul*.

2:30 PM 520 **Association between stall surface and some dairy welfare measurements on farms using automatic milking systems.**
J. A. Salfer* and M. I. Endres, *University of Minnesota*, *St.Paul*.

2:45 PM 521 **Environmental bioburden attributable to super-shedders in freestall pens.**
S. S. Aly*[1,2], A. D. Glover[2], J. D. Champagne[2], R. H. Whitlock[3], R. Anderson[4], and J. M. Adaska[5], [1]*Department of Population Health and Reproduction, School of Veterinary Medicine, University of California-Davis*, *Davis*, [2]*Veterinary Medicine Teaching and Research Center, School of Veterinary Medicine, University of California-Davis*, *Tulare*, [3]*Johne's Research Laboratory, New Bolton Center, School of Veterinary Medicine, University of Pennsylvania*, *Kennett Square*, [4]*California Department of Food and Agriculture, Animal Health Branch*, *Sacramento*, [5]*California Animal Health and Food Safety Laboratory, Tulare Branch*, *Tulare*.

3:00 PM 522 **Influence of breed, milk yield, and temperature humidity index on dairy cow reticulorumen temperature, lying time, and rumination behavior.**
A. E. Sterrett*, B. A. Wadsworth, J. D. Clark, and J. M. Bewley, *University of Kentucky, Department of Animal and Food Sciences*, *Lexington*.

3:15 PM 523 **Effect of milking frequency on the behavior and productivity of lactating dairy cows.**
K. D. Hart*[1], B. W. McBride[2], T. F. Duffield[3], and T. J. DeVries[1], [1]*Dept. of Animal and Poultry Science, University of Guelph, Kemptville Campus*, *Kemptville, ON, Canada*, [2]*Dept. of Animal and Poultry Science, University of Guelph*, *Guelph, ON, Canada*, [3]*Dept. of Population Medicine, University of Guelph*, *Guelph, ON, Canada*.

3:30 PM **Break**

3:45 PM 524 **Periconceptional heat stress of Holstein cows affects subsequent milk production and composition.**
B. Brown*, J. Stallings, and M. Rhoads, *Virginia Polytechnic Institute and State University*, *Blacksburg*.

4:00 PM 525 **Use of urine as a diagnostic tool for subacute ruminal acidosis (SARA) in lactating Holstein and Jersey cows.**
S. Luan*, M. R. Murphy, F. C. Cardoso, and J. K. Drackley, *University of Illinois*, *Urbana*.

4:15 PM 526 **Potential of mid-infrared spectrum of milk to detect changes in the physiological status of dairy cows.**
A. Laine*[1], A. Goubau[1], H. Hammami[1,2], C. Bastin[1], and N. Gengler[1], [1]*University of Liege, Gembloux Agro-Bio Tech, Animal Science Unit*, *Gembloux, Belgium*, [2]*National Fund for Scientific Research*, *Brussels, Belgium*.

4:30 PM 527 **Evaluation of a novel system to measure enteric methane emissions from beef cattle on pasture.**
S. Zimmerman*[1], J. J. Michal[2], R. White[2], K. A. Johnson[2], A. Guerouali[3], and P. Zimmerman[1], [1]*C-Lock Incorporated*, *Rapid City, SD*, [2]*Washington State University*, *Pullman*, [3]*Hassan II Agronomic and Veterinary Institute*, *Rabat, Morocco*.

4:45 PM 528 **Pasture-derived greenhouse gases emissions in cow-calf production systems.**
M. B. Chiavegato*, W. Powers, S. A. Utsumi, and J. Rowntree, *Michigan State University*, *East Lansing*.

Small Ruminant Symposium: Sustainable Meat Goat Production
Chair: Govind Kannan, Fort Valley State University
Sponsor: Southern SARE
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2:00 PM 529 **Sustainable health management for meat goats.**
J. Miller*, *Louisiana State University*, *Baton Rouge*.

2:45 PM 530 **Sustainable feed and forage management for meat goats.**
J.-M. Luginbuhl*, *North Carolina State University*, *Raleigh*.

3:30 PM **Break**

3:45 PM 531 **Live animal and carcass evaluation of market goats.**
K. W. McMillin*[1], K. W. Braden[2], J. C. Gregorie[1], M. A. Persica[1], and J. N. Maynard[1], [1]*Louisiana State University Agricultural Center*, *Baton Rouge*, [2]*Angelo State University*, *San Angelo, TX*.

4:30 PM 532 **Current trends and future strategies for marketing goat meat.**
M. Ibrahim*, *Fort Valley State University*, *Fort Valley, GA*.

Dairy Foods: Processing
Chair: Kerry Kaylegian, Pennsylvania State University
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3:45 PM 533 **Effect of microfiltration concentration factor on serum protein removal from skim milk using polymeric spiral-wound membranes.**
S. L. Beckman* and D. M. Barbano, *Cornell University*, *Ithaca, NY*.

4:00 PM 534 **Modification of milk fat fatty acid profile by a combination of microfiltration and dry crystallization.**
K. E. Kaylegian*[1], J. Choi[1], K. Harvatine[2], J. N. Coupland[1], and R. J. Elias[1], [1]*Dept. of Food Science, Pennsylvania State University*, *University Park*, [2]*Dept. of Animal Science, Pennsylvania State University*, *University Park*.

4:15 PM 535 **Production of milk protein concentrate with a modified mineral content.**
C. Marella*, P. Salunke, A. Biswas, and L. E. Metzger, *Midwest Dairy Foods Research Center, Dairy Science Department, South Dakota State University*, *Brookings*.

4:30 PM 536 **Direct capture membrane adsorption chromatography with crude whey at pilot scale.**
L. Voswinkel* and U. Kulozik, *Technische Universität München*, *Freising, Germany*.

4:45 PM 537 **Effect of operating conditions on particle size of milk protein concentrates during ultrafiltration.**
X. Luo, L. Ramchandran, and T. Vasiljevic*, *Advanced Food Systems Research Unit, College of Health and Biomedicine, Victoria University*, *Melbourne, Victoria, Australia*.

Thursday, July 11

POSTER PRESENTATIONS

Animal Health: Immune Response Patterns

TH1 **Fatty acid catabolism modifies hypothalamic metabolome to suppress inflammation and appetite.**
J. W. McFadden*[1,2], E. Kim[3], Q. Li[2], S. Aja[2], V. V. Bandaru[2], N. J. Haughey[2], F. P. Kuhajda[2], and G. V. Ronnett[2], [1]*West Virginia University*, *Morgantown*, [2]*Johns Hopkins University*, *Baltimore, MD*, [3]*Daegu Gyeongbuk Institute of Science and Technology*, *Daegu, South Korea*.

TH2 **Effect of subcutaneous fat stores on fatty acid content of serum phospholipids fraction in periparturient dairy cows.**
C. M. Scholte*, K. C. Ramsey, S. L. Shields, and P. Rezamand, *University of Idaho*, *Moscow*.

TH3 **Productive performance and risk of fat cow syndrome of cows at peak lactation with or without clinical mastitis.**
C. F. Qin[1,2], P. H. Zhang*[1], J. Q. Wang[2], P. Sun[2], D. P. Bu[2], D. Zhu[1], Y. G. Chai[1,2], and T. Zhang[1], [1]*Hunan Provincial Key Laboratory for Genetic Improvement of Domestic Animal, College of Animal Science and Technology, Hunan Agricultural University*, *Changsha, Hunan, China*, [2]*State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*.

TH4 **Association between hematological parameters and gender upon arrival with clinical bovine respiratory disease (BRD) risk in newly received beef calves.**
J. T. Richeson*[1], P. J. Pinedo[2], E. B. Kegley[3], J. G. Powell[3], M. S. Gadberry[3], P. A. Beck[3], and S. M. Falkenberg[4], [1]*Department of Agricultural Sciences, West Texas A&M University*, *Canyon*, [2]*Texas A&M AgriLife Research & Extension Center-College of Veterinary Medicine & Biomedical Sciences, Texas A&M University System*, *Amarillo*, [3]*Department of Animal Science, Division of Agriculture, University of Arkansas*, *Fayetteville*, [4]*Ruminant Diseases and Immunology Research Unit, National Animal Disease Center, USDA-ARS*, *Ames, IA*.

TH5 **Relationship between lying behavior and metritis in Holstein dairy cows.**
J. M. Huzzey*, A. Itle, D. M. Weary, and M. A. G. von Keyserlingk, *University of British Columbia, Animal Welfare Program*, *Vancouver, BC, Canada*.

TH6 **Depleted serum vitamin E concentrations precede retained placenta in multiparous dairy cows.**
Y. Qu*, A. N. Fadden, M. G. Traber, and G. Bobe, *Oregon State University*, *Corvallis*.

TH7 **Elevated serum visfatin concentrations precede retained placenta in multiparous dairy cows.**
A. N. Fadden, M. G. Traber, and G. Bobe*, *Oregon State University*, *Corvallis*.

TH8 **Depleted serum vitamin E concentrations precede milk fever in multiparous dairy cows.**
Y. Qu*, A. N. Fadden, M. G. Traber, and G. Bobe, *Oregon State University*, *Corvallis*.

TH9 **Assessment of shedding of *Mycobacterium avium* ssp. *paratuberculosis* into milk and colostrum of naturally infected dairy cows over complete lactation cycles.**
J. R. Stabel*[1,2], L. Bradner[1], S. Robbe-Austerman[3], and D. C. Beitz[2], [1]*USDA-ARS-NADC*, *Ames, IA*, [2]*Iowa State University*, *Ames*, [3]*USDA-ARS-VS*, *Ames, IA*.

TH10 **Monitoring response to vaccination with an inactivated BVDV vaccine by RNAseq transcriptome analysis in cattle.**
W. Demasius[1], R. Weikard[1], F. Hadlich[1], K. Müller[2], and Ch. Kühn*[1], [1]*Leibniz Institute for Farm Animal Biology (FBN)*, *Dummerstorf, Germany*, [2]*Freie Universität Berlin, Department of Veterinary Medicine*, *Berlin, Germany*.

TH11 ***Cryptosporidium parvum* in Holstein calves at the State of Jalisco, México.**
I. Vitela-Mendoza[1], L. Medina-Esparza[1], C. Cruz-Vazquez[1], M. Ramos-Parra[1], I. Mejía-Haro[1], and S. S. González-Muñoz*[2], [1]*Instituto Tecnológico El Llano*, *Aguascalientes, Aguascalientes, México*, [2]*Colegio de Postgraduados*, *Montecillo, Estado de México, México*.

TH12 **Evidence of seasonality and birth clusters of *Mycobacterium avium* subspecies *paratuberculosis* infection in US dairy herds.**
Y. Zare*[1], G. E. Shook[2], M. T. Collins[3], and B. W. Kirkpatrick[1,2], [1]*College of Agricultural and Life Sciences, Department of Animal Science, University of Wisconsin-Madison*, *Madison*, [2]*College of Agricultural and Life Sciences, Department of Dairy Science, University of Wisconsin-Madison*, *Madison*, [3]*School of Veterinary Medicine, Department of Pathobiological Sciences, University of Wisconsin-Madison*, *Madison*.

TH13 **Association between bovine viral diarrhea virus (BVDV) vaccine response and birth and weaning weights in crossbred beef calves.**
X. Sheng*, J. Walker, and M. Gonda, *South Dakota State University*, *Brookings*.

TH14 **The effect of feeding endophyte-infected fescue on the acute phase response to lipopolysaccharide in beef heifers.**
A. W. Altman*[1], N. C. Burdick Sanchez[2], J. A. Carroll[2], T. B. Schmidt[3], E. S. Vanzant[1], and K. R. McLeod[1], [1]*Department of Animal and Food Sciences, University of Kentucky*, *Lexington*, [2]*Livestock Issues Research Unit, USDA-ARS*, *Lubbock, TX*, [3]*Department of Animal Science, University of Nebraska-Lincoln*, *Lincoln*.

TH15 **Oronasal administration of lipopolysaccharide and oral administration of lipopolysaccharide along with lipoteichoic acid enhanced salivary immunoglobulin A in periparturient dairy cows.**
S. Iqbal*[1], Q. Zebeli[1,2], D. A. Mansmann[1], S. M. Dunn[1], and B. N. Ametaj[1], [1]*University of Alberta*, *Edmonton, AB, Canada*, [2]*University of Veterinary Medicine*, *Vienna, Austria*.

TH16 **Repeated oral exposure to lipopolysaccharide and lipoteichoic acid prepartum decreased uterine horn fluctuation and the incidence of abnormal discharges in postparturient dairy cows.**
S. Iqbal*[1], Q. Zebeli[1,2], D. A. Mansmann[1], S. M. Dunn[1], and B. N. Ametaj[1], [1]*University of Alberta*, *Edmonton, AB, Canada*, [2]*University of Veterinary Medicine*, *Vienna, Austria*.

TH17 **Environmental heat stress modulates thyroid status and its response to repeated endotoxin (LPS) challenge in steers.**
S. Kahl*[1], T. H. Elsasser[1], R. P. Rhoads[2], R. J. Collier[3], and L. H. Baumgard[4], [1]*USDA-ARS*, *Beltsville, MD*, [2]*Virginia Polytechnic Institute and State University*, *Blacksburg*, [3]*University of Arizona*, *Tucson*, [4]*Iowa State University*, *Ames*.

TH18 **Proinflammatory responses to repeated endotoxin (LPS) challenges are augmented in Brahman cattle compared to Angus cattle following the second LPS challenge.**
T. H. Elsasser*[1], C. Chase[2], and S. Kahl[1], [1]*USDA-ARS*, *Beltsville, MD*, [2]*USDA-ARS*, *Clay Center, NE*.

TH19 **Effects of intrauterine infusion of endometritic cows with E. coli lipopolysaccharide on endometrial gene expression and reproductive performance.**
J. Moraes*[1], P. Silva[2], A. Scanavez[1], L. Mendonca[1], J. Silva[1], K. Galvao[3], and R. Chebel[1], [1]*Department of Veterinary Population Medicine, University of Minnesota*, *St Paul*, [2]*Department of Animal Science, University of Minnesota*, *St Paul*, [3]*Department of Large Animal Clinical Sciences, University of Florida*, *Gainesville*.

TH20 **Phagocytic activities of leukocytes, monocytes and neutrophils of dairy cows fed with n-3 and n-6 fatty acids sources in the transition period and early lactation.**
L. C. Verdurico*, J. R. Gandra, R. D. Mingoti, R. V. Barletta, T. S. Canaes, L. Oliveira, G. D. Calomeni, R. Gardinal, C. S. Takyia, T. H. Vendramini, and F. P. Renno, *Universidade de Sao Paulo*, *Universidade de Sao Paulo, Pirassununga, Sao Paulo, Brazil*.

TH21 **Effect of IgG binding on expression of Fc receptors and SYK activation in bovine neutrophils.**
J. Williams*, M. Worku, A. Alston, R. Noble, and T. Hanner, *North Carolina Agricultural & Technical State University*, *Greensboro*.

TH22 **Modulation of the intestinal immune response of calves by *Bacillus cereus* var. *toyoi* (Toyocerin).**
A. Aris*[1], F. Fabregas[1], S. Pares[1], M. Terre[1], M. Castillo[3], and A. Bach[1,2], [1]*IRTA*, *Caldes de Montbui, Spain*, [2]*ICREA*, *Barcelona, Spain*, [3]*Rubinum SA*, *Rubi, Spain*.

TH23 **Decomposing between-cow and within-cow variation in hematology and leukocyte responses in dairy cows during the periparturient period.**
M. D. Sellers*, C. R. Nightingale, A. R. Pepper-Yowell, T. L. Harris, and M. A. Ballou, *Department of Animal and Food Sciences, Texas Tech University*, *Lubbock*.

TH24 **Leukocyte responses immediately following calving are not predictive of first test day milk yield or somatic cell count in multiparous Holstein cows.**
M. D. Sellers, C. R. Nightingale, R. Y. Liang*, T. L. Harris, A. R. Pepper-Yowell, B. S. Obeidat, and M. A. Ballou, *Department of Animal and Food Sciences, Texas Tech University*, *Lubbock*.

TH25 **Differential effects of stimulation on ruminant neutrophils.**
K. Gyenai* and M. Worku, *North Carolina Agricultural and Technical State University*, *Greensboro*.

TH26 **Evaluation of TLR2 surface expression on blood mononuclear cells (BMC) in high immune response (HIR) biased cows.**
L. Wagter-Lesperance*, M. Paibomesai, R. Opsteen, and B. Mallard, *University of Guelph*, *Guelph, ON, Canada*.

TH27 **Effects of an immunomodulatory dietary supplement on the global gene expression profile of neutrophils from periparturient dairy cows.**
X. S. Revelo[1], J. W. Davis[2], R. D. Schnabel[2], A. L. Kenny[2], N. M. Barkley[2], and M. R. Waldron*[2], [1]*University Health Network*, *Toronto, ON, Canada*, [2]*University of Missouri*, *Columbia*.

TH28 **Effects of recombinant bovine somatotropin (rbST) treatment during the peripartum period on innate immune responses and hemogram parameters.**
P. Silva*[1], J. Moraes[2], A. Dresch[2], K. Machado[2], and R. Chebel[2], [1]*Department of Animal Science, University of Minnesota*, *St Paul*, [2]*Department of Veterinary Population Medicine, University of Minnesota*, *St Paul*.

TH29 **Immune status of dairy calves in the Northern Plains of Costa Rica: Year 2.**
J. A. Elizondo-Salazar*[1], D. Benavides-Varela[1], and A. J. Heinrichs[2], [1]*Estacion Experimental Alfredo Volio Mata, Facultad de Ciencias Agroalimentarias, Universidad de Costa Rica*, *San Rafael, Costa Rica*, [2]*The Pennsylvania State University*, *University Park*.

TH30 **Effect of disease in one lactation on the incidence of disease in the subsequent lactation in dairy cows.**
A. Vieira-Neto*[2], C. A. Risco[1], J. E. Santos[1], and K. N. Galvão[1], [1]*University of Florida*, *Gainesville*, [2]*Universidade do Estado de Santa Catarina*, *Lages, SC, Brazil*.

TH31 **Cortisol, interleukin 8, and immunoglobulin G ratios predict treatment for bovine respiratory disease in feedlot cattle.**
S. E. Speidel[1], R. R. Cockrum*[1], J. L. Salak-Johnson[2], C. C. L. Chase[3], M. G. Thomas[1], K. G. Prayaga[6], R. K. Peel[1], R. L. Weaber[4], H. Van Campen[1], G. H. Loneragan[5], J. J. Wagner[1], and R. M. Enns[1], [1]*Colorado State University*, *Fort Collins*, [2]*University of Illinois*, *Urbana*, [3]*South Dakota State University*, *Brookings*, [4]*Kansas State University*, *Manhattan*, [5]*Texas Tech University*, *Lubbock*, [6]*Zoetis*, *Kalamazoo, MI*.

TH32 **Citrus-derived oil (CDO) kills both *Staphylococcus aureus* and *Escherichia coli* in bovine MAC-T mammary epithelial cell lines in vitro.**
K. M. Moyes*, J. A. Almario, S. Salaheen, D. Hewes, and D. Biswas, *University of Maryland*, *College Park*.

TH33 **Evaluation of on-farm colostrum quality measurement tools.**
A. Bartier*, C. Windeyer, and L. Doepel, *University of Calgary*, *Calgary, AB, Canada*.

TH34 **The Wnt/Frizzled pathway in bovine neutrophils.**
H. Ismael and M. Worku*, *North Carolina Agricultural and Technical State University*, *Greensboro*.

TH35 **Genome-wide association of white blood cell types during vaccination.**
R. J. Leach*, C. G. Chitko-McKown, G. L. Bennet, S. A. Jones, J. W. Keele, W. M. Snelling, R. M. Thallman, and L. A. Kuehn, *U.S. Meat Animal Research Center*, *Clay Center, NE*.

TH36 **Associations among vaginal-vulvar laceration, vaginal discharge early postpartum, and prevalence of uterine disease.**
A. Vieira-Neto*[2], F. S. Lima[1], J. E. Santos[1], R. D. Mingoti[3], G. S. Vasconcellos[3], C. A. Risco[1], and K. N. Galvão[1], [1]*University of Florida*, *Gainesville*, [2]*Universidade do Estado de Santa Catarina*, *Lages, SC, Brazil*, [3]*Universidade de São Paulo*, *São Paulo, SP, Brazil*.

Ruminant Nutrition: Fats, Fatty Acids, Oils, and Glycerin Supplementation II

TH37 **Comparison of direct transesterification and extraction procedures to analysis the fatty acid composition in the rumen contents.**
S. P. Alves*[1,2], A. R. J. Cabrita[3], A. J. M. Fonseca[4], J. A. M. Prates[1], and R. J. B. Bessa[1], [1]*CIISA, Faculdade de Medicina Veterinária*, *Lisbon, Portugal*, [2]*UIPA, Instituto Nacional de Investigacao Agrária e Veterinária*, *Santarem, Portugal*, [3]*REQUIMTE, Faculdade de Ciências, Universidade do Porto*, *Porto, Portugal*, [4]*REQUIMTE, ICBAS, Universidade do Porto*, *Porto, Portugal*.

TH38 **Delayed feeding of fat enriched protein supplement alleviates postprandial suppression of in vitro rumen metabolism.**
Q. Baptiste*, E. Nestor, S. Chavez, S. Rastle-Simpson, K. D'Souza, A. Redhead, M. Knights, and E. Felton, *West Virginia University*, *Morgantown*.

TH39 **Estimation of energy content and short-chain fatty acid for microwave irradiated sorghum grain by in vitro gas production technique.**
F. P. Khajehdizaj*, A. Taghizadeh, B. B. Nobari, and H. Paya, *Dept of Animal Science, Faculty of Agriculture, University of Tabriz*, *Tabriz, Eastern Azerbaijan, Iran*.

TH40 **Effects of microwave irradiation on in vitro gas production characteristics of wheat grain.**
F. P. Khajehdizaj*, A. Taghizadeh, and B. B. Nobari, *Dept. of Animal Science, Faculty of Agriculture, University of Tabriz*, *Tabriz, Eastern Azerbaijan, Iran*.

TH41 **Effect of alkaline pretreatment on in vitro volatile fatty acid production of sorghum grain.**
F. P. Khajehdizaj*, A. Taghizadeh, and B. B. Nobari, *Dept of Animal Science, Faculty of Agriculture, University of Tabriz*, *Tabriz, Eastern Azerbaijan, Iran*.

TH42 **Effect of essential oils on rumen fermentation and methanogenesis by in vitro gas production technique.**
E. W. Jin[1,2], J. Q. Wang*[1], Y. H. Jiang[1], D. P. Bu[1], W. J. Shen[1], H. T. Shi[1], W. H. Bao[1], and F. D. Li[2], [1]*State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*, [2]*Gansu Agricultural University*, *Lanzhou, China*.

TH43 **Effect of C18 unsaturated fatty acid and rumen temperature on rumen fermentation and methane emission.**
Y. H. Jiang[1,2], J. Q. Wang[1], D. P. Bu*[1], H. J. Yang[2], L. H. Baumgard[3], E. W. Jin[1], H. T. Shi[1], and W. H. Bao[1], [1]*State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*, [2]*College of Animal Science and Technology, China Agricultural University*, *Beijing, China*, [3]*Department of Animal Science, Iowa State University*, *Ames*.

TH44 **Screening and characterization of *trans*-11 18:1 hydrogenating bacteria from rumen of dairy cows.**
Y. F. Lu[1,2], D. P. Bu*[1], S. G. Zhao[1], D. Jin[1], G. Q. Zhao[2], X. L. Hu[1], and J. W. Zhao[1], [1]*State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Sciences*, *Beijing, China*, [2]*College of Animal Science and Technology, Yangzhou University*, *Yangzhou, China*.

TH45 **Effects of rumen-protected γ-aminobutyric acid on performance and health status in heat-stressed dairy cows.**
J. B. Cheng[1,2], D. P. Bu[1], J. Q. Wang*[1], X. Z. Sun[1,2], L. Pan[1], and W. Liu[1], [1]*State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*, [2]*College of Animal Science and Technology, Anhui Agricultural University*, *Hefei, China*.

TH46 **Effects of rumen-protected γ-aminobutyric acid on rumen fermentation of dairy cows under heat stress.**
J. B. Cheng[1,2], J. Q. Wang*[1], D. P. Bu[1], X. Z. Sun[1,2], L. Pan[1], and W. Liu[1], [1]*State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*, [2]*College of Animal Science and Technology, Anhui Agricultural University*, *Hefei, China*.

TH47 **Rumen biohydrogenation of polyunsaturated fatty acids differs between herb species.**
M. B. Petersen*[1] and S. K. Jensen[2], [1]*AgroTech, Institute for Agri Technology and Food innovation*, *Aarhus, Denmark*, [2]*Aarhus University, Department of Animal Science*, *Tjele, Denmark*.

TH48 **Microbiological and fermentative indicators in response to the inclusion of yeast *Candida norvegensis* on in vitro and in vivo experiments.**
O. Enriquez*[1], N. Madera[1], O. Ruiz[1], Y. Marrero[2,1], C. Arzola[1], C. Rodriguez[1], and A. Corral[1], [1]*Universidad Autonoma de Chihuahua*, *Chihuahua, Mexico*, [2]*Instituto de Ciencia Animal*, *La Habana, Cuba*.

TH49 **Effects of purified n-6 and n-3 fatty acid on rumen fermentation indices and greenhouse gas emission in relation to biohydrogenation.**
S. M. Amanullah[1], S. C. Kim*[1], D. H. Kim[2], H. J. Lee[2], Y. J. Jae[2], Y. H. Joo[2], E. T. Kim[2], S. S. Lee[2], and I. H. Choi[3], [1]*Department of Animal Science (Inst. Agric. & Life Sci.), Gyeongsang National University*, *Jinju, South Korea*, [2]*Division of Applied Life Science, Gyeongsang National University*, *Jinju, South Korea*, [3]*Department of Companion Animal & Animal Resource Sciences, Joongbu University*, *Geumsan, South Korea*.

TH51 **Effects of different forage profiles diets on key genes expression of fatty acid synthesis in the mammary gland of lactating dairy goats.**
H. Zhang, C. J. Ao*, L. W. Song, E. Khas, and X. F. Zhang, *Department of Animal Science of Inner Mongolia Agricultural University*, *Huhhot, Inner Mongolia, China*.

TH52 **Roughage quality affects mammary gland uptake of major milk fat precursors in lactating dairy cows.**
L. W. Song, C. J. Ao*, E. Khas, and H. Zhang, *Department of Animal Science, Inner Mongolia Agricultural University*, *Huhhot, Inner Mongolia, China*.

TH53 **Effect on fatty acids metabolism in mammary gland by two different diets of lactating dairy goats.**
L. W. Song, C. J. Ao*, E. Khas, H. Zhang, and S. W. Liu, *Department of Animal Science, Inner Mongolia Agricultural University*, *Huhhot, Inner Mongolia, China*.

TH54 **Study of effects of conjugated linoleic acid (CLA) on feed intake, milk yield and composition, and milk fatty acid profile of Holstein dairy cows in early lactation.**
A. Mahdavi*, K. Rezayazdi, A. Z. Shahneh, and M. Dehghan-Banadaky, *Department of Animal Science, College of Agriculture and Natural Resources, University of Tehran*, *Karaj, Tehran, Iran*.

TH55 **High levels of crude glycerin in the diets of lambs finished in feedlot: ruminal fermentation.**
V. B. Carvalho*, J. M. B. Ezequiel, V. R. Fávaro, R. F. Leite, E. M. de Oliveira, É. H. Fernandes, L. F. Cremasco, J. R. Paschoaloto, M. T. C. Almeida, and B. H. F. Araújo, *FCAV, São Paulo State University - UNESP*, *Jaboticabal, São Paulo, Brazil*.

TH56 **Lactation performance of dairy cows grazing a tropical pasture supplemented with sources of rumen protected fat.**
J. De Souza*[1], F. Batistel[1], K. C. Welter[2], M. M. V. Silva[1], C. Sitta[1], M. G. M. F. Santos[1], L. J. Chagas[1], D. F. A. Costa[1], and F. A. P. Santos[1], [1]*University of Sao Paulo*, *Piracicaba, SP, Brazil*, [2]*University of Sao Paulo*, *Pirassununga, SP, Brazil*.

TH57 **Concentrate levels and supplemental fat for grazing mid-lactating dairy cows on milk fatty acids profile.**
F. L. Macedo, J. De Souza*, F. Batistel, W. F. Angolini, S. F. Angolini, and F. A. P. Santos, *University of Sao Paulo*, *Piracicaba, SP, Brazil*.

TH58 **Mathematical model for cheese yield prediction using nutritional composition of diets for dairy cows.**
E. Chávez-Delgadillo, D. Hernández-Sánchez, L. M. Vargas-Villamil, M. M. Crosby-Galván, O. Hernández-Mendo, S. S. González-Muñoz*, and R. Pinto-Ruiz, *Colegio de Postgraduados*, *Montecillo, Estado de México, México*.

Ruminant Nutrition: Feed Additives, Minerals and Vitamins III

TH59 **Microbial nitrogen synthesis in lambs fed corn silage inoculated with *Lactobacillus buchneri* associated with levels of concentrate.**
F. C. Basso*, C. H. S. Rabelo, E. C. Lara, L. G. O. Jorge, G. R. Siqueira, and R. A. Reis, *Department of Animal Science, UNESP/FCAV*, *Jaboticabal, SP, Brazil*.

TH60 **Influence of endotoxin and thermolysin on claw explants in an ex vivo laminitis model.**
S. Schaumberger*, M. Penner, N. Reisinger, and G. Schatzmayr, *Biomin Research Center*, *Tulln, Austria*.

TH61 **Evaluation of a protocol to measure endotoxin activity in rumen fluid.**
S. Schaumberger*, C. Kalteis, N. Reisinger, and G. Schatzmayr, *Biomin Research Center*, *Tulln, Austria*.

TH62 **Effect of corn silage with microbial inoculants on performance of feedlot lambs.**
F. C. Basso*, E. C. Lara, C. H. S. Rabelo, M. F. C. Miranda, G. S. Goncalves, L. G. O. Jorge, and R. A. Reis, *Department of Animal Science, UNESP/FCAV*, *Jaboticabal, SP, Brazil*.

TH63 **Influence of yeast viability on rumen fermentation parameters and nutrient digestibility in beef heifers.**
D. Vyas*[1], A. Uwijeye[1], R. Mohammed[1], W. Z. Yang[1], K. A. Beauchemin[1], and N. Walker[2], [1]*Agriculture and Agri-Food Canada*, *Lethbridge, AB, Canada*, [2]*AB Vista*, *Marlborough, Wiltshire, UK*.

TH64 **Influence of tannins extract supplementation at low level on feedlot performance of Katahdin × Pelibuey hair-lambs.**
B. Ortiz*[1], A. Camacho[2], N. E. Villalba[3], L. R. Flores[2], M. A. Mariezcurrena[1], M. D. Mariezcurrena[1], and R. Barajas[2], [1]*Universidad Autonoma del Estado de Mexico*, *Toluca, Edo. de Mexico, Mexico*, [2]*Facultad de Medicina Veterinaria y Zootecnia, Universidad Autonoma de Sinaloa*, *Culiacan, Sinaloa, Mexico*, [3]*Agricola Ganadera Mojolo*, *Culiacan, Sinaloa, Mexico*.

TH65 **Effects of dietary phytogenic feed additives on in vivo rumen fermentation, enzyme profile, and microbial ecology of cross-bred cattle.**
S. L. Ingale*[1], A. K. Pattanaik[2], D. N. Kamra[2], and K. Sharma[2], [1]*College of Animal Life Sciences, Kangwon National University*, *Chuncheon, Republic of Korea*, [2]*Clinical & Pet Nutrition Laboratory, Division of Animal Nutrition, Indian Veterinary Research Institute*, *Izatnagar, India*.

TH66 **Effect of tannin extract supplementation on apparent digestibility of crude protein and plasma urea nitrogen of implanted and non-implanted finishing hair-lambs.**
L. R. Flores*[1], J. J. Lomeli[1], J. I. Macias[1], E. A. Velazquez[1], N. E. Villalba[2], A. Camacho[1], E. Vazquez[1], I. Quintero[1], and R. Barajas[1], [1]*Facultad de Medicina Veterinaria y Zootecnia, Universidad Autonoma de Sinaloa*, *Culiacan, Sinaloa, Mexico*, [2]*Agricola y Ganadera Mojolo, S.A. de C.V*, *Culiacan, Sinaloa, Mexico*.

TH67 **Effects of bismuth subsalicylate and dietary sulfur level on in vitro rumen fermentation in continuous culture.**
S. W. Fessenden*, A. J. Carpenter, M. Ruiz Moreno, and M. D. Stern, *Department of Animal Science, University of Minnesota*, *St. Paul*.

TH68 **Effect of an exogenous phytase on digestibility, performance and phosphorus balance of Holstein steers.**
G. Buendía-Rodríguez[1], S. S. González-Muñoz*[2], M. D. Montoya-Flores[1], N. I. Ortega-Álvarez[1], and C. Aceves-Hacebe[1], [1]*CENID-FyMA, INIFAP*, *Ajuchitlán, Querétaro, México*, [2]*Colegio de Postgraduados*, *Montecillo, Estado de México, México*.

TH69 **Effects of supplementing *Propionibacterium freudenreichii* on lipid biohydrogenation of beef finishing diets containing flax oils using a semi-continuous fermentation system (RUSITEC).**
S. Ding*[1,2], M. L. He[2], G. O. Ribeiro Junior[3,2], A. Y. Alazzeh[2], H. Holo[4,5], O. M. Harstad[6], T. A. McAllister[2], S. J. Meale[1,2], and A. V. Chaves[1], [1]*Faculty of Veterinary Science, University of Sydney*, *Sydney, NSW, Australia*, [2]*Lethbridge Research Center, Agriculture and Agri-Food Canada*, *Lethbridge, AB, Canada*, [3]*Veterinary School, Federal University of Minas Gerais*, *Belo Horizonte, MG, Brazil*, [4]*Department of Chemistry, Biotechnology and Food Science, Norwegian University of Life Sciences*, *Ås, Norway*, [5]*TINE SA*, *Oslo, Norway*, [6]*Department of Animal and Aquacultural Sciences, Norwegian University of Life Sciences*, *Ås, Norway*.

TH73 **Effects of probiotics supplementation on milk performance of late lactation dairy cows.**
L. C. Huang[1,3], N. Zheng[1,2], J. Q. Wang*[1,2], J. B. Cheng[1,3], and D. P. Bu[1], [1]*State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*, [2]*Ministry of Agriculture - Milk and Dairy Product Inspection Center (Beijing)*, *Beijing, China*, [3]*College of Animal Science and Technology, Anhui Agricultural University*, *Hefei, China*.

TH74 **Diversity of monensin-sensitive rumen proteolytic bacteria under different nitrogen sources in vitro.**
Y. F. Lu[1,2], J. Q. Wang*[1], S. G. Zhao[1], D. P. Bu[1], and G. Q. Zhao[2], [1]*State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Sciences*, *Beijing, China*, [2]*College of Animal Science and Technology, Yangzhou University*, *Yangzhou, China*.

TH75 **Effects of antibacterial agents on ruminal biohydrogenation of unsaturated fatty acid in vitro.**
Y. H. Jiang[1,2], J. Q. Wang*[1], H. J. Yang[1], D. P. Bu[1], E. W. Jin[1], H. T. Shi[1], W. H. Bao[1], and P. Sun[1], [1]*State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*, [2]*College of Animal Science and Technology, China Agricultural University*, *Beijing, China*.

TH76 **Effects of supplemental bupleurum extract on blood parameters, antioxidant status and immune function in heat-stressed dairy cows.**
X. Z. Sun[1,2], J. Q. Wang*[1], D. P. Bu[1], J. B. Cheng[1,2], L. Pan[1], and W. Liu[1], [1]*State Key Laboratory of Animal Nutrition, Institute of Animal Sciences, Chinese Academy of Agricultural Sciences, Beijing, China*, [2]*College of Animal Science and Technology, Anhui Agricultural University, Hefei, China*.

TH77 **Effect of *Saccharomyces cerevisiae* I-1077 feed additive on rumen bacterial diversity in calves.**
F. Chaucheyras-Durand[1,2], V. Demey[1], F. Ossa[3], and E. Chevaux*[1], [1]*Lallemand Animal Nutrition*, *Blagnac, France*, [2]*Institut National de la Recherche Agronomique (INRA)*, *Saint-Genès Champanelle, France*, [3]*Lallemand Animal Nutrition*, *Montreal, QC, Canada*.

TH78 **Effects of cellulase and xylanase levels on the kinetics of in vitro fermentation of corn stover.**
A. Z. M. Salem*[1], Y. Liu[1], H. Ammar[2], L. M. Camacho[3], M. M. Y. Elghandour[1], H. Gado[4], and Z. Tan[5], [1]*Facultad de Medicina Veterinaria y Zootecnia, Universidad Autonoma del Estado de Mexico*, *Mexico*, [2]*Ecole superieure d'agriculture de Mograne*, *Mograne, Zaghouan, Tunisia*, [3]*Facultad de Medicina Veterinaria y Zootecnia, Universidad Autonoma de Guerrero*, *Cd. Altamirano, Guerrero, Mexico*, [4]*Animal Production Department, Faculty of Agriculture, Ain Shams University*, *Qalubia, Egypt*, [5]*Key Laboratory of Agro-ecological Processes in Subtropical Region, Institute of Subtropical Agricultural, the Chinese Academy of Sciences*, *Hunan, Changsha, China*.

TH79 **Effect of exogenous glucoamylase enzyme on in vitro fermentation of diet with 25% of maize or sorghum grains.**
A. Z. M. Salem*[1], H. Ammar[2], L. B. Ortiz[1], H. Gado[3], M. M. Y. Elghandour[1], and G. D. Mendoza[4], [1]*Facultad de Medicina Veterinaria, Universidad Autonoma del Estado de Mexico*, *Mexico*, [2]*Ecole superieure dagriculture de Mograne*, *Mograne, Zaghouan, Tunisia*, [3]*Department of Animal Production, Faculty of Agriculture, Ain Shams University*, *Qalubia, Egypt*, [4]*Universidad Autónoma Metropolitana*, *Unidad Xochimilco, México*.

TH80 **Effects of feeding *Bacillus subtilis* and *Bacillus licheniformis* on performance, health parameters, and a low quality roughage diet intake and digestibility by lambs.**
E. Martínez*, A. A. Rodríguez, and L. C. Solórzano, *University of Puerto Rico*, *Mayagüez, Puerto Rico*.

TH81 **Use of organic acids and polyphenols to mitigate induced ruminal acidosis in dairy heifers.**
R. De Nardi*[1], S. Segato[1], J. C. Plaizier[2], S. Li[2], E. Khafipour[2], I. Andrighetto[1,3], and G. Marchesini[1], [1]*Department of Animal Medicine, Productions and Health, University of Padova*, *Legnaro (Padova), Italy*, [2]*Department of Animal Science, University of Manitoba*, *Winnipeg, Manitoba, Canada*, [3]*Istituto Zooprofilattico Sperimentale delle Venezie*, *Legnaro (Padova), Italy*.

TH82 **Effects of exogenous enzymes on in vitro gas production kinetics and degradation of wheat dried distillers grains with solubles and barley silage.**
Z. X. He*[1,2], S. Ding[1], L. Xu[1,3], K. A. Beauchemin[1], and W. Z. Yang[1], [1]*Lethbridge Research Centre, Agriculture and Agri-Food Canada*, *Lethbridge, AB, Canada*, [2]*Key Laboratory of Agro-Ecological Processes in Subtropical Region, Institute of Subtropical Agriculture, the Chinese Academy of Sciences*, *Changsha, Hunan, China*, [3]*College of Food Science and Engineering, Inner Mongolia Agricultural University*, *Hohhot, Inner Mongolia, China*.

TH83 **Selenium-enriched tall wheatgrass hay as a substitute for sodium selenite in diets of dairy cattle.**
G. S. Cun*[1,2], P. H. Robinson[2], and S. E. Benes[1], [1]*California State University, Fresno*, *Fresno*, [2]*University of California, Davis*, *Davis*.

TH84 **The effect of different sources of zinc on some blood mineral of finishing lambs.**
M. Mallaki*, M. A. Norouzian, and A. A. Khadem, *The University of Tehran*, *Tehran, Iran*.

TH85 **Effects of supplemental niacinamide on lactation performance and rumen fermentation of Holstein cows under heat stress.**
L. Pan[2], D. P. Bu[2], J. Q. Wang*[1,2], J. B. Cheng[2], X. Z. Sun[2], and W. Liu[2], [1]*Agronomy College of Heilongjiang August First Land Reclamation University*, *Heilongjiang, China*, [2]*State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*.

TH86 **Effect of Rumensin and Amaferm on performance of heifers fed in dry lot and on wheat pasture.**
H. Gray*[1], P. Beck[1], K. Glaubius[2], and B. Stewart[1], [1]*University of Arkansas*, *Hope*, [2]*BioZyme Incorporated*, *St. Joseph, MO*.

TH87 **Effects of salinomycin and virginiamycin supplementation on ruminal fermentation and blood characteristics of Nellore steers fed a high concentrate diet.**
A. J. C. Nuñez*[1], V. V. Almeida[2], J. P. Schoonmaker[3], I. E. Borges[1], F. Pinese[1], F. T. Mercado[1], E. M. Ferreira[4], A. V. Pires[4], P. R. Leme[1], and J. C. M. Nogueira Filho[1], [1]*FZEA/USP*, *Pirassununga, SP, Brazil*, [2]*FCAV/UNESP*, *Jaboticabal, SP, Brazil*, [3]*Purdue University*, *West Lafayette, IN*, [4]*ESALQ/USP*, *Piracicaba, SP, Brazil*.

TH88 **Concentrate level and combined use of ionophore and virginiamycin on ruminal fermentation and blood characteristics of Nellore steers fed high grain diets.**
A. J. C. Nuñez*[1], V. V. Almeida[2], J. P. Schoonmaker[3], F. Pinese[1], I. E. Borges[1], F. T. Mercado[1], E. M. Ferreira[4], A. V. Pires[4], P. R. Leme[1], and J. C. M. Nogueira Filho[1], [1]*FZEA/USP*, *Pirassununga, SP, Brazil*, [2]*FCAV/UNESP*, *Jaboticabal, SP, Brazil*, [3]*Purdue University*, *West Lafayette, IN*, [4]*ESALQ/USP*, *Piracicaba, SP, Brazil*.

TH89 **Effects of different amino acid patterns on the expression of four major milk protein genes in primary cultured bovine mammary epithelial cells.**
X. F. Zhang[1], C. J. Ao*[1], M. Gao[2], E. Khas[1], H. Zhang[1], and L. W. Song[1], [1]*Department of Animal Science, Inner Mongolia Agricultural University*, *Hohhot, Inner Mongolia, China*, [2]*Inner Mongolia Academy of Agricultural & Animal Husbandry Sciences*, *Hohhot, Inner Mongolia, China*.

TH90 **Effects of tributyrin supplementation in milk replacer on performance and gut development of Holstein calves.**
G. Araujo*[1], M. Terré[1], A. Mereu[2], I. Ipharraguerre[2], and A. Bach[3,1], [1]*Department of Ruminant Production, IRTA*, *Caldes de Montbui, Spain*, [2]*Lucta S.A*, *Barcelona, Spain*, [3]*ICREA, Institut de Recerca i Estudis Avançats*, *Barcelona, Spain*.

TH91 **Casein and whey protein as delivery methods for synthetic vitamin B12 to increase intestinal absorption in lactating dairy cows.**
V. M. Artegoitia*[1], M. J. de Veth[2,3], F. Harte[1], D. R. Ouellet[4], and C. L. Girard[4], [1]*Department of Food Science and Technology, University of Tennessee*, *Knoxville*, [2]*Department of Animal Science, University of Tennessee*, *Knoxville*, [3]*Balchem Corporation*, *New Hampton, NY*, [4]*Agriculture and Agri-Food Canada*, *Sherbrooke, QC, Canada*.

TH92 **The effects of propyl-propylthiosulphonate and capsicum addition on ruminal fermentation and animal performance of lactating dairy cows.**
A. Foskolos*[1], A. Siurana[1], A. Ferret[1], L. Castillejos[1], D. Bravo[2], and S. Calsamiglia[1], [1]*Universitat Universitat Autònoma de Barcelona*, *Bellaterra, Spain*, [2]*Pancosma*, *Geneva, Switzerland*.

TH93 **The effect of feed additives on in vitro volatile fatty acid production.**
A. Duncan*, A. Woldeghebriel, and M. Worku, *North Carolina Agricultural and Technical State University*, *Greensboro*.

TH94 **Anionic diets with chromium or methionine for transition cows on hormone and metabolic profile.**
I. R. F. M. Veiga[1], B. N. de Faria[1], T. L. Resende[1], A. B. D. Pereira[2], and R. B. Reis*[1,3], [1]*Veterinary School, Federal University of Minas Gerais*, *Belo Horizonte, Minas Gerais, Brazil*, [2]*University of New Hampshire*, *Durham*, [3]*FAPEMIG*, *Minas Gerais, Brazil*.

TH95 **The effecs of anionic diets with chromium or methionine for transition cows on blood mineral levels.**
I. R. F. M. Veiga[1], B. N. de Faria[1], T. L. Resende[1], A. B. D. Pereira[2], and R. B. Reis*[1,3], [1]*Veterinary School, Federal University of Minas Gerais*, *Belo Horizonte, Minas Gerais, Brazil*, [2]*University of New Hampshire*, *Durham*, [3]*FAPEMIG*, *Minas Gerais, Brazil*.

TH96 ***Shigella*** **isolation, phylogeny and identification, with potential for cellulose hydrolysis in the rumen.**
L. Luna-Rodríguez, D. Hernández-Sánchez, M. Cobos-Peralta, H. Silva-Rojas, C. Cortez-Romero, S. S. González-Muñoz*, and R. Pinto-Ruiz, *Colegio de Postgraduados*, *Montecillo, Estado de México, México*.

Ruminant Nutrition: Feeding, Ruminal Fermentation, and Efficiency of Production III

TH97 **Effects of different feeding frequencies on feeding behavior of feedlot Nellore cattle.**
J. Silva[2], T. V. B. Carrara[1], M. C. S. Pereira[2], A. L. N. Rigueiro[2], D. H. M. Watanabe[2], D. D. Estevam[2], D. P. Silva[2], D. V. F. Vicari[2], I. C. Batista Junior[2], F. T. V. Pereira[2], D. J. C. Oliveira[3], G. P. Mateus[3], C. A. Oliveira[2], and D. D. Millen*[2], [1]*São Paulo State University (UNESP)*, *Botucatu, São Paulo, Brazil*, [2]*São Paulo State University (UNESP)*, *Dracena, São Paulo, Brazil*, [3]*APTA*, *Andradina, São Paulo, Brazil*.

TH98 **Effects of different feeding frequencies on rumen papillae of feedlot Nellore cattle.**
T. V. B. Carrara[2], J. Silva[2], M. C. S. Pereira[2], A. L. N. Rigueiro[2], D. H. M. Watanabe[2], D. D. Estevam[2], D. P. Silva[2], D. V. F. Vicari[2], C. A. Oliveira[2], I. C. Batista Junior[2], F. T. V. Pereira[2], R. V. G. Soutello[2], M. D. B. Arrigoni[1], and D. D. Millen*[2], [1]*São Paulo State University (UNESP)*, *Botucatu, São Paulo, Brazil*, [2]*São Paulo State University (UNESP)*, *Dracena, São Paulo, Brazil*.

TH99 **Manipulating wheat source and monensin level on growth performance, carcass characteristics, and fatty acid of feedlot cattle.**
L. Xu*[1,2], Y. Jin[1], M. L. He[2], and W. Z. Yang[2], [1]*College of Food Science and Engineering, Inner Mongolia Agricultural University*, *Hohhot, Inner Mongolia, China*, [2]*Research Centre, Agriculture and Agri-Food Canada*, *Lethbridge, AB, Canada*.

TH100 **Transcriptome analysis of epithelial and connective tissue fractions of rumen papillae from lactating dairy cattle.**
M. A. Steele*[1], O. AlZahal[1], S. Greenwood[1], J. C. Matthews[2], and B. W. McBride[1], [1]*University of Guelph*, *Guelph, ON, Canada*, [2]*University of Kentucky*, *Lexington*.

TH101 **Feeding behavior and lactational performance in response to reciprocal combinations of barley and corn grains in the diets of Holstein cows.**
S. Kargar*[1,3], G. R. Ghorbani[1], M. Khorvash[1], and D. J. Schingoethe[2], [1]*Department of Animal Sciences, College of Agriculture, Isfahan University of Technology*, *Isfahan, Iran*, [2]*Dairy Science Department, South Dakota State University*, *Brookings*, [3]*Department of Dairy Science, College of Agricultural and Life Sciences, University of Wisconsin-Madison*, *Madison*.

TH102 **Rumination times in balanced dairy cow rations.**
S. Rengman*[1], B. Johansson[1], L. Karlsson[2], M. Murphy[1], A. Sterk[3], and E. Weurding[3], [1]*Lantmännen Lantbruk Feed Development*, *Malmö, Sweden*, [2]*Felleskjøpet Feed Development*, *Trondheim, Norway*, [3]*Agrifirm Innovation Center*, *Apeldoorn, Netherlands*.

TH103 **Water intake in crossbred dairy calves.**
A. L. Silva[1], M. I. Marcondes[1], F. S. Machado[2], F. C. Sousa[1], A. S. Trece[1], M. M. D. Castro[1], T. E. Silva[1], and J. P. P. Rodrigues*[1], [1]*Universidade Federal de Viçosa*, *Viçosa, Minas Gerais, Brazil*, [2]*EMBRAPA Gado de Leite*, *Juiz de Fora, Minas Gerais, Brazil*.

TH104 **Improving the preweaning performance of dairy calves through sensory stimulation.**
A. Mereu[1], R. Hernández[2], J. C. Macias[2], J. Vargas[1], M. Candelas[2], and I. R. Ipharraguerre*[1], [1]*Lucta SA*, *Barcelona, Spain*, [2]*Nuplen*, *Gomez Palacio, Dgo., México*.

TH105 **Intake, digestibility, and ruminal parameters in heifers fed treated jatropha (*Jatropha curcas*) seed cake.**
L. D. Silva, O. G. Pereira*, S. C. Valadares Filho, K. G. Ribeiro, T. C. Silva, and R. Tamehiro, *Federal University of Viçosa*, *Department of Animal Science, Viçosa, Minas Gerais, Brazil*.

TH106 **In situ degradation kinetics of brown midrib corn silage hybrids harvested prior to or at maturity.**
M. S. Holt*[1], K. Neal[1], J.-S. Eun[1], J. E. Creech[2], A. J. Young[1], and X. Dai[3], [1]*Department of Animal, Dairy, and Veterinary Sciences, Utah State University*, *Logan*, [2]*Department of Plant, Soils, and Climate, Utah State University*, *Logan*, [3]*Utah Agricultural Experiment Station, Utah State University*, *Logan*.

TH107 **Tail arterial blood or tail venous blood: Could represent external pudic arterial blood?**
Y. D. Zhang, J. Q. Wang*, D. P. Bu, M. Zhao, X. Q. Zhou, P. Zhang, and Y. J. Xu, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*.

TH108 **Milk production and ruminal fermentation characteristics of dairy cows grazing birdsfoot trefoil pasture on a commercial organic dairy farm.**
R. G. Christensen[1], J.-S. Eun*[1], A. J. Young[1], and J. W. MacAdam[2], [1]*Department of Animal, Dairy, and Veterinary Sciences, Utah State University*, *Logan*, [2]*Department of Plants, Soils, and Climate, Utah State University*, *Logan*.

TH109 **Behavior and physiological changes of dairy calves in response to the level of intake and weaning method.**
M. P. C. Gallo[1,3], M. R. Paula[1,2], D. Lezier[1,2], M. C. Soares[1,3], G. B. Mourao[1,2], and C. M. M. Bittar*[1,2], [1]*ESALQ/USP*, *Piracicaba, Sao Paulo, Brazil*, [2]*CNPq*, *Brasilia, DF, Brazil*, [3]*Fapesp*, *Sao Paulo, Sao Paulo, Brazil*, [4]*Capes*, *Brasilia, DF, Brazil*.

TH110 **Effects of different dry period managements on rumen microbiota before and after calving.**
H. R. Khazanehei*, J. C. Plaizier, S. Li, and E. Khafipour, *University of Manitoba*, *Winnipeg, MB, Canada*.

TH111 **Enteric methane emissions from dairy cows fed corn silage or barley silage based diets.**
C. Benchaar*[1], F. Hassanat[1], R. Gervais[2], P. Y. Chouinard[2], H. Petit[1], and D. Massé[1], [1]*Agriculture and Agri-Food Canada, Dairy and Swine Research and Development Centre*, *Sherbrooke, QC, Canada*, [2]*Département des Sciences Animales, Université Laval*, *Québec, QC, Canada*.

TH112 **Midwestern US by-product feedstuffs vary in ruminal nutrient digestion.**
J. Goeser*[1], C. Heuer[1,2], and L. Meyer[1], [1]*Rock River Laboratory Inc.*, *Watertown, WI*, [2]*University of Wisconsin, Madison*, *Madison*.

TH113 **Milk fatty acid profiles in Holstein dairy cows fed a corn straw or mixed forage diet.**
Y. D. Zhang, X. W. Zhao, J. Q. Wang, D. P. Bu*, P. P. An, and X. W. Xu, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*.

TH114 **Effects of replacing alfalfa hay and corn silage with corn straw in diets on feeding behavior of dairy cows.**
Y. D. Zhang, D. P. Bu, J. Q. Wang*, P. Zhang, J. Guo, M. Zhao, and X. Q. Zhou, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*.

TH115 **Efficacy of a commercial colostrum replacer in delivering passive immunity to Holstein calves.**
D. L. Cook*[1], T. TerHune[2], M. T. Socha[3], D. Carlson[1], D. J. Tomlinson[3], and J. M. DeFrain[3], [1]*Milk Products*, *Chilton, WI*, [2]*HMS Veterinary Development*, *Tulare, CA*, [3]*Zinpro Corporation*, *Eden Prairie, MN*.

TH116 **Lactational performance and ruminal fermentation profiles of dairy cows fed diets containing birdsfoot trefoil hay.**
R. G. Christensen[1], J.-S. Eun*[1], A. J. Young[1], and J. W. MacAdam[2], [1]*Department of Animal, Dairy, and Veterinary Sciences, Utah State University*, *Logan*, [2]*Department of Plants, Soils, and Climate, Utah State University*, *Logan*.

TH117 **Feed efficiency and carcass traits of Nellore and Angus young bulls fed whole corn grain diet.**
J. R. R. Carvalho[1], M. M. Ladeira*[1,2], M. L. Chizzotti[1], P. D. Teixeira[1], L. A. Silveira[1], and M. C. L. Alves[1], [1]*Universidade Federal de Lavras*, *Lavras, MG, Brazil*, [2]*Purdue University*, *West Lafayette, IN*.

TH118 **The relationship between carcass and non-carcass composition and visceral organ mass, and residual feed intake in finishing beef cattle.**
M. L. Nascimento*[1], G. E. Carstens[2], F. R. B. Ribeiro[2], W. K. Krueger[2], L. O. Tedeschi[2], M. E. Davis[3], and W. E. Pinchak[4], [1]*University of Sao Paulo*, *Piracicaba, SP, Brazil*, [2]*Texas A&M University*, *College Station*, [3]*Ohio State University*, *Columbus*, [4]*Texas AgriLife Research*, *Vernon*.

TH119 **Use of a fescue seed model to study effects of ergot alkaloids on temperature regulation in steers.**
J. Eisemann*, G. Huntington, M. Poore, M. Hanna, and M. Williamson, *North Carolina State University*, *Raleigh*.

TH120 **Soybean hull and enzyme inclusion effects on diet digestibility and growth performance in beef calves consuming corn-based diets.**
J. R. Russell*, W. J. Sexten, and M. S. Kerley, *University of Missouri*, *Columbia*.

TH121 **Doses of monensin in combination with virginiamycin in the diet of Nellore beef cattle in feedlot.**
J. M. B. Benatti*[1], J. A. A. Neto[1], I. Sokoloski[2], M. H. Moretti[1], P. Terencio[3], F. D. Resende[4], and G. R. Siqueira[4], [1]*Universidade Estadual Paulista–FCAV*, *Jaboticabal, São Paulo, Brazil*, [2]*Universidade de São Paulo–Esalq*, *Piracicaba, São Paulo, Brazil*, [3]*Cargill*, *São Paulo, Brazil*, [4]*Agência Paulista de Tecnologia dos Agronegócios, Alta Mogiana*, *Colina, Saõ Paulo, Brazil*.

TH122 **Using near-infrared spectroscopy (NIRS) to predict the relationship between fecal starch concentration and feed efficiency for feedlot cattle.**
L. J. Jancewicz*[1,2], M. L. Swift[1], G. B. Penner[2], J. J. McKinnon[2], K. A. Beauchemin[1], and T. A. McAllister[1], [1]*Agriculture and Agri-Food Canada*, [2]*University of Saskatchewan*.

TH123 **Annual energy requirements of Nellore cows, pregnant in different breeding seasons, in Brazilian savannah.**
A. L. B. Netto[1], J. C. Souza[1], H. J. Fernandes*[2,1], E. P. Rosa[2], B. D. D'Auria[2], A. Aguiar[3], L. O. Tedeschi[4], L. M. Surita[2], and L. M. Paiva[2], [1]*Federal University of Mato Grosso doSul*, *Campo Grande, MS, Brazil*, [2]*State University of Mato Grosso do Sul*, *Aquidauana, MS, Brazil*, [3]*University of Florida*, *Gainesville*, [4]*Texas A&M University*, *College Station*.

TH124 **Interaction of corn distillers grain and monensin on site and extent of digestion in feedlot heifers.**
L. Xu*[1,2], Y. Jin[1], M. L. He[2], and W. Z. Yang[2], [1]*College of Food Science and Engineering, Inner Mongolia Agricultural University*, *Hohhot, Inner Mongolia, China*, [2]*Research Centre, Agriculture and Agri-Food Canada*, *Lethbridge, AB, Canada*.

TH125 **Carcass traits by male beef cattle finished in feedlot with sources of roughage and crude glycerin.**
A. F. Ribeiro*, J. F. Lage, A. J. Neto, R. A. Silva, L. G. Rossi, E. E. Dallantonia, L. M. Delevatti, G. M. Delamagna, M. B. Abra, M. O. Santana, and T. T. Berchielli, *São Paulo State University*, *Jaboticabal, SP, Brazil*.

Ruminant Nutrition: Protein, Energy and By-Products Supplementation III

TH126 **The response of prepubertal Holstein heifers to altering the ratio of dietary crude protein to metabolizable energy.**
H. R. Motalebei, K. Rezayazdi, M. Dehghan-Banadaky*, and H. Kohram, *Department of Animal Science, University of Tehran*, *Karaj, Tehran, Iran*.

TH127 **Effect of replacing soybean meal with whole soybean on digestibility of the diet of grazing heifers.**
A. G. Silva*[1], M. F. Paulino[1], I. F. Smith[1], E. E. L. Valente[2], L. S. Martins[1], D. M. Almeida[1], A. L. Braga Netto[3], and G. Mendes Filho[4], [1]*Federal University of Vicosa, Vicosa, Brazil*, [2]*Federal University of Lavras, Lavras, Brazil,* [3]*State University of Mato Grosso do Sul, Aquidauana, Brazil,* [4]*Federal University of Tocantins, Araguaina. Brazil*.

TH128 **Comparison of omasal and reticular digesta samples to estimate the ruminal digestibility in cattle fed diets containing sugar cane in natura or ensiled sugar cane and corn silage.**
L. D. S. Mariz*, S. C. V. Filho, E. Detmann, S. A. Santos, F. A. C. Villadiego, L. F. Prados, D. Zanetti, F. Sales, A. N. Nunes, and L. C. Alves, *Universidade Federal de Vicosa*, *Vicosa, Minas Gerais, Brazil*.

TH129 **Effect of replacing soybean meal with rumen-protected soybean meal on production performance and milk composition in early lactation dairy cows.**
C. G. Zhang[1], L. M. Huang[1,2], G. L. Liu*[1,2], X. K. Zhang[1], and G. Yang[1], [1]*State Key Laboratory of Dairy Biotechnology, Shanghai Bright Holstan Co. Ltd*, *Shanghai, China*, [2]*Shanghai Dairy Breeding Center Co. Ltd*, *Shanghai, China*.

TH130 **Effects of Chinese herbal medicinal formula supplementation on production performance and immune profile in late-lactation dairy cows.**
Y. J. Su[1], G. L. Liu*[1,2], C. G. Zhang[1], G. Yang[1], and Z. Liu[1], [1]*State Key Laboratory of Dairy Biotechnology, Shanghai Bright Holstan Co. Ltd*, *Shanghai, China*, [2]*Shanghai Dairy Breeding Center Co. Ltd*, *Shanghai, China*.

TH131 **Effects of wheat source and monensin level on intake and rumen fermentation in feedlot heifers.**
W. Z. Yang*[1], L. Xu[1,2], C. Li[3], S. Ding[1,4], and T. A. McAllister[1], [1]*Agriculture and Agri-Food Canada*, *Lethbridge, AB, Canada*, [2]*College of Animal Science, Inner Mongolia Agricultural University*, *Hohhot, Inner Mongolia, China*, [3]*College of Animal Science and Technology, Inner Mongolia University for the Nationalities*, *Tongliao, Inner Mongolia, China*, [4]*Department of Agricultural, Food and Nutritional Science, University of Alberta*, *Edmonton, AB, Canada*.

TH132 **Meat quality of Girolando steers fed spineless cactus.**
R. A. S. Pessoa*[1], J. R. C. Silva[1], A. S. C. Veras[1], M. A. Ferreira[1], I. Ferraz[2], and P. C. Vasconcelos[1], [1]*Universidade Federal Rural de Pernambuco*, *Recife, Pernambuco, Brazil*, [2]*Instituto Agronômico de Pernambuco*, *Recife, Pernambuco, Brazil*.

TH133 **Effects of replacing corn silage with alfalfa hay on blood metabolites of Holstein cows in early lactation.**
A. Akbari, A. Zali, M. Ganjkhanlou*, M. Dehghan-Banadaky, and A. Emami, *University of Tehran*, *Tehran, Iran*.

TH134 **Continuous measurement of methane production before and after feeding in continuous cultures fed bermudagrass.**
K. M. Young*, J. R. Burgess, C. T. McDonald, and T. C. Jenkins, *Clemson University*, *Clemson, SC*.

TH135 **In vitro screening of potential enzyme additives to enhance degradation of wheat dried distillers grains with solubles and barley silage.**
Z. X. He*[1,2], S. Ding[1], L. Xu[1,3], K. A. Beauchemin[1], and W. Z. Yang[1], [1]*Lethbridge Research Centre, Agriculture and Agri-Food Canada*, *Lethbridge, AB, Canada*, [2]*Key Laboratory of Agro-ecological Processes in Subtropical Region, Institute of Subtropical Agriculture, the Chinese Academy of Sciences*, *Changsha, Hunan, China*, [3]*College of Food Science and Engineering, Inner Mongolia Agricultural University*, *Hohhot, Inner Mongolia, China*.

TH136 **Replacing corn silage with chopped alfalfa hay on performance, apparent digestibility, and chewing activity of dairy cows.**
A. Akbari, A. Zali, M. Ganjkhanlou*, M. Dehghan-Banadaky, and A. Emami, *University of Tehran*, *Tehran, Iran*.

TH137 **Impact of increased dietary grain inclusion on blood metabolites and rumen fermentation characteristics of prepubertal dairy heifers.**
T. S. Dennis*, J. E. Tower, H. Schmitz, A. Mosiman, and T. D. Nennich, *Purdue University*, *West Lafayette, IN*.

TH138 **Effects of energy source (starch or fat) on performance, eating pattern, and carcass quality of Holstein bulls fed high-concentrate rations during the finishing period.**
M. Devant*[1], B. Quintana[1], and A. Bach[2,1], [1]*Department of Ruminant Production-IRTA*, *Torre Marimon, Caldes de Montbui, Barcelona, Spain*, [2]*ICREA*, *Barcelona, Spain*.

TH139 **Effects of zinc sources on performance, hematology, and biochemistry of blood serum in finishing lambs.**
M. Mallaki*, M. A. Norouzian, and A. A. Khadem, *The University of Tehran*, *Tehran, Iran*.

TH140 **Effects of supplemental bupleurum extract on lactation performance and rumen fermentation in Holstein cows subjected to heat stress.**
L. Pan[1], D. P. Bu*[1], J. Q. Wang[1], J. B. Cheng[1,2], X. Z. Sun[1,2], W. Liu[1,3], R. X. Hu[1,3], and C. Y. Ren[1,3], [1]*Chinese Academy of Agricultural Sciences*, *Beijing, China*, [2]*Anhui Agricultural University*, *Hefei, Anhui, China*, [3]*Gansu Agricultural University*, *Lanzhou, Gansu, China*.

TH141 **Effect of ration on intake, digestibility, and rumen microbial yield in heifers under intensive fattening system.**
J. Mora, X. Cortes, H. J. Morazan, A. R. Seradj, D. V. Mata, and J. Balcells*, *Dept. Animal Production, University of Lleida*, *Lleida, Spain*.

TH142 **Effect of endophyte-infected tall fescue seed on ruminal metabolism and physiology in Angus steers.**
D. H. Kim*[1], J. L. Klotz[2], and D. L. Harmon[1], [1]*Department of Animal and Food Sciences, University of Kentucky*, *Lexington*, [2]*USDA-ARS, Forage-Animal Production Research Unit*, *Lexington, KY*.

TH143 **Feeding incremental levels of ground flaxseed linearly reduced milk yield and enteric methane emission in organic Jersey cows.**
T. L. Resende*[1], A. F. Brito[2], K. J. Soder[3], D. H. Woitschach[4], A. B. D. Pereira[2], and R. B. Reis[1], [1]*Universidade Federal de Minas Gerais*, *Belo Horizonte, Minas Gerais, Brazil*, [2]*University of New Hampshire*, *Durham*, [3]*USDA-ARS*, *University Park, PA*, [4]*Universidade Federal de Viçosa*, *Viçosa, Minas Gerais, Brazil*.

TH144 **Effect of source of corn silage and level of dry matter intake on rumen nutrient pool sizes and turnover in dairy cows.**
F. Lopes*, D. E. Cook, R. W. Bender, and D. K. Combs, *Department of Dairy Science, University of Wisconsin*, *Madison*.

TH146 **Performance and intake of finishing Nellore young bulls on pasture in the rainy season supplemented with crude glycerin.**
E. San Vito*, J. F. Lage, R. A. Silva, P. Castignino, A. F. Ribeiro, L. R. Simonetti, L. M. Delevatti, M. Machado, E. E. Dallantonia, R. A. Reis, and T. T. Berchielli, *São Paulo State University*, *Jaboticabal, São Paulo, Brazil*.

TH147 **Effects of increasing levels of whole raw soybean in the Nellore steer diets on ruminal fermentation and microbial protein synthesis.**
N. R. B. Cônsolo*, A. S. C. Pereira, R. Gardinal, J. E. Freitas Junior, J. R. Gandra, C. S. Takiya, F. P. Rennó, and G. D. Calomeni, *Universidade de São Paulo*, *Pirassununga, São Paulo, Brazil*.

TH148 **Carcass traits of Nellore young bulls finished in pasture supplemented with crude glycerin.**
E. San Vito*, J. F. Lage, L. M. Delevatti, E. E. Dalantonia, M. Machado, L. R. Simonetti, R. A. Silva, P. Castagnino, R. A. Reis, and T. T. Berchielli, *São Paulo State University*, *Jaboticabal, São Paulo, Brasil*.

TH149 **Meat quality from Nellore young bulls finished on pasture supplemented with crude glycerin.**
E. San Vito*, J. F. Lage, R. A. Silva, L. M. Delevatti, E. E. Dalantonia, L. R. Simonetti, M. Machado, M. B. Abra, A. F. Ribeiro, and T. T. Berchielli, *São Paulo State University*, *Jaboticabal, São Paulo, Brazil*.

TH150 **Microbial protein synthesis in dairy cows fed with sources of unsaturated fatty acids.**
V. P. Bettero*[2,1], J. E. Freitas Junior[1], M. D. S. Oliveira[2], B. C. Venturelli[1], E. F. Jesus[2], R. Gardinal[1], G. D. Calomeni[1], K. A. Koyama[1], V. G. C. Lacuna[1], B. C. Benevento[1], R. V. Barletta[1], and F. P. Renno[1], [1]*University of Sao Paulo*, *Pirassununga, Sao Paulo, Brazil*, [2]*State University Julio de Mesquita*, *Jaboticabal, Sao Paulo, Brazil*.

TH151 **Protein maintenance requirements of goats.**
A. K. Almeida*, D. C. Soares, S. P. Silva, M. H. M. R. Fernandes, I. A. M. A. Teixeira, and K. T. Resende, *UNESP Univ Estadual Paulista*, *Jaboticabal, São Paulo, Brazil*.

TH152 **Encapsulated nitrate product replacing soybean meal on feedlot performance of finishing beef steers.**
M. L. R. Pereira[1], V. R. M. Couto[1], R. C. Araujo[1], F. A. Lino[1], A. M. Mobiglia[1], J. A. Silva[1], A. C. Carvalho[1], P. H.J. Cunha[1], and J. J. R. Fernandes*[1], [1]*Escola de Veterinaria e Zootecnia da UFG*, *Goiania, Goias, Brazil*, [2]*GRASP Ind. e Com. LTDA*, *Curitiba, Parana, Brazil*.

TH153 **Production, composition and oxidative stability of milk enriched in polyunsaturated fatty acids from dairy cows fed alfalfa protein concentrate or supplemental vitamin E.**
M.-C. Fauteux*, Y. Lebeuf, R. Gervais, and P. Y. Chouinard, *Departement des Sciences Animales, Universite Laval*, *Quebec, QC, Canada*.

TH154 **Effects of canola meal treatment with different levels of tannins extracted from pistachio hulls on the N fractions by the Cornell Net Carbohydrate and Protein System (CNCPS).**
M. Dehghan-Banadaky*, A. R. Jolazadeh, and N. Vahdani, *Department of Animal Science, University of Tehran*, *Karaj, Tehran, Iran*.

TH155 **Aflatoxin B1 binding by treated lactobacilli as a mycotoxin binder in ruminant gastrointestinal model.**
R. Motameny[2], M. Dehghan-Banadaky*[1], and S. Totonchi-Mashhour[2], [1]*Department of Animal science, University of Tehran*, *Karaj, Tehran, Iran*, [2]*Department of Animal Science, Faculty of Agriculture, Science and Research Branch, Islamic Azad University*, *Tehran, Iran*.

TH156 **Ruminal fermentability of killed lactobacilli as mycotoxin binder.**
R. Motameny[2], M. Dehghan-Banadaky*[1], and A. A. Sadeghi[2], [1]*Department of Animal Science, University of Tehran*, *Karaj, Tehran, Iran*, [2]*Department of Animal Science, Faculty of Agriculture, Science and Research Branch, Islamic Azad University*, *Tehran, Iran*.

TH157 **Steam flaking barley grain decreases rumen pH when compared to grinding.**
M. Dehghan-Banadaky*, M. Eslamizad, and A. Lakki, *Department of Animal Science, University of Tehran*, *Karaj, Tehran, Iran*.

TH158 **Lactation performance and nitrogen balance in cows fed red clover or alfalfa based diets differing in rumen-degraded protein supply.**
M. Leduc*[1], R. Gervais[1], E. Baumann[1], Y. Lebeuf[1], G. F. Tremblay[2], and P. Y. Chouinard[1], [1]*Universite Laval*, *Quebec, Quebec, Canada*, [2]*Agriculture and Agri-Food Canada*, *Quebec, Quebec, Canada*.

Animal Behavior and Well-Being II

TH159 **Group size of veal calves does not affect production, physiological, or hematological indicators of welfare and has transient effects on health.**
E. M. Abdelfattah[2], M. M. Schutz[3], D. C. Lay[1], J. N. Marchant-Forde[1], and S. D. Eicher*[1], [1]*USDA-ARS*, *W. Lafayette, IN*, [2]*Banah University*, *Moshtohor, Qalyubia, Egypt*, [3]*Purdue University*, *W. Lafayette, IN*.

TH160 **Effect of meloxicam on gain and behavior of calves castrated by banding preweaning.**
J. A. Daniel*[1], P. D. Krawczel[2], and B. K. Whitlock[3], [1]*Department of Animal Science, Berry College*, *Mt. Berry, GA*, [2]*Department of Animal Science, The University of Tennessee*, *Knoxville*, [3]*Department of Large Animal Clinical Sciences, College of Veterinary Medicine, The University of Tennessee*, *Knoxville*.

TH162 **Panting score and respiratory rate in *Bos indicus* growing heifers.**
A. Camacho*[1], B. J. Cervantes[2], and R. Barajas[1], [1]*Facultad de Medicina Veterinaria y Zootecnia, Universidad Autonoma de Sinaloa*, *Culiacan, Sinaloa, Mexico*, [2]*Ganadera Los Migueles, S.A. de C.V*, *Culiacan, Sinaloa, Mexico*.

TH161 **Differences in vocalization and behavior of Holstein cows and calves caused by separation.**
S.J. Rhim*, *Chung-Ang University*, *Ansung, Gyeonggi-do, South Korea*.

TH163 **Effects of misting systems on physiological responses of dairy heifers in freestalls.**
G. A. Silva[1], S. V. Matarazzo*[2,1], I. Arcaro Junior[1], L. M. Toledo[1], and J. B. Demski[1], [1]*Instituto de Zootecnia*, *Nova Odessa, SP, Brazil*, [2]*Universidade Estadual de Santa Cruz*, *Ilheus, BA, Brazil*.

TH164 **Estrus behavior in young Holstein heifers.**
B. F. Silper*[1], M. M. Reis[1], A. M. L. Madureira[1], T. A. Burnett[1], A. M. de Passillé[2], J. Rushen[2], and R. L. A. Cerri[1], [1]*University of British Columbia*, *Vancouver, BC, Canada*, [2]*Agriculture and Agri-Food Canada*, *Agassiz, BC, Canada*.

TH165 **Effect of calving management on calf vitality, blood gas, behavior, and intake for 24 hours after birth.**
P. Ji[1], H. M. Gauthier*[1], S. Y. Morrison[1], S. E. Williams[1], K. M. Morrill[2], D. M. Haines[3], and H. M. Dann[1], [1]*William H. Miner Agricultural Research Institute*, *Chazy, NY*, [2]*Cornell Cooperative Extension*, *Canton, NY*, [3]*The University of Saskatchewan and The Saskatoon Colostrum Co. Ltd*, *Saskatoon, SK, Canada*.

TH166 **Herd-level reproductive performance and its relationship with lameness and leg injuries on freestall dairy farms.**
N. Chapinal*[1], M. A. G. von Keyserlingk[1], R. L. A. Cerri[2], K. Ito[3], S. J. LeBlanc[4], and D. M. Weary[1], [1]*Animal Welfare Program, University of British Columbia*, *Vancouver, BC, Canada*, [2]*Faculty of Land and Food Systems, University of British Columbia*, *Vancouver, BC, Canada*, [3]*Novus International Inc.*, *St. Charles, MO*, [4]*Population Medicine, University of Guelph*, *Guelph, ON, Canada*.

TH167 **Associations between herd-level factors and lying behavior of freestall-housed dairy cows.**
K. Ito*[1,2], N. Chapinal[1], D. M. Weary[1], and M. A. G. von Keyserlingk[1], [1]*Animal Welfare Program, University of British Columbia*, *Vancouver, BC, Canada*, [2]*Novus International Inc.*, *St. Charles, MO*.

TH168 **Prevalence of knee and hock injuries and their association with stall base, bedding depth and bedding type on Canadian tie-stall dairy farms.**
C. Nash*[1], J. Zaffino[1], D. Kelton[1], D. Pellerin[2], T. DeVries[3], A. M. de Passillé[4], J. Rushen[4], E. Vasseur[5], and D. Haley[1], [1]*University of Guelph*, *Guelph, ON, Canada*, [2]*Université Laval*, *Québec, QC, Canada*, [3]*University of Guelph – Kemptville Campus*, *Kemptville, ON, Canada*, [4]*Agriculture and Agri-Food Canada*, *Agassiz, BC, Canada*, [5]*University of Guelph – Alfred Campus*, *Alfred, ON, Canada*.

TH169 **Effect of cow comfort on longevity on tie-stall farms in Eastern Canada.**
F. Bécotte*[1], E. Vasseur[3], D. Lefebvre[2], A.-M. de Passillé[4], J. Rushen[4], D. B. Haley[3], and D. Pellerin[1], [1]*Laval University*, *Quebec, QC, Canada*, [2]*Valacta*, *Sainte-Anne-de-Bellevue, QC, Canada*, [3]*University of Guelph*, *Guelph, ON, Canada*, [4]*Agriculture and Agri-Food Canada Research Centre*, *Agassiz, BC, Canada*.

TH170 **Practices associated with dairy cattle wellbeing on organic and similarly sized conventional dairy herds.**
M. Bergman*[1], R. Richert[1], K. Stiglbauer[2], K. Cicconi-Hogan[3], M. Gamroth[2], Y. Schuken[3], and P. Ruegg[1], [1]*University of Wisconsin Madison*, *Madison*, [2]*Oregon State University*, *Corvallis*, [3]*Cornell University*, *Ithaca, NY*.

TH171 **Effect of meloxicam on gain and inflammatory response of calves castrated by banding post-weaning.**
B. Whitlock*[1], P. Krawczel[2], J. Carroll[3], N. Burdick Sanchez[3], J. Dailey[3], J. Daniel[4], and J. Coetzee[5], [1]*Department of Large Animal Clinical Sciences, College of Veterinary Medicine, The University of Tennessee*, *Knoxville*, [2]*Department of Animal Science, The University of Tennessee*, *Knoxville*, [3]*USDA-ARS, Livestock Issues Research Unit*, *Lubbock, TX*, [4]*Department of Animal Science, Berry College*, *Mt. Berry, GA*, [5]*Veterinary Diagnostic and Production Animal Medicine, College of Veterinary Medicine, Iowa State University*, *Ames*.

TH172 **Meloxicam mediates short-term behavioral changes of castrated calves.**
P. D. Krawczel*[1], J. A. Carroll[2], N. C. Burdick Sanchez[2], J. W. Dailey[2], J. A. Daniel[3], J. F. Coetzee[4], and B. K. Whitlock[5], [1]*Department of Animal Science, The University of Tennessee*, *Knoxville*, [2]*USDA-ARS, Livestock Issues Research Unit*, *Lubbock, TX*, [3]*Department of Animal Science, Berry College*, *Mt. Berry, GA*, [4]*Veterinary Diagnostic and Production Animal Medicine, College of Veterinary Medicine, Iowa State University*, *Ames*, [5]*Department of Large Animal Clinical Sciences, College of Veterinary Medicine, The University of Tennessee*, *Knoxville*.

TH173 **Lying behavior of indoor-housed dairy goats.**
G. Zobel*[1], K. Leslie[2], D. M. Weary[1], and M. A. G. von Keyserlingk[1], [1]*Animal Welfare Program, University of British Columbia*, *Vancouver, BC, Canada*, [2]*Population Medicine, University of Guelph*, *Guelph, ON, Canada*.

TH174 **Effects of housing systems and farrowing crates on the performance of sows and piglets in Korea.**
J. Y. Lee*, J. H. Jeon, K. H. Park, S. H. Yang, Y. H. Yoo, and J. I. Song, *National Institute of Animal Science*, *Suwon, Korea*.

TH175 **Behavior and welfare of intramuscular or subcutaneous injection in finishing pigs and piglets.**
K. A. Guay* and J. J. McGlone, *Texas Tech University*, *Lubbock*.

TH176 **Models for facial recognition and body weight to more precisely provide individual pig care.**
J. J. McGlone*[1], B. L. Backus[1], K. Guay[1], J. Ao[2], Q. Wan[2], B. Nutter[2], R. Pal[2], and S. Mitra[2], [1]*Texas Tech University Animal and Food Sciences*, *Lubbock*, [2]*Texas Tech University Electrical and Computer Engineering*, *Lubbock*.

TH177 **Gait analysis as an objective tool to measure painful and non-painful hoof lameness in multiparous sows.**
C. Mohling*[1], A. Johnson[1], K. Stalder[1], C. Abell[1], H. Coetzee[2], S. Millman[3], and L. Karriker[4], [1]*Animal Science, Iowa State University*, *Ames*, [2]*Cyclone Custom Analyte Detection Service, Iowa State University*, *Ames*, [3]*Veterinary Diagnostic and Animal Production Medicine, Iowa State University*, *Ames*, [4]*Swine Medicine Education Center, Iowa State University*, *Ames*.

Breeding and Genetics: Molecular Genetics

TH178 **Association of neonatal Fc receptor α-chain gene (FCGRT) promoter haplotypes with FcRn expression of dairy cows.**
X. L. Hu, J. Q. Wang*, S. G. Zhao, J. W. Zhao, and D. P. Bu, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*.

TH179 **X marks the spot: Region of bovine chromosome X associated with heifer fertility traits in Brangus cattle.**
K. L. DeAtley[1], M. G. Thomas*[2], M. R. S. Fortes[3], J. F. Medrano[4], G. Rincon[4,8], A. Islas-Trejo[4], M. L. Colgrave[5], R. L. Ashley[1], G. A. Silver[1], S. O. Peters[1,7], A. Reverter[5], A. Canovas[4], and W. M. Snelling[6], [1]*New Mexico State University*, *Las Cruces*, [2]*Colorado State University*, *Fort Collins*, [3]*University of Queensland*, *Brisbane, QLD, Australia*, [4]*University of California*, *Davis*, [5]*CSIRO*, *Brisbane, QLD, Australia*, [6]*USDA-ARS-MARC*, *Clay Center, NE*, [7]*Berry College*, *Mount Berry, GA*, [8]*Zoetis*, *Kalamazoo, MI*.

TH180 **Association between IgE single nucleotide polymorphisms and parasite resistance in Senepol × Charolais crossbred heifers.**
M. Pagán, L. Emmanuelli, I. Rivera, E. Jiménez, D. Vélez, and G. Ortiz-Colón*, *University of Puerto Rico*, *Mayagüe, Puerto Rico*.

TH181 **Characterization of milk composition in Charolais cows and its association to SNP's in candidate genes.**
V. I. Pacheco Contreras*, A. M. Sifuentes Rincón, G. M. Parra Bracamonte, and V. R. Moreno Medina, *Centro de Biotecnología Genómica, Instituto Politécnico Nacional*, *Reynosa, Tamaulipas, México*.

TH182 **A SNP in the DRD2 gene influences adjusted birth and 205-day weights of calves grazing endophyte-infected tall fescue.**
K. M. Ely*[1], C. J. Kojima[1], A. M. Saxton[1], and R. L. Kallenbach[2], [1]*University of Tennessee*, *Knoxville*, [2]*University of Missouri*, *Columbia*.

TH183 **Effect of stearoyl-CoA desaturase gene polymorphism on milk production traits of Hungarian Holstein Friesian cows.**
T. G. Jaleta*[1] and L. Czeglédi[2], [1]*Max Planck Institute for Developmental Biology*, *Tuebingen, Baden Wurteenberg, Germany*, [2]*University of Debrecen, Center of Agricultural Sciences and Engineering, Institute of Animal Science*, *Debrecen, Hajdu Bihar, Hungary*.

TH184 **Developmental gene expression patterns in the skeletal muscle transcriptomes of Yorkshire and Tongcheng pigs.**
Y. Zhao*[1,2], M. Lei[1], J. Li[1], J. P. Steibel[2], H. Liu[1], G. Liu[1], S. Xu[3], Y. Xiong[1], D. Xu[1], and C. W. Ernst[2], [1]*Huazhong Agricultural University*, *Wuhan, China*, [2]*Michigan State University*, *East Lansing*, [3]*Animal Husbandry Bureau of Tongcheng County*, *China*.

TH185 **Abundance of total genomic 5-methylcytosine and 5-hydroxymethylcytosine in different pig tissues.**
B. A. Freking* and D. J. Nonneman, *USDA, ARS, U.S. Meat Animal Research Center*, *Clay Center, NE*.

TH186 **Genomic regions associated with resistance to necrotic enteritis in chicken lines.**
Y. H. Hong*[1], E. Kim[2], D. Hue[1], S. I. Jang[3], and H. S. Lillehoj[3], [1]*Chung-Ang University*, *Anseong, Gyeonggi-do, Republic of Korea*, [2]*Iowa State University*, *Ames*, [3]*USDA-ARS*, *Beltsville, MD*.

TH187 **Associations of pituitary specific transcription factor-1 (*POU1F1*) gene polymorphisms with growth and carcass traits in sheep.**
A. Jalil-Sarghale[1], M. M. Shahrebabak[1], H. M. Shahrebabak*[1], M. Sadeghi[1], and M. C. Mura[2], [1]*University of Tehran*, *Karaj, Tehran, Iran*, [2]*University of Sassari*, *Sassari, Italy*.

TH188 **Molecular analysis of calpastatin gene in fat-tailed Lori-Bakhtiari sheep in Iran.**
A. H. F. Khaltabadi[1], H. M. Shahrbabak*[2], and M. A. Talebi[3], [1]*Department of Animal Science, Faculty of Agriculture, University of Arak*, *Arak, Iran*, [2]*Department of Animal Science, Academic of Agronomy and Animal Science, University College of Agriculture & Natural Resources, University of Tehran*, *Karaj, Iran*, [3]*Department of Animal Science, Agriculture and Natural Resources Research Center*, *Shahrekord, Iran*.

TH189 **Association between transferrin polymorphism and some blood parameters in Makoei fat-tailed sheep.**
A. H. F. Khaltabadi[1], H. M. Shahrbabak*[2], and H. Mohammadi[3], [1]*Department of Animal Science, Faculty of Agriculture, University of Arak*, *Arak, Iran*, [2]*Department of Animal Science, Faculty of Agricultural Sciences and Engineering, University College of Agriculture and Natural Resources, University of Tehran*, *Karaj, Alborz, Iran*, [3]*Department of Animal Science, Faculty of Agriculture*, *Tabriz, Iran*.

TH190 **Association of polymorphisms in the transferrin with carcass traits in Makoei fat-tailed sheep.**
A. H. F. Khaltabadi[1], H. M. Shahrbabak*[2], and H. Mohammadi[3], [1]*Department of Animal Science, Faculty of Agriculture, University of Arak*, *Arak, Iran*, [2]*Department of Animal Science, Academic of Agronomy and Animal Science, University College of Agriculture & Natural Resources, University of Tehran*, *Karaj, Alborz, Iran*, [3]*Department of Animal Science, Faculty of Agriculture, University of Tabriz*, *Tabriz, Iran*.

TH191 **Expression of acetyl-CoA carboxylase alpha (ACC-α) in thin and fat tail sheep breeds associated with lipogenesis pathway.**
H. O. Mousapour*, A. Nejati-Javaremi, M. Moradi-Shahrbabak, H. Moradi-Shahrbabak, and M. J. Najafpanah, *University of Tehran*, *Karaj, Tehran, Iran*.

Extension Education

TH192 **Constraints for nutritional grouping in Wisconsin dairy farms.**
F. E. Contreras-Govea*, V. E. Cabrera, L. E. Armentano, R. D. Shaver, and P. M. Crump, *University of Wisconsin-Madison, Department of Dairy Science*, *Madison*.

TH193 **A survey of starch digestibility on Wisconsin dairy farms.**
A. Huibregtse[1], C. Heuer[2,3], R. Shaver*[2], and P. Hoffman[2], [1]*Oconto County Extension*, *Oconto, WI*, [2]*Dairy Science Department, University of Wisconsin*, *Madison*, [3]*Rock River Laboratory*, *Watertown, WI*.

TH194 **Determining forage dry matter by microwave, Koster Moisture Tester, and Q-Dry methods.**
F. H. Pino* and A. J. Heinrichs, *The Pennsylvania State University*, *University Park*.

TH195 **Proposal for a universally applicable method of evaluating feed cost and shadow pricing for dairy cattle based on locally available feeds.**
D. Barber[1] and R. A. Patton*[2], [1]*Agri-Science Queensland, Department of Agriculture, Fisheries and Forestry*, *Lawes, QLD, Australia*, [2]*Nittany Dairy Nutrition Inc.*, *Mifflinburg, PA*.

TH196 **Variation in alfalfa silage, corn silage and high-moisture dry matter content within and among silo bags.**
L. F. Ferraretto* and R. D. Shaver, *University of Wisconsin-Madison*, *Madison*.

TH197 **Evaluation of on-farm feed nutrient composition determined by near infrared spectroscopy.**
M. S. Akins*[1], L. F. Ferraretto[2], C. Weigel[1], J. Dewell[1], M. Dobberstein[3], and R. D. Shaver[2], [1]*University of Wisconsin-Platteville*, *Platteville*, [2]*University of Wisconsin-Madison*, *Madison*, [3]*Dinamica Generale US Inc.*, *DeKalb, IL*.

TH198 **An update on the Repro Money Program: A farmer-directed team-based extension program to improve reproductive performance in Wisconsin dairy herds.**
M. C. Cordoba*, P. M. Fricke, P. L. Ruegg, R. D. Shaver, K. A. Weigel, and V. E. Cabrera, *University of Wisconsin-Madison*, *Madison*.

TH199 **Changes in lying behavior and milk yield associated with changing freestall dimensions and bases.**
B. A. Wadsworth*, A. E. Sterrett, J. D. Clark, D. L. Ray, and J. M. Bewley, *University of Kentucky*, *Lexington*.

TH200 **A decision support tool for compost bedded pack barn bedding cost analysis.**
E. Eckelkamp*, J. Taraba, and J. Bewley, *University of Kentucky*, *Lexington*.

TH201 **Tools for teams: Improving the success of dairy farm teams.**
L. Holden*[1], R. White[1], V. Ishler[1], R. Goodling[1], K. Baase[2], and T. Kitsos[3], [1]*The Pennsylvania State University*, *University Park*, [2]*Cornell Cooperative Extension*, *Morrisville, NY*, [3]*University of Vermont*, *St. Albans*.

TH202 **Look who's talking when setting goals and protocols for calf care.**
W. M. Sischo[1], D. A. Moore*[1], M. Davis[1], K. Heaton[1], D. Kinder[1], S. Kurtz[1], J. Siler[2], R. Pereira[2], and L. Warnick[2], [1]*Washington State University*, *Pullman*, [2]*Cornell University*, *Ithaca, NY*.

TH203 **Educational farm tours improve public understanding, impressions, and trust in modern dairy production systems.**
T. A. Ferris*[1], N. D. Thelen[2], and M. A. Dunckel[3], [1]*Department of Animal Science, Michigan State University*, *East Lansing*, [2]*Michigan State University Extension*, *Ann Arbor*, [3]*Michigan State University Extension*, *Alpena*.

TH204 **Developing a regional extension dairy programs through the use of DHI production data in Northern New York.**
K. M. Morrill*[1], S. Morrison[2], H. M. Dann[2], and H. M. Gauthier[2], [1]*Cornell Cooperative Extension*, *Canton, NY*, [2]*William H. Miner Agricultural Research Institute*, *Chazy, NY*.

TH205 **Advising and technical support for dairy goat farmers: An Antonio Narro University service and extension experience in northern Mexico.**
P. A. Robles-Trillo*[1], F. G. Veliz[1], R. Rodriguez-Martinez[1], M. A. De Santiago-Miramontes[1], G. Arellano-Rodriguez[1], C. A. Meza-Herrera[2], and E. Martínez-Aranda[1], [1]*Universidad Autonoma Agraria Antonio Narro*, *Torreon, Coah. Mexico*, [2]*Unidad Regional Universitaria de Zonas Aridas, Universidad Autonoma de Chapingo*, *Bermejillo, Durango, Mexico*.

TH206 **Relationships among performance parameters and beef bull sale price.**
J. L. Gleason, M. A. McCann, and S. P. Greiner*, *Virginia Polytechnic Institute and State University*, *Blacksburg*.

TH207 **Factors affecting sale price of bulls sold in the Florida Bull Test.**
V. R. G. Mercadante*, D. D. Henry, F. M. Ciriaco, N. DiLorenzo, and G. C. Lamb, *North Florida Research and Education Center, University of Florida*, *Marianna*.

TH208 **Moos, Ewes and More: A public education event.**
E. L. Berg*, S. M. Ostby, K. A. Vonnahme, S. Wagner, S. E. Anderson, J. D. Hayden, L. A. Christianson, C. Stoltenow, and K. B. Koch, *North Dakota State University*, *Fargo*.

TH209 **Survey of central North Carolina horse owners regarding parasite anthelmintic resistance.**
N. C. Whitley*[1], B. Chase[2], and S. B. Routh[1], [1]*North Carolina A&T State University*, *Greensboro*, [2]*Guilford and Rockingham County Extension Service*, *Greensboro and Reidsville, NC*.

Food Safety

TH210 **Occurrence of aflatoxin in dairy cow feed and raw milk in China.**
N. Zheng[1,2], J. Q. Wang*[1,2], Y. P. Zhen[1,2], X. M. Xu[1,2], R. W. Han[1,2], S. L. Li[1,2], and X. Y. Qu[1,2], [1]*State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*, [2]*Ministry of Agriculture - Milk and Dairy Product Inspection Center (Beijing)*, *Beijing, China*.

TH211 **Survey of 38 veterinary drug residues in raw milk in China.**
R. W. Han[1,3], N. Zheng[1,2], J. Q. Wang*[1,2], Z. N. Yu[3], X. M. Xu[1,2], Y. P. Zhen[1,2], X. Y. Qu[1,2], and L. C. Huang[1,2], [1]*State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*, [2]*Ministry of Agriculture - Milk and Dairy Product Inspection Center (Beijing)*, *Beijing, China*, [3]*College of Food Science and Engineering, Qingdao Agricultural University*, *Qingdao, Shandong, China*.

TH212 **Occurrence of organochlorine pesticide residues in raw milk in China by gas chromatography triple-quadrupole mass spectrometry.**
X. M. Xu[1,2], N. Zheng[1,2], J. Q. Wang*[1,2], R. W. Han[1,2], and S. L. Li[1,2], [1]*State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*, [2]*Ministry of Agriculture - Milk and Dairy Product Inspection Center (Beijing)*, *Beijing, China*.

TH213 **Occurrence of heavy metals in raw milk in China.**
X. Y. Qu[1,2], N. Zheng[1,2], J. Q. Wang*[1,2], X. M. Xu[1,2], R. W. Han[1,2], Y. P. Zhen[1,2], and S. L. Li[1,2], [1]*State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*, [2]*Ministry of Agriculture - Milk and Dairy Product Inspection Center (Beijing)*, *Beijing, China*.

TH214 **Occurrence of four mycotoxin residues in raw milk in China.**
L. C. Huang[1,3], N. Zheng[1,2], J. Q. Wang*[1,2], J. B. Cheng[1,3], R. W. Han[1,2], X. M. Xu[1,2], and S. L. Li[1,2], [1]*State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*, [2]*Ministry of Agriculture - Milk and Dairy Product Inspection Center (Beijing)*, *Beijing, China*, [3]*College of Animal Science and Technology, Anhui Agricultural University*, *Hefei, China*.

TH215 **Effect of prophylactic use of antibiotics in intravaginal sponges on the response of inhibitor screening tests in goats milk.**
T. Romero[1], J. Balado[2], R. L. Althaus[3], M. C. Beltrán[1], and M. P. Molina*[1], [1]*Instituto de Ciencia y Tecnolog Animal, Universitat Politècnica de Valencia*, *Valencia, Spain*, [2]*Diputació n Provincial de Castellón Ares del Maestrat, Castellón, Spain*, [3]*Cátedra de Biofísica, Facultad de Ciencias Veterinarias, Universidad Nacional del Litoral*, *Esperanza, Argentina*.

TH216 **Validation of new SNAP Beta-Lactam antibiotic residue test kit for goat milk screening.**
S. S. Zeng*, K. Tesfai, E. Vasquez, I. Portugal, and C. Watson, *Langston University*, *Langston, OK*.

TH217 **Antimicrobial residues in pasteurized milk assessed by the inhibition test of microbial growth and HPLC-DAD.**
A. P. A. Magnavita[1], S. A. A. Fernandes[1], S. P. B. Ferrão[1], S. A. Gualberto[1], and S. V. Matarazzo*[2], [1]*Universidade Estadual do Sudoeste da Bahia*, *Itapetinga, Bahia, Brasil*, [2]*Universidade Estadual de Santa Cruz*, *Ilheus, Bahia, Brasil*.

TH218 **Regulatory processes for substances used in animal food.**
M. G. Alewynse* and S. A. Benz, *Center for Veterinary Medicine, Food and Drug Administration*, *Rockville, MD*.

TH219 **Detection of antimicrobial and anthelmintic residues in bulk tank milk from Minas Gerais State, Brazil.**
F. N. Souza[1], A. F. Cunha[1], L. C. A. Picinin[2], M. O. Leite[1], C. F. A. Penna[1], M. R. Souza[1], L. M. Fonseca[1], and M. M. O. P. Cerqueira*[1], [1]*Department of Food Technology and Inspection*, *Belo Horizonte, Minas Gerais, Brazil*, [2]*Department of Food Science and Technology*, *Florianopolis, Santa Catarina, Brazil*.

TH220 **Development of phage-based technologies to reduce *E. coli* O157:H7 contamination of beef products and produce.**
Y. Pan*, Y. Hong, J. Zhang, and P. D. Ebner, *Purdue University, Department of Animal Sciences*, *West Lafayette, IN*.

TH221 **Detection of ceftiofur residues in milk of cows treated for mastitis using the BetaStar Plus assay.**
K. Grooms*[1], D. Grooms[1], E. Jagodzinski[1], B. Norby[1], R. Erskine[1], L. Halbert[1], and J. Rice[2], [1]*Michigan State University, College of Veterinary Medicine*, *East Lansing*, [2]*Neogen Corporation*, *Lansing, MI*.

TH222 **Macrocyclic lactones residues in milk from family farming properties in the state of Rio Grande do Sul, Brazil.**
U. A. Souza[1], J. Reck[2], J. R. Martins[2], A. Webster[1], G. Klafke[2], G. Rubesam[3], F. Barreto[3], and L. Kindlein*[1], [1]*Federal University of Rio Grande do Sul*, *Porto Alegre, Rio Grande do Sul, Brazil*, [2]*Institute of veterinary research Desidério Finamor*, *Eldorado do Sul, Rio Grande do Sul, Brazil*, [3]*Agriculture Ministry, Livestock and Supply, National Agricultural Laboratory*, *Porto Alegre, Rio Grande do Sul, Brazil*.

TH223 **Inhibitory effects of mint oils alone or combining with tannin extract against foodborne pathogens.**
B. J. Min[1], B. R. Min*[2], and J. H. Lee[3], [1]*Tuskegee University*, *Department of Food and Nutritional Sciences, Tuskegee, AL*, [2]*Tuskegee University*, *Department of Agricultural and Environmental Sciences, Tuskegee, AL*, [3]*Fort Valley State University*, *Department of Agricultural Sciences, Fort Valley, GA*.

TH224 **A genotyping tool for *Enterobacter sakazakii* isolates from powdered infant formula and environment.**
Y. Chai[2], Y. Lu[1], C. Man[1], Y. Guo[2], X. Dong[2], Y. Lang[2], M. Guo*[3], and Y. Jiang[1], [1]*National Dairy Engineering and Technology Research Center, Northeast Agricultural University*, *Harbin, Heilongjiang, China*, [2]*Department of Food Science, Northeast Agricultural University*, *Harbin, Heilongjiang, China*, [3]*Department of Nutrition and Food Sciences, The University of Vermont*, *Burlington*.

TH225 **The effectiveness of hurdle strategies consisting of pulsed light treatment and antimicrobials on the inactivation of pathogenic bacteria on cheese.**
L. Hsu*, B. M. Miller, and C. I. Moraru, *Cornell University*, *Ithaca, NY*.

TH226 **Microbial assay and proximate composition of suya meat (an intermediate moisture meat) in Osun State, Southwest Nigeria.**
A. O. Akinwumi*, A. A. Odunsi, G. O. Adebayo, and T. O. Akande, *Ladoke Akintola University of Technology*, *Ogbomoso, Oyo, Nigeria*.

TH227 **Effect of exposure to copper sulfate or zinc oxide on bacterial antibiotic susceptibility profile.**
A. F. Amaral[2], G. Schaefer[2], L. J. Lara[2], G. M. Preis[2], A. D. B. Melo[2], L. V. C. Girao[2], and M. H. Rostagno*[1], [1]*USDA-ARS*, *West Lafayette, IN*, [2]*Purdue University*, *West Lafayette, IN*.

TH228 **Variable antimicrobial effect of essential oils against different bacterial strains.**
A. D. B. Melo[2], A. F. Amaral[2], G. Schaefer[2], G. M. Preis[2], L. J. Lara[2], L. V. C. Girao[2], and M. H. Rostagno*[1], [1]*USDA-ARS*, *West Lafayette, IN*, [2]*Purdue University*, *West Lafayette, IN*.

TH229 **Clenbuterol hydrochloride residues in beef and beef liver tissues from different retailers points in Texcoco, Mexico.**
E. Olaya-Fernandez[1], G. Aranda-Osorio*[1], E. Maldonado-Siman[1], J. A. Cadena-Meneses[1], M. Huerta-Bravo[1], and O. Hernandez-Mendo[2], [1]*Universidad Autonoma Chapingo*, *Texcoco, Mexico*, [2]*Colegio de Postgraduados*, *Montecillo, Mexico*.

Forages and Pastures: General Topics

TH230 **In vitro NDF digestion parameters differ when using a forage fiber bag.**
J. Goeser*[1], C. Heuer[1,2], and L. Meyer[1], [1]*Rock River Laboratory Inc.*, *Watertown, WI*, [2]*University of Wisconsin, Madison*, *Madison*.

TH231 **Relationship between one-seed juniper terpene concentration and herbivory by small ruminants.**
R. E. Estell*[1], S. A. Utsumi[2], A. F. Cibils[3], and D. M. Anderson[1], [1]*USDA ARS Jornada Experimental Range*, *Las Cruces, NM*, [2]*Michigan State University, Kellogg Biological Station*, *Hickory Corners*, [3]*New Mexico State University*, *Las Cruces*.

TH232 **In situ dry matter disappearance of bermudagrass and sudangrass hays harvested at different time of the day.**
G. Scaglia*[1] and H. T. Boland[2], [1]*LSU Agricultural Center, Iberia Research Station*, *Jeanerette*, [2]*Mississippi State University, Prairie Unit*, *Prairie*.

TH233 **Tillering dynamics in Marandu grass pasture submitted to different grazing intensities under continuous stocking.**
S. S. Santana*[1], L. F. Brito[1], P. M. de Franca[1], U. Bragiato[1], M. E. R. Santos[2], A. C. Ruggieri[1], and R. A. Reis[1], [1]*Faculdade de Ciencias Agrarias e Veterinarias/UNESP*, *Jaboticabal, SP, Brazil*, [2]*Universidade Federal de Uberlandia*, *Uberlandia, MG, Brazil*.

TH234 **Effect of harvesting date on chemical composition and in vitro digestion of buffelgrass (*Cenchrus ciliaris* L.) during autumn in Northeastern Mexico.**
N. C. Vásquez Aguilar*[1], H. Bernal Barragán[1,3], R. G. Ramírez Lozano[1], M. A. Cerrillo Soto[2,3], M. V. Gómez Meza[1], E. Gutiérrez Ornelas[1,3], and M. Guerrero Cervantes[2,3], [1]*Universidad Autónoma de Nuevo León*, *San Nicolás de los Garza, Nuevo León, México*, [2]*Universidad Juárez del Estado de Durango*, *Durango, México*, [3]*Red Internacional de Nutrición y Alimentación en Rumiantes*, *México*.

TH235 **Production of *Panicum maximum* Jacq. cultivars under two defoliation strategies.**
V. L. N. Brandao*, D. M. Fonseca, M. Williame, and C. G. Vitor, *Universidade Federal de Vicosa*, *Viçosa, MG, Brazil*.

TH236 **Tiller weight and tiller and branches density in tropical pastures of *Brachiaria brizantha* 'Marandu' mixed with *Arachis pintoi* 'Belmonte'.**
O. A. A. Lopes de Sa, G. S. Sant'ana, L. G. Freitas, A. D. Rosa, D. R. Casagrande, M. A. S. Lara, A. R. Evangelista, and T. F. Bernardes*, *University of Lavras*, *Lavras, Minas Gerais, Brazil*.

TH237 **Yield and nutritional quality of deferred sorghum hybrids.**
S. P. Lagrange[1], H. M. Arelovich*[2,3], J. P. Vasicek[2], R. D. Bravo[2,3], and M. F. Martinez[2], [1]*INTA EEA Bordenave*, *Bordenave, Buenos Aires, Argentina*, [2]*Departamento de Agronomia, Universidad Nacional del Sur*, *Bahia Blanca, Buenos Aires, Argentina*, [3]*Comision de Investigaciones Cientificas (CIC)*, *Bahia Blanca, Buenos Aires, Argentina*, [4]*CERZOS-CONICET*, *Bahia Blanca, Buenos Aires, Argentina*.

TH238 **Influence of bacteriocinogenic lactic acid bacteria on the fermentation profile of elephant grass silage.**
M. P. Silva, T. C. Silva, L. D. Rufino, M. C. Agarussi, O. G. Pereira*, and H. C. Mantovani, *Federal University of Vicosa*, *Vicosa, Minas Gerais, Brazil*.

TH239 **Using near-infrared reflectance spectroscopy as a predictor of in vitro true digestibility of bahiagrass (*Paspalum notatum*).**
N. L. Bell*[1], T. A. Wickersham[2], and J. L. Young[1], [1]*Stephen F. Austin State University*, *Nacogdoches, TX*, [2]*Texas A&M University*, *College Station*.

TH240 **A survey of the expected concentrations of lactic acid bacteria, pH, elapsed time in the tank, and temperature of the inoculant-water mixes used to treat silages.**
M. Windle*[1], C. Wacek-Driver[2], R. Kuber[3], and L. Kung[1], [1]*University of Delaware*, *Newark*, [2]*Vita Plus*, *Madison, WI*, [3]*Connor Marketing Inc.*, *Clovis, CA*.

TH241 **Biomass yield and quality of barley forage prior to ensiling as affected by fertilizer rate and harvest date.**
S. P. Lagrange[1], H. M. Arelovich*[2,3], F. X. Frache[2], R. D. Bravo[2,3], M. F. Martinez[2], and M. I. Amela[2], [1]*INTA EEA Bordenave*, *Bordenave, Buenos Aires, Argentina*, [2]*Departamento de Agronomia-CERZOS. Universidad Nacional del Sur*, *Bahia Blanca. Buenos Aires, Argentina*, [3]*Comision de Investigaciones Cientificas (CIC)*, *Bahia Blanca, Buenos Aires, Argentina*.

TH242 **Protein precipitating phenolics change with herbivory and seed dispersal.**
C. E. Cooper*[1], H. D. Naumann[2], B. D. Lambert[4,3], and J. P. Muir[3], [1]*Tarleton State University, Department of Environmental and Agricultural Management*, *Stephenville, TX*, [2]*Texas A&M University, Department of Soil and Crop Sciences*, *College Station*, [3]*Texas A&M AgriLife Research*, *Stephenville*, [4]*Tarleton State University, Department of Animal Science and Wildlife Management*, *Stephenville, TX*.

TH243 **Fermentation quality of maralfalfa grass (*Pennisetum* sp.) and tropical shrub foliage ensiled alone and in mixtures as feed supplements for cattle in Cundinamarca, Colombia.**
L. Bernal*, *Universidad de La Salle*, *Bogota, Colombia*.

TH244 **Volatile fatty acids and gas production of diets for growing calves with added yeast inoculants and fermented apple pomace.**
P. F. Mancillas-Flores[1], C. Rodriguez-Muela*[1], D. Diaz-Plascencia[1], G. Corral-Flores[1], Y. Castillo-Castillo[2], J. A. Grado-Ahuir[1], A. Flores-Mariñelarena[1], and A. C. Arzola-Alvarez[1], [1]*Universidad Autonoma de Chihuahua*, *Chihuahua, Mexico*, [2]*Universidad Autonoma de Ciudad Juárez*, *Juárez, México*.

TH245 **Grape pomace silage characteristics and in vitro digestibility with or without recycled poultry bedding.**
M. Basalan*[1] and F. N. Owens[2], [1]*Kirikkale University, Faculty of Veterinary Medicine, Department of Animal Nutrition*, *Kirikkale, Turkey*, [2]*Pioneer Hi-Bred International*, *Johnston, IA*.

TH246 **Improvement of tall wheatgrass biomass yield and quality by intercropping with two legumes.**
M. Menghini[1], H. M. Arelovich*[1,2], S. P. Lagrange[3], M. Quintana[2], and A. Galassi[2], [1]*Comision de Investigaciones Cientificas*, *Bahia Blanca, Buenos Aires, Argentina*, [2]*Departamento de Agronomia-CERZOS, Universidad Nacional del Sur*, *Bahia Blanca, Buenos Aires, Argentina*, [3]*INTA EEA Bordenave*, *Bordenave, Buenos Aires, Argentina*.

TH247 **Agronomic performance and nutritional assessment of three varieties of *Brachiaria* and *Panicum*.**
M. Medina-Villacis*[1], I. Espinoza-Guerra[2], M. Samaniego-Armijos[1], J. Mackencie-Alvarez[1], L. Rizzo-Zamora[1], G. Suárez-Fernández[1], and A. Haro-Chong[1], [1]*Unidad de Estudios a Distancia*, *Quevedo, Los Rios, Ecuador*, [2]*Facultad de Ciencias Pecuarias*, *Quevedo, Los Rios, Ecuador*.

TH248 **In situ ruminal energy degradability of three genera of tropical grasses at four regrowth ages during the rainy season in Veracruz, Mexico.**
H. Bernal-Barragán*[1], E. Castillo-Gallegos[2], N. C. Vásquez-Aguilar[1], C. A. Hernández-Martínez[1], J. Jarillo-Rodríguez[2], B. Valles de la Mora[2], and E. Ocaña-Zavaleta[2], [1]*Universidad Autónoma de Nuevo León, Fac. de Agronomía*, *General Escobedo, Nuevo León,México*, [2]*Universidad Nacional Autónoma de México, Fac. Medicina Veterinaria y Zootecnia*, *Martínez de la Torre, Veracruz, México*.

TH249 **Nutritive value and fermentation quality of the silage of three kenaf (*Hibiscus cannabinas* L.) cultivars at three different growth stages.**
B. W. Kim*, K. I. Sung, J. G. Nejad, and J. S. Shin, *College of Animal Science, Kangwon National University*, *Chuncheon, Kangwon, South Korea*.

TH250 **Effect of supplementing exogenous fibrolytic enzymes with cofactors on the preingestive hydrolysis of bermudagrass.**
J. J. Romero*[1], Z. X. Ma[1], A. A. Pech[1], C. R. Staples[1], C. F. Gonzalez[2], and A. T. Adesogan[1], [1]*Department of Animal Sciences, IFAS, University of Florida*, *Gainesville*, [2]*Department of Microbiology and Cell Science, IFAS, University of Florida*, *Gainesville*.

TH251 **Content of tannins and effect of polyethylene glycol on in vitro fermentation kinetics and digestibility of *Quercus hintonii* and *Quercus glaucoides* acorns and leaves.**
F. A. Nova*[1], J. G. F. Estrada[2], O. A. C. Ortega[3], A. R. Otero[1], and B. A. Portillo[1], [1]*Centro Universitario Temascaltepec Universidad Autónoma del Estado de México (UAEM)*, *Barrio de Santiago, Temascaltepec, Estado de México, México*, [2]*Instituto de Ciencias Agropecuarias y Rurales (ICAR) (UAEM)*, *El Cerrillo, Piedras Blancas, Toluca, Estado de México, México*, [3]*Facultad de Medicina Veterinaria y Zootecnia Universidad Autónoma del Estado de México (UAEM)*, *El Cerrillo, Piedras Blancas, Toluca, Estado de México, México*.

TH252 **Tropical pasture grazing management effects on in vitro rumen degradation kinetics evaluated with a semi-automated technique of gas production.**
M. R. Lovaglio*, J. R. R. Dorea, M. G. M. F. Santos, L. R. D. Agostinho Neto, D. F. A. Costa, and F. A. P. Santos, *University of Sao Paulo*, *Piracicaba, Sao Paulo, Brazil*.

Growth and Development III

TH253 **Fatty acids differentially regulate expression of deiodinases in differentiated pig adipocytes.**
H. Yan*, W. Hanxiao, H. Lu, O. Adeola, and K. M. Ajuwon, *Purdue University*, *West Lafayette, IN*.

TH254 **Comparison of growth performance and muscle fiber characteristics in different Japanese quail lines.**
Y. M. Choi*, S. Shin, M. P. Wick, and K. Lee, *The Ohio State University*, *Columbus*.

TH255 **Sequence identification of bovine microRNA in adipose tissue and their differential expression due to diet.**
S. K. Duckett*, M. D. Owens, and S. L. Pratt, *Clemson University*, *Clemson, SC*.

TH256 **Differential expression of multiple transcripts of Agouti-related peptide in avian species and its association with nutritional status.**
C. Zhang*, Y. M. Choi, Y. Suh, and K. Lee, *The Ohio State University*, *Columbus*.

TH257 **Regulation of bovine G0/G1 switch gene 2 (G0S2) and comparative gene identification-58 (CGI-58) genes.**
J. Ahn*[1], X. Li[1], Y. Suh[1], S. S. Hwang[2], and K. Lee[1], [1]*The Ohio State University*, *Columbus*, [2]*Rural Development Administration*, *Suwon, Republic of Korea*.

TH258 **Age-related changes in the expression of myogenesis-associated genes in the pig muscle.**
D. Loesel*[1], A. Tuchscherer[2], and C. Kalbe[1], [1]*Leibniz Institute for Farm Animal Biology (FBN), Institute for Muscle Biology and Growth*, *Dummerstorf, Germany*, [2]*Leibniz Institute for Farm Animal Biology (FBN), Institute for Genetics and Biometry*, *Dummerstorf, Germany*.

TH259 **Establishing lean and obese Mangalica pigs as a translational model for juvenile obesity and metabolic syndrome.**
C. F. Garrett*, R. H. Amin, C. L. Bratcher, E. P. Cambier, J. L. Bartosh, and T. D. Brandebourg, *Auburn University*, *Auburn, AL*.

TH260 **Selenium treatment promotes adipogenesis in chicken embryonic fibroblasts in vitro.**
A. Lee*, Y. Suh, and K. Lee, *The Ohio State University*, *Columbus*.

TH261 **Potential role of the epidermal growth factor receptor in estradiol-induced alterations in proliferation, protein synthesis, and protein degradation in bovine satellite cell cultures.**
B. C. Reiter*, E. Kamanga-Sollo, M. E. White, and W. R. Dayton, *University of Minnesota*, *St. Paul*.

TH262 **Interactive effects of zinc and ractopamine hydrochloride on β-adrenergic receptor.**
T. L. Harris*[1], A. D. Hosford[1], M. J. Anderson[1], C. K. Larson[2], and B. J. Johnson[1], [1]*Department of Animal and Food Sciences, Texas Tech University*, *Lubbock*, [2]*Zinpro Corporation*, *Eden Prairie, MN*.

TH263 **Effect of castration methods on performance of beef cattle.**
A. D. Moreira[1], F. D. Resende[2], G. R. Siqueira[2], J. F. Lage*[1], M. H. Moretti[1], J. M. B. Benatti[1], J. A. Alves Neto[1], R. C. Silva[1], and R. F. Marciel[1], [1]*Universidade Estadual Paulista*, *Jaboticabal, Sao Paulo, Brazil*, [2]*Agencia Paulista de Tecnologia dos Agronegocios*, *Colina, Sao Paulo, Brazil*.

TH264 **Effect of castration methods on tissue deposition of Angus × Nellore.**
A. D. Moreira[1], J. F. Lage*[1], F. D. Resende[2], G. R. Siqueira[2], J. M. B. Benatti[1], M. H. Moretti[1], J. A. Alves Neto[1], G. F. Berti[3], P. H. Goncalves[3], and M. A. P. Alves[3], [1]*Universidade Estadual Paulista*, *Jaboticabal, Sao Paulo, Brazil*, [2]*Agencia Paulista de Tecnologia dos Agronegocios*, *Colina, Sao Paulo, Brazil*, [3]*Centro Universitario de Barretos*, *Barretos, Sao Paulo, Brazil*.

TH265 **Effect of α-lipoic acid on in vitro differentiation of broiler chicks' myoblasts and adipoblasts.**
S. Sigler-Galván*[1], L. González-Dávalos[2], A. Shimada[2], E. Piña-Garza[3], and O. Mora[2], [1]*Programa de Posgrado en Ciencias de la Producción y de la Salud Animal, Universidad Nacional Autónoma de México (UNAM))*, *México City, DF, México*, [2]*Laboratorio de Rumiología y Metabolismo Nutricional (RuMeN), Facultad de Estudios Superiores Cuautitlán (FES Cuautitlán), UNAM*, *Querétaro, Querétaro, México*, [3]*Departamento de Bioquímica, Facultad de Medicina, Universidad Nacional Autónoma de México*, *México City, DF, México*.

THURSDAY POSTERS

Horse Species

TH266 **Effects of melatonin on stallion sperm motility and viability in vitro.**
A. Trabold[1], J. M. Reddish[1], K. Barnhart[1], M. A. Coutinho da Silva[2], and K. Cole*[1], [1]*Department of Animal Sciences, The Ohio State University*, *Columbus*, [2]*Department of Veterinary Clinical Sciences, The Ohio State University*, *Columbus*.

TH267 **Influence of prebiotic and probiotic supplementation on apparent digestibility in mature geldings at maintenance.**
J. A. Coverdale*[1], E. D. Lamprecht[2], P. Kropp[3], I. Yoon[3], J. L. Lucia[1], K. N. Winsco[1], A. E. Hanson[1], and C. M. Warzecha[1], [1]*Texas A&M University*, *College Station*, [2]*Cargill Incorporated*, *Elk River, MN*, [3]*Diamond V*, *Cedar Rapids, IA*.

TH268 **Influence of oral glucosamine supplementation in young horses: Dietary adaptation.**
J. L. Lucia*[1], K. L. Gehl[1], J. A. Coverdale[1], C. E. Arnold[1], R. A. Dabareiner[1], K. N. Winsco[1], and E. D. Lamprecht[2], [1]*Texas A&M University*, *College Station*, [2]*Cargill Incorporated*, *Elk River, MN*.

TH269 **The availability of dietary calcium and magnesium to long yearlings and mature horses.**
A. L. Fowler*, L. A. Strasinger, T. L. Hansen, B. E. Harlow, S. H. Hayes, and L. M. Lawrence, *University of Kentucky*, *Lexington*.

TH270 **Changes in fecal microbial species richness during foal heat diarrhea.**
L. A. Strasinger*[1], A. L. Fowler[1], G. L. Gellin[2], M. D. Flythe[2,1], and L. M. Lawrence[1], [1]*University of Kentucky*, *Lexington*, [2]*USDA, ARS*, *Lexington, KY*.

TH271 **Equine palmar artery, palmar vein and uterine artery express different populations of vasoactive biogenic amine receptors.**
D. A. Hestad[1], K. J. McDowell[1], and J. L. Klotz*[2], [1]*Deparatment of Veterinary Science, University of Kentucky*, *Lexington*, [2]*USDA-ARS FAPRU*, *Lexington, KY*.

TH272 **Use of kainic acid as an alternative to commercially available anthelmintics in horses.**
K. J. Stutts*, J. L. Lucia, M. J. Anderson, S. D. Brooks, and M. L. McMillan, *Sam Houston State University*, *Huntsville, TX*.

TH273 **Comparison of on-farm and commercial laboratory fecal egg counts to determine internal parasite status of horses.**
J. L. Lucia*, K. J. Stutts, M. J. Anderson, S. D. Brooks, and M. L. McMillan, *Sam Houston State University*, *Huntsville, TX*.

International Animal Agriculture

TH274 **A survey analysis on comparative growth and reproductive performance of various sheep breeds in alpine pasture and foot hills of northern areas in Pakistan.**
M. Abdullah*, K. Javed, M. Mudassir, J. A. Bhatti, N. Ahmad, and U. Younas, *University of Veterinary and Animal Sciences*, *Lahore, Pakistan*.

TH275 **Development and comparison of regression models for estimation of live body weight in Lohi and Hissardale sheep using mophometric measurements.**
M. Abdullah*, K. Javed, U. Younas, M. A. Hassan, N. Ahmad, and J. A. Bhatti, *University of Veterinary and Animal Sciences*, *Lahore, Pakistan*.

TH276 **The dairy industry in Malawi—A description of the Malawi milk bulking groups.**
W. G. Sindani[1,2], S. R. Neba*[1,3], M. T. Correa[1], K. L. Anderson[1], and J. C. Allen[1], [1]*North Carolina State University*, *Raleigh*, [2]*Malawi Bureau of Standards*, *Blantyre, Malawi*, [3]*Ministry of Agriculture*, *Salima, Malawi*.

TH277 **Effects of a new additive on milk performance of water buffalos.**
M. Lohölter*, A. Lewke, A. Numsri, S. Kirwan, and B. Eckel, *Dr. Eckel GmbH*, *Niederzissen, Germany*.

Lactation Biology II

TH278 **Changes in the mechanical microenvironment of the bovine mammary gland and their effect on mammary function.**
J. Biet*[1], K. Stelwagen[2], J. Margerison[3], CA Poole[4], A. Cullum[1], and K. Singh[1], [1]*AgResearch Ltd*, *Hamilton, New Zealand*, [2]*SciLactis Ltd*, *Hamilton, New Zealand*, [3]*Massey University*, *Palmerston North, New Zealand*, [4]*University of Otago*, *Dunedin, New Zealand*.

TH279 **Determining the effect of chronic light:dark shifts on dairy cow milk production.**
J. Crodian*, T. Casey, and K. Plaut, *Purdue University*, *West Lafayette, IN*.

TH280 **Lipoprotein lipase (LPL), molecular cloning, tissue expression, and regulation of milk fat synthesis in goat mammary epithelial cells.**
W. S. Zhao, J. Luo*, and S. L. Hu, *Shaanxi Key Laboratory of Molecular Biology for Agriculture, College of Animal Science and Technology, Northwest A&F University*, *Yangling, Shaanxi, China*.

TH281 **Use of quantitative real-time PCR for diagnosis of culture negative mastitis cases.**
K. E. Merriman, J. Laporta, T. L. Peters, M. J. Fuenzalida, P. L. Ruegg, and L. L. Hernandez*, *University of Wisconsin*, *Madison*.

TH282 **Circulating serotonin (5-HT) concentrations on day 1 of lactation as a potential predictor of transition-related disorders.**
J. Laporta, S. A. E. Moore*, M. W. Peters, and L. L. Hernandez, *University of Wisconsin*, *Madison*.

TH283 **Hormonal regulation of α-tocopherol transfer related molecules expression in bovine mammary epithelial cells.**
S. Haga*[1,2], Y. Kobayashi[1], M. Nakano[1], H. Ishizaki[1], S. G. Roh[2], and K. Katoh[2], [1]*NARO Institute of Livestock and Grassland Science*, *Nasushiobara, Tochigi, Japan*, [2]*Lab of Animal Physiology, Graduate School of Agriculture Science, Tohoku University*, *Sendai, Miyagi, Japan*.

TH284 **Cellular composition and expression of potential stem cell markers in mammary tissue of cows consuming endophyte-infected fescue seed during the dry period and early lactation.**
R. K. Choudhary*[1], R. L. Baldwin[2], C. M. Evock-Clover[2], P. Grossi[3], T. H. Elsasser[2], G. Bertoni[3], E. Trevisi[3], K. R. McLeod[1], and A. V. Capuco[2], [1]*Department of Animal Sciences, University of Kentucky*, *Lexington*, [2]*Bovine Functional Genomics Lab, USDA-ARS*, *Beltsville, MD*, [3]*Istituto di Zootecnica, Universitá Cattolica del Sacro Cuore*, *Piacenza, Italy*.

TH285 **Influence of intramammary lipopolysaccharide challenge on milk and plasma adiponectin in dairy cows.**
S. P. Singh*[1], S. Häussler[1], O. Wellnitz[2], R. M. Bruckmaier[2], and H. Sauerwein[1], [1]*Institute of Animal Science, Physiology and Hygiene Group, University of Bonn*, *Bonn, Germany*, [2]*Veterinary Physiology, Vetsuisse Faculty University of Bern*, *Bern, Switzerland*.

TH286 **Transcriptomics differences between liver and mammary tissue in mid-lactation dairy cows.**
D. P. Bu[1], M. Bionaz[2], X. M. Nan[1], and J. Q. Wang*[1], [1]*State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*, [2]*Animal and Rangeland Sciences, Oregon State University*, *Corvallis*.

TH287 **Differential proteome analysis of lactating and non-lactating bovine mammary gland.**
H. Y. Liu*[1], J. X. Yang[1], X. D. Zhang[2], and J. X. Liu[1], [1]*Institute of Dairy Science, Zhejiang University*, *Hangzhou, China*, [2]*Department of Animal Science and Technology, Zhejiang Agriculture and Forestry University*, *Hangzhou-Lin'an, China*.

TH288 **AKT/mTOR and JAK2/STAT5 pathway act synchronously on the synthesis of β-casein in bovine mammary epithelial cells.**
L. L. Shi, F. Zhao, X. J. Gao, Q. Z. LI*, and N. Zhang, *Key Laboratory of Dairy Science of Education Ministry, Northeast Agricultural University*, *Harbin, China*.

TH289 **The effects of laminin on the proliferation of dairy cow mammary epithelial cells are mediated by α6 and β4 integrin.**
F. Zhao, C. Liu, X. J. Gao, and Q. Z. Li*, *Key Laboratory of Dairy Science of Education Ministry, Northeast Agricultural University*, *Harbin, China*.

Meat Science and Muscle Biology II

TH290 **Shelf life of fresh pork sausage from immunologically castrated barrows.**
K. A. Jones-Hamlow*[1], A. L. Schroeder[2], and A. C. Dilger[1], [1]*University of Illinois*, *Urbana-Champaign*, [2]*Zoetis*, *Kalamazoo, MI*.

TH291 **Gene expression of lipogenic enzymes present in muscle of young bulls fed ground soybean grain or cottonseed and vitamin E.**
M. M. Ladeira*[1,2], D. M. Oliveira[1], A. Chalfun Junior[1], M. L. Chizzotti[1], H. G. Barreto[1], T. C. Coelho[1], P. D. Teixeira[1], and E. E. L. Valente[1], [1]*Federal University of Lavras*, *Lavras, MG, Brazil*, [2]*Purdue University*, *West Lafayette, IN*.

TH292 **Effects of frame, forage type and time-on-pasture on carcass traits, LM composition, and meat color in steers.**
G. Volpi Lagreca*[1], R. Arnoni[1], M. Alende[1], S. K. Duckett[1], R. M. Lewis[2], and J. P. Fontenot[2], [1]*Clemson University*, *Clemson, SC*, [2]*Virginia Tech University*, *Blacksburg*.

TH293 **Fatty acid profile of meat from Nellore young bulls fed crude glycerin and lipid sources.**
R. A. Silva, J. F. Lage*, E. San Vito, A. F. Ribeiro, L. M. Delevatti, E. E. Dallantonia, M. Machado, L. R. Simonetti, B. R. Vieira, and T. T. Berchielli, *Universidade Estadual Paulista*, *Jaboticabal, Sao Paulo, Brazil*.

TH294 **Visible and near infrared reflectance spectroscopy (Vis-NIRS) to predict tenderness in Nellore cattle.**
M. N. Bonin*[1], S. L. Silva[1], L. Bunger[2], D. Ross[2], C. Craigie[2], R. C. Gomes[3], A. Figueiredo[1], P. Torralvo[1], J. H. A. Campos[1], V. N. Barbosa[1], F. J. Novais[1], M. H. A. Santana[1], L. S. Oliveira[1], M. Mazon[1], J. B. S. Ferraz[1], [1]*College of Animal Science and Food Engineering, University of Sao Paulo*, *Pirassununga, SP, Brazil*, [2]*Scotland's Rural College*, *Edinburgh, United Kingdom*, [3]*Embrapa Beef Cattle*, *Campo Grande, MS, Brazil*.

TH295 **Influence of season of lamb finshing on meat quality.**
R. C. Vilarinho[1], U. Souza[1], C. P. McManus[2], and L. Kindlein*[1], [1]*Federal University of Rio Grande do Sul*, *Porto Alegre, Rio Grande do Sul, Brazil*, [2]*Brasilia University*, *Brasilia, DF, Brazil*.

TH296 **An Investigation of the black bone syndrome with broiler chickens fed diets supplemented with 25-OH-vitamin D3.**
L. Kindlein* and S. L. Vieira, *Federal University of Rio Grande do Sul*, *Porto Alegre, Rio Grande do Sul, Brazil*.

TH297 **Effects of feeding ractopamine to immunologically castrated pigs on carcass cutting yields and fresh meat quality.**
B. K. Lowe*[1], G. D. Gerlemann[2], S. N. Carr[3], P. J. Rincker[3], A. L. Schroeder[4], D. B. Petry[5], G. L. Allee[2], F. K. McKeith[1], and A. C. Dilger[1], [1]*University of Illinois*, *Urbana*, [2]*University of Missouri*, *Columbia*, [3]*Elanco Animal Helath*, *Greenfield, IN*, [4]*Zoetis*, *Kalamazoo, MI*, [5]*Newsham Choice Genetics*, *West Des Moines, IA*.

TH298 **Effects of temperament on meat lipid content and fatty acid composition of Nellore feeder steers.**
C. L. Francisco*[1,6], A. M. Jorge[1], A. Cominotte[1], I. M. Padovan[1], F. D. Rezende[2], J. M. B. Benatti[3], R. O. Roca[4], and R. F. Cooke[5], [1]*Universidade Estadual Paulista - FMVZ*, *Botucatu, SP, Brazil*, [2]*APTA*, *Colina, SP, Brazil*, [3]*Universidade Estadual Paulista - FCAV*, *Jaboticabal, SP, Brazil*, [4]*Universidade Estadual Paulista - FCA*, *Botucatu, SP, Brazil*, [5]*Oregon State University - EOARC*, *Burns*, [6]*FAPESP Proc 2010/09516-1*, *São Paulo, SP, Brazil*.

TH299 **Effects of feeding Next Enhance 300 on carcass characteristics, meat quality, and consumer sensory characteristics of longissimus beef steaks.**
M. C. Westerhold*[1], Z. D. Callahan[1], M. S. Kerley[1], C. L. Lorenzen[1], W. J. Sexten[1], B. R. Wiegand[1], and T. J. Wistuba[2], [1]*University of Missouri, Columbia*, *Columbia*, [2]*Novus International Inc.*, *St. Charles, MO*.

TH300 **Incidence of white striping in relation to the weight of broiler breast fillets.**
T. Z. Ferreira, S. L. Vieira, and L. Kindlein*, *Federal University of Rio Grande do Sul*, *Porto Alegre, Rio Grande do Sul, Brazil*.

TH301 **Evaluation of metabolic, endocrine and meat quality traits in longissimus muscle of beef cattle.**
M. D. Poleti, A. F. Rosa, C. T. Moncau, S. L. Silva, J. P. Eler, and J. C. C. Balieiro*, *University of Sao Paulo*, *Pirassununga, Sao Paulo, Brazil*.

TH302 **Visible and near infrared spectroscopy to predict beef quality traits in *Bos indicus* cattle.**
S. L. Silva*[1], M. N. Bonin[1], R. C. Gomes[2], M. R. Mazon[1], T. M. C. Leme[1], J. M. Balage[1], L. S. Martello[1], J. B. S. Ferraz[1], and P. R. Leme[1], [1]*University of Sao Paulo*, *Pirassununga, SP, Brazil*, [2]*Embrapa Beef Cattle*, *Campo Grande, MS, Brazil*.

TH303 **Effect of aging on pH and water holding capacity of muscles from Nellore beef cattle.**
L. R. Simonetti, J. F. Lage, E. E. Dallantonia, E. San Vito*, E. A. Oliveira, M. Machado, L. M. Delevatti, G. M. Delamagna, and T. T. Berchielli, *São Paulo State University*, *Jaboticabal, São Paulo, Brazil*.

Nonruminant Nutrition: Enzymes

TH304 **Bone breakage resistance of 25-kg piglets fed diets with phytase containing benzoic or butyric acid.**
L. M. Rufino, M. Q. Resende*, R. M. Geraldine, J. H. Stringhini, M. A. Andrade, A. G. Mascarenhas, A. C. S. Barnabé, B. P. Mota, and R. C. Nunes, *Universidade Federal de Goiás*, *Goiânia, GO, Brazil*.

TH305 **Phosphorus digestibility of triticale distillers dried grains with solubles without or with phytase supplementation determined using the regression method in growing pigs.**
P. C. Xue* and O. Adeola, *Department of Animal Sciences, Purdue University*, *West Lafayette, IN*.

TH306 **Performance of piglets in pre-starter phase fed diets containing organic acids and phytase.**
L. M. Rufino, J. H. Stringhini, M. Q. Resende*, H. H. C. Mello, A. G. Mascarenhas, N. S. M. Leandro, I. C. Di Castro, M. P. F. Silva, and R. C. Nunes, *Universidade Federal de Goiás, Goiânia, GO, Brazil*.

TH307 **Effect of protease on growth performance of nursery pigs fed diets with different soybean meal inclusion.**
J. Guo*[1], P. Biggs[2], and S. W. Kim[1], [1]*North Carolina State University*, *Raleigh*, [2]*BioResource International*, *Morrisville, NC*.

TH308 **Effect of enzyme supplementation of mango (*Mangifera indica* L.) seed kernel- based diet on the performance of broiler chickens.**
A. A. Odunsi*, O. A. Olu-Arotiowa, A. O. Akinwunmi, T. A. Rafiu, T. O. Akande, and A. O. Afolabi, *Ladoke Akintola University of Technology*, *Ogbomoso, Oyo, Nigeria*.

TH309 **Effects of exogenous enzyme supplemented to a corn and soybean meal based diets on energy and nitrogen balance in nursery pigs.**
Y. B. Kim* and S. W. Kim, *North Carolina State University*, *Raleigh*.

Nonruminant Nutrition: Feed Ingredients

TH310 **Effect of a controlled fermentation process on the content of digestible phosphorus in diets for growing pigs.**
R. Schemmer*[1], B. Drüing[1], G. Stalljohann[2], and K.-H. Südekum[1], [1]*University of Bonn*, *Bonn, Germany*, [2]*Agricultural Chamber of North Rhine-Westphalia*, *Münster, Germany*.

TH311 **Effects of dietary fat source and feeding pattern on performance, tissue fatty acids composition, and serum insulin and ghrelin dynamics in grower-finisher pigs.**
J. S. Kim[1], S. L. Ingale[1], K. H. Kim[1], S. Lee[1], J. S. Kim[1], E. H. Kim[2], D. C. Lee[2], and B. J. Chae*[1], [1]*Department of Animal Resource Science, Kangwon National University*, *Chuncheon, Gangwon-do, Republic of Korea*, [2]*Department of Biosystem Engineering, Kangwon National University*, *Chuncheon, Gangwon-do, Republic of Korea*.

TH312 **Influence of level of fiber inclusion in the diet two different hygiene conditions in weaned pigs.**
J. D. Berrocoso*, B. Saldana, P. Guzman, L. Camara, and G. G. Mateos, *Universidad Politecnica de Madrid*, *Madrid, Spain*.

TH313 **Effects of inclusion of spray-dried porcine plasma in lactation diets on sow and litter performance.**
S. D. Carter*[1,6], L. I. Chiba[2,6], M. D. Lindemann[3,6], M. J. Estienne[4,6], and G. J. M. M. Lima[5,6], [1]*Oklahoma State University*, *Stillwater*, [2]*Auburn University*, *Auburn, AL*, [3]*University of Kentucky*, *Lexington*, [4]*Virginia Tech University*, *Blacksburg*, [5]*Embrapa Swine and Poultry*, *Concordia, SC, Brazil*, [6]*S-1044 Committee on Nutritional Systems for Swine to Increase Reproductive Efficiency*.

TH314 **Effects of spray-dried plasma replacement for soy protein concentrate on growth performance of weaned pigs.**
M. Q. Resende*, A. G. Mascarenhas, R. C. Nunes, E. Arnhold, K. A. Teixeira, K. M. Borges, L. V. G. C. Mota, and H. H. C. Mello, *Universidade Federal de Goiás, Goiânia, GO, Brazil*.

TH315 **Growth performance, carcass characteristics and meat quality of pigs fed crude glycerin.**
C. A. Ordonez-Gomez*[1,3], S. Castaneda[1], H. Florez[1], G. Afanador[2], and C. Ariza-Nieto[1], [1]*CORPOICA*, *Bogota, Colombia*, [2]*Universidad Nacional de Colombia*, *Bogota, Colombia*, [3]*Universidad Francisco de Paula Santander Ocana*, *Ocana, Colombia*.

TH316 **Energy concentrations in distillers dried grains with solubles containing different fat concentrations and the effect of corn oil addition on energy concentrations in diets fed to growing pigs.**
D. Y. Kil[1], J. W. Lee[2], D. M. D. L. Navarro*[2], and H. H. Stein[2], [1]*Chung-Ang University*, *Anseong-si, Gyeonggi-do, Republic of Korea*, [2]*University of Illinois at Urbana-Champaign*, *Urbana*.

TH317 **Effect of diet complexity and an enzyme-treated soy protein plus yeast on performance in weanling pigs.**
T. Tsai*[1], H. Kim[1], G. Fitzner[2], J. K. Apple[1], J. J. Chewning[1], and C. V. Maxwell[1], [1]*University of Arkansas*, *Fayetteville*, [2]*Hamlet Protein Inc.*, *Findlay, OH*.

TH318 **Low oligosaccharide soybean meal improves nursery pig performance.**
V. Perez*[1], N. Bajjalieh[2], T. Radke[1], and D. Holzgraefe[1], [1]*ADM Alliance Nutrition Inc.*, *Quincy, IL*, [2]*Integrative Nutrition Inc.*, *Decatur, IL*.

TH319 **Growth performance, intestinal morphology, and blood parameters of piglets fed different soy protein concentrate levels.**
M. Q. Resende*, A. G. Mascarenhas, J. H. Stringhini, E. Arnhold, K. A. Teixeira, H. P. F. Xavier, R. D. Silva, and H. H. C. Mello, *Universidade Federal de Goiás, Goiânia, GO, Brazil*.

TH320 **Effects of cocoa powder as a source of theobromine in diets on performance of weanling pigs.**
G. L. Cromwell*, M. D. Lindemann, and H. J. Monegue, *University of Kentucky*, *Lexington*.

TH321 **Grain replacement value of honey bee slumgum meal in broiler finisher diet.**
O. O. Ojebiyi*, I. O. Oladunjoye, T. B. Olayeni, and M. D. Shittu, *Ladoke Akintola University of Technology*, *Ogbomoso, Oyo State, Nigeria*.

TH322 **Use of modified soy protein in aquaculture feeds as a replacement for fishmeal.**
B. M. Vester Boler*[1], D. M. Gatlin[2], E. A. Koutsos[1], and B. L. Miller[1], [1]*Purina Animal Nutrition*, *Gray Summit, MO*, [2]*Texas A&M University*, *College Station*.

TH323 **Complete replacement of soybean meal in pig diets with hydrolyzed feather meal with blood by amino acid supplementation based on standardized ileal digestibility.**
S. D. Brotzge*[1], L. I. Chiba[1], C. K. Adhikari[1], H. H. Stein[2], S. P. Rodning[1], and E. G. Welles[1], [1]*Auburn University*, *Auburn, AL*, [2]*University of Illinois*, *Urbana*.

TH324 **Hen performance as influenced by dietary *Aspilia africana* leaf.**
O. O. K. Oko*, E. A. Agiang, and P. O. Ozung, *University of Calabar*, *Calabar, Cross River State, Nigeria*.

TH325 **Utilization of high levels of crude glycerin in commercial layer diets.**
Y. Avellaneda*[1,2], R. Ortiz[1,2], G. Afanador[2], and C. Ariza-Nieto[1], [1]*CORPOICA*, *Mosquera, Cundinamarca, Colombia*, [2]*Universidad Nacional de Colombia*, *Bogota, Cundinamarca, Colombia*.

TH326 **Dietary hop (*Humulus lupulus*) β-acids improve growth performance of weanling pigs.**
M. Sbardella*, C. Andrade, D. P. Perina, and V. S. Miyada, *Universidade de São Paulo (USP/ESALQ)*, *Piracicaba, SP, Brazil*.

Nonruminant Nutrition: Physiology

TH327 **Type 2 diabetes mellitus increases sensitivity to dietary iron overload in pigs.**
M. S. Morales*[1], A. Espinoza[1,2], M. Arredondo[2], and F. Pizarro[2], [1]*Facultad de Ciencias Veterinarias y Pecuarias, Universidad de Chile*, *Santiago, R.M., Chile*, [2]*INTA, Universidad de Chile*, *Santiago, R.M., Chile*.

TH328 **Severe heat stress affects amino acid transporters expression and serum concentration of amino acids in pair-fed pigs.**
F. Grageola, M. Morales, H. García, B. A. Araiza, N. Arce, and M. Cervantes*, *ICA - Universidad Autónoma de Baja California*, *Mexicali, BC, México*.

TH329 **Thyroid function and growth are impaired by *Moringa oleifera* leaf meal in pair-fed growing poultry.**
J. Ashong* and D. Brown, *Cornell University, Ithaca, NY*.

TH330 **Effects of immunization against GnRH and feeding allowance on the performance of growing-finishing pigs.**
O. A. Dalla Costa, G. J. M. M. Lima*, F. C. Tavernari, and L. S. Lopes, *Embrapa*, *Concordia, SC, Brazil*.

TH331 **Effects of melamine in young barrows.**
B. R. Landers[1], G. Hosotani*[1], D. Y. Kim[2], M. C. Shannon[1], G. E. Rottinghaus[2], and D. R. Ledoux[1], [1]*Animal Sciences Department, University of Missouri*, *Columbia*, [2]*Veterinary Medical Diagnostic Laboratory, College of Veterinary Medicine, University of Missouri*, *Columbia*.

Physiology and Endocrinology III

TH332 **Exogenous enzymes and *Salix babylonica* extract affects cellular immune response in growing lambs.**
N. Rivero[1], A. Z. M. Salem*[1], C. G. Penuelas[1], M. G. Ronquillo[1], H. Gado[2], and N. E. Odongo[3], [1]*Facultad de Medicina Veterinaria y Zootecnia, Universidad Autonoma del Estado de Mexico*, *Mexico*, [2]*Animal Production Department, Faculty of Agriculture, Ain Shams University*, *Qalubia, Egypt*, [3]*Animal Production and Health Section, International Atomic Energy Agency*, *Vienna, Austria*.

TH333 **Effects of intravenous β-hydroxybutyrate on the mRNA abundance of genes related to metabolism and immune response in hepatic and mammary tissue in dairy cows.**
M. Zarrin*[1,2], H. A. van Dorland[1], O. Wellnitz[1], and R. M. Bruckmaier[1], [1]*Veterinary Physiology, Vetsuisse Faculty University of Bern*, *Bern, Switzerland*, [2]*Department of Animal Science, Yasouj University*, *Yasouj, Iran*, [3]*Graduate School for Cellular and Biomedical Sciences, University of Bern*, *Bern, Switzerland*.

TH334 **Effects of bovine plasma handling and storage protocols on concentrations of haptoglobin and ceruloplasmin.**
P. G. M. A. Martins*, P. Moriel, and J. D. Arthington, *University of Florida, Institute of Food and Agricultural Sciences, Range Cattle Research and Education Center*, *Ona*.

TH335 **Purinergic signaling gene network expression in bovine polymorphonuclear neutrophils during the peripartal period.**
J. Seo, J. S. Osorio*, and J. J. Loor, *University of Illinois*, *Urbana*.

TH336 **Dynamics of TLR-4 signaling in bovine neutrophils during the periparturient period.**
M. G. H. Stevens*[1,2], X. Boulougouris[1], C. Rogiers[1], T. McFadden[2], L. Peelman[1], B. De Spiegeleer[1], L. Duchateau[1], and C. Burvenich[1], [1]*Ghent University*, *Ghent, Oost-Vlaanderen, Belgium*, [2]*University of Missouri*, *Columbia*.

TH337 **Expression of niacin receptor GPR109A in bovine oocytes and preimplantation embryos and effect of addition of niacin during embryo culture on development following exposure to heat shock.**
J. Block[1,2], A. Ruiz[2], A. M. Reeg[1], L. K. Mamedova[3], B. J. Bradford[3], and T. R. Bilby*[4], [1]*OvaTech LLC*, *Gainesville, FL*, [2]*Department of Animal Sciences, University of Florida*, *Gainesville*, [3]*Department of Animal Sciences and Industry, Kansas State University*, *Manhattan*, [4]*Texas A&M AgriLife Research and Extension, Texas A&M System*, *Stephenville*.

TH338 **Prepartum body condition score changes and the secretion of acute phase proteins in dairy cows.**
P. Montagner[1,2], E. Schwegler[1,2], M. M. Weschenfelder[1,2], A. R. Krause[1,3], J. Alvarado[1,2], A. S. Maffi[1,2], C. C. Brauner[1,3], A. Schneider[1,4], E. Schmitt*[1,2], E. G. Xavier[5,2], C. F. Martins[1,2], V. R. Rabassa[1,2], F. A. B. Del Pino[1,3], and M. N. Correa[1,2], [1]*Center for Research, Teaching and Extension in Animal Science (NUPEEC), Pelotas, RS, Brazil*, [2]*Department of Clinical Veterinary, Federal University of Pelotas (UFPEL)-BRA*, *Pelotas, RS, Brazil*, [3]*Department of Animal Science, (UFPEL - BRA)*, *Pelotas, RS, Brazil*, [4]*Departament of Nutrition (UFPEL - BRA)*, *Pelotas, RS, Brazil*, [5]*Granjas 4 Irmaos*, *Rio Grande, RS, Brazil*, [6]*Center for Agroforestry Research of Rondonia - Embrapa CPAF*, *Rondonia, RO, Brazil*.

TH339 **Relationships of birth weight traits with age at first estrus and number of ovulations in Landrace-Duroc-Yorkshire gilts.**
C. A. Lents*, L. A. Rempel, T. Wise, and D. Nonneman, *U.S. Meat Animal Research Center, Agricultural Research Service, United States Department of Agriculture*, *Clay Center, NE*.

TH340 **Determining the effect of scrotal insulation on sperm production in the boar.**
K. M. Gibbs*, J. R. Schindler, and J. J. Parrish, *University of Wisconsin-Madison*, *Madison*.

TH341 **Influence of fat supplementation on leptin and LH concentration in Nelore heifers.**
R. S. Cipriano*, M. C. V. Miguel, H. F. Costa, J. S. Souza, L. M. Pavanello, J. L. C. Delfino, D. Giraldo-Arana, D. M. Pinheiro, and G. P. Nogueira, *UNESP, Animal Endocrinology Laboratory, DAPSA, FMVA*, *Aracatuba, Sao Paulo, Brazil*.

TH342 **Effect of supplementation of distillers grains during early pregnancy on reproductive performance of beef cows.**
A. M. Schreiner[1], P. M. Fricke*[2], E. J. Cretney[2], A. E. Radunz[1], and J. S. Luther[1], [1]*University of Wisconsin-River Falls*, *River Falls*, [2]*University of Wisconsin-Madison*, *Madison*.

TH343 **Effect of capsicum oleoresin on proliferation and cytokine production in bovine peripheral blood mononuclear cells.**
J. Oh*[1], S. Walusimbi[1], A. N. Hristov[1], J. Pate[1], and D. Bravo[2], [1]*Department of Animal Science, The Pennsylvania State University*, *University Park*, [2]*Pancosma*, *Geneva, Switzerland*.

TH344 **Growth and cardiovascular characteristics between birth and one month of age in dairy calves.**
B. E. Voelz*, H. M. Kerr, D. K. Hardin, K. A. Barton, C. O. Lemley, and J. E. Larson, *Mississippi State University*, *Mississippi State*.

TH345 **Effect of decreased progesterone concentrations during follicular development on oocyte yield and quality.**
F. M. Abreu*[1], S. Kruse[2], L. H. Cruppe[1], R. S. Cipriano[1], M. L. Day[1], T. W. Geary[3], M. A. Coutinho da Silva[1], B. A. Hicks[4], D. S. Clark[4], and G. A. Bridges[2], [1]*The Ohio State University*, *Columbus*, [2]*University of Minnesota*, *Grand Rapids*, [3]*USDA ARS Fort Keogh*, *Miles City, MT*, [4]*Simplot Livestock Inc.*, *Emmett, ID*.

TH346 **Integrating nutritional and reproductive models to improve reproductive efficiency in dairy cattle.**
S. L. Shields* and J. P. McNamara, *Department of Animal Sciences, Washington State University*, *Pullman*.

TH347 **Effect of maternal dietary fish oil supplementation on growth and physiological indicators of stress in pre- and post-weaned pigs.**
S. A. Lockwood*, H. G. Kattesh, C. J. Kojima, M. P. Roberts, G. M. Pighetti, and A. M. Saxton, *University of Tennessee*, *Knoxville*.

TH348 **Effects of intrauterine infusion of *Trueperella pyogenes* on endometrial mRNA expression of genes associated with luteolysis in dairy cows.**
F. S. Lima*, J. E. P. Santos, R. S. Bisinotto, L. F. Greco, E. S. Ribeiro, N. Martinez, C. A. Risco, W. W. Thatcher, and K. N. Galvão, *University of Florida*, *Gainesville*.

TH349 **Correlations between PAG concentrations, pregnancy loss, and milk production in high producing Holstein cows.**
P. Mercadante*[1], C. Risco[2], and A. Ealy[1,3], [1]*University of Florida, Department of Animal Sciences*, *Gainesville*, [2]*University of Florida, Department of Large Animal Clinical Sciences*, *Gainesville*, [3]*Virginia Polytechnic Institute and State University of Florida, Department of Animal and Poultry Sciences*, *Blacksburg*.

TH350 **Assessment of systematic breeding programs: A comparison between AI after estrus detection and timed AI in lactating dairy cows.**
A. B. Nascimento*[1], A. H. Souza[2], G. Pontes[1], M. C. Wiltbank[2], and R. Sartori[1], [1]*University of São Paulo*, *Piracicaba, São Paulo, Brazil*, [2]*University of Wisconsin*, *Madison*.

TH351 **Reproductive outcomes of timed AI or transfer of in vivo- or in vitro-produced vitrified embryos in beef cattle.**
R. Sartori*[1], A. B. Prata[1], R. S. Surjus[1], A. V. Pires[1], M. C. C. Mattos[2], A. C. Basso[2], J. H. F. Pontes[2], J. R. S. Gonçalves[3], L. G. Lima[3], and T. S. Aguiar[1], [1]*University of São Paulo*, *Piracicaba, SP, Brazil*, [2]*In Vitro Brasil Ltda*, *Mogi Mirim, SP, Brazil*, [3]*Hildergard G. V. Pritzelwitz Experimental Station*, *Londrina, PR, Brazil*.

TH352 **Effects of gonadotropin releasing hormone (GnRH) and equine chorionic gonadotropin (eCG) during estrus synchronization and fixed-time artificial insemination of *Bos indicus*-based females on fixed-time artificial insemination and final pregnancy rates.**
F. R. Gaievski[1], V. R. G. Mercadante[2], G. C. Lamb[2], R. R. Weiss[3], M. A. F. Betiol[3], and L. E. Kozicki*[1], [1]*School of Agricultural Sciences and Veterinary Medicine, Pontifical Catholic University of Parana*, *Curitiba, PR, Brazil*, [2]*North Florida Research and Education Center, University of Florida*, *Marianna*, [3]*School of Veterinary Medicine, Federal University of Parana*, *Curitiba, PR, Brazil*.

TH353 **The impact of omission of GnRH at the beginning of 5-d CO-Synch + CIDR program on timed AI pregnancy rate in beef heifers.**
L. H. Cruppe*[1], G. A. Bridges[2], S. L. Lake[3], R. S. Cipriano[1], F. M. Abreu[1], S. Kruse[2], B. R. Harstine[1], R. Arias[3], R. Raymond[4], W. Kayser[4], M. V. Biehl[1], and M. L. Day[1], [1]*The Ohio State University*, *Columbus*, [2]*University of Minnesota*, *Grand Rapids*, [3]*University of Wyoming*, *Laramie*, [4]*Simplot Livestock Inc.*, *Grand View, ID*.

TH354 **The effects of intramuscular or intravenous injections of gonadotropin releasing hormone at fixed-time artificial insemination (TAI) on pregnancies per TAI of *Bos indicus* beef cows.**
D. Demeterco[1], V. R. G. Mercadante[2], G. C. Lamb[2], F. R. Gaievski[1], B. G. Weiss[1], G. N. Turbay[1], M. S. Segui[1], R. R. Weiss[3], M. A. F. Betiol[3], and L. E. Kozicki*[1], [1]*School of Agricultural Sciences and Veterinary Medicine, Pontifical Catholic University of Parana*, *Curitiba, PR, Brazil*, [2]*North Florida Research and Education Center, University of Florida*, *Marianna*, [3]*School of Veterinary Medicine, Federal University of Parana*, *Curitiba, PR, Brazil*.

TH355 **Timing of artificial insemination in a 7-d P4-E2 estrous synchronization program in *Bos indicus* postpartum cows.**
M. V. C. Ferraz Junior[1], A. V. Pires[2], M. V. Biehl*[1], E. M. Ferreira[2], D. D. Nepomuceno[2], V. N. Gouvea[1], R. Sartori[2], J. R. S. Gonçalves[3], L. H. Cruppe[4], and M. L. Day[4], [1]*University of Sao Paulo*, *Pirassununga, SP, Brazil*, [2]*University of Sao Paulo*, *Piracicaba, SP, Brazil*, [3]*Experimental Station Hildegard Georgina Von Pritzelwitz*, *Londrina, PR, Brazil*, [4]*The Ohio State University*, *Columbus*.

TH356 **Improving embryo recovery from superovulated Holstein dairy cattle: Evaluation of reflushing 30 minutes after the initial flush on embryo recovery.**
R. W. Bender*, K. S. Hackbart, P. D. Carvalho, A. R. Dresch, L. M. Vieira, M. C. Amundson, G. B. Sandoval, A. H. Souza, J. N. Guenther, and M. C. Wiltbank, *University of Wisconsin-Madison*, *Madison*.

TH357 **Identifying and resynchronizing open cows and heifers 21 d after AI using CIDR inserts, ultrasonography, and GnRH in dairy cattle.**
L. Ibarbia, J. H. Bittar, R. Daetz, J. E. Santos, C. A. Risco, and K. N. Galvão*, *University of Florida*, *Gainesville*.

TH358 **Effects of heat stress and insulin on hepatic progesterone catabolic enzymes cytochrome P450 2C and 3A in lactating cows.**
V. L. McCracken*[1], G. Xie[1], S. E. Deaver[1], L. H. Baumgard[2], R. P. Rhoads[1], and M. L. Rhoads[1], [1]*Virginia Polytechnic Institute and State University*, *Blacksburg*, [2]*Iowa State University*, *Ames*.

TH359 **Predicting methane and carbon dioxide emissions using the CNCPS.**
R. J. Higgs*, K. L. Russomanno, T. F. Christoph, and M. E. Van Amburgh, *Cornell University*, *Ithaca, NY*.

TH360 **Risk measurement for technologies used in cow-calf production system.**
J. O. Barcellos*[1], T. E. Oliveira[1], C. McManus[1], R. P. Pedroso[2], D. S. Freitas[1], and M. E. Canozzi[1], [1]*UFRGS*, *Porto Alegre, RS, Brazil*, [2]*UFPA*, *Belem, PA, Brazil*.

TH361 **The environmental and economic impact of steroid implant and β-adrenergic agonist use within US beef production.**
J. L. Capper*, *Livestock Sustainability Consulting*, *Bozeman, MT*.

TH362 **The environmental and economic impact of withdrawing parasite control (Fenbendazole) from US beef production.**
J. L. Capper*, *Livestock Sustainability Consulting*, *Bozeman, MT*.

TH363 **The environmental and economic impact of calving rate within US beef production.**
J. L. Capper*, *Livestock Sustainability Consulting*, *Bozeman, MT*.

TH364 **Comparison of traditional and modern systems for the individual identification of dromedary camels.**
G. Caja*[1], E. Diaz-Medina[2], S. Cabrera[2], O. Amann[2], O. H. Salama[3], M. H. El-Shafei[3], H. El-Sayed[3], A. A. K. Salama[1,3], R. S. Aljumaah[4], M. Ayadi[4], and M. A. Alshaikh[4], [1]*Group of Ruminant Research, Bellaterra, Spain*, [2]*Oasis Park-Museo del Campo Majorero*, *Fuerteventura, Spain*, [3]*Animal Production Research Institute*, *Dokki, Giza, Egypt*, [4]*College of Food and Agriculture Sciences, King Saud University*, *Riyadh, Saudi Arabia*.

TH365 **Prediction of body condition scores in dairy cattle from daily measurements of milk yield, milk composition and body weights.**
A. De Vries*[1], K. D. Gay[1], L. F. Barbosa[1], F. Du[1], K. Kaniyamattam[1], and E. Maltz[2], [1]*University of Florida*, *Gainesville*, [2]*Institute of Agricultural Engineering, ARO, The Volcani Center*, *Bet Dagan, Israel*.

TH366 **Evaluating carbon fluxes variability in late lactation organic Jersey cows using a portable automated gas quantification system during the grazing season.**
A. B. D. Pereira*[1], A. F. Brito[1], S. Zimmerman[2], and N. Antaya[1], [1]*University of New Hampshire*, *Durham*, [2]*C-Lock Inc.*, *Rapid City, SD*.

TH367 **Housing and management characteristics of 53 farms using automatic milking systems.**
J. A. Salfer*[1], M. I. Endres[1], and D. W. Kammel[2], [1]*University of Minnesota*, *St. Paul*, [2]*University of Wisconsin*, *Madison*.

TH368 **Factors affecting expression of estrus of lactating dairy cows using activity monitors.**
A. M. L. Madureira*, T. A. Burnett, B. F. Silper, N. Dinn, and R. L. A. Cerri, *University of British Columbia*, *Vancouver, BC, Canada*.

TH369 **Ammonia emissions and carbon and energy footprints of dairy farms in the Northeastern United States and Northern Europe estimated using DairyGEM.**
A. N. Hristov*[1], A. Rotz[2], P. Huhtanen[3], M. Korhonen[4], and B. Isenberg[1], [1]*Department of Animal Science, The Pennsylvania State University*, *University Park*, [2]*USDA-ARS-PSWMRU*, *University Park, PA*, [3]*Division of Animal Husbandry, Swedish University of Agricultural Sciences*, *Umea, Sweden*, [4]*Farm Services, Valio Ltd*, *Helsinki, Finland*.

TH370 **Potential impact of climate change on crop yield and nutritive value of dairy farms in Quebec.**
J. M. Moreno*[1], G. Bélanger[2], H. Côté[3], D. Pellerin[1], V. Bélanger[1], G. Allard[1], R. Audet[2], D. Chaumont[3], and E. Charbonneau[1], [1]*Universite Laval*, *Quebec, QC, Canada*, [2]*Agriculture and Agri-Food Canada*, *Quebec, QC, Canada*, [3]*Ouranos*, *Montreal, QC, Canada*.

TH371 **Potential impact of climate change on dairy farm profitability and management practices in Quebec.**
J. M. Moreno*[1], D. Pellerin[1], G. Bélanger[2], V. Bélanger[1], H. Côté[3], G. Allard[1], R. Audet[3], D. Chaumont[3], and E. Charbonneau[1], [1]*Universite Laval*, *Quebec, QC, Canada*, [2]*Agriculture and Agri-Food Canada*, *Quebec, QC, Canada*, [3]*Ouranos*, *Montreal, QC, Canada*.

TH372 **Survey of milk production, and feeding and reproduction management on pasture based dairy farms in Florida and Georgia.**
F. Du*[1], K. Gay[1], M. Sowerby[1], Y. Newman[1], C. Staples[1], C. Lacy[2], and A. De Vries[1], [1]*University of Florida*, *Gainesville*, [2]*University of Georgia*, *Tifton*.

TH373 **Breeding for polled dairy cows versus dehorning: Preliminary cost assessments and discussion.**
N. J. O. Widmar*[1], M. M. Schutz[1], and J. B. Cole[2], [1]*Purdue University*, *West Lafayette, IN*, [2]*Animal Improvement Programs Laboratory, ARS, USDA*, *Beltsville, MD*.

TH374 **Environmental impact estimate of dairy cows treated for mastitis.**
F. M. Goncalves*[1,2], P. A. S. Silveira[1,3], M. E. Lima[1,3], G. N. Bolzan[1,3], J. Halfen[1,3], A. Schneider[1,3], E. G. Xavier[1,4], and M. N. Correa[1,3], [1]*Federal University of Pelotas*, *Pelotas, RS, Brazil*, [2]*Nucleo GAPA - Research Group in Environmental Management in Livestock*, *MERCOSUL Center, Pelotas, RS, Brazil*, [3]*NUPEEC - Research, Teaching and Animal Husbandry Extension Center*, *Veterinary Clinic Dep, Pelotas, RS, Brazil,* [4]*Granja 4 Irmaos, Rio Grande, RS, Brazil*.

TH375 **Trends in noncompliance with milk quality standards for dairy herd improvement herds in the United States.**
H. D. Norman* and J. R. Wright, *Animal Improvement Programs Laboratory, USDA-ARS*, *Beltsville, MD*.

TH376 **Management and outcomes of Sicilian dairy farms enrolled in a team-based milk quality improvement project.**
G. Azzaro[1], M. Caccamo*[1], P. L. Ruegg[2], J. D. Ferguson[3], M. Gambina[1], and G. Licitra[1,4], [1]*CoRFiLaC, Regione Siciliana*, *Ragusa, Italy*, [2]*University of Wisconsin*, *Madison*, [3]*School of Veterinary Medicine, University of Pennsylvania*, *Philadelphia*, [4]*DISPA, University of Catania*, *Catania, Italy*.

TH377 **Effect of delaying breeding during the summer on profitability of dairy cows.**
M. Gobikrushanth*, A. De Vries, C. A. Risco, J. E. Santos, and K. N. Galvão, *University of Florida*, *Gainesville*.

TH378 **Impact of feeding strategies on milk production and profitability on Wisconsin organic dairy farms.**
C. A. Hardie*[1], M. Dutreuil[1], R. Gildersleeve[2], M. Wattiaux[1], N. S. Keuler[1], and V. E. Cabrera[1], [1]*University of Wisconsin-Madison*, *Madison*, [2]*University of Wisconsin-Extension*, *Lancaster*.

TH379 **Whole-farm balance of nitrogen and phosphorous on Costa Rican dairy farms.**
J. A. Elizondo-Salazar*[1], J. P. Jimenez-Castro[1], and Z. Wu[2], [1]*Estacion Experimental Alfredo Volio Mata, Facultad de Ciencias Agroalimentarias*, *Universidad de Costa Rica*, [2]*University of Pennsylvania*, *New Bolton Center*.

TH380 **Agreement of dairy cattle replacement policies by two models: Optimization and simulation.**
A. S. Kalantari* and V. E. Cabrera, *University of Wisconsin-Madison*, *Madison*.

Small Ruminant: Health, Reproduction, Growth, Management

TH381 **The effects of condensed tannin-rich pine bark diet on gastrointestinal parasite infection in meat goats.**
B. R. Min*[1], S. Solaiman[1], A. Wilson[1], N. Gurung[1], and J. Miller[2], [1]*Tuskegee University*, *Tuskegee, AL*, [2]*Louisiana State University*, *Baton Rouge*.

TH382 **Effect of six condensed tannin containing plants on the third larval stage of *Haemonchus contortus* in an in vitro system.**
S. A. Armstrong[1], H. N. Naumann[2], B. D. Lambert*[1,3], and J. P. Muir[2,3], [1]*Tarleton State University*, *Stephenville, TX*, [2]*Texas A&M University, Department of Crop and Soil Sciences*, *College Station*, [3]*Texas A&M AgriLife Research*, *Stephenville*.

TH383 **A modified method for larval migration inhibition.**
S. A. Armstrong*[1], H. N. Naumann[2], B. D. Lambert[1,3], and J. P. Muir[2,3], [1]*Tarleton State University*, *Stephenville, TX*, [2]*Texas A&M University, Department of Crop and Soil Sciences*, *College Station*, [3]*Texas A&M AgriLife Research*, *Stephenville*.

TH384 **Effects of feeding a pelletized diet containing pumpkin seeds (*Cucurbita* sp.) on nematode fecal egg counts and hematocrit of wether goats.**
E. N. Escobar, J. Rodriguez, A. N. Gideon*, V. Purnell-Cropper, and H. Taylor, *University of Maryland Eastern Shore*, *Princess Anne*.

TH385 **Influence of body weight, age, and level of *Haemonchus contortus* infection on measurement of parasite resistance in performance tested rams.**
B. Allen*, D. Wright, D. Notter, M. McCann, A. Zajac, and S. Greiner, *Virginia Polytechnic Institute and State University*, *Blacksburg*.

TH386 **Effect of continuous suckling/"ewe-rearing" and supplementation on growth performance and degree of parasitism of pasture-raised Katahdin lambs.**
S. L. Rastle-Simpson*, K. N. D'Souza, A. K. Redhead, Q. S. Baptiste, and M. Knights, *West Virginia University*, *Morgantown*.

TH387 **Genetic marker assisted selection for footrot disease resistance in sheep flocks.**
T. Wuliji*[1], W. Lamberson[2], B. Shanks[1], J. Caldwell[1], C. Clifford-Rathert[1], J. Pennington[1], H. Swartz[1], S. Azarpajouh[1], and A. Bax[1], [1]*Lincoln University*, *Jefferson City, MO*, [2]*University of Missouri*, *Columbia*.

TH389 **Effects of male-female ratios and treatment with testosterone.**
O. Angel-Garcia[1], C. A. Meza-Herrera[3], J. M. Guillen-Munoz[1], P. A. Robles-Trillo[1], G. Arellano-Rodriguez[1], M. Mellado[2], F. G. Veliz[1], and R. Rodriguez-Martinez*[1], [1]*Universidad Autonoma Agraria Antonio Narro*, *Torreon, Coahuila, Mexico*, [2]*Universidad Autonoma Agraria Antonio Narro*, *Saltillo, Coahuila, Mexico*, [3]*Universidad Autonoma Chapingo*, *Bermejillo, Durango, Mexico*.

TH390 **Reproductive outcomes of nulliparous and multiparous French-Alpine goats synchronized with prostaglandins.**
R. Rivas-Muñoz[1], E. Carrillo[1], A. Fabela-Hernandez[2], M. Velazquez-Morales[1], J. A. Garcia[1], J. Cabrera-Reyes[1], C. A. Meza-Herrera[3], R. Rodriguez-Martinez[2], and F. G. Veliz*[2], [1]*Insituto Tecnologico de Torreon*, *Torreon, Coahuila, Mexico*, [2]*Universidad Autonoma Agraria Entonio Narro*, *Torreon, Coahuila, Mexico*, [3]*Universidad Autónoma de Chapingo*, *Bermejillo, Durango, México*.

TH391 **Sexual response from Alpine goats stimulated with vaginal sponges vs. intravulvar progesterone.**
R. Rivas-Muñoz[1], E. Carrillo[1], J. A. Garcia[1], M. Velazquez-Morales[1], A. Fabela-Hernandez[2], J. Cabrera-Reyes[2], C. A. Meza-Herrera[3], R. Rodriguez-Martinez[2], and F. G. Veliz*[2], [1]*Instituto Tecnologico de Torreon*, *Torreon, Coahuila, Mexico*, [2]*Universidad Autonoma Antonio Narro*, *Torreon, Coahuila, Mexico*, [3]*Universidad Autonoma de Chapingo*, *Bermejillo, Durango, Mexico*.

TH392 **The effects of P.G. 600 on fertility and fecundity of non-lactating, seasonally anestrous ewes.**
K. N. D'Souza*, S. L. Rastle-Simpson, A. K. Redhead, Q. S. Baptiste, and M. Knights, *West Virginia University*, *Morgantown*.

TH393 **Body, carcass, and chemical composition of lambs and young goats produced in Alto Camaquã, Brazil.**
R. Arnoni*[1], M. T. Osorio[2], J. C. Osorio[2], R. Oliveira[1], M. Goncalves[1], M. Borba[3], R. Esteves[1], and S. Duckett[4], [1]*Universidade Federal de Pelotas*, *Pelotas, RS, Brazil*, [2]*PVNS/CAPES/UFGD*, *Dourados, MS, Brazil*, [3]*Embrapa/Pecuaria Sul*, *Bage, RS, Brazil*, [4]*Clemson University*, *Clemson, SC*.

TH394 **Influence of dietary cottonseed on carcass and meat quality characteristics of feedlot lambs.**
R. A. Souza[1], R. S. Gentil[1], E. M. Ferreira[1], D. M. Polizel[1], A. P. A. Freire[1], L. G. M. Gobato[1], M. A. Trindade[2], and I. Susin*[1], [1]*Escola Superior de Agricultura Luiz de Queiroz (ESALQ)/USP*, *Piracicaba, SP, Brazil*, [2]*Faculdade de Zootecnia e Engenharia de Alimentos (FZEA)/USP*, *Pirassununga, SP, Brazil*.

TH395 **Impact of spray washing of goats and goat carcasses on microbial counts.**
C. Harris*, A. K. Mahapatra, G. Kannan, J. H. Lee, and B. Kouakou, *Agricultural Research Station, Fort Valley State University*, *Fort Valley, GA*.

TH396 **Carcass characteristics and yield of lambs fed diets containing crude glycerin.**
V. B. de Carvalho*, J. M. B. Ezequiel, R. F. Leite, V. C. Santos, E. M. de Oliveira, T. R. Delphino, É. H. Fernandes, L. F. Cremasco, S. F. F. Petrorossi, J. R. Paschoaloto, M. T. C. Almeida, and J. F. Lage, *FCAV, São Paulo State University - UNESP*, *Jaboticabal, São Paulo, Brazil*.

TH397 **Evaluation of productivity carcass indicators in Merino and Corriedale lambs.**
G. A. Rosa, L. A. O. Ribeiro, and L. Kindlein*, *Federal University of Rio Grande do Sul*, *Porto Alegre, Rio Grande do Sul, Brazil*.

TH398 **Influence of zilpaterol (β-agonist) supplementation period on carcass traits of feedlot lambs.**
J. C. Robles-Estrada*, J. A. Rocha-Yocupicio, B. I. Castro-Perez, A. Estrada-Angulo, and H. Davila-Ramos, *Universidad Autonoma de Sinaloa*, *Culiacan, Sinaloa, Mexico*.

TH399 **Effect of zilpaterol hydrochloride on growth and carcass characteristics of Nubian × Criollo weather goats.**
A. M. Ocampo-Barragan[1], M. A. Lopez-Carlos*[1], J. I. Aguilera[1], H. Rodriguez[1], C. F. Arechiga[1], and R. G. Ramirez[2], [1]*UAMVZ, Universidad Autonoma de Zacatecas*, *Zacatecas, Mexico*, [2]*Universidad Autonoma de Nuevo Leon*, *Monterrey, Mexico*.

TH400 **Influence of zilpaterol (β-agonist) supplementation period on primal cuts of feedlot lambs.**
J. C. Robles-Estrada, B. I. Castro-Perez*, J. L. Martinez-Martinez, S. A. Serrano-Cebreros, and H. Davila-Ramos, *Universidad Autonoma de Sinaloa*, *Culiacan, Sinaloa, Mexico*.

TH401 **Influence of zilpaterol (β-agonist) supplementation period on growth performance of feedlot lambs.**
J. C. Robles-Estrada, J. A. Garcia-Sandoval, B. I. Castro-Perez, and H. Davila-Ramos*, *Universidad Autonoma de Sinaloa*, *Culiacan, Sinaloa, Mexico*.

TH402 **Effect of prepartum administration of recombinant bovine somatotropin (rbST) on plasma beta-hydroxybutyrate levels in ewes subjected to subclinical ketosis.**
D. Perazzoli*[1], J. O. Feijó[1], A. C. J. Silva[1], A. M. Oliveira[1], L. Mielke[1], L. G. C. Silva[1], I. Bianchi[1], A. Schneider[1], E. Schmitt[1], C. F. Martins[1], F. A. B. Del Pino[1], C. Brauner[1], M. N. Corrêa[1], S. F. Faria Junior[2], M. B. Ferreira[3], [1]*Federal University of Pelotas*, *Pelotas, Rio Grande do Sul, Brazil*, [2]*University Anhanguera-Uniderp*, *Campo Grande, Mato Grosso do Sul, Brazil*, [3]*MSD Animal Health*, *São Paulo, São Paullo. Brazil*.

TH403 **Application of Wood model to lactation curves of dairy ewes in an organic production system.**
J. C. Angeles Hernandez*[1], M. Gonzalez Ronquillo[2], B. Albarran Portillo[2], J. H. Gutierrez[2], and J. P. Rocha Malcher[3], [1]*Facultad de Medicina Veterinaria y Zootecnia, Universidad Nacional Autonoma de Mexico*, *Ciudad Universitaria, Distrito Federal, Mexico*, [2]*Facultad de Medicina Veterinaria y Zootecnia, Universidad Autonoma del Estado de Mexico*, *Toluca, Estado de Mexico, Mexico*, [3]*Ovinos Especializados en Leche SP de RL*, *El Marquez, Queretaro, Mexico*.

TH404 **Over-expression of adipose triglyceride lipase (ATGL) gene in mammary gland epithelial cells of dairy goats.**
J. Li, J. Luo, H. Tian, H. Shi, and W. Wang*, *Shaanxi Key Laboratory of Molecular Biology for Agriculture, Northwest A&F University*, *Yangling, Shaanxi, China*.

TH405 **Feeding behavior of goats subjected to feed restriction.**
R. F. Leite*, F. O. M. Figueiredo, M. M. Freire, V. B. de Carvalho, L. S. Fonseca, D. C. Soares, A. R. C. Lima, A. K. de Almeida, T. F. V. Bompadre, and I. A. M. A. Teixeira, *FCAV, São Paulo State University-UNESP*, *Jaboticabal, São Paulo, Brazil*.

TH406 **Effects of conditions between periods of studies to evaluate electric fence additions to barb wire fence for goat containment.**
Y. Tsukahara*, A. L. Goetsch, T. A. Gipson, J. Hayes, R. Puchala, and T. Sahlu, *American Institute for Goat Research, Langston University*, *Langston, OK*.

TH407 **Effects of adaptation and meat goat breed in a method to evaluate electric fence additions to barb wire fence for goat containment.**
Y. Tsukahara*, A. L. Goetsch, T. A. Gipson, J. Hayes, R. Puchala, and T. Sahlu, *American Institute for Goat Research, Langston University*, *Langston, OK*.

TH408 **Growth and survivability of meat goat kids as influenced by breed of dam and sire and forage type from birth to weaning.**
L. C. Nuti*[1], H. Soape[2], Y. Jung[1], and G. R. Newton[1], [1]*Prairie View A&M University*, *Prairie View, TX*, [2]*Texas A&M AgriLife Extension Service*, *Gregg County, Longview*.

TH409 **Dose response effects of supplementing an algal meal in concentrate diets fed to Canadian Arcott lambs on production performance.**
S. J. Meale*[1,2], A. V. Chaves[1], and T. A. McAllister[2], [1]*Faculty of Veterinary Science, University of Sydney*, *Sydney, NSW, Australia*, [2]*Agriculture and Agri-Food Canada, Lethbridge Research Centre*, *Lethbridge, AB, Canada*.

TH410 **Factors affecting post weaning growth of hair-sheep lambs born in winter and managed under semi-intensive husbandry system.**
R. Fernandez-Mier, M. A. Lopez-Carlos, J. I. Aguilera, C. F. Arechiga*, H. Rodriguez, and R. M. Rincon, *UAMVZ*, *Universidad Autonoma de Zacatecas, Zacatecas, Mexico*.

Swine Species: Weanling Pigs

TH411 **Mitochondrially targeted antioxidants as a strategy to reduce oxidative stress in pigs.**
M. R. O'Neil*[1], G. A. Kraus[2], N. K. Gabler[1], S. M. Lonergan[1], and D. C. Beitz[1], [1]*Department of Animal Science, Iowa State University*, *Ames*, [2]*Department of Chemistry, Iowa State University*, *Ames*.

TH412 **Effect of neonatal Ca nutrition on growth, bone development and differentiation of mesenchymal stem cell in pigs.**
Y. Li*, B. Seabolt, and C. Stahl, *North Carolina State University*, *Raleigh*.

TH413 **Immunological and growth response in pre-weanling piglets administered an oral gavage of alligator blood.**
S. Means*, B. Chung, T. Shields, and F. LeMieux, *McNeese State University*, *Lake Charles, LA*.

TH414 **Effect of in-feed enzymes on ileal and cecal microbial populations of nursery pigs.**
G. M. Preis[2], M. H. Rostagno*[1], B. T. Richert[2], and J. E. Ferrel[3], [1]*USDA-ARS*, *West Lafayette, IN*, [2]*Purdue University*, *West Lafayette, IN*, [3]*Elanco Animal Health*, *Greenfield, IN*.

TH415 **Evaluating postweaning macromineral and organic trace mineral supplementation on performance and tissue mineral status of nursery pigs.**
R. S. Samuel*[1], J. S. Jolliff[2], and D. C. Mahan[2], [1]*Alltech Inc.*, *Nicholasville, KY*, [2]*The Ohio State University*, *Columbus*.

TH416 **Zinc source and level on nursery pig growth performance.**
R. S. Samuel*[1], J. S. Jolliff[2], B. W. James[3], and D. C. Mahan[2], [1]*Alltech Inc.*, *Nicholasville, KY*, [2]*The Ohio State University*, *Columbus*, [3]*Kalmbach Feeds Inc.*, *Upper Sandusky, OH*.

TH417 **Probiotics and enzymes on swine feed: Post-weaning to growing phase effects.**
L. G. M. Amaral, H. Silveira, F. M. Carvalho, C. A. P. Garbossa, and V. S. Cantarelli*, *Federal University of Lavras*, *Lavras, Minas Gerais, Brazil*.

TH418 **Dose response assessment of a whey and yeast-derived additive for nursery pigs.**
J. S. Monegue*[1], M. D. Lindemann[1], H. J. Monegue[1], M. Thomas[1], and S. Jalukar[2], [1]*University of Kentucky*, *Lexington*, [2]*Varied Industries Corporation*, *Mason City, IA*.

TH419 **Evaluation of Celmanax SCP supplementation in sow diets on piglet performance at weaning.**
M. Peng[1], C. Guozhu[2], and S. Jalukar*[3], [1]*Anyou Animal Nutrition R&D Co. Ltd*, *Huanggang City, Hubei Province, China*, [2]*All Victors Biotechnololgy Co. Ltd*, *Wuhan, China*, [3]*Vi-COR*, *Mason City, IA*.

TH420 **Eating patterns of newly weaned piglets.**
T. van Kempen*[1,2] and J.-W. Resink[1], [1]*Nutreco*, *Boxmeer, the Netherlands*, [2]*North Carolina State University*, *Raleigh*.

SYMPOSIA AND ORAL SESSIONS

Breeding and Genetics: Genomic Selection in Dairy II
Chair: Katie Olson, Genus plc
Wabash Ballroom 1

10:30 AM 538 **Application of a posteriori granddaughter and modified granddaughter designs to determine Holstein haplotype effects.**
J. I. Weller[1,2], P. M. VanRaden[1], and G. R. Wiggans*[1], [1]*Animal Improvement Programs Laboratory, Agricultural Research Service*, *Beltsville, MD*, [2]*ARO, The Volcani Center*, *Bet Dagan, Israel*.

10:45 AM 539 **Using 90,113 single nucleotide polymorphisms in genomic evaluation of dairy cattle.**
G. R. Wiggans*, T. A. Cooper, and P. M. VanRaden, *Animal Improvement Programs Laboratory, Agricultural Research Service, USDA*, *Beltsville, MD*.

11:00 AM 540 **Methods for genomic evaluation in a small dairy population and the effect of inclusion of genotyped cows' information in multiple-parity analyses.**
D. A. L. Lourenco*[1], I. Misztal[1], J. I. Weller[2], S. Tsuruta[1], I. Aguilar[3], and E. Ezra[4], [1]*University of Georgia*, *Athens*, [2]*Institute of Animal Sciences, ARO*, *Bet Dagan, Israel*, [3]*Instituto Nacional de Investigacion Agropecuaria*, *Las Brujas, Canelones, Uruguay*, [4]*Israel Cattle Breeders Association*, *Caesaria, Israel*.

11:15 AM 541 **Dissection of genomic correlation matrices using multivariate factor analysis in dairy and dual-purpose cattle breeds.**
N. P. P. Macciotta*[1], C. Dimauro[1], S. Sorbolini[1], D. Vicario[2], D. J. Null[3], and J. B. Cole[3], [1]*Dipartimento di Agraria, Università di Sassari*, *Sassari, Italia*, [2]*ANAPRI*, *Udine, Italia*, [3]*Animal Improvement Programs Laboratory, USDA*, *Beltsville, MD*.

11:30 AM 542 **International genomic evaluation of young Holstein bulls.**
J. H. Jakobsen*[1] and P. G. Sullivan[2], [1]*Interbull Centre, Swedish University of Agricultural Sciences*, *Uppsala, Sweden*, [2]*Canadian Dairy Network*, *Guelph, ON, Canada*.

11:45 AM 543 **Whole genome analysis for SNP variation in indigenous cattle population in Pakistan.**
H. Mustafa*[1], H. Heather[2], K. Javed[1], T. Pasha[1], M. Abdullah[1], I. Mohsin[1], K. Euisoo[2], A. Ali[1], A. Ajmal[1], and T. Sonstegard[2], [1]*University of Veterinary and Animal Sciences*, *Lahore, Pakistan*, [2]*Bovine Functional Genomics Laboratory, ARS/USDA*, *Beltsville, MD*.

12:00 PM 544 **Increasing the accuracy of genomic predictions of fat yield in New Zealand Holstein Friesians using *DGAT1* genotypes.**
M. K. Hayr*[1], M. Saatchi[1], D. L. Johnson[2], and D. J. Garrick[1], [1]*Iowa State University*, *Ames*, [2]*LIC*, *Hamilton, NZ*.

12:15 PM 545 **Profitability of combined use of sexed semen and genomic testing in dairy heifers.**
A. De Vries*[1] and J. A. Salfer[2], [1]*University of Florida*, *Gainesville*, [2]*University of Minnesota Extension*, *St. Cloud*.

Breeding and Genetics: Genomic Selection Methods I
Chair: Christian Maltecca, North Carolina State University
Wabash Ballroom 2

10:30 AM 546 **Mixed model methods for genomic prediction and estimation of variance components of additive and dominance effects using SNP markers.**
Y. Da* and S. Wang, *Department of Animal Science, University of Minnesota*, *St. Paul*.

10:45 AM 547 **GVCBLUP 2.1: A computing package for genomic prediction and estimation of variance components for additive and dominance effects using SNP markers.**
C. Wang*[1], D. Prakapenka[2], S. Wang[1], H. B. Runesha[2], and Y. Da[1], [1]*Department of Animal Science, University of Minnesota, St. Paul*, [2]*Research Computing, The University of Chicago*, *Chicago, IL*.

11:00 AM 548 **Estimating dominance SNP effects using alternative single-step type genomic prediction equations.**
N. Gengler*, *ULg-GxABT*, *Gembloux, Belgium*.

11:15 AM 549 **A comparison of hidden Markov-based imputation algorithms when applied to livestock data.**
K. Dhakal*[1], J. M. Hickey[4], A. Kranis[3], M. A. Cleveland[2], and C. Maltecca[1], [1]*North Carolina State University*, *Raleigh*, [2]*School of Environmental and Rural Science*, *Armidale, NSW, Australia*, [3]*Aviagen Ltd*, *Midlothian, United Kingdom*, [4]*Genus plc*, *Hendersonville, TN*.

11:30 AM 550 **Effect of genotype imputation on genome-based prediction of complex traits: An empirical study with mice data.**
V. P. S. Felipe*[1,2], G. J. M. Rosa[1], H. Okut[3], D. Gianola[1], and M. A. Silva[2], [1]*University of Wisconsin-Madison*, *Madison*, [2]*Federal University of Minas Gerais*, *Belo Horizonte, Minas Gerais, Brazil*, [3]*University of Yuzuncy Yil*, *Van, Turkey*.

11:45 AM 551 **A fast expectation maximization antedependence model for whole genome prediction.**
C. Chen*, H. Wang, W. Yang, and R. J. Tempelman, *Michigan State University*, *East Lansing*.

12:00 PM 552 **Unknown-parent groups and incomplete pedigrees in single-step genomic evaluation.**
I. Misztal*[1], Z. Vitezica[2], A. Legarra[3], I. Aguilar[4], and A. Swan[5], [1]*University of Georgia*, *Athens*, [2]*Université de Toulouse*, *Castanet-Tolosan, France*, [3]*INRA*, *Castanet-Tolosan, France*, [4]*INIA*, *Las Brujas, Uruguay*, [5]*University of New England*, *Armidale, Australia*.

12:15 PM 553 **Efficient inversion of a large genomic relationship matrix stored on a disk using a multi-core processor and graphic processing units.**
Y. Masuda* and M. Suzuki, *Obihiro University of Agriculture and Veterinary Medicine*, *Obihiro, Japan*.

Dairy Foods: Chemistry
Chair: Nana Farkye, California Polytechnic State University
109

10:30 AM 323 **From giant unilamellar vesicles (GUVs) to lipid organization of bovine milk fat globule membrane (MFGM).**
H. Zheng*[1,2], R. Jiménez-Flores[2], and D. Everett[1], [1]*Riddet Institute and Department of Food Science, University of Otago*, *Dunedin, New Zealand*, [2]*Dairy Products Technology Center, California Polytechnic State University*, *San Luis Obispo*.

10:45 AM 324 **Centrifugal washing processes reveal lipid organization of bovine milk fat globule membrane (MFGM).**
H. Zheng*[1,2], R. Jiménez-Flores[2], and D. Everett[1], [1]*Riddet Institute and Department of Food Science, University of Otago*, *Dunedin, New Zealand*, [2]*Dairy Products Technology Center, California Polytechnic State University*, *San Luis Obispo*.

11:00 AM 325 **Production of dairy-based functional peptides and their fractionation by membrane adsorption chromatography.**
E. Leeb*, S. Cheison, and U. Kulozik, *Technische Universität München*, *Freising, Germany*.

11:15 AM 326 **Correction of mid-IR fat test for sample to sample variation in fatty acid chain length and unsaturation.**
K. L. Wojciechowski[1], D. M. Barbano*[1], and E. de Jong[2], [1]*Cornell University, Department of Food Science, Northeast Dairy Foods Research Center*, *Ithaca, NY*, [2]*Delta Instruments*, *Drachten, the Netherlands*.

11:30 AM **Break**

11:45 AM 327 **The role of milk immunoglobulins in gravity separation of somatic cells in raw skim milk.**
S. R. Geer* and D. M. Barbano, *Cornell University*, *Ithaca, NY*.

12:00 PM 328 **Effect of seasonal variation on the heat stability of UHT and in-container sterilized milk.**
B. Chen*, A. Grandison, and M. Lewis, *University of Reading*, *Reading, UK*.

12:15 PM 329 **Effect of chemical-physical properties of raw milk on the quality of dairy products in the UK.**
B. Chen*, A. Grandison, and M. Lewis, *University of Reading*, *Reading, UK*.

12:30 PM 330 **In vitro and in vivo assessment of the antioxidant activity of whey protein hydrolysates prepared using commercial enzymes.**
B. Mann*, A. Kumari, K. Prajapati, R. Kumar, and R. Sharma, *National Dairy Research Institute*, *Karnal, Haryana, India*.

Contemporary and Emerging Issues
Chair: Mark Boggess, USDA-Agricultural Research Service
107

10:30 AM 554 **Impact of genetic drift on developing access and benefit sharing guidelines under the Nagoya Protocol: The case of Meishan pigs imported into the United States.**
H. D. Blackburn*[1], Y. Plante[2], E. W. Welch[3], G. A. Rohrer[4], and S. R. Paiva[5], [1]*National Animal Germplasm Program ARS-USDA*, *Ft. Collins, CO*, [2]*Agriculture and Agri-Food Canada*, *Saskatoon, Saskatchewan, CA*, [3]*University of Illinois, Chicago*, *Chicago*, [4]*US Meat Animal Research Center ARS-USDA*, *Clay Center, NE*, [5]*EMBRAPA Secretariat International Affairs*, *Brasilia, Brazil*.

10:45 AM 555 **Vermont dairy farmer perceptions regarding farm access control.**
J. M. Smith*, R. Standish, M. Quaassdorff, M. Mills, L. Powell, and L. Weglarz, *University of Vermont*, *Burlington*.

11:00 AM 556 **Profit in practice: Understanding the role of human resource management in dairy farm efficiency.**
J. E. Johnson*, N. Popp, and G. J. Lascano, *California Polytechnic State University*, *San Luis Obispo*.

11:15 AM 557 **Tools to exploit sequence data to find new markers and disease loci in dairy cattle.**
D. M. Bickhart*[1], H. A. Lewin[2,3], and G. E. Liu[4], [1]*United States Department of Agriculture, Agricultural Research Service, Animal Improvement Programs Laboratory*, *Beltville, MD*, [2]*Department of Evolution and Ecology, University of California*, *Davis*, [3]*Institute for Genomic Biology, University of Illinois at Urbana-Champaign*, *Urbana*, [4]*United States Department of Agriculture, Agricultural Research Service, Bovine Functional Genomics Laboratory*, *Beltsville, MD*.

11:30 AM 558 **In situ evaluation of NDF digestion in a large-scale biogas power plant.**
A. Palmonari*, M. Fustini, G. Canestrari, N. Panciroli, and A. Formigoni, *DSMVET, University of Bologna*, *Bologna, Italy*.

11:45 AM 559 **Dairy cow handling facilities and the perception of beef quality assurance on Colorado dairies.**
A. E. Adams*, I. N. Roman-Muniz, T. Grandin, D. R. Woerner, and F. J. Olea-Popelka, *Colorado State University*, *Fort Collins*.

Graduate Student Symposium: How to Communicate Science Successfully Using Media Outlets
Chair: Rachel Campbell, North Carolina State University
Sponsor: ADSA
Sagamore 1

10:30 AM 566 **Proper media preparation and how to successfully sell your science to the public.**
M. E. McCurry-Schmidt*, *American Society of Animal Science*, *Champaign, IL*.

11:30 AM 567 **Communicate by better listening.**
R. F. Roberts*, *The Pennsylvania State University*, *University Park*.

12:00 PM 568 **Know your story and how to tell it.**
K. A. Devaney*, *Dairy Farmers of America*, *Mooresville, NC*.

Growth and Development I
Chair: Ransom Baldwin, USDA-ARS
Sagamore 7

10:30 AM 569 **Growth hormone stimulates liver growth by increasing the size of hepatocytes.**
D. Jia* and H. Jiang, *Virginia Polytechnic Institute and State University*, *Blacksburg*.

10:45 AM 570 **Insulin and insulin-like growth factor-I (IGF-I) receptor phosphorylation in µ-calpain knockout mice.**
W. Oliver*[1], A. Chishti[2], and C. Kemp[1], [1]*USDA, ARS, U.S. Meat Animal Research Center*, *Clay Center, NE*, [2]*Tufts University*, *Boston, MA*.

11:00 AM 571 **Ractopamine hydrochloride and estradiol/trenbolone acetate implants alter live performance and carcass components of heifers during the finishing phase.**
M. A. Jennings*[1], T. R. Young[1], J. T. Cribbs[1], B. C. Bernhard[1], A. D. Hosford[1], T. L. Harris[1], M. J. Anderson[1], G. J. Vogel[2], J. A. Scanga[2], M. F. Miller[1], and B. J. Johnson[1], [1]*Texas Tech University*, *Lubbock*, [2]*Elanco Animal Health*, *Greenfield, IN*.

11:15 AM 572 **The use of terminal implants and β-agonists to alter blood components and myogenic mRNA and protein levels.**
T. L. Harris*[1], A. D. Hosford[1], M. A. Jennings[1], M. J. Anderson[1], G. J. Vogel[2], and B. J. Johnson[1], [1]*Department of Animal and Food Sciences, Texas Tech University*, *Lubbock*, [2]*Elanco Animal Health*, *Greenfield, IN*.

11:30 AM 573 **Transcriptional regulation of M. longissimus dorsi during nutritional restriction and compensatory growth in Aberdeen Angus × Holstein Friesian steers.**
S. M. Keady, A. G. Doran, C. J. Creevey, D. A. Kenny, and S. M. Waters*, *Teagasc, Animal and Bioscience Department, Grange, Dunsany*, *Co. Meath, Ireland*.

11:45 AM 574 **Ruminal and adipose gene expression in beef steers selected for diverse feed intake and gain phenotypes.**
A. K. Lindholm-Perry*, L. A. Rempel, K. E. Hales, W. T. Oliver, H. C. Freetly, and L. A. Kuehn, *USDA, ARS, U.S. Meat Animal Research Center*, *Clay Center, NE*.

12:00 PM 575 **Identification of the SH3 and cysteine-rich domain 3 (STAC3) gene as a novel regulator of myogenesis in cattle.**
Y. Zhang*, X. Ge, D. E. Gerrard, and H. Jiang, *Virginia Polytechnic Institute and State University*, *Blacksburg*.

12:15 PM 576 **Metabolomic profile of the small for gestational age piglet following arginine supplementation.**
C. M. Getty*, A. A. Baratta, and R. N. Dilger, *University of Illinois*, *Urbana*.

Meat Science and Muscle Biology Symposium: Pre-Harvest Factors Affecting the Prevalence of Pathogens in Livestock and Meat
Chair: Ty Schmidt, University of Nebraska-Lincoln
122-123

10:30 AM 577 **Diet, fecal microbiome and *Escherichia coli* O157:H7 shedding in beef cattle.**
J. Wells*[1], M. Kim[1], J. Bono[1], L. Kuehn[1], and A. Benson[2], [1]*USDA, ARS, U.S. Meat Animal Research Center*, *Clay Center, NE*, [2]*University of Nebraska*, *Lincoln*.

11:15 AM 578 **Ecological and dietary impactors of foodborne pathogen prevalence and methods to reduce colonization in cattle.**
T. R. Callaway*, *Agricultural Research Service/USDA*, *College Station, TX*.

12:00 PM 814 **Development of phage-based technologies to reduce *E. coli* O157:H7 contamination of beef products and produce.**
Y. Pan*, *Purdue University, West Lafayette, IN*.

12:15 PM 815 **Effect of exposure to copper sulfate or zinc oxide on bacterial antibiotic susceptibility profile.**
A. F. Amaral*, *Purdue University, West Lafayette, IN*.

Nonruminant Nutrition: Feed Ingredients I
Chair: Mariela Lanchman, Land O' Lakes
105-106

10:30 AM 579 **Effects of 5.4 or 9.6% oil dried distillers grains with solubles on finishing pig growth performance and carcass characteristics.**
A. B. Graham*, R. D. Goodband, M. D. Tokach, J.M. DeRouchey, S. S. Dritz, and S. Nitikanchana, *Kansas State University*, *Manhattan*.

10:45 AM 580 **Effects of 9.4 or 12.1% oil dried distillers grains with solubles on finishing pig growth performance and carcass characteristics.**
A. B. Graham*, R. D. Goodband, M. D. Tokach, J. M. DeRouchey, S. S. Dritz, and S. Nitikanchana, *Kansas State University*, *Manhattan*.

11:00 AM 581 **Effects of mix time on nutritional value of diets without and with inclusion of DDGS and wheat midds when fed to finishing pigs.**
M. E. Morts*, J. D. Hancock, K. L. Kohake, and J. D. McAtee, *Kansas State University*, *Manhattan*.

11:15 AM 582 **Impact of dietary leucine levels on the optimal valine to lysine ratio in diets for 10 to 25 kg pigs.**
J. K. Htoo*[1], C. F. M. de Lange[2], and C. L. Zhu[2], [1]*Evonik Industries AG*, *Hanau, Germany*, [2]*University of Guelph*, *Guelph, Canada*.

11:30 AM 583 **Effects of graded corn cob levels on physicochemical properties of digesta and visceral organs in growing pigs.**
A. Wate*, S.P. Ndou, and M. Chimonyo, *University of KwaZulu-Natal*, *Pietermaritzburg, South Africa*.

11:45 AM 584 **Effect of dietary supplementation of fermented Hamcho (*Salicornia herbacea*) on Growth Performance and Meat Quality in Broiler Chicks.**
M.-J. Ku*[1], S.-W. Kim[1], K.-S. Kim[1], S.-K. Lee[1], D.-Ju. Yu[1], Y.-S. Choi[1], A.-A. Yun[1], D.-H. Park[1], S.-S. Lee[2], and W.-H. Kim[1], [1]*Livestock Research Institute, Jeollanamdo Agricultural Research & Extension Service(JARES)*, *Gangjin-gun, Jeollanam-do, Republic of Korea*, [2]*Sunchon National University*, *Suncheon, Jeollanam-do, Republic of Korea*.

12:00 PM 585 **In vitro degradation and fermentation characteristics of expeller-pressed canola meal and cold-pressed canola cake simulating the pig intestine.**
T. A. Woyengo*[1], R. Jha[2], E. Beltranena[1,3], and R. T. Zijlstra[1], [1]*University of Alberta*, *Edmonton, AB, Canada*, [2]*University of Hawaii at Manoa*, *Honolulu*, [3]*Alberta Agriculture and Rural Development*, *Edmonton, AB, Canada*.

12:15 PM 586 **Comparative utilization of processed chicken offal and blood meals in diets of young pigs containing maize offal.**
A. O. K. Adesehinwa*[1] and B. Adebayo[2], [1]*Livestock Improvement Programme, Institute of Agricultural Research & Training, Moor Plantation*, *Ibadan, Oyo State, Nigeria*, [2]*Nigerian Institute of Animal Science, Southwest Zonal Office, Moor Plantation*, *Ibadan, Oyo State, Nigeria*.

Physiology and Endocrinology: Pregnancy
Chair: Jason Ross, Iowa State University
120-121

10:30 AM 587 **Tamoxifen treatment affects morphological characteristics and gene expression within the reproductive tract of prepubertal Holstein heifers.**
A. Y. Wood*, H. L. M. Tucker, V. L. McCracken, S. E. Deaver, B. M. Brown, R. M. Akers, and M. L. Rhoads, *Virginia Polytechnic Institute and State University*, *Blacksburg*.

10:45 AM 588 **No evidence of a systemic mRNA biomarker of early pregnancy using RNAseq of whole blood on day 20 of pregnancy in dairy cattle.**
M. P. Mullen*[1,2], P. McGettigan[2], J. A. Browne[2], S. Scully[2], M. G. Diskin[1], A. C. O. Evans[3], and M. A. Crowe[2], [1]*Teagasc*, *Athenry, Co. Galway, Ireland*, [2]*School of Veterinary Medicine, University College Dublin*, *Dublin, Ireland*, [3]*School of Agriculture and Food Science, University College Dublin*, *Dublin, Ireland*.

11:00 AM 589 **Influence of post-insemination nutrition on embryonic development in beef heifers.**
S. G. Kruse*[1], B. J. Funnell[1], S. L. Bird[1], H. P. Dias[2], S. L. Lake[3], R. P. Arias[3], G. A. Perry[4], O. L. Swanson[4], E. L. Larimore[4], and G. A. Bridges[1], [1]*North Central Research and Outreach Center, University of Minnesota*, *Grand Rapids*, [2]*São Paulo State University*, *Botucatu, São Paulo, Brazil*, [3]*University of Wyoming*, *Laramie*, [4]*South Dakota State University*, *Brookings*.

11:15 AM 590 **Effects of maternal nutrient restriction followed by re-alimentation on uterine blood flow during mid-gestation on beef cows.**
L. E. Camacho*[1], C. O. Lemley[2], L. Prezotto[1], K. C. Swanson[1], and K. A. Vonnahme[1], [1]*Department of Animal Sciences, North Dakota State University*, *Fargo*, [2]*Department of Animal and Dairy Sciences, Mississippi State University*, *Mississippi State*.

11:30 AM 591 **Nutritional genomics: Effect of maternal methionine supplementation on the transcriptome of day 7 embryos from superovulated lactating dairy cows.**
F. Peñagaricano*[1], A. H. Souza[1], P. D. Carvalho[1], A. Driver[1], R. Gambra[1], J. Kropp[1], K. S. Hackbart[1], D. Luchini[2], R. D. Shaver[1], M. C. Wiltbank[1], and H. Khatib[1], [1]*University of Wisconsin-Madison*, *Madison*, [2]*Adisseo*, *Alpharetta, GA*.

11:45 AM 592 **Activation of the transcription factor nuclear factor kappa B (NFKB) by recombinant porcine cytokines in the uterine epithelium.**
D. J. Mathew*, R. D. Geisert, and M. C. Lucy, *University of Missouri*, *Columbia*.

12:00 PM 593 **Effects of prenatal transportation stress on preweaning temperament and growth of Brahman calves.**
B. P. Littlejohn*[1,2], D. M. Price[1,2], J. P. Banta[2], A. W. Lewis[2], D. A. Neuendorff[2], J. A. Carroll[3], R. C. Vann[4], T. H. Welsh[1], and R. D. Randel[2], [1]*Texas A&M Department of Animal Science*, *College Station*, [2]*Texas A&M AgriLife Research and Extension Center*, *Overton*, [3]*Livestock Issues Research Unit, USDA-ARS*, *Lubbock, TX*, [4]*MAFES- Brown Loam, Mississippi State University*, *Raymond*.

Production, Management and the Environment: Diet and Forage II
Chair: Stephanie Ward, Mississippi State University
108

10:30 AM 594 **Effects of dietary fiber type and inclusion level on the physico-chemical composition of excreta of pigs.**
C. T. Mpendulo* and M. Chimonyo, *Animal and Poultry Science, College of Agriculture, Engineering and Science, University of Kwazulu-Natal*, *Pietermaritzburg, South Africa*.

10:45 AM 595 **Effects of cinnamon extracts on urease activity and emission of NH3 and H2S of piglet slurry.**
A. Chen*, Y. Xiao, C. Li, Q. Hong, and C. Yang, *Zhejiang University*, *Hangzhou, Zhejiang, China*.

11:00 AM 596 **The effects of environment-friendly feed on growth performance and excrements of piglets.**
N. Zhang* and C. Jiang, *Feed Research Institute, Chinese Academy of Agricultural Sciences*, *Beijing, China*.

11:15 AM 597 **Foliar uptake and utilization of phosphorus by grazing cattle as influenced by nitrogen fertilization regime.**
S. L. Dillard*, W. F. Owsley, C. W. Wood, B. H. Wood, C. J. Weissend, and R. B. Muntifering, *Auburn University*, *Auburn University, AL*.

11:30 AM **Break**

11:45 AM 598 **Forage allowance on reproductive response of primiparous cows submitted to suckling restriction and flushing grazing Campos native pastures.**
M. Claramunt[1], M. Carriquiry[2], G. Gil[1], and P. Soca*[3], [1]*Facultad de Veterinaria, Universidad de la Republica*, *Paysandu, Uruguay*, [2]*Facultad de Agronomia, Universidad de la Republica*, *Montevideo, Uruguay*, [3]*Facultad de Agronomia*, *Paysandu, Uruguay*.

12:00 PM 599 **Utilization of stockpiled perennial forages in winter feeding systems for beef cattle.**
D. G. R. S. Kulathunga*[1], H. A. Lardner[1,2], J. J. Schoenau[1], and G. B. Penner[1], [1]*University of Saskatchewan*, *Saskatoon, SK, Canada*, [2]*Western Beef Development Centre*, *Humboldt, SK, Canada*.

Ruminant Nutrition Symposium:
Burk Dehority—Swimming in the Rumen with Protozoa
Chair: Todd Callaway, USDA-ARS
Sagamore 2

10:30 AM 601 **Burk Dehority: An introduction.**
S. Loerch*, *The Ohio State University*, *Wooster*.

11:00 AM 602 **Protozoa taxonomy and morphology.**
J. L. Firkins*, *The Ohio State University*, *Columbus*.

11:30 AM 603 **The "ebb and flow" of cultivation based studies.**
R. I. Mackie*[1], I. K. Cann[1], and M. Morrison[2,3], [1]*University of Illinois*, *Urbana*, [2]*The Ohio State University*, *Columbus*, [3]*CSIRO Animal, Food and Health Sciences*, *St Lucia, QLD, Australia*.

12:00 PM 604 **International efforts and collaborations, especially with exotic herbivores.**
A.-D. G. Wright*, *Department of Animal Science, University of Vermont*, *Burlington*.

Follow-Up to Innovate 2012: Funding Livestock Research and Outreach in the Future
Chair: Margaret Benson, Washington State University
Sponsor: ASAS Foundation
Wabash Ballroom 1

Innovate 2012 was conducted in October 2012 to discuss novel funding models for animal agricultural research at land-grant and other universities. The objective was to develop a framework for future efforts to influence industry partnerships and federal funding for animal research, education, and extension activities. Today's presentations and group discussion will serve to update JAM attendees on the results of the meeting and new initiatives and successes that have occurred as a result of the meeting.

2:00 PM **Research in animal agriculture—A high return and globally valuable investment in our future.**
Margaret E. Benson*, *Department of Animal Sciences, Washington State University, Pullman.*

2:30 PM **Partnering with non-traditional funding sources for strong university animal science programs.**
Bruce Golden*, *Dairy Science Department, California Polytechnic State University, San Luis Obispo.*

3:00 PM **What role does allied industry have in funding models for animal agricultural research?**
Todd A. Armstrong*, *Elanco Animal Health, Greenfield, IN.*

3:30 PM **Innovative alternatives to federal funding for agricultural animal research.**
Deb Hamernik*, *Department of Animal Science, University of Nebraska, Lincoln.*

4:00 PM **Discussion, questions, and answers**

ADSA Southern Section Symposium: Strategies for Managing Reproduction and Udder Health in Heat-Stressed Dairy Cows
Chair: Kas Ingawa, Dairy Records Management Systems-NCSU
Wabash Ballroom 3

2:00 PM 605 **Optimization of breeding decisions for dairy cattle subject to long periods of seasonal heat stress.**
A. De Vries*[1], F. Du[1], K. D. Gay[1], T. R. Bilby[2], J. Block[3], and P. J. Hansen[1], [1]*University of Florida*, *Gainesville*, [2]*Texas AgriLife Research and Extension*, *Stephenville*, [3]*OvaTech LLC*, *Gainesville, FL*.

2:30 PM 606 **Strategies to improve reproductive performance during heat stress in lactating dairy cows.**
T. R. Bilby*, *Merck Animal Health*, *De Soto, KS*.

3:00 PM 607 **Management and dietary manipulations during heat stress periods to improve lactation and reproduction.**
J. E. P. Santos* and C. R. Staples, *University of Florida*, *Gainesville*.

3:30 PM 608 **Milk somatic cell counts in Southeast dairy herds.**
K. L. Anderson*[1], E. Wemple[1], K. Ingawa[2], M. Correa[1], R. Lyman[1], and K. Mullen[3], [1]*College of Veterinary Medicine, North Carolina State University*, *Raleigh*, [2]*Dairy Records Management Systems*, *Raleigh, NC*, [3]*College of Agriculture and Life Sciences, NC State University*, *Raleigh*.

4:00 PM 609 **Management practices to reduce heat stress, prevent mastitis, and lower somatic cell counts in dairy cows and heifers.**
S. C. Nickerson*, *University of Georgia*, *Athens*.

4:30 PM **Discussion**

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

ADSA-ASAS Northeast Section Symposium: Optimal Land Use for Northeast Farms: Growing Crops and Feeding Animals
Chair: Matthew Wilson, West Virginia University
107

2:00 PM 610 **Whole-farm assessment of alternative cropping and feeding strategies.**
C. A. Rotz*, *USDA/ARS*, *University Park, PA*.

2:45 PM 611 **The expanding role of alternative forages for dairy farms in the Northeast.**
G. W. Roth*, *Penn State University*, *University Park*.

3:30 PM 612 **Integrating land use and dairy cattle rations: Challenges and opportunities.**
L. E. Chase*, *Cornell University*, *Ithaca, NY*.

Animal Behavior and Well-Being III
Chair: Julie Huzzey, University of British Columbia
104

2:00 PM 613 **Measurement time required to detect sow lameness using an embedded microcomputer-based force plate system.**
B. M. McNeil*[1], C. E. Abell[1], J. D. Stock[1], S. T. Millman[2], A. K. Johnson[1], L. A. Karriker[2], and K. J. Stalder[1], [1]*Department of Animal Science, Iowa State University*, *Ames*, [2]*Swine Medicine Education Center, College of Veterinary Medicine, Iowa State University*, *Ames*.

2:15 PM 614 **Embedded micro-computer based force plate as an objective tool to measure painful and non-painful hoof lameness states in multiparous sows.**
C. Mohling*[1], A. Johnson[1], C. Abell[1], H. Coetzee[2], S. Millman[3], L. Karriker[4], and K. Stalder[1], [1]*Animal Science, Iowa State University*, *Ames*, [2]*Cyclone Custom Analyte Detection Service, Iowa State University*, *Ames*, [3]*Veterinary Diagnostic and Animal Production Medicine, Iowa State University*, *Ames*, [4]*Swine Medicine Education Center, Iowa State University*, *Ames*.

2:30 PM 615 **Porcine reproductive and respiratory syndrome virus (PRRSV) causes neuroinflammation and cognitive impairment in neonatal piglets.**
M. Elmore[1], M. Burton[1], M. Conrad[1], J. Rytych[1], W. Van Alstine[2], and R. Johnson*[1], [1]*University of Illinois*, *Urbana*, [2]*Purdue University*, *West Lafayette, IN*.

2:45 PM 616 **Automatic lameness detection by computer vision and behaviour and performance sensing.**
T. Van Hertem*[1,2], S. Viazzi[2], C. E. B. Romanini[2], C. Bahr[2], D. Berckmans[2], A. Schlageter-Tello[3], C. Lokhorst[3], D. Rozen[4], A. Antler[1], V. Alchanatis[1], E. Maltz[1], and I. Halachmi[1], [1]*Institute of Agricultural Engineering, Agricultural Research Organization (ARO), the Volcani Center*, *Bet-Dagan, Israel*, [2]*Division M3-BIORES: Measure, Model & Manage Bioresponses, KU Leuven*, *Heverlee, Belgium*, [3]*WageningenUR Livestock Research*, *Lelystad, Netherlands*, [4]*Fellow in the EU BioBusiness project*.

3:00 PM 617 **Effect of dystocia on daily activity patterns prior to parturition in Holstein dairy cows.**
M. Titler*, M. G. Maquivar, S. Bas, E. Gordon, P. J. Rajala-Schultz, K. McCullough, and G. M. Schuenemann, *Department of Veterinary Preventive Medicine, The Ohio State University*, *Columbus*.

3:15 PM 618 **Rumination and feeding behavior before calving can identify cows at risk for metritis and subclinical ketosis after calving.**
K. Schirmann*[1,2], N. Chapinal[1], W. Heuwieser[2], D. M. Weary[1], and M. A. G. von Keyserlingk[1], [1]*Animal Welfare Program, Faculty of Land and Food Systems, The University of British Columbia*, *Vancouver, BC, Canada*, [2]*Clinic for Animal Reproduction, Faculty of Veterinary Medicine, Freie Universität Berlin*, *Berlin, Germany*.

3:30 PM 619 **Detecting post-calving ketosis by sensors and models.**
M. Steensels*[1,2], E. Maltz[1], C. Bahr[2], D. Berckmans[2], A. Antler[1], and I. Halachmi[1], [1]*Institute of Agricultural Engineering - Agricultural Research Organization (ARO), the Volcani Center*, *Bet-Dagan, Israel*, [2]*Division M3-BIORES: Measure, Model & Manage Bioresponses, KU Leuven*, *Heverlee, Belgium*.

3:45 PM 620 **Effect of metritis on daily activity patterns in lactating Holstein dairy cows.**
M. Titler*, M. G. Maquivar, S. Bas, E. Gordon, P. J. Rajala-Schultz, K. McCullough, and G. M. Schuenemann, *Department of Veterinary Preventive Medicine, The Ohio State University*, *Columbus*.

4:00 PM 621 **Cow activity around diagnosis of naturally occurring clinical mastitis.**
P. J. Rajala-Schultz*, K. E. McCullough, P. N. Gott, G. M. Schuenemann, and M. Titler, *Department of Veterinary Preventive Medicine, The Ohio State University*, *Columbus*.

4:15 PM 622 **Use of accelerometers for early detection of hoof lesions and lameness in dairy cows.**
J. H. Higginson Cutler*[1], S. T. Millman[2], G. Cramer[1,3], K. E. Leslie[1], A. M. B. de Passille[4], T. F. Duffield[1], and D. F. Kelton[1], [1]*University of Guelph*, *Guelph, ON, Canada*, [2]*Iowa State University*, *Ames*, [3]*Cramer Mobile Bovine Veterinary Services*, *Stratford, ON, Canada*, [4]*Agriculture and Agri-Food Canada*, *Agassiz, BC, Canada*.

4:30 PM 623 **Pheromone/Interomone effects of behavior of foals after weaning.**
K. A. Guay*, M. D. May, and J. J. McGlone, *Texas Tech University*, *Lubbock*.

4:45 PM 624 **Relationships of temperament, exit velocity and rectal temperature of crossbred steers challenged with bovine viral diarrhea virus.**
X. Fang*[1], E. Downey[1], C. A. Runyan[1], J. E. Sawyer[2], T. B. Hairgrove[1], J. F. Ridpath[3], W. Mwangi[1], C. A. Gill[1], and A. D. Herring[1], [1]*Texs A&M University*, *College Station*, [2]*Texas Agrilife Extension*, *College Station*, [3]*USDA-ARS*, *Ames, IA*.

Animal Health: Health and Immune Function
Chair: Rupert Bruckmaier, University of Bern, Switzerland
110

2:00 PM 625 **Analysis of immune-relevant genes expressed in spleen of *Capra hircus* kids fed with Cr-Met supplement.**
M. J. Najafpanah* and M. Sadeghi, *University of Tehran*, *Tehran, Iran*.

2:15 PM 626 **Prenatal transportation alters the acute phase response (APR) of bull calves exposed to a lipopolysaccharide (LPS) challenge.**
N. C. Burdick Sanchez*[1], J. A. Carroll[1], D. M. Price[2,4], B. P. Littlejohn[2,4], M. C. Roberts[2,4], R. C. Vann[3], T. H. Welsh[4], H. D. Hughes[5], J. T. Richeson[5], and R. D. Randel[2], [1]*Livestock Issues Research Unit, USDA-ARS*, *Lubbock, TX*, [2]*Texas A&M AgriLife Research, Texas A&M University System*, *Overton*, [3]*MAFES-Brown Loam, Mississippi State University*, *Raymond*, [4]*Texas A&M AgriLife Research, Texas A&M University System*, *College Station*, [5]*Department of Agricultural Sciences, West Texas A&M University*, *Canyon*.

2:30 PM 627 **Circulating immune cell subpopulations in pestivirus persistently infected calves and non-infected calves varying in immune status.**
S. M. Falkenberg*, J. Ridpath, and F. V. Bauermann, *USDA-ARS-National Animal Disease Center, Ruminant Immunology Group*, *Ames, IA*.

2:45 PM 628 **Ontogenetic changes of ochratoxin A on growth performance, serum biochemistry and nephrotoxic damages in cherry valley male ducks.**
W. Wang[1], L. Zhong[1], H. Ye[1], H. Zhang[2], and L. Yang*[1], [1]*College of Animal Science, South China Agricultural University*, *Guangzhou, China*, [2]*China National Key Laboratory of Animal Nutrition, Beijing Animal and Veterinary Science Institute, Chinese Agricultural Academy*, *Beijing, China*.

3:00 PM 629 **Anamnestic antibody response to BVDV 1b challenge in Angus-Nelore steers.**
E. D. Downey*[1], X. Fang[1], C. A. Runyan[1], J. E. Sawyer[4], T. B. Hairgrove[3], J. F. Ridpath[2], and A. D. Herring[1], [1]*Texas A&M University*, *College Station*, [2]*National Animal Disease Center, USDA-ARS*, *Ames, IA*, [3]*Texas AgriLife Extension*, *College Station*, [4]*Texas AgriLife Research*, *College Station*.

3:15 PM 630 **Increasing the dietary ratio of n-3 to n-6 fatty acids increases the n-3 concentration of peripheral blood mononuclear cells in Holstein calves.**
L. C. Nagengast*, A. L. Lock, S. N. Woodruff, C. M. Ylioja, N. A. Martinec, C. V. Vanderson, C. L. Preseault, N. L. Trottier, M. J. VandeHaar, and E. L. Karcher, *Michigan State University*, *East Lansing*.

3:30 PM 631 **Epigenetic mechanisms control over cytokine gene expression of biased immune response dairy cattle.**
M. Paibomesai* and B. Mallard, *University of Guelph*, *Guelph, ON, Canada*.

3:45 PM 632 **The effect of feeding endophyte-infected fescue on the metabolic response to a provocative immune challenge in beef heifers.**
A. W. Altman*[1], N. C. Burdick Sanchez[2], J. A. Carroll[2], T. B. Schmidt[3], E. S. Vanzant[1], and K. R. McLeod[1], [1]*Department of Animal and Food Sciences, University of Kentucky*, *Lexington*, [2]*Livestock Issues Research Unit, USDA-ARS*, *Lubbock, TX*, [3]*Department of Animal Science, University of Nebraska-Lincoln*, *Lincoln*.

4:00 PM 633 **Gut microbiome profile of early weaned piglets in response to crowding stress, *Escherichia coli* K88+ challenge, and anti-*E. coli* K88 probiotics.**
P. M. Munyaka*[1], R. J. Hartmann[1], J. C. Rodriguez-Lecompte[2], J.-E. Ghia[1], D. O. Krause[1], and E. Khafipour[1], [1]*University of Manitoba*, *Winnipeg, MB, Canada*, [2]*University of Prince Edward Island*, *Charlotte, PEI, Canada*.

4:15 PM 634 **Breed susceptibility to pathogenic enterotoxigenic *Escherichia coli* strains in piglets from South Africa.**
N. S. Chaora*[1], F. C. Muchadeyi[2], E. Madoroba[2], E. F. Dzomba[1], and M. Chimonyo[1], [1]*University of KwaZulu Natal*, *Pietermaritzburg, South Africa*, [2]*Agricultural Research Council*, *Pretoria, South Africa*.

Breeding and Genetics: Genomic Selection Methods II
Chair: Denny Crews, Colorado State University
Wabash Ballroom 2

2:00 PM 636 **Random regression and reaction norm extensions of whole genome prediction models accounting for genotype by environment interaction.**
W. Yang*, C. Chen, and R. J. Tempelman, *Michigan State University*, *East Lansing*.

2:15 PM 637 **Exploring alternative specifications for whole genome prediction bivariate trait models.**
W. Yang*, C. Chen, and R. J. Tempelman, *Michigan State University*, *East Lansing*.

2:30 PM 638 **Prediction of direct genomic values by using a restricted pool of SNP selected by maximum difference analysis.**
M. Cellesi[1], N. P. P. Macciotta[1], G. Gaspa[1], D. Vicario[2], P. Ajmone-Marsan[3], A. Stella[4], and C. Dimauro*[1], [1]*Dipartimento di Agraria, Sezione Scienze Zootecniche Universita' di Sassari*, *Sassari, Italy*, [2]*Associazione Nazionale Allevatori Razza Pezzata Rossa Italiana (ANAPRI)*, *Udine, Italy*, [3]*Istituto di Zootecnica, Universita' Cattolica del Sacro Cuore*, *Piacenza, Italy*, [4]*CNR IBBA*, *Lodi, Italy*.

2:45 PM 639 **Using identifiability of genetic causal effects as a criterion for covariate choice in genome-enabled selection models.**
B. D. Valente*, G. J. M. Rosa, D. Gianola, and K. A. Weigel, *University of Wisconsin-Madison*, *Madison*.

3:00 PM 640 **Assessing statistical properties of cSNP discovery and genotyping using RNAseq and genotyping chip data.**
P. D. Reeb*, C. W. Ernst, N. Raney, L. Preeyanon, T. Brown, R. O. Bates, and J. P. Steibel, *Michigan State University*, *East Lansing*.

3:15 PM 641 **A robust Bayesian regression model for whole-genome analyses.**
K. Kizilkaya*[1,2], R. L. Fernando[1], and D. Garrick[1], [1]*Iowa State University*, *Ames*, [2]*Adnan Menderes University*, *Aydin, Turkey*.

3:30 PM 642 **Genome-wide analysis of case-control data using logit, probit and robit models.**
K. Kizilkaya*[1,2], R. L. Fernando[1], S. Kachman[3], and D. Garrick[1], [1]*Iowa State University*, *Ames*, [2]*Adnan Menderes University*, *Aydin, Turkey*, [3]*University of Nebraska*, *Lincoln*.

3:45 PM 643 **A structural model for genetic similarity in genomic selection of admixed populations.**
E. Hay*, S. Smith, and R. Rekaya, *University of Georgia*, *Athens*.

4:00 PM 635 **Mating programs including genomic relationships.**
C. Sun*[1] and P. VanRaden[2], [1]*National Association of Animal Breeders*, *Columbia, MO*, [2]*Animal Improvement Programs Laboratory, ARS, USDA*, *Beltsville, MD*.

THURSDAY ORALS

Ruminant Nutrition: Dairy: Calf Nutrition and Feed Additives
Chair: Jong-Su Eun, Utah State University
Sagamore 2

2:00 PM 644 **Use of plasma, hydrolyzed wheat gluten, or the combination in dairy calf milk replacers.**
T. M. Hill*, H. G. Bateman, J. M. Aldrich, J. D. Quigley, and R. L. Schlotterbeck, *Nurture Research Center, Provimi North America*, *Brookville, OH*.

2:15 PM 645 **Standing time of dairy calves within a naturally ventilated, unheated nursery over different seasons of the year, fed different amounts of milk replacer, and housed individually or in groups. .**
T. M. Hill*, H. G. Bateman, J. M. Aldrich, J. D. Quigley, and R. L. Schlotterbeck, *Nurture Research Center, Provimi North America*, *Brookville, OH*.

2:30 PM 646 **Replacing 10 and 20% of dairy calf milk replacer with whey cream yields similar starter intake, growth, and health performance during the nursery phase.**
R. J. LaBerge*[1], R. S. Younker[2], and N. B. Litherland[1], [1]*University of Minnesota*, *St. Paul*, [2]*Milk Specialties Global*, *Eden Prairie, MN*.

2:45 PM 647 **Feeding dairy calves once or twice a day: Effects on solid feed intake and ruminal physico-chemical parameters from birth to weaning.**
C. Julien*[1,2], F. Enjalbert[1,2], and C. Bayourthe[1,2], [1]*INRA, UMR1289 TANDEM, Tissus Animaux Nutrition Digestion Ecosystème et Métabolisme*, *Castanet-Tolosan, France*, [2]*Université de Toulouse, INPT ENSAT, INP-ENVT, UMR1289 TANDEM*, *Castanet-Tolosan, France*.

Ruminant Nutrition: Dairy: Fat and Fatty Acids Supplementation
Chair: Richard Kohn, University of Maryland
109

2:00 PM 648 **Effect of altering the ratio of dietary n-6 to n-3 fatty acids on lactational performance and acute phase response to an intramammary lipopolysaccharide challenge.**
L. F. Greco*[1], J. T. Neves Neto[1], A. Pedrico[1], R. Ferrazza[1], F. S. Lima[1], R. S. Bisinotto[1], N. Martinez[1], E. S. Ribeiro[1], M. Garcia[1], G. C. Gomes[1], M. A. Ballou[2], W. W. Thatcher[1], C. R. Staples[1], and J. E. P. Santos[1], [1]*University of Florida*, *Gainesville*, [2]*Texas Tech University*, *Lubbock*.

2:15 PM 649 **Comparison of two supplemental fat sources differing in saturated fatty acid content on the production response of lactating dairy cows.**
J. K. Bernard* and N. A. Mullis, *University of Georgia*, *Tifton*.

2:30 PM 650 **Incorporation of n-6 and n-3 fatty acids into plasma lipid fractions of lactating cows: Chronic effect of abomasal infusion of linoleic and linolenic acids.**
C. L. Preseault, L. C. Nagengast, J. C. Ploetz, C. M. Klein, and A. L. Lock*, *Michigan State University*, *East Lansing*.

2:45 PM 651 **Milk yield and milk fat responses to increasing levels of palmitic acid supplementation of dairy cows receiving low and high-fat diets.**
J. E. Rico*, M. S. Allen, and A. L. Lock, *Michigan State University*, *East Lansing*.

3:00 PM 652 **Effect of dietary NDF and PUFA concentration on recovery from diet induced milk fat depression (MFD) in monensin-supplemented dairy cows.**
D. E. Rico*[1], A. W. Holloway[2], and K. J. Harvatine[1], [1]*The Pennsylvania State University*, *University Park*, [2]*Elanco Animal Health*, *Greenfield, IN*.

3:15 PM 653 **Saturated fat supplementation interacts with dietary forage concentration during the immediate postpartum and carryover periods in Holstein cows.**
P. Piantoni*, A. L. Lock, and M. S. Allen, *Michigan State University*, *East Lansing*.

3:30 PM 654 **Milk production responses to dietary stearic acid vary by production level in dairy cattle.**
P. Piantoni*, A. L. Lock, and M. S. Allen, *Michigan State University*, *East Lansing*.

3:45 PM 655 **Effects of rumen-protected conjugated linoleic acid (CLA) on expression of genes involved in hepatic gluconeogenesis and insulin sensitivity in dairy cows.**
A. Kinoshita[1], L. Locher[1], K. Huber[2], U. Meyer[3], S. Daenicke[3], and J. Rehage*[1], [1]*Clinic for Cattle, University of Veterinary Medicine Hannover*, *Hannover, Germany*, [2]*Dep. of Physiology, University of Veterinary Medicine Hannover*, *Hannover, Germany*, [3]*Dep. of Animal Nutrition, Friedrich-Loeffler-Institute*, *Braunschweig, Germany*.

4:00 PM 656 **Interaction between rumen unsaturated fatty acid load and forage:concentrate ratio on the formation of biohydrogenation intermediates in continuous culture.**
Y. Sun*[1], T. C. Jenkins[2], and A. L. Lock[1], [1]*Michigan State University*, *East Lansing*, [2]*Clemson University*, *Clemson, SC*.

4:15 PM 657 **Effect of abomasal infusions of *trans* octadecenoic fatty acids on plasma lipids and milk fat synthesis in dairy cows.**
C. M. Klein* and A. L. Lock, *Michigan State University*, *East Lansing*.

4:30 PM 658 **Impact of unsaturated free fatty acids and triglycerides on milk fat synthesis in dairy cattle.**
J. C. Ploetz* and A. L. Lock, *Michigan State University*, *East Lansing*.

4:45 PM 659 **Effects of ruminally inert essential fatty acids on postpartum immune-related functions and productivity in lactating dairy cattle.**
J. Pankowski*[1], J. Noble[2], P. Brennan[3], G. Jarrett[4], and E. Block[1], [1]*Arm & Hammer Animal Nutrition*, *Princeton, NJ*, [2]*Linwood Management,LLC*, *Linwood, NY*, [3]*Purina Animal Nutrition LLC*, *Caledonia, NY*, [4]*Cows Come First LLC*, *Batavia, NY*.

Dairy Foods: Dairy Chemistry
Chair: Lloyd Metzger, South Dakota State University
103

2:00 PM 560 **Physico-chemical characterization of casein micelles cross-linked by genipin.**
N. Nogueira Silva[1], A. F. de Carvalho[2], M. Piot[1], and F. Gaucheron*[1], [1]*INRA UMR STLO, Agrocampus-Ouest*, *Rennes, France*, [2]*University of Vicosa*, *Minas Gerais, Brazil*.

2:15 PM 561 **Destabilization of UHT milk induced by different strains of *Pseudomonas fluorescens*: Role of AprX protease.**
F. Bagliniere[1], G. Tanguy[1], A. Mateos[2], J. Jardin[1], F. Rousseau[1], B. Robert[1], G. Humbert[2], A. Dary[2], J. L. Gaillard[3], C. Amiel[3], and F. Gaucheron*[1], [1]*INRA 1253 UMR STLO, Agrocampus-Ouest*, *Rennes, France*, [2]*URAFPA, University of Nancy*, *Nancy, France*, [3]*ERPCB, University of Caen*, *Caen, France*.

2:30 PM 562 **Effect of adding chelators during skim milk powder manufacturing on the physico-chemical properties.**
V. Sikand*[1], P. Tong[1], S. Vink[1], A. Zeng[1], K. Sikand[1], and S. Roy[2], [1]*Dairy Products Technology Center, California Polytechnic State University*, *San Luis Obispo*, [2]*Statistics Department, California Polytechnic State University*, *San Luis Obispo*.

2:45 PM 563 **Effect of succinylation of skim milk on its plasmin-induced hydrolysis.**
H. Bhatt*[2,1], A. Cucheval[1], C. Coker[1], H. Patel[3], A. Carr[2], and R. Bennett[2], [1]*Fonterra Research & Development Centre*, *Palmerston North, Manawatu, New Zealand*, [2]*Institute of Food, Nutrition and Human Health, Massey University*, *Palmerston North, Manawatu, New Zealand*, [3]*Dairy Science Department, South Dakota State University*, *Brookings*.

3:00 PM 564 **Antioxidative activity and resilience of Cheddar and Edam whey as determined from total radical trapping potentials (TRAP).**
Z. Z. Haque*, D. Mukherjee, S. Mukherjee, and S. Chang, *Mississippi State University*, *Mississippi State*.

3:15 PM 565 **Effect of detergents on the antioxidative efficacy of sweet whey.**
Z. Z. Haque*, D. Mukherjee, and S. Chang, *Mississippi State University*, *Mississippi State*.

Forages and Pastures: Dairy and Livestock
Chair: Brad Heins, University of Minnesota
122-123

2:00 PM 660 **Effect of organic grain supplementation on production, body weight, body condition score, and profitability of organic dairy cows.**
B. J. Heins*[1,3], J. C. Paulson[2], M. I. Endres[3], and R. D. Moon[3], [1]*University of Minnesota, West Central Research and Outreach Center*, *Morris*, [2]*University of Minnesota Extension*, *Willmar*, [3]*University of Minnesota*, *Saint Paul*.

2:15 PM 661 **Effect of organic grain supplementation on pasture and total mixed ration dry matter intake and fatty acid profiles of organic dairy cows.**
B. J. Heins[1,3], J. C. Paulson*[2], M. I. Endres[3], and R. D. Moon[3], [1]*University of Minnesota, West Central Research and Outreach Center*, *Morris*, [2]*University of Minnesota Extension*, *Willmar*, [3]*University of Minnesota*, *Saint Paul*.

2:30 PM 662 **Cost of corn silage in dairy farms in Viçosa, state of Minas Gerais, Brazil.**
G. A. Freitas, M. I. Marcondes*, O. G. Pereira, F. L. Araujo, and R. L. Albino, *Universidade Federal de Vicosa*, *Vicosa, Minas Gerais, Brasil*.

2:45 PM 663 **Changes in alfalfa silage fermentation products during aerobic exposure and its impact on dry matter intake by goats.**
K. Gerlach*, Y. Liao, and K.-H. Südekum, *University of Bonn*, *Bonn, Germany*.

3:00 PM 664 **Effects of stocking rate and monensin supplementation on forage characteristics and performance of beef heifers receiving warm-season grasses.**
J. M. B. Vendramini*[1], J. D. Sanchez[1], W. L. da Silva[1], R. F. Cooke[2], P. Moriel[1], and G. Caputti[1], [1]*University of Florida*, *Ona*, [2]*Oregon State University*, *Burns*.

3:15 PM **Break**

3:30 PM 665 **Evaluation of different dietary supplements for cattle consuming ryegrass baleage.**
L. V. Durst*, B. J. Rude, and S. H. Ward, *Animal and Dairy Sciences, Mississippi State University*, *Starkville*.

3:45 PM 666 **Using weekly pasture cover measurements to monitor growth and utilization.**
J. R. Seymour and T. W. Downing*, *Oregon State University*, *Corvallis*.

4:00 PM 667 **In vitro NDF digestibility and its correlation with chemical components of tropical grasses under intensive rotational grazing strategies.**
J. C. Lopes*[1], R. B. Reis[2], and D. K. Combs[1], [1]*Department of Dairy Science, University of Wisconsin-Madison*, *Madison*, [2]*Escola de Veterinária, Universidade Federal de Minas Gerais*, *Belo Horizonte, MG, Brazil*.

4:15 PM 668 **Days of rest affects forage mass and quality in a rotational stocking system.**
J. C. Emenheiser*[1], B. F. Tracy[1], A. E. Tanner[1], D. Fiske[2], W. S. Swecker[3], W. M. Clapham[4], and R. M. Lewis[1], [1]*Virginia Polytechic Institute and State University*, *Blacksburg*, [2]*Shenandoah Valley Agricultural Research and Extension Center*, *Steeles Tavern, VA*, [3]*Virginia-Maryland Regional College of Veterinary Medicine*, *Blacksburg*, [4]*USDA-ARS Appalachian Farming Systems Research Center*, *Beaver, WV*.

4:30 PM 669 **Effects of pasture management and energy supplement on ingestive behavior of grazing cattle.**
J. R. R. Dorea[1], L. R. D. Agostinho Neto[1], V. N. Gouvea[1], D. F. A. Costa*[1], A. V. Pires[1], L. G. R. Pereira[2], and F. A. P. Santos[1], [1]*University of Sao Paulo*, *Piracicaba, Sao Paulo, Brazil*, [2]*Empresa Brasileira de Pesquisa Agropecuaria*, *Juiz de Fora, Minas Gerais, Brazil*.

Ruminant Nutrition: Metabolism and Modeling
Chair: Shawn Archibeque, Colorado State University
Sagamore 1

2:00 PM 670 **The use of logistic and cumulative normal distributions to model ruminal temperature and pH by radiofrequency rumen boluses under different conditions in goats.**
A. Castro-Costa[1], J. Torrent*[2], A. A. K. Salama[1], M. Creus[3], and G. Caja[1], [1]*Ruminant Research Group (G*, *Universitat Autonoma de Barcelona, Bellaterra, Spain*, [2]*Oligo Basics USA LLC*, *Wilmington, DE*, [3]*Nutcat*, *Lleida, Spain*.

2:15 PM 671 **Biomarkers for bovine rumen acidosis.**
A. M. Danscher[1], S. C. Li*[2], P. H. Andersen[3], E. Khafipour[2], N. B. Kristensen[4], and J. C. Plaizier[2], [1]*University of Copenhagen*, *Copenhagen, Denmark*, [2]*University of Manitoba*, *Winnipeg, MB, Canada*, [3]*Swedish University of Agricultural Sciences*, *Uppsala, Sweden*, [4]*Danish Agricultural Advisory Service*, *Aarhus, Denmark*.

2:30 PM 672 **Liver mitochondrial efficiency of two lineages of Angus bulls with high and low residual feed intake (RFI).**
G. Acetoze*[1], K. L. Weber[1], A. L. Van Eenennaam[1], J. J. Ramsey[2], and H. A. Rossow[3], [1]*University of California, Department of Animal Science*, *Davis*, [2]*University of California, School of Veterinary Medicine*, *Davis*, [3]*University of California, School of Veterinary Medicine*, *Tulare*.

2:45 PM 673 **Effect of lipid source on fatty acid profile in the rumen of cattle fed a tropical hay.**
D. F. A. Costa*[1], P. Isherwood[1], S. Quigley[1], S. R. McLennan[2], J. De Souza[3], J. Gibbs[5], X. Sun[4], and D. P. Poppi[1], [1]*The University of Queensland*, *Gatton, QLD, Australia*, [2]*The University of Queensland*, *Brisbane, QLD, Australia*, [3]*University of Sao Paulo*, *Piracicaba, Sao Paulo, Brazil*, [4]*College of Animal Science and Technology, Northwest A&F University*, *Yangling, Shaanxi, China*, [5]*Lincoln University*, *Lincoln, Canterbury, New Zealand*.

3:00 PM 674 **Effect of dietary glucogenic precursors and linseed oil on growth performance, rumen fermentation and intramuscular fatty acids of lambs.**
R. J. B. Bessa*[1], J. M. Pestana[1,3], A. S. H. Costa[1], E. Jeronimo[2], S. P. Alves[1,2], J. Santos-Silva[2], and J. A. M. Prates[1], [1]*CIISA, Faculdade de Medicina Veterinária*, *Lisbon, Portugal*, [2]*UIPA, Instituto Nacional de Investigacao Agrária e Veterinária*, *Santarem, Portugal*, [3]*GIRM, Grupo de Investigação em Recursos Marinhos, Instituto Politécnico de Leiria*, *Peniche, Portugal*.

3:15 PM 675 **The interference of time interval and number of samples on the parameter estimates of GnG1 nonlinear models for passage rate data.**
L. F. L. Cavalcanti*[2,1] and L. O. Tedeschi[1], [1]*Texas A&M University*, *College Station*, [2]*Universidade Federal de Minas Gerais*, *Belo Horizonte, Minas Gerais, Brazil*.

3:30 PM 676 **Effect of increasing concentrations of DHA-Gold in concentrate diets fed to Canadian Arcott lambs on the fatty acid profiles of adipose tissue and skeletal muscle.**
S. J. Meale*[1,2], S. Ding[1,2], M. L. He[2], A. V. Chaves[1], and T. A. McAllister[2], [1]*Faculty of Veterinary Science, University of Sydney*, *Sydney, NSW, Australia*, [2]*Agriculture and Agri-Food Canada, Lethbridge Research Centre*, *Lethbridge, Alberta, Canada*.

3:45 PM 677 **Small intestinal digestion of raw cornstarch in cattle is increased by duodenal infusion of glutamate.**
D. W. Brake*, E. C. Titgemeyer, and D. E. Anderson, *Kansas State University*, *Manhattan*.

4:00 PM 678 **Importance of yeast viability for reducing the effects of ruminal acidosis in beef heifers during and following an imposed acidosis challenge.**
D. Vyas*[1], A. Uwijeye[1], W. Z. Yang[1], K. A. Beauchemin[1], and N. Walker[2], [1]*Agriculture and Agri-Food Canada*, *Lethbridge, AB, Canada*, [2]*AB Vista*, *Marlborough, Wiltshire, UK*.

4:15 PM 679 **Molecular weight of legume condensed tannins does not correlate with biological activity.**
H. D. Naumann*[1,2], J. P. Muir[2], L. O. Tedeschi[1], B. D. Lambert[2,3], and A. E. Hagerman[4], [1]*Texas A&M University*, *College Station*, [2]*Texas A&M AgriLife Research*, *Stephenville*, [3]*Tarleton State University*, *Stephenville, TX*, [4]*Miami University*, *Oxford, OH*.

Growth and Development II
Chair: Ransom Baldwin, USDA-ARS
Sagamore 7

2:00 PM 680 **Total body fat and subcutaneous fat distribution in beef steers.**
M. J. McPhee*[1], B. J. Walmsley[1], J. P. Siddel[2], J. F. Wilkins[3], V. H. Oddy[1], and P. L. Greenwood[1], [1]*Beef Industry Centre of Excellence*, *Armidale, NSW, Australia*, [2]*Glen Innes Research Station*, *Glen Innes, NSW, Australia*, [3]*Wagga Wagga Institue*, *Wagga Wagga, NSW, Australia*.

2:15 PM 681 **Development of target growth charts for Ayrshire, Brown Swiss, Holstein and Jersey heifers.**
D. E. Santschi, R. Lacroix, and D. M. Lefebvre*, *Valacta*, *Ste-Anne-de-Bellevue, QC, Canada*.

2:30 PM 682 **Mammary gland development in heifers under different metabolizable protein and metabolizable energy ratios.**
R. L. Albino[1], M. I. Marcondes*[1], A. C. F. Rocha[1], A. S. Trece[1], A. S. Castro[1], and B. C. Gomes[2], [1]*Universidade Federal de Vicosa*, *Vicosa, Minas Gerais, Brasil*, [2]*Empresa Brasileira de Pesquisa Agropecuaria*, *Juiz de Fora, Minas Gerais, Brasil*.

2:45 PM 683 **Relationships between pre- and postweaning growth on estrus behavior and reproductive parameters of Holstein heifers.**
B. F. Silper*[1], A. M. L. Madureira[1], T. A. Burnett[1], A. M. de Passillé[2], J. Rushen[2], and R. L. A. Cerri[1], [1]*University of British Columbia*, *Vancouver, BC, Canada*, [2]*Agriculture and Agri-Food Canada*, *Agassiz, BC, Canada*.

3:00 PM 684 **Partial substitution of conventional milk replacer with whey cream drives starter intake, gastrointestinal development, and growth of dairy calves.**
R. J. LaBerge*[1], J. Schefers[1], R. S. Younkers[2], and N. B. Litherland[1], [1]*University of Minnesota*, *St. Paul*, [2]*Milk Specialties Global*, *Eden Prairie, MN*.

3:15 PM 685 **Dietary reduction from early gestation in obese/overnourished ewes reduced adiposity and serum lipids and increased liver glycogen in late gestation fetuses.**
J. F. Odhiambo*[1], T. Nurmamat[1], P. W. Nathanielsz[2], and S. P. Ford[1], [1]*Center for the Study of Fetal Programming, Department of Animal Science, University of Wyoming*, *Laramie*, [2]*Center for Pregnancy and Newborn Research, Department of Obstetrics and Gynecology, University of Texas Health Sciences Center*, *San Antonio*.

3:30 PM 686 **Effect of feeding 25-hydroxycholecalciferol on vitamin D status and skeletal muscle growth and development in broiler chickens.**
K. C. Hutton[1], J. D. Starkey*[1], M. A. Vaughn[1], B. J. Turner[2], and G. Litta[2], [1]*Texas Tech University*, *Lubbock*, [2]*DSM Nutritional Products*, *Basel, Switzerland*.

3:45 PM 687 **Effect of fluted pumpkin (*Telfaria occidentalis*) leaf extract on growth performance, serum chemistry, and carcass yield of cockerel chickens.**
A. O. Ladokun*, N. O. Adewale, M. K. Adeoye, and J. A. Abiona, *Federal University of Agriculture*, *Abeokuta, Ogun, Nigeria*.

Meat Science and Muscle Biology: Muscle and Meat Biochemistry
Chair: Min Du, Washington State University
Sponsor: ASAS Foundation
Sagamore 6

2:00 PM 828 **ASAS Early Career Award: Proteome basis of muscle- and species-specificity in meat color stability.**
S. P. Suman*, *University of Kentucky, Lexington.*

2:30 PM 688 **Effects of myogenin on muscle fiber types and muscle oxidative metabolism.**
L. N. Zhu*, Y. Ren, J. Q. Chen, and Y. Z. Wang, *Institute of Feed Science, Zhejiang University, The Key Laboratory of Molecular Animal Nutrition, Ministry of Education, Zhejiang Provincial Laboratory of Feed and Animal Nutrition*, *Hangzhou, Zhejiang, China*.

2:45 PM 689 **FNDC5 transcript variants and protein detection in skeletal muscle and plasma of cattle.**
K. Komolka[1], E. Albrecht[1], J. Brenmoehl[2], A. Hoeflich[2], and S. Maak*[1], [1]*Institute for Muscle Biology and Growth, Leibniz Institute for Farm Animal Biology*, *Dummerstorf, Germany*, [2]*Institute for Genome Biology, Leibniz Institute for Farm Animal Biology*, *Dummerstorf, Germany*.

3:00 PM 690 **Effect of aging on muscle color from Nellore beef cattle.**
L. R. Simonetti, J. F. Lage*, E. E. Dallantonia, E. San Vito, E. A. Oliveira, M. Machado, G. M. Delamagna, M. O. Santana, A. L. Esper, and T. T. Berchielli, *Universidade Estadual Paulista*, *Jaboticabal, Sao Paulo, Brasil*.

3:15 PM 691 **Comparison of histochemical characteristics and meat quality of longissimus dorsi muscle between commercial pig breeds (Yorkshire × Landrace × Duroc vs. Yorkshire × Berkshire × Duroc crossbred pigs).**
G. D. Kim*[1], K. B. Kwon[2], E. Y. Jung[3], H. W. Seo[3], H. J. Lim[3], J. Y. Jeong[3], H. S. Yang[3], and S. T. Joo[3], [1]*Division of Animal Biotechnology, College of Applied Life Sciences, Jeju National University*, *Jejudaehakro, Jeju, South Korea*, [2]*Darby Genetics Inc.*, *Anseong, Gyeonggi-do, South Korea*, [3]*Department of Animal Science, Institute of Agriculture & Life Science, Gyeongsang National University*, *Jinju, Gyeongnam, South Korea*.

3:00 PM 692 **Effect of vitamin A on early intramuscular adipogenesis: A model for improving marbling in beef.**
S. M. Harris[1,2], J. L. Schneider*[2], C. Trost[2], A. M. Gibson[2], C. J. Rogers[1], J. R. Busboom[1], M. V. Dodson[1], J. B. Lamb[1], and M. Du[1], [1]*Washington State University*, *Pullman*, [2]*Brigham Young University-Idaho*, *Rexburg, ID*.

3:15 PM 693 **Enzymes activities in the muscle and subcutaneous fat of steers finished at feedlot fed with lipid sources.**
G. Fiorentini*[1,2], I. P. C. Carvalho[1,2], J. F. Lage[1,2], L. G. Rossi[1], Y. T. G. Salcedo[1,2], C. S. Ribeiro Junior[1,2], and T. T. Berchielli[1,3], [1]*University of São Paulo State*, *Jaboticabal, SP, Brazil*, [2]*São Paulo Research Foundation*, *São Paulo, SP, Brazil*, [3]*National Institute of Science and Technology in Animal Science*, *Brasília, DF, Brazil*.

3:30 PM 694 **Comparison of real-time ultrasound measurements for body composition traits to carcass and camera data in feedlot steers.**
A. J. Thompson*, F. R. B. Ribeiro, S. N. Aragon, A. H. Hosford, J. E. Hergenreder, M. A. Jennings, and B. J. Johnson, *Texas Tech University*, *Lubbock*.

3:45 PM 695 **Influence of graded levels of Tetracin on physico-chemical properties of broiler meat.**
A. O. Akinwumi*, A. A. Odunsi, A. B. Omojola, and T. O. Akande, *Ladoke Akintola University of Technology*, *Ogbomoso, Oyo, Nigeria*.

Nonruminant Nutrition: Nutritional Values I
Chair: Ryan Dilger, University of Illinois
105-106

2:00 PM 696 **Nutrient profile and in vitro vs. in vivo energy digestibility of wheat co-products from flour milling in growing pigs.**
R. Jha*[1,2], P. R. Regmi[1], L. F. Wang[1], A. Pharazyn[3], and R. T. Zijlstra[1], [1]*University of Alberta*, *Edmonton, AB, Canada*, [2]*University of Hawaii at Manoa*, *Honolulu*, [3]*Nutreco Canada*, *Guelph, ON, Canada*.

2:15 PM 697 **Nutrient profile and in vitro vs. in vivo energy digestibility of grain legumes in growing pigs.**
R. Jha*[1,2], L. F. Wang[1], P. R. Regmi[1], A. Pharazyn[3], and R. T. Zijlstra[1], [1]*University of Alberta*, *Edmonton, AB, Canada*, [2]*University of Hawaii at Manoa*, *Honolulu*, [3]*Nutreco Canada*, *Guelph, ON, Canada*.

2:30 PM 698 **Digestible and metabolizable energy concentration in canola meal, 00-rapeseed meal, and 00-rapeseed expellers fed to growing pigs.**
T. Maison* and H. H. Stein, *University of Illinois at Urbana-Champaign*, *Urbana*.

2:45 PM 699 **Determination of true phosphorus digestibility in *Brassica napus* black and *Brassica juncea* yellow fed to growing pigs using regression analysis.**
P. A. Adhikari*, J. M. Heo, and C. M. Nyachoti, *University of Manitoba*, *Winnipeg, MB, Canada*.

3:00 PM 700 **Physiological effects of L-methionine compared with DL-methionine fed to nursery pigs.**
Y. B. Shen* and S. W. Kim, *North Carolina State University*, *Raleigh*.

3:15 PM 701 **Predicting digestible energy (DE) and net energy (NE) of dried distillers grains with solubles from its oil content.**
S. Nitikanchana*, A. B. Graham, R. D. Goodband, M. D. Tokach, S. S. Dritz, and J. M. DeRouchey, *Kansas State University*, *Manhattan*.

Production, Management and the Environment: Surveys and Models I
Chair: Judith Capper, Livestock Sustainability Consulting, Bozeman
108

2:00 PM 702 **Expected value of beef cattle breeding strategies: Sexed versus non-sexed semen.**
E. D. Lord*[1], N. J. Olynk Widmar[1], B. Gloy[1], W. M. Hilton[2], and C. A. Wolf[3], [1]*Purdue University, Department of Agricultural Economics*, *West Lafayette, IN*, [2]*Purdue University, College of Veterinary Medicine*, *West Lafayette, IN*, [3]*Michigan State University, Department of Agricultural, Food, and Resource Economics*, *East Lansing*.

2:15 PM 703 **Meta-analysis of consumer willingness to pay for specialty attributes of beef.**
R. White*[1] and M. Brady[2], [1]*Department of Animal Sciences, Washington State University*, *Pullman*, [2]*School of Economic Sciences, Washington State University*, *Pullman*.

2:30 PM 706 **Life cycle assessment of the production of one kilogram of milk in six buffalo farms.**
G. Pirlo*[1], S. Carè[1], V. Fantin[2], F. Falconi[3], P. Buttol[2], C. Pacelli[4], G. Terzano[1], and P. Masoni[2], [1]*Consiglio per la ricerca e sperimentazione in agricoltura (CRA)*, *Cremona, Italy*, [2]*ENEA, Italian National Agency for New Technologies, Energy and Sustainable Economic Development*, *Bologna, Italy*, [3]*LCA-lab SRL*, *Bologna, Italy*, [4]*Dipartimento di Scienze delle Produzioni Animali, Università della Basilicata*, *Potenz, Italy*.

2:45 PM 707 **Assessment of culling risk and economic outcomes in dairy herds.**
G. M. Schuenemann*[1] and K. N. Galvão[2], [1]*Department of Veterinary Preventive Medicine, The Ohio State University*, *Columbus*, [2]*Large Animal Clinical Sciences, University of Florida*, *Gainesville*.

3:00 PM 704 **Environmental footprints of beef production at the U.S. Meat Animal Research Center.**
C. A. Rotz*[1], B. J. Isenberg[1], K. R. Stackhouse-Lawson[2], and E. J. Pollak[3], [1]*USDA/ARS*, *University Park, PA*, [2]*National Cattlemen's Beef Association*, *Centennial, CO*, [3]*USDA/ARS*, *Clay Center, NE*.

3:15 PM **Break**

3:30 PM 705 **Environmental, social, and economic footprints of current and past beef production systems.**
K. R. Stackhouse-Lawson*[1], C. A. Rotz[2], B. J. Isenberg[2], E. J. Pollak[3], T. Battagliese[4], B. Ulhman[4], C. Barcan[4], I. Schulze[5], J. Silva[5], and J. O. Reagan[1], [1]*National Cattlemen's Beef Association*, *Centennial, CO*, [2]*USDA-ARS, Pasture Systems and Watershed Management Research Unit*, *University Park, PA*, [3]*USDA-ARS-NPA, Roman L. Hruska U.S. Meat Animal Research Center*, *Clay Center, NE*, [4]*BASF Corporation, Nutrition and Health*, *Florham Park, NJ*, [5]*BASF Corporation, Fundação Espaço ECO*, *Sao Bernardo do Campo, Brazil*.

3:45 PM 708 **Effect of milking personnel performance and turnover on milk losses in dairy herds.**
G. M. Schuenemann*, M. G. Maquivar, S. Bas, and J. D. Workman, *Department of Veterinary Preventive Medicine, The Ohio State University*, *Columbus*.

4:00 PM 709 **Retention pay-off prediction using machine learning algorithms.**
S. Shahinfar*, A. S. Kalantari, V. Cabrera, and K. Weigel, *Department of Dairy Science, University of Wisconsin-Madison*, *Madison*.

4:15 PM 710 **Model selection, estimation and cross validation of methane emissions prediction equations.**
L. E. Moraes*[1], E. Kebreab[1], A. B. Strathe[2], J. G. Fadel[1], and D. P. Casper[3], [1]*University of California*, *Davis*, [2]*University of Copenhagen*, *Copenhagen, Denmark*, [3]*South Dakota State University*, *Brookings*.

Reproduction Symposium:
External Influences on Reproductive Neuroendocrinology
Chairs: Fred Stormshak, Oregon State University, and Mark Mirando, NIFA
120-121

2:00 PM 711 **EAAP-ADSA Speaker Exchange Presentation: While the grass may be greener in the other field, is it better for you or your baby? Hidden risks of environmental pollutants.**
N. P. Evans*[1], M. Bellingham[1], C. Cotinot[2], S. M. Rhind[3], R. Sharpe[4], and P. A. Fowler[5], [1]*University of Glasgow, College of Medical Veterinary and Life Sciences, Institute of Biodiversity Animal Health & Comparative Medicine*, *Glasgow, UK*, [2]*INRA, UMR 1198 Biologie du Developpment et Reproduction*, *Jouy en Josas, France*, [3]*James Hutton Institute*, *Aberdeen, UK*, [4]*University of Edinburgh, Queens Medical Research Institute, MRC Centre for Reproductive Health*, *Edinburgh, UK*, [5]*Institute of Medical Sciences, Division Applied Medicine, University of Aberdeen*, *Aberdeen, UK*.

2:45 PM 712 **E-Screen—Potential tool for assessment of relative serum estrogenicity.**
N. W. Shappell*[1], S. A. Hiablie[2], J. D. Magolski[3], K. A. Vonnahme[3], E. P. Berg[3], and L. O. Billey[1], [1]*Biosciences Research Laboratory, USDA-ARS*, *Fargo, ND*, [2]*Penn State University*, *State College*, [3]*North Dakota State University*, *Fargo*.

3:00 PM 713 **Developmental programming of reproductive and metabolic health.**
V. Padmanabhan*, *Department of Pediatrics, Obstetrics and Gynecology, Molecular and Integrative Physiology, and Environmental Health Sciences, University of Michigan*, *Ann Arbor*.

3:45 PM 714 **Effects of bovine somatotropin administration on growth, physiological, and reproductive responses of replacement beef heifers.**
R. F. Cooke*[1], D. W. Bohnert[1], C. L. Francisco[1,2], R. S. Marques[1], C. J. Mueller[3], and D. H. Keisler[4], [1]*Oregon State University, Eastern Oregon Agricultural Research Center*, *Burns*, [2]*UNESP, Faculdade de Medicina Veterinária e Zootecnia*, *Botucatu, São Paulo, Brazil*, [3]*Oregon State University, Eastern Oregon Agricultural Research Center*, *Union*, [4]*University of Missouri, Division of Animal Sciences*, *Columbia*.

4:00 PM 715 **Neuroendocrine programing of accelerated puberty in heifers.**
M. Amstalden*[1], B. R. C. Alves[1], and R. C. Cardoso[1,2], [1]*Texas A&M University*, *College Station*, [2]*Texas A&M AgriLife Research*, *Beeville*.

4:45 PM 716 **Use of a stair-step compensatory gain nutritional regimen to program the onset of puberty in beef heifers.**
R. C. Cardoso*[1,2], B. R. C. Alves[1], T. Moczygemba[1], L. D. Prezotto[1,2], J. F. Thorson[1,2], L. O. Tedeschi[1], D. H. Keisler[3], M. Amstalden[1], and G. L. Williams[1,2], [1]*Texas A&M University*, *College Station*, [2]*Texas A&M Agrilife Research*, *Beeville*, [3]*University of Missouri*, *Columbia*.

Ruminant Nutrition: Beef: By-Products and Dietary Modifications
Chair: Allan Chestnut, Vigortone Ag Products
Sagamore 2

3:15 PM 717 **Effect of dietary fat concentration from corn coproducts, during the growing phase, on beef cattle performance, carcass traits, digestibility, and ruminal metabolism.**
J. R. Segers*, T. L. Felix, and D. W. Shike, *University of Illinois at Urbana-Champaign*, *Urbana*.

3:30 PM 718 **Effects of partially replacing supplemental N with condensed distillers solubles on feedlot cattle performance and carcass characteristics.**
J. Simroth-Rodriguez*[1], M. S. Brown[1], J. Kawas[2], R. Butler[1], B. Coufal[1], H. Hughes[1], K. Kraich[1], B. Mendonca[1], and J. Wallace[1], [1]*West Texas A&M University*, *Canyon*, [2]*Universidad Autónoma de Nuevo León*, *Monterrey, Nuevo Leon, Mexico*.

3:45 PM 719 **Performance and metabolism of Holstein dairy calves receiving concentrate starter containing citrus pulp as a replacement for corn.**
C. E. Oltramari[1,2], J. T. Silva*[1,2], M. R. Paula[1,2], G. G. O. Napoles[1,3], M. C. Soares[1,3], M. P. C. Gallo[1,3], and C. M. M. Bittar[1,2], [1]*ESALQ/USP*, *Piracicaba, Sao Paulo, Brazil*, [2]*CNPq*, *Brasilia, DF, Brazil*, [3]*Fapesp*, *Sao Paulo, Sao Paulo, Brazil*.

4:00 PM 720 **Evaluation of nutrient composition and variability of wheat grain entering feedlots in western Canada using commercially available near-infrared reflectance spectroscopy.**
A. R. Harding*[1], C. F. O'Neill[1], M. L. May[2], L. O. Burciaga-Robles[2], and C. R. Krehbiel[1], [1]*Oklahoma State University*, *Stillwater*, [2]*Feedlot Health Management Services*, *Okotoks, AB, Canada*.

4:15 PM 721 **Effect of nutrient composition variability of barley grains on near infrared reflectance spectroscopy predictions using commercially available technology.**
C. F. O'Neill*[1], A. R. Harding[1], M. L. May[2], L. O. Burciaga-Robles[2], and C. R. Krehbiel[1], [1]*Department of Animal Science, Oklahoma State University*, *Stillwater*, [2]*Feedlot Health Management Services Ltd*, *Okotoks, AB, Canada*.

4:30 PM 722 **Co-prilling flaxseed and dolomitic hydrate to decrease ruminal biohydrogenation of polyunsaturated fatty acids.**
C. Alvarado*[1], D. Sousa[1], K. Miller[1], C. van Bibber-Krueger[1], E. van Cleef[1], F. Scarpino[1], D. Klamfoth[2], and J. Drouillard[1], [1]*Kansas State University*, *Manhattan*, [2]*Lhoist North America*, *Fort Worth, TX*.

Nonruminant Nutrition: Nutritional Values II
Chair: Martin Nyachoti, University of Manitoba, Canada
105-106

3:45 PM 723 **Diurnal variation of amino acid digestibility in pigs.**
B. G. Kim*[1] and H. H. Stein[2], [1]*Konkuk University*, *Seoul, Republic of Korea*, [2]*University of Illinois*, *Urbana*.

4:00 PM 724 **Effects of adjusting the standardized ileal digestible (SID) amino acids in heat damaged soybean meal (SBM) or distillers dried grains with solubles (DDGS) in diets on performance of weaned pigs.**
F. N. Almeida*[1], J. K. Htoo[2], J. Thomson[3], and H. H. Stein[1], [1]*University of Illinois*, *Urbana*, [2]*Evonik Industries*, *Hanau, Germany*, [3]*Evonik Degussa Corporation*, *Kennesaw, GA*.

4:15 PM 725 **Prediction of voluntary feed intake in finishing pigs using physicochemical properties of bulky feeds.**
S. P. Ndou*, A. G. Bakare, and M. Chimonyo, *Animal and Poultry Science, University of KwaZulu-Natal*, *Pietermaritzburg, South Africa*.

4:30 PM 726 **Effects of reducing the particle size of corn on energy, phosphorus, and amino acid by growing pigs.**
O. J. Rojas* and H. H. Stein, *University of Illinois at Urbana-Champaign*, *Urbana*.

4:45 PM 727 **Net energy value of field pea, Napus and Juncea canola meals, and wheat millrun fed to growing-finishing pigs.**
T. A. Woyengo*[1], S. Moehn[1], E. Beltranena[1,2], and R. T. Zijlstra[1], [1]*University of Alberta*, *Edmonton, AB, Canada*, [2]*Alberta Agriculture and Rural Development*, *Edmonton, AB, Canada*.

Animal Behavior and Well-Being IV
Chair: Peter Krawczel, University of Tennessee, Knoxville
120-121

8:30 AM 728 **A comparison of three animal welfare assessment programs on Canadian swine farms.**
A. N. Roberts*[1], P. Lawlis[2], R. Bergeron[3], and T. M. Widowski[1], [1]*University of Guelph*, *Guelph, Ontario, Canada*, [2]*Ontario Ministry of Agriculture and Food*, *Woodstock, Ontario, Canada*, [3]*University of Guelph Alfred*, *Alfred, Ontario, Canada*.

8:45 AM 729 **A role for serotonin in piglet preweaning mortality.**
R. L. Dennis*, K. A. McMunn, D. C. Lay, and H. W. Cheng, *Livestock Behavior Research Unit, USDA-ARS*, *W. Lafayette, IN*.

9:00 AM 730 **Effects of alternative farrowing systems on sow productivity and piglet growth, behavior, and mortality.**
L. A. Mack*[1], S. P. Rossini[1], S. J. Leventhal[2], and T. D. Parsons[1], [1]*University of Pennsylvania, School of Veterinary Medicine*, *Kennett Square*, [2]*University of Delaware*, *Newark*.

9:15 AM 731 **Establishing boarding level requirements while transporting finishing pigs from farm to packing plant.**
A. Sapkota*[1], A. K. Johnson[2], and J. McGlone[1], [1]*Laboratory of Animal Behavior, Physiology and Welfare, Texas Tech University*, *Lubbock*, [2]*Department of Animal Science, Iowa State University*, *Ames*.

9:30 AM 732 **Bedding level on trailers during warm weather and effects on transport losses of market weight pigs.**
R. K. Kephart*[1], A. K. Johnson[1], K. J. Stalder[1], T. W. Huiatt[1], A. Sapkota[2], and J. J. McGlone[2], [1]*Iowa State University*, *Ames*, [2]*Texas Tech University*, *Lubbock*.

9:45 AM 733 **Measuring the efficacy of flunixin meglumine for lame sows using nociceptive threshold tests.**
M. D. Pairis-Garcia*[1], S. T. Millman[4], L. A. Karriker[2], K. J. Stalder[1], J. F. Coetzee[3], and A. K. Johnson[1], [1]*Animal Science, Iowa State University*, *Ames*, [2]*Swine Medicine Education Center, Iowa State University*, *Ames*, [3]*Cyclone Custom Analyte Detection Services (CYCADS), Iowa State University*, *Ames*, [4]*Veterinary Diagnostic and Production Animal Medicine, Iowa State University*, *Ames*.

10:00 AM 734 **Barrow approachability to a human when selected for feed efficiency.**
J. Colpoys*[1], N. Gabler[1], A. Keating[1], S. Millman[2], J. Siegford[3], and A. Johnson[1], [1]*Animal Science, Iowa State University*, *Ames*, [2]*Veterinary Diagnostics and Production Animal Medicine, Iowa State University*, *Ames*, [3]*Animal Science, Michigan State University*, *East Lansing*.

10:15 AM 735 **Measuring the efficacy of meloxicam for lame sows using nociceptive threshold tests.**
M. D. Pairis-Garcia*[1], S. T. Millman[4], L. A. Karriker[2], K. J. Stalder[1], J. F. Coetzee[3], and A. K. Johnson[1], [1]*Animal Science, Iowa State University*, *Ames*, [2]*Swine Medicine Education Center, Iowa State University*, *Ames*, [3]*Cyclone Custom Analyte Detection Services (CYCADS), Iowa State University*, *Ames*, [4]*Veterinary Diagnostic and Production Animal Medicine, Iowa State University*, *Ames*.

Ruminant Nutrition: Beef: Dietary Effects and Additives
Chair: Shawn Archibeque, Colorado State University
105-106

8:30 AM 736 **Use of a pelleted corn residue complete feed for receiving feedlot cattle.**
S. J. Peterson*, B. L. Nuttelman, D. B. Burken, J. C. MacDonald, M. K. Luebbe, and G. E. Erickson, *University of Nebraska-Lincoln*, *Lincoln*.

8:45 AM 737 **Growth and carcass characteristics of feed efficiency sorted cattle fed corn or roughage-based diets and finished with corn or byproduct-based diets.**
J. R. Russell*[1], E. L. Lundy[1], N. O. Minton[2], W. J. Sexten[2], M. S. Kerley[2], and S. L. Hansen[1], [1]*Iowa State University*, *Ames*, [2]*University of Missouri*, *Columbia*.

9:00 AM 738 **Apparent total-tract digestibility of steers gradually adapted to a finishing diet or dosed with Lactipro and placed directly onto a finishing diets.**
K. A. Miller*[1], C. L. Van Bibber-Krueger[1], C. C. Aperce[2], C. A. Alvarado[1], and J. S. Drouillard[1], [1]*Kansas State University*, *Manhattan*, [2]*MS-Biotec*, *Wamego, KS*.

9:15 AM 739 **Effect of low-fat dried distillers grains inclusion in finishing diets on feedlot cattle total-tract digestibility and ruminal fermentation parameters.**
I. Ceconi*[1], M. Ruiz-Moreno[2], A. DiCostanzo[1], and G. I. Crawford[1], [1]*University of Minnesota*, *Saint Paul*, [2]*University of Florida*, *Marianna*.

9:30 AM 740 **Effect of slow-release urea inclusion in diets containing wet distillers grains on total-tract digestibility and ruminal fermentation parameters in feedlot cattle.**
I. Ceconi*[1], M. Ruiz-Moreno[2], A. DiCostanzo[1], and G. I. Crawford[1], [1]*University of Minnesota*, *Saint Paul*, [2]*University of Florida*, *Marianna*.

9:45 AM 741 **Effects of feeding treated corn stover and distillers grains to beef cattle on performance, carcass traits, digestibility, and ruminal metabolism.**
W. P. Chapple*[1], D. B. Faulkner[1], M. J. Cecava[2], P. H. Doane[2], A. H. Grusby[2], and T. L. Felix[1], [1]*University of Illinois*, *Urbana*, [2]*Archer Daniels Midland Company*, *Decatur, IL*.

10:00 AM 742 **Effects of ractopamine hydrochloride on performance and carcass characteristics in finishing heifers: 16-trial summary.**
N. A. Pyatt*, G. J. Vogel, J. W. Homm, R. L. Botts, and C. D. Bokenkroger, *Elanco Animal Health*, *Greenfield, IN*.

10:15 AM 743 **Effects of feeding functional oils and high levels of glycerol in feedlot bull diets.**
F. Zawadzki[2], I. N. Prado[2], and J. Torrent*[1], [1]*Oligo Basics USA LLC*, *Wilmington, DE*, [2]*Department of Animal Science*, *Univ. Estadual de Maringa, PR, Brazil*.

10:30 AM 744 **Effects of propolis and functional oils on performance, digestibility and blood parameters of crossbred bulls.**
M. V. Valero[2], I. N. Prado[2], and J. Torrent*[1], [1]*Oligo Basics USA LLC*, *Wilmington, DE*, [2]*Department of Animal Science*, *Univ. Estadual de Maringa, PR, Brazil*.

10:45 AM 745 **Effect of urea inclusion in diets containing distillers grains on total-tract digestibility and ruminal fermentation in feedlot cattle.**
I. Ceconi*[1], M. Ruiz-Moreno[2], A. DiCostanzo[1], and G. I. Crawford[1], [1]*University of Minnesota*, *Saint Paul*, [2]*University of Florida*, *Marianna*.

11:00 AM 746 **Seed orientation and row direction alter maize grain yield and composition.**
T. D. Kaufman*[1], P. Walker[1], L. Brown[2], L. Nuzback[2], and F. N. Owens[2], [1]*Illinois State University*, *Normal*, [2]*DuPont Pioneer*, *Johnston, IA*.

11:15 AM 747 **Influence of fines on the feeding value of steam-flaked corn in finishing diets for feedlot cattle.**
M. Montano*[1], V. Gonzalez[1], O. Manriquez[1], D. May[1], J. Melendrez[1], A. Plascencia[1], J. Salinas-Chavira[2], and R. Zinn[3], [1]*UABC*, *Mexicali, BC, Mexico*, [2]*UAT*, *Cuidad Victoria, Tamaulipas, MX*, [3]*University of California*, *Davis*.

11:30 AM 748 **Diet inclusion rate for leftover residual biomass in a beef heifer diet.**
J. A. Tucker*[1], H. W. Harpster[2], J. S. Moritz[3], M. E. Wilson[3], J. A. Carroll[4], and D. L. Smith[1], [1]*Eastern New Mexico University*, *Portales*, [2]*The Pennsylvania State University*, *University Park*, [3]*West Virginia University*, *Morgantown*, [4]*USDA ARS*, *Lubbock, TX*.

Ruminant Nutrition: Dairy: Feed Additives, Vitamins and Minerals
Chair: Allan Chestnut, Vigortone Ag Products
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8:30 AM 749 **Rumensin in dairy cows diets containing high and low levels of linoleic acid from corn distillers grains and high and low fractions of physically effective fiber.**
M. L. Smith*[1], K. F. Kalscheur[1], J. L. Anderson[1], D. P. Casper[1], and D. L. Prentice[2], [1]*South Dakota State University*, *Brookings*, [2]*Elanco Animal Health*, *Greenfield, IN*.

8:45 AM 750 **Effect of *Saccharomyces cerevisiae* CNCM I-1077 (Levucell SC) on rumen pH and milk production during heat stress.**
M. Fustini[1], A. Palmonari[1], H. Durand[2], A. Formigoni[1], and E. Grilli*[1], [1]*DIMEVET, University of Bologna*, *Ozzano Emilia, BO, Italy*, [2]*Lallemand Animal Nutrition*, *Blagnac, France*.

9:00 AM 751 **Production responses to increasing MP lysine supply in lactating Holstein cows.**
A. M. Schuler*[1], K. F. Kalscheur[1], F. Diaz-Royon[1], S. E. Boucher[2], and F. R. Valdez[2], [1]*South Dakota State University*, *Brookings*, [2]*Kemin Industries Inc.*, *Des Moines, IA*.

9:15 AM 752 **Feed intake, ruminal fill and pH of calcium oxide pretreated corn stover diets fed to lactating cows.**
D. E. Cook*[1], M. J. Cecava[2], P. H. Doane[2], M. B. Hall[3], and D. K. Combs[1], [1]*University of Wisconsin-Madison, Madison*, [2]*ADM Research*, *Decatur, IL*, [3]*USDA-ARS, US Dairy Forage Research Center*, *Madison, WI*.

9:30 AM 753 **Determining the optimal level of zinc amino acid complex in lactating dairy cows.**
A. Nayeri*[1], N. C. Upah[1], E. Sucu[1,2], M. V. Sanz-Fernandez[1], J. M. DeFrain[3], and L. H. Baumgard[1], [1]*Iowa State University*, *Ames*, [2]*Uludag University*, *Bursa, Turkey*, [3]*Zinpro Corporation*, *Eden Prairie, MN*.

9:45 AM 754 **Temporal effect of feeding potassium carbonate sesquihydrate on milk fat.**
G. Ma*[1], J. H. Harrison[1], E. Block[2], T. C. Jenkins[3], and T. D. Nennich[4], [1]*Washington State University*, *Puyallup*, [2]*Church and Dwight Animal Nutrition*, *Princeton, NJ*, [3]*Clemson University*, *Clemson, SC*, [4]*Purdue University*, *Lafayette, IN*.

10:00 AM 755 **Effects of supplemental amino acids and chromium propionate on plasma amino acids, energy digestibility, and productivity of peak lactation dairy cattle.**
C. F. Vargas*, K. Yuan, C. Titgemeyer, L. K. Mamedova, and B. J. Bradford, *Kansas State University*, *Manhattan*.

10:15 AM 756 **Effects of feed additives during a starch and fructose challenge.**
H. M. Golder*[1,2], A. R. Rabiee[1,2], P. Celi[2,3], and I. J. Lean[1,2], [1]*SBScibus*, *Camden, New South Wales, Australia*, [2]*University of Sydney, Faculty of Veterinary Science*, *Camden, New South Wales, Australia*, [3]*Melbourne School of Land and Environment, The University of Melbourne*, *Parkville, Victoria, Australia*.

10:30 AM 757 **Effects of addition of *Aspergillus oryzae* culture and 2-hydroxyl-4-methylthio butanoic acid on milk production and rumen fermentation in lactation dairy cows.**
H. Sun[1], Y. M. Wang*[2], K. J. Zhu[1], Y. B. Zhou[1], B. C. Zheng[1], C. Wang[3], Y. M. Wu[1], and J. X. Liu[1], [1]*Institute of Dairy Science, Zhejiang University*, *Hangzhou, China*, [2]*Novus International Trading (Shanghai) Co. Ltd*, *Shanghai, China*, [3]*Zhejiang A&F University*, *Hangzhou, China*.

10:45 AM 758 **Performance of Nili-Ravi buffaloes as influenced by feeding wheat straw fermented with rumen digesta treated without or with fibrolytic enzymes.**
M. Nisa*, A. Rehman, M. Sarwar, M. A. Shazad, and O. A. Khan, *Institute of Animal Nutrition and Feed Technology, University of Agriculture*, *Faisalabad, Punjab, Pakistan*.

Food Safety
Chair: Mika Alewynse, FDA
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8:30 AM 759 **Do dried distillers grains with solubles affect the occurrence of *Salmonella enterica* colonization in pigs?**
M. H. Rostagno*[1], B. T. Richert[2], L. V. C. Girao[2], G. M. Preis[2], L. J. Lara[2], A. F. Amaral[2], A. D. B. Melo[2], and A. Jones[2], [1]*USDA-ARS*, *West Lafayette, IN*, [2]*Purdue University*, *West Lafayette, IN*.

8:45 AM 760 **Characterization of phage-resistant *Escherichia coli* O157:H7.**
Y. Hong*, J. Zhang, Y. Pan, and P. Ebner, *Purdue University*, *West Lafayette, IN*.

9:00 AM 761 **The effect of phage on the growth of *E. coli* O157:H7 and release of shiga toxins.**
J. Zhang*, K. Walton, Y. Pan, Y. Hong, S. Hayes, and P. Ebner, *Purdue University*, *West Lafayette, IN*.

9:15 AM 762 **Arginine and glutamine alleviate the impairment induced by DON stress and enhance immunity in growing pigs.**
W. Wang*[1,2], L. Wu[2], T. Zhou[3], L. Yang[1], H. Zhang[4], J. Yin[2], T. Li[2], K. Yao[2], Q. Wang[3], R. Huang[2], and Y. Yin[2], [1]*College of Animal Science, South China Agricultural University*, *Guangzhou, China*, [2]*Research Center of Healthy Breeding of Livestock and Poultry, Hunan Engineering and Research Center of Animal and Poultry Science, and Key Laboratory of Agro-ecological Processes in Subtropical Region, Institute of Subtropical Agriculture, Chinese Academy*, *Changsha, Hunan, China*, [3]*Guelph Food Research Centre, Agriculture and Agri-Food Canada*, *Guelph, ON, Canada*, [4]*China National Key Laboratory of Animal Nutrition, Beijing Animal and Veterinary Science Institute, Chinese Agricultural Academy*, *Beijing, China*.

Forages and Pastures: General Topics
Chair: Matt Poore, North Carolina State University
201

8:30 AM 765 **Evaluation of nonprotein nitrogen-based protein supplements to enhance low-quality forage utilization by cattle.**
C. C. Stefan*, J. E. Sawyer, and T. A. Wickersham, *Texas A&M University*, *College Station*.

8:45 AM 766 **The effect of Mediterranean saltbush (*Atriplex halimus*) treated with exogenous enzymes on feed intake, nutrient digestibility and ruminal fermentation in sheep.**
H. N. Alsersy[1], A. Z. M. Salem*[1,2], H. Gado[3], B. E. Borhami[1,3], M. M. El Adawy[1], and M. H. Yacuot[4], [1]*Faculty of Agriculture, Alexandria University*, *Egypt*, [2]*Facultad de Medicina Veterinaria y Zootecnia, Universidad Autonoma de Estado de Mexico*, *Mexico*, [3]*Animal Production Department, Faculty of Agriculture, Ain Shams University*, *Qalubia, Egypt*, [4]*Animal Production Institute, Ministry of Agriculture*, *Dokki, Cairo, Egypt*.

9:00 AM 767 **Volatile profile of Hyblean cultivated and native pasture detected by gas chromatography/mass spectrometry/olfactometry.**
T. Rapisarda*[1], C. Pasta[1], G. Licitra[1,2], and S. Carpino[1], [1]*CoRFiLaC*, *Ragusa, Italy*, [2]*DISPA, Catania University*, *Catania, Italy*.

9:15 AM 768 **Effects of cutting height, time of day, and nitrogen fertilization on nutrient content of Bermudagrass (*Cynodon dactylon*).**
B. McIntosh*, D. McIntosh, J. Beeler, and G. Bates, *University of Tennessee*, *Knoxville*.

9:30 AM 769 **Effect of bale feeder, forage, and monensin on hay waste, disappearance, and cow performance.**
W. A. Moore* and W. J. Sexten, *University of Missouri*, *Columbia*.

9:45 AM **Break**

10:00 AM 770 **Liveweight, rectal temperature and plasma prolactin responses in lambs grazing tall fescue with novel endophytes.**
M. Friend*, I. Allen, J. Broster, and S. Robertson, *Graham Centre for Agricultural Innovation (NSW Department of Primary Industries and Charles Sturt University)*, *Wagga Wagga, NSW, Australia*.

10:15 AM 771 **Intake, digestibility, and passage rate of three warm-season grass hays consumed by beef steers.**
K. E. Turner*[1], S. W. Coleman[1], and C. C. Chase[2], [1]*USDA ARS*, *El Reno, OK*, [2]*USDA ARS*, *Clay Center, NE*.

10:30 AM 772 **Does addition of cofactors to exogenous fibrolytic enzymes increase digestion of bermudagrass by the enzymes?**
J. J. Romero*[1], Z. X. Ma[1], F. H. Kamada[1], U. Carneiro[1], C. F. Gonzalez[2], C. R. Staples[1], and A. T. Adesogan[1], [1]*Department of Animal Sciences, IFAS, University of Florida*, *Gainesville*, [2]*Department of Microbiology and Cell Science, IFAS, University of Florida*, *Gainesville*.

10:45 AM 773 **Nutrient digestibility of annual summer forages using different indigestible markers and fecal collection schedules in growing beef heifers.**
C. A. Njombwa, F. M. Ciriaco*, D. D. Henry, V. R. G. Mercadante, M. J. Ruiz-Moreno, G. C. Lamb, and N. DiLorenzo, *North Florida Research and Education Center, University of Florida*, *Marianna*.

11:00 AM 774 **The effects of rumen digestion and in vitro exposure of small intestinal fluid on viability and germination of common Indiana weed seeds.**
L. Unruh Snyder*[1], E. Kiley[1], K. Burger[2], N. Baird[2], R. Lemenager[2], S. Lake[3], and J. Santini[2], [1]*North Carolina State University*, *Raleigh*, [2]*Purdue University*, *West Lafayette, IN*, [3]*University of Wyoming*, *Laramie*.

Nonruminant Nutrition: Feed Ingredients II
Chair: Rajesh Jha, University of Hawaii
Wabash Ballroom 3

8:30 AM 775 **Supplemental fumaric acid restored growth performance of weanling pigs fed 10% full-fat diatom microalgae.**
B. Y. Jung, K. K. Lum*, K. R. Roneker, and X. G. Lei, *Cornell University*, *Ithaca, NY*.

8:45 AM 776 **Weanling pigs fed 10% defatted green microalgae maintained normal growth performance and plasma biochemistry.**
R. D. Ekmay*, K. R. Roneker, K. K. Lum, and X. G. Lei, *Cornell University*, *Ithaca, NY*.

9:00 AM 777 **Defatted microalgae diatom biomass may replace a portion of soybean meal and corn in broiler diets.**
R. E. Austic, A. Mustafa, B. Y. Jung, and X. G. Lei*, *Cornell University*, *Ithaca, NY*.

9:15 AM 778 **Effect of dietary fat sources on tissue α-tocopherol concentration in pig.**
D. P. Preveraud*[1], E. Devillard[1], and P. Borel[2], [1]*Adisseo France SAS-CERN (Center of Expertise and Research in Nutrition)*, *Commentry, France*, [2]*UMR NORT (Nutrition Obésité et Risque Thrombotique) 1062 INSERM/1260 INRA/Aix-Marseille Université*, *France*.

9:30 AM 779 **Ingredients of plant and animal origin in diets for nursery pigs.**
K. M. Jones*, J. D. Hancock, and K. M. Sotak, *Kansas State University*, *Manhattan*.

9:45 AM 780 **Growth performance of weanling pigs fed diets containing copra meal, palm kernel expellers, or palm kernel meal.**
N. W. Jaworski*, J. C. Gonzalez-Vega, and H. H. Stein, *University of Illinois at Urbana-Champaign*, *Urbana*.

10:00 AM 781 **Nutritive value of low phytate peas and barley based diets fed to growing pigs.**
R. K. Kahindi*[1], P. A. Thacker[2], and C. M. Nyachoti[1], [1]*University of Manitoba*, *Winnipeg, MB, Canada*, [2]*University of Saskatchewan*, *Saskatoon, SK, Canada*.

10:15 AM 782 **Effects of acidified protein feed on growth performance, digestive characteristics, and gut bacterial communities in growing and finishing pigs.**
J. Chen*, Y. Xiao, X. Li, Q. Hong, and A. Chen, *College of Animal Sciences, Zhejiang University*, *Hangzhou, Zhejiang, China*.

Production, Management and the Environment Symposium: Confinement Animal Agriculture Sustainability
Chair: Judith Capper, Livestock Sustainability Consulting, Bozeman
122-123

8:30 AM 783 **Navigating sustainability.**
J. L. Capper*[1] and R. R. White[2], [1]*Livestock Sustainability Consulting*, *Bozeman, MT*, [2]*Washington State University*, *Pullman*.

9:10 AM 784 **The US Swine Industries Carbon Footprint.**
R. Ulrich*, G. Thoma, J. Popp, and G. Rodriguez, *University of Arkansas*, *Fayetteville*.

9:50 AM **Break**

10:10 AM 785 **Nutrient management and environmental and societal issues affecting sustainability of feedlot finishing systems.**
N. A. Cole*[1], R. W. Todd[1], H. Waldrip[1], K. Hales[2], and J. C. MacDonald[3], [1]*USDA-ARS-CPRL*, *Bushland, TX*, [2]*USDA-ARS-MARC*, *Clay Center, NE*, [3]*Univ. of Nebraska*, *Lincoln, NE*.

10:50 AM 786 **Nutrient management, environmental issues and societal issues affecting confinement dairy sustainability.**
J. H. Harrison*, *Washington State University*, *Puyallup*.

Production, Management and the Environment: Surveys and Models II
Chair: Shane Gadberry, University of Arkansas
103

8:30 AM 787 **Mortality rate of dairy calves in a calf rearing farm (CRF).**
D. Aponte[1], J. Rossi[3], J. Raciti[4], and P. Celi*[1,2], [1]*Faculty of Veterinary Science, The University of Sydney*, *Narellan, NSW, Australia*, [2]*Melbourne School of Land and Environment, The University of Melbourne*, *Parkville, VIC, Australia*, [3]*Departamento de Producción Animal, Facultad de Agronomía, Universidad de Buenos Aires*, *Ciudad Autónoma de Buenos Aires, Argentina*, [4]*Manfrey Cooperativa de Tamberos de Comercio e Industria*, *Freyre, Córdoba, Argentina*.

8:45 AM 788 **A mechanistic model for estimating water excretion in dairy cows.**
J. A. D. R. N. Appuhamy*[1], E. Kebreab[1], and J. France[2], [1]*University of California*, *Davis*, [2]*University of Guelph*, *Guelph, ON, Canada*.

9:00 AM 789 **Predictors of the heat stress response in lactating Holstein cows.**
S. K. Stoakes*[1], M. Abuajamieh[1], M. V. Sanz-Fernandez[1], J. S. Johnson[1], D. B. Snider[1], R. P. Rhoads[2], and L. H. Baumgard[1], [1]*Iowa State University*, *Ames*, [2]*Virginia Polytechnic Institute and State University*, *Blacksburg*.

9:15 AM **Break**

9:30 AM 790 **Visualization of lifetime profitability curves in Quebec dairy cattle.**
H. Delgado*[1], R. Cue[1], A. Sewalem[4], R. Lacroix[2,1], D. Lefevre[2], E. Bouchard[3], J. Dubuc[3], and K. Wade[1], [1]*Dairy Information Systems Group, McGill University*, *Montreal, QC, Canada*, [2]*Valacta*, *St. Anne de Bellevue, QC, Canada*, [3]*Université de Montreal*, *St. Hyacinthe, QC, Canada*, [4]*Agriculture and Agri-Food Canada*, *Guelph, ON, Canada*.

9:45 AM 791 **Stochastic economic evaluation of dairy farms' reproductive performance.**
A. S. Kalantari* and V. E. Cabrera, *University of Wisconsin-Madison*, *Madison*.

10:00 AM 792 **A 50-year comparison of the environmental impact and resource use of the US swine herd: 1959 vs. 2009.**
R. A. Cady*[1], G. Boyd[2,3], L. Wittig[3], G. Bryan[4], P. J. Holden[5], A. L. Sutton[6], and D. Anderson[7], [1]*Elanco*, *Greenfield, IN*, [2]*Prasino Group*, *Topsail Beach, NC*, [3]*Camco*, *Broomfield, CO*, [4]*Camco*, *London, UK*, [5]*Iowa State University*, *Ames*, [6]*Purdue University*, *West Lafayette, IN*, [7]*Anderson Associates*, *Loveland, CO*.

Ruminant Nutrition: Modification of Ruminal Fermentation
Chair: Richard Kohn, University of Maryland
Wabash Ballroom 1

8:30 AM 793 **Effects of of 2-hydroxy 4-(methylthio) butanoic acid iso-propyl ester (HMBi) and dl-Met on in vitro fermentation characters of high-yielding dairy cow diets.**
B. B. Nobari*[1], A. Taghizadeh[1], M. Khorvash[2], S. Alijani[1], J. Shodja[1], F. Parnian[1], and K. Dizaj[1], [1]*Department of Animal Sciences, Faculty of Agriculture, University of Tabriz*, *Tabriz, Eastern Azarbaijan, Iran*, [2]*Department of Animal Science, College of Agriculture*, *Isfahan, Isfahan, Iran*.

8:45 AM 794 **Study of the effect of flavonoid substances on methanogenesis on in vitro fermentation of rumen liquor coming from different experimental diets in beef cattle.**
A. R. Seradj*[1], J. Balcells[1], H. J. Morazan[1], D. V. Mata[1], J. Crespo[2], and M. Fondevila[3], [1]*Dept. Animal Production, University of Lleida*, *Lleida, Spain*, [2]*Interquim, S.A. (Ferrer HealthTech)*, *Barcelona, Spain*, [3]*Dept. Animal production and nutrition, University of Zaragoza*, *Zaragoza, Spain*.

9:00 AM 795 **Gastrointestinal bacterial and methanogenic archaea diversity in response to feeding condensed tannins-containing pine bark diet to goats using 16S rDNA amplicon pyrosequencing.**
B. R. Min*[1], S. Solaiman[1], R. Shange[1], and J. S. Eun[2], [1]*Tuskegee University*, *Tuskegee, AL*, [2]*Utah State University*, *Logan*.

9:15 AM **Break**

9:30 AM 797 **Effect of polymer-coated urea and sodium bentonite on digestibility, nitrogen retention and rumen fermentation in sheep fed high levels of corn stalk.**
A. R. Chegeni[1,2], Y. L. Li*[1], C. G. Jiang[1], and Q. Y. Diao[1], [1]*Feed Research Institute, Chinese Academy of Agricultural Sciences*, *Beijing, China*, [2]*Lorestan Agricultural and Natural Resources Research Center*, *Khorramabad, Lorestan, Iran*.

9:45 AM 798 **Essential oils modify rumen bacterial compositions in vitro as revealed by microarray analysis.**
A. K. Patra[1,2] and Z. Yu*[1], [1]*The Ohio State University*, *Columbus*, [2]*West Bengal University of Animal and Fishery Sciences*, *Kolkata, West Bengal, India*.

10:00 AM 799 **Chemical composition and digestion kinetic of urea-molasses treated wheat straw ensiled with exogenous enzyme in ruminally cannulated buffalo bulls.**
M. Nisa, M. Sarwar, O.A. Khan*, A. Rehman, and M. A. Shazad, *Institute of Animal Nutrition and Feed Technology, University of Agriculture Faisalabad*, *Faisalabad, Punjab, Pakistan*.

10:15 AM 800 **Effects of nitrate, saponins, sulfate, and their combinations on rumen methanogenesis, fermentation and microbial communities in vitro.**
A. K. Patra*[1,2] and Z. Yu[1], [1]*The Ohio State University*, *Columbus*, [2]*West Bengal University of Animal and Fishery Sciences*, *Kolkata, West Bengal, India*.

Ruminant Nutrition: Diet Modifications
Chair: Robbie Pritchard, South Dakota State University
Wabash Ballroom 2

8:30 AM 801 **Effects of starch infusion on body condition, lactation performance, and fecal content in lactating cows.**
Y. Zou*, Y. Guo, Z. Yang, Y. Du, S. Li, and Z. Cao, *State Key Laboratory of Animal Nutrition, College of Animal Science and Technology, China Agricultural University*, *Beijing, China*.

8:45 AM 802 **Benefits of using milk fat to true protein ratio to evaluate on farm transition dairy cow lipid metabolism and effect of transition cow success on milk production.**
Z. Sawall* and N. B. Litherland, *University of Minnesota*, *St. Paul*.

9:00 AM 803 **Effects of three levels of energy intake during the close-up period on blood metabolites of dairy cows.**
A. Pineda*, F. C. Cardoso, and J. K. Drackley, *University of Illinois*, *Urbana*.

9:15 AM 804 **Grain processing methods for Nellore bulls fed high grain finishing diets.**
C. Sitta, M. A. P. Meschiatti, P. R. B. Campanili, L. T. C. Mello, W. F. Angolini, J. de Souza, F. Batistel, V. N. Gouvêa, M. Lovaglio, A. H. F. Melo, J. R. R. Dórea, D. F. A. Costa, and F. A. P. Santos*, *University of São Paulo*, *Piracicaba, São Paulo, Brazil*.

9:30 AM 805 **Effects of wet distillers grains and condensed distillers solubles on growth performance and carcass characteristics of finishing steers.**
H. D. Hughes*, M. S. Brown, R. Butler, K. J. Kraich, J. Simroth-Rodriguez, and J. O. Wallace, *West Texas A&M University*, *Canyon*.

9:45 AM 806 **Individual limitation of total daily concentrate consumption reduces between-day variation of concentrate consumption and carcass weight in Holstein bulls fed high-concentrate rations during the finishing period.**
M. Verdu*[1], A. Bach[2,1], and M. Devant[1], [1]*Department of Ruminant Production-IRTA, Torre Marimon*, *Caldes de Montbui, Barcelona, Spain*, [2]*ICREA*, *Barcelona, Spain*.

10:00 AM 807 **Fattening Holstein heifers feeding high-moisture corn (whole or ground) separately from concentrate and straw ad libitum: Effects on behavior, rumen fermentation, digestibility, and nitrogen balance.**
M. Devant*[1], B. Quintana[1], and A. Bach[2,1], [1]*Department of Ruminant Production-IRTA, Torre Marimon*, *Caldes de Montbui, Barcelona, Spain*, [2]*ICREA*, *Barcelona, Spain*.

10:15 AM 808 **Effect of increased dietary grain inclusion on growth performance of prepubertal dairy heifers.**
T. S. Dennis*, J. E. Tower, H. Schmitz, A. Mosiman, and T. D. Nennich, *Purdue University*, *West Lafayette, IN*.

10:30 AM 809 **Effects of varying periparturient dietary starch amount and supplementation with *Propionibacterium* on multiparous dairy cow performance, metabolism, and health.**
Z. Sawall*[1], W. Weich[1], D. Lobao da Silva[1], T. Parrott[2], and N. B. Litherland[1], [1]*University of Minnesota*, *St. Paul*, [2]*Dupont Industrial Biosciences*, *Waukesha, WI*.

10:45 AM 810 **Effect of duodenal leucine infusion on pancreatic exocrine function of dairy cow.**
K. Liu, Y. Liu, and J. Yao*, *College of Animal Science and Technology, Northwest A&F University*, *Yangling, Shaanxi, China*.

11:00 AM 811 **Effects of starch infusion on plasma metabolic and gene expression in lactating cows.**
Y. Zou*, Z. Yang, Y. Guo, S. Li, and Z. Cao, *State Key Laboratory of Animal Nutrition, College of Animal Science and Technology, China Agricultural University*, *Beijing, China*.