Scientific Program
Table of Contents

Sunday, July 12
SYMPOSIA AND ORAL SESSIONS
Triennial Reproduction Symposium: Challenges and Opportunities Facing Livestock Reproduction in the 21st Century: Session 2: Genetic influences on animal reproduction
Late Breaking/Original Research

Monday, July 13
POSTER PRESENTATIONS
Animal Behavior and Well-Being
Animal Health: Stress, Respiratory Disease, Small Ruminants
Bioethics
Breeding and Genetics: Beef Breeding, Poultry Breeding, and Genetics of Disease
Dairy Foods: Dairy Foods/Cheese
Forages and Pastures: Forages and Pastures: Forage Composition, Analysis and Utilization
Graduate Student Paper Competition: CSAS Graduate Student Competition 1
Graduate Student Paper Competition: National ADSA Production MS Poster
Graduate Student Paper Competition: National ADSA Production PhD Poster
Lactation Biology
Meat Science and Muscle Biology: Meat Science Poster Session 1
Nonruminant Nutrition: Feed Ingredients
Physiology and Endocrinology: Endocrinology and Metabolism
Production, Management and the Environment: Beef and Dairy
Ruminant Nutrition: By-product Feeds
Ruminant Nutrition: Dairy
Ruminant Nutrition: Forages
Teaching/Undergraduate and Graduate Education

SYMPOSIA AND ORAL SESSIONS
SYMPOSIUM: Alpharma Beef Cattle Nutrition Symposium
Animal Health: Mastitis, Lameness, and Stress
Bioethics: A Scientist's Guide to Approaching Bioethics
Breeding and Genetics: Dairy Cattle Breeding I
Breeding and Genetics: Molecular Genetics I
Graduate Student Paper Competition: ADSA-ASAS Northeast Section
Graduate Student Paper Competition: CSAS Graduate Student Oral Competition 1
Graduate Student Paper Competition: National ADSA Dairy Foods
Graduate Student Paper Competition: National ADSA Production MS Oral
Graduate Student Paper Competition: National ADSA Production PhD Oral
Nonruminant Nutrition: Feed Ingredients
Production, Management and the Environment: Environment
Ruminant Nutrition: Dairy I
Ruminant Nutrition: Growing Cattle and Beef Breeding Herd
SYMPOSIUM: Teaching/Undergraduate and Graduate Education: Enhancing the Writing Experience
SYMPOSIUM: ASAS Cell Biology Symposium
ADSA-SAD (Student Affiliate Division) Undergraduate Competition: Dairy Foods
Graduate Student Paper Competition: ADSA Southern Section
SYMPOSIUM: Dairy Foods: Milk Protein Fractionation Symposium
SYMPOSIUM: ADSA Southern Section Symposium: Dairy Replacement Health Challenges in the Southeastern U.S.
ADSA-SAD (Student Affiliate Division) Undergraduate Competition: Dairy Production
ADSA-SAD (Student Affiliate Division) Undergraduate Competition: Original Research
Animal Health: Immunity and Swine Health
SYMPOSIUM: Bioethics: Working through Bioethical Issues in Practice
SYMPOSIUM: Breeding and Genetics: Whole Genome Selection - The New Frontier?
Food Safety
Graduate Student Paper Competition: CSAS Oral Competition 2
SYMPOSIUM: Meat Science and Muscle Biology: Balancing Live Cattle Performance and Beef Quality
SYMPOSIUM: Nonruminant Nutrition: Improving the Nutritional Value of Alternative Feed Ingredients
Physiology and Endocrinology: Dairy Cattle Reproduction
Ruminant Nutrition: Feedlot, Byproduct Feeds
SYMPOSIUM: Ruminant Nutrition: Forage Digestibility Estimates; Obtaining and Applying Meaningful Values
Swine Species

OTHER EVENTS
JDS-JAS Reviewer Workshop

Tuesday, July 14
POSTER PRESENTATIONS
Animal Health: Mastitis and Associated Microbiology
Breeding and Genetics: Dairy Cattle Breeding II and Rabbit Breeding
Food Safety
Forages and Pastures: Pastures and Grazing
Graduate Student Paper Competition: CSAS Graduate Student Competition 2
Growth and Development
Horse Species
Meat Science and Muscle Biology 2
Nonruminant Nutrition: Feed Additives I
Nonruminant Nutrition: Nutrients
Physiology and Endocrinology: Estrous Synchronization
Production, Management and the Environment: Dairy
Ruminant Nutrition: Additives
Ruminant Nutrition: Efficiency
Ruminant Nutrition: Feedlot
Ruminant Nutrition: Grass Cattle
Small Ruminant: Lactation, Physiology, Reproduction, Health

SYMPOSIA AND ORAL SESSIONS
ADSA Foundation Scholar Lecture - Production
SYMPOSIUM: Animal Health: Emerging Foreign Animal and Zoonotic Diseases
Breeding and Genetics: Genomic Evaluation
Companion Animals
SYMPOSIUM: CSAS Symposium: Nutrition - Behavior Interaction in Ruminants
SYMPOSIUM: Forages and Pastures: Forage Management Strategies of Offset High Input Costs
Growth and Development: Physiology of Growth In vivo and In vitro
Lactation Biology 1
SYMPOSIUM: Meat Science and Muscle Biology: Effects of By-product Feeding on Meat Quality Traits
Nonruminant Nutrition: Amino Acids and Energy
Production, Management and the Environment: Dairy
Ruminant Nutrition: Fat Supplementation
Ruminant Nutrition 1
SYMPOSIUM: Small Ruminant: Organic and Grass-Fed Small Ruminant Challenges and Opportunities
Dairy Foods: Danisco International Dairy Science Award Lecture
Animal Behavior and Well-Being 1
SYMPOSIUM: Animal Health: Animal Well Being: Tackling the Issue of Cow Longevity
SYMPOSIUM: ARPAS Symposium: Feed Management: ARPAS, NRCS, and the National Project
SYMPOSIUM: Beef Species: Population Data Analyses to Evaluate Trends in Animal Production Systems
Breeding and Genetics: Dairy Breeding III - Parameter Estimation
Breeding and Genetics: Swine Breeding
Dairy Foods: Dairy Foods 1
Dairy Foods: Dairy Foods/Cheese
SYMPOSIUM: Growth and Development: Fetal Programming in Animal Agriculture
Meat Science and Muscle Biology: Pork and Beef Quality
Physiology and Endocrinology: Estrous Synchronization of Beef Cattle
Ruminant Nutrition: Feed Additives
SYMPOSIUM: Ruminant Nutrition: Using Molecular Techniques to Advance Research in Ruminant Nutrition
Small Ruminant: Production, Management, Lactation
Teaching/Undergraduate and Graduate Education: Teaching Issues

Wednesday, July 15
POSTER PRESENTATIONS
Animal Health
Beef Species: Growth, Concentrate Level, Meat Quality, and Production Traits
Breeding and Genetics: Genomic Evaluation, Molecular Genetics, Statistical Methods, Sheep Breeding, and Swine Breeding
Dairy Foods: Dairy Products/Chemistry/Enzyme
Extension Education
Forages and Pastures: Forages and Pastures: Silages
International Animal Agriculture
Nonruminant Nutrition: Feed Additives II
Physiology and Endocrinology: Livestock and Poultry
Production, Management and the Environment: General
Ruminant Nutrition: Dairy Calves
Ruminant Nutrition: Dairy Heifers
Ruminant Nutrition: Fat Supplementation
Ruminant Nutrition: Metabolism
Ruminant Nutrition: Vitamins and Minerals
Ruminant Nutrition: Ruminant Nutrition; Experimental Methods
Small Ruminant: Growth, Carcass Traits, Meat Quality, Nutrition
Swine Species

SYMPOSIA AND ORAL SESSIONS
Animal Behavior and Well-Being: Behavior-Nutrition Interaction
SYMPOSIUM: ASAS/ADSA Graduate Student Symposium: Decisions, Decisions, Decisions. How to make informed decisions on your future career opportunities to developing a successful research program.
Breeding and Genetics: Beef Cattle & Sheep Breeding
Dairy Foods: Dairy Foods/Microbiology
Extension Education
Growth and Development: Fetal Development
SYMPOSIUM: International Animal Agriculture: ASAS-EAAP Global Issues
Lactation Biology 2
Nonruminant Nutrition: Minerals and Vitamins
SYMPOSIUM: Physiology and Endocrinology: Impact of Gonadal Steroids on Brain Development and Function
Production, Management and the Environment: General
Ruminant Nutrition: Dairy Calves
Ruminant Nutrition: Rumen Microbiology
Ruminant Nutrition: Ruminant Nutrition 2
Small Ruminant: Nutrition

OTHER EVENTS

Mixed Models

SYMPOSIA AND ORAL SESSIONS

SYMPOSIUM: ADSA Production Division Symposium: Driving Forces in the Dairy Industry That Will Change Dairy Farm Management
Animal Health: Calf Health, Respiratory Disease, etc.
Beef Species: Health, Efficiency and Beef Quality
Breeding and Genetics: Workshop
Breeding and Genetics: Molecular Genetics II
SYMPOSIUM: Contemporary and Emerging Issues Joint with Extension Education: Science-Based Approaches to Address Consumer Concerns with the Processing and Marketing of Animal Products
SYMPOSIUM: CSAS Symposium: Functional Foods, Probiotics and Animal Health
SYMPOSIUM: Dairy Foods: Challenges and Opportunities of Microencapsulation Technology in Application to Dairy Foods
SYMPOSIUM: Dairy Foods: Milk Protein and Enzymes Symposium
SYMPOSIUM: Extension Education: Models for Dairy Production Decision Making
Forages and Pastures: Harvested Forages, Ensiling and Forage Utilization
Nonruminant Nutrition: Feed Additives
Physiology and Endocrinology: Livestock Physiology
Physiology and Endocrinology: Metabolic Physiology
Ruminant Nutrition: Dairy 2
Ruminant Nutrition: Minerals

Thursday, July 16

SYMPOSIA AND ORAL SESSIONS

Animal Behavior and Well-Being 2
Breeding and Genetics: Dairy Breeding IV - Crossbreeding
Dairy Foods: Dairy Foods Processing/Enzymes
Forages and Pastures: Grazing and Pasture Utilization
Horse Species: Horse Species
Nonruminant Nutrition: Fats and Oils
Production, Management and the Environment: Beef
Ruminant Nutrition: Dairy 3
Ruminant Nutrition: Research Methods
SYMPOSIUM: Swine Species: Environmental Concerns Based on Swine Production
OTHER EVENTS

   Mixed Models
   Writers' Workshop
## ADSA Dairy Foods Division
### Schedule of Events

**Sunday, July 12**
5:00 pm – 6:00 pm  
ADSA Dairy Foods Division Council Meeting, Convention Center, Room 523a

**Monday, July 13**
7:30 am – 9:30 am  
Posters: Dairy Foods: Dairy Foods/Cheese, Convention Center, Room 220cde
9:30 am – 12:15 pm  
Graduate Student Paper Competition: National ADSA Dairy Foods, Convention Center, Room 510ac
1:30 pm – 5:00 pm  
SYMPOSIUM: Dairy Foods: Milk Protein Fractionation Symposium, Convention Center, Room 513cd

**Tuesday, July 14**
7:30 am – 9:30 am  
Posters: Dairy Foods: Dairy Foods Processing/Cheese/Dairy Micro, Convention Center, Room 220cde
10:30 am – 11:30 am  
Dairy Foods: Danisco International Dairy Science Award Lecture, Convention Center, Room 513ef
11:30 am – 12:30 pm  
ADSA Dairy Foods Division Business Meeting, Convention Center, Room 513ef
12:30 pm – 2:00 pm  
ADSA DF Division Milk Proteins & Enzyme Committee, Convention Center, Room 523a
12:30 pm – 2:00 pm  
ADSA DF Division Program Planning Lunch, Convention Center, Room 523b
2:00 pm – 4:45 pm  
Dairy Foods: Dairy Foods 1, Convention Center, Room 513cd
2:00 pm – 4:45 pm  
Dairy Foods: Dairy Foods/Cheese, Convention Center, Room 513ef

**Wednesday, July 15**
7:30 am – 9:30 am  
Posters: Dairy Foods: Dairy Products/Chemistry/Enzyme, Convention Center, Room 220cde
10:30 am – 12:30 pm  
Dairy Foods: Dairy Foods/Microbiology, Convention Center, Room 513cd
2:00 pm – 4:30 pm  
SYMPOSIUM: Dairy Foods: Challenges and Opportunities of Microencapsulation Technology in Application to Dairy Foods, Convention Center, Room 513ef
2:00 pm – 4:30 pm  
SYMPOSIUM: Dairy Foods: Milk Protein and Enzymes Symposium, Convention Center, Room 513cd
Thursday, July 16
8:30 am – 10:45 am  Dairy Foods: Dairy Foods Processing/Enzymes, Convention Center, Room 513cd
# Sunday, July 12

**SYMPOSIA AND ORAL SESSIONS**

**Triennial Reproduction Symposium**  
**Challenges and Opportunities Facing Livestock Reproduction in the 21st Century**

**Session 1: Global perspectives on animal health and livestock reproduction**  
**Chair: Rob Knox, University of Illinois**  
511cf

<table>
<thead>
<tr>
<th>Time</th>
<th>Session Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 AM</td>
<td>Welcome and Introductions</td>
</tr>
<tr>
<td>8:05 AM</td>
<td>1 A global perspective on the evolution of animal agriculture. R. D. Green*, Pfizer Animal Genetics, Sutton, NE.</td>
</tr>
<tr>
<td>8:50 AM</td>
<td>2 Impact of animal health on endocrinology and reproduction in dairy cows. D. Wolfenson*, Y. Lavon1, R. Meidan1, Z. Roth1, and G. Leitner1, The Hebrew University, Rehovot, Israel, 2The Veterinary Institute, Bet-Dagan, Israel.</td>
</tr>
<tr>
<td>9:35 AM</td>
<td>3 Challenges in matching the physiology and productivity of the modern commercial sow. G. R. Foxcroft*, University of Alberta, Edmonton, Alberta, Canada.</td>
</tr>
<tr>
<td>10:20 AM</td>
<td>Break</td>
</tr>
<tr>
<td>10:50 AM</td>
<td>4 The impact of amino acid nutrition on pregnancy outcome in pigs: mechanisms and implications for swine production. G. Wu*, F. W. Bazer1, G. A. Johnson1, S. W. Kim2, and T. E. Spencer1, 1Texas A&amp;M University, College Station, 2North Carolina State University, Raleigh.</td>
</tr>
<tr>
<td>11:35 AM</td>
<td>Casida Award Program</td>
</tr>
</tbody>
</table>

**Session 2: Genetic influences on animal reproduction**  
**Chair: Rob Knox, University of Illinois**  
511cf

<table>
<thead>
<tr>
<th>Time</th>
<th>Session Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:15 PM</td>
<td>6 Application of molecular and genetic tools for identification of reproductive traits to create and establish commercial lines of swine. T. Rathje*, Danbred North America, Columbus, NE.</td>
</tr>
<tr>
<td>3:00 PM</td>
<td>Break</td>
</tr>
</tbody>
</table>
| 3:30 PM| 7 Epigenetics: A mechanism of adaptation to perinatal events.  
R. Lane*, R. McKnight, L. Joss-Moore, Q. Fu, and X. Ke, Division of Neonatology, University of Utah Department of Pediatrics, Salt Lake City. |
| 4:15 PM| 8 Impact of dam nutrition on subsequent growth and reproduction in beef heifers.  
R. N. Funston*, University of Nebraska, West Central Research and Extension Center, North Platte. |

**OTHER EVENTS**

**Late Breaking/Original Research**  
510ac
3:00 PM–5:00 PM
Monday, July 13

POSTER PRESENTATIONS

Animal Behavior and Well-Being

M1 Validation of footprint analysis to describe sow gait. J. Grégoire, R. Bergeron, S. D’Allaire, M.-C. Meunier-Salatin, and N. Devillers, AAFCA, Dairy and Swine R&D Centre, Sherbrooke, QC, Canada, University Laval, Ste Foy, QC, Canada, University of Guelph, Alfred, ON, Canada, University of Montreal, Faculty of Veterinary Medicine, St Hyacinthe, QC, Canada, INRA–SENAH, St-Gilles, France.

M2 Changes of serum HSP70 during weaning and effects of NCG and arginine on serum HSP70 in early-weaned piglets. X. Wu, X. Zhou, Y. Gao, Y. Yin, and R. Huang, Laboratory of Animal Nutritional Physiology and Metabolic Process, Institute of Subtropical Agriculture, the Chinese Academy of Sciences, Changsha, China.

M3 Effects of feed-borne Fusarium mycotoxins on histological changes in lymphoid organs of turkeys. C. K. Girish, T. K. Smith, P. Anil Kumar, and G. N. Girgis, University of Guelph, Guelph, Ontario, Canada.

M4 Seasonal cow behavior in a large dairy herd in central Iran. R. Kowsar, A. Nikkhah, M. Khorvash, M. Alikhani, and G. R. Ghorbani, Isfahan University of Technology, Isfahan, Iran, Zanjan University, Zanjan, Iran.

M5 Automated recording of sow posture and locomotion using accelerometers. N. Devillers, J. Déom, C. Corriiveau, J. Grégoire, and R. Bergeron, AAFCA, Dairy and Swine R&D Centre, Sherbrooke, QC, Canada, University of Sherbrooke, Sherbrooke, QC, Canada, University Laval, Ste Foy, QC, Canada, University of Guelph, Alfred, ON, Canada.


M7 Comparison of slaughter methods with or without previous stunning on animal welfare and bleeding efficiency in bulls. J. E. Gomes Neves, M. J. R. Paranhos da Costa, R. Roça, N. G. Gregory, and L. Faustiano, Faculdade de Ciências Agrárias e Veterinárias, Universidade Estadual Paulista Julio de Mesquita Filho, Jaboticabal, Sao Paulo, Brazil, Faculdade de Medicina Veterinária e Zootecnia, Universidade Estadual Paulista Julio de Mesquita Filho, Botucatu, Sao Paulo, Brazil, Royal Veterinary College, London, UK, Agriculture and Agri-Food Canada, Sherbrooke, Canada.

M8 Water access and the physiological well-being of Holstein slaughter cows. K. D. Vogel, J. R. Claus, T. Grandin, G. R. Oetzel, and D. M. Schafer, Colorado State University, Fort Collins, University of Wisconsin, Madison, University of Wisconsin, Madison.

M9 Changes in temperament score as a result of handling do not affect voluntary feed intake. T. D. Maddock, J. L. Foster, M. A. Elzo, and G. C. Lamb, North Florida Research and Education Center, Marianna, University of Florida, Gainesville.

M10 Effect of group change on lying time and milk yield of dairy cattle. I. Guasch, and A. Bach, IRTA-Ruminant Production, Caldes de Montbui, Spain, ICREA, Barcelona, Spain.

M11 Effect of rubber flooring in a freestall dairy barn on cow behavior and milk production. J. Pempek and N. Botheras, The Ohio State University, Columbus.

M12 Effect of feed bin stocking density on the feeding and standing behavior of postpartum dairy cows. P. D. Krawczel, R. J. Grant, and M. A. G. von Keyserlingk, William H. Miner Agricultural Research Institute, Chazy, NY, The University of Vermont, Burlington, University of British Columbia, Vancouver, BC, Canada.


M15 Flavors affect the feeding behaviour of ewes fed two unpalatable feeds. A. Mereu, V. Giovanetti, G. Molle, I.
Ipharraguere$^1$, and A. Cannas$^1$, $^1$Dipartimento di Scienze Zootecniche, University of Sassari, Sassari, Sardinia, Italy, $^2$Agris Sardegna, DiRPA, Olmedo, Sardinia, Italy, $^3$LUCTA SA, Barcelona, Spain.

M16  When and where do cows defecate? M. Villettaz Robichaude$^1$, A. M. de Passillè$^2$, and J. Rushen$^2$, $^1$Université Laval, Québec, Québec, Canada, $^2$Agriculture and Agri-Food Canada, Agassiz, British Columbia, Canada.

Animal Health

Stress, Respiratory Disease, Small Ruminants

M17  Effects of dehydration and rehydration on the thermoregulation of heat stressed Angus steers. B. Scharf*, L. E. Wax, T. J. Evans, and D. E. Spiers, University of Missouri, Columbia.

M18  Heat stress augments plasma tyrosine-nitrated proteins and lactate-to-pyruvate ratio after repeated endotoxin (LPS) challenge in steers. T. Elsasser$^3$, R. Rhoads$^2$, S. Kahl$^1$, R. Collier$^2$, L. Baumgard$^2$, C. Li$^1$, and T. Caperna$^1$, $^1$USDA-ARS, Beltsville, MD, $^2$University of Arizona, Tucson, $^3$University of Missouri, Columbia.


M21  Effects of bluetongue virus infection on sperm quality in German test-bulls. K. Kemmerling$^1$, D. Straet$^1$, U. Mueller$^1$, U. Janowitz$^2$, and H. Sauerwein*.$^1$, $^1$Institute of Animal Science, Physiology and Hygiene Group, University of Bonn, North-Rhine-Westphalia, Germany, $^2$Rinder-Union-West, Borken, North-Rhine-Westphalia, Germany.

M22  The use of infrared thermography in the non-invasive, automated detection of calves displaying bovine respiratory disease. A. L. Schaefer$^1$, C. Bench$^2$, J. Basarab$^1$, N. Cook$^1$, E. Okine$^2$, J. Colyn$^1$, B. Chabot$^1$, D. Froehlich$^3$, L. Holt-Klemic$^1$, T. Liu$^1$, and P. Lepage$^1$, $^1$Agriculture and Agri-Food Canada, Lacombe, Alberta, Canada, $^2$University of Alberta, Edmonton, Alberta, Canada, $^3$Alberta Agriculture, Lacombe, Alberta, Canada.

M23  Orbital thermal topography in calves with bovine respiratory disease. A. L. Schaefer$^1$, C. Bench$^2$, N. Cook$^2$, J. Colyn$^1$, T. Liu$^1$, E. Okine$^2$, M. Stewart$^3$, and J. Webster$^3$, $^1$Agriculture and Agri-Food Canada, Lacombe, Alberta, Canada, $^2$University of Alberta, Edmonton, Alberta, Canada, $^3$Alberta Agriculture, Lacombe, Alberta, Canada.

M24  Relationship between ex vivo neutrophil function in response to an enteropathogenic Escherichia coli and measures of health and performance of dairy calves. L. G. D. Mendonça$^1$, G. Lopes Jr.$^1$, M. A. Ballou$^2$, and R. C. Chebel$^1$, $^1$Veterinary Medicine Cooperative Extension, University of California Davis, Tulare, $^2$Department of Animal and Food Sciences, Texas Tech University, Lubbock.

M25  Replacing milk proteins with nucleotides in milk replacers for pre-weaned dairy calves. J. A. Elizondo-Salazar$^{1,2}$, C. M. Jones$^1$, R. F. Leuer$^1$, and A. J. Heinrichs$^1$, $^1$The Pennsylvania State University, University Park, $^2$Estación Experimental Alfredo Volio Mata, Facultad de Ciencias Agroalimentarias, Universidad de Costa Rica.


M27  Predictive measures of fetal distress in calves during delivery. K. E. Hard$^*$ and H. D. Tyler, Iowa State University, Ames.

M28  Automated measurement of feeding behavior to detect illness in milk-fed calves. F. T. Borderas$^{1,2}$, J. Rushen$^2$, M. A. G. von Keyserlingk$^1$, and A. M. de Passillè$^2$, $^1$University of British Columbia, Vancouver, BC, Canada, $^2$Agriculture and Agri-Food Canada, Agassiz, BC, Canada.


M30  Effect of vitamin E supplementation on naturally acquired parasite infection in lambs. C. E. MacGlaflin$^1$, A. M. Zajac$^2$, K. A. Rego$^1$, C. S. Petersson-Wolfe$^2$, and K. H. Petersson$^1$, $^1$University of Rhode Island, Kingston, $^2$Virginia Tech, Blacksburg.

M31  Analysis of the lipopolysaccharide profiles of Escherichia coli O118 and O151 O antigen gene clusters. J. W. Allen$^1$,

M33 Effect of calf-specific Bacillus on health and growth of young calves. D. Wood1, J. Sowinski, and R. Blome, Animix, Juneau, WI.

M34 Feeding colostrum with an esophageal feeder does not reduce IgG absorption in neonatal dairy heifer calves. J. A. Elizondo-Salazar1,2, and A. J. Heinrichs1, The Pennsylvania State University, University Park, Estación Experimental Alfredo Volio Mata, Facultad de Ciencias Agroalimentarias, Universidad de Costa Rica.


M36 Abrupt weaning alters leukocyte subsets and functional activity of granulocytes in beef calves. E. M. Lynch1,2, B. Earley1, M. McGee3, and S. Doyle3, Teagasc, Animal Bioscience Centre, Dunsany, Co. Meath, Ireland, Department of Biology, National University of Ireland, Maynooth, Co Kildare, Teagasc, Grange Beef Research Centre, Dunsany, Co. Meath, Ireland.

Bioethics


Breeding and Genetics

Beef Breeding, Poultry Breeding, and Genetics of Disease

M38 Milk production and composition during the first 4 months of lactation of Hereford (HH), Angus (AA) and F1 crosses grazing on native pastures Uruguay. A. Espasandin1, A. Casal2, A. Graña2, V. Gutiérrez2, and M. Carriquiry3, School of Agronomy, UDELAR, Montevideo, Uruguay, School of Veterinary, UDELAR, Montevideo, Uruguay.

M39 Genetic relationships of monounsaturated fatty acid with image analysis traits in Japanese Black cattle. Y. Nakahashi1, T. Kato2, M. Nakamachi1, N. Murasawa1, Y. Hamsaki1, S. Hidaka1, and K. Kuchida1, Obihiro University of A & VM, Obihiro, Hokkaido, Japan, Tokachi Federation of Agricultural Cooperatoratives, Obihiro, Hokkaido, Japan.

M40 Genetic analysis of growth traits considering the average numerator relationship matrix and a hierarchical Bayes model for Nellore cattle. L. Shiotsuki1, F. F. Cardoso2, J. A. V. Silva2, and L. G. Albuquerque1, Universidad Estadual Paulista, Jaboticabal, Sao Paulo, Brazil, Embrapa Pecuaria Sul, Bage, Rio Grande do Sul, Brazil, Alta Genetics, Uberaba, Minas Gerais, Brazil.

M41 Estimates of genetic parameters using random regression on B-spline functions for weights from birth to mature in Nellore cattle. A. A. Boligon1, L. G. Albuquerque1, M. E. Z. Mercadante2, and R. B. Lobo3, Faculdade de Ciências Agrárias e Veterinárias, UNESP, Jaboticabal, São Paulo, Brazil, Instituto de Zootecnia, Estação Experimental de Zootecnia de Sertãozinho, Sertãozinho, São Paulo, Brazil, Faculdade de Medicina de Ribeirão Preto, USP, Ribeirão Preto, São Paulo, Brazil.

M42 Estimation of genetic parameters for weights, scrotal circumference and testicular volume in Nellore cattle. A. A. Boligon1, L. G. Albuquerque1, J. A. V. Silva2, R. C. Sesana1, and J. B. Junqueira1, Faculdade de Ciências Agrárias e Veterinárias, UNESP, Jaboticabal, São Paulo, Brazil, Alta Genetics Brasil LTDA, Uberaba, Minas Gerais, Brazil.

M43 Heritabilities, genetic correlations, and genetic trends for age at first calving and calving intervals in a Colombian Blanco Orejinegro-Angus-Zebu cattle population. O. D. Vergara1,2,3, M. A. Elzo4, and M. F. Ceron-Muñoz5, University of Antioquia, Medellín, Colombia, University of Florida, Gainesville, University of Córdoba, Monteña, Colombia.

M44 Genetic parameters and genetic trends for pre and postweaning growth in a Colombian Blanco Orejinegro-Romosinuano-Angus-Zebu cattle population. O. D. Vergara1,2,3, M. A. Elzo4, and M. F. Ceron-Muñoz5, University of...
Genotype by environment interaction in Nellore cattle for 450 day weight. M. G. Dib*, I. D. P. S. Diaz*, F. R. de Araujo Neto*, H. N. de Oliveira*, R. B. Lobo*, and L. A. F. Bezerra*, FMVZ-UNESP, Botucatu, SP, Brazil, FCAV-UNESP, Jaboticabal, SP, Brazil, FMRP-USP, Ribeirao Preto, SP, Brazil.

Random regression analyses using B-spline functions to model growth from birth to adult age in Canchim cattle. F. Baldi*, L. G. Albuquerque, and M. M. Alencar*. Faculdade de Ciências Agrárias e Veterinárias, UNESP, Jaboticabal (SP), Brazil, Embrapa Pecuária Sudeste, São Carlos (SP), Brazil.

Performance group in GxE study for genetic evaluation of growth in Brazilian Nellore. L. O. C. Silva, S. Tsuruta*, J. K. Bertrand, A. Gondo, L. A. Josahkian, P. R. C. Nobre, and A. N. Rosa*, University of Georgia, Athens, EMBRAPA, Campo Grande, MS, Brazil, CNPq, Brasilia, DF, Brazil, ABCZ, Uberaba, MG, Brazil.

Residual feed intake and reproductive performance of heifers sired by high or low RFI EBV bulls. J. M. Bormann*, D. W. Moser, T. T. Marston, and K. C. Olson*, Kansas State University, Manhattan, University of Nebraska, Lincoln.


Temperature and humidity as criteria of between states differences in beef cattle growth rate. M. Lukaszewicz, J. L. Williams*, J. K. Bertrand, and I. Misztal*, University of Georgia, Athens, Polish Academy of Sciences, Jastrzebiec, Poland.

Multiple-trait genetic analysis of weight at week 8, age at sexual maturity and initial egg weight in Iranian indigenous chickens. H. Farhangfar*, S. M. Hosseini, and M. E. Navidizadeh, Birjand University, Birjand, Iran.


Analysis of androgen receptor gene in dairy bulls. C. Foresta, A. Garolla, D. Zuccarello, and M. Cassandro*, University of Padova, Agripolis, Legnaro (PD), Italy, University of Padova, Padova, Italy.

Evidence for a genetic contribution to bovine viral diarrhea vaccine response in beef calves. X. Fang, T. A. Henrickson, C. Maltecca, and M. G. Gonda*, South Dakota State University, Brookings, North Carolina State University, Raleigh.

Estimation of genetic parameters and transmitting ability for Minnesota Johne's milk ELISA test. S. A. Attalla, A. J. Seykora, J. B. Cole, and B. J. Heins*, University of Minnesota, Saint Paul, Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD, Cairo University, Giza, Egypt.

**Dairy Foods**

Relationship between base and process cheese characteristics. A. Hassan* and N. Nigam, South Dakota State University, Brookings.

Fate of aflatoxin M1 during manufacture and brining of feta cheese. M. M. Motawee* and D. J. McMahon, National Organization for Drug Control and Research, Cairo, Egypt, Utah State University, Logan.


Cordoba, Monteria, Colombia, University of Florida, Gainesville, University of Antioquia, Medellin, Colombia.
M60 Aroma profile characterization of traditional Algerian Bouhezza cheese. S. Carpino1, T. Rapisarda1, G. Belvedere1, and G. Licitra1,2, 1CoRFiLaC, Regione Siciliana, Ragusa, Italy, 2D.A.C.P.A. University of Catania, Italy.

M61 Molecular characterization of Algerian cheese Bouhezza by PCR-TTGE. C. Pediliggieri1, S. Carpino1, and G. Licitra1,2, 1CoRFiLaC, Regione Siciliana, Ragusa, Italy, 2D.A.C.P.A. University of Catania, Italy.

M62 Characterization of bacterial ecosystem in Pecorino Siciliano cheese produced in different areas of Sicily. C. Pediliggieri1, S. Carpino1, and G. Licitra1,2, 1CoRFiLaC, Regione Siciliana, Ragusa, Italy, 2D.A.C.P.A. University of Catania, Italy.


M64 Influence of microfiltration and adjunct culture on quality of Egyptian soft white cheese. S. Awad8, N. Ahmed, and M. El Soda, Alexandria University, Alexandria, Egypt.


M66 Effect of cream cheese made from freeze-dried milk powder on physicochemical properties. S. H. Kim1, S. Y. Lee1, J. Ahn1, and H. S. Kwak1, 1Sejong University, Seoul, Korea, 2Jungwon University, Chungbuk, Korea.

M67 Optimization of recovery of key Cheddar cheese flavor compounds from full fat and reduced fat Cheddar cheeses. D. M. Watson8, R. E. Miracle, and M. A. Drake, North Carolina State University, Raleigh.

M68 The influence of sodium chloride on flavor of natural Cheddar cheese. M. A. Drake1,2, R. E. Miracle1, and D. J. McMahon8, 1North Carolina State University, Raleigh, 2Utah State University, Logan.

M69 Automatic detection of microstructural features using a statistical image processing method. G. Impoco1, L. Tuminello1, N. Fuca1, M. Caccamo1, and G. Licitra1,2, 1CoRFiLaC, Ragusa, Italy, 2D.A.C.P.A., University of Catania, Catania, Italy.


M71 Effect of aging on the rheology of full fat and low fat Cheddar-like caprine cheese. D. L. Van Hekken1, Y. W. Park2, and M. H. Turnick1, 1Dairy Processing and Products Research Unit, Agricultural Research Service, Wyndmoor, PA, 2Agricultural Research Station, Fort Valley University, Fort Valley, GA.

M72 Effect of renneting pH on calcium balance in cheese making process. N. Remillard8 and M. Britten, Food Research and Development Centre, Agriculture and Agri-food Canada, St-Hyacinthe, QC, Canada.

M73 Denaturation of proteins measured in liquid whey. M. Allen8 and P. Tong, California Polytechnic State University, San Luis Obispo.

M74 Use of fluorescence spectroscopy for monitoring changes and predicting browning reactions during whole milk powder storage. P. Salunke1, J. Amamcharla, and L. E. Metzger, 1Midwest Dairy Foods Research Center, South Dakota State University, Brookings.

M75 Profiling changes in amino acids and organic acids in Cheddar cheese during ripening using infrared spectroscopy. A. Subramanian8, J. Harper, and L. Rodriguez-Saona, The Ohio State University, Columbus.

M76 Production of nisin-containing whey protein concentrate. H. Abd El-aal1, R. Dave1, A. Khattab2, and A. Hassan8, 1South Dakota State University, Brookings, 2Alexandria University, Alexandria, Egypt.

M77 Bovine milk based infant formula promote the growth and acid production of bifidobacteria. K. Mohamedali* and S. A. Ibrahim, North Carolina A&T State University, Greensboro.

M78 Induction of α and β galactosidases from Lactobacillus reuteri by different metal ions. A. Y. Alazzeh1, S. A. Ibrahim1, D. Song1, A. Shahbazi1, and A. A. AbuGhazaleh2, 1North Carolina A&T State University, Greensboro, 2Southern Illinois University, Carbondale.

M79 Immobilization of Lactobacillus acidophilus in apple pieces (Pyrus malus L.) and mamey sapote (Pouteria sapota) for whey fermentation. M. E. Yañez-Villar1, E. Paz-Gamboa1, A. Perez-Silva1, H. S. García3, and M. Montero-Lagunes1, 1Instituto Tecnologico de Taxtapa, Taxtpepec, Oax, Mexico, 3Instituto Tecnologico de Veracruz, Veracruz, Ver.
M80 A simple on-farm technique for early detection of foreign substances in milk. M. H. Hathurusinghe1,2, A. Alazzeh1, A. Shahbazi1, S. A. Ibrahim1, and A. A. AbuGhazaleh1, 1North Carolina A&T State University, Greensboro, 2Southern Illinois University, Carbondale.

M81 Fatty acid composition in ewe's milk fat produced in lowland, hill and highland areas of Sardinia. M. G. Manca, F. Puggioni, R. Boe, R. Rubattu, G. Battacone*, and A. Nudda, Dipartimento di Scienze Zootecniche, University of Sassari, Italy.


M86 Phylogenetic analysis of dairy Penicillium rDNA. G. Petit* and S. Labrie, Université Laval, Québec, Canada.

M87 Effects of culture conditions on the growth and autoreggregation ability of bifidobacteria and Lactobacillus reuteri. O. A. Hassan1, S. A. Ibrahim1, A. A. AbuGhazaleh2, A. Shahbazi1, and Y. Murad3, 1North Carolina A&T State University, Greensboro, 2Southern Illinois University, Carbondale, 3National Research Council-Canada, Ottawa, Canada.

M88 80% whey (WPC) and serum protein (SPC) concentrate and 95% serum protein (SP) reduced micellar casein concentrate (MCC): Production and composition. J. Zulewska*, D. M. Barbano1, M. Newbold1, M. Drake2, E. A. Foegeding1, and C. Moraru1, 1Cornell University, Ithaca, NY, 2University Of Warmia And Mazury, Olszyn, Poland, 1North Carolina State University, Raleigh.

Forages and Pastures

Forage Composition, Analysis and Utilization

M89 Utilizing near infrared (NIR) spectroscopy to predict carbohydrates (sugars) in forages. J. Horst1,2, and G. Ayangbibi1,2, 1Agri-King Inc., Fulton, IL, Analab, Fulton, IL.


M92 Condensed tannins from purple prairie clover inhibit growth of Escherichia coli O157:H7. Y. Wang1, T. A. McAllister1, S. N. Acharya1, and A. D. Iwaasa2, 1Agriculture and Agri-Food Canada Research Centre, Lethbridge, Alberta, Canada, 2Agriculture and Agri-Food Canada, Semiarid Prairie Agricultural Research Centre, Swift Current, Saskatchewan, Canada.

M93 Evaluation of tannins from forages for their capacity to inhibit growth of Escherichia coli O157:H7. Y. Wang1, T. A. McAllister1, K. H. Ominski2, D. O. Krause2, and K. M. Wittenberg2, 1Agriculture and Agri-Food Canada Research Centre, Lethbridge, Alberta, Canada, 2University of Manitoba, Winnipeg, Manitoba, Canada.


M96 Total digestible nutrient and energy values of new crossed and winter-hardy proanthocyanidin-containing alfalfa populations transformed with the maize bHLH (Lc) regulatory gene in ruminants: Comparison with non-transgenic
Chemical profiles and protein and carbohydrate subfractions of new crossed and winter-hardy proanthocyanidin-containing alfalfa populations transformed with the maize bHLH (Lc) regulatory gene in ruminants: Comparison with non-transgenic alfalfa. A. Jonker*, P. Yu¹, Y. Wang², and M. Gruber³, ¹University of Saskatchewan, Saskatoon, SK, Canada, ²Lethbridge Research Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, ³Saskatoon Research Centre, Agriculture and Agri-Food Canada, Saskatoon, SK, Canada.

M97

Sugarcane stalk proportion effects on dairy cow performance. S. Siécola Júnior¹, L. L. Bitencourt¹, V. A. Silva³, N. M. Lopes¹, G. S. Dias Júnior¹, J. R. M. Silva², R. A. N. Pereira³, and M. N. Pereiraª¹, ¹Universidade Federal de Lavras, Lavras, MG, Brazil, ²Centro Federal de Educação Tecnológica, Januária, MG, Brazil, ³Better Nature Research Center, Ijaci, MG, Brazil.

M98

Nutritive value, in situ degradability and intake of forage soybean and Lablab by weanling goats. R. Rojo-Rubio⁴, A. Z. M. Salem⁴, L. M. Camacho-Díaz³, D. Cardoso-Jiménez³, and S. Rebollar-Rebollar³, ¹Universidad Autónoma del Estado de México, Estado de México, México, ²University of Saskatchewan, Saskatoon, SK, Canada, ³Universidade Federal de Lavras, Lavras, MG, Brazil, ⁴Centro Federal de Educação Tecnológica, Januária, MG, Brazil, ⁵Universidad Autónoma de Tamaulipas, Ciudad Victoria, Tamaulipas, Mexico, ⁶Centro de Investigación y de Estudios Avanzados del IPN, CINVESTAV, Ciudad de México, México, ⁷Universidad Autónoma de Chihuahua, Chihuahua, Chihuahua, Mexico, ⁸Universidad Autónoma de Zacatecas, Zacatecas, Zacatecas, Mexico, ⁹Universidad Autónoma de Tamaulipas, Cd. Victoria, Tamaulipas, Mexico, ¹⁰University of Illinois, Urbana, ¹¹IFAP, Delicias, Chihuahua, Mexico.

M100

Effects of variety and maturity at harvest time in the composition and in vitro kinetics of ruminal degradability of alfalfa hays. C. Arzola⁴, A. Muro⁵, M. R. Murphy⁶, O. Ruiz⁷, J. Salinas⁸, C. Rodriguez⁹, Y. Castillo¹, and J.A. Payan¹, ¹Universidad Autonoma de Chihuahua, Chihuahua, Chihuahua, Mexico, ²Universidad Autonoma de Zacatecas, Zacatecas, Zacatecas, Mexico, ³Universidad Autónoma de Tamaulipas, Cd. Victoria, Tamaulipas, Mexico, ⁴University of Illinois, Urbana, ⁵IFAP, Delicias, Chihuahua, Mexico.

M101

Early-lactation cows fed concentrate do not respond to high-total nonstructural carbohydrates alfalfa. A. F. Brito¹, G. Régimbald², G. F. Tremblay³, A. Bertrand⁴, Y. Castonguay⁵, G. Bélanger⁶, R. Michaud⁷, and R. Berthiaume⁸, ¹Agriculture & Agri-Food Canada, Sherbrooke, QC, Canada, ²Université Laval, Québec, QC, Canada, ³Agriculture et Agri-Food Canada, Québec, QC, Canada.

M102

Diurnal variation of non structural carbohydrate concentrations in alfalfa. C. Morin⁴, G. Bélanger², G. F. Tremblay², A. Bertrand⁴, Y. Castonguay⁵, R. Michaud⁷, R. Berthiaume⁸, and G. Allard¹, ¹Université Laval, Québec, QC, Canada, ²Agriculture and Agri-Food Canada, Québec, QC, Canada, ³Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada.

M103

Subjectivity of qualitative assessment of corn silage by dairy nutritionists. K. E. Griswold⁴, P. H. Craig¹, R. C. Goodling¹, and A. J. Heinrichs², ¹Penn State Cooperative Extension, University Park, ²Penn State University, University Park.

M104

Use of Pleurotus ostreatus to change the nutritional quality of wheat straw. O. D. Montañez Valdez⁴, J. H. Avellaneda-Cevallos⁵, J. M. Tapia-Gonzalez⁷, G. Rocha-Chavez⁷, E. Guerra-Medina¹, and E. O. Garcia-Flores³, ¹Centro Universitario del Sur de la Universidad de Guadalajara, Ciudad Guzmán, Jalisco, ²Universidad Técnica Estatal de Quevedo, Santo Domingo, Quevedo, Los Ríos, Ecuador, ³Centro Universitario de la Costa Sur de la Universidad de Guadalajara, Autlán, Jalisco.

M105

Effects of wilting, molasses and inoculants on alfalfa silage nutritional properties. F. Hashemzadeh Sigari¹, M. Khorvash¹, G. R. Ghorbani¹, and A. Nikkhah², ¹Isfahan University of Technology, Isfahan, Iran, ²Zanjan University, Zanjan, Iran.

M106

Effect of drying methods on chemical composition kinetics of ruminal fermentation and digestibility of Leucaena leucocephala in goats. R. Rojo-Rubio⁴, O. Vázquez-Mendoza³, A. Z. M. Salem¹, D. L. López-Aguirre¹, D. Cardoso-Jiménez¹, B. Albarrán-Portillo¹, S. Rebollar-Rebollar¹, J. Hernández-Martínez¹, F. Vázquez-Armijo¹, and L. M. Camacho-Díaz³, ¹Universidad Autónoma del Estado de México, Temascaltepec, Estado de México, México, ²Universidad Técnica de México, ³Universidad Autónoma, Mexico City, ⁴Isfahan University, Isfahan, Iran, ⁵Zanjan University, Zanjan, Iran.

M107

Timothy dietary cation-anion difference, grass tetany index, and mineral concentrations predicted by near infrared reflectance spectroscopy. G. F. Tremblay¹, Z. Nie², G. Bélanger¹, S. Pelletier¹, and G. Allard¹, ¹Agriculture and Agri-Food Canada, Québec, QC, Canada, ²China Agricultural University, Beijing, China, ³Université Laval, Québec, QC, Canada.

M108

The effect of maturity stage on in vitro digestibility and energy utilization of mesquite (Prosopis laevigata) pods in goats. R. Rojo-Rubio⁴, A. Z. M. Salem¹, L. M. Camacho-Díaz³, D. Cardoso-Jiménez¹, and S. Rebollar-Rebollar¹, ¹Universidad Autónoma del Estado de México, Estado de México, México, ²Alexandria University, Alexandria, Egypt.

M109

Nutritive value, in situ degradability and intake of forage soybean and Lablab by weanling goats.
E. Valencia*, A. Rodríguez, and F. Rivera Melendez, University of Puerto Rico, Mayaguez, Puerto Rico.

M110 Inclusion of nopal (cactus) in diets for finishing lambs in Mexico. G. Aranda-Osorio*, M. Segundo-Espejel, C. A. Flores-Valdez, and F. M. Cruz-Miranda, Universidad Autónoma Chapingo, Chapingo, Mexico, Mexico.


M112 Chemical composition, in vitro gas production kinetics of mesquite (Prosopis laevigata) pods at different stages of maturity in goats. A. Z. M. Salem1,2, R. Rojo-Rubio3, O. Vazquez-Mendoza1, D. Cardoso-Jiménez1, and B. Albarrán-Portillo1, 1Universidad Autónoma del Estado de México, Estado de México, México, 2Alexandra University, Alexandria, Egypt.

M113 Using in vitro gas production technique to calculate total digestible nutrients value of native forage in southern Texas. A. D. Aguilar4, L. O. Tedeschi1, M. G. Colazo2, and D. J. Ambrose3, 1Texas A&M University, College Station, 2Texas AgriLife Research, Overton, TX, 3Texas A&M University, Kingsville, 4King Ranch, Kingsville, TX.

Graduate Student Paper Competition
CSAS Graduate Student Competition 1

M114 Variation in antibody and cell-mediated immune responses between Canadian Holsteins and Norwegian-Red crossbred first calf heifers. S. Cartwright4, E. B. Burnside5, N. Karrow5, L. Schaefer6, and B. A. Mallard1, 1University of Guelph Department of Pathobiology, Guelph, Ontario, Canada, 2Centre for Genetic Improvement of Livestock, Guelph, Ontario, Canada, 3Gencor Inc., Guelph, Ontario, Canada.

M115 Translation efficiency mediated by untranslated region of bovine beta casein mRNA. J. Kim*, M. Bakovic, J. Li, J. Bag, and J. P. Cant, University of Guelph, Guelph, Ontario, Canada.

M116 Impact of an extended photoperiod in farrowing houses on sow and litter performances. M.-P. Lachance*, J.-P. Laforest*, N. Devillers*, A. Laperrière*, and C. Farmer1, 1Agriculture and Agri-Food Canada, Dairy and Swine R&D Centre, Sherbrooke, QC, Canada, 2Animal Science Dept., Laval University, Québec, QC, Canada, 3LTE, Hydro-Québec’s Research Institute, Shawinigan, QC, Canada.

M117 Effects of low-voltage electrical stimulation and aging on heavy lamb meat tenderness. E. Pouliot*, C. Gariépy2, M. Thériault3, C. Aveizard3, J. Fortin4, N. J. Simmons2, and F. W. Castonguay3, 1Université Laval, Québec, QC, Canada, 2Food Research and Development Centre, AAFC, St-Hyacinthe, QC, Canada, 3Dairy and Swine Research and Development Centre, AAFC, Lennoxville, QC, Canada, 4Carne Technologies Ltd, Cambridge, New Zealand.

M118 Lysine and energy maintenance requirements in modern, high productivity sows are greater than previous estimates. R. S. Samuel*, S. Moen1, P. B. Pencharz2, and R. O. Ball1, 1Swine Research and Technology Centre, University of Alberta, Edmonton, Alberta, Canada, 2Research Institute, Hospital for Sick Children, Toronto, Ontario, Canada.

M119 A modified Ovsynch protocol using pLH or hCG in lactating dairy cows. M. B. Gordon*, R. Rajamahendran1, M. G. Colazo2, and D. J. Ambrose2, 1Department of Animal Science, Faculty of Land Food Systems, University of British Columbia, Vancouver, BC, Canada, 2Dairy Research and Technology Centre, Alberta Agriculture and Rural Development, Edmonton, AB, Canada, 3University of Alberta, Edmonton, AB, Canada.

M120 Dairy farm sustainability in Quebec, Canada: The social aspect. V. Bélanger*, D. Parent, A. Vanasse, G. Allard, and D. Pellerin, FSA, Université Laval, Québec, Canada.


M122 The influence of fish oil diets on insulin metabolism in adult male pig. C. A. Castellano1,2, I. Audet1, J.-P. Laforest2, P. Y. Chouinard2, and J. J. Mattle1, 1Dairy and Swine R&D Centre, Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, 2Department of Animal Sciences, Québec city, QC, Canada.

Graduate Student Paper Competition
National ADSA Production MS Poster
Chair: Jeffrey S. Stevenson, Kansas State University
M123 Use of ash and nitrogen concentrations in manure to estimate loss of ammonia over time. H. A. Paz* and W. P. Weiss, The Ohio State University, Wooster.

M124 The effects of metaphylactic therapy on health and growth of neonatal Holstein bull calves. K. S. Holloway*, G. A. Holub, J. E. Sawyer, and M. A. Tomaszewski, Texas A&M University, College Station.

M125 Effects of single nucleotide polymorphisms in stearoyl-CoA desaturase on milk fatty acid profile in lactating Holstein cows fed diets varying in fat content. L. Clark*, S. Moore, and M. Oba, University of Alberta, Edmonton, Alberta, Canada.


M128 Evaluating the impacts of a ruminally protected lysine product in dairy cows. N. Swanepoel*1,2, P. H. Robinson2, and L. J. Erasmus1,1, University of Pretoria, Pretoria, South Africa, 1University of California, Davis.


M131 Evaluation of the economic impact of Optigen® use in commercial dairy herd diets with varying feed and milk prices. J. F. Blum1,2, V. E. Cabrera1, R. D. Shaver4, and J. M. Tricárico1, 1University of Wisconsin, Madison, 2Alltech Inc., Brookings, SD.


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

M133 Metabolism of ferulic acid in ram lambs. M. A. Soberón* and D. J. R. Cherney, Cornell University, Ithaca, NY.


M135 Molecular cloning, distribution and ontogenetic expression of b0,+AT and the oligopeptide transporter PepT1 mRNA in Tibetan suckling piglets. W. Wang*, G. Wu*, W. Gu*, T. Li1, M. Geng1, W. Chu*, R. Huang1, M. Fan1, D. Fu1, Z. Feng1, and Y. Yin1, 1The Chinese Academy of Sciences, Changsha, Hunan, P. R. China, 2Changsha University, Changsha, Hunan, P. R. China, 3University of Guelph, Guelph, Ontario, Canada, 4Texas A&M University, College Station.


M137 Polymorphisms in lipogenic genes and variations in milk fatty acid composition in Holstein dairy cows. R. A. Nafikov*, J. P. Schoonmaker*, J. M. Reecy1, D. Moody-Spurlock1, J. Minick-Bormann2, K. J. Koehler1, and D. C. Beitz1, 1Iowa State University, Ames, 2Kansas State University, Manhattan.

M138 Regulation of bovine pyruvate carboxylase promoters by fatty acids. H. M. White*, S. L. Kosner, and S. S. Donkin, Purdue University, West Lafayette, IN.

Lactation Biology

M139 Effects of restricted feeding of prepubertal ewe lamb on growth performance, mammary gland development and first
lactation. L. Villeneuve* 1, D. Cinq-Mars 2, and P. Lacasse 3, 1 Centre d’expertise en production ovine du Québec, LaPocatière, QC, Canada, 2 Laval University, Québec, QC, Canada, 3 AAFC, Dairy and Swine Research and Development Center, Sherbrooke, QC, Canada.

M140 Effects of intravenous infusion of trans-10, cis-12 18:2 on mammary lipid metabolism in lactating dairy cows. R. Gervais 1-3, J. W. McFadden 1, A. J. Leng 3, B. A. Cori 1, and P. Y. Chouinard 1, 1 Université Laval, Québec, QC, Canada, 2 Virginia Tech, Blacksburg.

M141 Selection of reference genes for quantitative real-time PCR in mouse mammary gland during different lactation days. X. L. Dong 1, 2, J. Q. Wang 2, 3, D. P. Bu 1, K. L. Liu 1, H. Y. Wei 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 Yangzhou University, Yangzhou, China.

M142 Responses of milk protein and mammary amino acids metabolism to duodenal soybean small peptides and free amino acids infusion in lactating goat. H. Liu, Z.-J. Cao, L. Wang, S.-L. Li 1 and L.-B. Wang, College of Animal Science and Technology, China Agricultural University, Beijing, China.


M144 In vitro culture and characterization of a mammary epithelial cell line from Chinese Holstein dairy cows. H. Hu 1, D. P. Bu 1, J. Q. Wang 2, 3, Q. Chen 1, X. Y. Li 1, H. Y. Wei 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 University of Illinois, Urbana.


M146 Chinese women dietary behavior in different lactating stages and breast milk levels of fatty acids and iron. L. Xu 1, Q.-H. Sheng 2, Z.-G. Zhang 1, Q. Gen 1, and L.-W. Zhang 1, School of Food and Science and Engineering, Harbin Industry University, Harbin city, China, 2 National Dairy Engineering and Technical Research Center, Northeast Agriculture, Harbin city, China, 3 Hebei Dairy Engineering and Technical Research Center, Shijiazhuang city, China.

M147 Effect of staged ovariectomy on mammary histology and transcript abundance in prepubertal heifers. B. T. Velayudhan 1, 2, R. M. Akers 3, B. P. Huderson 4, A. Rowson-Baldwin 5, R. C. Hovey 2, and S. E. Ellis 1, Virginia Polytechnic Institute and State University, Blacksburg, 2 University of California, Davis, 3 University of Idaho, 4 Blacksburg, VA, 5 Department of Animal and Dairy Science, University of Idaho, Moscow, Idaho.

M148 Variation in expression of genes involved in glucose production and transport in mammary gland, liver and muscle of lactating cows. R. Weikard 1, K. Krappmann, B. Brand, T. Goldammer, R. Brunner, and Ch. Kühn, Research Institute for the Biology of Farm Animals (FBN), Dummerstorf, Germany.

M149 Effects of increased milking frequency on milk fatty acid composition in early lactation dairy cows. S. L. Shields 1, D. Sevier, J. E. Williams, S. Zaman, P. Rezamand, and M. A. McGuire, University of Idaho, Moscow.

M150 Energy deprivation inhibits protein synthesis in mammary epithelial cells through an AMPK- and mTOR-dependent pathway. S. A. Burgos 2 and J. P. Cant, University of Guelph, Guelph, Ontario, Canada.

M151 Effect of milking frequency (1 vs. 4x) on milk yield, composition and numbers of gene transcripts for alphalactalbumin and beta casein in milk. A. P. Alex 1, 2, J. L. Collier 1, D. L. Hadsell 1, and R. J. Collier 1, University of Arizona, Tucson, 2 Baylor College of Medicine, Houston, TX.

M152 Lactational effects of once- versus twice-daily milkings throughout lactation in two breeds of dairy ewes. A. Santibañez, X. Such, G. Caja, V. Castillo, and E. Albanell, G2R, Universitat Autònoma de Barcelona, Bellaterra, Spain.

M153 Activation of mTOR signaling by insulin-like growth factor-I stimulates translation initiation in mammary epithelial cells. S. A. Burgos 1 and J. P. Cant, University of Guelph, Guelph, Ontario, Canada.

M154 An intact SREBP pathway is essential for the trans-10, cis-12 CLA-induced inhibition of de novo fatty acid synthesis in the murine lactating mammary gland. M. R. Foote 2, 1, K. J. Harvatine 1, J. Monks 2, M. C. Neville 2, Y. R. Boisclair 1, and D. E. Bauman 1, Cornell University, Ithaca, NY, 2 University of Colorado, Aurora.

M155 Low dosage oxytocin treatment induces milk ejection in dairy cows. C. J. Belo and R. M. Bruckmaier 1, University of Bern, Vetsuisse Faculty, Veterinary Physiology, Bern, Switzerland.
Effect of exogenous growth hormone and ovariotomy on protein expression of aromatase in prepubertal bovine mammary gland. B. P. Hudson*1, S. E. Ellis2, and R. M. Akers3, 1Virginia Polytechnic Institute and State University, Blacksburg, 2Clemson University, Clemson, SC.


Effects of a shortened dry period on milk production and composition in early lactating Holstein cows. S. Safa1, A. Heravi Moussavi2,3, M. Danesh Mesgaran1, A. Golian1, and A. Soleimani1,2, 1Department of Animal Science, Ferdowsi University of Mashhad, Mashhad, Khorsan Razavi, Iran, 2Islamic Azad University-Kashmar Branch, Kashmar, Khorsan Razavi, Iran.

Age entering the feedlot and implant potency: II

Age entering the feedlot and implant potency: I

Evaluating the application of dual x-ray energy absorptiometry (DEXA) to assess dissectible fat and muscle from the 9–11th rib section of beef cattle. F. R. B. Ribeiro4,5, R. D. Roaudes2, L. O. Tedeschi3, S. E. Martin3, and S. F. Crouse1, 1Texas A&M University, Commerce, 2The King Ranch Institute, Kingsville, TX, 3Texas A&M University, College Station.

Interaction of dietary vitamin D3 and sunlight exposure on meat tenderness and color of Bos indicus cattle. A. R. Lobo Jr.1, E. F. Delgado4, G. B. Mourão2, A. Berndt3, and J. J. A. A. Demarchi1, 1FMVZ/Unesp, Botucatu, São Paulo, Brazil, 2Apoio FAPESP, São Paulo, Brazil.


Heat shock protein β-6 emerges as a potential biomarker to predict meat tenderness. I. Zapata*, H. N. Zerby, and M. Wick, The Ohio State University, Columbus.

Evaluating the application of dual x-ray energy absorptiometry (DEXA) to assess dissectible fat and muscle from the 9–11th rib section of beef cattle. F. R. B. Ribeiro4,5, R. D. Roaudes2, L. O. Tedeschi3, S. E. Martin3, and S. F. Crouse1, 1Texas A&M University, Commerce, 2The King Ranch Institute, Kingsville, TX, 3Texas A&M University, College Station.

Age entering the feedlot and implant potency: I

Age entering the feedlot and implant potency: II Carcass quality, shear force and sensory panel characteristics. B. Barham*1, P. Beck2, S. Gadberry4, J. Apple1, W. Whitworth2, and M. Miller5, 1University of Arkansas, Little Rock, 2University of Arkansas, Hope, 3University of Arkansas, Fayetteville, 4University of Arkansas, Monticello, 5Texas Tech University, Lubbock.

Age entering the feedlot and implant potency: II

Meat Science and Muscle Biology 1

M172 Effects of dry-ageing on pork quality of vitamin E enhanced loins. M. Juarez*, W. R. Caine1, J. L. Aalhus1, M. E. R. Dugan1, N. Hidiрогloû1, and B. E. Uttaro1, 1Agriculture and Agri-Food Canada, Lacombe Research Centre, Lacombe, Alberta, Canada, 2Health Products and Food Branch, Health Canada, Sir Frederick G. Banting Research Centre, Ottawa, Ontario, Canada.

M173 Age at the beginning of the free-range fattening period affects meat quality of Iberian pigs. M. A. Latorre*, J. A. Rodríguez-Sánchez, and G. Ripoll, Centro de Investigación y Tecnología Agroalimentaria de Aragón, Zaragoza, Spain.

M174 Effects of electrical stimulation and aging on beef tenderness of dairy cows. A. A. Souza*, T. I. Ferreira2, and J. C. Hadlich3, 1UNIDERP/ANHANGUERA, Campo Grande, Mato Grosso do Sul, Brazil, 2IAGRO, Campo Grande, Mato Grosso do Sul, Brazil, 3UNESP, Botucatu, Sao Paulo, Brazil.

M175 Relationship between raw breast meat color lightness values and functionalities of broiler fillets deboned six to eight hours postmortem. H. Zhuang* and E. Savage, ARS-USDA, Athens, GA.


Nonruminant Nutrition

Feed Ingredients

M177 Characterization of protein structure of the new co-products from bioethanol production in western Canada using DRIFT Spectroscopy: Comparison among blend DDGS, wheat DDGS and corn DDGS, between wheat and wheat DDGS, and corn and corn DDGS. P. Yu*, D. Damiran, and W. Nuez Ortin, Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, SK, Canada.

M178 Effects of various cereals on nursery pigs: Gastrointestinal bacterial populations. Y. Liu*, M. Rossoni, J. Barnes, and J. E. Pettigrew, University of Illinois, Urbana.

M179 Effects of altering the syrup inclusion rate and the dryer recycling rate on DDGS composition and digestibility in pigs. K. A. Houin*, B. E. Aldridge, B. T. Richert, A. L. Sutton, and J. S. Radcliffe, Purdue University, West Lafayette, IN.

M180 Combined usage of corn distillers solubles and corn steep water for liquid fed growing-finishing pigs. C. L. Zhu*, D. Wey, and C. F. M. de Lange, University of Guelph, Guelph, ON, Canada.

M181 Comparison of drying methods for whole frozen fish commonly fed to marine mammals. S. M. Langowski1, A. W. White1, K. L. West1, K. S. Yamamoto2, and J. R. Carpenter*, 1Hawaii Pacific University, Honolulu, 2University of Hawaii at Manoa, Honolulu.

M182 Effects of feeding soybean meal from high protein or low oligosaccharide varieties of soybeans to weanling pigs. K. M. Baker*, B. G. Kim, and H. H. Stein, University of Illinois, Urbana.

M183 The granulated barley provided during the finishing period improves the production cost, intramuscular fat percentage and oleic acid content in muscle from heavy pigs. A. Daza1, M. A. Latorre*, G. Cordero1, A. Oliva1, and C. J. López-Bote3, 1Universidad Politécnica de Madrid, Madrid, Spain, 2Centro de Investigación y Tecnología Agroalimentaria de Aragón, Zaragoza, Spain, 3Universidad Complutense de Madrid, Madrid, Spain.


M185 Influence of sunflower seed meal on histological alterations of broiler chickens. S. Salari*, H. Nassiri Moghaddam, J. Arshami, A. Golian, and M. Maleki, Ferdowsi University of Mashhad, Mashhad, Iran.

M186 Guar gum as a source of soluble non-starch polysaccharides for swine decreases nutrient digestibility and ammonia emission while increasing manure odor. W. Zhang1, E. van Heugten*, T. van Kempen1, 2, and V. Fellner1, 1North Carolina State University, Raleigh, 2Provimi, RIC, Brussels, Belgium.

In vitro rabbit cecal fermentation patterns of four substrates: Manitoba fed to growing pigs. Ileal amino acid digestibility in dried distillers grains with solubles originating from wheat, corn or wheat. Changes in diversity and homogeneity of the gut microbiota of pigs fed distillers dried grains with solubles (DDGS) during a coccidial challenge. The effect of corn of different textures in dry grain or silage forms on digestibility and growth performance of piglets. The effect of increasing the level of rapeseed meal in the diet of the growing-finishing pig on the growth performance and nitrogen and phosphorus excretion. Evaluation of blue mussel shells as an alternative dietary calcium source for laying hens. Evaluation of in vitro starch kinetics hydrolysis and fermentation patterns of four substrates: Manitoba fed to growing pigs. Digestible and metabolizable energy of oils and lards for growing pigs. The effects of increasing the level of rapeseed meal in the diet of the growing-finishing pig on the growth performance and nitrogen and phosphorus excretion. In vitro starch kinetics hydrolysis and fermentation patterns of four substrates: Manitoba fed to growing pigs. Ileal amino acid digestibility in dried distillers grains with solubles originating from wheat, corn or wheat. Changes in diversity and homogeneity of the gut microbiota of pigs fed distillers dried grains with solubles (DDGS) after an E. coli challenge. Variation and relationships in nutrient and mineral composition for six species of whole fish commonly used as animal feeds. In vitro starch kinetics hydrolysis and fermentation of field peas (Pisum sativum). Ileal amino acid digestibility in dried distillers grains with solubles originating from wheat, corn or wheat–corn blend fed to growing pigs. In vitro rabbit cecal fermentation patterns of four substrates: Glucose, cellobiose, microcrystalline cellulose and NDF separated from alfalfa hay. Nutritional evaluation of fermented fish meal (L. acidophilus GB-LC2 and B. licheniformis GB-F2) based on nitrogen balance and nutrient digestibility in comparison with spray-dried plasma protein for weanling pigs.
Institute of Animal Science, RDA, Korea.

M205 Apparent metabolizable energy of hydrolyzed swine intestinal mucosa (Palbio RD50®) for broiler chickens. D. Solà-Oriol1, E. Torrallardona1,1, IRTA, Mas de Bover, Constanti, Spain, 2Lucta SA, Barcelona, Spain.

M206 Digestibilities of components in three sources of liquid mycelium feed products in growing pigs. W. C. Sauer1,2, A. B. Araiza1, B. Schutte3,5,6, M. Cervantes3,5, A. Morales3, R. Zijlstra2, and J. L. Lander1,1, ICA, Universidad Autónoma de Baja California, Mexicali, BC, México, 2DAFNS, University of Alberta, Edmonton, AB, Canada, 3S&P Consultancy, Bennekom, The Netherlands.

M207 A spreadsheet program for making a balanced Latin square design. B. G. Kim* and H. H. Stein, University of Illinois, Urbana.


M210 The effect of different double choice feeding protocols on the measurement of feed preferences. D. Solà-Oriol1, E. Torrallardona1,1, IRTA, Mas de Bover, Constanti, Spain, 2Lucta SA, Barcelona, Spain.

M211 Influence of the type of diet on the growth performance of two genotypes of quails in a floor housing system. D. Cardoso-Jiménez1, A. Z. M. Salem1,2, R. Rojo-Rubio1, and A. Perez-Cháves1,1, Centro Universitario UAEM-Temascaltepec, Universidad Autónoma del Estado de México, Toluca-Tejupilco, Estado de México, México, 2Alexandria University, Alexandria, Egypt.

M212 Effects of a dietary complex enzyme in corn distillers dried grains with solubles (DDGS) on meat quality and pork fatty acid composition of loin muscle. J. S. Yoo1, H. D. Jang1, T. X. Zhou1, J. P. Wang1, and C. Y. Lee2, Dankook University, Cheonan, Choongnam, Korea, 2Regional Animal Industry Center, Jinju National University, Jinju, Gyeongnam, Korea.

M213 Supplementation with phytase and xylanase can increase energy availability in swine diets containing corn distillers dried grains with solubles (DDGS). M. D. Linde1, G. A. Apgar2, G. L. Cromwell1, P. H. Simmins4, and A. Owusu-Asiedu1,1, University of Kentucky, Lexington, 2Southern Illinois University, Carbondale, 3Danisco Animal Nutrition, Marlborough, UK.

**Physiology and Endocrinology**

Endocrinology and Metabolism


M215 Effect of exogenous insulin and fasting on estradiol production and growth hormone receptor (GHR) and insulin-like growth factor I (IGF-I) genes expression by the pre-ovulatory follicle of ewes. A. Schneider1, L. F. M. Pfeifer1, E. Schmitt1, J. W. Silva Neto1, L. T. Hax1, M. M. Antunes1, F. A. B. Del Pino1, G. R. Paludo1, and M. N. Corrêa4,1, Federal University of Pelotas, Brazil, 2University of Brasilia, Brazil.

M216 TNFα and adipocyte-hepatic metabolism at drying off and during early lactation in dairy cows. H. A. van Dorland1, H. Sadri1, and R. M. Bruckmaier1,1, University of Bern, Vetsuisse Faculty, Veterinary Physiology, Bern, Switzerland, 1Isfahan University of Technology, Department of Animal Science, Isfahan, Iran.

M217 Early-weaning up-regulates the expression of sucrase-isomaltase in the jejunum of the piglet. D. Lackeyram*, T. Archbold, K. C. Swanson, and M. Z. Fan, University of Guelph, Guelph, ON, Canada.

M218 Effect of propionate infusion on hepatic PEPCK and glucose-6-phosphatase expression in neonatal Holstein calves. S. S. Donkin*, E. Cedeño, and S. L. Koser, Purdue University, West Lafayette.

M219 The Effects of supplemented diet with fish oil and canola oil during transition period to early lactation on follicular dynamics of Iranian Holstein dairy cows. T. S. Vafa, A. Heravi Mousavi*, A. Naserian, M. Danesh Mesgaran, R.
Valizadeh, A. Parand, Excellent Center for Animal Science, Ferdowsi University of Mashhad, Iran.

M220 The effects of supplemented diet with fish oil and canola oil during transition period to early lactation on complete blood count of Iranian Holstein dairy cows. T. S. Vafa, A. Heravi Mousavi, A. Naserian, M. Danesh Mesgaran, and R. Valizadeh, Excellent Center for Animal Science, Ferdowsi University of Mashhad, Iran.


M224 Hematological profile of confined ewes fed corn silage. J. P. F. Silveira, J. L. C. B. Reis, M. A. Factori, D. H. Vieira, V. L. Tierzo, L. F. D. Medeiros, and C. Costa, São Paulo State University, Botucatu, SP, Brazil, University of Agrarian Sciences - University of Marília, Marília, SP, Brazil, Center of Creation of Animals of Laboratory, Rio de Janeiro, RJ, Brazil, Royal Federal university of Rio de Janeiro, Seropedica, RJ, Brazil.


M227 Serum and anterior pituitary gland (AP) concentrations of IGF-I during an estradiol induced LH surge in gilts. N. M. Rasmussen, C. E. Hostetler, and J. A. Clapper, South Dakota State University, Brookings.


M229 Relationships between dry matter intake (DMI), plasma progesterone (P4), and liver catabolic enzymes in lactating dairy cows. O. G. Sa Filho, C. O. Lemley, M. E. Wilson, J. Hillegass, J. L. M. Vasconcelos, and W. R. Butler, FMVZ/UNESP, Botucatu, SP, Brazil, West Virginia University, Morgantown, Cornell University, Ithaca, NY.


M231 Effects of BCS and level of concentrate feeding during early lactation on plasma concentrations of blood metabolites in pasture–fed dairy cows. F. Y. Obese, T. E. Stirling, C. A. Stockdale, K. L. Macmillan, A. R. Egan, and S. Humphreys, CSIR-Animal Research Institute, Accra, Ghana, School of Agriculture and Food Systems, the University of Melbourne, Victoria, Australia, School of Veterinary Science, the University of Melbourne, Werribee, Victoria, Australia, Department of Primary Industries, Kyabram, Victoria, Australia, Primegro Pty Ltd, Thebarton, South Australia, Australia.


M234 Plant-based diets enriched with linseed oil or marine algae and organic selenium alter reproductive performances of broiler breeder hens over the reproductive season. C. Brèque, C. Coss, L. Lessard, R. Gervais, D. Venne, M. R. Lefrançois, P. Y. Chouinard, G. Vandenber, and J. L. Bailey, Centre de recherche en biologie de la reproduction, Québec, QC, Canada, Département des Sciences Animales, Québec, QC, Canada, Couvoir Scott Liée, Scott Jonction, QC, Canada.
M235 Temporal changes in hepatic gene expression during the periparturient period of spring-calving beef cows on grazing conditions. A. L. Astessian¹, R. Perez-Clariget¹, G. Quintans², P. Soca³, B. A. Crooker², and M. Carriquiry³, ¹School of Agronomy, UDELAR, Uruguay, ²INIA, Treinta y Tres, Uruguay, ³Department of Animal Science, University of Minnesota, St. Paul.

M236 Effect of short-term prepartum supplementation on reproduction of multiparous beef cows on grazing conditions. G. Quintans¹, G. Banchero¹, G. Roig¹, and M. Carriquiry³, ¹INIA, Treinta y Tres, Uruguay, ³School of Agronomy, UDELAR, Uruguay.

M237 Endocrine and reproductive parameters of North American Holstein × New Zealand Holstein-Friesian crossbred cows on grazing conditions. A. Fernandez-Forens¹, M. Carriquiry³, V. Arteguita¹, D. Laborde³, and A. Meikle³, ¹Veterinary School, UDELAR, Uruguay, ³School of Agronomy, UDELAR, Uruguay. ²Private consultant, Uruguay.

M238 Effect of short-term prepartum supplementation on milk production and calf performance of multiparous beef cows on grazing conditions. M. Carriquiry³, G. Roig¹, G. Banchero¹, and G. Quintans³, ¹INIA, Treinta y Tres, Uruguay, ³School of Agronomy, UDELAR, Uruguay.

M239 Effect of bovine somatotropin (bST), dietary fat, and day in milk (DIM) on hepatic mineral concentrations in Holstein cows. M. Carriquiry³, W. J. Weber², W. A. House¹, and B. A. Crooker², ¹School of Agronomy, UDELAR, Uruguay, ²Department Animal Science, University of Minnesota, St. Paul, ³SDA-ARS, Ithaca, NY.

M240 Responses of physiological parameters in cattle to a short period of induced heat load. Y. Aharoni¹, A. Brosh², E. Tahar¹, and A. Abud¹, ¹VETERIX Ltd, Or Aqiva, Israel, ²Agricultural Research Organization, Ramat Yishai, Israel.

M241 Differential propionate effects on the mRNA expression of a putative beta-hydroxybutyrate sensitive receptor GPR109A in two adipose depots of goats. M. Mielenz² and H. Sauerwein, University of Bonn, Bonn, Germany.

M242 Effect of maternal nutrition and selenium (Se) supply on growth and thyroxine (T4) and triiodothyronine (T3) concentrations in female lambs. L. A. Lekatz¹, J. J. Reed, T. L. Neville, D. A. Redmer, L. P. Reynolds, J. S. Caton, and K. A. Vonnahme, Department of Animal Sciences, North Dakota State University, Fargo.


M244 Effects of heat stress on glucose homeostasis and metabolic response to an endotoxin challenge in Holstein steers. R. P. Rhoads², S. R. Sanders¹, L. Cole¹, M. V. Skrzypek¹, T. H. Elsasser², G. C. Duff², R. J. Collier¹, and L. H. Baumgard¹, ¹University of Arizona, Tucson, ²USDA-ARS, Beltsville, MD.

M245 Impact of unsaturated fatty acid supply on the regulation of CLA-induced milk fat depression in lactating cows. M. J. de Veth¹, J. M. Griñari¹, V. Toivonen¹, and K. J. Shingfield¹, BASF, Offenbach/Queich, Germany, University of Helsinki, Helsinki, Finland, MTT Agrifood Research Finland, Jokioinen, Finland.

Production, Management and the Environment

Beef and Dairy

M246 Sexed-biased semen for nulliparous heifers: Effects on reproductive and lactational performances. F. Guagnini¹, J. E. P. Santos², J. R. Lima¹, J. Petrow³, and R. C. Chebel³, ¹Veterinary Medicine Cooperative Extension, University of California Davis, Tulare, ²Department of Animal Science, University of Florida, Gainesville, ³Department of Veterinary Population Medicine, University of Minnesota, Saint Paul.

M247 Use of sex-sorted semen in superovulated Holstein cows and heifers: A case study. S. R. Potter¹, B. J. Paus¹, J. M. DeJarnette¹, and R. L. Nebel³, Spruce Haven Farm, LLC, Union Springs, NY, Select Sires, Inc, Plain City, OH.

M248 What percentage of Nellore (Bos indicus) bulls exhibit fertility-associated antigen on sperm membranes? J. C. Dalton¹, L. Deragon², and J. L. M. Vasconcelos³, ¹University of Idaho, Caldwell, ²Alta Genetics Brazil, Uberaba, MG, Brazil, ³FMVZ-UNESP, Botucatu, SP, Brazil.

M249 Effect of dry period length on productive and reproductive parameters at subsequent lactation period of Holstein cows. D. R. Lozano¹ and C. F. Arêchiga², ¹Instituto Nacional de Investigaciones Forestales, Agrícolas y Pecuarias, Aguascalientes, Aguascalientes, México, ²Universidad Autónoma de Zacatecas, Zacatecas, Zacatecas, México.

M250 Effect of total dissolved solids and sulfates in drinking water on growing heifers fed sorghum silage. J. I. Arroquy¹, ², M. Avila¹, J. Saravia¹, R. Ibáñez¹, and P. Fisolo¹, ¹INTA Santiago del Estero, Santiago del Estero, Argentina, ²Univ. Nacional de Santiago del Estero - Fac. Agronomía y Agroindustrias, Santiago del Estero, Argentina, CONICET,
Santiago del Estero, Argentina.

M251 Non genetics effects on reproductive traits in Nellore female: I. Gestation length. D. H. Vieira¹, V. C. Rodrigues², L. F. D. Medeiros², C. G. Barbosa², J. P. P. Silveira³, V. L. Tierzo³, J. L. C. B. Reis*¹, and R. S. B. Pinheiro¹. ¹Center of Creation of A, Rio de Janeiro, RJ, Brazil, ²Rural Federal university of Rio de Janeiro, Seropedica, RJ, Brazil, ³São Paulo State University, Botucatu, SP, Brazil, ⁴University of Agrarian Sciences - University of Marília, Marília, SP, Brazil.

M252 Effects of differing levels of rumen degradable protein on nitrogen metabolism in dairy cows and environmental pollution. H. Rafiee*, University of Tehran, Tehran, Iran.

M253 PGF2α analog on uterine health and reproductive performance of dairy cattle. R. M. Santos*, D. G. B. Demétrio², C. C. Dias², and J. L. M. Vasconcelos². ¹FAMEV-UFU, Uberlandia, MG, Brazil, ²FMVZ-UNESP, Botucatu, SP, Brazil.

M254 Effects of GnRH treatment 7 days prior to resynchronization on conception rates to previous and repeat inseminations. R. L. Nebel*, J. M. Defarnette¹, and B. A. Meek². ¹Select Sires, Inc., Plain City, OH, ²Cache Valley/Select Sires, Logan, UT.

M255 Tasco alleviation of heat stress in dairy cows. L. B. Pompeu*¹, J. E. Williams¹, D. E. Spiers¹, R. L. Weaber¹, M. R. Ellersiek¹, K. M. Sargent¹, N. P. Feyerabend¹, H. L. Vellios¹, and F. Evans². ¹University of Missouri, Columbia, ²Acadian Seaplants, Dartmouth, NS, Canada.


M257 Validation of right ruminal artery and vein as models of bovine foregut vasculature. J. L. Klotz*, L. P. Bush², and J. R. Strickland¹. ¹USDA-ARS, FAPRU, Lexington, KY, ²University of Kentucky, Lexington.

M258 Effects of a commercial product containing Morinda citrifolia extract on growth performance and health of calves with a high risk of developing bovine respiratory disease. M. S. Brown*, R. Godbee², B. Coufal¹, C. L. Maxwell¹, J. O. Wallace¹, and C. H. Ponce¹. ¹Feedlot Research Group, West Texas A&M University, Canyon, ²Morinda Agriculture, Provo, UT.

Ruminant Nutrition By-product Feeds


M261 In situ ruminal protein degradation of whole corn or corn endosperm distiller grains. W. Z. Yang*, L. E. Armentano², and Y. L. Li¹. ¹Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, ²University of Wisconsin, Madison.


M263 Effects of feeding different combinations of stored wet corn distillers grains plus soluble (WDGS) on performance of lactating dairy cows. H. A. Ramirez Ramirez*, P. J. Kononoff, and A. M. Gehman, University of Nebraska Lincoln, Lincoln.


M265 The effects of replacing barley silage or barley grain with dried distillers grains plus solubles on productivity of lactating dairy cows. S. Z. Zhang*, G. B. Penner, and M. Oba, University of Alberta, Edmonton, AB, Canada.

M266 In vitro intestinal digestion of ruminal undegraded protein of distiller grain. Y. L. Li*, W. Z. Yang¹, and L. E. Armentano². ¹Agriculture and Agri-Food Canada, Research Center, Lethbridge, AB, Canada, ²University of
Wisconsin, Madison.

M267  Effects of diets containing elevated levels of modified wet corn distillers grains with solubles (DGS) on performance and carcass characteristics of beef steers. J. M. Carmack1, P. M. Walker1, R. L. Atkinson2, S. W. Reader3, and B. R. Wiegand4. 1Department of Agriculture, Illinois State University, Normal, 2Animal Science, Food and Nutrition, Southern Illinois University, Carbondale, 3Division of Animal Science, University of Missouri, Columbia.

M268  Effects of high levels of distillers grains and composition of distillers grains on performance and carcass characteristics in steers. J. M. Carmack1, P. M. Walker1, R. L. Atkinson2, S. W. Reader3, and B. R. Wiegand4. 1Department of Agriculture, Illinois State University, Normal, 2Animal Science, Food and Nutrition, Southern Illinois University, Carbondale, 3Division of Animal Science, University of Missouri, Columbia.

M269  Effect of varying ratios of corn to wheat grain in ethanol production on fermentation of ethanol by-product in batch culture. W. Z. Yang1, J. J. McKinnon2, T. A. McAllister1, K. A. Beauchemin1, and D. J. Gibb1. 1Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, 2University of Saskatchewan, Saskatoon, SK, Canada.


M271  Performance of post-weaned Holstein heifer calves fed grain mixes with glycerin as an energy source. G. Golombeski1, M. Raeth-Knight1, B. Ziegler2, R. Larson1, D. Ziegler2, H. Chester-Jones2, and J. Linn1. 1University of Minnesota, St. Paul, 2Hubbard Feeds, Mankato, MN. 3University of Minnesota, Southern Research and Outreach Center, Waseca.


M273  Effects of increasing concentrations of dietary glycerol on ruminal environment and digestibility in lactating dairy cows. J. Boyd1, J. W. West, and J. K. Bernard, University of Georgia, Tifton.

M274  Response of dairy cows to the complete substitution of corn by crude glycerin. O. F. Zacaroni1, N. M. Lopes1, S. Siécola Júnior1, G. S. Dias Júnior1, L. L. Bitencourt1, B. F. Carvalho1, J. R. M. Silva2, R. A. N. Pereira3, and M. N. Pereira4. 1Universidade Federal de Lavras, Lavras, MG, Brazil, 2Centro Federal de Educação Tecnológica, Januária, MG, Brazil, 3Better Nature Research Center, Ijaci, MG, Brazil.

M275  Glycerol supplementation to corn silage- or cottonseed hull-based diets for lactating dairy cows. J. H. Shin1, S. C. Kim1,2, D. Wang1, A. T. Adesogan1, and C. R. Staples1. 1Department of Animal Sciences, University of Florida, Gainesville, 2Department of Animal Science, Gyeongsang National University, Jinju, Gyeongsangnam, South Korea.

M276  The effects of feeding glycerol on rumen fermentation and bacteria. R. B. Poțu1, A. A. AbuGhazaleh1, D. Hastings1, S. Abo El-Nor2, and S. Ibrahim1. 1Southern Illinois University, Carbondale, 2Egyptian National Research Center, Cairo, Egypt. 3North Carolina A&T State University, Greensboro.


M280  Feeding behavior of yearling bulls fed a finishing diet containing low pectin wet citrus pulp silage. J. O. Sarturi1, L. G. Nussio1, M. Zopollatto1, J. T. Vasconcelos2, and J. G. M. Mano1. 1University of São Paulo, São Paulo, SP, Brazil, 2University of Nebraska, Scottsbluff.

M281  Feeding behavior of yearling bulls fed a finishing diet containing low pectin wet citrus pulp. J. O. Sarturi1, L. G. Nussio1, M. Zopollatto1, J. T. Vasconcelos2, and L. J. Mari1. 1University of São Paulo, São Paulo, SP, Brazil, 2University of Nebraska, Scottsbluff.
Ruminant Nutrition

Dairy

M282  Dry matter and nutrient intake of sheep fed with different levels of cashew nut in the diet. E. S. Pereira*, P. G. Pimentel, J. G. L. Regadas Filho, M. S. S. Carneiro, and I. S. G. Maia, Universidade Federal do Ceará, Fortaleza, Ceará, Brasil.

M283  Antioxidant activity of plasma and carcass characteristics of mature cows fed diets with manzarena. C. Rodríguez-Muela¹, S. Romero-Villalobos², H. E. Rodríguez-Ramírez³, A. C. Arzola-Alvarez⁴, A. Flores-Marínóla, G. Corral⁵, O. La O-León⁶, and J. A. Grado-Ahuir⁷, ¹Universidad Autónoma de Chihuahua, Chihuahua, Chihuahua, México, ²Instituto Nacional de Investigaciones Agrícolas Forestales y Pecuarias, Delicias, Chihuahua, México, ³Instituto de Ciencia Animal, La Habana, Cuba.

M284  Effects of tomato pomace on feed intake and milk production of lactating dairy cows. R. Safari, R. Valkizadeh*, A. A. Naserian, and A. M. Tahmasbi, Department of Animal Science (Excellent Center of Animal Nutrition), Faculty of Agriculture, Ferdowsi University of Mashhad, Mashhad, Iran.


M286  Economic analysis of alfalfa hay inclusion in wet corn gluten feed based diets for lactating dairy cattle. C. R. Mullins and B. J. Bradford, Kansas State University, Manhattan.

M287  Effect of alfalfa hay particle size and source of neutral detergent soluble carbohydrates on intake, chewing activity, ruminal fermentation and nutrient digestibility of midlactation cows. A. Asadi*, G. R. Ghorbani, M. Alikhani, and M. Bagheri, Department of Animal Sciences, Isfahan University of Technology, Isfahan, Iran.


M289  Effect of roughage to concentrate ratio on ruminal parameters and protein degradability in dairy cows. L. J. Erasmus*, W. A. van Niekerk, H. Nienaber, and P. H. Robinson, ¹University of Pretoria, Department of Animal and Wildlife Sciences, Pretoria, South Africa, ²University of California, Department of Animal Science, Davis.

M290  Effect of decreasing forage fiber in close-up cows diets on rumination time, DMI and subsequent lactation performance. A. Nikkhah*, V. Keshavarz², H. Amanloo², M. Dehghan², and M. Kazemi Bonchenari¹, ¹Department of Animal Sciences, University of Tehran, Karaj, Iran, ²Department of Animal Sciences, University of Zanjan, Zanjan, Iran.


M292  Corn bran vs. corn grain at two levels of forage: Intake and production responses by lactating dairy cows. C. Arndt*, L. E. Armentano¹, and M. B. Hall², ¹Department of Dairy Science, University of Wisconsin, Madison, ²U.S. Dairy Forage Research Center, University of Wisconsin, Madison.

M293  Corn bran vs. corn grain at two levels of forage: Apparent digestibilities by lactating dairy cows. C. Arndt*, L. E. Armentano¹, and M. B. Hall², ¹Department of Dairy Science, University of Wisconsin, Madison, ²U.S. Dairy Forage Research Center, University of Wisconsin, Madison.


M295  Effect of dietary concentrate level on rumen fermentation, digestibility, and nitrogen losses in dairy cows. M. Agle*, A. N. Hristov², S. Zaman³, and C. Schneider¹, ¹University of Idaho, Moscow, ²Pennsylvania State University, University Park.

M296  Feeding dairy cows rolled barley grain treated with lactic acid and heat delays in situ DM disappearance and prevents development of sub-acute ruminal acidosis. Q. Zebeli*, A. Mazzolari, S. M. Dunn, and B. N. Armetaj, University of Alberta, Edmonton, AB, Canada.

M298 Corn endosperm type influences nutrient digestibility in lactating dairy cows. J. C. Lopes, R. D. Shaver, P. C. Hoffman, M. S. Akins, S. J. Bertics, H. Gencoglu, and J. G. Coors, Department of Dairy Science, University of Wisconsin, Madison, Department of Animal & Nutritional Sciences, Faculty of Veterinary Medicine, Uludag University, Bursa, Turkey, Department of Agronomy, University of Wisconsin, Madison.


M300 Effect of starch infusion site on glucose rate of appearance (Ra) and digestibility of starch and nitrogen in dairy cows. F. Hassanat, H. Lapierre, and D. R. Ouellet, Dairy and Swine R&D Centre, Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada.

M301 The effects of different sources of nonstructural carbohydrates and addition of full fat roasted canola seed on milk production and composition in lactating cows. M. Sari, A. A. Naserian, R. Valizadeh, and S. Salari, Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran.

M302 Supplemental starch in postpartum dairy cow diets 1. Effect on productivity. B. L. Dyck, L. Doepel, and M. G. Colazo, University of Alberta, Edmonton, AB, Canada, Alberta Agriculture and Rural Development, Edmonton, AB, Canada.


M305 Use of milk urea nitrogen (MUN) to improve dairy farm management. M. Nourozi, A. Heravi Moussavi, and M. Abazari, Department of Animal Science, Ferdowsi University of Mashhad, Mashhad, Iran, Department of Animal Science, Khorasan Razavi Agricultural and Natural Resources Research Center, Torogh, Mashhad, Iran.


M308 Effects of different levels of rumen degradable protein on rumen and plasma parameters in midlactation Holstein cows. H. Rafiee, Aboureihan Campus, Tehran University, Tehran, Iran.

M309 Partial replacement of soybean meal by protected urea effects on milk yield and composition. V. L. Souza, P. R. B. Piekarski, C. P. Jesus, M. N. Pereira, and R. Almeida, Universidade Federal do Paraná, Curitiba, PR, Brazil, Colégio Agrícola Olegário Macedo, Castro, PR, Brazil, Universidade Federal de Lavras, Lavras, MG, Brazil.

M310 Effect of different ratios of ammonia nitrogen to peptide nitrogen on microbial nitrogen synthesis in dairy cows. A. Nikkhah, M. Kazemi Bonchenari, K. Rezayazdi, M. Dehghan, and H. Kohram, Department of animal Sciences, Faculty of agronomy and animal sciences, University of Tehran, Karaj, Iran.

M311 Optimum ratio of ammonia nitrogen to peptide nitrogen in ruminal fluid for fiber digestibility and nitrogen utilization efficiency in dairy cows. M. Kazemi Bonchenari, K. Rezayazdi, M. Dehghan, A. Nikkhah, H. Khalilvandi, V. Keshavarz, and F. Ghaziani, Department of Animal Sciences, Faculty of Agronomy and Animal Sciences, University of Tehran, Karaj, Iran, Department of Animal Sciences, University of Zanjan, Zanjan, Iran.

M312 Effect of whole cottonseed levels on ruminal parameters of dairy cows grazing elephant grass. J. Cesar Martinez, F. Department of Animal Science, Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran, Department of Animal Science, University of Zanjan, Zanjan, Iran.
Auguto Portela Santos, T. Vinhas Volytorni, A. Vaz Pires, and C. Maris Machado Brittar, São Paulo State University, Jaboticabal, São Paulo, Brazil, São Paulo University, Piracicaba, São Paulo, Brazil.

M313 Effect of whole cottonseed levels on performance of dairy cows grazing elephant grass. J. Cesar Martinez, F. Auguto Portela Santos, T. Vinhas Volytorni, M. Antonio Penati, and A. Mendonça Pedroso, São Paulo State University, Jaboticabal, São Paulo, Brazil, São Paulo University, Piracicaba, São Paulo, Brazil.

M314 Effect of whole cottonseed processing on ruminal degradability of dairy cow grazing elephant grass. J. Cesar Martinez, F. Auguto Portela Santos, T. Vinhas Volytorni, and A. Dias Pacheco Júnior, São Paulo State University, Jaboticabal, São Paulo, Brazil, São Paulo University, Piracicaba, São Paulo, Brazil.

M315 Effect of dietary protein on urea concentrations and preovulatory follicle characteristics in dairy cattle. U. Moallem, R. Blank, M. Zachut, and A. Arieli, ARO, Bet Dagan, Israel, Faculty of Agriculture, Rehovot, Israel.

M316 Relationship between milk odd and branched-chain fatty acids and duodenal flow of microbial protein. L. Wang, J. Q. Wang, D. P. Bu, Khas-erdene, and S. Y. Luan, State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, P. R. China.

M317 Comparison of optimal lysine and methionine concentrations in metabolizable protein estimated by the NRC (2001), CPM-Dairy (v.3.0.10) and AMTS.Cattle (v.2.1.1) models. N. Whitehouse, C. Schwab, T. Tylutki, D. Luchini, and B. Sloan, University of New Hampshire, Durham, Integrated Solutions for Sustainable Agriculture, Cortland, NY, Adisseo, Atlanta, GA.

M318 Reevaluation of the breakpoint estimates for the NRC (2001) required concentrations of lysine and methionine in metabolizable protein for maximal content and yield of milk protein. C. Schwab, N. Whitehouse, D. Luchini, and B. Sloan, University of New Hampshire, Durham, Adisseo, Atlanta, GA.

M319 Rumen microbial population shifts in dairy cattle experimentally induced with subacute ruminal acidosis (SARA). E. Khafipour, S. Li, J. C. Plaizier, and D. O. Krause, Department of Animal Science, University of Manitoba, Winnipeg, MB, Canada.

M320 Molecular population analysis of Escherichia coli associated with subacute ruminal acidosis (SARA) in dairy cattle. E. Khafipour, J. C. Plaizier, and D. O. Krause, Department of Animal Science, University of Manitoba, Winnipeg, MB, Canada.


M322 Estimation of herd level risk of subacute ruminal acidosis on four commercial dairies on the Priority P-One Program. K. Schneider, D. Mertz, K. Mertz, and R. Breunig, Priority IAC, Manitowoc, WI, Agtech Products, Inc., Waukesha, WI.

M323 Use of magnesium exchanged natural zeolite as a source of ruminal buffer additive for lactating dairy cows. C. M. Dschkaak, J.-S. Eun, A. J. Young, and S. Peterson, Utah State University, Logan, Zeotech Corporation, Fort Worth, TX.


M326 Effect of β-carotene supply during close-up dry period on ovulation at the first follicular wave postpartum in dairy cows. K. Kawashima, S. Nagashima, Y. Fujihara, T. M. Schweigert, K. Sawada, A. Miyamoto, and K. Kida, Obihiro University of Agriculture and Veterinary Medicine, Obihiro, Hokkaido, Japan, University of Potsdam, Potsdam-Rehbrücke, Germany, DSM Nutrition Japan K.K., Tokyo, Japan.

M327 Effect of prepartum diet on rumen bacterial adaptation to a lactation diet fed to dairy cattle. S. E. Stebulis, D. M. Stevenson, G. J. M Rosa, P. J. Weimer, and R. R. Grummer, University of Wisconsin, Madison, USDA-ARS US Dairy Forage Research Center, Madison, WI.

M328 Effect of feeding level on the sorting behavior of lactating dairy cows. E. K. Miller-Cushon and T. J. DeVries, Department of Animal and Poultry Science, University of Guelph, Kemptville Campus, Kemptville, Ontario, Canada.

M329 Relationship of dairy cattle chewing behavior with forage fragility and fiber digestibility. K. W. Cotanch, H. M.

M331 Concentration of mammalian lignan enterolactone in milk of dairy cows fed different levels of flaxseed hulls. N. Gagnon*, C. Córtes, C. Benchaar, and H. V. Petit, Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada.


M334 Performance and ruminal fermentation parameters of lactating dairy cows during hot environment. J. P. Wang1,2, J. Q. Wang2, D. P. Bu2, F. D. Li1, X. K. Huo2, T. J. Guo2, H. Y. Wei2, and L. Y. Zhou1, Gansu Agricultural University, Lanzhou, Gansu, China, Chinese Academy of Agricultural Sciences, Beijing, China.

Ruminant Nutrition
Forages

M335 Efficiency of different chemicals in deactivation of phenolic compounds in Sainfoin (Onobrychis vicifolia Scop.). H. Khalilvandi-Behroozyar, M. Dehghan-Banadaki*, and K. RezaYazdi, Research Center of Excellence for Improving Sheep Carcass Quality and Quantity, Animal Science Department, University of Tehran, Karaj, Tehran, I.R. Iran.

M336 The effect of high sugar grass on nitrogen and methane output in cattle: A modeling approach. J. L. Ellis*, A. Bannink1, J. Dijkstra2, A. J. Parsons2, S. Rasmussen3, G. R. Edwards4, E. Kebreab5, and J. France6. 1Centre for Nutrition Modelling, Department of Animal and Poultry Science, University of Guelph, Guelph, ON, Canada, 2Animal Sciences Group, Division Animal Production, Wageningen University and Research Centre, Lelystad, The Netherlands, 3Animal Nutrition Group, Wageningen Institute of Animal Sciences, Wageningen University, Wageningen, The Netherlands, 4AgResearch, Palmerston North, New Zealand, 5Lincoln University, Lincoln, New Zealand, 6Department of Animal Science, University of Manitoba, Winnipeg, MB, Canada.

M337 Lipolysis and biodehydrogenation of forage species at vegetative and reproductive stages of growth. A. Cabiddu1, M. R. F. Lee2, L. Salis1, N. D. Scollan1, and M. L. Sullivan1, 1AGRIS, Sardinia, Italy, 2Abertyswyth University, Wales, UK, 3USDA-DFRC, Madison, WI.

M338 Effects of maturity of alfalfa conserved as silage on intake, productivity, and rumen pools in lactating dairy cows. K. L. Kammes*, Y. Ying, and M. S. Allen, Michigan State University, East Lansing.

M339 Alfalfa silage length of cut interacts with feed intake to affect concentration of milk components in Holstein cows. K. L. Kammes*, Y. Ying, and M. S. Allen, Michigan State University, East Lansing.

M340 Protein fractionation of various whole crop silages, and effect of silage based TMR on fermentation characteristics and degradability in vitro, and ruminal degradability and whole tract digestibility of TMR by cattle. J. Shinekhuu1, G. L. Jin1, S. H. Choi1, B. J. Ji1, X. Z. Li2, and M. K. Song1, 1Department of Animal Science, Chungbuk National University, Cheongju, Chungbuk, Korea, 2Department of Animal Science, Yanbian University, Yanji, Jilin, China.


M343 As corn plants mature, NDF mass decreases. P. M. Walker1, J. M. Carmack1, L. H. Brown2, and F. N. Owens2, 1Department of Agriculture, Illinois State University, Normal, 2Pioneer Hi-Bred International, a DuPont Business, Johnston, IA.

M344 Effects of moisture content and storage time on quality of baled TMR. J. Wang, J. Q. Wang*, W. J. Guo, Z. T. Song,
J. Y. Zhang, and D. P. Bu, *The State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China.*


Teaching/Undergraduate & Graduate Education

M347 An introductory animal cell culture course for animal science, biomanufacturing and biotechnology programs. P. E. Mozdziak*1,2, J. N. Petitte1,2, and S. Carson1, *Biotechnology Program, North Carolina State University, Raleigh, Biomanufacturing Program, North Carolina State University, Raleigh.*

M348 Justification of university equine extra-curricular activities. M. Nicodemus*, *Mississippi State University, Mississippi State.*

M349 A practical stem cell culture course for agricultural, life science, and engineering students. J. N. Petitte1,2, P. E. Mozdziak1,2, and S. Carson1, *North Carolina State University, Biotechnology Program, Raleigh, North Carolina State University, Biomanufacturing Program, Raleigh.*

M350 Reliability of item scores on end-of-semester departmental course evaluation. M. A. Wattiaux* and P. M. Crump, *University of Wisconsin, Madison.*

M351 Effect of instructor on use of an informal consumer sensory panel to teach students concepts related to beef palatability. J. A. Daniel*, S. E. Kitts1, and T. D. Pringle2, *Berry College, Mount Berry, GA, University of Georgia, Athens.*

M352 Factors influencing student success in an introductory to animal science class. F. M. LeMieux*, T. H. Shields, and J. T. Compton, *McNeese State University, Lake Charles, LA.*

M353 Introducing a “Nutritional Physiology Webinar” for animal scientists. K. J. Harvatine*, *Penn State University, University Park.*

M354 Assessment of needs for teaching, research and extension for goat sector. S. Solaiman*, C. Hill, N. Gurung, O. Bolden-Tiller, and C. Okere, *Tuskegee University, Tuskegee, AL.*

M355 Preferences and backgrounds of incoming students in animal sciences at Tuskegee University. O. U. Bolden-Tiller*, E. Bush, and S. Bruinton, *Tuskegee University, Tuskegee, AL.*

**SYMPOSIA AND ORAL SESSIONS**

**Alpharma Beef Cattle Nutrition Symposium**

**Chair: Matt Hersom, University of Florida**

* 517b

9:30 AM Introduction


Animal Health

Mastitis, Lameness, and Stress

Chair: Gina Pighetti, University of Tennessee, Knoxville

511cf


9:45 AM 15 Reproduction and milk loss following clinical mastitis compared among J5 vaccinates and controls. D. J. Wilson*, Utah State University, Logan.

10:00 AM 16 Relationships between rumen lipopolysaccharide and mediators of inflammatory response with milk fat production and efficiency in dairy cows. Q. Zebeli, S. M. Dunn, and B. N. Ametaj*, University of Alberta, Edmonton, Alberta, Canada.

10:15 AM 17 Joint association of some Staphylococcus aureus genes with in-vitro biofilm formation and sub-clinical intramammary infection. B. V. Le Thanh1,2,3, C. L. Jacob1,3, S. Messier1,3, F. Malouin1,3, K. Pépin Gaudreau2, and D. Scholl1,3, 1University of Montreal, Saint-Hyacinthe, Quebec, Canada, 2University of Sherbrooke, Sherbrooke, Quebec, Canada, 3University of Guelph, Guelph, ON, Canada.

10:30 AM 18 Effect of flunixin meglumine treatment following parturition on cow health and milk production. T. F. Duffield1,4, H. Putnam-Dingwell1, D. Weary2, A. Skidmore3, L. Neuder4, W. Raphael1, S. Millman1, N. Newby1, and K. E. Leslie1, 1University of Guelph, Guelph, ON, Canada, 2University of British Columbia, Vancouver, ON, Canada, 3Iowa State University, Ames, 4Michigan State University, East Lansing.

10:45 AM 19 Use of dermal fibroblasts to identify cows with high and low innate immune response potential. S. Kandasamy* and D. E. Kerr, University of Vermont, Burlington.

11:00 AM 20 Effect of farm, housing and management practices on the occurrence of clinical mastitis and pathogen isolation. Y. B. Hunt1,2, and J. K. Margerison*, 1Massey University, Palmerston North, New Zealand, 2Plymouth University, Newnton Abbot, UK.

11:15 AM 21 The effect of lameness in Holstein Friesian dairy cattle on live weight, milk yield, milk let down and milking duration. J. A. Hollis* and J. K. Margerison*, 1Massey University, Palmerston North, New Zealand, 2Plymouth University, Newnton Abbot, UK.

11:30 AM 22 A comparison of measures of stress following administration of either lipopolysaccharide (LPS) or corticotropin-releasing hormone (CRH) to Brahman bulls and heifers. L. E. Hubert1,2, J. A. Carroll1, M. A. Ballou1, J. W. Dailey1, L. C. Caldwell1, A. N. Loyd1,3, N. C. Burdick2,1, R. C. Vann2, T. H. Welsh, Jr., and R. D. Randel2, 1Livestock Issues Research Unit, USDA-ARS, Lubbock, TX, 2Texas AgriLife Research, Texas A&M System, College Station, 3Texas AgriLife Research, Texas A&M System, Overton, 4Department of Animal and Food Sciences, Texas Tech University, Lubbock, 5MAFES, Mississippi State University, Raymond.

11:45 AM 23 Peripartum measures of stress, inflammation and energy status as predictors for postpartum health disorders in transition dairy cows. J. M. Huzey*1, T. R. Overton1, D. V. Nydam1, and R. J. Grant2, 1Cornell University, Ithaca, NY, 2W. H. Miner Agricultural Research Institute, Chazy, NY.

12:00 PM 24 Use of rumen temperature for health monitoring in cattle. L. E. Sims*, T. K. Dye-Rose1, C. L. Goad2, B. P. Holland1, L. O. Burcigaga-Robles1, D. L. Step1, C. R. Krethiel1, and C. J. Richards1, 1Department of Animal Science, Oklahoma State University, 2Department of Statistics, Oklahoma State University, 3Veterinary Clinical Sciences, Oklahoma State University.
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>12:15 PM</td>
<td>Relationship between milk fat depression and laminitis in early lactating Holstein cows. M. Vazirigohar*, A. Nejati Jawaremi, and A. Nikkhah, University of Tehran, Karaj, Tehran, Iran.</td>
</tr>
<tr>
<td></td>
<td><strong>Bioethics</strong></td>
</tr>
<tr>
<td></td>
<td><strong>A Scientist's Guide to Approaching Bioethics</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Chair: Janice Siegford, Michigan State University</strong></td>
</tr>
<tr>
<td>9:30 AM</td>
<td>Introduction. Diane Van Hekken, Dairy Processing and Products Research, ERRC, ARS, USDA.</td>
</tr>
<tr>
<td>9:35 AM</td>
<td>Bioethical considerations of food animal products and production. W. R. Stricklin*, University of Maryland, College Park.</td>
</tr>
<tr>
<td>10:05 AM</td>
<td>Discussion</td>
</tr>
<tr>
<td>10:10 AM</td>
<td>Thinking critically about bioethical issues. K. K. Schillo*, University of Kentucky, Lexington.</td>
</tr>
<tr>
<td>10:45 AM</td>
<td>A pedagogical tool for scientists faced with ethical issues. C. C. Croney*, The Ohio State University, Columbus.</td>
</tr>
<tr>
<td>11:15 AM</td>
<td>Questions and overall discussion</td>
</tr>
<tr>
<td></td>
<td><strong>Breeding and Genetics</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Dairy Cattle Breeding I</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Chair: Kent Weigel, University of Wisconsin</strong></td>
</tr>
<tr>
<td>9:30 AM</td>
<td>Using veterinary and milk recording data for a genetic analysis of health traits. J. Moro-Méndez*1, E. Bouchard2, and R. I. Cue1, McGill University, Ste-Anne-de-Bellevue, QC, Canada, Université de Montréal, Faculté de Médecine Vétérinaire, Saint-Hyacinthe, QC, Canada.</td>
</tr>
<tr>
<td>9:45 AM</td>
<td>Use of linear and threshold models for analysis of producer-recorded health data in Holstein cattle. T. F.-O. Neuenschwander1, F. Miglior*2,3, J. Jamrozik1, and L. R. Schaeffer1, CGIL, Dept. of Animal and Poultry Science, University of Guelph, Guelph, ON, Canada, Dairy and Swine Research and Development Centre, Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, Canadian Dairy Network, Guelph, ON, Canada.</td>
</tr>
<tr>
<td>10:00 AM</td>
<td>Comparison of service-sire fertility evaluations formerly or currently available to the US dairy industry. H. D. Norman*, J. L. Hutchison, and J. R. Wright, Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD.</td>
</tr>
<tr>
<td>10:15 AM</td>
<td>Analysis of accounting for production in the genetic evaluation of direct herd life in Canadian Holsteins. A. Sewalem*1,2, G. Kistemaker1, and F. Miglior1,2, Agriculture and Agri-Food Canada, Sherbrooke, Quebec, Canada, Canadian Dairy Network, Guelph, ON, Canada.</td>
</tr>
<tr>
<td>10:30 AM</td>
<td>Estimates of residual feed intake in Holstein dairy cattle using an automated, continuous feed intake monitoring system. E. E. Connor1, J. L. Hutchison2, H. D. Norman2, and R. L. Baldwin, VI, USDA-ARS, Bovine Functional Genomics Laboratory, Beltsville, MD, USDA-ARS, Animal Improvement Programs Laboratory, Beltsville, MD.</td>
</tr>
<tr>
<td>10:45 AM</td>
<td>Break</td>
</tr>
<tr>
<td>11:00 AM</td>
<td>Trends for monthly changes in days open in Holsteins. M. Pszczola<em>1,2, I. Aguilar</em>1,3, and I. Misztal1, University of Georgia, Athens, Animal Breeding and Genetics Group, Wageningen University, Wageningen, the Netherlands, Instituto Nacional de Investigación Agropecuaria, LasBrujas, Uruguay.</td>
</tr>
<tr>
<td>11:15 AM</td>
<td>Effects of milk fat composition, DGAT1 and SCD1 on fertility traits in Dutch Holstein cattle. R. M. Demeter*1,2, G. C. B. Schopen1, A. G. J. M. Oude Lansink2, M. P. M. Meeuwissen3, and J. A. M. van Arendonk1, Animal Breeding and Genetics Centre, Wageningen University, Wageningen, the Netherlands.</td>
</tr>
</tbody>
</table>
Deriving final score from linear traits for the Italian Holstein cattle. S. Biffani, F. Canavesi*, and R. Finocchiaro, ANAFI, Cremona, Italy.

Modelling technical parameters of individual extended lactation curves in Italian Holsteins. R. Steri¹, E. L. Nicolazzi², G. Gaspa³, F. Canavesi², C. Dimauro³, and N. P. P. Macciotta*¹. Dipartimento di Scienze Zootecniche, Università di Sassari, Sassari, Italia; Associazione Nazionale Allevatori Frisona Italiana, Cremona, Italia.

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

Hybridization quality diagnostics using control probes on long-oligonucleotide microarrays: An application to the Pigoligoarray. J. P. Steibel*¹, M. Wysocki², V. D. Rilington¹, A. M. Ramos¹², J. K. Lunney², and C. W. Ernst¹. University of Michigan State University, East Lansing, ANRI, BARC, ARS, USDA, Beltsville, MD, Wageningen University, Wageningen, the Netherlands.

Low density SNP chip for non-genotyped animals. H. Wang*¹ and R. Rekaya¹², Department of Animal and Dairy Science, University of Georgia, Athens.

An approach to predict and manage Mendelian sampling variation based on dense SNP data. G. Abdel-Azim*, Genex Cooperative Inc., Shawano, WI.

Selection of SNPs for an optimal low-density assay for genomic prediction of transmitting abilities. A. Vasquez*, G. de los Campos, K. A. Weigel, G. J. M. Rosa, and D. Gianola, University of Wisconsin, Madison.

Break

Transcriptional profiling during fetal skeletal muscle development of Piau and commercial pigs. B. P. Sollero*¹², V. D. Rilington¹, R. J. Tempelman¹, S. E. F. Guimarães², J. D. Guimarães², M. S. Lopes*, N. E. Raney¹, J. P. Steibel¹, and C. W. Ernst¹. University of Michigan State University, East Lansing, Federal University of Viçosa, Viçosa, MG, Brazil.

Extent of linkage disequilibrium in purebred and crossbred beef cattle. D. Lu¹, M. Sargolzaei¹, M. Kelly¹, G. Vander Voort¹, Z. Wang¹, J. Mah², G. Plastow², S. Moore², and S. Miller³. University of Guelph, Guelph, Ontario, Canada; University of Alberta, Edmonton, Alberta, Canada.

Construction of LD maps for SNPs linked to susceptibility loci. L. Gomez-Raya*, University of Nevada, Reno.

Characterization of a whole-genome map of single nucleotide polymorphisms applied to two selection lines in British dairy cattle. G. Banos*¹ and M. P. Coffey². Faculty of Veterinary Medicine, Aristotle University of Thessaloniki, Thessaloniki, Greece; Sustainable Livestock Systems, Scottish Agricultural College, Edinburgh, Scotland, UK.

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


Feeding anionic salts in the prefresh period, the addition of sodium bicarbonate to colostrum replacer and their effects on IgG absorption in the neonate. K. M. Morrill*, S. P. Marston, N. L. Whitehouse, and P. S. Erickson, University of New Hampshire, Durham.
10:00 AM  48  Intramammary infections in pasture-based dairy cows supplemented with barium selenate before calving. A. Ceballos*, J. Kruze*, I. R. Dough*, J. Sanchez*, H. W. Barkema*, J. J. Wichtel*, and F. Wittwer*, 1Centre for Veterinary Epidemiologic Research, University of Prince Edward Island, Charlottetown, Prince Edward Island, Canada, 2Institute of Microbiology, Universidad Austral de Chile, Valdivia, Chile, 3Canadian Food and Inspection Agency, Charlottetown, Prince Edward Island, Canada, 4Department of Production Animal Health, University of Calgary, Calgary, Alberta, Canada, 5Institute of Veterinary Clinical Sciences, Universidad Austral de Chile, Valdivia, Chile.


10:30 AM  50  Effects of level of concentrate supplementation on milk production and ruminal pH in lactating cows on pasture. G. R. Cleveger*, L. R. Tager, and K. M. Krause, West Virginia University, Morgantown.

10:45 AM  51  Use of in vitro and in vivo tests to characterize gastrointestinal nematode anthelmintic resistance on sheep and goat farms in the mid-Atlantic U.S. E. K. Crook*, D. J. O’Brien*, N. C. Whitley*, R. M. Kaplan*, and J. M. Burke*, 1Delaware State University, Dover, 2North Carolina A&T State University, Greensboro, University of Georgia, Athens, USDA, ARS, Boonesville, AR.

11:00 AM  52  Effects of cinnamaldehyde, eugenol, and capsicum on rumen fermentation in continuous culture. L. R. Tager* and K. M. Krause, West Virginia University, Morgantown.

---

**Graduate Student Paper Competition**

**CSAS Graduate Student Oral Competition 1**

Chair: Luigi Faucitano, Agriculture and Agri-Food Canada

---

9:30 AM  53  Plant-based diets enriched with linseed oil or marine algae and organic selenium modify sperm fertility parameters in broiler breeders over the reproductive cycle. C. Coss*1,2, C. Bréqué*1,2, R. Gervais*1, C. Lessard1,2, D. Venne1, M. R. Lefrançois2, P. Y. Chouinard2, G. Vandenbergh3, and J. L. Bailey1,2, 1Centre de recherche en biologie de la reproduction, Québec, Québec, Canada, 2Département des sciences animales, Université Laval, Québec, Québec, Canada, 3Couvoir Scott Liée, Scott Jonction, Québec, Canada.

9:45 AM  54  The effect of two calving seasons on cow and calf performance in western Canada. L. C. Girardin*, H. A. Lardner*, A. D. Iwaasa*, S. L. Scott*, and S. H. Hendrick*, 1University of Saskatchewan, Saskatoon, Saskatchewan, Canada, 2Western Beef Development Centre, Lanigan, Saskatchewan, Canada, 3Agriculture and Agri-Food Canada - Semiarid Prairie Agricultural Research Centre, Swift Current, Saskatchewan, Canada, 4Agriculture and Agri-Food Canada - Brandon Research Centre, Brandon, Manitoba, Canada.


10:15 AM  56  Effect of ruminal protozoa on urea-nitrogen recycling in growing lambs fed varying dietary protein concentrations. D. Kiran* and T. Mutsvanga, University of Saskatchewan, Saskatoon, Saskatchewan, Canada.

10:30 AM  57  Comparison of NRC–2001 chemical approach with biological approach (in situ animal study) in the determination of digestible nutrients and energy values of dry distillers grains with solubles in ruminants. W. G. Nuez Ortín* and P. Yu, University of Saskatchewan, Saskatoon, SK, Canada.


11:00 AM  59  Comparison of wheat or corn dried distillers grains with solubles (DDGS) on performance and carcass characteristics of feedlot steers. L. J. Walter*, J. L. Aalhus*, W. M. Robertson*, T. A. McAllister*, D. J. Gibbs*, M. E. R. Dugan*, N. Aldai*, and J. J. McKinnon*, 1University of Saskatchewan, Saskatoon,
11:15 AM 60 Effect of graded levels of wheat-based dried distillers grains with solubles on rumen fermentation in finishing cattle. R. M. Beliveau\textsuperscript{1,2}, and J. J. McKimmon\textsuperscript{2}, \textsuperscript{1}Agriculture and Agri-Food Canada, Lethbridge Research Centre, Lethbridge, AB, Canada, \textsuperscript{2}University of Saskatchewan, Saskatoon, Saskatchewan, Canada.

11:30 AM 61 Impact of feed waste on the nutrition and economics of wintering beef cows. B. J. Yaremchio\textsuperscript{1}, E. K. Okine\textsuperscript{2}, M. Oba\textsuperscript{2}, and D. McCartney\textsuperscript{1}, \textsuperscript{1}Alberta Agriculture and Rural Development, Canada, \textsuperscript{2}University of Alberta, Canada.


12:00 PM 63 Fertility of Alpine goats following oestrus synchronisation with CIDR and artificial insemination with cryopreserved semen. M.-E. Marier\textsuperscript{1,2}, F. Castonguay\textsuperscript{1}, M. Theriault\textsuperscript{1}, D. Cinq-Mars\textsuperscript{2}, C. Lessard\textsuperscript{1,2}, and J. L. Bailey\textsuperscript{1,2}, \textsuperscript{1}Centre de recherche en biologie de la reproduction, \textsuperscript{2}Département des sciences animales, Université Laval, Québec City, \textsuperscript{3}Dairy & Swine Research and Development Center, AAFC, Lévis, Québec, Canada.

Graduate Student Paper Competition
National ADSA Dairy Foods

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

510ac

9:30 AM 64 Growth of Lactobacillus casei at 8°C in Cheddar cheese extract requires supplementation. W. S. Tan\textsuperscript{1}, M. F. Budinich\textsuperscript{1}, R. Ward\textsuperscript{2}, J. R. Broadbent\textsuperscript{2}, and J. L. Steele\textsuperscript{1}, \textsuperscript{1}University of Wisconsin, Madison, \textsuperscript{2}Utah State University, Logan.

9:45 AM 65 Structure-function relationship of exopolysaccharides from lactic acid bacteria in fermented milk. M.-C. Gentès\textsuperscript{1,2}, D. St-Gelais\textsuperscript{2}, and S. L. Turgeon\textsuperscript{1}, STELA Dairy Research Centre and Institute of Nutraceuticals and Functional Foods, Laval University, Quebec city, Quebec, Canada, G1K 7P4, Food Research and Development Centre, Agriculture and Agri-Food Canada, St-Hyacinthe, Quebec, Canada, J2S 8E3.

10:00 AM 66 Modifying whey proteins to improve heat stability and clarity. K. N. Ryan*, B. Vardhanabhuti, and E. A. Foegeding, North Carolina State University, Raleigh.

10:15 AM 67 Evaluation of heated milkfat flavor profile and its effect on buttery flavor in cheese. E. L. Harvey* and S. A. Rankin, University of Wisconsin, Madison.

10:30 AM 68 Are the physico-chemical properties of the casein micelle modified by ultrafiltration? M. A. Ferrer\textsuperscript{1,2}, M. Alexander\textsuperscript{2}, and M. Corredig\textsuperscript{1}, \textsuperscript{1}University of Zulia, Maracaibo, Zulia, Venezuela, \textsuperscript{2}University of Guelph, Guelph, Ontario, Canada.

10:45 AM Break

11:00 AM 69 Isolation of a whey fraction rich in α-lactalbumin from skim milk through microfiltration. B. Holland\textsuperscript{1}, J. Kacmar\textsuperscript{1}, and M. Corredig\textsuperscript{1}, \textsuperscript{1}University of Guelph, Guelph, ON, Canada, \textsuperscript{2}NCSRT, Raleigh, NC.

11:15 AM 70 Production efficiency of a serum protein (SP) reduced micellar casein concentrate (MCC) produced with polymeric spiral-wound microfiltration (MF) membranes. S. L. Beckman\textsuperscript{1}, J. Zulewska\textsuperscript{1}, M. Newbold\textsuperscript{1}, and D. M. Barban\textsuperscript{1}, \textsuperscript{1}Cornell University, Ithaca, NY, \textsuperscript{2}University of Warmia and Mazury, Olsztyn, Poland.

11:30 AM 71 Retention of vitamin D fortified emulsions in bench-top cheese. M. Tippett\textsuperscript{1,2}, S. Martini\textsuperscript{1,2}, C. Brothersen\textsuperscript{1}, and D. McMahon\textsuperscript{1,2}, \textsuperscript{1}Utah State University, Logan, \textsuperscript{2}Western Dairy Center, Logan, UT.

11:45 AM 72 Low fat Mozzarella cheese with improved baking and melting properties. R. Wadhwani* and D. J. McMahon, Utah State University, Logan.
Effects of starch addition on a low-fat cheese model system. K. M. Larsen\textsuperscript{1,2}, D. J. McMahon\textsuperscript{1,2}, and W. R. McManus\textsuperscript{1,2}, \textsuperscript{1}Western Dairy Center, Logan, UT, \textsuperscript{2}Utah State University, Logan.

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

Effects of conjugated linoleic acid isomers on mammary gland development in BALB/cJ mice. J. M. Głowiczki\textsuperscript{1}, J. Kraft\textsuperscript{2}, A. L. Lock\textsuperscript{2}, J. F. Trott\textsuperscript{1}, and R. C. Hovey\textsuperscript{1}, \textsuperscript{1}University of California, Davis, \textsuperscript{2}University of Vermont, Burlington.

The effects of TGF-β1 on mammary stroma during the dry period of dairy cows. L. De Vries\textsuperscript{1}, J. Liesman, K. Weiss, H. Dover, T. Casey, M. VandeHaar, and K. Plaut, Michigan State University, East Lansing.

Comparison of real-time PCR and culture for detection and speciation of Mycoplasma species in bulk tank milk samples. A. Justice-Allen\textsuperscript{1}, G. Goodell\textsuperscript{2}, J. Trujillo\textsuperscript{1}, and D. Wilson\textsuperscript{1}, \textsuperscript{1}Utah State University, Logan, \textsuperscript{2}Dairy Authority, Greeley, CO.

Intermediates of linoleic acid biohydrogenation in ruminal batch cultures dosed with uniformly \textsuperscript{13}C labeled linoleic acid. C. M. Klein\textsuperscript{1} and T. C. Jenkins, Clemson University, Clemson, SC.

Effect of an exogenous fibrolytic enzyme or ammonia on fiber concentration, feed intake, digestibility, and ruminal pH of steers fed bermudagrass hay harvested at two maturity stages. J. J. Romero\textsuperscript{1}, A. T. Adesogan, M. A. Zarate, O. C. M. Queiroz, J. Han, K. G. Arriola, C. M. Huisden, C. R. Staples, and M. Garcia, University of Florida, Gainesville.

Supplemental starch in postpartum dairy cow diets: 2. Effects on reproduction. B. L. Dyck\textsuperscript{1}, M. G. Colazo\textsuperscript{2}, D. J. Ambrose\textsuperscript{1,2}, M. K. Dyck\textsuperscript{1}, and L. Doepel\textsuperscript{1}, \textsuperscript{1}University of Alberta, Edmonton, AB, Canada, \textsuperscript{2}Alberta Agriculture and Rural Development, Edmonton, AB, Canada.

Accuracy of an on-farm blood test for pregnancy in dairy and beef cattle. J. C. Green\textsuperscript{1}, D. H. Volkman\textsuperscript{1}, S. E. Poock\textsuperscript{1}, M. F. McGrath\textsuperscript{2}, M. Ehrhardt\textsuperscript{2}, A. E. Moseley\textsuperscript{2}, and M. C. Lucy\textsuperscript{1}, \textsuperscript{1}University of Missouri, Columbia, \textsuperscript{2}Monsanto Co., St. Louis, MO.

Financial analysis of direct comparison of natural service sires and timed artificial insemination in a dairy herd. F. Lima\textsuperscript{1}, A. deVries, and C. Risco, University of Florida, Gainesville.

Fecal and urinary estrogens in dairy heifers during the estrous cycle. H. A. Tucker\textsuperscript{1}, K. F. Knowlton\textsuperscript{1}, and N. G. Love\textsuperscript{2}, \textsuperscript{1}Virginia Polytechnic Institute and State University, Blacksburg, \textsuperscript{2}University of Michigan, Ann Arbor.

Low progesterone concentration during the development of the first follicular wave impairs fertility of lactating dairy cows. A. C. Denicol\textsuperscript{1,2}, G. Lopes Jr\textsuperscript{3}, L. G. D. Mendonça\textsuperscript{1}, F. A. Rivera\textsuperscript{1}, F. Guagnini\textsuperscript{1}, R. V. Perez\textsuperscript{1}, J. R. Lima\textsuperscript{1}, R. G. S. Bruno\textsuperscript{1}, J. E. P. Santos\textsuperscript{2}, and R. C. Chebel\textsuperscript{1}, \textsuperscript{1}University of California, Tulare, \textsuperscript{2}University of Florida, Gainesville.

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

Expression of inducible nitric oxide synthase is up-regulated by production of 1,25-dihydroxyvitamin D\textsubscript{3} in bovine monocytes in response to toll-like receptor signaling. C. D. Nelson\textsuperscript{1,2}, D. C. Beitz\textsuperscript{1}, T. A. Reinhardt\textsuperscript{2}, and J. D. Lippolis\textsuperscript{2}, \textsuperscript{1}Iowa State University, Ames, \textsuperscript{2}National Animal Disease Center, United States Department of Agriculture, Ames, IA.

Regulation of bovine pyruvate carboxylase mRNA and promoter expression by heat stress. H. M. White\textsuperscript{2}, S. L. Kosar, and S. S. Donkin, Purdue University, West Lafayette, IN.
Activation of AMP-activated protein kinase (AMPK) inhibits de novo fatty acid synthesis in bovine mammary epithelial cells. J. W. McFadden* and B. A. Corl, Virginia Polytechnic Institute and State University, Blacksburg.

Evaluation of effects of fibrolytic enzyme application on the digestibility of corn silage, alfalfa hay, and two concentrates and complete diets under simulated ruminal and preruminal conditions. K. G. Arriola* and A.T. Adesogan, University of Florida, Gainesville.

Comparison of a controlled-energy high-fiber diet fed throughout the dry period to a two-stage far-off and close-up dietary strategy. B. F. Richards‡, N. A. Janovick®, K. M. Moyes³, D. E. Beever½, and J. K. Drackley¹, ¹University of Illinois, Urbana, ²Richard Keenan & Co., County Carlow, Ireland.

Effects of addition of live bacterial inoculants and glycerol to the diet of lactating dairy cows on apparent efficiency and milk yield during heat stress. J. Boyd², J. W. West¹, J. Bernard³, J. Lofsten², and D. R. Ware². ¹University of Georgia, Tifton, ²Nutrition Physiology Corporation, St. Cloud, MN.

Subacute ruminal acidosis decreases acetate absorption across the isolated ruminal epithelia. G. B Penner*, J. R. Aschenbach³, G. Gäbel³, and M. Oba¹. ¹University of Alberta, Edmonton, AB, Canada, ²Universität Leipzig, Leipzig, Germany.

Effect of feed bin stocking density on the feeding and standing behavior of postpartum dairy cows. P. D. Krawczel², D. M. Weary¹, R. J. Grant³, and M. A. G. von Keyserlingk³. ¹William H. Miner Agricultural Research Institute, Chazy, NY, ²The University of Vermont, Burlington, ³University of British Columbia, Vancouver, BC, Canada.


Use of acaricides and gastrointestinal anthelmintes in developing countries: A case study among livestock farmers in Ghana. W. Addah³, J. Baa³, and E. K. Okine¹. ¹University of Alberta, Edmonton, Alberta, Canada, ²Agriculture and Agri-Food Canada, Lethbridge Research Centre, Lethbridge, Alberta, Canada.

Nonruminant Nutrition

Feed Ingredients

Chair: Randy Walker, DPI Global

Prediction of DE content of common ingredients in grower pigs using an in vitro digestibility technique. P. R. Regmi*¹, N. S. Ferguson², A. Pharazyn², L. F. Wang¹, and R. T. Zijlstra¹. ¹University of Alberta, Edmonton, AB, Canada, ²Nutreco Canada, Guelph, ON, Canada.


Canola meals from yellow-seeded Brassica napus and B. juncea have a higher digestible and net energy content in pigs than the meal from black-seeded B. napus. C. A. Montoya, K. Neufeld, P. Kish, and P. Leterme*, Prairie Swine Centre Inc., Saskatoon, SK, Canada.

Chemical composition and nutritive value of yellow-seeded canola for broiler chickens. W. Jia³, B. A. Slominski¹, G. Rakow², and D. Hickling³. ¹University of Manitoba, Winnipeg, MB, Canada, ²Agriculture and Agri-Food Canada, Saskatoon, SK, Canada, ³Canola Council of Canada, Winnipeg, MB, Canada.

Effect of grinding on the digestible and net energy content of field peas (Pisum sativum) in growing
pigs. C. A. Montoya, K. Neufeld, P. Kish, and P. Leterme*, Prairie Swine Centre Inc., Saskatoon, SK, Canada.


11:00 AM 101 Prediction of barley grain feed value for swine using near infrared reflectance spectroscopy (NIRS). M. L. Swift*, L. Oatway¹, R. T. Zijlstra², W. C. Sauer², and J. H. Helm¹, ¹Alberta Agriculture and Rural Development, Lacombe, AB, Canada, ²University of Alberta, Edmonton, AB, Canada.

11:15 AM 102 Prediction of metabolizable energy value of meat and bone meal for swine using near infrared reflectance analysis. O. A. Olukosi* and O. Adeola, Purdue University, West Lafayette, IN.

11:30 AM 103 Nutritive value of distillers dried grains with solubles (DDGS) for poultry. A. Rogiewicz*, B. A. Slominski, M. Mogielnicka, C. M. Nyachoti, and K. M. Wittenberg, University of Manitoba, Winnipeg, Canada.

11:45 AM 104 Effects of distillers dried grains with solubles on the digestibility of energy, DM, AA, and fiber, and intestinal transit time in a corn-soybean meal diet fed to growing pigs. P. E. Urriola* and H. H. Stein, University of Illinois, Urbana.


Production, Management and the Environment

Environment

Chair: Karen Koenig, Agriculture and Agri-Food Canada

510bd


9:45 AM 107 Ammonia emissions from beef feedlot cattle fed corn-based backgrounding and finishing diets varying in protein concentration and source. K. M. Koenig*, S. M. McGinn, and K. A. Beauchemin, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.

10:00 AM 108 Methane emissions from finishing beef cattle offered maize silages harvested at four different stages of maturity. E. McGeough¹,² P. O’Kiely¹, T. M. Boland², K. J. Hart², P. A. Foley², and D. A. Kenny², ¹Teagasc, Grange Beef Research Centre, Dunsany, Co. Meath, Ireland, ²School of Agri., Food Sci. & Vet. Med., University College Dublin, Belfield, Dublin, Ireland.


10:30 AM 110 On-farm evaluation and demonstration of ammonia reduction best management practices (BMPs) for feedlots and dairies. N. M. Marcillac-Embertson*, J. Pritchett, J. L. Collett, and J. G. Davis, Colorado State University, Fort Collins.


11:00 AM 112 DairyGHG: A tool for evaluating the greenhouse gas emissions and carbon footprint of dairy production systems. C. A. Rotz* and F. Montes, USDA-ARS, University Park, PA.


11:30 AM 114 Effects of urine application on chemistry of feedlot pen surfaces. N. A. Cole¹, A. M. Mason¹, R. W. Todd¹, and D. B. Parker², ¹USDA-ARS-CPRL, Bushland, TX, ²West Texas A&M University, Canyon.
11:45 AM 115 Modifying available grazing time to increase dairy cow urine capture. C. E. F. Clark*1, K. L. M. McLeod1, C. B. Glassy1, P. Gregorini1, K. Betteridge2, and J. G. Jago1, 1DairyNZ, Hamilton, Waikato, New Zealand, 2AgResearch, Palmerston North, Manawatu, New Zealand.

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

9:30 AM 116 Production of angiopoietin-like protein 4 in ruminal tissue is decreased with increasing dietary fermentability. L. K. Mamedova*1, G. B. Penner2, K. A. Beuchemin3, M. Oba4, and B. J. Bradford1, 1Kansas State University, Manhattan, 2University of Alberta, Edmonton, 3Agriculture and Agri-Food Canada, Lethbridge Research Centre, AB, Canada.

9:45 AM 117 Mammary transcriptomics response to milk fat-depressing or milk fat-enhancing diets in lactating dairy cows. G. Invernizzi*1,2, B. J. Thering1, D. E. Graugnard1, P. Piantoni2, M. A. McGuire2, G. Savoini2, and J. J. Loor1, 1University of Illinois, Urbana, 2University of Milan, Milan, Italy, 3University of Idaho, Moscow.

10:00 AM 118 Mammary glucose metabolism in response to energy and/or protein supply in lactating dairy cows. S. Lemosquet*1,2, F. Bardey1,2, H. Rulquin1,2, H. Lapierre1, and J. Guinard-Flament1, 1INRA, Rennes, France, 2Agrocampus ouest, Rennes, France, 3Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada.


10:30 AM 120 Changes in deposition of visceral adipose tissues and expression of lipogenesis-related genes induced by diets with different energy levels in non-lactating cows. P. Ji*, J. J. Loor, A. Nikkhah, M. Bionaz, N. A. Janovicj, and J. K. Drackley, Department of Animal Science, University of Illinois, Urbana.


11:00 AM 122 Nitrogen recycling in lactating dairy cows consuming diets predicted by CPM Dairy to be deficient in either ruminal N or metabolizable protein. E. B. Recktenwald*, D. A. Ross, and M. E. Van Amburgh, Cornell University, Ithaca, NY.

11:15 AM 123 Effect of metabolizable methionine (MET) and lysine (LYS) concentrations on milk production and N utilization in lactating dairy cows. Z. H. Chen*1, G. A. Broderick2, N. D. Luchini3, B. K. Sloan3, and E. Devillard4, 1University of Wisconsin, Madison, 2U. S. Dairy Forage Research Center, Madison, WI, 3Adisseo USA Inc., Alpharetta, GA, 4Adisseo, France S.A.S., Commentry, France.

11:30 AM 124 Effects of jugular infused branched-chain amino acid supplementation on milk protein synthesis in high producing dairy cows. J. A. D. R. N. Appuhumay*1, J. R. Knapp2, C. A. Ungerber1, and M. D. Hanigan1, 1Virginia Polytechnic Institute and State University, Blacksburg, 2Fox Hollow Consulting, LLC, Colombus, OH.

11:45 AM 125 Effect of carbohydrate source on rumen fluid pH and in vitro gas production (GP) in heifers fed pasture silage. A. Britos4, A. Mendoza2, M. Claramunt2, M. Karlen1, G. Kelly1, L. Magallanes1, S. Ramirez3, A. Zunin1, J. L. Repetto2, and C. Cajarville1, 1Department of Animal Nutrition,Faculty of Veterinary, Udelar, Montevideo, Uruguay, 2Department of Bovines, Faculty of Veterinary, Udelar, Montevideo, Uruguay.

12:00 PM 126 TMR particles breakdown through ingestive mastication of dairy cows. I. Schadt*1, J. D. Ferguson2, G. Azzaro3, C. Guardiano1, R. Petrigliani1, and G. Licitra2,3, 1CoRFiLaC, Regione Siciliana, Ragusa, Italy, 2University of Pennsylvania, School of Veterinary Medicine, Kennett Square, 3D.A.C.P.A. University of Catania, Italy.
Ruminant Nutrition
Growing Cattle and Beef Breeding Herd
Chair: Cathy Bandyk, Quality Liquid Feeds
516ab


9:45 AM  128  Residual feed intake in Nellore heifers selected for growth. R. H. Branco¹, S. F. M. Bonilha², D. P. D. Lanna¹, L. A. Figueiredo¹, L. Calegare³, and A. G. Razook⁴.¹Instituto de Zootecnia, Agência Paulista de Tecnologia dos Agronegócios, Sertãozinho, São Paulo, Brazil, ²Departamento de Zootecnia, Esalq/USP, Piracicaba, São Paulo, Brazil, ³Nutron Alimentos LTDA, Toledo, Parand, Brazil.

10:00 AM  129  Relationships between residual feed intake and apparent nutrient digestibility, in vitro methane producing activity and VFA concentrations in growing Brangus heifers. W. K. Krueger¹², G. E. Carstens¹², R. R. Gomez¹², B. M. Bourg³, P. A. Lancaster, L. J. Slay⁴, J. C. Miller⁴, R. C. Anderson⁴, S. M. Horrocks⁴, N. A. Krueger⁴, and T. D. A. Forbes⁴.¹Intercollegiate Faculty of Nutrition - Texas A&M University, College Station, ²Department of Animal Science - Texas A&M University, College Station, ³USDA, ARS, Food and Feed Safety Research Unit, College Station, TX, ⁴Texas AgriLife Research - Texas A&M University, Uvalde.


10:45 AM  132  Effect of energy source on leucine utilization and nitrogen retention in growing steers. K. S. Spivey*, E. C. Titgemeyer, and M. L. Jones. Kansas State University, Manhattan.

11:00 AM  133  Steer performance and digestibility when fed stocker diets with soy hull, corn gluten feed and distillers grain. G. M. Hill¹, V. A. Corriher², D. J. Renney¹, and A. J. Nichols¹. ¹The University of Georgia, Tifton, ²Texas AgriLife Ext. Ctr., Overton, TX.


11:30 AM  135  Feeding dried distillers grains in lieu of standard range cubes to pregnant beef cows consuming low quality roughages improved economic returns with limited impacts on serum urea nitrogen or trace mineral status of the cows or their offspring. K. L. Swyers¹, M. J. Jarosz², L. W. Douglass², and S. L. Archibeque¹. ¹Colorado State University, Department of Animal Sciences, Fort Collins, ²University of Maryland, Department of Animal and Avian Sciences, College Park.

11:45 AM  136  A meta-analysis evaluation of supplementing dried distillers grains plus solubles to cattle consuming forage based diets. W. A. Griffin*, V. R. Bremer¹, T. J. Klopfenstein¹, L. A. Stalker¹, L. W. Lomas¹, J. L. Moyer¹, and G. E. Erickson¹. ¹University of Nebraska, Lincoln, ²West Central Research and Extension Center, North Platte, NE, ³Southeast Agricultural Research Center, Parsons, KS.

12:00 PM  137  Effects of dam’s dietary prepartum energy source on post-natal skeletal muscle development and growth in offspring of beef cattle. A. E. Radunz*, H. N. Zerby, F. L. Fluharty, and S. C. Loerch. The Ohio State University, Wooster.

12:15 PM  138  Effect of ZADO⁵, as enzymes from anaerobic bacterium, on extent of ruminal fermentation, nutrient digestibilities and average daily gain in steers. H. Gado¹ and B. E. A. Borham². ¹Ain-Shams University, Dept. of Animal Production, Faculty of Agriculture, Cairo, Egypt, ²Alexandria University, Dept. of Animal Production, Faculty of Agriculture, Alexandria, Egypt.

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

9:30 AM

9:35 AM 139
Making the writing experience right. D. K. Aaron*, University of Kentucky, Lexington.

9:55 AM 140
Creating effective writing assignments in the animal sciences. M. W. Orth* and T. T. Barry, Michigan State University, East Lansing.

10:15 AM
Discussion

10:20 AM 141
Incorporating journals and journal writing into the teaching and learning process. A. Zimmerman*, The Ohio State University, Wooster.

11:20 AM
Break

11:30 AM 142
Incorporating writing assignments in large animal science courses. J. A. Sterle*, Texas A&M University, College Station.

11:40 AM 143
Journal writing. C. L. Hicks*, University of Kentucky, Lexington.

11:50 AM 144
Students’ perception of writing assignments in contrasting learning environments. M. Wattiaux*, University of Wisconsin, Madison.

12:00 PM
Panel discussion. All participants.

SYMPOSIUM
ASAS Cell Biology Symposium
Chair: B. W. Hess, University of Wyoming

10:00 AM
Introductions. B. W. Hess.

10:05 AM 145
Redox regulation of cysteine-dependent enzymes. R. P. Guttmann*, University of Kentucky, Lexington.

10:35 AM 146

11:05 AM 147
Mammalian epididymal glutathione peroxidases control the maintenance of sperm DNA integrity. E. Chabory, P. Vernet, R. Cadet, F. Saez, and J. R. Drevet*, GReD, Clermont Université, Aubiere, France.

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

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

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

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

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

11:45 AM 152
Importance of conventional dairy products in young adult diets. K. M. Stomack* and E. L. Karcher, Michigan State University, East Lansing.
<table>
<thead>
<tr>
<th>Time</th>
<th>Page</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>12:00 PM</td>
<td>153</td>
<td>Risks associated with raw milk consumption. A. M. Harshbarger*, The Pennsylvania State University, University Park.</td>
</tr>
<tr>
<td>12:15 PM</td>
<td>154</td>
<td>Defending the US milk supply with a novel bulk milk transportation security system. C. N. Gravatte* and C. D. Thompson, University of Kentucky, Lexington.</td>
</tr>
<tr>
<td>12:30 PM</td>
<td>155</td>
<td>On farm pasteurization: Finding a niche market. J. T. Price*, Clemson University, Clemson, SC.</td>
</tr>
</tbody>
</table>

**Graduate Student Paper Competition**

**ADSA Southern Section**

**Chair: Albert DeVries, University of Florida**

**513ab**

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


**Dairy Foods**

**Milk Protein Fractionation Symposium**

**Chair: Lloyd Metzger, South Dakota State University**

**513cd**

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

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

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

- 2:30 PM 162 Comparison of the functional properties of whey proteins isolated from milk or whey. E. A. Foegeding^1^, J. Zulewska^2^, D. M. Barbano^1^, M. A. Drake^1^, P. J. Luck^1^, Y. H. Yong^1^, B. Vardhanabhuti^1^, and T. Berry^1^, ^1^North Carolina State University, Raleigh, ^2^Cornell University, Ithaca, NY.

- 2:55 PM 163 Comparison of the flavor chemistry and sensory properties of whey proteins isolated from milk and whey. M. A. Drake^1^, D. M. Barbano^1^, E. A. Foegeding^1^, J. Zulewska^2^, and M. Newbold^2^, ^1^North Carolina State University, Raleigh, ^2^Cornell University, Ithaca, NY.

- 3:20 PM 164 An integrated processing system to produce beta-casein, native whey protein and casein concentrates from whole milk. J. Lucey* and K. Smith^1^, ^1^Department of Food Science, University of Wisconsin, Madison, ^2^Wisconsin Center for Dairy Research, University of Wisconsin, Madison.

- 3:45 PM 165 Charged ultrafiltration membranes for whey protein fractionation. M. Etzel* and S. Bhushan, University of Wisconsin, Madison.

- 4:10 PM 166 Utilization of supercritical carbon dioxide to produce milk protein fractions. P. M. Tomasula*, L. M. Bonnaillie, and P. X. Qi, Dairy Processing and Products Research Unit, USDA/ARS/ERRC, Wyndmoor, PA.
4:35 PM  Wrap-up and closing. L. E. Metzger.

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

510bd

2:00 PM  167  Advances in colostrum management. S. Godden*, S. Wells*, J. Stabel*, D. Haines*, R. Bey*, J. Fetrow*, P. Pithua*, and M. Donahue*; University of Minnesota, St. Paul, USDA, ARS, National Animal Disease Center, Ames, IA, University of Saskatchewan, Saskatoon, SK, Canada.

2:30 PM  Development of vaccination programs that enhance heifer immune systems. G. Goodell, Dairy Authority, Greeley, CO.

3:00 PM  168  Strategies to minimize the impact of heat stress on heifer health and performance. J. W. West*, University of Georgia, Tifton.

3:30 PM  Differences in health and survivability between purebred and crossbred heifers. B. Cassell, Virginia Polytechnic Institute and State University, Blacksburg.

4:00 PM  Producer’s perspective on heifer health challenges in the Southeast and strategies to manage them. B. Patrick, Veterinarian, GA.

4:30 PM  ADSA Southern Section Business Meeting

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

520ad

2:00 PM  169  The impact of genomic selection on A.I. companies, today and tomorrow. K. L. Westaby* and L. H. Kilmer, Iowa State University, Ames.

2:15 PM  170  Pre-planning considerations for on-farm dairy processing enterprises. E. A. Chaney*, University of Kentucky, Lexington.

2:30 PM  171  Bovine genomics: Mapping the future of the dairy industry. V. Eubanks*, Clemson University, Clemson, SC.


3:00 PM  173  Advanced technology in gender selection: Sexed semen. H. Parkins* and S. Washburn, North Carolina State University, Raleigh.

3:15 PM  174  Blood pregnancy tests as alternatives to transrectal examinations. N. J. Heim*, The Pennsylvania State University, University Park.

3:30 PM  175  Contracted tendons in calves. M. Reed*, Louisiana State University, Baton Rouge.

3:45 PM  176  The effects of breeding for increased milk production in dairy cattle on other productive traits. G. A. Carpenter* and E. L. Karcher, Michigan State University, East Lansing.

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

520be
2:00 PM 177 Feeding brown midrib forage sorghum silage and wet corn gluten feed to lactating dairy cows. C. S. Heine*, P. J. Kononoff, J. F. Pedersen, A. G. Geis, and A. M. Gehman, University of Nebraska, Lincoln, USDA-ARS Grain, Forage, and Bioenergy Research Unit, Lincoln, NE.

2:15 PM 178 Measuring the citrate content in milk, mammary epithelial cells, and blood using capillary electrophoresis. M. J. Howell* and R. Jimenez-Flores, California Polytechnic State University, San Luis Obispo.

2:30 PM 179 Effects of black hair coat color in neonatal Holstein bull calves. A. J. Krenek, G. A. Holub, and J. E. Sawyer, Texas A&M University, College Station.

2:45 PM 180 The effect of TGF-β1 on cell proliferation in the bovine mammary gland during the dry period. K. Weiss, L. DeVries, H. Dover, T. Casey, J. Liesman, M. VandeHaar, and K. Plaut, Michigan State University, East Lansing.


3:15 PM 182 Microbial growth in refrigerated colostrum over seven days. M. Beyer* and S. I. Kehoe, University of Wisconsin, River Falls.


3:45 PM 184 Differentiating effects of effective fiber sources on performance of lactating dairy cows. R. A. Starkey, P. N. Gott, M. L. Eastridge, E. R. Oelker, A. R. Sewell, B. Mathew, and J. L. Firkins, The Ohio State University, Columbus.

4:00 PM 185 The effects of betaine on free choice water intake and vital signs related to heat stress of neonatal Holstein bull calves. J. L. Clark, G. A. Holub, and J. E. Sawyer, Texas A&M University, College Station.


4:30 PM 187 Performance of weanling goats when fed a mixed concentrate with dried distillers grains compared to a pelleted concentrate. J. Popowski*, M. Raeth-Knight, T. Walsh, J. Linn, and R. Larson, University of Minnesota, St. Paul, Hubbard Feeds, Mankato, MN.

4:45 PM 188 The effects of in-vivo derived trophoblastic vesicles on corpus luteum lifespan and serum progesterone concentrations in dairy cattle. E. R. Waggoner, J. L. Fain, and J. R. Gibbons, Clemson University, Clemson, SC.

Animal Health
Immunity and Swine Health
Chair: Jeffery Escobar, Virginia Polytechnic Institute and State University

2:00 PM 189 Pea dietary fiber for adhesion and excretion of enterotoxigenic E. coli K88 to prevent intestinal colonization. P. M. Becker*, P. G. van Wijkstraal, A. J. M. Jansman, and J. van der Meulen, Animal Sciences Group of Wageningen UR, Lelystad, the Netherlands.

2:15 PM 190 Health benefits of yeast derivates: In vitro and in vivo investigation. A. Ganner* and G. Schatzmayr, BIOMIN Research Center, Tulln, Lower Austria, Austria.


2:45 PM 192 Effects of feeding OmniGen-AF on neutrophil-mediated killing of Archanobacterium pyogenes. A. Rowson*, Y.-Q. Wang, S. B. Puntenney, and N. E. Forsberg, OmniGen Research, Corvallis, OR.
3:00 PM 193 Influence of an in vivo endotoxin challenge on ex vivo phagocytic and oxidative burst capacities of bovine neutrophils. M. A. Ballou*, L. E. Hulbert2, L. R. Schwertner1, J. A. Carroll2, L. C. Caldwell3,4, R. C. Vann1, T. H. Welsh Jr3, and R. D. Randel3, 1Texas Tech University, Lubbock, 2Livestock Issues Research Unit, USDA-ARS, Lubbock, TX, 3Texas AgriLife Research, Texas A&M System, College Station, 4Texas A&M System, Overton, 5MAFES, Mississippi State University, Raymond.

3:15 PM 194 Influence of an in vivo corticotropin–releasing hormone (CRH) challenge on ex vivo phagocytic and oxidative burst capacities of bovine neutrophils. M. A. Ballou*, L. E. Hulbert2, L. R. Schwertner1, J. A. Carroll2, L. C. Caldwell3,4, R. C. Vann1, T. H. Welsh Jr3, and R. D. Randel3, 1Texas Tech University, Lubbock, 2Livestock Issues Research Unit, USDA-ARS, Lubbock, TX, 3Texas A&M System, College Station, 4Texas A&M System, Overton, 5MAFES, Mississippi State University, Raymond.


3:45 PM 196 Genotypic profiling of enterococci isolated from bovine origin. B. A. Stewart*, T. H. Yang1, J. S. Hogan2, and C. S. Peterson-Wolfe1, 1Virginia Tech, Blacksburg, 2The Ohio State University, Ohio Agricultural Research and Development Center, Wooster.

4:00 PM 197 Protective effect of polysaccharide produced by Enterobacter cloacae Z0206 on cyclophosphamide-induced suppression of immune functions in mice. M. Jin*, Y. Wang, X. Yang, C. Xu, and Z. Lu, Institute of Feed Science, Zhejiang University, Hangzhou, Zhejiang Province, China.


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

2:00 PM Introductions. J. Siegford, Michigan State University.

2:05 PM Introduction of case exercises and working process

2:20 PM Work on cases in small groups.

3:50 PM Group presentations on working processes and conclusions

4:50 PM Summary and discussion

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

2:00 PM Introduction. J. M. Rumph, Michigan State University.

2:10 PM National and international genomic evaluations for dairy cattle. P. M. VanRaden*1 and P. G. Sullivan2, 1USDA Animal Improvement Programs Laboratory, Beltsville, MD, 2Canadian Dairy Network, Guelph, ON, Canada.

2:45 PM Beef cattle industry structure: Implications for whole genome selection. A. Van Eenennaam*. 
3:20 PM  Break

3:50 PM  202 Utilization of next generation sequencing technologies for development of a high-density pig SNP genotyping platform. R. P. M. A. Crooijmans*1, M. A. M. Groenen1, and L. B. Schook2, 1Wageningen University, Wageningen, the Netherlands, 2University of Illinois, Urbana.

4:25 PM  203 Bioinformatics requirements to apply whole genome prediction in livestock. D. Garrick*, Iowa State University, Ames.

5:00 PM  Panel discussion

SYMPOSIUM

Companion Animals

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

Chair: Kelly Swanson, University of Illinois

511ad

2:00 PM  Introduction. Kelly Swanson.

2:10 PM  204 Navigating the FDA's regulation of animal feed "supplements". J. B. Murphy*, U.S. Food and Drug Administration's Center for Veterinary Medicine, Rockville, MD.


3:00 PM  206 The big "S" supplementation in exotic animal diets. N. A. Irlbeck*, Colorado State University, Fort Collins, CO.

3:25 PM  Break

3:45 PM  207 From arthritis to zinc deficiency, veterinarians are increasingly recommending pet supplements. P. Brown*, Nutri-Vet LLC, Boise, ID.

4:10 PM  208 Who are we, what do we do and how can we help? W. Bookout*, National Animal Supplement Council, Valley Center, CA.

4:35 PM  209 2008 Corbin Award Winner: Opportunities in companion animal sciences. Gail Kuhlman, Proctor & Gamble Pet Care, Lewisburg, OH.

4:55 PM  Reception

Food Safety

Chair: Mandy Carr, National Cattlemen's Beef Association

519

2:00 PM  209 Clostridium difficile in cattle and swine. R. Harvey*, FFSRU, ARS, USDA, College Station, TX.

2:30 PM  210 Optimising fluorescence of feces as a real-time solution for the detection of fecal contamination on carcasses. M. R. F. Lee*, V. J. Theoblad1, M. K. Theodorou1, A. Veberg Dahl2, F. Lundby2, and J.-P. Wold2, 1Aberystwyth University, Wales, UK, 2Nofima Mat, Ås, Norway.


3:00 PM  212 Oral delivery systems for encapsulating bacteriophage targeted at E. coli O157:H7. K. Stanford1, T. P. Stephens1, T. A. McAllister2, D. Niu1,3, and R. P. Johnson1, 1Alberta Agriculture and Rural Development, Lethbridge, AB, Canada, 2Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, 3Dalian University of Technology, Dalian, China, 4Public Health Agency of Canada, Guelph, ON, Canada.
3:15 PM 213 Effects of Avilus® on E. coli O157:H7 in pure culture and in mixed ruminal culture fermentations. T.R. Callaway*, E. Grilli2, M. R. Messina2, and A. Piva3, 1Food and Feed Safety Research Unit, Agricultural Research Service, USDA, College Station, TX, 2DIMORFIPA, University of Bologna, Bologna, Italy.

3:30 PM 214 Control of E. coli O157:H7 in corn silage with inoculants under anaerobic and aerobic conditions. A. F. Pedrosa1,2, A. T. Adesogan1, O. C. M. Queiroz2, and S. K. Williams2, 1Brazilian Agricultural Research Corporation, Embrapa Cattle-Southeast, Sao Carlos, Sao Paulo, Brazil, 2Department of Animal Sciences, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, Florida, USA.

3:45 PM 215 Characterization of antimicrobial-resistant Escherichia coli from samples collected throughout processing of feedlot cattle at a commercial abattoir. T. W. Alexander1, G. D. Inglis1, L. J. Yanke1, E. Topp1, and T. A. McAllister1, 1Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada, 2Agriculture and Agri-Food Canada, London, Ontario, Canada.

4:00 PM 216 Screening of class IIa bacteriocin-producing lactic acid bacteria from Chinese traditional fermented food by PCR based method. H. Yi, L. Zhang*, Y. Tuo, X. Han, and M. Du, Harbin Institute of Technology, Harbin, Heilongjiang, China.


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

2:00 PM 218 The effect of animal location during transit on heart rate of pigs transported to slaughter using two vehicle types. J. A. Correa*, H. Gonyou2, R. Bergeron2, S. Torrey2, T. Crowe2, T. Widowski2, J. P. Laforest1, C. Dewey1, N. Lewis8, and L. Faucitano3, 1Laval University, Quebec, Quebec, Canada, 2Prairie Swine Centre, Saskatoon, Saskatchewan, Canada, 3University of Guelph, Guelph, Ontario, Canada, 4Agriculture & Agri-Food Canada, Lethbridge, Alberta, Canada, 5University of Saskatchewan, Saskatoon, Saskatchewan, Canada, 6University of Manitoba, Winnipeg, Manitoba, Canada.


2:30 PM 220 Identification of single nucleotide polymorphisms influencing feed efficiency and performance in multi-breed beef cattle using a candidate gene approach. M. K. Abo-Ismail*, M. J. Kelly1, E. J. Squires1, K. C. Swanson1, J. D. Nkrumah2, and S. P. Miller1, 1University of Guelph, Guelph, ON, Canada, 2Igenity Livestock Production Business Unit, Merial Ltd., Duluth, GA.


3:00 PM 222 Seasonal based genetic regulation of reproductive traits in a male turkey line. L. A. Case*, M. J. Kelly1, S. P. Miller1, and B. J. Wood2, 1University of Guelph, Guelph, Ontario, Canada, 2Hybrid Turkeys, Kitchener, Ontario, Canada.

3:15 PM 223 Effects of feeding solid feed on ruminal pH and expression of genes involved in ketogenesis in dairy calves during weaning transition. A. H. Laarman* and M. Oba, University of Alberta, Edmonton, Alberta, Canada.

3:30 PM 224 The threonine requirement in sows increases in late gestation. C. L. Levesque*, S. Moehn1, P. B. Pencharz2, and R. O. Ball1, 1Swine Research and Technology Centre, University of Alberta, Edmonton, Alberta, Canada, 2Sick Children's Hospital, University of Toronto, Toronto, Ontario, Canada.

3:45 PM 225 Energy and amino acid utilization in expeller-extracted canola meal fed to growing pigs. T. A. Woyengo*, E. Kiariie, and C. M. Nyachoti, University of Manitoba, Winnipeg, Manitoba, Canada.
Calcium chloride and sodium nitrate as nutritional means to overcome the reduction in performance of pigs fed high potassium diets. J. Guimaraes*, D. Wey, C. Zhu, and C. F. M de Lange, University of Guelph, Guelph, Ontario, Canada.

Protein turnover and heat production of sows varies at day 30, 45 and 105 of gestation. R. S. Samuel*, S. Moehn, P. B. Pencharz, and R. O. Ball, Swine Research and Technology Centre, University of Alberta, Edmonton, Alberta, Canada, Research Institute, Hospital for Sick Children, Toronto, Ontario, Canada.


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


Production systems to optimize growth and beef quality. I. Rush*, University of Nebraska, Lincoln.


Managing genetic antagonisms between economically important beef production traits and marbling. R. L. Weaber and R. M. Enns*, University of Missouri, Columbia, Colorado State University, Fort Collins.


SYMPOSIUM
Nonruminant Nutrition
Improving the Nutritional Value of Alternative Feed Ingredients
Chair: Kevin Herkelman, Wenger Feeds

Introduction. Kevin Herkelman.


Mycotoxins in alternative ingredients. T. K. Smith*, University of Guelph, Guelph, ON, Canada.

Anti-nutritional compounds and other limitations to the use of alternative feed ingredients. H. H. Stein*, University of Illinois, Urbana.

Phytase and NSP-degrading enzymes for alternative feed ingredients. R. T. Zijlstra*, E. Beltranena, C. M. Nyachoti, and S. W. Kim, University of Alberta, Edmonton, AB, Canada, Alberta Agriculture and Rural Development, Edmonton, AB, Canada, University of Manitoba, Winnipeg, MB, Canada, North Carolina State University, Raleigh.

Summary. Kevin Herkelman.

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

516c

2:00 PM 238 Effect of PRID administered 5-12 days post-insemination on progesterone levels and pregnancy risk in previously inseminated dairy cows. S. J. Scott*, K. E. Leslie, R. B. Walsh, J. S. Walton, and S. J. LeBlanc, University of Guelph, Guelph, ON, Canada.

2:15 PM 239 Plasma hormones and energy metabolites in postpartum lactating (L) and nonlactating (NL) Holstein cows that either conceived or failed to conceive at first insemination. A. N. Brauch1,2, J. C. Green1, J. P. Meyer1, A. M. Williams1, C. S. Okamura1, P. Taube2, L. Goetz2, and M. C. Lucy1, University of Missouri-Columbia, Columbia, Pfizer Animal Health, New York, NY.


2:45 PM 241 Effects of resynchronization programs on fertility, progesterone and PAGs after insemination. I. M. Thompson*1, R. L. A. Cerri1, I. H. Kim1, J. A. Green2, J. E. P. Santos1, and W. W. Thatcher3, University of Florida, Gainesville, Chungbuk National University, South Korea, University of Missouri, Columbia.

3:00 PM 242 Fertility after timed artificial insemination in lactating dairy cows resynchronized using Double-Ovsynch or standard Ovsynch and early embryonic development in Holstein cows. J. C. Green*, J. P. Meyer1, A. M. Williams1, A. N. Brauch1, C. S. Okamura1, P. Taube2, L. Goetz2, and M. C. Lucy1, University of Missouri-Columbia, Pfizer Animal Health, New York, NY.

3:15 PM Break

3:30 PM 243 Effect of parity on pedometer activity at estrus in dairy cows. S. J. Caldwell and G. E. Mann*, Division of Animal Sciences, School of Biosciences, University of Nottingham, Sutton Bonnington Campus, Loughborough, UK.

3:45 PM 244 Effect of body condition score on milk yield, milk composition and reproductive competence during the service period of Holstein-Friesian dairy cattle. T. J. Hole* and J. K. Margerison*, Massey University, Palmerston North, New Zealand, Plymouth University, Seale Hayne, Newton Abbot, UK.


4:30 PM 247 Use of OVSYNCH and alternative protocols to synchronize estrus and ovulation in dairy cows managed in a seasonal grass-based system. M. M. Herlihy1,2, M. A. Crowe1, M. G. Diskin1, J. A. Green1, C. S. Okamura1, J. P. Meyer1, and S. T. Butler1, Teagasc Moorepark DPRC, Fermoy, Co. Cork, Ireland, SAFVM, University College Dublin, Ireland, Teagasc, APRC, Athenry, Co. Galway, Ireland.

Ruminant Nutrition

Feedlot, Byproduct Feeds

Chair: John Wagner, Colorado State University

516ab

2:00 PM 248 Effects of ruminally degradable N in diets containing wet corn distillers grains and steam-flaked corn on feedlot cattle performance and carcass characteristics. C. H. Ponce*, M. S. Brown1, N. A. Cole2, C. L. Maxwell1, and J. C. Silva1, Feedlot Research Group, West Texas A&M University, Canyon, USDA ARS Conservation and Production Research Laboratory, Bushland, TX.

2:15 PM 60 Effect of graded levels of wheat-based dried distillers grains with solubles on rumen fermentation in finishing cattle. R. M. Beliveau*,1 and J. J. McKinnon2, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, University of Saskatchewan, Saskatoon, Saskatchewan, Canada.

2:30 PM 59 Comparison of wheat or corn dried distillers grains with solubles (DDGS) on performance and carcass
characteristics of feedlot steers. L. J. Walter, J. L. Aalhus, W. M. Robertson, T. A. McAllister, D. J. Gibb, M. E. R. Dugan, N. Aldai, and J. J. McKinnon. University of Saskatchewan, Saskatoon, SK, Canada, 2Agriculture and Agri-Food Canada, Lacombe Research Centre, Lacombe, AB, Canada, 3Agriculture and Agri-Food Canada, Lethbridge Research Centre, Lethbridge, AB, Canada.

2:45 PM 249 Evaluation of lighter density fraction from dried distillers grains with solubles as a feedstuff for ruminants. J.M. Greene, R. Srinivasan, and B.J. Rude. Animal and Dairy Sciences, Mississippi State University, Starkville, 2Agricultural and Biological Engineering, Mississippi State University, Starkville.


3:15 PM 251 Optimal roughage level in finishing diets containing combinations of flaked corn and dried distiller’s grains with solubles. K. A. Miller, M. K. Shelor, G. L. Parsons, and J. S. Drouillard. Kansas State University, Manhattan.


4:00 PM 254 Effects on ruminal pH, hydrogen sulfide concentration, and feed intake when using wet distillers grains with solubles to adapt cattle to finishing diets compared to forage. K. M. Rolfe, G. E. Erickson, T. J. Klopfenstein, and J. T. Vaszconcelos. Department of Animal Science, University of Nebraska, Lincoln.


4:30 PM 256 High sulfur content in distillers grains with solubles may be deleterious to performance and carcass quality of finishing steers. S. Uwituze, M. K. Shelor, G. L. Parsons, K. K. Karges, M. L. Gibson, L. C. Hollis, and J. S. Drouillard. Kansas State University, Manhattan, Dakota Gold Research Assn, Sioux Falls, SD.

4:45 PM 257 Evaluation of feedlot and carcass performance of steers fed different levels of ECORN™, a potential new feed product from ethanol plants. C. M. Godsey-Williams, G. E. Erickson, T. J. Klopfenstein, M. Greenquist, P. Guiroy, C. Ibanez, and J. Kazin. University of Nebraska, Lincoln, Cargill Inc., Wayzata, MN, Reessen LLC., Wayzata, MN.

SYMPOSIUM
Ruminant Nutrition

Forage Digestibility Estimates; Obtaining and Applying Meaningful Values

Chair: JoAnne Knapp, Fox Hollow Consulting, LLC

2:00 PM 517b Introduction. Charles Schwab.

2:05 PM 258 Opportunities and challenges in determining forage digestibility values. R. Ward. Cumberland Valley Analytical Services, Hagerstown, MD.

2:35 PM 259 Do in vitro digestibility data have value in dairy cattle nutrition? W. P. Weiss. Ohio State University, Wooster.

3:10 PM 260 Obtaining and applying meaningful forage digestibility estimates: Forage-fed beef. E. S. Vanzant and
J. W. Lehmkuhler, University of Kentucky, Lexington.

3:45 PM 261 Addressing fiber digestibility in low-forage diets. N. DiLorenzo and M. L. Galyean*, Department of Animal and Food Sciences, Texas Tech University, Lubbock.

4:15 PM 262 Attempting to apply meaningful forage values and digestibility estimates in commercial feedlot diets. T. M. Peters*, S. P. Montgomery, and S. J. Bierman, Corn Belt Livestock Services, Rock Falls, IL.

4:45 PM Panel discussion. Charles Schwab.

Swine Species

Chair: Bradley V. Lawrence, Novus International Inc.

512ae

2:00 PM 263 Birth weight implications for reproductive parameters in boars. F. C. L. Almeida*, A. L. N. Alvarenga¹, G. R. Foxcroft², and H. Chiarini-Garcia¹, ¹Federal University of Minas Gerais, Belo Horizonte, Minas Gerais, Brazil, ²University of Alberta, Edmonton, Alberta, Canada.


2:45 PM 266 Influence of seasonality of the growing-finishing period on carcass characteristics of heavy barrows and gilts. M. A. Latorre¹, S. Calvo¹, and L. Ariño², ¹Centro de Investigación y Tecnología Agroalimentaria de Aragón, Zaragoza, Spain, ²Integraciones Porcinas SL, Teruel, Spain.

3:00 PM 267 Artificial sweeteners enhance the capacity of the swine small intestine to absorb glucose. A. Moran*, D. Arora¹, M. Al-Rammahi¹, D. Batchelor¹, E. Coulter¹, N. Jones¹, C. Ionescu², D. Bravo², and S. Shirazi-Beechey¹, ¹Department of Veterinary Preclinical Sciences, University of Liverpool, Liverpool, UK, ²Pancosma SA, Geneva, Switzerland.

3:15 PM Break

3:30 PM 268 Changes in expression of swine intestinal Na⁺/glucose cotransporter in response to increased dietary carbohydrates. A. Moran*, M. Al-Rammahi¹, D. Arora¹, D. Batchelor¹, E. Coulter¹, N. Jones¹, C. Ionescu², D. Bravo², and S. Shirazi-Beechey¹, ¹Department of Veterinary Preclinical Sciences, University of Liverpool, Liverpool, UK, ²Pancosma SA, Geneva, Switzerland.

3:45 PM 269 Individual piglet birth weight, sow parity, gestation length, number of fully formed pigs and within litter birth weight variation affect incidence of stillborns. J. S. Fix*, J. W. Holl¹, W. O. Herring¹, and M. T. See¹, ¹North Carolina State University, Raleigh, ²Smithfield Premium Genetics Group, Rose Hill, NC.

4:00 PM 270 New DFM product (Bacillus) improves performance of grower/finisher swine. I. Knap and B. T. Lund*, Chr. Hansen, Hoersholm, Denmark.

4:15 PM 271 Cholecystokinin excited and sensitized porcine gastric mechanoreceptors responding to distension. W. L. Grovum*, W. R. Ellison, and W. W. Bignell, Department of Biomedical Sciences, Ontario Veterinary College, University of Guelph, Guelph, Ontario, Canada.

OTHER EVENTS

JDS-JAS Reviewer Workshop

513ab

2:00 PM–5:00 PM
Canadian Council on Animal Care Guidelines on
The care and use of farm animals in research, teaching and testing
Chair: Julie Dale, Canadian Council on Animal Care

3:30 PM Welcome and Introductions. M. von Keyserlingk1 and J. Dale2, 1University of British Columbia, 2Canadian Council on Animal Care.

3:45 PM Cattle. J. Rushen and A. M. de Passillé, Agriculture and Agri-Food Canada.

4:00 PM Sheep and Goats. K. Stanford, Alberta Agriculture and Rural Development.

4:15 PM Pigs. L. Connor, University of Manitoba.

4:30 PM Poultry. F. Silversides, Agriculture and Agri-Food Canada.

4:45 PM General wrap-up and discussion. J. Dale, Canadian Council on Animal Care.
## Tuesday, July 14

### POSTER PRESENTATIONS

#### Animal Health

**Mastitis and Associated Microbiology**

| T1 | Natural autoantibodies in milk and their role in the development of mastitis in dairy cows. A. T. M. Van Knegsel*, G. De Vries Reilingh, A. Lammers, B. Kemp, and H. K. Parmentier, Adaptation Physiology Group, Wageningen Institute of Animal Sciences, Wageningen University, Wageningen, the Netherlands. |
| T2 | Psoriasin expression in bovine udder is induced by *E. coli* infection. P. Regenhart1, W. Petzl2, H. Zerbe2, and H. Sauerwein1, 1Institute of Animal Science, Bonn, NRW, Germany, 2Clinic for Ruminants, Munich, Bavaria, Germany. |
| T3 | Innate immune responses in dairy cows and study of a promising candidate: Osteopontin. K. Alain1,2, N. A. Karrow3, C. Thibault1, M. Lessard1, and N. Bissonnette1,2,3, 1Dairy and Swine Research and Development Center, Agriculture and Agri-Food Canada, Sherbrooke, Québec, Canada, 2Université de Sherbrooke, Sherbrooke, Québec, Canada, 3University of Guelph, Guelph, Ontario, Canada. |
| T5 | Comparison of in vivo and in vitro mammary cell expression of selected inflammatory genes in response to ω- linolenic acid. P. Rezamand*, B. P. Hatch, K. Parnell, K. M. Hunt, J. E. Williams, W. Price, and M. A. McGuire, University of Idaho, Moscow. |
| T6 | Development of a multiplex-PCR detection assay for simultaneous identification of the major pathogens causing mastitis in dairy milk. B. Cressier*, C. Thibault1, and N. Bissonnette1,2,3, 1Dairy and Swine Research and Development Center, Agriculture and Agri-Food Canada, Sherbrooke, Québec, Canada, 2Université de Sherbrooke, Sherbrooke, Québec, Canada. |
| T11 | Effects of *Mangifera indica* peel extracts on *Staphylococcus aureus* mammary infections. S. Stella and D. Tedesco*, University of Milan, VSA Dep., Milan, Italy. |
| T14 | Effects of CpG ODN adjuvant on the immune responses elicited by a quadrovalent mastitis vaccine in dairy cows. S.-C. Lee1 and J.-W. Lee2, 1Graduate Institute of Animal Vaccine Technology, National Pingtung University of Science and Technology, Neipu, Pingtung, Taiwan, 2Department of Tropical Agriculture and International Cooperation, National Pingtung University of Science and Technology, Neipu, Pingtung, Taiwan. |
| T15 | Intramammary glucocorticoid treatment during LPS-induced mastitis. O. Wellnitz, M. Saudenowa, and R. M. Bruckmaier*, University of Bern, Vetsuisse Faculty, Veterinary Physiology, Bern, Switzerland. |
## Breeding and Genetics

**Dairy Cattle Breeding II and Rabbit Breeding**

<table>
<thead>
<tr>
<th>Authors</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>T16 Ketosis – Manageable by breeding strategies? F. Rehbock, G. Freyer, F. Klug, and N. Vukasovic*</td>
<td>1 Landesforschungsanstalt für Landwirtschaft und Fischerei M-V, Institut für Tierproduktion, Dummerstorf, Germany, 2 FBN, Unit Genetics and Biometry, Dummerstorf, Germany, 3 Alexandriastr. 4, Graul-Müritz, Germany, 4 Newsham Choice Genetics, STL Research Center, Chesterfield, MO.</td>
</tr>
<tr>
<td>T17 Genetic parameters and breeding values estimated under heterogeneous variances of two groups for type records of Holstein cows in Japan. T. Baba*, Y. Masuda, Y. Goto, and M. Suzuki, 1 Obihiro University of A and VM, Obihiro, Japan, 2 The Holstein Cattle Association of Japan, Hokkaido branch, Sapporo, Japan.</td>
<td></td>
</tr>
<tr>
<td>T18 Estimation of genetic parameters for maturity of lactation using a test day model in Japanese Holsteins. Y. Masuda* and M. Suzuki, Obihiro University of Agriculture and Veterinary Medicine, Obihiro, Japan.</td>
<td></td>
</tr>
<tr>
<td>T19 Bayesian analysis of random regression using B-splines to model test-day milk yield of Holstein cattle. A. B. Bignardi, L. El Faro, G. J. M. Rosa, F. F. Silva, V. L. Cardoso, P. F. Machado, and L. G. Albuquerque, 1 Universidade Estadual Paulista, Jaboticabal, Sã o Paulo, Brazil, 2 Agência Paulista de Tecnologia dos Agronegócios, Ribeirão Preto, São Paulo, Brazil, 3 University of Wisconsin, Madison, 4 Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, 5 Universidade de São Paulo, Piracicaba, São Paulo, Brazil.</td>
<td></td>
</tr>
<tr>
<td>T20 Study on genetic evaluation for linear type traits in Holstein cows. D.-H. Lee, S.-H. Oh, and N. C. Whitley, 1 Hankyong National University, Ansung, Gyeonggi, South Korea, 2 North Carolina A&amp;T State University, Greensboro.</td>
<td></td>
</tr>
<tr>
<td>T21 Comparison of Swiss and New Zealand cows in a pasture-based milk production system. P. Kunz, V. Piccard, and P. Thomet, Swiss College of Agriculture, 3052 Zollikofen, Bern, Switzerland.</td>
<td></td>
</tr>
<tr>
<td>T22 Udder health traits as related to economic losses in Friesian cattle. H. G. El Awady and E. Z. M. Oudah, 1 Kafir El Sheikh University, Kafr El Sheikh, Egypt, 2 Mansoura University, Mansoura, Egypt.</td>
<td></td>
</tr>
<tr>
<td>T23 Comparing random regression models to analyse first lactation daily milk yield data in Murrah buffaloes by Bayesian inference. F. C. Breda Mello, L. G. de Albuquerque, R. F. Euclydes, H. Tonhati, and A. B. Bignardi, 1 Universidade Federal de Roraima, Boa Vista, Roraima, Brazil, 2 Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, 3 Faculdade de Ciências Agrárias e Veterinária/Universidade Estadual Paulista, Jaboticabal, Sã o Paulo, Brazil.</td>
<td></td>
</tr>
<tr>
<td>T24 Genetic parameters estimation for milk yield of buffaloes Murrah breed using parametric functions. F. C. Breda, R. F. Euclydes, L. G. de Albuquerque, H. Tonhati, and A. B. Bignardi, 1 Universidade Federal de Roraima, Boa Vista, Roraima, Brazil, 2 Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, 3 Faculdade de Ciências Agrárias e Veterinária/Universidade Estadual Paulista, Jaboticabal, Sã o Paulo, Brazil.</td>
<td></td>
</tr>
<tr>
<td>T25 Estimation of heritability of monthly test day milk yield at different calving seasons in Holsteins of Khorasan province of Iran. R. Lotfi, H. Farhangfar, and A. Shoorideh, 1 Tarbiat Modares University, Tehran, Iran, 2 Birjand University, Birjand, Iran, 3 Jihad Agriculture of Razavi Khorasan, Mashhad, Iran.</td>
<td></td>
</tr>
<tr>
<td>T26 Genetic characteristics of energy balance for Iranian primiparous Holsteins using a fixed regression test day model. H. Farhangfar, R. Lotfi, and M. H. Fathi Nasri, 1 Birjand University, Birjand, Iran, 2 Tarbiat Modares University, Tehran, Iran.</td>
<td></td>
</tr>
<tr>
<td>T27 Estimation of genetic correlations among peak milk yield, energy balance and age at first calving for Iranian Holstein heifers. H. Farhangfar, R. Lotfi, and M. H. Fathi Nasri, 1 Birjand University, Birjand, Iran, 2 Tarbiat Modares University, Tehran, Iran.</td>
<td></td>
</tr>
<tr>
<td>T28 Mixed model analyzing of some environmental factors affecting average lactation somatic cell score in Iranian Holstein heifers. H. Farhangfar, A. Abedini, K. Shojaein, and M. H. Fathi Nasri, 1 Birjand University, Birjand, Iran, 2 Zabol University, Zabol, Iran.</td>
<td></td>
</tr>
<tr>
<td>T29 Genetic association between male fertility and prolificacy after artificial insemination with semen subjected to limited screening. L. L. Tusell, R. Rekaya, M. López-Bejar, M. García-Tomás, O. Rafel, J. Ramon, and M. Piles, 1 Unitat de Cunicultura, IRFA, Barcelona, Spain, 2 University of Georgia, Athens, 3 UAB, Barcelona, Spain.</td>
<td></td>
</tr>
<tr>
<td>T30 Breeding values of fat and protein content in inbred and outbred cows. J. Bezdicek, J. Subrt, R. Filipcik, and J. Rihá, 1 Agrovyrzom Rapotin Ltd., Rapotin, Czech Republic, 2 MZLU v Brne, Brno, Czech Republic.</td>
<td></td>
</tr>
<tr>
<td>T31 Genetic correlations of dry matter intake with fat corrected milk yield, body weight, and body condition score in eleven commercial tie-stall dairy farms. S. M. Hall, C. D. Dechow, J. M. Daubert, M. D. Dekleva, and J. W. Blum,</td>
<td></td>
</tr>
</tbody>
</table>
G. A. Varga1, C. R. Baumrucker1, and W. Liu1, 1Pennsylvania State University, University Park, 2University of Bern, Bern, Switzerland.

T32 Phenotypic and genotypic variation of bovine immune responses in Cohort dairy herds across Canada. K. A. Thompson4, N. Karrow3, K. Leslie2, M. Quinton1, F. Miglior3, and B. A. Mallard1, 1University of Guelph, Guelph, ON, Canada, 2Canadian Dairy Network, Guelph, ON, Canada.

T33 Study on genetic parameters of conception rate and heat detection rate of NY Holsteins. C. Huang1, S. Tsuruta5, I. Misztal1, and T. J. Lawlor2, 1University of Georgia, Athens, 2Holstein Association USA Inc., Brattleboro, VT.

T34 Beta-casein enhancer (BCE) and evolutionarily conserved region 3 (ECR3) polymorphisms are associated with milk composition and management traits in dairy cattle. G. Rincon1, M. Rijinkels1, A. Islas1, and J. F. Medrano4, 1University of California, Davis, 2USDA/ARS Children's Nutrition Research Center, Department of Pediatrics, Baylor College of Medicine, Houston, TX.


T36 Effect of sexed semen on conception rate for Holsteins in the United States. H. D. Norman and J. L. Hutchison*, Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD.

T37 Derivation of factors to estimate daily fat, protein, and somatic cell score from one milking of cows milked twice daily. M. M. Schutz3, J. M. Bewley2, and H. D. Norman1, 1Purdue University, West Lafayette, IN, 2University of Kentucky, Lexington, 3USDA-ARS, Beltsville, MD.

T38 Best prediction of lactation yields accounting for regional and seasonal differences. J. B. Cole and D. J. Null*, Animal Improvement Programs Laboratory, Agricultural Research Service, USDA, Beltsville, MD.

T39 Trends in international flow of Holstein genes. R. L. Powell*, J. R. Wright, and H. D. Norman, Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD.

T40 Holstein, Jersey and its cross affects fatty acid composition under grazing conditions. R. A. Palladino1, F. Buckley2, J. J. Murphy1, R. Prendiville1,2, and D. A. Kenny4, 1University College Dublin, Belfield, Dublin 4, Ireland, 2Teagasc, Moorepark Dairy Research Centre, Fermoy, Co. Cork, Ireland.

T41 Logistic analysis of some environmental factors affecting multiple birth performance of Iranian indigenous goats. H. Farhangfar1, Y. Shamshirgaran2, M. Esfandiari1, and M. H. Fathi Nasri1, 1Birjand University, Birjand, Iran, 2Ferdowsi University of Mashhad, Mashhad, Iran, 3Agricultural Jihad Organisation, Birjand, Iran.

T42 A neural networks approach for prediction fertility in rabbit using semen quality parameters. L. L. Tusell1, R. Rekaya2, M. López-Bejar3, M. García-Tomás1, C. Andreu2, O. Rafel1, J. Ramon2, and M. Piles1, 1Unitat de Canicultura, IRTA, Barcelona, Spain, 2University of Georgia, Athens, 3UAB, Barcelona, Spain.

Dairy Foods Dairy Foods Processing/Cheese/Dairy Micro

T43 Understanding and controlling flavor and color development resulting from non-thermal browning (NTB) in cheese. A. Lopez-Hernandez*, N. Van Epps, and S. A. Rankin, University of Wisconsin, Madison.

T44 Transcriptomic analysis of Camembert cheese fungal activity. C. Viel*, F. Boileau, A. Thériault, and S. Labrie, Département des sciences des aliments et de nutrition, Centre de recherche en sciences et technologie du lait (STELA), Institut des nutraceutiques et des aliments fonctionnels (INAF), Université Laval, Québec, QC, Canada.

T45 Comparison of Hispanic cheeses from US and country of origin manufacturers. L. A. Jimenez-Maroto1, A. Lopez-Hernandez4, B. Maldonado2, and S. A. Rankin1, 1University of Wisconsin, Madison, 2Tecnológico de Monterrey, Campus Querétaro, Querétaro, México.

T46 Partitioning of omega-3 fatty acids in Cheddar cheese curd and whey. C. Brothersen*, D. J. McMahon, and B. Pettee, Western Dairy Center, Utah State University, Logan.


T48 Effect of anhydrous milk fat, milk fat globular membrane and corn oil as the fat source in the AIN93 diet on the fecal microbiota in Fisher 344 rats. R. E. Ward4, D. Snow1, R. Jimenez-Flores2, and K. J. Hintze1, 1Nutrition, Dietetics and
Beneficial effects of bovine colostrum acid protein on bone properties of ovariectomized rats. M. Du\textsuperscript{a}, L. Zhang\textsuperscript{1}, Z. Mu\textsuperscript{2}, H. Yi\textsuperscript{1}, and X. Han\textsuperscript{1}, \textsuperscript{1}Harbin Institute of Technology, Harbin, Heilongjiang, China, \textsuperscript{2}Inner Mongolia Agricultural University, Holhot, Inner Mongolia, China.

Comparison of commercially available RNA extraction methods for effective bacterial RNA isolation from milk. S. Secchi\textsuperscript{1}, A. Serrano\textsuperscript{2}, P. García-Nogales\textsuperscript{1}, S. Gutiérrez\textsuperscript{1}, and A. Aris\textsuperscript{a}\textsuperscript{2}, \textsuperscript{1}Applied Research using OMICS Sciences, Barcelona, Spain, \textsuperscript{2}Institut de Recerca i Tecnologia Agroalimentàries, Barcelona, Spain, \textsuperscript{3}Centre de Recerca i Investigació de Catalunya, Barcelona, Spain.


Expression profile analysis of intestinal cells effected by \textit{Lactobacillus acidophilus} NCFM. M. Wang\textsuperscript{1}, G. Zhang\textsuperscript{1}, L. Yao\textsuperscript{1}, Y. Zhou\textsuperscript{1}, L. Han\textsuperscript{1}, and Y. Jiang\textsuperscript{1}\textsuperscript{1}, \textsuperscript{3}Key Lab of Dairy Science, Ministry of Education, Northeast Agricultural University, Harbin, China, \textsuperscript{4}National Dairy Engineering & Technical Research Center, Northeast Agricultural University, Harbin, China.

Development of a Multiplex-PCR detection assay for simultaneous identification of the major mastitis causing pathogens in dairy milk. B. Cressier\textsuperscript{1,1}, C. Thiubault\textsuperscript{1}, and N. Bissonnette\textsuperscript{1,2}, \textsuperscript{1}Université de Sherbrooke, Sherbrooke, QC, Canada, \textsuperscript{2}Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada.


Growth-promoting activities of bovine and caprine caseinomacropéptide. G. Robitaille*, R. Ioannoni, and C. Jolicoeur, Food Research and Development Centre, Agriculture and Agri-Food Canada, St-Hyacinthe, QC, Canada.

Study of the genetic diversity of \textit{Geotrichum candidum}. I. Alper* and S. Labrie, Département des sciences des aliments et de nutrition, Centre de recherche en sciences et technologie du lait (STELA) – Institut des nutraceutiques et des aliments fonctionnels (INAF), Université Laval, Quebec, QC, Canada.

Effect of somatic cell count on milk composition. R. Noorbakhsh\textsuperscript{a}, A. Mortazavi\textsuperscript{1}, F. Shahidi\textsuperscript{1}, A. F. Mehdikhani\textsuperscript{2}, M. Ahoi\textsuperscript{2}, and A. Heravi Moussavi\textsuperscript{1,2}, \textsuperscript{1}Dept of Food Science and Technology, Ferdowsi University of Mashhad, Mashhad, Khorasan, Iran, \textsuperscript{2}Dept of Animal Science, Ferdowsi University of Mashhad, Mashhad, Khorasan, Iran.

Impact of \textit{Lactobacillus acidophilus} NCFM surface protein expression on its binding properties toward the milk fat globule membrane. G. Brisson, H. F. Payken, E. Pettey, and R. Jimenez-Flores*, California Polytechnic State University, San Luis Obispo.

Acid tolerance of \textit{Lactobacillus acidophilus} LA-K as influenced by various pulsed electric field conditions. O. Cueva\textsuperscript{1} and K. Aryana\textsuperscript{a}\textsuperscript{a,1}, \textsuperscript{1}Louisiana State University, Baton Rouge, \textsuperscript{2}Louisiana State University Agricultural Center, Baton Rouge.

Growth of \textit{Lactobacillus acidophilus} LA-K as influenced by certain pulsed electric field conditions. O. Cueva\textsuperscript{1} and K. Aryana\textsuperscript{a}\textsuperscript{a,1}, \textsuperscript{1}Louisiana State University, Baton Rouge, \textsuperscript{2}Louisiana State University Agricultural Center, Baton Rouge.


Bile tolerance of \textit{Lactobacillus acidophilus} LA-K as influenced by certain pulsed electric field conditions. O. Cueva\textsuperscript{1} and K. Aryana\textsuperscript{a}\textsuperscript{a,1}, \textsuperscript{1}Louisiana State University, Baton Rouge, \textsuperscript{2}Louisiana State University Agricultural Center, Baton Rouge.


Environmental scanning of bacteria with the potential to produce ropy milk in a farm. A. Laubscher\textsuperscript{a}*, K. White\textsuperscript{1}, A. Cano\textsuperscript{1}, R. Cano\textsuperscript{2}, and R. Jimenez-Flores\textsuperscript{1}, \textsuperscript{1}Dairy Products Technology Center, California Polytechnic State University, San Luis Obispo, \textsuperscript{2}Biological Sciences Department, California Polytechnic State University, San Luis Obispo.
T65 Influence of growth medium composition on survival and storage stability and viability of lactobacilli during freeze-drying. M. I. Tudor, E. P. Cuesta-Alonso*, and S. E. Gilliland, Oklahoma State University, Stillwater.


T68 Influence of the sample pre-heating and time for reanalysis in the Total Bacteria Count of milk by flow cytometry. L. Clementino1,2, F. A. Pinto1,2, L. M. Fonseca1,2, J. F. Castro1, R. Rodrigues1,2, M. M. O. P. Cerqueira1,2, M. O. Leite1,2, C. S. P. Fonseca1, C. F. A. M. Penna1,2, and M. R. Souza1,2, 1Federal University of Minas Gerais (UFMG), School of Veterinary Medicine, Department of Food Technology and Inspection, Belo Horizonte, MG, Brazil, 2Laboratory of Milk Quality Analysis, Belo Horizonte, MG, Brazil.

T69 Methodology for differentiation of lactic acid bacteria in cheese made with probiotic adjunct cultures. C. J. Oberg1, L. Moyes1, C. Brothersen2, and D. J. McMahon1, 1Microbiology Department, Weber State University, Ogden, UT, 2Western Dairy Center, Utah State University, Logan.

T70 Use of supercritical fluid extraction to remove non-polar lipids from whey buttermilk powder. M. R. Costa1,2, M. L. Gigante2, and R. Jiménez-Flores1, 1Universidade Norte do Paraná, Londrina, Paraná, Brazil, 2Universidade Estadual de Campinas, Campinas, São Paulo, Brazil, 1California Polytechnic State University, San Luis Obispo.

T71 Effect of pH and ionic strength on heat-induced deposition of whey proteins at the surface of fat droplets in oil-in-water emulsions. M. Britten1 and S. Lamothe, Food Research and Development Centre, Agriculture and Agri-Food Canada, St-Hyacinthe, QC, Canada.

T72 The impact of antioxidant addition on flavor stability of Cheddar whey and whey protein. I. W. Liaw1, H. Eshpari2, P. S. Tong1, and M. A. Drake1, 1North Carolina State University, Raleigh, 2CalPoly University, San Luis Obispo, CA.

T73 Comparison of composition, sensory and volatile components of 80% whey protein and serum protein concentrates. J. P. Evans1, J. Zulewska2, M. Newbold1, D. M. Barbano2, and M. A. Drake1, 1North Carolina State University, Raleigh, 2Cornell University, Ithaca, NY.

T74 Production efficiency of a 95% serum protein (SP) reduced micellar casein concentrate (MCC) produced with ceramic microfiltration (MF) membranes. E. E. Hurt1, J. Zulewska2, M. W. Newbold1, and D. M. Barbano1, 1Cornell University, Ithaca, NY, 2University of Warmia and Mazury, Olsztyn, Poland.

T75 Functionality characterization of 65% and 95% serum protein (SP) reduced micellar casein concentrates (MCC): Concentration and drying effects. C. M. Beliciu1, J. Zulewska2, M. Newbold1, C. I. Moraru1, and D. M. Barbano1, 1Cornell University, Ithaca, NY, 2University of Warmia and Mazury, Olsztyn, Poland.

**Food Safety**

T76 A modeling system to predict S.aureus growth and SEA production in milk. F. Zhao, X. Qu, X. Lv, L. Xiang, B. Yan, and Y. Jiang1, Northeast Agricultural University, Harbin, China.

T77 Salmonella serotype shift during an endemic dairy infection. J. Van Kessel* and J. Karns, USDA-ARS, Beltsville, MD.

T78 Determination of the mechanism(s) by which direct-fed microbials control Escherichia coli O157:H7 in cattle. L. M. Guillen*, S. McCoy, M. R. Bible, L. O. Burciaga-Robles, M. M. James, C. R. Krehbiel, and S. E. Gilliland, Oklahoma State University, Stillwater.

T79 PCR analysis of pathogenic E. coli on three dairy farms in the northeastern US. J. Karns* and J. Van Kessel, USDA/ARS/BAANR/EMFSL, Beltsville, MD.

T80 Effect of a mycotoxin deactivating feed additive on the transfer of aflatoxin from dairy feed into milk. U. Hofstetter1, I. Rodrigues1, A. Pietri2, and T. Bertuzzi2, 1Biomin Holding GmbH, Herzogenburg, Austria, 2Istituto di Scienze degli Alimenti e della Nutrizione - Facoltà di Agraria U.C.S.C., Piacenza, Italy.

T81 Food crisis consumer information needs. K. E. Olson1, D. Pelzer2, and S. Stevens2, 1KEO Consulting, Schaumburg, IL, 2DMI, Rosemont, IL.

**Forages and Pastures**
Pastures and Grazing

T82 Structure of Tanzania grass managed under different residual light area index at rotational stocking by goats. A. C. Ruggieri1,2, N. Lima Santos1,3, I. A. M. Teixeira1, V. C. e Silva1, B. R. Vieira1, and E. B. Malheiros1, 1São Paulo State University, Jaboticabal, São Paulo, Brazil, 2Fundação de Amparo a Pesquisa do Estado de São Paulo, São Paulo, São Paulo, Brazil.


T84 Predicting dry matter intake of grazing Brahman bulls selected for high and low feed efficiency. A. D. Aguiar1, L. O. Tedeschi1, F. M. Rouquette, Jr.2, T. D. A. Forbes3, C. M. Henssrlng4, and R. D. Randel1, 1Texas A&M University, College Station, 2Texas AgriLife Research, Overton, TX, 3Texas AgriLife Research, Uvalde, TX.

T85 Summer forage species alters animal performance, carcass characteristics and fatty acid composition of grazing beef steers. J. R. Schmidt, J. G. Andrae, S. K. Duckett4, and M. Miller, Clemson University, Clemson, SC.

T86 Performance by spring and fall-calving cows grazing with full access, limited access, or no access to endophyte-infected tall fescue-2 year summary. J. Caldwell4, K. Coffey1, D. Philipp1, J. Jennnings5, D. Hubbell III1, T. Hess1, D. Kreider1, M. Loop2, M. Popp3, M. Savin1, and C. Rosenkrans Jr.1, 1University of Arkansas, Fayetteville, 2USDA-ARS, Booneville, AR, 3Cooperative Extension Service, Little Rock, AR.

T87 Characteristics of Tanzania (Panicum maximum) and Xaraés (Brachiaria brizantha) pastures under dairy cows grazing with two supplementation levels. C. A. M. Gomide*, D. S. C. Paciullo, D. Vilela, and J. H. Bruschi, Embrapa Dairy Cattle Research Center, Juiz de Fora, MG, Brasil.

T88 Characteristics of forages utilized by the Przewalski horse (Equus ferus przewalskii) in Hustai National Park, Mongolia. B. N. Petrukovich*, J. P. Stevens, and D. A. Christensen, University of Saskatchewan, Saskatoon, Saskatchewan, Canada.

T89 Timing of herbage allocation in a strip grazing organic system: Effects on performance and milk composition of lactating dairy cows. L. Baldoceda2,3, G. Raggio1, R. Bergeron3, D. Pellerin1, and R. Berthiaume2, 1Université Laval, Québec, Québec Canada, 2Dairy and Swine Research & Development Centre, Agriculture and Agri-Food Canada, Lennoxville, Québec, Canada, 3Campus Alfred Université de Guelph, Alfred, Ontario Canada.

T90 Performance of stocker cattle fed hay and protein supplements during the winter and grazed on wheat pasture during the spring. W. A. Phillips1, C. A. Bandyk2, and T. W. Geary3, 1USDA-ARS, El Reno, OK, 2Quality Liquid Feeds Inc., Dodgeville, WI, 3USDA-ARS, Miles City, MT.

T91 Perennial forage kochia for increased production of winter grazed pastures. L. K. Greenhalgh1, D. R. ZoBell1, B. L. Waldron2, K. C. Olson1, A. R. Moulton1, and B. W. Davenport2, 1Utah State University, Logan, 2USDA-ARS, Logan, UT, 3South Dakota State University, Rapid City, 4USDA-NRCS, Tooele, UT.

T92 Seasonal distribution of minerals in grazed and ungrazed cool-season tame grass pasture. C. L. Wright* and A. J. Smart, South Dakota State University, Brookings.

T93 Nutritive value of standing mature Buffel grass (Cenchrus ciliaris) for dry season feeding of cattle in Northeastern Mexico. H. Bernal-Barragan1,2, R. W. Blake2, D. J. R. Cherney2, and M. E. Van Amburgh2, 1Facultad de Agronomía UANL, Escobedo, N.L., México, 2Cornell University, Ithaca, NY.


T97 Nutritive value of the Tanzania grass managed under different residual LAI, at rotational stocking by goats. N. Lima
Santos¹,², A. C. Ruggieri²,³, I. A. M. Teixeira¹, V. C. e Silva¹, A. F. Campos¹, and E. B. Malheiros³, ¹São Paulo State University, Jaboticabal, São Paulo, Brazil, ²Fundação de Amparo a Pesquisa do Estado de São Paulo, São Paulo, São Paulo, Brazil.

**Graduate Student Paper Competition**

**CSAS Graduate Student Competition 2**

**T98**
Effects of ruminally-degradable starch and ruminally-degradable protein levels on urea-nitrogen recycling, microbial protein synthesis, and nitrogen balance in beef heifers. K. Baker¹, J. J. McKinnon¹, T. A. McAllister², and T. Mutsvangwa¹, ¹University of Saskatchewan, Saskatoon, SK, Canada, ²Agriculture and Agri-Food Canada, Lethbridge Research Centre, Lethbridge, AB, Canada.

**T99**
Effect of ruminal protozoa on urea-nitrogen recycling in growing lambs fed diets varying in ruminally-fermentable carbohydrate. D. Kiran³ and T. Mutsvangwa, University of Saskatchewan, Saskatoon, Saskatchewan, Canada.

**T100**
Effect of feed borne Fusarium mycotoxins on the performance of grain fed veal calves. L. M. Martin¹, K. M. Wood¹, P. L. McEwen², T. K. Smith¹, I. B. Mandell¹, A. Yiannikouris¹, and K. C. Swanson¹, ¹University of Guelph, Guelph, Ontario, Canada, ²Ridgetown Campus, University of Guelph, Ridgetown, Ontario, Canada, ³Alltech, Nicholasville, KY.

**T101**
Effect of replacing barley grain with triticale-based dry distillers grains with solubles on lamb performance and nutrient digestibility. L. E. McKeown¹, A. V. Chaves², M. Oba¹, T. A. McAllister², and E. Okine¹, ¹University of Alberta, Edmonton, Alberta, Canada, ²Agriculture and Agri-Food Canada Research Centre, Lethbridge, Alberta, Canada.

**T102**
Effect of bioethanol co-product type and bioethanol plant on situ degradation kinetics, effective degradability and rumen bypass of nutrient components. W. G. Nuez Ortin⁴ and P. Yu, Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, SK, Canada.

**T103**
Protein and carbohydrate fractions of new co-products of bioethanol production: Comparison among blend DDGS, wheat DDGS and corn DDGS, and between different bioethanol plants. W. G. Nuez Ortin⁴ and P. Yu, University of Saskatchewan, Saskatoon, SK, Canada.

**T104**
Influence of feeding increasing levels of dry or modified wet corn distillers grains plus solubles in whole corn grain-based finishing diets on performance and carcass traits in feedlot cattle. H. Salim⁵, K. M. Wood¹, P. L. McEwen⁵, I. B. Mandell¹, S. P. Miller¹, and K. C. Swanson¹, ¹University of Guelph, Guelph, ON, Canada, ²Ridgetown Campus, University of Guelph, Ridgetown, ON, Canada.

**T105**
Effects of supplementing beef cows grazing low quality roughages with wheat dried distillers grains with solubles. A. Van De Kerckhove¹,² and H. A. Lardner¹,², ¹University of Saskatchewan, Saskatoon, SK, Canada, ²Western Beef Development Centre, Humboldt, SK, Canada.

**T106**
Effect of microalgal type and length of incubation on fatty acid composition in vitro cultures of rumen fluid. C. Whitney¹, J. Ronquillo¹, C. Enright¹, J. Green-Johnson¹, L. MacLaren¹, A. Fredeen¹, and K. Glove¹, ¹Nova Scotia Agricultural College, Truro, Nova Scotia, Canada, ²University of Ontario Institute of Technology, Oshawa, Ontario, Canada.

**T107**
Effects of alfalfa hay on chewing behavior, rumen pH, and milk production for lactating dairy cows fed dried distillers grains plus solubles in place of barley silage. S. Z. Zhang⁴, G. B. Penner, and M. Oba, University of Alberta, Edmonton, Alberta, Canada.

**Growth and Development**

**T108**
Genetic group and slaughter weight influence on carcass quantitative traits of feedlot cattle. R. Mello¹,², F. D. de Resende¹, A. C. de Queiroz³, M. H. de Faria², P. V. R. Paulino¹, and G. R. Siqueira², ¹Universidade Federal de Roraima, Boa Vista, Roraima, Brazil, ²Agência Paulista de Tecnologia dos Agronegócios, Colina, São Paulo, Brazil, ³Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil.

**T109**
Physical carcass composition of crossbreed beef cattle slaughtered at different end points. R. Mello¹,², F. D. de Resende¹, A. C. de Queiroz³, M. H. de Faria², G. F. Allemon², and P. V. R. Paulino¹, ¹Universidade Federal de Roraima, Boa Vista, Roraima, Brazil, ²Agência Paulista de Tecnologia dos Agronegócios, Colina, São Paulo, Brazil, ³Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil.
Chemical composition of HH section from crossbred beef bulls slaughtered at different body masses. R. Mello\textsuperscript{a}, A. C. de Queiroz\textsuperscript{2}, F. D. de Resende\textsuperscript{1}, M. H. de Faria\textsuperscript{1}, G. R. Siqueira\textsuperscript{1}, and G. F. Allemi\textsuperscript{3}, \textsuperscript{1}Universidade Federal de Roraima, Boa Vista, Roraima, Brazil, \textsuperscript{2}Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, \textsuperscript{3}Agência Paulista de Tecnologia dos Agronegócios, Colina, São Paulo, Brazil.

Measurement of changes in body composition of piglets from birth to 4 kg using quantitative magnetic resonance (QMR). A. D. Mitchell\textsuperscript{a}, G. Taicher\textsuperscript{a}, and I. Kovner\textsuperscript{a}, \textsuperscript{1}USDA, Agricultural Research Service, Beltsville, MD, \textsuperscript{2}Echo Medical Systems, Houston, TX.

An in vivo and in vitro comparison of muscle precursor cells originating from broiler and layer chick somites. P. E. Mozdziak\textsuperscript{a}, D. Hodgeson, and J. N. Petitte, North Carolina State University, Raleigh.

Glucose metabolism in preterm (PT) and term (T) born neonatal calves. H. M. Hammon\textsuperscript{1}, J. Steinhoff\textsuperscript{1}, S. Görs\textsuperscript{1}, C. C. Metges\textsuperscript{2}, and R. M. Bruckmaier\textsuperscript{2}, \textsuperscript{1}Institute for the Biology of Farm Animals (FBN), Dummerstorf, Germany, \textsuperscript{2}University of Bern, Bern, Switzerland.

Milk diet affects glucose status and postprandial hepatic glucose metabolism in neonatal calves. J. Steinhoff\textsuperscript{a}, S. Görs\textsuperscript{1}, C. C. Metges\textsuperscript{1}, R. M. Bruckmaier\textsuperscript{2}, and H. M. Hammon\textsuperscript{1}, \textsuperscript{1}Institute for the Biology of Farm Animals (FBN), Dummerstorf, Germany, \textsuperscript{2}University of Bern, Bern, Switzerland.

Glucagon-like peptide-2 increases splanchnic blood flow acutely in calves but loses effectiveness with chronic exposure. C. C. Taylor-Edwards\textsuperscript{1}, D. G. Burrin\textsuperscript{2}, J. J. Holst\textsuperscript{1}, K. R. McLeod\textsuperscript{1}, and D. L. Harmon\textsuperscript{1}, \textsuperscript{1}University of Kentucky, Lexington, \textsuperscript{2}USDA/ARS Children's Nutrition Research Center, Baylor College of Medicine, Houston, TX, \textsuperscript{3}The Panum Institute, University of Copenhagen, Copenhagen, Denmark.

Glucagon-like peptide-2 increases small intestinal mass of calves. C. C. Taylor-Edwards\textsuperscript{1}, D. G. Burrin\textsuperscript{2}, K. R. McLeod\textsuperscript{1}, and D. L. Harmon\textsuperscript{1}, \textsuperscript{1}University of Kentucky, Lexington, \textsuperscript{2}USDA/ARS Children's Nutrition Research Center, Baylor College of Medicine, Houston, TX.

Maternal low and high protein diets during pregnancy affect body weight and P8 fat amount affects IGF2 expression in semitendinosus muscle tissue of the developing fetus. C. J. Fitzsimmons\textsuperscript{1,2}, R. Feldmann\textsuperscript{1}, Z. A. Kruk\textsuperscript{1,3}, S. Truran\textsuperscript{1}, D. Lines\textsuperscript{1}, D. Rutley\textsuperscript{1}, and S. Hiendleder\textsuperscript{1,4}, JS Davies Epigenetics and Genetics Group, Discipline of Agricultural and Animal Science, The University of Adelaide.
Fetal growth is substantially modulated by at least two different genetic loci in the middle part of bovine chromosome 6. A. Eberlein1, A. Takasuga2, K. Setoguchi2, R. Pfuhl1, K. Flisikowski2, R. Fries2, N. Klopp1, K. Suhre2, R. Weikard1, and Ch. Kühn1, 2. Research Institute for the Biology of Farm Animals, Dummerstorf, Germany, 3Shirikawa Institute of Animal Genetics, Fukushima, Japan, 4Cattle Breeding Development Institute of Kagoshima Prefecture, Kagoshima, Japan, 5Chair of Animal Breeding, Technische Universität München, Freising, Germany, 6Helmholtz Zentrum, Munich, Germany.


T129 Luminal energy supply (but not substrate) affects expression of mRNA for three proteins capable of amino acid transport by ileal epithelium (but not duodenal or jejunal) of forage-fed growing beef cattle. S. F. Liao, J. A. Boling, and J. C. Matthews. University of Kentucky, Lexington.


T133 Assisted reproductive technologies (ART) have a dramatic effect on cell proliferation in ovine fetal membranes (FM) during early pregnancy. P. P. Borowicz, L. P. Reynolds1, L. R. Coupe1, G. Ptak2, P. Loi2, P. A. Scapolò2, A. Cuomo3, C. Palmieri3, and A. T. Grazul-Bilska1. 1North Dakota State University, Fargo, 2Department of Comparative Biomedical Sciences, Faculty of Veterinary Medicine, University of Teramo, 64100 Teramo, Italy.


T135 Conjugated linoleic acid effects on adiposity are independent of spot 14 gene expression in mice. M. Hussein, K. Harvatine, Y. Boisclair, and D. Bauman. Cornell University, Ithaca, NY.


T139 Development of a protocol for staining BrdU-labeled cells within cryosections of bovine mammary tissue that is suitable for subsequent transcriptome analysis. R. K. Choudhary, K. M. Daniels, C. Clover, and A. V. Capuco. University of Maryland, College Park, USDA-ARS, Beltsville, MD.


T142 Growth hormone does not stimulate IGF-I mRNA expression in bovine skeletal muscle, myoblasts, or myotubes. X. Ge and H. Jiang. Virginia Polytechnic Institute and State University, Blacksburg.

T143 Early-weaning down-regulates the expression of aminopeptidase N gene in the jejunum of the piglet. D. Lackeyram,

**Horse Species**

T144 Influence of extension on the stock-type western pleasure jog. M. Nicodemus and J. Williams, Mississippi State University, Mississippi State.


T146 Temporal variables of the Marsh Tacky intermediate gait. M. Nicodemus and J. Beranger, Mississippi State University, Mississippi State, 2American Livestock Breeds Conservancy, Pittsboro, NC.

T147 The use of Doppler ultrasonography to measure mosaiconstriction in horses consuming endophyte-infected tall fescue. K. C. Gradert, J. M. Bormann, S. F. DeWitt, L. W. Lomas, J. M. Kouba, and T. L. Slough, Kansas State University, Manhattan, 2Woodside Equine Clinic, Ashland, VA, 3Southeast Agricultural Research Center, Parsons, KS.

T148 Genistein does not work through estrogen receptors to reduce lipopolysaccharide stimulated tumor necrosis factor α release from equine peripheral blood mononuclear cells (PBMC). A. Taylor, C. Paulson, and J. Clapper, South Dakota State University, Brookings.

T149 The evaluation of the miniature horse as a nutritional model for full size horses fed various levels of dietary fat. J. S. Pendergraft, B. Gutierrez, and M. J. Arms, 1South Texas State University, Alpine, TX, 2University of Arizona, Tucson.


**Meat Science and Muscle Biology 2**

T151 Retail and sensory quality of Longissimus thoracis from steers fed corn- or wheat-based dry distillers grains plus solubles (DDGS). N. Aldai, J. L. Aalhus, M. E. R. Dugan, T. A. McAllister, L. J. Walter, and J. J. McKinnon, 1Agriculture & Agri-Food Canada, Lacombe Research Centre, Lacombe, AB, Canada, 2Agriculture & Agri-Food Canada, Lethbridge Research Centre, Lethbridge, AB, Canada, 3Department of Animal & Poultry Science, University of Saskatchewan, Saskatoon, SK, Canada.

T152 Effects of feeding cattle increasing levels of dried distillers grains with solubles (DDGS) from wheat on muscle fatty acid composition. M. E. R. Dugan, N. Aldai, D. J. Gibb, T. A. McAllister, and J. K. G. Kramer, 1Lacombe Research Centre, Lacombe, AB, Canada, 2Guelph Food Research Centre, Guelph, ON, Canada, 3Lethbridge Research Centre, Lethbridge, AB, Canada.


T154 Wet distillers grains with or without solubles and vitamin E supplementation alter proximate and mineral composition of beef. L. S. Senaratne, C. R. Calkins, and A. S. de Mello Jr., University of Nebraska, Lincoln.


T156 Fatty acid composition of western Canadian beef: Hamburger. N. Aldai, M. E. R. Dugan, D. C. Rolland, and J. K. G. Kramer, 1Lacombe Research Centre, Lacombe, AB, Canada, 2Guelph Food Research Centre, Guelph, ON, Canada.

T157 Effect of slaughter end point on pH of beef carcasses from British or Continental versus Nellore crossbred cattle. R. Mello, F. D. de Resende, A. C. de Queiroz, M. H. de Faria, F. Maldonado, and P. V. R. Paulino, 1Universidade Federal de Roraima, Boa Vista, Roraima, Brazil, 2Agência Paulista de Tecnologia dos Agronegócios, Colina, São Paulo, Brazil, 3University Federal de Viçosa, Viçosa, Minas Gerais, Brazil.

T158 Post-mortem variation in temperature of beef carcasses in relation to breed and slaughter end point. R. Mello, A. C. de Queiroz, F. D. de Resende, M. H. de Faria, G. R. Siqueira, and J. S. de Oliveira, 1Universidade Federal de
Comparative effects of Yang, S. Z. Jiang, and G. G. Zhang, 1,2 Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, 3 Agência Paulista de Tecnologia dos Agronegócios, Colina, São Paulo, Brazil.

T159 Effect of breed and production system on the content of cis-9, trans-11 CLA in m. longissimus lumborum and m. semimembranosus of lambs. G. Davila El Russi,1,2 V. Banskalieva1, and M. Brown2. R. M. Kerr Food and Agricultural Products Center, Oklahoma State University, Stillwater, USDA-ARS, Grazinglands Research Laboratory, El Reno, OK.


T161 Feeding flaxseed to beef cows increases plasma omega-3 linolenic acid levels. M. L. He1,2, Y.-H. Chung1, K. A. Beauchemin1, P. S. Mir1, J. L. Aalhus3, M. E. R. Dugan1, and T. A. McAllister1. Agriculture & Agri-Food Canada Research Centre, Lethbridge, Alberta, Canada, 2Dept. of Animal and Poultry Sciences, University of Saskatchewan, Saskatoon, Saskatchewan, Canada, 3Agriculture & Agri-Food Canada Research Centre, Lacombe, Alberta, Canada.

T162 Grazing or concentrate feeding for 11 months prior to slaughter: Influence on colour and sensory characteristics of beef. A. P. Moloney1,2, A. Black1, P. G. Dunne2, and F. J. Monahan1. Teagasc, Grange Beef Research Centre, Dunsany, County Meath, Ireland. 2Teagasc, Ashtown Food Research Centre, Ashtown, Dublin, Ireland. 3University College Dublin, Belfield, Dublin, Ireland.


T164 Influence of management systems on meat quality of heifers fed with different lipid supplements in the finishing phase. M. C. A. Santana1,2, T. T. Berchielli1, R. A. Reis1, A. V. Pires2, G. Fiorentini2, and M. A. A. Balsalobre2, 1São Paulo State University, Jaboticabal, São Paulo, Brazil, 2São Paulo University, Piracicaba, São Paulo, Brazil, 3Bellman, Mirassol, São Paulo, Brazil.

Nonruminant Nutrition

Feed Additives I

T165 Hypocholesteremic effect of turmeric powder and sodium selenite in Ross broilers reared under heat stress conditions. A. Zeinali*, A. Riasi1, H. Farhangfar1, and H. Ziae1, Birjand University, Birjand, Iran.

T166 Cloning and expression of porcine carboxypeptidase A1 for feed application. Y. Zhao1, H. Zhao1, J. C. Zhou1, X. J. Xia1, and X. G. Lei1,2, 1Int. Ctr of Future Agriculture for Human Health, Sichuan Agri. Univ., Ya’an 625014, China, 2Cornell University, Ithaca, NY.

T167 Determination of optimal conditions for hydrolysis of conjugated deoxynivalenol in corn and wheat with trifluoromethanesulfonic acid. S.-T. Tran* and T. K. Smith, University of Guelph, Guelph, Ontario, Canada.

T168 Efficacy of a commercial purified phyllosilicate in preventing fumonisins toxicity in finishing pigs. C. A. Mullmann1, P. Dilkin1, L. Giacomini1, R. H. Rauber1, and J. Garcia-Sirera2, 1Universidade Federal de Santa Maria, Laboratorio de Análises Micotoxicologicas (LAMIC), Santa Maria, RS, Brasil, 2Special Nutrients, Miami, FL.


T170 Heterologous expression of recombinant porcine elastase 2 as a feed enzyme. Y. J. Zhang1, H. Zhao1, J. C. Zhou1, X. J. Xia1, and X. G. Lei1,2, 1Int. Ctr of Future Agriculture for Human Health, Sichuan Agri. Univ., Ya’an 625014, China, 2Cornell University, Ithaca, NY.

T171 Expression and purification of porcine pancreatic carboxypeptidase B in a yeast system. Y. Liu1, H. Zhao1, J. C. Zhou1, X. J. Xia1, and X. G. Lei1,2, 1Int. Ctr of Future Agriculture for Human Health, Sichuan Agri. Univ., Ya’an 625014, China, 2Cornell University, Ithaca, NY.


T173 Comparative effects of Escherichia coli AppA2 and Aspergillus niger PhyA phytases on bone property of weanling

1Dankook University, Cheonan, Chungnam, Korea, 2JINIS Inc, Wanju, Jeonbuk, Korea.


1Dankook University, Cheonan, Chungnam, Korea, 2Seoul Feed, Co. LTD, Seoul, Korea.


Effects of different dietary combinations of antibiotics, benzoic acid and probiotic for weaning pigs. G. F. Lopes1, L. Alebrante1, D. L. Santos1, G. G. Garcia1, A. A. Passos1, R. Balestrin1, and G. J. M. Lima1. Vitamix Animal Nutrition, 2Santa Maria Federal University, 3DSM, 4Embrapa.

Effect of phytase supplementation on the calcium and phosphorus balance in adult cannulated ganders. E. H. Balestrin1, L. Babinszky1, and D. Feuerstein2,3,4. National Institute of Genetic Engineering and Biotechnology, Tehran, Iran.

Genetic engineering of an *Escherichia coli* mutant phytase for thermostability does not affect the enzymatic efficacy in a diet for young pigs. L. E. Denmark, J. D. Weaver, K. R. Roneker, and X. G. Lei*. Cornell University, Ithaca, NY.


Screening based on antibacterial and phytase activities of lactic acid bacteria towards their use as a chicken probiotic supplement. H. R. Taheri1, H. Moravej1, F. Tabandeh2, M. Zaghari1, and M. Shivaazad1. University of Tehran, Karaj, Tehran, Iran. 1National Institute of Genetic Engineering and Biotechnology, Tehran, Iran.


Evaluation of antimicrobial activity of organic acids against *Salmonella typhimurium* isolated from swine. M. R. Messina1, E. Grilli1, S. Albonetti2, and A. Piva1, DIMORFIPA, University of Bologna, Italy. 2DSPVPA, University of Bologna, Italy.

Effect of Natuzyme supplementation on broiler performance in deficient standardized ileal threonine diets. S. Khalaji, M. Zaghari*, and M. Shivaazad, University of Tehran, Karaj, Iran.

**Nonruminant Nutrition**

**Nutrients**

Effects of protein and sulfur AA concentration in diets fed to weanling pigs on growth performance and diarrhea incidence. T. C. S. Reis1, G. Mariscal-Landín2, P. E. Urriola3, and H. H. Stein4, 1Universidad Autónoma de Queretaro, Queretaro, Mexico, 2INIFAB CENID Fisiologica, Queretaro, Mexico, 3University of Illinois, Urbana.


Apparent ileal digestibility of CP and amino acids in pigs fed sorghum-soybean meal diets supplemented with phytase. M. Cervantes1, E. Sánchez1, A. Morales1, A. Araiza1, W. Sauer4, M. Barrera1, and J. Yáñez2,1. 1ICA, Universidad Autónoma de Baja California, Mexicali, BC, México, 2Universidad Autónoma de Tlaxcala, Tlaxcala, México.


Effects of NCG or Arginine on immune function of intestinal mucosa in weanling period of piglets. X. Wu, Y. Gao, Y. }
Yin*, X. Zhou, R. Huang, Z. Tang, M. Geng, and T. Li, Laboratory of Animal Nutritional Physiology and Metabolic Process, Institute of Subtropical Agriculture, the Chinese Academy of Sciences, Changsha, China.


T192 Intestinal absorption of vitamin B12 in growing pigs. D. Préveaude,1,2, C. L. Girard1, F. Guay2, N. LeFloc’h3, and J. J. Matte4,1,1 Dairy & Swine R&D Centre. Agriculture & Agri-Food Canada, STN-Lennoxville, Sherbrooke, QC, Canada, 2Laval University, Quebec City, QC Canada, 3UMR 1079 SENA, INRA, St-Gilles, France.

T193 Multivariate nonlinear mixed effect models for protein and lipid deposition in growing pigs. A. B. Strathe1,2, and E. Kebreab2,1 University of Copenhagen, Copenhagen, Denmark, 2University of Manitoba, Winnipeg, Manitoba, Canada.


T198 Effect of betaine partially replacing dietary methionine on nutrient digestibility and on serum metabolites and enzymes of broiler chickens. H. Sun1, W. R. Yang1, Y. Wang2, Z. B. Yang1, S. Z. Jiang1, and G. G. Zhang1, 1Shandong Agricultural University, Tai-an, Shandong, P. R. China, 2Agriculture and Agri-Food Canada, Lethbridge Research Centre, P.O. Box 3000, Lethbridge, AB, Canada.

T199 Effects of decreased levels of crude protein in nursery diets on growth performance and diarrhea occurrence of pigs weaned at 21 days. C. J. Girotto Jr.*, F. F. Barbosa, P. F. Campos, P. C. Brustolini, and J. V. Moutinho, Federal University of Viçosa, Viçosa, Minas Gerais, Brazil.

T200 Effects of decreasing nutrient density of diet on Cu and nutrient absorption in ileal tissue of broilers. B. E. Aldridge* and J. S. Radcliffe, Purdue University, West Lafayette, IN.

T201 The effect of period and duration of feeding restriction on nitrogen balance in pigs. M. Richer-Lanciault1, M. Roy1, J. F. Bernier1, R. Fillion2, M. Lessard2, and F. Guay1, 1Universite Laval, Quebec, Quebec, Canada, 2Agriculture and Agrifood Canada, Sherbrooke, Quebec, Canada, 3CDPQ, Quebec, Canada.

T202 Effects of feeding sodium selenite vs. selenium yeast as the selenium source for sows during late gestation and lactation. T. E. Shipp*, D. W. Funderburke, and C. L. Funderburke, Cape Fear Consulting, LLC, Warsaw, NC.

T203 Efficacy of Cr (III) supplementation on growth, carcass composition, blood metabolites, and endocrine parameters in finishing pigs. M. Q. Wang1,2, Y. D. He1,2, and Z. R. Xu1,2, 1Animal Science College of Zhejiang University, Hangzhou, Zhejiang, P. R. China, 2The Key Laboratory of Molecular Animal Nutrition, Ministry of Education, Hangzhou, Zhejiang, P. R. China.

T204 Biochemical profile of broiler chicken supplemented with organic selenium (SelPlex®) in total replacement of inorganic selenium (sodium selenite). F. M. Gonçalves, M. N. Corrêa*, M. A. Anciuti, F. Rutz, and F. A. B. Del Pino, Federal University of Pelotas, Pelotas, RS, Brazil.

Physiology and Endocrinology

Estrous Synchronization

T209 Effect of progesterone insert during presynchronization program on reproductive responses of dairy cows. R. G. S. Bruno*, A. C. Denicolo1, D. F. Resende1, G. Lopes Jr1, L. G. D. Mendonça1, F. A. Rivera1, J. E. P. Santos2, and R. C. Chebel1, 1University of California - Davis, Tulare, 2University of Florida, Gainesville.

T210 Effect of duration of CIDR treatment on reproductive performance of dairy heifers using a timed-AI protocol. G. Lopes Jr1, L. G. D. Mendonça1, R. C. Chebel1, J. C. Dalton2, and A. Ahmadzadeh3, 1Veterinary Medicine Cooperative Extension, University of California-Davis, Tulare, 2Caldwell Research and Extension Center, University of Idaho, Caldwell, 3University of Idaho, Moscow.

T211 Effect of reusing CIDRs on the pregnancy rate of beef cattle. W. A. Greene* and M. L. Borger, The Ohio State University, Wooster.

T212 Reproductive outcomes of beef heifers treated with various duration of CIDR exposure in a modified timed-AI protocol. A. Ahmadzadeh*, D. Falk1, D. Gunn1, J. B. Hall1, and B. Glaze1, 1University of Idaho, Moscow, 2University of Idaho, R & E Center, Fort Hall, 3University of Idaho, R & E Center, Salmon, 4University of Idaho, R & E Center, Twin Falls.


T214 Effect of increasing GnRH and PGF2α dose during double-Ovsynch on fertility of lactating dairy cows at first postpartum timed artificial insemination. J. O. Giordano*, P. M. Fricke1, S. Bas1, A. P. Cunha1, R. A. Pawlisch2, J. N. Guenther1, and M. C. Wiltbank1, 1Department of Dairy Science, University of Wisconsin, Madison, 2Brodhead Veterinary Clinic, Brodhead, WI.


T216 Effect of body condition score on estrus expression, and AI and breeding season pregnancy rates in beef cows synchronized with progesterone supplemented protocols. R. Kasimanickam* and W. D. Whittier, Virginia-Maryland Regional College of Veterinary Medicine, Blacksburg.

T217 Comparison of the CIDR Select and 5 day CO-Synch + CIDR protocols for synchronizing estrus in beef heifers. P. J. Gunn*, K. C. Culp1, R. P. Arias1, R. P. Lemenager1, K. Heaton2, S. L. Lake2, and G. A. Bridges1, 1Purdue University, West Lafayette, IN, 2Utah State University, Logan, 3University of Wyoming, Laramie.

T218 Effect of double prostaglandin injections in the Ovsynch protocol on serum progesterone in cycling dairy cows. J. L. Fain*, E. R. Waggner, and J. R. Gibbons, Clemson University, Clemson, SC.

T219 In vitro assessment of corpus luteum function in cows induced to ovulate with porcine LH, GnRH or estradiol benzoate. D. J. Ambrose*, M. G. Colazo1, J. P. Kastelic2, T. O. Ree1, M. K. Dyck1, P. Ponce Barajas1, and A. G. A. Lamont1, 1Alberta Agriculture and Rural Development, Edmonton, AB, Canada, 2University of Alberta, Edmonton, AB, Canada.

T220 Reproductive performance of grazing dairy cows following presynchronization and resynchronization protocols. E. S.
T221 Follicular wave of the ovulatory follicle and not cyclic status influences fertility of dairy cows. R. S. Bisinotto*1, R. C. Chebel1, and J. E. P. Santos1. 1University of Florida, Gainesville, 2University of California Davis, Tulare.


T223 Low progesterone concentration during superstimulation of the first follicular wave impairs embryo quality of lactating dairy cows. F. A. Rivera*1, L. G. D. Mendonça1, G. Lopes Jr.1, R. V. Perez2, F. Guagnini2, M. Amstalden2, R. G. S. Bruno1, J. E. P. Santos1, and R. C. Chebel1. 1Veterinary Medicine Cooperative Extension, University of California Davis, Tulare, 2Animal Reproduction Laboratory, Texas A&M University Agricultural Research Station, Beeville, 3Department of Animal Science, University of Florida, Gainesville.


T225 Effect of follicular replacement prior to ovsynch and use of somatotropin at insemination on pregnancy rate at first service of Holstein cows exposed to warm climate. D. R. Lozano*1 and C. F. Aréchiga2. 1Instituto Nacional de Investigaciones Forestales, Agrícolas y Pecuarias, Aguascalientes, Aguascalientes, México, 2Universidad Autónoma de Zacatecas, Zacatecas, Zacatecas, México.


T227 Effects of presynchronization with hCG 7 d prior to estrous synchronization and fixed-time AI (TAI) on fertility and concentrations of progesterone in suckled beef cows. G. Marquezini*1, C. R. Dahlen1, S. L. Bird1, B. J. Funnell1, and G. C. Lamb1. 1North Florida Research and Education Center, University of Florida, Marianna, 2Northwest Research and Outreach Center, University of Minnesota, Crookston, 3North Central Research and Outreach Center, University of Minnesota, Grand Rapids.


T229 Relationship between follicular profiles and the superovulatory responses in cattle. H. Kohram* and H. Kermani Moakhar, Department of Animal Science, Faculty of Agriculture, Karaj, Tehran, Iran.

T230 Ovarian follicular dynamics during the estrous cycle in water buffalo. H. Kohram*1, G. Mohammadi2, and E. Dirandeh1. 1University of Tehran, Iran, 2Shahid Chamran University, Ahvaz, Khoozestan, Iran.

T231 The response to a progestin-based ovulation induction in anoestrous goats is enhanced by bovine somatotropin applied 5 days before the end of progestin treatment. A. M. Martinez, C. G. Gutierrez, Y. Dominguez, and J. Hernandez-Ceron*. Facultad de Medicina Veterinaria y Zootecnia, Universidad Nacional Autónoma de México, México.

T232 Ovarian response to different doses of eCG after synchronization of estrous and ovulation with CIDR during 14 days in the breeding season in goats. L. F. Uribe Velásquez*1, M. I. Lenz Souza2, and J. H. Osorio1. 1University of Caldas, Manizales, Caldas, Colombia, 2Federal University of Mato Grosso do Sul, Campo Grande, MS, Brazil.

T233 Origin and fate of preovulatory follicles after induced luteolysis at different stages of the luteal phase of the estrous cycle in ewes. L. F. Uribe Velásquez*1, M. I. Lenz Souza2, and M. Vélez Marín1. 1University of Caldas, Manizales, Caldas, Colombia, 2Federal University of Mato Grosso do Sul, Campo Grande, MS, Brazil.

T234 Endocrine function and follicular growth in sheep treated with exogenous progesterone. L. F. Uribe Velásquez*1, M. I. Lenz Souza2, and A. Correa Orozco1. 1University of Caldas, Manizales, Caldas, Colombia, 2Federal University of Mato Grosso do Sul, Campo Grande, MS, Brazil.
Real time PCR quantification of mRNA expression in the corpus luteum of cows induced to ovulate following different hormonal treatments. P. Ponce Barajas1,2, M. G. Colazo1, J. P. Kastelic3, M. K. Dyck4, and D. J. Ambrose1,2. 1Alberta Agriculture and Rural Development, Edmonton, AB, Canada; 2University of Alberta, Dept of Agricultural Food and Nutritional Science, Edmonton, AB, Canada; 3Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.

Production, Management and the Environment
Dairy

A stochastic decision support system tool for dairy expansion. J. Janowski* and V. E. Cabrera, University of Wisconsin, Madison.

Airborne endotoxin concentrations at a large open lot dairy in Southern Idaho. R. S. Dungan and A. B. Leytem*, USDA-ARS, Kimberly, ID.

Iodine levels in Canadian bulk-tank milk. S. I. Borucki-Castro1, R. Berthiaume1, S. Turcotte2, A. Robichaud2, and P. Lacasse1. 1Dairy and Swine R&D Centre, Sherbrooke, QC, Canada; 2Health Canada, Food Directorate, Health Products and Food Branch, Longueuil, QC, Canada.

Sicilian dairy herd demographics with a focus on culling. D. Galligan1, G. Azzaro2, A. Pozzebon2, S. Ventura2, and G. Licitra1,2,3. 1University of Pennsylvania, School of Veterinary Medicine, Kennett Square; 2CoRFiLaC, Regione Siciliana, Ragusa, Italy; 3D.A.C.P.A., University of Catania, Italy.

The effect of pregnancy on milk fat percent. C. D. Dechow1,2, J. E. Vallimont1, J. S. Clay2, and C. G. Sattler3. 1The Pennsylvania State University, University Park; 2Dairy Records Management Systems, Raleigh, NC; 3Select Sires, Inc., Plain City, OH.

Effect of rumen protected niacin (NiaShure®) supplementation during summer on milk production, and composition in lactating dairy cows. S. Emanuele1,2 and D. Schoenbaum3, 1Balchem, New Hampton, NY; 2Akey, Lewisburg, OH.

Effect of mixing before on-farm milk sampling on milk fat percent. M. Vazirigohar* and M. Dehghan Banadaki, University of Tehran, Karaj, Tehran, Iran.


Deviation of reticular temperatures in association with mastitis and estrus. J. M. Bewley1,2, M. E. Einstein1, M. W. Grott1, and M. M. Schutz2, 1Purdue University, West Lafayette, IN; 2University of Kentucky, Lexington.


Genetics and environmental effects which influence reproduction and milk production traits in goats in Rio de Janeiro State, Brazil. L. F. D. Medeiros1, D. H. Vieira2, C. A. Oliveira1, L. Shikasho1, V. L. Tierzo1, J. P. F. Silveira1, T. F. Silveira1, P. Persichetti Junior1, and J. L. C. B. Reis4. 1Rural Federal University of Rio Janeiro, Seropedica, RJ, Brazil; 2Center of Creation of Animals of Laboratory, Rio de Janeiro, RJ, Brazil; 3São Paulo State University, Botucatu, SP, Brazil; 4University of Agrarian Sciences - University of Marília, Marília, SP, Brazil; 5Agricultural Municipal School Adolfo Alves Rezende, Campina Verde, MG, Brazil.

Environmental effects and variance components of birth weight in dairy goats in Rio de Janeiro state, Brazil. L. F. D. Medeiros1, D. H. Vieira2, C. A. Oliveira1, J. P. F. Silveira1, V. L. Tierzo1, M. V. Fonseca1, T. F. Silveira1, P. R. C. Cordeiro1, and R. Belintani4. 1Rural Federal University of Rio Janeiro, Seropedica, RJ, Brazil; 2Center of Creation of Animals of Laboratory, Marília, SP, Brazil; 3São Paulo State University, Botucatu, SP, Brazil; 4University of Agrarian Sciences - University of Marília, Marília, SP, Brazil; 5Agricultural Municipal School Adolfo Alves Rezende, Campina Verde, MG, Brazil; 6Celles Lamb Foods, Nova Friburgo, RJ, Brazil.

Ruminant Nutrition
Additives


T250  Effect of a mixture of eugenol and cinnamaldehyde on milk production and composition of goats during the first five months of lactation. D. Bravo1, N. Manteaux2, P. H. Doane3, Y. Senlis4, and M. Cecava5, Pancosma, Geneva, Switzerland, 2Sanders Nutrition Animale, Braz, France, 3ADM Research, Decatur, IL.

T251  Synergy of cinnamaldehyde, eugenol and garlic for reduction of methane production in vitro. S. Cavini1, D. Bravo2, S. Calsamiglia1, M. Rodriguez3, and A. Ferret1, 1Universitat Autonoma de Barcelona, Bellaterra, Spain, 2Pancosma, Geneva, Switzerland.

T252  Effect of feeding eugenol on ruminal fermentation and carbohydrate digestion in the digestive tract of beef cattle fed finishing ration. W. Z. Yang1, C. Benchaar2, B. N. Ametaj3, M. L. He4, and K. A. Beauchemin1, 1Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, 2Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, 3University of Alberta, Edmonton, AB, Canada.

T253  Effects of eugenol supplementation on ruminal fermentation, protozoa counts, and in situ ruminal degradation of soybean meal, grass/legume hay, and corn grain in dairy cows fed high- or low-concentrate diets. C. Benchaar1, W. Z. Yang2, H. V. Petit3, and P. Y. Chouinard4, 1Agriculture and Agri-Food Canada, Dairy and Swine R&D Centre, Sherbrooke, QC, Canada, 2Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, 3Université Laval, Département des Sciences Animales, Québec, QC, Canada.

T254  Effects of eugenol supplementation on feed intake, nutrient digestibility, nitrogen retention, milk production, and milk composition of dairy cows fed high- or low-concentrate diets. C. Benchaar1, W. Z. Yang2, H. V. Petit3, and P. Y. Chouinard4, 1Agriculture and Agri-Food Canada, Dairy and Swine R&D Centre, Sherbrooke, QC, Canada, 2Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, 3Université Laval, Départements des Sciences Animales, Québec, QC, Canada.

T255  Assessment of the potential of cinnamaldehyde, condensed tannins, and saponins to modify milk fatty acid composition of dairy cows. C. Benchaar1 and P. Y. Chouinard2, 1Agriculture and Agri-Food Canada, Dairy and Swine Research and Development Centre, Sherbrooke, QC, Canada, 2Université Laval, Département des Sciences Animales, Québec, QC, Canada.

T256  Screening the activity of medicinal plants or spices on in vitro ruminal methane production. H. Jahani-Azizabadi1, M. Danesh Mesgaran2, A. R. Vakil3, A. R. Heravi Moussavi4, and M. Hashemi5, Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran, 2Research and Petroleum Engineering Center of Kermanshah, Kermanshah, Iran.

T257  Effects of cinnamaldehyde on in vitro methane production and ruminal fermentation of medium and high-concentrate diets. C. Kamei1, H. M. R. Greathread1, M. L. Tejido2, M. J. Ranilla2, M. E. Martínez2, C. Soro2, and M. D. Carro2, 1Faculty of Biological Sciences, University of Leeds, Leeds, United Kingdom, 2Departamento de Producción Animal, Universidad de León, León, Spain.


T260  Effects of Saccharomyces cerevisiae on ruminal pH and fermentation of Holstein dairy cows. Y.-H. Chung1, L. Holtschhausen2, N. Walker2, and K. A. Beauchemin1, 1Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, 2Lallemand Animal Nutrition, Montréal, QC, Canada.

T261  Multiple study analysis of the effect of live yeast (Saccharomyces cerevisiae CNCM I-1077) on milk and milk component production and feed efficiency. M. B. de Ondarza1, C. J. Sniffen2, L. Dusser3, E. Chevaux3, J. Sullivan3, and N. Walker4, 1Paradox Nutrition, LLC, West Chazy, NY, 2Fencrest, LLC, Holderness, NH, 3Lallemand Animal Nutrition, Milwaukee, WI.

T262  Potential of yeast-supplemented barley based dairy cow diets. L. Holtschhausen1 and K. A. Beauchemin, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.

T263  The effect of enzymatically hydrolyzed yeast on feeding behavior and immune function in early lactation dairy cows. K. Proudfoot1, J. Nocek2, and M. von Keyserlingk1, University of British Columbia, Vancouver, BC, Canada,


Effect of live yeast dietary supplementation on growing calves performance and health. V. Bontempo, A. Agazzi, E. Chevaux, V. Dell’Orto, and G. Savoini, Dept Veterinary Science and Technologies for Food Safety, University of Milan, Italy, Lallemand SAS, France.

Reduced carriage of Escherichia coli O157:H7 in cattle fed yeast culture supplement. L. Liou, H. Sheng, W. Ferens, C. Schneider, A. N. Hristov, I. Yoon, and C. J. Hovde, Department of Microbiology, Molecular Biology and Biochemistry, University of Idaho, Moscow, Department of Animal and Veterinary Science, University of Idaho, Moscow, Department of Dairy and Animal Science, Pennsylvania State University, University Park, Diamond V Mills, Inc., Cedar Rapids, IA.


The interaction of flaxseed hulls and monensin on feed intake, apparent digestibility, and milk composition of late-lactating dairy cows. C. Côrtes, D. C. da Silva, R. Kazama, N. Gagnon, C. Benchaar, G. T. dos Santos, L. M. Zeoula, and H. V. Petit, Agriculture and Agri-Food Canada, Quebec, Canada, Universidade Estadual de Maringá, Parana, Brazil, CNPq, Brazil.


T278 Influence of virginiamycin supplementation on ruminal fermentation and microbial populations of steers. T. J. Guo1,2, J. Q. Wang1, D. P. Bu1, J. P. Wang1, K. L. Liu1, D. Li1, S. Y. Yuan1, and X. K. Huo1, 1Institute of Animal Science, State Key Laboratory of Animal Nutrition, Chinese Academy of Agricultural Science, Beijing, China, 2Xinjiang Agricultural University, Urumqi, China.

T279 Effects of increasing levels of monensin on dairy cows in early lactation. G. F. Schroeder1,2, B. D. Strang1, M. A. Shah1, M. A. Messman1, and H. B. Green1, 1Cargill Animal Nutrition, Innovation Campus, Elk River, MN, 2Elanco Animal Health, Greenfield, IN.

T280 Field study to investigate the risk factors for milk fat depression (MFD) in dairy herds feeding Rumensin1, D. V. Nydam2, T. R. Overton1, D. E. Bauman1, T. C. Jenkins2, and G. D. Mechor3, 1Cornell University, Ithaca, NY, 2Clemson University, Clemson, SC, 3Elanco Animal Health, Greenfield, IN.

T281 Effect of monensin and propylene glycol on volatile fatty acid and rumen parameters in early lactation Holstein cows. H. Bahrami-Yekdangi, K. RezaYazdi, and M. Dehghan-Banadaky2, University of Tehran, Karaj, Tehran, I.R., Iran.

T282 The interaction of flaxseed hulls and monensin on milk fatty acid composition of late-lactating dairy cows. C. Córtes3, D. C. da Silva1,2, R. Kazama1,2, N. Gagnon1, C. Benchaar1, G. T. dos Santos2,3, L. M. Zeoula2,3, and H. V. Petit1, 1Agriculture and Agri-Food Canada, Sherbrooke, Quebec, Canada, 2Universidade Estadual de Maringa, Paraná, Brazil, 3CNPq, Brazil.

T283 Combined use of ionophore and virginiamycin in Nellore steers fed high concentrate diets. A. J. C. Nuñez1,2, M. Caetano1, A. Berndt1, J. J. A. A. Demarchi1, P. R. Leme2, and D. P. D. Lamina1, 1ESALQ/USP, Piracicaba, SP, Brazil, 2FZEA/USP, Pirassununga, SP, Brazil, 3APTA Regional Extremo Oeste, Andradina, SP, Brazil.

T284 Effects of an amylase inhibitor on rumen pH and feed intake of young Holstein heifers fed a 100% concentrate diet. A. Bach1,2, M. Devant1, A. Serrano1, and A. Aris2, 1ICREA, Barcelona, Spain, 2IRTA-Ruminant Production, Caldes de Monibui, Spain.

T285 Effect of Bacillus subtilis natto on milk performance, ruminal fermentation, and microbial profile of dairy cows. L. F. Deng1, J. Q. Wang1, D. P. Bu1, K. L. Liu1, Y. M. Jiang1, Q. Chen2, P. Yu1, H. T. Zhang1, and J. K. Drackley2, 1State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, 2University of Illinois, Urbana.

T286 Probiotic effect of Bacillus subtilis (natto) on rumen bacterial diversity of weaning Holstein calves. P. Yu1, J. Wang1, D. Bu1, K. Liu1, D. Li1, and C. McSweeney3, 1State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, 2CSIRO Livestock Industries, Queensland, Australia.


T288 Effect of fibrolytic enzymes on ruminal fermentation and digestibility in steers fed a diet with sodium bicarbonate. O. D. Montañez-Valdez1, J. M. Tapia Gonzalez1, G. Rocha-Chavez1, E. O. Flores-García2, and J. H. Avellanedachevalllos3, 1Centro Universitario del Sur de la Universidad de Guadalajara, Ciudad Guzmán, Jalisco, México, 2Centro Universitario de la Costa Sur de la Universidad de Guadalajara, Autlán de Navarro, Jalisco, México, 3Universidad Técnica Estatal de Quevedo, Quevedo, Ecuador.

T289 Effects of feeding a mixed enzyme on performance in Varamini male lambs. H. Baghershah1, K. Rezayazdi, and M. Dehghan-banadaky, Department of Animal Science, Faculty of Agriculture, University of Tehran, Karaj, Iran.

T290 Feruloyl and acetyl esterase production of an anaerobic rumen fungus Neocallimastix sp YQ2 and its potential in the hydrolysis of fibrous feedstuffs. Q. Yue1, H. J. Yang1, Y. C. Cao1, Y. H. Jiang1, and J. Q. Wang2, 1Department of Animal Nutrition and Feed Science, College of Animal Science and Technology, China Agricultural University, Beijing, P.R. China, 2State key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, P.R. China.

T291 Use of Megasphaera elsdenii NCIMB41125 as a probiotic for early-lactation dairy cows: Effects on rumen pH and fermentation patterns. P. C. Aikman1, P. H. Henning2, C. H. Horn2, and D. J. Humphries1, 1University of Reading, UK, 2KK Animal Nutrition, South Africa.

Effect of a probiotic (AgriMOS) and a prebiotic (Levucell SB) on performance, health and fecal microflora of veal calves. K. Chong\textsuperscript{a}, L. Phillip\textsuperscript{1}, R. Cue\textsuperscript{1}, and N. Walker\textsuperscript{2}, \textsuperscript{1}McGill University, Montreal, QC, Canada, \textsuperscript{2}Lallemand, Animal Nutrition, Montreal, QC, Canada.

Effect of ractopamine on whole body and splanchnic energy balance in Holstein steers. D. L. Harmon, and K. R. McLeod, Stellenbosch, South Africa

The effect of malic acid supplementation on diet digestibility and methane production by beef cattle fed a forage diet. S. M. Cobb, J. J. Michal, and K. A. Johnson*, Wisconsin, Madison, 4Alltech Biotechnology, Brooksing, SD.

Supplementation of grazing dairy cows with isopropyl ester of 2-hydroxy-4-methylthiobutanolic acid (HMBi). L. F. Greco\textsuperscript{1,2}, J. T. Neves Neto\textsuperscript{1}, A. Moreira\textsuperscript{1}, M. A. Penatti\textsuperscript{1}, C. M. M. Bittar\textsuperscript{1}, G. B. Mourao\textsuperscript{1}, and F. A. P. Santos\textsuperscript{1}, \textsuperscript{1}University of Sao Paulo, Piracicaba, Sao Paulo, Brazil, \textsuperscript{2}University of Florida, Gainesville.

The impact of a blend of synthetic antioxidants (AGRADO\textsuperscript{\textregistered} Plus) on milk fatty acids in dairy cows fed a high rumen unsaturated fatty acid load (RUFAL) diet. C. L. Preseault\textsuperscript{1,3}, J. Kraft\textsuperscript{1}, G. R. Bowman\textsuperscript{2}, H. M. Dann\textsuperscript{2}, and A. L. Lock\textsuperscript{1}, \textsuperscript{1}University of Vermont, Burlington, \textsuperscript{2}Novus International Inc., Capital Federal, Buenos Aires, Argentina, \textsuperscript{3}EEA-Inta Rafaela, Rafaela, Santa Fe, Argentina, \textsuperscript{4}Universidad del Litoral, Esperanza, Santa Fe, Argentina.


Effect of saponin extract supplementation on ruminal fermentation in continuous culture. J.-S. Eun*, C. M. Dschaak, F. H. Bhusan, Y.-M. Kim, and A. J. Young, Utah State University, Logan.

The effect of combinations of Acid Buf and sodium bicarbonate on milk production, milk composition and ruminal pH profiles. C. W. Cruywagen\textsuperscript{a}, S. J. Taylor\textsuperscript{2}, and T. Calitz\textsuperscript{1}, \textsuperscript{1}Dept. Animal Sciences, Stellenbosch University, Stellenbosch, South Africa, \textsuperscript{2}Celtic Sea Minerals, Carrigaline, Co. Cork, Ireland.


Zilpaterol hydrochloride impact on core body temperature, performance, and carcass characteristics of finishing steers. J. L. Wahrmund\textsuperscript{4}, B. P. Holland\textsuperscript{1}, C. R. Krechbiel\textsuperscript{1}, M. N. Streeter\textsuperscript{2}, D. A. Yates\textsuperscript{3}, J. P. Hutcherson\textsuperscript{2}, W. T. Nichols\textsuperscript{3}, C. L. Goad\textsuperscript{3}, and C. J. Richards\textsuperscript{1}, \textsuperscript{1}Department of Animal Science, Oklahoma State University, Stillwater, \textsuperscript{2}IntervehiSchering-Plough, DeSoto, KS, \textsuperscript{3}Department of Statistics, Oklahoma State University, Stillwater

The effect of substituting fish oil in cow diets with DHA-micro algae on milk composition and fatty acids profile. R. B. Potu\textsuperscript{4}, A. A. AbuGhazaleh\textsuperscript{1}, and S. Ibrahim\textsuperscript{2}, \textsuperscript{1}Southern Illinois University, Carbondale, \textsuperscript{2}North Carolina A&T University, Greensboro.

Ruminant Nutrition
Efficiency

T308 Residual feed intake and feeding behavior of Nellore bulls selected for post-weaning weight. T. L. S. Corvino1, R. H. Branco2, A. Polizel Neto1, S. F. M. Bonilha2, L. A. Figueiredo1, and A. G. Razook1, 1Programa de Pós-graduação em Zootecnia - UNESP, Botucatu, São Paulo, Brazil, 2CAPTA Pecuária de Corte - Instituto de Zootecnia, Seriânozinho, São Paulo, Brazil.

T309 Effects of residual feed intake on carcass characteristics of Nellore bulls. S. F. M. Bonilha1, R. H. Branco1, G. F. Alleoni2, A. M. Castilhos3, L. A. Figueiredo1, and A. G. Razook1, 1Instituto de Zootecnia, Agência Paulista de Tecnologia dos Agronegócios, Seriânozinho, SP, Brazil, 2Instituto de Zootecnia, Agência Paulista de Tecnologia dos Agronegócios, Nova Odessa, SP, Brazil, 3Faculdade de Medicina Veterinária e Zootecnia, Universidade Estadual Paulista, Botucatu, SP, Brazil.

T310 Relationships between residual feed intake and internal organs of Nellore bulls. S. F. M. Bonilha1, R. H. Branco1, T. L. S. Corvino2, G. F. Alleoni1, L. A. Figueiredo1, and A. G. Razook1, 1Instituto de Zootecnia, Agência Paulista de Tecnologia dos Agronegócios, Seriânozinho, SP, Brazil, 2Faculdade de Medicina Veterinária e Zootecnia, Universidade Estadual Paulista, Nova Odessa, SP, Brazil.

T311 Genetics of feed conversion efficiency: Using a dynamic metabolic model to investigate the patterns of nutrient flux in the most efficient dairy animals. C. Shachtschneider, J. L. Vierck, and J. P. McNamara*, Washington State University, Pullman.

T312 Associations between feed efficiency and gut microbial ecology and fermentation parameters in feedlot cattle. W. K. Krueger1,2, G. E. Carstens1,2, Z. D. Paddock1,2, T. R. Calloway1, R. C. Anderson1, N. A. Krueger1, V. Gontcharova1, S. E. Dowd1, R. R. Gomez*, and W. E. Pinchak1, 1Intercollegiate Faculty of Nutrition, Texas A&M University, College Station, 2Department of Animal Science, Texas A&M University, College Station, USDA, ARS, Food and Feed Safety Research Unit, College Station, TX, 3Medical Biofilm Research Institute, Lubbock, TX, Texas AgriLife Research, Texas A&M University, Vernon.

T313 Proteomic analyses in beef cows with low and high maintenance energy requirements. M. J. Prado-Cooper1,2, R. D. Madden1, J. W. Dillworth1, C. L. Bailey1, E. C. Wright1, C. R. Krehbiel1, D. L. Step1, and R. P. Wettemann1, 1Oklahoma Agricultural Experiment Station, Stillwater, 2Universidad Centrooccidental, Barquisimeto, Lara, Venezuela.

T314 Forage intake, rumen and blood variables, ultrasound and body measurements and behaviour in pregnant beef heifers differing in phenotypic residual feed intake. P. Lawrence1,2, M. McGee1, D. Kenny2, D. H. Crews, Jr., and B. Earley*, 1Teagasc, Grange Beef Research Centre, Dunsany, Co. Meath, Ireland, 2UCD School of Agriculture, Food Science and Veterinary Medicine, Belfield, Dublin, Ireland, 3Department of Animal Sciences, Colorado State University, Fort Collins, 4Teagasc, Animal Bioscience Centre, Dunsany, Co. Meath, Ireland.

Ruminant Nutrition

Feedlot

T315 Fatty acid profiles and quality of steers finished in feedlot or on pasture. H. O. Patíno1, F. S. Medeiros1, K. C. Swanson2, and M. A. Sierra1, 1Dep. Zootecnia, UFRGS, Porto Alegre, RS, Brazil, 2Dept. Animal and Poultry Science, University of Guelph, Guelph, ON, Canada.

T316 Nutrient digestibilities of Holstein steers fed diets containing different levels of nonforage fiber in a low forage diet. M. Mojtahedi, M. Danesh Mesgaran*, A. R. Heravi Moussavi, and A. Tahmasbi, Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran.


T319 Ruminal pH profile of feedlot steers during a 3-week transition from a high-forage to high-concentrate diet. L. Holsthausen*, K. A. Beauchemin, and K. S. Schwartzkopf-Genswein, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.
T320 Influence of processing method on comparative digestion of white corn vs. conventional steam-flaked yellow dent corn in finishing diets for feedlot cattle. A. Plascencia1, M. Cervantes1, M. A. Lopez-Soto1, D. May1, and R. A. Zinn2, 1Universidad Autonoma de Baja California, Mexicali, Baja California, Mexico, 2University of California, Davis, El Centro.


T322 Performance of steers fed a high energy oat as a replacement for barley or corn in growing and finishing diets. G. R. Zalino*, B. G. Rossnagel2, V. J. Racz1, D. A. Christensen1, and J. J. McKinnon1, 1Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, SK, Canada, 2Department of Plant Sciences, University of Saskatchewan, Saskatoon, SK, Canada.

T323 Effects of replacing barley with corn grain in finishing diets on VFA concentration and ruminal ammonia nitrogen of Holstein male calves. F. Fatehi, M. Dehghan-Banadaky*, K. Reza-Yazdi, M. Moradi-Shahrbabak, and H. Bahrami, The University of Tehran, Karaj, Tehran, Iran.

T324 The effect of dietary protein on immune response in receiving steers. E. P. Lane*, E. S. Vanzant, K. R. McLeod, and M. N. Steinman, University of Kentucky, Nicholasville, KY.

T325 Feeding soybean meal, urea or slow release urea (Optigen®) to finishing Zebu cattle. R. Carareto1, 1Faculdade de Ciencias Agrarias e Veterinarias, Jaboticabal, São Paulo, Brazil.

T326 The effects of crude protein concentration and urea source on nitrogen metabolism in Holstein steers. V. B. Holder1, S. Elkadi1, J. M. Tricarico1, E. Vanzant1, K. M. McLeod1, and D. L. Harmon1, 1Department of Animal and Food Sciences, University of Kentucky, Lexington, 2Alltech Biotechnology, Nicholasville, KY.

T327 Feed intake by Nellore and Red Norte bulls finished in feedlot. O. R. Machado Neto1, M. M. Ladeira1, T. M. Goncalves1, L. S. Lopes1, R. L. Oliveira2, M. S. Bassi1, D. M. Oliveira1, J. S. Ribeiro1, and E. O. S. Saliba3, 1Federal University of Lavras, Lavras, MG, Brazil, 2Federal University of Bahia, Salvador, BA, Brazil, 3Federal University of Minas Gerais, Belo Horizonte, MG, Brazil.

**Ruminant Nutrition**

**Grass Cattle**

T328 Nutrient balance and fermentative parameters of continuously cultured rumen fluid maintained with bermudagrass hay and supplied with additional soybean hulls and(or) corn. A. I. Orr* and B. J. Rude, Mississippi State University, Mississippi State.


T330 Growth performance and metabolism of cow-calf pairs receiving a high or low total non-structural carbohydrate diet with or without folic acid and vitamin b12 supplementation of the dams. J. Mercier1, C. L. Girard2, D. Cinq-Mars1, and R. Berthiaume2, 1Département des Sciences Animales, Pavillon Paul-Comtois, Université Laval, Québec, QC, Canada, 2Agriculture et Agroalimentaire Canada, Centre de Recherche sur le Bovin Laitier et le Porc, Sherbrooke, QC, Canada.


T332 Growth performance and breeding soundness of Angus bulls fed FlaxLic®. A. C. Pesta* and J. S. Drouillard, Kansas State University, Manhattan.

T333 A meta-analysis of dry matter intake in Nellore and Zebu-crosses cattle. J. A. G. Azevedo1, 2, S. C. Pina2, M. L. Chizzotti1, and O. G. Pereira*, 1Universidade Estadual de Santa Cruz, Ilheus, Bahia, Brazil, 2Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, 3Universidade Federal do Vale do São Francisco, Petrolina, Pernambuco, Brazil.

T334 Dry matter intake and performance of steers fed sugar cane ensiled with different levels of calcium oxide. F. H. M. Chizzotti1, O. G. Pereira*, S. C. Valadares Filho1, M. L. Chizzotti1, and R. T. S. Rodrigues*, 1Universidade Federal de Viçosa, Viçosa, MG, Brazil, 2Universidade Federal do Vale do São Francisco, Petrolina, PE, Brazil.
T335 Effects of protein or fat supplements for finishing beef cattle grazing tropical grass during dry season. A. A. Souza1, T. I. Ferreira2, C. F. Martins1, and J. C. Hadlich1, 1UNIDEPAHANGUERA, Campo Grande, Mato grosso do Sul, Brazil, 2IAGRO, Campo Grande, Mato grosso do Sul, Brazil, 3UNESP, Botucatu, Sao Paulo, Brazil.

T336 Effect of supplemental energy level on performance, blood parameters and carcass characteristics of steers finished on pasture. H. O. Patino1, F. S. Medeiros1, K. C. Swanson2, and M. A. Sierra1, 1Dept. Zootecnica, UFRGS, Porto Alegre, RS, Brazil, 2Dept. Animal and Poultry Science, University of Guelph, Guelph, ON, Canada.

Small Ruminant Lactation, Physiology, Reproduction, Health

T337 Long-term effects of lipid supplementation on milk concentration of conjugated linoleic acid (CLA) and vaccenic acid (VA) in dairy goats. G. A. Gagliostro1, M. A. Rodríguez2, V. I. Cejas2, M. Martinez3, A. V. Cano1, P. Gatti2, G. Museri2, R. A. Castañeda3, and Y. Chilliard4, 1Instituto Nacional de Tecnología Agropecuaria, Balcarce, Buenos Aires, Argentina, 2Instituto Nacional de Tecnología Industrial, PTM San Martín, Buenos Aires, Argentina, 3Instituto Nacional de Tecnología Agropecuaria, Salta, Salta, Argentina, 4Institut National de la Recherche Agronomique, Theix, Ceyrat, France.


T339 Thyroid hormones and blood metabolites of dairy goats supplemented with dietary iodine. A. Nudda1, G. Battaccone1, G. Bomboi1, B. Floris3, and G. Pulina1,3, 1Dipartimento di Scienze Zootecniche, University of Sassari, Italy, 2Dipartimento di Biologia Animale, University of Sassari, Italy, 3Agricultural Research Agency of Sardinia - AGRIS Sardegna, Sassari, Italy.


T341 The effects of shearing on milk production traits and milk fatty acid profile in Sarda dairy ewes. S. P. G. Rassu, M. G. Manca, R. Boe, R. Rubattu, A. H. D. Francesconi, and A. Nudda*, Dipartimento di Scienze Zootecniche, University of Sassari, Italy.

T342 Goat colostrum chemical composition evolution during 7 h postpartum. D. Sanchez-Macias1, N. Castro1, J. Capote2, I. Moreno-Indias3, and A. Argüello4,1, Las Palmas de Gran Canaria University, Arucas, Las Palmas, Spain, 2Instituto Canario de Investigaciones Agrarias, La Laguna, Tenerife, Spain.

T343 Somatic cell count in milk of goats enrolled in Dairy Herd Improvement Program in 2007. L. Zhang1,2, G. R. Wiggins3, J. Clay4, R. LaCroix4, J. Z. Wang1, T. Gipson1, and S. S. Zeng1,1, Langston University, Langston, OK, 2Agricultural Research Center of China, Changchun, Jilin, China, 3Animal Improvement Programs Laboratory, USDA-ARS, Beltsville, MD, 4Dairy Records Management Systems, North Carolina State University, Raleigh, 5AgSource Cooperative Services, Verona, WI.

T344 Excretion pattern of aflatoxin M1 in milk of goats fed a single dose of aflatoxin B1. G. Battaccone1, A. Nudda1, M. Decandia2, A. Mazzette1, M. Acciaro2, and G. Pulina1,2,1, Dipartimento di Scienze Zootecniche, Università di Sassari, Sassari, Italy, Agenzia AGRIS Sardegna, Sassari, Italy.

T345 Lamb production in the Northern Patagonia with or without winter supplementation. L. Villar1, E. Pavan2, M. Zimerman1, C. Giraudo1, and F. Santini1, 1INTA-EEA Bariloche, Bariloche, Rio Negro, Argentina, 2INTA-EEA Balcarce, Balcarce, Buenos Aires, Argentina, 3INTA-CIA Castelar, Hurlingham, Buenos Aires, Argentina.

T346 Relationship between body condition score and fertility of Saanen goats under intensive conditions. A. Ata3,2, M. Saatci2, and M. S. Gulay3, 1Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Department of Reproduction and Artificial Insemination, Burdur, Turkey, 2Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Department of Animal Science, Burdur, Turkey, 3Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Department of Physiology, Burdur, Turkey.

T347 Preliminary results of a comparison between Texas Rambouillet sheep and Australian Merino F1 crosses. C. J. Lupton1, F. A. Pfeiffer*, W. S. Ramsey2, M. Salisbury3, D. F. Waldron1, J. W. Walker1, and T. D. Willingham1, Texas AgriLife Research, San Angelo, Texas A&M University, College Station, Angelo State University, San Angelo, TX.
Two seasonal lambing in spring and fall increases reproductive efficiency of range sheep flock. T. Wuliji\textsuperscript{1,}, H. Glimp\textsuperscript{2}, and T. Filbin\textsuperscript{3}, \textit{University of Nevada, Reno,}\textsuperscript{2}Rafter 7 Ranch, Yerington, NV.

A daily exposure for 4 hours to the male effect is sufficient to induce ovulatory activity in goats. J. A. Delgadillo\textsuperscript{1,}, M. Bedos\textsuperscript{1,}, J. A. Flores\textsuperscript{1,}, G. Fitz-Rodriguez\textsuperscript{2}, and B. Malpaux\textsuperscript{2,}, \textit{Centro de Investigacion en Reproduccion Caprina, Universidad Autonoma Agraria Antonio Narro, Torreon, Coahuila, Mexico,}\textsuperscript{2}Physiologie de la Reproduction et des Comportements, UMR 6175 INRA-CNRS-Universite de Tours-Haras Nationaux, Nouzilly, France.

Estrus and mating response after estrus synchronization protocols in meat goats. J. L. Eierman\textsuperscript{1,}, D. J. O'Brien\textsuperscript{1,}, E. K. Crook\textsuperscript{1,}, R. A. Barczewski\textsuperscript{1,}, and N. C. Whitley\textsuperscript{2,}, \textit{Delaware State University, Dover,}\textsuperscript{2}North Carolina A&T State University, Greensboro.

Complement system activity on goats, hemolytic assay possibilities. I. Moreno-Indias\textsuperscript{1,}, A. Argüello\textsuperscript{1,}, N. Castro\textsuperscript{3,}, J. Capote\textsuperscript{2,}, A. Morales-delaNuez\textsuperscript{1,}, and B. Sim\textsuperscript{1,} Las Palmas de Gran Canaria University, Arucas, Las Palmas, Spain, \textit{Instituto Canario de Investigaciones Agrarias, La Laguna, Tenerife, Spain,}\textsuperscript{3}Oxford University, Oxford, United Kingdom.


Comparison of raw versus post-differentially corrected GPS collar fixes in free-ranging goats. T. A. Gipson\textsuperscript{1,}, S. P. Hart\textsuperscript{1,}, and R. Heinemann\textsuperscript{2,}, \textit{American Institute for Goat Research, Langston University, Langston, OK,}\textsuperscript{2}Kiamichi Forestry Research Station, Oklahoma State University, Idabel.

Garlic as an anthelmintic for goats. Z. Wang\textsuperscript{1,}, A. L. Goetsch, S. P. Hart, and T. Sahlu, \textit{American Institute for Goat Research, Langston University, Langston, OK.}

Comparison of copper sulfate and copper oxide wire particles as an anthelmintic for goats. S. P. Hart\textsuperscript{1} and Z. Wang, E Kika de la Garza American Institute for Goat Research, Langston, OK.

Performances of kids and calves grazing together and separately. S. Gebrelul\textsuperscript{1,}, R. Marshall, Y. Ghebreiyessus, and V. Bachireddy, \textit{Southern University Ag. Center, Baton Rouge, LA.}

Small ruminant producer gastrointestinal nematode (GIN) management survey. N. C. Whitley\textsuperscript{1,}, R. M. Kaplan\textsuperscript{2,}, J. M. Burke\textsuperscript{3,}, T. H. Terrill\textsuperscript{1,}, J. E. Miller\textsuperscript{5,}, W. R. Getz\textsuperscript{2,}, S. Mobini\textsuperscript{3,}, E. Valencia\textsuperscript{6,}, and M. J. Williams\textsuperscript{7,}, \textit{North Carolina A&T State University, Greensboro,}\textsuperscript{1}University of Georgia, Athens, \textsuperscript{3}USDA, ARS, Booneville, AR, \textsuperscript{4}Fort Valley State University, Fort Valley, GA, \textsuperscript{5}Louisiana State University, Baton Rouge, \textsuperscript{6}University of Puerto Rico, Mayaguez, PR, \textsuperscript{7}NRCS, Gainesville, FL.

Leg bands and rumen boluses for the long-term electronic identification of goats. S. Carné, G. Caja, M. A. Rojas-Olivares, and A. A. K. Salama\textsuperscript{1,}, \textit{G2R, Universitat Autònoma de Barcelona, Bellaterra, Spain.}

Natural plant anthelmintic fails to reduce internal parasites in meat goat kids. D. J. O'Brien\textsuperscript{1,}, K. K. Mathews\textsuperscript{1,}, J. E. Miller\textsuperscript{1,}, N. C. Whitley\textsuperscript{3,}, E. K. Crook\textsuperscript{1,}, and J. L. Eierman\textsuperscript{1,}, \textit{Delaware State University, Dover,}\textsuperscript{2}Louisiana State University, Baton Rouge, \textsuperscript{3}North Carolina A&T State University, Greensboro.
SYMPOSIA AND ORAL SESSIONS

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

Animal Health
Emerging Foreign Animal and Zoonotic Diseases
Chair: Gary Snowder, National Center for Foreign Animal and Disease Defense
511cf
9:30 AM 272 Potential threat of foreign animal diseases to US agriculture. T. Beckham*, Texas Veterinary Medical Diagnostic Laboratory, Texas A&M University System, College Station.
10:30 AM 273 Preventing and detecting foreign animal diseases. T. McKenna*, Wisconsin Veterinary Diagnostic Laboratory, Madison.

Breeding and Genetics
Genomic Evaluation
Chair: Curt Van Tassell, USDA-ARS
510ac
9:45 AM 276 Computing procedures for genetic evaluation including phenotypic, full pedigree and genomic information. I. Aguilar*, 1I. Misztal, and A. Legarra*, 1University of Georgia, Athens, 3Instituto Nacional de Investigación Agropecuaria, Las Brujas, Uruguay, 3INRA, SAGA, Castanet-Tolosan, France.
10:00 AM 277 Genetic evaluation including phenotypic, full pedigree and genomic information. I. Misztal*, A. Legarra*, and I. Aguilar*, 1University of Georgia, Athens, 3INRA SAGA, 32326 Castanet-Tolosan, France.
10:15 AM 278 Transition of genomic evaluation from a research project to a production system. G. R. Wiggans*, P. R. VanRadem*, L. R. Bacheller*, F. A. Ross*, T. S. Sonstegard*, G. te Meerman*, and C. P. Van Tassell*, 1ARS, USDA, Beltsville, MD, 2University Medical Center Groningen and University of Groningen, Groningen, the Netherlands.
10:30 AM 279 Can you believe those genomic evaluations for young bulls? P. M. VanRaden, M. E. Tooker*, and J. B. Cole, USDA Animal Improvement Programs Laboratory, Beltsville, MD.
10:45 AM Break
11:00 AM 280 Application of kernel partial least squares to estimate genomic breeding values of crossbred beef cattle. G. Vander Voort*, M. Kelly*, T. Caldwell*, D. Lu*, Z. Wang*, J. Mah*, G. Platstow*, S. Moore*, and S. Miller*, 1Centre for Genetic Improvement of Livestock, University of Guelph, Guelph, Ont., Canada, 2Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, Alberta, Canada.
11:15 AM 281 Visualization of results from genomic predictions. J. B. Cole*, Animal Improvement Programs Laboratory, Agricultural Research Service, USDA, Beltsville, MD.
11:30 AM 282 Comparison of Student's t, LASSO, and multiple shrinkage methods for the prediction of genomic
breeding values. C. Maltecca* and J. P. Cassady, North Carolina State University, Raleigh.

11:45 AM 283 Equivalent mixed model for joint genetic evaluation considering molecular and phenotypic information. N. Gengler1,2 and F. Colinet1. 1Gembloux Agricultural University, B-5030 Gembloux, Belgium, 2National Fund for Scientific Research, B-1000 Brussels, Belgium.

12:00 PM 284 Effect of estimation approach and number of QTLs in accuracies of genomic breeding values for simulated data. G. Gaspa1, E. L. Nicolazzi2, R. Sieri1, C. Dimauro1, and N. P. P. Macciotta1,1 Dipartimento di Scienze Zootecniche, Università di Sassari, Sassari, Italia, 2Istituto di Zootecnica, Università Cattolica del Sacro Cuore, Piacenza, Italia.

Chair: Gail Kuhlman, Procter & Gamble Pet Care

Companion Animals

511ad

9:30 AM Introduction. Gail Kuhlman.

9:40 AM 285 Protein quality differences exist among high quality mammalian, avian, and marine protein sources evaluated using avian assays. T. A. Faber1, D. C. Hernot1, C. M. Parsons1, K. S. Swanson1, S. Smiley1, P. J. Bechtel1,2, and G. C. Fahey, Jr.1,1University of Illinois, Urbana, 2University of Alaska, Fairbanks, Alaska, 3Agricultural Research Service, Fairbanks, Alaska.

9:55 AM 286 Total tract nutrient digestibility, fecal characteristics, and blood chemistry profiles of dogs as affected by alpha-cyclodextrin supplementation. M. A. Guevara1, K. A. Garleb2, and G. C. Fahey1,1University of Illinois, Urbana, 2Abbott Nutrition, Columbus, OH.

10:10 AM 287 Influence of dietary protein on fecal quality and colonic tight junction gene expression in Miniature poodles and German shepherds. J. Nery1,2, V. Leray1, V. Biourge1, L. Martin1, H. Dumon1, and P. Nguyen1,1École Nationale Vétérinaire de Nantes, France, 2University of Turin, Italy, 3Royal Canin, Aimargues, France.

10:25 AM 288 Identifying relationships of urinary 5-hydroxyindoleacetic acid, homovanillic acid and cortisol with behavioural display during social isolation in the domestic dog. M. J. Toscano1, C. Basse, E. Blackwell, J. W. S. Bradshaw, and R. Casey, DFAS, University of Bristol, Langford, UK.

10:40 AM 289 Canine adipose tissue transcriptome changes following eight weeks of diet-induced obesity. R. W. Grant1, B. M. Vester, T. K. Ridge, T. K. Graves, and K. S. Swanson, University of Illinois, Urbana.

10:55 AM 290 Colonic protein metabolites and microbial populations are altered in adult cats by consumption of cellulose, fructooligosaccharides, or pectin. K. A. Barry1, B. J. Wojcicki, I. S. Middelbos, B. M. Vester, K. S. Swanson, and G. C. Fahey Jr., University of Illinois, Urbana.

11:10 AM 291 Apparent macronutrient digestibility of four raw meat diets in African wildcats, jaguars, and Malayan tigers. K. R. Kerr1, A. Beloshpaka1, C. Dikeman2, S. Burke2, L. G. Simmons2, and K. S. Swanson1, 1University of Illinois Urbana, 2Henry Doorly Zoo, Omaha, NE.


11:40 AM 293 Effects of zinc amino acid complex and iron amino acid complex on performance, health and pelt quality of weanling blue fox (Alopex lagopus). Y. Zhang1, H. Wei1, D. J. Tomlinson1,2, and T. L. Ward2, 1Institute of Special Wild Animal and Plant Science, Jilin, China, 2Zinpro Corporation, Eden Prairie, MN.

SYMPOSIUM

CSAS Symposium

Nutrition - Behavior Interaction in Ruminants

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

517b
9:30 AM Introduction


10:05 AM 295 Interactions of nutrition and behavior in dairy calves. J. K. Drackley*, University of Illinois, Urbana.

10:35 AM 296 Understanding the behavior of growing dairy heifers from a nutritional perspective. T. J. DeVries*, University of Guelph, Kemptville Campus, Kemptville, Ontario, Canada.


11:35 AM 298 Grazing preferences in sheep and cattle: Implications for production, the environment and animal welfare. S. M. Rutter*, Harper Adams University College, Newport, Shropshire, United Kingdom.

12:05 PM Closing

SYMPOSIUM
Forages and Pastures
Forage Management Strategies of Offset High Input Costs
Chair: 524

9:30 AM 299 Effects of biological N fixation and nutrient cycling on stocking strategies for cow-calf and stocker programs. F. Rouquette Jr.* and G. Smith, Texas AgriLife Research, Overton.


11:00 AM 301 Effects of grazing management on productivity of cow/calf and stocker cattle with an emphasis on utilization of stockpiled tall fescue. M. H. Poore* and M. E. Drewnoski, North Carolina State University, Raleigh.


Growth and Development
Physiology of Growth In vivo and In vitro
Chair: Erin Connor, USDA ARS, Beltsville

9:30 AM 303 Modeling lifetime growth and feed efficiency in pigs. A. B. Strathe*, A. Danfaer1, and E. Kebreab2, 1University of Copenhagen, Copenhagen, Denmark, 2University of Manitoba, Winnipeg, Manitoba, Canada.

9:45 AM 304 Stimulation of skeletal muscle protein synthesis in neonatal pigs by long-term infusion of leucine is amino acid dependent. F. A. Wilson, A. Suryawan, M. C. Gazzaneo, R. A. Orellana, H. V. Nguyen, and T. A. Davis*, USDA/ARS Children’s Nutrition Research Center, Critical Care Med. Div., Dept. Pediatrics, Baylor College of Medicine, Houston, TX.


10:15 AM 306 Effect diet composition on precocious puberty and concentrations of IGF–1 in beef heifers. M. Maquivar1, L. A. Souto1, D. E. Grum1, D. M. Hallford2, S. C. Loerch1, A. V. Pires3, and M. L. Day1, 1The Ohio State University, Columbus, 2New Mexico State University, Las Cruces, NM, 3University of Sao Paulo, Piracicaba, Sao Paulo, Brazil.


1ESALQ/USP, Piracicaba, SP, Brazil, 2FZEA/USP, Pirassununga, SP, Brazil, 3Texas A&M University, College Station.


11:45 AM  312  Abundance of growth hormone secretagogue receptor in adipose tissue from beef cattle undergoing compensatory growth. J. S. Jennings*, J. A. Clapper, A. D. Weaver, and A. E. Wertz-Lutz, South Dakota State University, Brookings.

12:00 PM  313  Effect of Sirt1 on lipolysis and gene expression of adipose triglyceride lipase (ATGL) in porcine adipocytes. Y. Wang*, T. Shan, J. Guo, T. Wu, and C. Liu, The Key Laboratory of Molecular Animal Nutrition, Ministry of Education. Institute of Feed Science, Zhejiang University, Hangzhou, Zhejiang, China.

12:15 PM  314  Breed difference and regulation of porcine adipose triglyceride lipase (pATGL) and hormone sensitive lipase (HSL) by TNFα and insulin. T. Shan*, Y. Wang, T. Wu, C. Liu, and J. Guo, The Key Laboratory of Molecular Animal Nutrition, Ministry of Education. College of Animal Science, Zhejiang University, Hangzhou, China.

1University of Illinois, Urbana, 2Zinpro Performance Minerals, Eden Prairie, MN, 3Land O'Lakes Animal Milk Products Inc., Madison, WI.

12:45 PM  233  Effects of feeding solid feed on ruminal pH and expression of genes involved in ketogenesis in dairy calves during weaning transition. A. H. Laarman* and M. Oba, University of Alberta, Edmonton, Alberta, Canada.

**Lactation Biology 1**

**Chair:**

**512ae**

9:30 AM  316  Gene expression profile research of dairy goat mammary gland by Long-SAGE. H. Yan, C. Li, Q. Li*, and X. Gao, Northeast Agricultural University, Harbin, China.

9:45 AM  317  Selection of key gene related to development of mammary gland in dairy goat. C. Li, H. Yan, Q. Li*, and X. Gao, Northeast Agricultural University, Harbin, China.

10:00 AM  318  Epigenetic changes during functional differentiation of the mammary gland. M. Rijnkels*, C. Freeman-Zadrowski, and J. Hernandez, USDA/ARS Children's Nutrition Research Center, Baylor College of Medicine, Houston, TX.


10:30 AM  320  Microarray analysis of gene expression profiles in dry period bovine mammary gland. X. Hou and Q.
10:45 AM Break

11:15 AM 321 Palmitate affects larger gene networks in MACT cells compared with trans-10,cis-12-CLA or PPAR-gamma activation via Rosiglitazone. G. Invernizzi*1,2, A. K. G. Kadegowda1, M. Bionaz1, G. Savoini2, R. E. Everts1, H. A. Lewin1, and J. J. Loor1,1University of Illinois, Urbana, 2University of Milan, Milan, Italy.

11:30 AM 322 Energy metabolism in the development of dairy goat mammary gland. N. A. Zhang, Q. Li*, and X. Gao, Northeast Agricultural University, Harbin, Heilongjiang, China.

11:45 AM 323 Lactose synthesis in dairy goat mammary gland. X. Nan, Q. Li*, X. Gao, and B. Qu, Northeast Agricultural University, Harbin, Heilongjiang, China.

12:00 PM 324 Mammary expression of activating transcription factor 4 (ATF4) and tribbles homolog 3 (TRB3) is up-regulated during CLA-induced inhibition of milk fat synthesis in the dairy cow. K. J. Harvatine*, Y. R. Boisclair2, and D. E. Bauman2,1Pennsylvania State University, University Park, 2Cornell University, Ithaca, NY.

12:15 PM 325 Lipid transporters and their regulators in the bovine mammary gland in relation to blood serum metabolites during pregnancy, involution, and lactation. O. Mani1, M. T. Sorensen2, K. Sejrsen2, R.M. Bruckmaier*3, and C. Albrecht1,1Institute of Biochemistry and Molecular Medicine, University of Bern, Bern, Switzerland, 2Department of Animal Health, Welfare and Nutrition, Aarhus University, Tjele, Denmark, 3Veterinary Physiology, Vetsuisse Faculty, University of Bern, Bern, Switzerland.

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


10:00 AM 328 Effects of distillers grains on beef carcass quality and palatability. C. R. Calkins*, A. S. de Mello Jr., and L. S. Senaratne, University of Nebraska, Lincoln.

10:40 AM 329 Effects of various coproducts on beef consumer sensory and tenderness traits. G. P. Lardy* and R. J. Maddock, North Dakota State University, Fargo.

11:10 AM 330 By-product feeding effects on pork quality and carcass traits. J. D. Wood*, F. M. Whittington, and K. G. Hallett, University of Bristol, Langford, Bristol, UK.

11:50 AM Questions and answers

Nonruminant Nutrition
Amino Acids and Energy
Chair: Allen Pettey, Cal Poly State University
518

9:30 AM 331 Birth order, birth weigh, sow colostrum IgG, and pig IgG concentration and their effects on neonatal piglet survival. R. Cabrera*, X. Lin*, K. Shim1, T. Inskeep1, J. Campbell2, A. Moeser1, and J. Odle1, 1North Carolina State University, Raleigh, 2American Protein Coporation, Ankeny, IA.

9:45 AM 332 Efficacy of dietary amino acids to replace fish meal and whey protein on physiological changes in weanling pigs. Y. Zhao*, C. M. Ballou1, A. C. Chaytor1, R. L. Payne2, and S. W. Kim1, 1North
Maximizing the use of supplemental amino acids in diets for 14-kilogram pigs. V. D. Naranjo\textsuperscript{1}, T. D. Bidner\textsuperscript{1}, R. L. Payne\textsuperscript{1}, and L. L. Southern\textsuperscript{1}, \textsuperscript{1}Louisiana State University Agricultural Center, Baton Rouge, \textsuperscript{2}Evonik-Degussa Corporation, Kennesaw, GA.

Optimum isoleucine to lysine ratio in a barley and wheat based diet fed to starter pigs. J. Hoo\textsuperscript{1}, C. Zhu\textsuperscript{1}, and C. de Lange\textsuperscript{2}, \textsuperscript{1}Evonik Degussa Canada Inc., Gibbons, AB, Canada, \textsuperscript{2}University of Guelph, Guelph, ON, Canada.

Ileal digestibility of amino acids in low-Kunitz soybeans fed to weaning pigs. K. P. Goebel\textsuperscript{*} and H. H. Stein, University of Illinois, Urbana.

Amino acid digestibility and energy concentration in soybean meal produced from high protein, high digestible, or conventional varieties of soybeans and fed to weaning pigs. K. M. Baker\textsuperscript{*} and H. H. Stein, University of Illinois, Urbana.

Amino acid digestibility in corn and corn co-products fed to growing pigs. G. I. Petersen\textsuperscript{*} and H. H. Stein, University of Illinois, Urbana.

The threonine requirement in sows increases in late gestation. C. L. Levesque\textsuperscript{1}, S. Moehn\textsuperscript{1}, P. B. Pencharz\textsuperscript{2}, and R. O. Ball\textsuperscript{1}, \textsuperscript{1}Swine Research and Technology Centre, University of Alberta, Edmonton, Alberta, Canada, \textsuperscript{2}Sick Children's Hospital, University of Toronto, Toronto, Ontario, Canada.

Protein turnover and heat production of sows varies at day 30, 45 and 105 of gestation. R. S. Samuel\textsuperscript{1}, S. Moehn\textsuperscript{3}, P. B. Pencharz\textsuperscript{2}, and R. O. Ball\textsuperscript{1,2}, \textsuperscript{1}Swine Research and Technology Centre, University of Alberta, Edmonton, Alberta, Canada. \textsuperscript{2}Research Institute, Hospital for Sick Children, Toronto, Ontario, Canada.

Energy and amino acid utilization in expeller-extracted canola meal fed to growing pigs. T. A. Woyengo\textsuperscript{*}, E. Kiarie, and C. M. Nyachoti, University of Manitoba, Winnipeg, Manitoba, Canada.

Net energy of distillers dried grains with solubles and high protein distillers dried grains fed to growing and finishing pigs. N. A. Gutierrez\textsuperscript{*}, D. Y. Kil, and H. H. Stein, University of Illinois, Urbana.

Effect of saturated fat in diets with corn distillers dried grains with solubles (DDGS) on growth performance, carcass characteristics and apparent digestibility of nutrients of diets for finishing pigs. L. S. Freitas\textsuperscript{*}, M. J. Azain\textsuperscript{1}, D. C. Lopes\textsuperscript{1}, C. R. Dove\textsuperscript{2}, T. D. Pringle\textsuperscript{2}, P. Cline\textsuperscript{2}, and T. C. Tsai\textsuperscript{2}, \textsuperscript{1}Federal University of Viçosa, Viçosa, Brazil, \textsuperscript{2}University of Georgia, Athens.

Production, Management and the Environment

Dairy

Chair: Tim Klusmeyer, Monsanto

Short dry period: A new reality? Results from a long term field study. D. E. Santschi\textsuperscript{a,2}, D. Lefebvre\textsuperscript{3}, C. L. Girard\textsuperscript{1}, and D. Pellerin\textsuperscript{2}, \textsuperscript{1}Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, \textsuperscript{2}Université Laval, Quebec, QC, Canada, \textsuperscript{3}Valacta, Ste-Anne-de-Bellevue, QC, Canada.

Short dry period management improves peripartum ruminal adaptation in dairy cows. M. S. Jolicoeur\textsuperscript{1,2}, A. F. Brito\textsuperscript{2}, D. Pellerin\textsuperscript{1}, D. Lefebvre\textsuperscript{2}, R. Berthiaume\textsuperscript{2}, and C. L. Girard\textsuperscript{2}, \textsuperscript{1}Université Laval, Québec, QC, Canada, \textsuperscript{2}Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, \textsuperscript{3}Valacta, Ste-Anne-de-Bellevue, QC, Canada.

Effect of a shortened dry period on the mammary gland physiology. P. Bernier-Dodier\textsuperscript{1}, B. G. Talbot\textsuperscript{1}, and P. Lacasse\textsuperscript{1}, \textsuperscript{1}Université de Sherbrooke, Sherbrooke, QC, Canada, \textsuperscript{2}Dairy and Swine R&D Centre, Sherbrooke, QC, Canada.

Effects of heat stress and monensin on production and metabolism in lactating Holstein cows. J. B. Wheelock\textsuperscript{1}, S. R. Sanders\textsuperscript{1}, M. D. O'Brien\textsuperscript{1}, C. E. Moore\textsuperscript{2}, H. B. Green\textsuperscript{2}, M. R. Waldron\textsuperscript{1}, R. P. Rhoads\textsuperscript{1}, and L. H. Baumgard\textsuperscript{1}, \textsuperscript{1}University of Arizona, Tucson, \textsuperscript{2}Elanco Animal Health, Indianapolis, IN, \textsuperscript{3}University of Missouri, Columbia.

Effects of soaking dairy cows at the feed line on dry matter intake and milk production in a tunnel.


Changes in body condition scores during the transition period in Holstein cows. J. Moro-Méndez*, H. Monardes, and R. I. Cue, McGill University, Department of Animal Science, Ste-Anne-de-Bellevue, QC, Canada.

The association of level of milk production with reproductive performance. M. S. Campbell1, K. Hand1, D. F. Kelton1, F. Miglior2,3, and S. J. LeBlanc4, 1University of Guelph, Guelph, ON, Canada, 2Canadian Dairy Network, Guelph, ON, Canada, 3Dairy and Swine Research & Development Centre, Agriculture and Agri-Food Canada.

Management practices associated with conception rate and service rate of lactating Holstein cows in large, commercial dairy herds. J. M. Schefers5,6, K. A. Weigel1, N. B. Cook1, C. L. Rawson2, and N. R. Zwald3, 1University of Wisconsin, Madison, 2Alta Genetics USA Inc., Watertown, WI.

Pregnancy rates and herd turnover proportions after using a hormonal synchronization protocol in primiparous dairy cows in a California dairy. K. G. Gohary1, 2, S. S. Aly1, 2, D. C. Wagner1, 2, B. R. Hoar2, V. M. Lane1, and J. D. Rowe1, 1William R. Pritchard Veterinary Medical Teaching Hospital, School of Veterinary Medicine, University of California, Davis, 2Department of Veterinary Medicine and Epidemiology, School of Veterinary Medicine, University of California, Davis, 3Department of Population Reproduction, School of Veterinary Medicine, University of California, Davis.

Effect of days open in the previous lactation on the risk of culling or death around calving. P. J. Pinedo* and A. De Vries, University of Florida, Gainesville.

**Ruminant Nutrition**

**Fat Supplementation**

**Chair: Paul Kononoff, University of Nebraska**

**516c**

Effective use of safflower seeds in early lactation diets with alfalfa hay and corn silage. A. Alizadeh1, G. R. Ghorbani1, M. Alikhani1, H. R. Rahmani1, and A. Nikkhah2, 1Isfahan University of Technology, Isfahan, Iran, 2Zanjan University, Zanjan, Iran.


Effect of prepartum feed restriction and oilseed supplementation on peripartum cow metabolism. A. Hayırlı* and L. Doepel, 1 Atatürk University, Erzurum, Turkey, 2University of Alberta, Edmonton, AB, Canada.

Effects of duodenal infusion of linolenic acid on milk fatty acid composition in dairy cows. D. P. Bu1, Khas-Erdene1, J. Q. Wang2, H. Y. Wei1, L. Y. Zhou1, and J. K. Drackley2, 1State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, P. R. China, 2Department of Animal Sciences, University of Illinois, Urbana.


11:00 AM 358 Tracer studies in cultures of ruminal microorganisms reveal the formation of conjugated double bonds originating from biohydrogenation of $^{13}$C-labeled linolenic acid. Y. J. Lee, C. M. Klein, and T. C. Jenkins*, Clemson University, Clemson, SC.


11:30 AM 360 Lactation performance of dairy cows supplemented with different oil sources. J. A. Ye1, C. Wang4, H. F. Wang3, H. W. Ye1, B. X. Wang1, H. Y. Liu1, Y. M. Wang1, Z. Q. Yang1, and J. X. Liu1, 1Institute of Dairy Science, Zhejiang University, Hangzhou, P. R. China, 2School of Forestry and Biotechnology, Zhejiang Forestry University, Hangzhou, P. R. China, 3Hangzhou Zhengxing Animal Industries, Hangzhou, P. R. China.

11:45 AM 361 Milk production and composition from cows with different levels of cashew nut in the diet. P. G. Pimentel1, L. A. Leite2, I. R. F. M. Veiga2, and R. B. Reis1, 1Animal Science Department, Federal University of Ceará, Brazil, 2Veterinary School, Federal University of Minas Gerais, Brazil.

12:00 PM 362 Effect of dietary n-3 polyunsaturated fatty acids (PUFA) on gene expression of the insulin-like growth factor (IGF) system in the bovine uterus. G. S. Coyne1,2, D. A. Kenny2, and S. M. Waters1, 1Animal Bioscience Centre, Teagasc, Grange Beef Research Centre, Dunsany, Co. Meath, Ireland, 2School of Agriculture, Food Science & Veterinary Medicine, University College Dublin, Belfield, Dublin, Ireland.

**Ruminant Nutrition I**

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

516ab

9:30 AM 363 Oats grain as an alternative to corn in beef cattle diets. J. A. Marcenac1, H. M. Arlovich1, M. F. Martínez1, M. I. Amela1, and R. D. Bravo1,2, 1Dpto. Agronomía-Universidad Nacional del Sur, 2Comisión de Investigaciones Científicas de la Provincia de Buenos Aires (CIC); CERZOS, Bahía Blanca, Argentina.


10:15 AM 58 Effect of butyrate absorption on the severity of subacute ruminal acidosis... G. B Penner1, J. R. Aschenbach2, G. Gäbel1, and M. Oba3, 1University of Alberta, Edmonton, AB, Canada, 2Universität Leipzig, Leipzig, Germany.

10:30 AM 366 Effect of nitrogen supplementation on urea kinetics and microbial use of recycled urea in steers consuming corn-based diets. D. W. Brake1, E. C. Tügemeyer1, M. L. Jone2, and D. E. Anderson2, 1Department of Animal Sciences and Industry, Kansas State University, Manhattan, 2Department of Clinical Sciences, Kansas State University, Manhattan.

10:45 AM 367 Effects of a slow-release urea product on the N balance of growing cattle fed steam flaked corn. B. M. Bourg1, T. A. Wickersham1, L. O. Tedeschi1, and J. M. Tricarico2, 1Dept. of Animal Science, Texas A&M University, College Station, 2Alltech Inc., Nicholasville, KY.

11:00 AM 368 Effects of a slow-release urea product on performance and carcass characteristics of growing cattle fed steam-flaked corn. B. M. Bourg1, L. O. Tedeschi1, J. M. Tricarico2, T. A. Wickersham1, and W. K. Krueger1, 1Dept. of Animal Science, Texas A&M University, College Station, 2Alltech Inc., Nicholasville, KY.

11:15 AM 369 Dose and release pattern of anabolic implants affects growth of finishing beef steers. S. L. Parr1, K. Y. Chung1, J. P. Hutcheson2, W. T. Nichols3, D. A. Yates3, M. N. Streeter2, R. S. Swingle3, M. L. Galvyan1, and B. J. Johnson1, 1Texas Tech University, Lubbock, 2Intervet / Schering-Plough Animal
SYMPOSIUM

Small Ruminant Challenges and Opportunities
Chair: Joan Burke, USDA, ARS, Booneville, AR

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

ASAS Early Career Achievement Award: Nutritional and management methods to decrease nitrogen losses from beef feedlots. G. E. Erickson* and T. J. Klopfenstein, University of Nebraska, Lincoln.

Increasing dietary concentration of coconut oil reduces enteric methane emission from lactating Holstein cows. M. Hollmann*1, W. J. Powers1,2, A. Fogiel1, N. M. Bello1,2, J. S. Liesman1, and D. K. Beede1, 1Department of Animal Science, Michigan State University, East Lansing, 2Department of Biosystems Engineering, Michigan State University, East Lansing, 3College of Agriculture and Natural Resources Statistical Consulting Center, Michigan State University, East Lansing.

Effects of two strains of Saccharomyces cerevisiae on methane emissions from Holstein dairy cattle. Y.-H. Chung*1, S. M. McGinn1, N. Walker2, and K. A. Beauchemin1, 1Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, 2Lallemand Animal Nutrition, Montréal, QC, Canada.

The effect of pre-grazing herbage mass on growth rate and methane emissions of grazing beef cattle. T. M. Boland*, K. J. Hart, K. M. Pierce, B. M. Lynch, R. McDonnell, D. Murphy, A. K. Kelly, and D. A. Kenny, School of Agriculture, Food Science and Veterinary Medicine, University College Dublin, Belfield, Dublin, Ireland.

Obstacles to organic and grass fed small ruminant production in the U.S. J. M. Burke*, USDA, Agricultural Research Service, Booneville, AR.

Ecology as a model for organic dairy production. F. Thicke*, Radiance Dairy, Fairfield, IA.

Successful organic dairy systems. K. J. Soder*, USDA-ARS, Pasture Systems & Watershed Mgmt. Research Unit, University Park, PA.

Grass-fed management systems for profitable livestock production. S. K. Duckett* and J. G. Andrae, Clemson University, Clemson, SC.

Discussion

Enriched colony cage for laying hens and the effects on behavioural and physiological parameters. N. J. Cook*1, J. Feddes2, D. Korver2, D. B. . Haley2, and J. S. Church1, 1Alberta Agriculture and Rural Development, Lacombe Research Centre, Lacombe, Alberta, Canada, 2University of Alberta, Edmonton, Alberta, Canada, 3Thompson Rivers University, Kelowna, British Columbia, Canada.

Animal welfare indicators of Holstein bulls ring-castrated at three months of age. S. Marti*1,2, A. Velarde2, J. L. de la Torre1, A. Bach1,2, X. Manteca1, A. Aris2, A. Serrano2, and M. Devant1,3, 1Animal Nutrition, Management, and Welfare Group, Barcelona, Spain, 2IRTA, Barcelona, Spain, 3UBA, Barcelona, Spain.

Pain mitigation at time of castration improves performance and intake in feedlot bull calves. L. A. González*, K. S. Schwartzkopf-Genswein1, E. Fierheller2, E. Janzen2, N. A. Caulkett2, T. A. McAllister1, D. B. Haley4, J. M. Stookey3, and S. Hendrick3, 1Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, 2University of Calgary, Calgary, AB, Canada, 3University of Saskatchewan, Saskatoon, SK, Canada, 4University of Alberta, Edmonton, AB, Canada.

Feeding behavior and weight gain of dairy calves in the post-weaning period. A. L. Stanton*, D. Kelton1, K. E. Leslie1, S. J. LeBlanc1, K. Hester1, and S. T. Millman*, University of Guelph, Guelph,
Ontario, Canada, 2Iowa State University, Ames.

3:00 PM 382 Evaluation of the Pedometry Plus system for the detection of pedometric activity and lying behaviour in dairy cattle. J. H. Higginson 1, K. E. Leslie 1, S. T. Millman 1, and D. F. Kelton 1, 1University of Guelph, Guelph, Ontario, Canada, 2Iowa State University, Ames.


3:30 PM Break

3:45 PM 384 A comparison of the effects of two different Korral Kool systems on dairy cows in a desert environment. X. Ortiz 1, J. Smith 1, B. Bradford 1, J. Harner 1, and A. Oddy 2, 1Kansas State University, Manhattan, 2NADA Al-Othman, Saudi Arabia.

4:00 PM 385 Effect of feedline soakers complementing Korral Kool systems on lactating dairy cows in a desert environment. X. Ortiz 1, J. Smith 1, B. Bradford 1, J. Harner 1, and A. Oddy 2, 1Kansas State University, Manhattan, 2NADA Al-Othman, Al Ahsa, Saudi Arabia.


4:45 PM 388 Use of an automated sampler to assess bovine adrenal hormone response to transportation. N. C. Burdick 1, 2, J. A. Carroll 2, R. D. Randel 3, S. T. Willard 1, R. C. Vann 2, C. C. Chase, Jr. 6, D. A. Neuendorff 2, A. W. Lewis 3, J. W. Dailey 2, L. E. Hulbert 2, L. C. Caldwell 3, J. G. Lyons 1, and T. H. Welsh, Jr. 1, 1Texas AgriLife Research, Texas A&M System, College Station, 2USDA ARS Livestock Issues Research Unit, Lubbock, TX, 3Texas AgriLife Research, Texas A&M System, Overton, 4Mississippi State University, Mississippi State, 5MAFES, Mississippi State University, Raymond, 6USDA ARS Subtropical Agricultural Research Station, Brooksville, FL.

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

2:00 PM 389 New frontiers in mastitis research. S. C. Nickerson 1, University of Georgia, Athens.

2:45 PM 390 Tackling the issue of cow longevity: Battling lameness. J. K. Shearer 1, University of Florida, Gainesville.

3:30 PM 391 Increasing longevity by increasing reproductive efficiency in dairy cattle. M. C. Wiltbank 1, University of Wisconsin, Madison.

4:15 PM 392 Improving longevity with new genetic models and marker assisted selection. K. A. Weigel 1, University of Wisconsin, Madison.

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

2:00 PM Introductions. R. Shaver, University of Wisconsin, Madison.

2:15 PM 393 Feed management from perspective of national feed management project. J. H. Harrison 1, R. A.
SYMPOSIUM
Beef Species
Population Data Analyses to Evaluate Trends in Animal Production Systems
Chair: Alfredo DiCostanzo, University of Minnesota

2:00 PM 394 Introduction. A. DiCostanzo.

2:05 PM 397 Enhancing management decisions in modern animal agriculture using population data and appropriate analytical methodology. P. D. Matzat1, J. Bargen2, and W. J. Platter1, Elanco Animal Health, Greenfield, IN, 2AgSpan, Overland Park, KS.

2:50 PM 398 An animal breeding approach to the estimation of genetic and environmental trends from field populations. D. Garrick*, Iowa State University, Ames.

3:20 PM 399 Break

3:30 PM 399 Data collection and determination of factors affecting efficiency and profitability of beef cattle production systems. R. Jones1 and M. Langemeier*, 1Oklahoma State University, Enid, 2Kansas State University, Manhattan.

4:00 PM 400 Applications of population data analysis in on-farm dairy trials. M. Engstrom1, W. Sanchez2, W. Stone2, and N. R. St-Pierre3, DSM Nutritional Products, Inc., Parsippany, NJ, 2Diamond V Mills, Cedar Rapids, IA, 3The Ohio State University, Columbus.

4:30 PM 401 Application of statistical process control techniques to monitor changes in animal production systems. A. De Vries*, University of Florida, Gainesville.

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

2:00 PM 402 Estimates of heritability of feed intake in Canadian Holsteins. J. Song*, J. F. Hayes, and R. I. Cuc, McGill University, Macdonald Campus, Ste-Anne de Bellevue, Quebec, Canada.

2:15 PM 403 Heritability of body condition score and relationships with milk production traits in Canadian Ayrshires. S. Loker1, C. Bastin2, F. Miglior3, A. Sewalem3, J. Fatehi1, L. R. Schaeffer1, and J. Jamrozik1, CGIL, University of Guelph, Canada, 2Gembloux Agricultural University, Belgium, 3Agriculture and Agri-Food Canada, Canadian Dairy Network, Guelph, Canada.

2:30 PM 404 Effect of test-day records beyond 305 days in milk on variance components and 305-d estimated breeding values for production traits and somatic cell score of Canadian Holsteins. J. Bohmanova1, F. Miglior2, and J. Jamrozik1, Centre for Genetic Improvement of Livestock, University of Guelph.
Genetic variability of test-day stearoyl coenzyme-A desaturase 9 activity. V. M.-R. Arnould1, N. Gengler2, and H. Soyeurt1. 1Gembloux Agricultural University, Animal Science Unit, Gembloux, Belgium, 2National Fund for Scientific Research, Brussels, Belgium.

3:00 PM
Break

3:15 PM 405

3:30 PM 407
Estimates of genetic parameters among body condition score and fertility traits in first-parity Canadian cows. C. Bastin1, S. Loiker2, N. Gengler1, and F. Miglior4,5. 1Animal Science Unit, Gembloux Agricultural University, Gembloux, Belgium, 2CGIL, Dept. of Animal and Poultry Science, University of Guelph, Guelph, ON, Canada, 3National Fund for Scientific Research, Brussels, Belgium, 4Dairy and Swine Research and Development Centre, Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, 5Canadian Dairy Network, Guelph, ON, Canada.

3:45 PM 408
The influence of genetic selection and feed system on milk production and fertility performance of spring-calving dairy cows. J. Coleman1,2, K. M. Pierce2, D. P. Berry1, A. Brennan1, and B. Horan1. 1Teagasc, Moorepark Dairy Production Research Centre, Fermoy, Co. Cork, Ireland, 2UCD, School of Agriculture Food Science and Veterinary Medicine, Belfield, Dublin 4, Co. Dublin, Ireland.

4:00 PM 409
Consequence on reproduction of two feeding levels with opposite effects on milk yield and body condition loss in Holstein and Normande cows. E. Cutullic1, L. Delaby1, G. Michel1, and C. Disenhaus1. 1INRA UMR1080 Dairy Production, Rennes, France, 2INRA UE326 Le Pin-au-Haras, Exmes, France.

Breeding and Genetics
Swine Breeding

Chair: Cathy Ernst, Michigan State University

510bd

2:00 PM 410
Performance and carcass composition of pigs selected for residual feed intake on restricted and ad libitum diets. N. Boddicker1, D. Nettleton, N. Gabler, M. Spurlock, and J. C. M. Dekkers. Iowa State University, Ames.

2:15 PM 411

2:30 PM 412
Longitudinal random regression analysis of growth and feed intake in selection lines for residual feed intake in Yorkshire swine. W. Cai1, H. Wu, and J. C. M. Dekkers. Iowa State University, Ames.

2:45 PM 413
Impact of genetic social interactions on relationships between average daily gain and feeding pattern in pigs. C. Y. Chen1, I. Misztal2, S. Tsuruta1, W. O. Herring1, J. Holl2, and M. Culbertson2. 1University of Georgia, Athens, 2Smithfield Premium Genetics Group, Rose Hill, NC.

3:00 PM 414
Genetic relationships of individual pig birth weight with weaning weight, off-test weight, feed intake, backfat and loin depth. J. S. Fix1, J. W. Holl2, W. O. Herring2, J. P. Cassidy1, C. Maltecca1, and M. T. See1. 1North Carolina State University, Raleigh, 2Smithfield Premium Genetics Group, Rose Hill, NC.

3:15 PM 221

3:30 PM 415
Breed differences in swine temperament and its phenotypic relationship with performance. C. L. Yoder1, C. Maltecca1, J. P. Cassidy1, S. Price2, and M. T. See1. 1North Carolina State University, Raleigh, 2Ivey Spring Creek Farms, Goldsboro, NC.

3:45 PM 416
Genetic parameters for litter traits and piglet survival in Norsvin Landrace. B. Zumbach1, P. Madsen2, and B. Holm1. 1Norsvin, Hamar, Norway, 2Aarhus University, Tjele, Denmark, 3Norsvin USA.
Rochester, MN.

4:00 PM 417 Marker assisted selection using simulated IGF2 gene in Canadian Landrace. M. Jafarikia*, B. Sullivan, and L. Maignel, *Canadian Centre for Swine Improvement, Ottawa, ON, Canada.

4:15 PM 418 A DNA based test for evaluating and improving pork colour in Canadian pigs. B. Uttaro*1, M. Jafarikia2, W. Van Berkel1, S. Wyss2, B. Sullivan2, and S. Chen1, 1Agriculture and Agri-Food Canada, Lacombe Research Centre, Lacombe, Alberta, Canada, 2Canadian Centre for Swine Improvement, Ottawa, Ontario, Canada, 3Western Swine Testing Association, Lacombe, Alberta, Canada, 4University of Guelph, Laboratory Services Division, Guelph, Ontario, Canada.

4:30 PM 419 Estimation of the IGF2 effect on backfat and lean muscle depth in Canadian Landrace. M. Jafarikia*, B. Sullivan, L. Maignel, and S. Wyss, *Canadian Centre for Swine Improvement, Ottawa, ON, Canada.

4:45 PM 420 Proximal promoter of the pig HMGCR gene: Structural and functional study. A. Cánovas*1, R. Quintanilla1, J. M. Reecy2, M. Marquiés3, and R. N. Pena1, 1IRTA. Genetica i Millora Animal. Lleida, Spain, 2Iowa State University, Ames, 3INDEGA. Universidad de León, León, Spain.

Dairy Foods 1
Chair: Dave McCoy, DMI Inc.

2:00 PM 421 ADSA Pioneer: Value-added components derived from whey. W. Modler*, Agriculture Canada (formerly Centre for Food & Animal Research, Ottawa, Ontario, Canada), Kemptville, Ontario, Canada.

2:30 PM 422 Optimizing the recovery of protein during microfiltration of preconcentrated whey. C. Marella*, L. E. Metzger, and K. Muthukumarappan, Midwest Dairy Foods Research Center, South Dakota State University, Brookings.

2:45 PM 423 Nanoparticulation of denatured whey protein by pH–cycling. M. Britten*, J. Houde, and H. J. Giroux, Agriculture and Agri-Food Canada, St-Hyacinthe, QC, Canada.


3:15 PM 425 Use of whey protein fractions as a fat substitute for sausage. A. C. B. Ferreira1, W. L. M. Santos1, L. M. Fonseca2,1, and R. L. Bradley Jr.3, 1Federal University of Minas Gerais (UFMG), School of Veterinary Medicine, Department of Food Technology and Inspection, Belo Horizonte, MG, Brazil, 2Laboratory of Milk Quality Analysis, UFMG, Belo Horizonte, MG, Brazil, 3University of Wisconsin, Department of Food Science, Madison.

3:30 PM 426 Influence of casein on flux and passage of serum proteins (SP) during microfiltration (MF) using polymeric spiral wound (SW) membranes at 50°C. J. J. Zulewska*1, M. Newbold2, and D. M. Barbano2, 1University of Warmia and Mazury, Olsztyn, Poland, 2Cornell University, Ithaca, NY.

3:45 PM 427 A non-pasta filata Mozzarella cheese making method using CO2: Cheese composition and yield. L. Li1, M. Newbold2, and D. M. Barbano2, 1South China University of Technology, Guangzhou, China, 2Cornell University, Ithaca, NY.

4:00 PM 428 A non-pasta filata Mozzarella cheese making method using CO2: Cheese functionality. L. Li1, M. Newbold2, and D. M. Barbano2, 1South China University of Technology, Guangzhou, China, 2Cornell University, Ithaca, NY.

4:15 PM 429 Caseins as molecular chaperones: Functional analysis and structural considerations. Y. H. Yong* and E. A. Foegeding, Department of Food, Bioprocessing and Nutrition Sciences, North Carolina State University, Raleigh.

4:30 PM 430 Development and functionalities of milk protein-based paper glue. X. Chen1,2, Y. L. Gao2,1, L. H. Zhou1, and M. R. Guo8,1, 1University of Vermont, Burlington, 2Inner Mongolia Agriculture University, Huhhot, Inner Mongolia, China.
Dairy Foods
Dairy Foods/Cheese
Chair: Donald McMahon, Utah State University
513ef

2:00 PM ADSA Pioneer.
2:00 PM 431 ADSA Pioneer: A century of predictive cheese yield formulas. D. B. Emmons*, Food Research Laboratory, Research Branch, Agriculture and Agri-Food Canada, Guelph, ON, Canada.
2:30 PM 432 Cheesemaking properties of camel chymosin. K. B. Qvist*, M. Harboe, H. van den Brink, M. L. Broe, and M. W. Børстing, Chr. Hansen, Hørsholm, Denmark.
2:45 PM 433 Aggregation of casein micelles by combined rennet and acidification studied by rheology and diffusing wave spectroscopy: Effect of heat treatment. C. Cooper*, M. Alexander, and M. Corredig, University of Guelph, Guelph, ON, Canada.
3:00 PM 434 Improvement in the texture of low-fat Cheddar cheese by altering the manufacturing protocol. N. Bansal*, N. Y. Farkye, and M. A. Drake, California Polytechnic State University, San Luis Obispo, North Carolina State University, Raleigh.
3:15 PM 435 Impact of grating and reforming on the texture of low fat/nonfat cheese. C. Akbulut*, S. Govindasamy-Lucey, J. A. Lucey, J. J. Jaeggi, and M. E. Johnson, Department of Food Science, University of Wisconsin, Madison, Wisconsin Center for Dairy Research, University of Wisconsin, Madison.
3:30 PM 436 Influence of brine concentration and temperature on composition, microstructure and yield of feta cheese. D. J. McMahon*, M. M. Motawee, and W. R. McManus, Western Dairy Center, Utah State University, Logan, National Organization for Drug Control and Research, Cairo, Egypt.
3:45 PM 437 Impact of the addition of salts on the textural and rheological properties of nonfat cheese. J. A. Stankey*, M. E. Johnson, and J. A. Lucey, University of Wisconsin, Department of Food Science, Madison, Wisconsin Center for Dairy Research, Madison.
4:00 PM 438 Comparison of mono- and poly-unsaturated fatty acid compositions between reduced-fat and full-fat goat milk cheeses during three months aging. W. Nouira, Z. Guler, J. H. Lee, T. H. Terrill, G. Kannan, and Y. W. Park, Fort Valley State University, Fort Valley, GA, Mustafa Kemal University, Hatay, Turkey.
4:15 PM 439 Distribution of fat in comminuted cheese at varying fat levels and storage times using laser scanning confocal microscopy and textural analysis. W. R. McManus*, N. Garg, and D. J. McMahon, Western Dairy Center, Utah State University, Logan.
4:30 PM 440 Development of various paneer based spreads. H. G. Ramachandra Rao* and H. Arun Kumar, Dairy Science College, Hebbal, Bangalore, Karnataka, India.

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

2:00 PM 441 Dam/grand-dam nutrition during pregnancy affects milk supply in offspring and reproductive performance in grand-offspring. H. T. Blair*, D. S. van der Linden, L. C. Davenport, P. R. Kenyon, C. M. C. Jenkinson, S. W. Peterson, D. D. S. Mackenzie, S. T. Morris, and E. C. Firth, National Research Centre for Growth & Development, Massey University, Palmerston North, New Zealand.
2:35 PM 442 Fetal programming of skeletal muscle development in ruminant animals. M. Du* and M. J. Zhu, University of Wyoming, Laramie.
3:10 PM 443 Programming of fetal fat and muscle: Natural and genetic fetal restriction and exogenous nutritional influences. G. J. Hausman*, USDA-ARS, Athens, GA.
Meat Science and Muscle Biology
Pork and Beef Quality
Chair: Kasey Maddock Carlin, North Dakota State University

514


2:30 PM 448 Impact of varying CO2 and O2 concentrations during stunning and carcass chilling conditions on pork quality traits. G. Bee1*, M. Gerritzen2, M. Mull2, C. Bioley1, G. Guex1, B. Dougd1, and C. Vonnez1, Agroscope Liebefeld Postieux, Research Station ALP, CH-3409, Lusen, Switzerland.

2:45 PM 449 Using ultrasound technology to predict intramuscular fat of loin in live pigs and potential use in swine genetic improvement. L. Maignel1*, J.-P. Daigle2, and B. Sullivan1, Canadian Centre for Swine Improvement, Ottawa, ON, Canada, Centre de Développement du Porc du Québec, Quebec, QC, Canada.

3:00 PM 450 The effects of restricted feeding and subsequent realimentation on pig carcass composition. C. Chaosap*, T. Parr, and J. Wiseman, Nottingham University, Loughborough, UK.

3:15 PM Break


3:45 PM 452 Sarcome length influences postmortem proteolysis of Troponin-T in bovine muscle. S. J. Wells1*, T. M. Nath, D. M. Wulf, and A. D. Weaver, South Dakota State University, Brookings.

4:00 PM 453 Water access and the carcass characteristics of Holstein slaughter cows. K. D. Vogel1*, J. R. Claus2, T. Grandin1, G. R. Oetzel2, and D. M. Schaefer2, Colorado State University, Fort Collins, University of Wisconsin, Madison.

4:15 PM 454 Growth and carcass characteristics of steers fed an omega-3-fatty acid-fortified supplement from flaxseed while on improved pastures and following feedlot finishing. R. C. Vann1*, S. T. Willard2, E. L. Schenck2, J. M. Martin2, K. Moult2, W. Holmes2, A. Brown2, B. Thomas2, T. E. Lawrence3, and M. S. Brown4, MAFES-Brown Loam Exp. Stat., Mississippi State University, Raymond, Mississippi State University, Starkville, West Texas A&M University, Canyon.

4:30 PM 455 Impact of feeding Fusarium graminearum-infested barley on meat quality and fatty acid profiles in beef steers. S. L. Scott1*, D. L. McLaren1, H. C. Block1, M. E. R. Dugan2, Y. Wang3, and T. A. McAllister3, Agriculture and Agri-Food Canada, Brandon Research Centre, Brandon, MB, Canada, Agriculture and Agri-Food Canada, Lacombe Research Centre, Lacombe, AB, Canada, Agriculture and Agri-Food Canada, Lethbridge Research Centre, Lethbridge, AB, Canada.

4:45 PM 456 Long-term supplementation with sunflower/fish oil-containing concentrates in a grass-based beef production system: Effects on colour and lipid stability during retail display. P. G. Dunne1, F. J. Monahan2, and A. P. Moloney1*, Teagasc, Ashtown Food Research Centre, Ashtown, Dublin.
**SYMPOSIUM**

**Nonruminant Nutrition**

**Mineral-Mineral Interactions: Implications for Nutrition**

*Chair: Scott Radcliffe, Purdue University*

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:00 PM</td>
<td>Ionomics: Mineral nutrition, physiology, and interactions as a biological system. J. Fleet* and D. Salt, <em>Purdue University, West Lafayette, IN.</em></td>
</tr>
<tr>
<td>2:40 PM</td>
<td>Trace mineral interactions, known, unknown and not used. G. M. Hill* and J. E. Link, <em>Michigan State University, East Lansing.</em></td>
</tr>
<tr>
<td>3:20 PM</td>
<td>Macromineral interactions. J. S. Radcliffe*, <em>Purdue University, West Lafayette, IN.</em></td>
</tr>
<tr>
<td>4:00 PM</td>
<td>Panel discussion: How should future mineral requirement studies be designed? James Fleet, Gretchen Hill, and Scott Radcliffe.</td>
</tr>
<tr>
<td>4:40 PM</td>
<td>Summary. Scott Radcliffe.</td>
</tr>
</tbody>
</table>

**Physiology and Endocrinology**

**Estrous Synchronization of Beef Cattle**

*Chair: Ricardo C. Chebel, VMTRC-University of California Davis*

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:00 PM</td>
<td><strong>ASAS Early Career Achievement Award Presentation:</strong> Control of the estrous cycle for fixed-time artificial insemination (TAI) in beef cattle. G. C. Lamb*, <em>North Florida Research and Education Center, University of Florida, Marianna.</em></td>
</tr>
<tr>
<td>3:05 PM</td>
<td>Comparison of progestin-based protocols to synchronize estrus and facilitate AI in postpartum beef cows. D. J. Wilson*, D. A. Mallory*, D. C. Busch†, N. R. Leitman†, J. K. Haden†, D. J. Schafer†, M. R. Ellersieck†, M. F. Smith†, and D. J. Patterson†, <em>University of Missouri, Columbia, MFA, Inc., Columbia, MO.</em></td>
</tr>
<tr>
<td>3:20 PM</td>
<td>Comparison of follicular dynamics and hormone concentrations between the 7 d and 5 d CO-Synch + CIDR program in two-year old beef cows. G. A. Bridges*, M. L. Mussard, L. A. Helsel, and M. L. Day, <em>Purdue University, West Lafayette, IN, The Ohio State University, Columbus, Select Sires Inc., Plain City, OH.</em></td>
</tr>
<tr>
<td>3:50 PM</td>
<td>Break</td>
</tr>
<tr>
<td>4:00 PM</td>
<td>Efficacy of the 5 day CO-Synch estrous synchronization protocol with or without the inclusion of a CIDR in beef cows. K. C. Culp*, R. P. Lemenager, M. C. Claey§, P. J. Gunn, M. Van Emon, R. P. Arias, S. L. Lake, and G. A. Bridges, <em>Purdue University, West Lafayette, IN, University of Wyoming, Laramie.</em></td>
</tr>
<tr>
<td>4:15 PM</td>
<td>Presynchronization with hCG 7 d prior to estrous synchronization and replacement of GnRH with hCG</td>
</tr>
</tbody>
</table>
at fixed-time AI (TAI) in suckled beef cows. G. Marquezini*1, C. R. Dahlen2, S. L. Bird3, B. J. Funnell1, and G. C. Lamb1, 1North Florida Research and Education Center, University of Florida, Marianna, 2Northwest Research and Outreach Center, University of Minnesota, Crookston, 3North Central Research and Outreach Center, University of Minnesota, Grand Rapids.

4:30 PM 468
Administration of human chorionic gonadotropin (hCG) 7 days after insemination of suckled beef cows. C. R. Dahlen*1, S. L. Bird2, C. A. Martel1, K. C. Olson3, J. S. Stevenson1, and G. C. Lamb5, 1Northwest Research and Outreach Center, University of Minnesota, Crookston, 2North Central Research and Outreach Center, Grand Rapids, MN, 3Department of Animal Sciences and Industry, Kansas State University, Manhattan, 5North Florida Research and Education Center, University of Florida, Marianna.

4:45 PM 469
Effect of used CIDR and FSH on estrus expression and pregnancy rate during low breeding season in Nili buffaloes. N. Ahmad4, Z. Naseer1, E. Ahmad1, M. Mushtaq2, and J. Singh1, 1Department of Theriogenology, University of Veterinary & Animal Sciences, Lahore, Pakistan, 2Buffalo Research Institute, Pattoki, Pakistan, 3Department of Veterinary Biomedical Sciences, WCVM, Saskatoon, Canada.

---

**Ruminant Nutrition**

**Feed Additives**

Chair: Cathy Bandyk, Quality Liquid Feeds

516c

2:00 PM 470

2:15 PM 471
Meta analysis of growing ruminants fed a mixture of eugenol, cinnamaldehyde and capiscum oleoresin. D. Bravo1, N. A. Pyat2, P. H. Doane2, and M. J. Cecava3, 1Pancosma, Geneva, Switzerland, 2ADM Research, Decatur, IL.

2:30 PM 472
Synergy of cinnamaldehyde, eugenol and garlic for reduction of methane production in vitro. S. Cavini1, D. Bravo2, S. Calsamiglia1, M. Rodriguez1, A. Ferret1, and G. Schroeder3, 1Universitat Autonoma de Barcelona, Barcelona, Spain, 2Pancosma, Geneva, Switzerland, 3Cargill, Elk River, MN.

2:45 PM 473
Essential oils may reduce the risk of ketosis in dairy goats carrying twins. S. Calsamiglia1, S. Cavini1, A. Bouattour1, A. Ferret1, and D. Bravo2, 1Universitat Autonoma de Barcelona, Bellaterra, Spain, 2Pancosma, Switzerland.

3:00 PM 474
Effects of feeding an essential oil complex on whole tract nutrient digestion and productive performance of lactating dairy cows. M. B. Santos1,2, P. H. Robinson3, and P. Williams3, 1University of California, Davis, 2CECAV-UTAD, Vila Real, Portugal, 3Advantec Associates, Davis, CA.

3:15 PM 475
Effects of an encapsulated combination of cinnamaldehyde and garlic oil on early and late lactating Red Simmental dairy cows. C. Kame1,4, H. M. R. Greathead1, and P. W. Cardozo2, 1School of Biology, University of Leeds, Leeds, United Kingdom, 2Carotenoid Technologies, IQF Group, Tarragona, Spain.

3:30 PM 476
Yeast culture supplementation interacts with voluntary feed intake to affect ruminal starch digestion. Y. Ying* and M. S. Allen, Michigan State University, East Lansing.

3:45 PM 477
Effect of yeast culture on ruminal fermentation and nutrient utilization in dairy cows. A. N. Hristov*1, G. Varga1, T. Cassidy1, M. Long1, K. Heyler1, C. J. Hovde2, and I. Yoon1, 1Pennsylvania State University, University Park, 2University of Idaho, Moscow, 3Diamond V Mills, Cedar Rapids, IA.

4:00 PM 478
Production response to soybean meal and methionine supplementation of corn silage-based diets in dairy cows. M. Gonzalez Ronquillo*1, H. Nursoy2, G. A. Broderick3, and A. P. Faciola4, 1Universidad Autonoma del Estado de Mexico, Toluca, Mexico, 2Yuzuncu Yil University, Van, Turkey, 3U.S. Dairy Forage Research Center, Madison, WI, 4University of Wisconsin, Madison.

4:15 PM 479
Springs, NY.

4:30 PM 480 High-fat or low-fat distillers grains with dry or high-moisture corn in diets containing monensin for dairy cows. T. M. Owens\textsuperscript{1}, A. R. Hippen\textsuperscript{1}, K. F. Kalscheur\textsuperscript{1}, D. J. Schingoethe\textsuperscript{1}, D. L. Prentice\textsuperscript{2}, and H. B. Green\textsuperscript{1}. \textsuperscript{1}South Dakota State University, Brookings, \textsuperscript{2}Elanco Animal Health, Greenfield, IN.

4:45 PM 481 Effect of marine algae (ALG) on milk production characteristics and fatty acid (FA) composition in early lactating dairy cows. B. Vlaeminck\textsuperscript{1}, M. Hostens\textsuperscript{2}, G. Opsomer\textsuperscript{2}, and V. Fievez\textsuperscript{1}. \textsuperscript{1}Laboratory for Animal Nutrition and Animal Product Quality, Ghent University, Melle, Belgium, \textsuperscript{2}Department of Reproduction, Obstetrics and Herd Health, Ghent University, Merelbeke, Belgium.

**SYMPOSIUM**

**Ruminant Nutrition**

Using Molecular Techniques to Advance Research in Ruminant Nutrition

**Chair:** Masahito Oba, University of Alberta

517b

2:00 PM Introduction. Masahito Oba.

2:05 PM 482 Introduction to molecular techniques currently used in ruminant nutrition. J. R. Knapp*, Fox Hollow Consulting, LLC, Columbus, OH.

2:30 PM 483 Integration of microbial profiling techniques to improve the efficiency of nutrient usage in ruminant production. J. L. Firkins\textsuperscript{*} and Z. Yu, The Ohio State University, Columbus.

3:10 PM 484 Metagenomics of the rumen microbial ecosystem. D. Krause*, University of Manitoba, Winnipeg, Canada.

3:50 PM 485 Basal expression of 27 nucleoside and amino acid transporter mRNA by small intestinal epithelia of forage-fed growing beef steers is differentially affected by increased luminal substrate or energy supply. J. C. Matthews\textsuperscript{*}, S. F. Liao, and J. A. Boling, Department of Animal and Food Sciences, University of Kentucky, Lexington.

4:25 PM 486 Molecular adaptations in transition dairy cows. J. J. Loor*, University of Illinois, Urbana.

**Small Ruminant**

**Production, Management, Lactation**

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

511cf

2:00 PM 487 Effects of kid genotype on carcass traits of meat goats from a three-breed diallel. R. Browning, Jr.\textsuperscript{1}, W. Getz\textsuperscript{2}, O. Phelps\textsuperscript{3}, and C. Chisley\textsuperscript{4}. \textsuperscript{1}Tennessee State University, Nashville, \textsuperscript{2}Fort Valley State University, Fort Valley, GA, \textsuperscript{3}USDA-AMS, Lakewood, CO, \textsuperscript{4}Southern University, Baton Rouge, LA.


2:45 PM 490 Comparison of body composition measurements in sheep using dual energy X-ray absorptiometry (DXA) in vivo and post mortem. A. M. Scholz\textsuperscript{4}, C. Mendel\textsuperscript{5}, P. V. Kremer\textsuperscript{1}, E. Gruber\textsuperscript{1}, A. Steiner\textsuperscript{2}, K.-U. Goetz\textsuperscript{2}, and M. Foerster\textsuperscript{1}. \textsuperscript{1}Ludwig Maximilians University Munich, Livestock Center, Oberschleissheim, Bavaria, Germany, \textsuperscript{2}Bavarian State Research Center for Agriculture, Institute for Animal Breeding, Poing, Bavaria, Germany.

3:15 PM 492 Use of sodium dodecyl sulfate (SDS) as a microbicide in goat colostrum. A. Morales-delaNuez1, J. Capote2, M. C. Juste1, D. Sanchez-Macias1, N. Castro1, and A. Argüello*1, 2. Las Palmas de Gran Canaria University, Arucas, Las Palmas, Spain., 1Instituto Canario de Investigaciones Agrarias, La Laguna, Tenerife, Spain.

3:30 PM 63 Fertility of Alpine goats following oestrus synchronisation with CIDR and artificial insemination with cryopreserved semen. M.-E. Marier*1, 2, F. Castonguay1, M. Theriault1, D. Cinq-Mars2, C. Lessard1, 2, and J.-L. Bailey1, 2. 1Centre de recherche en biologie de la reproduction, 2Département des sciences animales, Université Laval, Québec City, Canada.


4:00 PM 494 Effect of lamb age on response to immunization. M. E. Gailor, J. Gavalchin, and M. L. Thonney*, Cornell University, Ithaca, NY.

4:15 PM 495 Control of Haemonchus contortus using three chemical classes of anthelmintics and copper oxide wire particles in meat goat kids. M. Rothaug1, K. Andries1, 2, E. Sherrow1, and J. Burke1, 1Kentucky State University, Frankfort, 2Midway College, Midway, KY.

Teaching/Undergraduate and Graduate Education

Teaching Issues

Chair: Jody Sterle, Texas A&M University

512ae

2:00 PM 496 Comparative development of critical thinking skills in animal science undergraduates who enroll in evaluation courses. L. M. White* and K. D. Layfield, Clemson University, Clemson, SC.

2:15 PM 497 Enhancing underrepresented minority student learning through agricultural and natural resources based research. R. L. Stanko*1, 2, S. D. Nelson1, J. C. Laurenz1, and M. R. Garcia1, 1Texas A&M University, Kingsville, 2Texas AgriLife Research, Beeville.

2:30 PM 498 Teaching livestock production for niche markets. P. J. Lammers* and M. S. Honeyman, Iowa State University, Ames.


3:00 PM 500 Teaching a 'dog lab' in a traditional animal science department. G. M. Hill*, B. B. Snedegar, J. A. Snedegar, and J. E. Link, Michigan State University, East Lansing.

3:15 PM 501 Using companion animal classes to teach biology, nutrition, critical thinking and media literacy to animal sciences majors and across the University community. S. Rocco and J. P. McNamara*, Washington State University, Pullman.

3:30 PM 502 Innovative dairy teaching through a broad-based Dairy Consortium. G. R. Hagevoort*1, 2, M. A. Tomaszewski2, and R. Collier1, 1New Mexico State University, Clovis, 2Texas A&M University, College Station, 1University of Arizona, Tuscon.

3:45 PM 503 The Dairy Cattle Breeding Simulation Program (DCBSP 4.9), an interactive software to teach animal breeding principles and practices. J. Casellas1, 2, A. Ahmadi2, R. A. Verdugo2, G. A. E. Gall2, and J. F. Medrano*2, 1Genética i Millora Animal, IRITA-Lleida, Lleida, Spain, 2Department of Animal Science, University of California, Davis.

Wednesday, July 15
**POSTER PRESENTATIONS**

**Animal Health**

**W1** The economic impact of five dairy cattle clinical diseases as measured by the correlation between Lactational incidence risk and the income over feed cost in Wisconsin dairy herds. M. C. Ruiz* and V. E. Cabrera, University of Wisconsin, Madison.

**W2** Cows response to glucose tolerance test (GTT) and periparturient diseases: Preliminary study. G. Matteo*, C. Chiara, C. Mauro, and M. Massimo, Department of Veterinary Clinical Sciences. University of Padua, Legnaro, Padova (PD), Italy.

**W3** Effect of modified yeast extract and HSCAS containing mycotoxin adsorbent on blood metabolites of dairy cows challenged with aflatoxin B1. M. R. Akkaya1, M. A. Bal1, F. Inanc Tolun1, F. Bilge1, Y. Atli1, and V. Akay2,3, 1Kahramanmaras Sutcu Imam University, Turkey, 2Global Nutritech Ltd., Kocaeli, Turkey.

**W4** Comparison of rectal and vaginal body temperatures in lactating dairy cows. L. A. Vickers*1, M. A. G. von Keyserlingk1, D. M. Veira1, D. M. Weary1, and W. Heuwers1,2, Animal Welfare Program, Faculty of Land and Food Systems, University of British Columbia, Vancouver, British Columbia, Canada, 2Clinic for Animal Reproduction, Faculty of Veterinary Medicine, Freie Universität Berlin, Berlin, Germany, 3Agriculture and Agri-Food Canada, Pacific Agriculture Research Station, Agassiz, British Columbia, Canada.

**W5** Effects of prepartum dietary carbohydrate source on reproductive performance and metabolic disorders in Holstein cows during the periparturient period. H. R. Mirzaei Alamouti*, H. A. Hatamian, K. Rezayazdi*, and A. Towhidi*, 1University of Tehran, Karaj, Tehran, Iran, 2Zanjan University, Zanjan, Zanjan, Iran.

**W6** Expression of inducible nitric oxide synthase is up-regulated by production of 1,25-dihydroxyvitamin D3 in bovine monocytes in response to toll-like receptor signaling. C. D. Nelson1,2, D. C. Beitz1, T. A. Reinhardt2, and J. D. Lippolis2, 1Iowa State University, Ames, 2National Animal Disease Center, United States Department of Agriculture, Ames, IA.

**W7** Factors affecting milk ELISA scores of cows tested for Johne's disease. H. D. Norman1, J. R. Wright1, and T. M. Byrem2, 1Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD, 2Antel BioSystems, Lansing, MI.

**W8** Characteristics of milk ELISA results for Johne's disease in US dairy cows. T. M. Byrem*1, H. D. Norman2, and J. R. Wright3, 1Antel BioSystems, Inc., Lansing, MI, 2Animal Improvement Programs Laboratory, Beltsville, MD.

**W9** Johne's outreach survey. K. E. Olson*, KEO Consulting, Schaumburg, IL.

**W10** Perceptions of and participation in a Johne's control program. E. Hovingh*1, K. E. Olson2, and J. McDonald3, 1Pennsylvania State University, University Park, 2KEO Consulting, Schaumburg, IL, 3University of Wisconsin, Madison.

**W11** Relationship between lying patterns, feeding management, and udder health in lactating dairy cows. B. L. Kitts*1, S. Dufour1, D. T. Scholl2, and T. J. DeVries1, Department of Animal and Poultry Science. University of Guelph, Kemptville Campus, Kemptville, Ontario, Canada, 2Faculté de Médecine Vétérinaire, Université de Montréal, Saint-Hyacinthe, Quebec, Canada.

**W12** Using gait score and resting behavior to detect hoof lesions in cows. N. Chapinal2, A. M. de Passillé1, D. W. Weary2, M. A. G. von Keyserlingk2, and J. Rushen*1, 1Agriculture and Agri-Food Canada, Agassiz, BC, Canada, 2University of British Columbia, Vancouver, BC, Canada.

**W13** Effect of metritis on health, fertility and milk production in two subsequent lactations in dairy cows. J. R. Lima*1, J. E. P. Santos2, and R. G. S. Bruno1, 1University of California-Davis, Tulare, 2University of Florida, Gainesville.

**W14** Effects of feeding menhaden fish meal or Ca salts of fish oil fatty acids on some cytokine genes expression and endometrial cytology in early lactating cows. A. Heravi Moussavi1, H. B. Roman2, T. R. Overton2, D. E. Bauman2, W. R. Butler2, and R. O. Gilbert2, Department of Animal Science and Excellence Center for Animal Science, Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran, 2Cornell University, Ithaca, NY.

**W15** Feeding dairy cows barley grain treated with lactic acid and heat modulated diurnal patterns of selected plasma metabolites. S. Iqbal, Q. Zebeli, A. Mazzolari, S. M. Dunn, and B. N. Ametaj*, University of Alberta, Edmonton, Alberta, Canada.

**W16** Treating barley grain with lactic acid and heat modulates selected plasma metabolites in dairy cows. D. Mansmann, Q.
Effects of *Bacillus subtilis* on antioxidant capacity and immunity of broilers. Y. Dongyou, M. Xiangfei, Q. Yan, and L. Weifen*, College of Animal Science, Feed Science Institute, Zhejiang University, Hangzhou, Zhejiang, China.

Melamine residues in tissues of ducks fed diets containing graded levels of melamine. M. Lü*, L. Yan, J. Guo, Z. Sun, and S. Zhu, Research and Development Center, Liuhe Feed Co., Ltd., Qingdao, Shandong, China.

Metabolic and histological evaluation of quails fed with or without genetically modified Bt-maize. N. Scholz*, G. Flachowsky, I. Halle, and H. Sauerwein, University of Bonn, Bonn, Germany, Friedrich-Loeffler-Institute, Braunschweig, Germany.

Immune response in quail fed with or without genetically modified Bt-maize. N. Scholz, G. Flachowsky, and H. Sauerwein, University of Bonn, Bonn, Germany, Friedrich-Loeffler-Institute, Braunschweig, Germany.

Ameliorating effect of ascorbic acid on subacute endosulfan toxicity in male New Zealand White rabbits. F. S. Hatipoglu, O. Ozmen, A. Ata, T. İleri-Buyukkolu, S. Sahinduran, F. Mor, O. Yildiz-Gulay, and M. S. Gulay, Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Department of Veterinary Medicine, Burdur, Turkey, Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Department of Pathology, Burdur, Turkey, Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Department of Reproduction and Artificial Insemination, Burdur, Turkey, Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Department of Biochemistry, Burdur, Turkey, Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Department of Internal Medicine, Burdur, Turkey, Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Department of Pharmacology, Burdur, Turkey.

Effect of autolysed yeast on macrophage activation in vitro and performance of weaning piglets. A. Ganner, S. Nitsch, and G. Schatzmayr, BIOMIN Research Center, Technopark 1, Tulln, Austria, BIOMIN Holding GmbH, Industriestr. 12, Herzogenburg, Austria.

Monitoring of the efficacy of SOP GOLD PIG on the reduction of the microbial load in an Italian commercial fattening piglet farm. G. Tacconi, A. Covarelli, and A. Zanierato, BIOMIN Research Center, Research and Development Center, Liuhe Feed Co., Ltd., Hangzhou, Zhejiang, China.

Effect of timing of *Mannheimia haemolytica* challenge following short-term exposure to bovine viral diarrhea virus type 1b on serum cytokine concentrations and muscle and fat gene expression changes in growing beef steers. L. Carlos-Valdez, L. Burcìaga-Robles, D. L. Step, R. W. Fulton, A. W. Confer, U. DeSilva, and C. R. Krehbiel, Oklahoma State University, Department of Animal Science, Stillwater, Oklahoma State University, Department of Veterinary Clinical Sciences, Stillwater, Oklahoma State University, Department of Veterinary Pathobiology, Stillwater.

**Beef Species**

**Growth, Concentrate Level, Meat Quality, and Production Traits**

**Chair:** Alfredo Di Costanzo, University of Minnesota


Residual feed intake in progeny of Nellore bulls. Y. B. Farjalla, C. U. Magnabosco, F. Manicardi, F. R. C. Araújo, D. P. D. Lanna, and R. D. Sainz, Universidade de São Paulo, Piracicaba, São Paulo, Brazil, Embrapa Cerrados, Planaltina, Distrito Federal, Brazil, Guaporé Pecuária, Pontes e Lacerda, Mato Grosso, Brazil, Aval Serviços Tecnológicos, Uberaba, Minas Gerais, Brazil, University of California, Davis.


Carcass traits of beef heifers of different genetic groups finished with different concentrate allowance levels. S. F. Reis, P. V. R. Paulino, E. J. Souza, J. F. Lage, R. A. A. Torres Júnior, S. C. Valadares Filho, L. F. Costa e Silva, L. F. Prados, and P. B. Benedetti, Universidade Federal de Viçosa, Viçosa, MG, Brazil, EMBRAPA Beef Cattle Research Center, Campo Grande, MS, Brazil, Universidade Federal Rural de Pernambuco, Recife, PE, Brazil.

Feedlot performance of cull cows fed using three systems. C. L. Wright*, R. J. Maddock, South Dakota State University, Brookings, SD, USA, North Dakota State University, Fargo.

---

1. University of Alberta, Edmonton, Alberta, Canada.
2. Tecnológicos de Di Raffaello, Busto Arsizio, Italy
3. Oklahoma State University, Department of Veterinary Pathobiology, Stillwater.
4. Oklahoma State University, Department of Animal Science, Stillwater.
5. Oklahoma State University, Department of Veterinary Medicine, Stillwater.
6. Oklahoma State University, College of Animal Science, Feed Science Institute, Zhejiang University, Hangzhou, Zhejiang, China.
<table>
<thead>
<tr>
<th>ID</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>W31</td>
<td>Fatty acid profile of back fat and intramuscular fat from yak and Chinese Yellow Cattle. Y. S. Peng, M. A. Brown, and J. P. Wu. Gansu Agricultural University, Lanzhou, Gansu, PRC. USDA-ARS, Grazinglands Research Laboratory, El Reno, OK.</td>
<td>Y. S. Peng, M. A. Brown, and J. P. Wu. Gansu Agricultural University, Lanzhou, Gansu, PRC. USDA-ARS, Grazinglands Research Laboratory, El Reno, OK.</td>
</tr>
<tr>
<td>W35</td>
<td>Improving the profitability of beef from pastures: A case study of Tasmania's Circular Head Beef Business Group. E. O. Malau-Aduli, I. D. Bruce, B. Doonan, and P. A. Lane. School of Agricultural Science, University of Tasmania, Hobart, Tasmania 7001, Australia.</td>
<td>E. O. Malau-Aduli, I. D. Bruce, B. Doonan, and P. A. Lane. School of Agricultural Science, University of Tasmania, Hobart, Tasmania 7001, Australia.</td>
</tr>
</tbody>
</table>

**Breeding and Genetics**

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

<table>
<thead>
<tr>
<th>ID</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>W45</td>
<td>Analysis in silico and in vitro of caseinophosphopetides from different genetic variants. A. M. Caroli, O. Bulgari, S. Chessa, D. Rignanese, D. Cocchi, and G. Tulipano. Dept. SBB, Brescia, Italy. Dept. VSA, Milano, Italy.</td>
<td>A. M. Caroli, O. Bulgari, S. Chessa, D. Rignanese, D. Cocchi, and G. Tulipano. Dept. SBB, Brescia, Italy. Dept. VSA, Milano, Italy.</td>
</tr>
</tbody>
</table>
W54 Using a repeated measurements mixed model to analyse some environmental factors affecting weight at different ages of Arabi sheep breed of Iran. H. Farhangfar*1, B. Zivand2, M. B. Sayyadnezhad3, and I. Mirzaee4, 1Birjand University, Birjand, 2Azad University of Shooshtar, Shooshtar, Iran, 3Animal Breeding Centre, Karaj, Iran, 4Agricultural Jihad Organisation, Khuzistan, Iran.

W55 Improve reproduction with identification of polymorphism in FecXH gene in Shall sheep. S. N. Hedayat-Evrigh*, S. R. Mirzaei-Eghtiandi, and A. Nejati-Javaremi, University of Tehran, Karaj, Tehran, Iran.


W57 Effect of vitamin E on chromatin integrity of ram epididymal sperm. B. L. Sartini*, K. H. Peterson, and M. Procopio, University of Rhode Island, Kingston.

W58 Association of beta-lactoglobulin and prolactin genes with milk production in East Friesian sheep. E. A. Staiger*1, M. L. Thonney2, B. W. Buchanan3, and R. G. Mateescu1, 1Oklahoma State University, Stillwater, 2Cornell University, Ithaca, NY.


W60 Genetic analysis of lean tissue growth and carcass traits in Large white swine. T. M. Gonçalves*1, A. L. L. Costa1, A. I. G. Oliveira1, and M. C. A. M. Bink2, 1University of Lavras, Lavras, Minas Gerais, Brazil, 2University of Wageningen, Wageningen, the Netherlands.

W61 Factors affecting weaning-to-first service interval in a Landrace-Large White swine population in Northern Thailand. C. Chansomboon1, S. Koanawoottrirat1, M. A. Elzo2, and T. Suwanasopee1, 1Kasetsart University, Bangkok, Thailand, 2University of Florida, Gainesville.

W62 Use of random regression models for the genetic analysis of weight gain from electronic swine feeders. C. Y. Chen*1, I. Misztal1, S. Tsuruta1, B. Zumbach1,2, M. Lukaszewicz3, W. O. Herring4, J. Holli5, and M. Culbertson5, 1University Wisconsin, 2Cornell University, Ithaca, NY.
Dairy Foods

Dairy Products/Chemistry/Enzyme

W63 Calcium reduces DMH-induced large intestinal tumors in male Wistar rats. K. Sivier² and E. Rossi², ¹Università di Pisa, Italy, ²Università di Pisa, Italy.

W64 Effect of storage temperatures on ice cream quality. J. Buyck* and R. Baer, South Dakota State University, Brookings.

W65 Obtention of a dairy ingredient rich in milk fat globule membrane material from whey buttermilk. M. R. Costa¹,², R. Jiménez-Flores³, and M. L. Gigante³, ¹Universidade do Vale do Itajaí, Brazil, ²Universidade Estadual de Campinas, Campinas, Brazil, ³California Polytechnic State University, San Luis Obispo.

W66 Effect of pH on functional properties of regular and whey buttermilk powders. M. R. Costa¹,², R. Jiménez-Flores³, and M. L. Gigante³, ¹Universidade do Vale do Itajaí, Brazil, ²Universidade Estadual de Campinas, Campinas, Brazil, ³California Polytechnic State University, San Luis Obispo.

W67 Milk iodine concentration in goats supplemented with potassium iodide. A. Nudda¹, F. Aghini-Lombardi¹, G. Battacone¹, M. Decandia¹, M. Frigeri², and G. Pulina¹,²,¹, Dipartimento di Scienze Zootecniche, University of Sassari, Italy, ²Dipartimento di Endocrinologia e Metabolismo, University of Pisa, Italy, ³Agricultural Research Agency of Sardinia – AGRIS Sardegna, Sassari, Italy.

W68 Antioxidant properties of milk protein dispersions preheated with various sugars. H. J. Giroux*, J. Houde, and M. Britten, Food Research and Development Centre, Agriculture and Agri-Food Canada, Saint-Hyacinthe, QC, Canada.

W69 Main phospholipids content of sweet whey cream, butter and buttermilk. M. R. Costa¹,², R. Jiménez-Flores³, and M. L. Gigante³, ¹Università di Pisa, Italy, ²Università di Pisa, Italy, ³Università di Pisa, Italy.

W70 Expression of milk-derived angiotensin-converting-enzyme-inhibiting peptide in Lactococcus lactis. X. Han², L. Yao², M. Wang², D. Sun², B. Li², and Y. Jiang¹,², National Dairy Engineering & Technical Research Center, Northeast Agricultural University, Harbin, China, ²Key Laboratory of Dairy Science, Ministry of Education, Northeast Agricultural University, Harbin, China.


W72 Improvement of emulsifying properties of sodium caseinate by conjugation with maltodextrins through the initial step in the Maillard reaction. Y. Lu* and J. Lucey, University of Wisconsin, Madison.

W73 Chemical composition, probiotic survivability and sensory property of goat's milk kefir. Y. H. Bao¹,², G. P. Yu¹,³, and M. R. Guo¹,², University of Vermont, Burlington, ²Northeast Forestry University, Harbin, Heilongjiang, China, ³Northeast Agricultural University, Harbin, Heilongjiang, China.

W74 Optimizing the organoleptic and nutritional qualities of a dairy-based ready-to-eat food product. J. Heick*, M. Cleveland, H. Khalil, and R. Jiménez-Flores, California Polytechnic State University, San Luis Obispo.


W76 Shelf life of milk. C. A. Boeneke*, J. L. Vargas, and K. J. Aryana, Louisiana State University Agricultural Center, Baton Rouge.

W77 Influence of resistant starch on the characteristics of fat free plain yogurt. M. Moncada¹, K. Aryana¹,², M. Keenan¹,², R. Martin¹,², F. Greenway¹, and N. Dhurandhar¹, ¹Louisiana State University, Baton Rouge, ²Louisiana State University Agricultural Center, Baton Rouge, ³Pennington Biomedical Research Center, Baton Rouge, LA.

W78 Acceptability of yogurt containing resistant starch. K. Aryana¹,², D. Olson², M. Keenan¹,², R. Martin¹,², F. Greenway¹, and N. Dhurandhar¹, ¹Louisiana State University Agricultural Center, Baton Rouge, ²Louisiana State University, Baton Rouge, ³Pennington Biomedical Research Center, Baton Rouge, LA.

W79 Improving the quality of yogurt with modified whey protein ingredients. P. T. Matumoto-Pintro*, L. Rabiey, G.
W80 Effect of starch spherulites on survival of bifidobacteria in the presence of acid or bile. S. Chittiprolu, R. F. Roberts*, and G. R. Ziegler, The Pennsylvania State University, University Park.

W81 Determination of free fatty acid profiles of reduced-fat and whole goat milk cheeses aged for 3 months under refrigeration. W. Nouira¹, Z. Guler², and Y. W. Park*¹. Fort Valley State University, Fort Valley, GA. ¹Mustafa Kemal University, Hatay, Turkey.

W82 Heat stability of mixtures of different milk protein concentrates (40–90% protein) and whey protein concentrate (80% protein). Y. H. Yong* and E. A. Foegeding, Department of Food, Bioprocessing and Nutrition Sciences, North Carolina State University, Raleigh.

W83 Effect of processing on the structure and functional properties of milk phospholipids. S. Gallier¹, D. Gragson¹, D. W. Everett¹, and R. Jiménez-Flores². ¹Department of Food Science, University of Otago, Dunedin, Otago, New Zealand. ²Dairy Products Technology Center, California Polytechnic State University, San Luis Obispo.

W84 Investigation of self-assembly properties of α-lactoglobulin tryptic peptide. M.-M. Guy*¹, M. Treblay², S. Gauthier¹, S. Pouliot¹, ¹Institute of Nutraceuticals and Functional Foods (INAF), Quebec City, QC, Canada. ²Dairy Science and Technology Research Center (STELA), Quebec City, QC, Canada.


W87 Binding affinity of various strains of lactic acid bacteria to phospholipids found in buttermilk. M. Cleveland* and R. Jiménez-Flores, California Polytechnic State University, San Luis Obispo.

W88 Non-casein nitrogen analysis of microfiltration and ultrafiltration retentate. H. Zhang¹,² and L. E. Metzger¹,². ¹Midwest Dairy Foods Research Center, Brookings, SD. ²South Dakota State University, Brookings.

W89 Effect of processing and refrigerated storage on isoflavone and stachyose contents of yogurt fortified with nongerminated or germinated whole soy powder. U. Nsofor²* and Z. Ustunol, Michigan State University, East Lansing.

W90 The effect of pH and whey protein nitrogen (WPN) on the heat stability of medium heat nonfat dry milk powders. V. Sikand*, E. Ng¹, S. Gualco¹, A. Hui¹, P. S. Tong¹, and J. H. Walker². ¹Dairy Products Technology Center, Cal Poly State University, San Luis Obispo. ²Statistics Department, Cal Poly State University, San Luis Obispo.

W91 Dietary milk fat globule membrane (MFGM) reduces the incidence of aberrant crypt foci (ACF) in Fisher-344 rats. K. J. Hintze¹, D. Snow¹, R. Jiménez-Flores¹, J. Campbell¹, and R. E. Ward¹. ¹Department of Nutrition and Food Sciences, Utah State University, Logan. ²Dairy Products Technology Center, Department of Agriculture, California Polytechnic State University, San Luis Obispo.

W92 Codon optimization of bovine prochymosin gene and its expression in Kluyveromyces lactis. F. Zhen¹ and Z. Lanwei¹. ¹College of Food Science, Northeast Agricultural University, Harbin, Heilongjiang Province, China. ²College of Food Science and Technology, Harbin Institute of Technology, Harbin, Heilongjiang Province, China.

W93 Effect of carbon dioxide addition on refrigerated raw milk proteolysis. P. C. B. Vianna, M. T. Ruiz, and M. L. Gigante*, State University of Campinas, Campinas, SP, Brazil.

W94 Expression of bovine trypsin in Lactococcus lactis. L. Yao², X. Han², X. Qu², B. Li², Y. Jiang², and Y. Jiang²,¹. ¹National Dairy Engineering & Research Center, Northeast Agricultural University, Harbin, China. ²Key Lab of Dairy Science, Ministry of Education, Northeast Agricultural University, Harbin, China.

W95 Effect of the protein fractions of the milk serum, alpha-lactalbumin and beta-lactoglobulin, on the Escherichia coli O157:H7 colonization in the intestinal mucosa of mice. J. P. Teixeira², N. Silva³, L. M. Fonseca¹,², and R. L. Bradley Jr.¹. ¹Federal University of Minas Gerais (UFMG), School of Veterinary Medicine, Department of Food Technology and Inspection, Belo Horizonte, MG, Brazil. ²Federal University of Minas Gerais (UFMG), School of Veterinary Medicine, Department of Preventive Veterinary Medicine, Belo Horizonte, MG, Brazil. ³Laboratory of Milk Quality Analysis, UFMG, Belo Horizonte, MG, Brazil. ⁴University of Wisconsin, Madison.
Extension Education

W96 Effects of heat mount detectors, season, breed, and lactation on reproductive efficiency in summer and winter of dairy cows marked with chalk. J. A. Pennington1,2 and Z. B. Johnson2,1. 1University of Arkansas, Little Rock, 2University of Arkansas, Fayetteville.

W97 Improving IPM of house flies at commercial dairy operations through pest monitoring and determination of nuisance threshold. G. E. Higginbotham1, L. N. Pereira2, and A. C. Gerry3,1. 1University of California Cooperative Extension, Fresno, 2California State University-Fresno, Fresno, 3University of California, Riverside, Riverside.

W98 Pizza Ranch is an educational tool to teach fourth graders about proper nutrition and where food originates. J. A. Pennington4 and J. Buffalo, University of Arkansas Cooperative Extension Service, Little Rock.

W99 Economic importance of some traits of dairy cattle. F. Szabó* and Z. Fekete, University of Pannonia, Keszthely, Hungary.


W103 Description of Kentucky dairy management systems and producer demographics. R. A. Russell* and J. M. Bewley, University of Kentucky, Lexington.

W104 Characterization of the decision making behavior of Kentucky dairy demographics. R. A. Russell* and J. M. Bewley, University of Kentucky, Lexington.

W105 A Spanish language artificial insemination school for Idaho dairy employees. J. C. Dalton1,1, K. S. Jensen2,1, M. Chahine1,1, and M. de Haro Marti1,1. 1University of Idaho, Caldwell, 2University of Idaho, Marsing, 3University of Idaho, Twin Falls, 4University of Idaho, Gooding.

W106 Hoof care workshop in English and Spanish. M. Chahine1,1, T. S. Hirsch2,1, J. M. DeFrain2,2, T. Fife1,1, and M. E. de Haro Marti1,1. 1University of Idaho, Twin Falls, 2Zinpro Corporation, Eden Prairie, MN, 3University of Idaho, Gooding.

W107 TMR feeder schools in English and Spanish. R. J. Norell1,1, M. Chahine2,1, and M. E. de Haro Marti2,1. 1University of Idaho, Idaho Falls, 2University of Idaho, Twin Falls, 3University of Idaho, Gooding.


W109 The integration of beef cattle into a peanut and cotton rotation that involves a perennial grass: A farm scale demonstration. R. O. Myer1,1, D. Zhao1, K. S. Balkcom2, C. L. Mackowiak1, J. L. Foster3, D. L. Wright1, J. J. Marois1, J. A. Howe1, G. C. Lamb1, A. R. Blount1, and M. K. Maddox1,1 University of Florida, Marianna, 2Auburn University, Headland, AL.

W110 Incorporation of Tifton 85 greenchop in least-cost rations for Florida dairy producers. J. Clavijo1,1, Y. Newman1,1, L. Ortega1,1, C. Staples1,1, A. Adesogan1,1, and L. Sollenberger1,1 University of Florida, Gainesville, 2National Mango Board, Orlando.

W111 Master goat producer's training certification program at Tuskegee University. O. U. Bolden-Tiller*, S. Solaiman, and N. K. Gurung, Tuskegee University, Tuskegee, AL.

W112 Influence of citronella and geranium essence treatment on milk aroma. S. Carpino1, G. Belvedere1, T. Rapisarda1,1, G. Azzaro1,1, and G. Licitra1,1. 1CoRFiLaC, Regione Siciliana, Ragusa, Italy, 2D.A.C.P.A. University of Catania, Italy.

Forages and Pastures

Silages

W113 Relationship of corn silage dry matter content to density in bunker silos. K. E. Griswold1,1, P. H. Craig2,2, and S. K.

Selection of bacterial strains to improve ensiling of alfalfa under sub-optimal conditions. S. Hansen*, A. Smith, and T. Rehberger, Agitech Products Inc., Waukesha, WI.

Effect of additive inclusion on dry matter loss of sugarcane silage. L. Borgatti*, A. Conrado†, J. Pavan Neto†, P. Meyer‡, C. Marino§, and P. Rodrigues∀, University of São Paulo, Pirassununga, São Paulo, Brazil, Brazilian Institute of Geography and Statistics, Pirassununga, São Paulo, Brazil.

Effects of microbial inoculants and dry matter content at harvest on the fermentation, aerobic stability and digestion of NDF of two corn silage hybrids. M. C. Santos*, L. T. Tait†, M. C. Der Bedrosian†, W. Hu†, O. G. Pereira‡, L. A. Williams§, M. A. Gilinsky∀, and L. Kung Jr., University of Delaware, Newark, Universidade de Sao Paulo, Piracicaba, SP, Brazil, Universidade Federal de Vícosa, Vícosa, MG, Brazil.

Using molecular techniques to identify and differentiate bacterial species and strains used in commercial silage inoculants. N. D. Walker*, M. E. Quintino Cintora†, R. Schmidt‡, and R. Charley∀, Lallemand Animal Nutrition, Montreal, Quebec, Canada.

Sorghum forage as an alternative to corn silage in dairy cows feeding. S. Colombini, G. Galassi, G. M. Crovetto*, and L. Rapetti, University of Milan, Milan, Italy.

Nutritive value and fermentation profile of sorghum silages with urea and two storage periods. F. E. P. Fernandes†, R. Garcia*, A. J. V. Pires‡, O. G. Pereira*, and C. S. Fernandes∀, Federal University of Viçosa, Viçosa, MG, Brazil, State University of Bahia, Itapetinga, BA, Brazil, Fapemig, Belo Horizonte, MG, Brazil.

Elephantgrass with and without wilting, added of cassava meal in silage production. R. Garcia*, A. C. Oliveira†, A. J. V. Pires§, O. G. Pereira*, and F. E. P. Fernandes∀, Federal University of Viçosa, Viçosa, MG, Brazil, State University of Bahia, Itapetinga, BA, Brazil.

Effects of ensiling corn and sorghum silages under normal or adverse conditions on proportions of long chain fatty acids. B. C. do Amaral*, S. C. Kim‡, O. F. Zacaroni§, A. T. Adesogan∀, and C. R. Staples*, University of Florida, Gainesville, Kyungyang University, Jinju, South Korea.

Nutritive value of corn hybrids for silage production according to the maturity stage. M. Zopollatto*, L. G. Nussio‡, J. O. Sarturi*, G. B. Mourão*, A. P. Duarte*, C. M. M. Bittar*, and V. P. Santos†, University of Sao Paulo/ESALQ, Piracicaba, SP, Brazil, University of Nebraska, Lincoln, Apta Regional, Assis, SP, Brazil.

Nutritional quality of sunflower silage associated with additives. R. H. de Tonissi e Buschinelli de Goes*, K. A. de Souza†, E. S. Miyagi‡, R. A. Patussi§, K. C. da Silva Brabes∀, A. C. Martinez∀, C. O. de Abreu†, E. R. de Oliveira†, and D. D. Alves∗, Universidade Federal da Grande Dourados, Dourados, Mato Grosso do Sul, Brazil, Universidade Estadual de Maringá, Umuarama, Paraná, Brazil, Universidade Federal de Goiás, Goiânia, Goiás, Brazil, Universidade Estadual de Montes Claros, Janaúba, Minas Gerais, Brazil.

In situ dry degradation coefficients of whole crop barley silage treated with Lactobacillus plantarum or mixed with Pediococcus pentosaceus plus Propionibacter freundii. M. Vatandoost, M. Danesh Mesgaran*, A. Heravi Mousavi, and A. R. Vakili, Ferdowsi University of Mashhad, Mashhad, Iran.

The effect of propionic acid or propionate ammonium on chemical composition and in situ dry matter degradation of whole crop barley silage. M. Vatandoost, M. Danesh Mesgaran*, A. Heravi Mousavi, and A. R. Vakili, Ferdowsi University of Mashhad, Mashhad, Iran.


Inoculant-treated corn silage quality and performance of lactating cows. A. Ghaempoor*, G. R. Ghorbani†, M. Khorvash†, and A. Nikkhah∀, Isfahan University of Technology, Isfahan, Iran, Zanjan University, Zanjan, Iran.

Fitted models for description of cumulative gas production profiles from silages of sunflower and corn. R. Mello*, A. L. R. Magalhães†, F. C. Breda†, A. J. Regazzi, A. C. de Queiroz∀, and J. L. Nörnberg§, Universidade Federal de Roraima, Boa Vista, Roraima, Brazil, Universidade Federal Rural de Pernambuco - Universidade Acadêmica de Garanhuns, Garanhuns, Pernambuco, Brazil, Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil.
Nitrogenous compounds and fermentation characteristics of king grass - leucaena silages. T. Clavero* and R. Razz, Universidade del Zulia, Maracaibo, Estado Zulia, Venezuela.

The effect of sewage irrigation on mineral composition and in-vitro digestibility of two corn forage varieties. E. Yosef1, E. Zakermann2, I. Miron1, M. Nikbah1, and D. Ben-Ghedalia1, 1The Volcani Center, ARO, Bet Dagan, Israel, 2Extension Service-Ministry of Agriculture and Rural Development, Bet Dagan, Israel.

Biomin® BioStabil Mays enhanced the fermentation and the aerobic stability of corn silage under tropical laboratory conditions. A. A. Rodriguez1, Y. Acosta-Aragón2, and E. Valencia1, 1University of Puerto Rico, Mayaguez, PR, 2Biomin GmbH, Austria.

**International Animal Agriculture**

Dairy farm milk quantity, quality, and revenue within a private organization in Central Thailand. S. Yeamkong1, S. Koonawoottritriron1, M. A. Elzo1,2, and T. Suwanasopee1, 1Kasetsart University, Bangkok, Thailand, 2University of Florida, Gainesville.

Hormonal profile in superovulated buffalo heifers using pFSH and LH. A. M. Osman* and S. H. Shehata, Assiut University, Assiut, Egypt.

Semen quantity and quality of dairy bulls raised in tropical Central Thailand. T. Kongnoi1, S. Koonawoottritriron1, M. A. Elzo*1, and T. Suwanasopee1, 1Kasetsart University, Bangkok, Thailand, 2University of Florida, Gainesville.

Effect of proportion of females on number of piglets born alive and pre-weaning growth traits in Pietrain swine in Thailand. T. Punsanit1, S. Koonawoottritriron1, T. Suwanasopee1, and M. A. Elzo*2, 1Kasetsart University, Bangkok, Thailand, 2University of Florida, Gainesville.


Elaboration of ruminant supplements with byproducts and residues of bio-ethanol produced on farm settings. H. O. Patino1, B. P. Ospina2, E. C. Mallmann3, and A. Roa3, 1Dep. Zootecnia, UFRGS, Porto Alegre, RS, Brazil, 2Latin American and Caribbean Consortium to support Cassava Research and Development, CLAYUCA, Cali, Valle del Cauca, Colombia, 3Usinas Sociais Inteligentes, USI, Porto Alegre, RS, Brazil, 4Soil Net LLC, Madison, WI.

Factors affecting milk production in Brazil. R. P. Lana1,2, G. Guimarães1,2, A. V. Guimarães1, and M. A. Santos1, 1Universidade Federal de Viçosa - UFV, Viçosa, MG, Brazil, 2Conselho Nacional de Desenvolvimento Científico e Tecnológico - CNPq, Brasília, DF, Brazil.

Bulk tank milk quality in Brazil - 2007/2008. L. M. Fonseca1,2, R. Rodrigues1,2, M. M. O. P. Cerqueira1,2, M. O. Leite1,2, M. R. Souza1,2, and C. F. A. M. Penna1,2, 1Federal University of Minas Gerais (UFMG), School of Veterinary Medicine, Department of Food Technology and Inspection, Belo Horizonte, MG, Brazil, 2Laboratory of Milk Quality Analysis, UFMG, Belo Horizonte, MG, Brazil.

Multivariate analysis applied to milk quality evaluation in Brazil. A. M. G. Oliveira1,4, L. M. Fonseca1,2, I. B. M. Sampaio1, and Célia L. L. F. Ferreira1, 1Federal University of Minas Gerais (UFMG), School of Veterinary Medicine, Department of Food Technology and Inspection, Belo Horizonte, MG, Brazil, 2Laboratory of Milk Quality Analysis, UFMG, Belo Horizonte, MG, Brazil, 3University of Viçosa, Viçosa, MG, Brazil, 4LANAGRO, Ministério da Agricultura, Pecuária e Abastecimento, Pedro Leopoldo, MG, Brazil.

Azidol in tablet form as a preservative for milk quality analysis. J. F. Castro1, L. M. Fonseca1,2, R. Rodrigues1,2, and C. S. P. Fonseca1, 1Federal University of Minas Gerais (UFMG), School of Veterinary Medicine, Department of Food Technology and Inspection, Belo Horizonte, MG, Brazil, 2Laboratory of Milk Quality Analysis, UFMG, Belo Horizonte, MG, Brazil.
Nonruminant Nutrition
Feed Additives II

<table>
<thead>
<tr>
<th>ID</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>W144</td>
<td>Effect of dietary medicinal plants or an organic acid on ileal nutrient digestibility of Ross broiler chickens.</td>
<td>H. Ziaei¹, M. Bashtani², M. A. Karimi Torshizi³, H. Farhangfar³, H. Naeemipour³, and A. Zeinali³.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Agricultural Research Center, Birjand, Iran, Birjand University, Birjand, Iran, Tarbiat Modares University, Tehran, Iran.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>South Khorasan Agricultural and Natural Resources Researches Center, Birjand, Khorasan, Iran, Birjand University, Birjand, Khorasan, Iran.</td>
</tr>
<tr>
<td>W146</td>
<td>The effect of ractopamine and ileal digestible lysine levels on growth performance and carcass characteristics of finishing pigs.</td>
<td>Y. Wang¹, X. Y. Zhao¹, and L. X. Chen¹.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>University of Lavras, Lavras, MG, Brazil, University Federal Minas Gerais, Belo-Horizonte, Brazil.</td>
</tr>
<tr>
<td>W147</td>
<td>Influence of ractopamine on carcass characteristics and economic viability of finishing pigs fed ad libitum or restricted feeding system.</td>
<td>X. Wu¹, X. F. Kong¹, T. J. Li¹, R. L. Huang¹, and L. X. Chen¹.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The Chinese Academy of Sciences, Changsha, China, Guang An Biological Technique Company, Beijing, China.</td>
</tr>
<tr>
<td>W148</td>
<td>Effects of long term dietary supplementation of L-carnitine and antioxidant on boar semen viability.</td>
<td>L. C. Girão¹, E. T. Fialho*, V. S. Cantarelli¹, E. C. Almeida¹, M. G. Zangeronimo¹, N. O. Amaral¹, and L. V. C. Girão¹.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>University Federal de Lavras, Lavras, MG, Brazil.</td>
</tr>
<tr>
<td>W149</td>
<td>Effects of dietary probiotics on the performance of weaned pigs.</td>
<td>L. C. Girão¹, E. T. Fialho*, V. S. Cantarelli¹, E. C. Almeida¹, M. G. Zangeronimo¹, N. O. Amaral¹, and L. V. C. Girão¹.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>University Federal de Lavras, Lavras, MG, Brazil.</td>
</tr>
<tr>
<td>W150</td>
<td>Effects of dietary supplementaion of talc on growth performance and meat quality in finishing pigs.</td>
<td>X. Wu¹, X. F. Gong¹, T. J. Li¹, R. L. Huang¹, and L. X. Chen¹.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diamond V, Cedar Rapids, IA.</td>
</tr>
<tr>
<td>W151</td>
<td>The effect of dietary laminarin and fucoidan in the diet of the weaning piglet on performance, selected faecal microbial populations and volatile fatty acid concentrations.</td>
<td>P. McDonnell¹, J. V. O’Doherty¹.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lyons Research Farm, University College Dublin, Newcastle, Co Dublin, Ireland.</td>
</tr>
<tr>
<td>W152</td>
<td>Acanthopanax senticosus extract improved growth performance and antioxidants in weaned piglets.</td>
<td>X. Wu¹, X. F. Gong¹, T. J. Li¹, R. L. Huang¹, and L. X. Chen¹.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The Chinese Academy of Sciences, Changsha, China, Guang An Biological Technique Company, China.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>University of Manitoba, Winnipeg, MB, Canada, Diamond V, Cedar Rapids, IA.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dankook University, Cheonan, Chungnam, Korea, National Institute of Animal Science, RDA, Cheonan, Chungnam, Korea.</td>
</tr>
<tr>
<td>W155</td>
<td>Effects of dietary supplementation on growth performance and meat quality in finishing pigs.</td>
<td>H. D. Jang¹, E. J. Han², W. K. Jeon², K. Y. Pak², S. D. Lee², J. C. Park², and I. H. Kim¹.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dankook University, Cheonan, Chungnam, Korea, Korea Institute of Oriental Medicine, Daejeon, Korea, National Institute of Animal Science, RDA, Cheonan, Chungnam, Korea.</td>
</tr>
<tr>
<td>W156</td>
<td>Effects of dietary wild-ginseng adventitious root meal on growth performance, blood characteristics and meat quality in broiler chicks.</td>
<td>H. D. Jang¹, E. J. Han², W. K. Jeon², K. Y. Pak², S. D. Lee², J. C. Park², and I. H. Kim¹.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dankook University, Cheonan, Chungnam, Korea, Korea Institute of Oriental Medicine, Daejeon, Korea, National Institute of Animal Science, RDA, Cheonan, Chungnam, Korea.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dankook University, Cheonan, Chungnam, Korea, Chungnam, Korea, Korea Institute of Oriental Medicine, Daejeon, Korea, National Institute of Animal Science, RDA, Cheonan, Chungnam, Korea.</td>
</tr>
<tr>
<td>W158</td>
<td>Effects of anion emission rock powder supplementation on growth performance, nutrient digestibility, blood</td>
<td>X. Wu¹, X. F. Gong¹, T. J. Li¹, R. L. Huang¹, and L. X. Chen¹.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>University of Lavras, Lavras, MG, Brazil, University Federal Minas Gerais, Belo-Horizonte, Brazil.</td>
</tr>
</tbody>
</table>

¹Shandong Agricultural University, China, ²University of Lavras, Lavras, MG, Brazil, ³University Federal Minas Gerais, Belo-Horizonte, Brazil, ⁴University of Lavras, Lavras, MG, Brazil.

W159 Effects of delta-aminolevulinic acid and antibiotics on the growth performance, nutrient digestibility, hematological status, and immune responses of weanling pigs. J. P. Wang*, J. S. Yoo1, J. H. Lee1, R. Noble2, S. H. Oh2, and I. H. Kim1, Dankook University, Cheonan, Choongnam, Korea, North Carolina A&T State University, Greensboro.


W165 Effects of yucca and Bacillus subtilis on nutrient digestibility, fecal noxious gas content and meat quality in finishing pigs. J. H. Lee*, H. J. Kim1, S. M. Hong1, S. H. Oh2, R. Noble2, and I. H. Kim1, Dankook University, Cheonan, Choongnam, Korea, National Institute of Animal Science, RDA, Cheonan, Choongnam, Korea.


W167 Effects of dietary supplementation of Biacton™ on growth performance of pigs from weaning through finishing phases. K. Bregendahl and M. Z. Fan*, University of Guelph, Guelph, Ontario, Canada.


W169 Different enzymatic activities of sixty-two isolated lactic acid bacteria of chicken digestive tract. H. R. Taheri*, H. Moravej1, F. Tabandeh2, M. Zaghar1, and M. Shivazad1, University of Tehran, Karaj, Tehran, Iran, National Institute of Genetic Engineering and Biotechnology, Tehran, Iran.


W173 Effects of yeast fermentation products on fecal consistency and gut microbial population in weaned piglets challenged with Escherichia coli K88+. S. K. Bhandari*, E. Kiarié1, M. Scott2, D. O. Krause2, and C. M. Nyachoti1, University of Manitoba, Winnipeg, Manitoba, Canada, Diamond V, Cedar Rapids, IA.

W174 Effects of Pediococcus acidilactici and Saccharomyces cerevisiae boulardii on the ileal microbiota of piglets two weeks after weaning. J.-P. Brousseau*, F. Beaudoin, D. Roy, and M. Lessard, Agriculture and Agri-Food Canada, Sherbrooke, Quebec, Canada, University Laval, Quebec, Quebec, Canada.

Plant active compounds or extracts can be effective as antioxidants in vitro. C. Ionescu\textsuperscript{a,}\textsuperscript{1}, J. Seppey\textsuperscript{2}, D. Bravo\textsuperscript{1}, M. Grogg\textsuperscript{2}, X. Simonnet\textsuperscript{2}, N. Marcon\textsuperscript{1}, and A.-F. Grogg\textsuperscript{1}, \textit{Pancosma, Geneva, Switzerland}; \textsuperscript{3}Mediplant, Conthey, Switzerland.\textsuperscript{3}HESSE, Sion, Switzerland.


Effects of feeding \textit{Lathyrus sativus} on broiler performance. M. Eslami\textsuperscript{a} and B. Ahmadipour, \textit{Ramin Agricultur and Natural Resources University, Ahwaz, Khouzestan, Iran.}

Effects of dietary Biomate (Artemisia, Acanthopanax and garlic) on performance in lactating sows. S.-M. Hong\textsuperscript{a,}\textsuperscript{1}, M.-J. Kim\textsuperscript{1}, M.-B. Cho\textsuperscript{1}, B.-U. Yang\textsuperscript{1}, M.-J. Kim\textsuperscript{1}, I.-H. Kim\textsuperscript{1}, and S.-H. Oh\textsuperscript{2}, \textit{Dankook University, Cheonan, Chungnam, South Korea}; \textsuperscript{3}North Carolina A&T State University, Greensboro.

Effects of dietary probiotics of endospores and complex enzyme supplementation on growth performance in pigs. M.-J. Kim\textsuperscript{a,}\textsuperscript{1}, B.-U. Yang\textsuperscript{1}, M.-B. Cho\textsuperscript{1}, M.-J. Kim\textsuperscript{1}, S.-M. Hong\textsuperscript{1}, I.-H. Kim\textsuperscript{1}, T. Barrios\textsuperscript{2}, and S.-H. Oh\textsuperscript{2}, \textit{Dankook University, Cheonan, Chungnam, South Korea}; \textsuperscript{3}North Carolina A&T State University, Greensboro.

Comparison of Bio-Mos\textsuperscript{a} and carboxad on growth performance during the early nursery phases of weanling pigs. J. L. Pierce\textsuperscript{a}, R. F. Gilliam, and C. A. Moran, Alltech, Inc., Nicholasville, KY.


Effects of natural clay enterosorbent on vulva sizes and reproductive organ weights of postweaning female pigs fed zearalenone contaminated diets. Z. B. Yang\textsuperscript{a,}\textsuperscript{1}, S. Z. Jiang\textsuperscript{1}, W. R. Yang\textsuperscript{1}, H. Zao\textsuperscript{1}, C. C. Chen\textsuperscript{2}, and F. Chi\textsuperscript{2}, \textsuperscript{1}Shandong Agricultural University, Taian, Shandong, PRC; \textsuperscript{2}Chaoyang University Technology, Taichung, Taiwan, ROC; \textsuperscript{3}Amlan International, Chicago, IL.

Effects of natural clay enterosorbent on nutrient digestibility of postweaning female pigs fed zearalenone contaminated diets. Z. B. Yang\textsuperscript{a,}\textsuperscript{1}, S. Z. Jiang\textsuperscript{1}, W. R. Yang\textsuperscript{1}, H. Zao\textsuperscript{1}, C. C. Chen\textsuperscript{2}, and F. Chi\textsuperscript{2}, \textsuperscript{2}Shandong Agricultural University, Taian, Shandong, PRC; \textsuperscript{3}Chaoyang University Technology, Taichung, Taiwan, ROC; \textsuperscript{3}Amlan International, Chicago, IL.

Evaluation of the efficacy of a commercial purified phyllosilicate to reduce the toxicity of zearalenone + deoxynivalenol in gilt s. K. Bond\textsuperscript{1}, C. K. Maune\textsuperscript{1}, J. R. Stoltz\textsuperscript{1}, R. J. Malone\textsuperscript{1}, and D. Zaviezo\textsuperscript{a,}\textsuperscript{2}, \textit{Trilogy Analytical Laboratory, Washington, MO}; \textsuperscript{2}Special Nutrients, Miami, FL.

Effects of dietary levels of tylosin on growth performance and efficiency of nutrient utilization in growing pigs. M. Z. Fan\textsuperscript{a,}\textsuperscript{1}, T. Archbold\textsuperscript{1}, K. Bregendahl\textsuperscript{1}, C. Yang\textsuperscript{1}, X. Yang\textsuperscript{1}, R. Bagg\textsuperscript{2}, G. Vessie\textsuperscript{2}, P. Dick\textsuperscript{2}, and D. Anderson\textsuperscript{1}, \textsuperscript{1}University of Guelph, Guelph, Ontario, Canada; \textsuperscript{2}Elanco Animal Health Canada Inc., Guelph, Ontario, Canada.

Effect of the combined use of ractopamine and chromium picolinate on growth performance and carcass traits of finishing pigs. E. Toledo\textsuperscript{a}, R. F. Gilliam, and C. A. Moran, \textit{Department of Animal and Poultry Sciences, Virginia Tech, Blacksburg}; \textsuperscript{2}Louisiana State University AgCenter-Iberia Station, Jeanerette; \textsuperscript{3}Virginia-Maryland Regional College of Veterinary Medicine, Virginia Tech, Blacksburg.

Early prediction tools for the selection of reproductive traits on spring born crossbred Angus heifers. R. A. Franco\textsuperscript{a,}\textsuperscript{1}, G. Scaglia\textsuperscript{a}, W. S. Swecker\textsuperscript{1}, and M. L. Wahlberg\textsuperscript{1}, \textit{Department of Animal and Poultry Sciences, Virginia Tech, Blacksburg}; \textsuperscript{2}University of Minnesota, St. Paul, MN; \textsuperscript{3}Virginia-Maryland Regional College of Veterinary Medicine, Virginia Tech, Blacksburg.

Endometrial gene expression of estradiol, progesterone, and oxytocin receptors in anestrous Bos indicus cows treated with progesterone. O. G. Sa Filho\textsuperscript{a}, D. M. Guerra, and J. L. M. Vasconcelos, \textit{FMVZ/UNESP, Botucatu, SP, Brazil.}

W191 Embryo transfer following treatment of cystic ovaries in cattle. C. E. Ferguson1, F. M. LeMieux2, D. J. Kesler2, and R. A. Godke3, 1McNeese State University, Lake Charles, LA, 2University of Illinois, Urbana, 3Louisiana State University, Baton Rouge.

W192 GnRH affects emergence of a new follicular wave in cows with cystic ovaries. E. Dirandeh, H. Kohram*, T. Saberifar, and A. Zare Shahneh, University of Tehran, Iran.

W193 Immediate and carryover effects of Gram-negative or Gram-positive toxin-induced mastitis on follicular functions in cows. Y. Lavon1, G. Leitner1, R. Meidan1, U. Moallem1, E. Klipper1, and D. Wolfenson1, 1The Hebrew University, Rehovot, Israel, 2The Veterinary Institute, Bet-Dagan, Israel, 3Agricultural Research Org, Bet-Dagan, Israel.


W195 Pregnancy success and luteal function of lactating Holstein cows after hCG on day 5 after insemination. E. Urzua1, C. G. Gutierrez2, A. Garza2, C. Corona1, G. Mapes1, and J. Hernandez-Ceron2, 1Facultad de Medicina Veterinaria y Zootecnia, Universidad Nacional Autónoma de México, México, 2Beta San Gabriel S.A. de C.V., Torreón, México, 3Intervet Schering Plough Animal Health, México.

W196 Plasma LH concentrations and CL function in Holstein cows given porcine LH, GnRH, or estradiol benzoate. M. G. Colazo2, T. O. Ree2, A. G. A. Lamont1, J. P. Kastelic3, R. J. Mapletot2, and D. J. Ambrose1,2, 1Alberta Agriculture and Rural Development, Edmonton, AB, Canada, 2Lakeland College, Vermilion, AB, Canada, 3University of Alberta, Edmonton, AB, Canada, 4Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, 5University of Saskatchewan, Saskatoon, SK, Canada.

W197 Prostaglandin (PG) E1 or E2 (PGE1, PGE2) luteal implants prevent luteolysis in cows. C. W. Weems2, Y. S. Weems1, R. C. Vann1, S. P. Ford1, D. A. Neuendorff1, A. W. Lewis4, T. A. Welsh3, T. M. Netf6, P. J. Bridges2, and R. D. Randel2, 1University of Hawaii, Honolulu, 2Mississippi State University, Raymond, 3University of Wyoming, Laramie, 4Texas AgriLife Res., Overton, 5Texas A&M University, College Station, 6Colorado State University, Fort Collins, 7University of Kentucky, Lexington.

W198 The effect of a shortened dry period on follicular dynamic in early lactation Holstein cows. S. Sata1, A. Heravi Moussavi1, M. Danesh Mesgaran1, and A. Soleimani1,2, 1Department of Animal Science, Ferdowsi University of Mashhad, Iran, 2Islamic Azad University- Kashmar Branch, Iran.

W199 Characteristic of the largest follicle of the waves emerged after treatment with GnRH during estrous cycle of Iranian Holstein cows. E. Dirandeh and H. Kohram*, University of Tehran, Karaj, Tehran, Iran.

W200 Subclinical mastitis effects on steroid concentrations and gene expression in theca cells of preovulatory follicles in cows. Y. Lavon1, G. Leitner1, R. Meidan1, E. Klipper1, and D. Wolfenson1, 1The Hebrew University, Rehovot, Israel, 2The Veterinary Institute, Bet-Dagan, Israel.

W201 Effect of dry period lengths on complete blood count in early lactating Holstein cows. A. Soleimani1,2, A. Heravi Moussavi1, M. Danesh Mesgaran1, A. Golian1, and S. Sata1, 1Department of Animal Science, Ferdowsi University of Mashhad, Iran, 2Islamic Azad University-Kashmar Branch, Iran.


W203 Effect of melatonin on in vitro manipulated rat oocytes and embryos. S. Nand1,2, V. Girish Kumar2, and F. C. Gwazdauskas1, 1National Institute of Animal Nutrition and Physiology, Bangalore, India, 2Karnataka Veterinary Animal and Fishery Sciences University, Bangalore, India, 3Department of Dairy Science, Virginia Polytechnic Institute and State University, Blacksburg.

W204 17β estradiol and spontaneous myometrial contractions in ovariectomized rats. O. Yildiz-Gulay1, A. Bulbul2, M. S. Gulay1, K. Altunbas1, and O. Ozden-Akayla1, 1Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Department of Physiology, Burdur, Turkey, 2Ayonkarahisar Kocatepe University, Faculty of Veterinary Medicine, Department of Physiology, Ayonkarahisar, Turkey, 3Ayonkarahisar Kocatepe University, Faculty of Veterinary Medicine, Department of Histology and Embryology, Ayonkarahisar, Turkey.

Production, Management and the Environment

General

W206 Detection of alternative splicing form of PRL mRNA in the chicken anterior pituitary gland. N. Kansaku*, T. Sasanaami, T. Ohkubo, G. Hiyama*, and D. Zawdorny, Azabu University, Sagamihara, Japan, Shizuoka University, Shizuoka, Japan, Kagawa University, Miki-cho, Japan, McGill University, Montreal, QC, Canada

W207 Culture of chicken germine stem cells. J. N. Petitte*, J. Angerman-Stewart, R. Wysocki, and P. E. Mozdziak, Department of Poultry Science, North Carolina State University, Raleigh.

Agricultural Sciences, Beijing, China.


W209 Arrangements of Acacia decurrens, Acacia melanoxylon and Alnus acuminate as silvopasture systems in a high tropic ecosystem. A. Conde*, L. L. Betancourt, C. J. Jaramillo, A. Umana, D. Barrera, and D. R. Chamorro, Universidad de La Salle, Bogotá, Colombia, Corpoica, Bogotá, Colombia.

W210 Influence of Acacia mangium on soil chemical characteristics in a silvopastoral system in northwestern Venezuela. T. Clavero* and R. Razz, Centro de Transferencia de Tecnologia en Pastos y Forrajes, Universidad del Zulia, Maracaibo, Estado Zulia, Venezuela.

W211 Discrimination and classification of the new co-products from bio-energy production using infrared spectroscopy with multivariate techniques- AHCA and PCA: Comparison among blend DDGS, wheat DDGS and corn DDGS and between wheat and wheat DDGS, and corn and corn DDGS. D. Damiran and P. Yu*, College of Agriculture and Bioresources, University of Saskatchewan, Saskatoon, SK, Canada.


W213 Copper and zinc accumulation in dairy production systems. T. Downing*, K. Stiglbauer, M. Gamroth, and J. Hart, Oregon State University, Corvallis.


W215 The effects of management and environmental factors on broiler breeder performance in Iran. H. Hosaini*, M. Moradi Sharbabak, A. Noshari, M. Zaghari, and M. B. Zandi, Tehran Azad University, Karaj Tehran Iran, University of Saskatchewan, Saskatoon, SK, Canada, Young Researchers Cloob, Sanandaj Kurdistan Tehran.

W216 Effects of stocking rate of weaned to finishing pigs on bermudagrass ground cover. S. Pietrosemoli*, J. T. Green, and R. Vibart, Animal Science Department, North Carolina State University, Raleigh, Crop Science Department, North Carolina State University, Raleigh, AgResearch Limited, Grasslands Research Centre, New Zealand.


W219 Black soldier fly larvae grown on cow manure. M. Chahine*, M. E. de Haro Martí, S. St Hilaire, O. Pozo, and R. E. Sheffield, University of Idaho, Twin Falls, University of Idaho, Gooding, Idaho State University, Pocatello, Louisiana State University, Baton Rouge.
Ruminant Nutrition

Dairy Calves

W220 The influence of parity, sex and twinning on birth weight of Holstein calves. M. H. Fathi Nasri* and H. Farhangfar, Department of Animal Science, The University of Birjand, Iran.

W221 Influence of altering conventional milk replacer feeding rate and protein source on pre- and post-weaning performance and health of dairy calves. D. Carlson1, S. Hayes1, B. Ziegler2, R. Larson2, M. Raeth-Knight3, G. Golombeski3, J. Linn3, D. Ziegler1, and H. Chester-Jones1, 1Milk Products, LLC, Chilton, WI, 2Hubbard Feeds Inc., Mankato, MN, 3University of Minnesota, St. Paul, 4University of Minnesota, Southern Research and Outreach Center, Waseca.

W222 Effect of milk replacer carbohydrate source on performance and health of dairy calves. J. K. Bernard1 and A. F. Kertz2, 1University of Georgia, Tifton, 2ANDHIL LLC, St. Louis, MO.

W223 Impact of glycerol in milk replacer on dairy calf performance. M. Raeth-Knight1, J. Linn1, R. Larson2, and J. Salzer1, 1University of Minnesota, St. Paul, 2Hubbard Feeds, Mankato, MN.

W224 Effect of group penning on dairy calf performance. D. Carr4 and A. Chestnut, Vigorione Ag Products, Hiawatha, IA.

W225 Relationship between immunoglobulin G intake and serum immunoglobulin G concentrations in calves fed titrated levels of immunoglobulin G in colostrum replacers. J. M. Campbell1, J. C. Gawthrop2, A. W. Riad2, L. E. Russell1, S. K. Hayes1, J. D. Quigley1, and J. D. Crenshaw1, 1APC, Inc., Ankeny, IA, 2CalfCare, North Manchester, IN.

W226 Effects of protein sources in calf milk replacers on growth and fecal score of dairy calves. S. Y. Luan1, J. Q. Wang1, D. P. Bu1, H. T. Zhang1, Z. F. Zhou1, and A. F. Kertz2, 1State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, P. R. China, 2ANDHIL LLC, St. Louis, MO.

W227 Effects of combining hydrolyzed wheat gluten and spray dried plasma in calf milk replacer (CMR) on calf performance. D. Wood*, J. Sowinski, and R. Blome, Animix, Juneau, WI.

W228 Hydrolyzed proteins from animal origin can replace dried skim milk from milk replacer formula. M. Terré1, E. Borda2, F. Boe3, and A. Bach1,3, 1IRTA-Unitat de Remugants, Barcelona, Spain, 2Bioiberica, S.A., Barcelona, Spain, 3ICREA, Barcelona, Spain.

W229 The effect of feeding alfalfa hay at different ages on pre- and post-weaning performance of Holstein calves. A. Ahangaran#, M. H. Fathi Nasri, H. Farhangfar, and A. Omidi, Department of Animal Science, The University of Birjand, Iran.

W230 Effects of supplementing a mix of nucleotides to dairy calves prior to weaning on respiratory afflications and immune response during the postweaning period. A. Bach1,3, A. Ferrer2, D. Martínez-Puig3, and J. Ahedo4, 1ICREA, Barcelona, Spain, 2IRTA-Ruminant Production, Caldes de Montbui, Spain, 3Biotiberica, Barcelona, Spain, 4 Rancho Las Nieves, Mallén, Spain.


W232 Flavor effects on feed intake and performance of calves. C. Montoro1, I. Pharraguerre2, and A. Bach1,3, 1IRTA-Ruminant Production, Caldes de Montbui, Spain, 2LUCTA S.A., Barcelona, Spain, 3ICREA, Barcelona, Spain.

W233 Development of an animal model to evaluate oro-sensorial preferences in weaned calves. C. Montoro1, F. Boe1, I. Pharraguerre2, and A. Bach1,3, 1IRTA-Ruminant Production, Caldes de Montbui, Spain, 2Lucta S.A., Barcelona, Spain, 3ICREA, Barcelona, Spain.

Ruminant Nutrition

Dairy Heifers

W234 Pre- and post weaning performance and health of heifer calves fed different levels of bovine spray dried animal plasma in a traditional milk replacer program. S. Hayes1, D. Carlson2, D. Ziegler1, M. Raeth-Knight1, G. Golombeski3, B. Ziegler2, R. Larson2, J. Linn3, and H. Chester-Jones1, 1APC, Inc., Ankeny, IA, 2Milk Products, Chilton, WI, 3University of Minnesota Southern Research and Outreach Center, Waseca, 4University of Minnesota, St. Paul, 5Hubbard Feeds, Inc., Mankato, MN.

W235 Performance and health of post weaned Holstein heifer calves from 9 to 25 weeks of age fed grain mixes containing
varying levels of bovine spray dried plasma protein during the initial transition to group pens. H. Chester-Jones⁴, S. Hayes⁵, R. Larson⁶, B. Ziegler⁷, D. Ziegler⁷, M. Raeth-Knight⁸, G. Golombeski⁹, and J. Linn¹⁰.¹ University of Minnesota Southern Research and Outreach Center, Waseca, ²APC, Inc., Ankeny, IA, ³Hubbard Feeds, Inc., Mankato, MN, ⁴University of Minnesota, St. Paul.

Performance of post weaned Holstein heifer calves fed limited or free-choice pelleted grain mixes with two differing fiber levels along with free-choice hay. D. Ziegler¹¹, R. Larson¹², B. Ziegler¹³, M. Raeth-Knight¹⁴, G. Golombeski¹⁵, H. Chester-Jones¹⁶, and J. Linn¹⁷.¹ University of Minnesota Southern Research and Outreach Center, Waseca, ²University of Minnesota, St. Paul.

Correlation between future production performance and hepatic gene expression in postpubertal Holstein dairy heifers. J. Doelman*, N. G. Purdie, H. Cao, N. A. Karrow, and J. P. Cant, University of Guelph, Guelph, ON, Canada.

Effects of feeding rapeseeds on lactation performance in dairy cows and oxidative stability of milk and butter. O. Y. Tsisaryk*, E. Gniemi², K. Glover³, and A. Fredeen³, ¹Dalhousie University, Halifax, NS, Canada, ²Nova Scotia Agricultural College, Truro, NS, Canada.


Ruminant Nutrition

Fat Supplementation

Effect of dietary lipids on selected strains of ruminal bacteria. R. B. Potu¹, A. A. AbuGhazaleh¹, K. L. Jones¹, R. L. Atkinson¹, D. Hastings¹, J. D. Haddock¹, and S. Ibrahim¹, ¹Southern Illinois University, Carbondale, ²North Carolina A&T University, Greensboro.


Effects of different rates of continuous abomasal or pulse ruminal infusions of either free or protected nicotinic acid on plasma NEFA concentrations. J. Pescara*, J. Pires, and R. Grummer, University of Wisconsin, Madison.

Effects of infusing volatile fatty acids intraruminally on rumen and milk odd and branched-chain fatty acids. E. A. French* and L. E. Armentano, University of Wisconsin, Madison.


The long-term effect of supplementation with fish oil or microalgae on the performance of grazing dairy cows. P. Vahmani¹, E. Gniemi², K. Glover³, and A. Fredeen³, ¹Dalhousie University, Halifax, NS, Canada, ²Nova Scotia Agricultural College, Truro, NS, Canada.

Effect of feeding rapeseeds on lactation performance in dairy cows and oxidative stability of milk and butter. O. Y. Tsisaryk*, Lviv National University of Veterinary Medicine and Biotechnologies, Lviv, Ukraine.

Performance and metabolic measures of lactating dairy cows fed diets supplemented with either mostly saturated or more unsaturated fatty acids. J. K. Bernard¹ and A. F. Kertz², ¹The University of Georgia, Tifton, ²ANDHIL LLC, St. Louis, MO.
Effects of duodenal infusion of linoleic acid on nutrient digestion, milk production, and milk composition in dairy cows. Khass-Erdene1, D. P. Bu1, J. Q. Wang2, Q. S. Liu1, L. Wang1, H. Y. Wei1, L. Y. Zhou1, and J. K. Drackley2, 1State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, P. R. China, 2Department of Animal Sciences, University of Illinois, Urbana.

Effects of feeding different rumen-protected fat supplements on the fatty acid composition of milk. A. R. Sewell*, M. L. Eastridge, P. N. Gott, B. Mathew, and D. L. Palmiqrist, The Ohio State University, Columbus.

Fatty acids profile of milk fat from cows with different forage and lipids levels in the diet. M. A. Oliveira1, M. M. Ladeira2, I. G. Pereira3, B. N. Faria1, and R. B. Reis2, 1Veterinary School, Federal University of Minas Gerais, Brazil, 2Animal Science Department, Federal University of Lavras, Brazil, 3Animal Science Department, Federal University of Jequitinhonha and Mucury Valley, Brazil.

Milk fatty acid composition of dairy cows fed whole flaxseed or/and Ca-salts of flaxseed oil. C. Córtes1, D. C. da Silva1-2, R. Kazama1-2, N. Gagnon1, C. Benchaar1, G. T. d. Santos1-2, L. M. Zeoula1,2, and H. V. Petit1, 1Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, 2Universidade Estadual de Maringa, Paraná, Brazil, 3CNPq, Brazil.

The effect of nonstructural carbohydrate and addition of full fat roasted canola seed on milk fatty acid composition in lactating cows. M. Sari, A. A. Naserian*, and R. Valizadeh, Ferdowsi University of Mashhad, Mashhad, Iran.

Effect of coconut oil and lauric acid on ruminal protozoa and milk production and composition in dairy cows. A. Faciola1 and G. Broderick2, 1University of Wisconsin, Madison, 2U. S. Dairy Forage Research Center, Madison, WI.


Assessment of whole Nutrasaff safflower seed as a fat supplement to lactating Holstein dairy cows. C. M. Dschaak1, J.-S. Eun1, A. J. Young1, and J. W. Bergman2, 1Utah State University, Logan, 2Safflower Technologies International, Sidney, MT.

Effects of protected fat supplements on total tract digestion and plasma metabolites of early lactation Holstein cows. M. Ganjkhianlou*, K. Reza Yazdi1, G. R. Ghorbani1, M. Dehghan Banadaky1, H. Morraveg1, W. Z. Yang2, and A. Zali1, 1University of Tehran, Karaj, Tehran, Iran, 2Isfahan University of Technology, Isfahan, Iran, 3Lethbridge Research Centre, Lethbridge, AB, Canada.

Effect of lipids source and supplementation frequency on ingestive behavior of beef heifers grazing tropical grass. M. Cristina Araújo Santana1, T. Teresinha Berchielli1, R. Andrade Reis1, A. Vaz Pires2, G. Fiorentini1, P. Henriquede Moura Dian1, J. Cesar Martinez1, and M. Antonio Alvares Balsalobre2, 1São Paulo State University, Jaboticabal, São Paulo, Brazil, 2São Paulo University, Piracicaba, São Paulo, Brazil, 3Bellann, Mirassol, São Paulo, Brazil.

Degree of dietary fatty acid saturation affects plasma glucose kinetics in growing beef steers. S. E. Cartiff*, V. Fellner, and J. H. Eisemann, North Carolina State University, Raleigh.

Seminal characteristics in beef bulls supplemented with rumen bypass fat. H. O. Patino1, M. M. H. Ramirez2, J. C. C. Angel1, K. C. Swanson3, and R. M. Gregory3, 1Dep. Zootecnia, UFRGS, Porto Alegre, RS, Brazil, 2Dept. Animal and Poultry Science, University of Guelph, Guelph, ON, Canada, 3Faculdade Veterinária, UFRGS, Porto Alegre, RS, Brazil.

Ruminant Nutrition
Metabolism

Malate and fumarate enhanced CLA production and reduced methane emission by rumen microbes when incubated with linoleic acid. G. L. Jin1, X. Z. Li2, C. G. Yan2, R. J. Long3, and M. K. Song1, 1Department of Animal Science, Chongbuk National University, Cheongju, Chongbuk, Korea, 2Animal Science department of Agricultural college, Yanbian University, Yanji, Jilin, China, 3International Centre for Tibetan Plateau Ecosystem Management, Lanzhou University, Lanzhou, Gansu, China.

Phosphate inhibits in vitro ruminal acetoclastic methanogenesis of maize-rich substrates with lactating Holstein dairy cow rumen liquor. H. J. Yang1, D. F. Zhang1, Y. C. Cao1, Y. H. Jiang1, and J. Q. Wang2, 1Department of Animal Nutrition and Feed Science, College of Animal Science and Technology, Beijing, P.R. China, 2State key Laboratory of Animal Nutrition, Beijing Institute of Animal Science, China Academy of Agricultural Sciences, Beijing, P.R. China.

The effect of concentrate to forage ratios on methanogenes bacteria population in rumen fluid of Holstein steers.
Microbial growth, methane production and fermentation of a high-concentrate diet in Rusitec fermenters as affected by dilution rate and concentrate retention time. M. E. Martínez, M. J. Ranilla†, S. Ramos, M. L. Tejido, C. Saro, and M. D. Carro, Departamento de Producción Animal, Universidad de León, León, Spain.

Effect of diets supplemented by sucrose and/or starch on Ruminococcus albus populations in the rumen fluid of Holstein steers determined by real-time PCR. F. Rezaei, M. Danesh Mesgaran†, A. Vakili, A. Heravi Moussavi, and S. Ghovvati, Dpt. of Animal Science (Excellence Center for Animal Science), Ferdowsi University of Mashhad, Iran.

Synergistic fibrolysis by cellulolytic Ruminococcus flavefaciens, Fibrobacter succinogenes, and non-cellulolytic Prevotella ruminicola and Prevotella bryani: study in semi-defined cultures. J. Chiquette† and K. Lauzon, Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada.

Role of inulin as a modifier in rumen fermentation. H. D. Umucalilar†, N. Gulsen†, A. Hayirli‡ and M. S. Alatas†, 1Department of Animal Nutrition and Nutritional Disorders, Faculty of Veterinary Medicine, Selçuk University, Konya, Turkey, 2Department of Animal Nutrition and Nutritional Disorders, Faculty of Veterinary Medicine, Atatürk University, Erzurum, Turkey.

Role of lactulose as a modifier in rumen fermentation. N. Gulsen†, H. D. Umucalilar†, A. Hayirli‡ and O. B. Cetil†, 1Department of Animal Nutrition and Nutritional Disorders, Faculty of Veterinary Medicine, Selçuk University, Konya, Turkey, 2Department of Animal Nutrition and Nutritional Disorders, Faculty of Veterinary Medicine, Atatürk University, Erzurum, Turkey.

Lactic acid modulates DM degradation kinetics of barley grain in the rumen and decreases the risk of acidosis in dairy cows. S. Iqbal, Q. Zebeli*, A. Mazzolari, S. M. Dunn, and B. N. Ametaj, University of Alberta, Edmonton, AB, Canada.

Effect of condensed tannins and maceration on in vitro ruminal degradation of protein in legume hay. G. A. Broderick* and J. H. Grabber, U.S. Dairy Forage Research Center, Madison, WI.

Shift in in vitro microbial fermentation in response to condensed tannin supplementation in mixed ruminal cultures. C. M. Dschua, J.-S. Eun†, Y.-M. Kim, F. H. Blushan, and A. J. Young, Utah State University, Logan.

Deglycosylation of steroidal saponin to sapogenin by mixed rumen microbes and their enzymes. Y. Wang* and T. A. McAllister, Agriculture & Agri-Food Canada Research Centre, Lethbridge, AB, Canada.

Starch fermentation kinetics in rumen fluid and synthesis of end products. J. W. Cone* and P. M. Becker†, 1Animal Nutrition Group, Wageningen University, Wageningen, the Netherlands, 2Animal Sciences Group of Wur, Lelystad, the Netherlands.


Mammary cell signaling responses to abomasal starch and casein infusions in lactating dairy cows. A. G. Rius*, J. Escobar*, O. Becvar*, D. Kirovski*, and M. D. Hanigan†, 1Dept. of Dairy Science, Virginia Polytechnic Institute and State University, Blacksburg, 2Dept. of Animal Science, Virginia Polytechnic Institute and State University, Blacksburg, 3College of Veterinary Medicine, Virginia Polytechnic Institute and State University, Blacksburg, 4Faculty of Veterinary Medicine, University of Belgrade, Belgrade, Serbia.

Meta-analysis for the prediction of net portal absorption of amino acid nitrogen in ruminants. R. Martineau*, D. Sauvant†, D. R. Oueller†, J. Vernet†, I. Orltigues-Martý†, and H. Lapierre*, 1Agriculture and Agri-Food Canada, Stn Lennoxville, Sherbrooke, QC, Canada, 2AgroParisTech INRA, Paris, France, 3UHR INRA Clermont-Ferrand, Theix, St-Genèix-Champanelle, France.

Acute fasting-induced changes in motilin, luteinizing hormone and metabolites in goat wethers. O. Gazal†, B. Kouakou‡, W. Mboko*, S. Bialka†, and J. H. Lee‡, 1St. Cloud State University, St. Cloud, MN, 2Fort Valley State
University, Fort Valley, GA.


W283 Plasma concentration of glucose-dependent insulinotropic polypeptide is negatively correlated with respiratory quotient in lactating dairy cows. A. E. Relling*, L. A. Crompton1, S. C. Loerch1, and C. K. Reynolds2, 1The Ohio State University, Wooster, 2University of Reading, Reading, UK.

W284 Gluconeogenesis and carbon recycling in beef steers is modulated by energy-substrate supply. B. J. Bequette*1, J. Sumner-Thomson1, J. A. Moorefield1, D. Hucht2, M. Niland2, and R. L. Baldwin VI2, 1Department of Animal and Avian Sciences, University of Maryland, College Park, 2Bovine Genomic Laboratory, Animal and Nutrition Resources Institute USDA-ARS, Beltsville, MD.


W286 Plasma leptin, feed intake and body fat reserves in ruminants. An updated overview. E. González-García*, N. Debus1, Y. Chilliard2, and F. Bocquier1, 1INRA, Montpellier, France, 2INRA, Theix, St-Genes-Champanelle, France.

W287 Variation of basal expression of a sodium-dependent phosphate transporter between sections of cattle small intestine. A. P. Foote*1, B. D. Lambert1,2, and J. A. Brady1, 1Tarleton State University, Stephenville, TX, 2Texas AgriLife Research, Stephenville.

W288 Insulin and essential amino acids have significant but independent effects on protein synthesis signaling in bovine mammary epithelial cells in-vitro. A. L. Bell*, J. A. D. R. N. Appuhamy, J. Escobar, and M. D. Hanigan, Virginia Polytechnic Institute and State University, Blacksburg.


Ruminant Nutrition
Vitamins and Minerals

W290 The influence of feeding chelated trace minerals on dairy cattle performance and colostrum quality. A. Formigoni1, S. Emanuele2, C. Sniffen3, B. D. Lambert1, and M. Fustini1, 1DIMORFIPA-University of Bologna, Bologna, Italy, 2Balchem, New Hampton, NY, 3Fencrest LLC, Plymouth, NH.

W291 Effect of zinc from zinc sulfate on trace mineral concentrations of milk in Varamini ewes. A. Zali and M. Ganjkhanlou*, University of Tehran, Tehran, Iran.


W293 Total mixed ration mineral content in California dairy farms. A. R. Castillo*1, N. Silva del Rio1, and N. St-Pierre2, 1University of California, Tulare, 2The Ohio State University, Columbus.

W294 Effects of supplementation of beef cattle ration with rare earth elements on fermentation and digestion in batch culture. W. Z. Yang* and M. L. He, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.

W295 The effects of trace mineral supplementation on performance and carcass characteristics of steers. J. S. Schutz*1, J. L. Seabrook1, K. L. Neuhold1, J. J. Wagner1, M. de Veth2, and T. E. Engle3, 1Colorado State University, Fort Collins, 2Balchem Corporation, New Hampton, NY.


Ruminant Nutrition
Experimental Methods


W299 Analysis of fiber from coarsely ground corn plant components within in situ dacron bags. L. J. Nuzback, W. M. Rutherford, and F. N. Owens*, Pioneer Hi-Bred International, Johnston, IA.

W300 Utilization of lignin extracted from different plant sources as standards in the spectrophotometric acetyl bromide lignin method. R. S. Fukushima*1, 2 and M. S. Kerley2, 1Universidade de Sao Paulo, Pirassununga, Sao Paulo, Brazil, 2University of Missouri, Columbia.

W301 Degradation kinetics of N in rumen fluid determined with the gas production technique. J. W. Cone*1, P. M. Becker2, and M. A. M. Rodrigues3, 1Animal Nutrition Group, Wageningen University, Wageningen, the Netherlands, 2Animal Sciences Group of WUR, Lelystad, the Netherlands, 3CECAV-UTAD, Vila Real, Portugal.

W302 Effect of pH and nonforage fiber sources on microbial fermentation and nutrient flow from a dual-flow continuous culture system. M. Sari, A. Ferret*, S. Calsamiglia, M. Blanch, and M. C. Fuentes, Universitat Autonoma de Barcelona, Bellaterra, Spain.

W303 In vivo and in vitro measurements of ruminal redox potential: A comparative study. C. Julien*1, A. Troegeler-Meynadier1, J. P. Marden1, 2, E. Enjalbert1, and C. Bayourthe1, 1Université de Toulouse, INRA, Castanet-Tolosan, France, 2Lesaffre Feed Additives, Marquette-Lez-Lille, France.


W305 Cloning of a bifunctional xylanolytic enzyme gene from Neocallimastix patriciarum. J.-R. Liu*1, 2, C.-K. Pai1, Y.-F. Zeng1, C.-H. Duan1, and M.-L. Li3, 1Institute of Biotechnology, National Taiwan University, Taipei, Taiwan, Republic of China, 2Department of Animal Science and Technology, National Taiwan University, Taipei, Taiwan, Republic of China, 3Department of Life Science, National Taiwan Normal University, Taipei, Taiwan, Republic of China, 4Institute of BioAgricultural Sciences, Academia Sinica, Taipei, Taiwan, Republic of China.

W306 Validation of a system for monitoring rumination in dairy cows. K. Schirmann*1, 2, M. A. G. von Keyserlingk1, D. M. Veira1, D. M. Weary1, and W. Heuwieser1, 2, 1Animal Welfare Program, Faculty of Land and Food Systems, The University of British Columbia, Vancouver, BC, Canada, 2Clinic for Animal Reproduction, Faculty of Veterinary Medicine, Freie Universitat Berlin, Berlin, Germany, 3Agriculture and Agri-Food Canada, Agassiz, BC, Canada.

W307 The accuracy and precision of the hand-held Precision Xtra™ meter for measuring β-hydroxybutyrate in whole blood from dairy cows. T. M. Kaiser, S. E. Stebulis*, and R. R. Grummer, University of Wisconsin, Madison.

W308 Re—evaluating the technique of estimating total internal fat using real—time ultrasound and carcass measurements in beef cattle. F. R. B. Ribeiro*1, L. O. Tedeschi2, J. R. Stouffer3, and G. E. Carstens2, 1Texas A&M University, Commerce, 2Texas A&M University, College Station, 3Cornell University, Ithaca, NY.

W309 Determination of ruminal protein degradation kinetics of Soy Best® with and without soy gums using dynamic modeling and a single point in situ protein disappearance and simulations with the CPM Dairy nutrition model. L. O. Tedeschi1, G. A. Holub1, W. Chalupa2, and C. A. Macgregor3, 1Texas A&M University, College Station, 2University of Pennsylvania, Kennett Square, 3Grain States Soya Inc., West Point, NE.

W310 Assessing the ability of the Cornell Net Carbohydrate and Protein System to predict fecal and urinary nitrogen excretion in lactating dairy cows. R. J. Higgs*, L. E. Chase, and M. E. Van Amburgh, Cornell University, Ithaca, NY.

Small Ruminant
Growth, Carcass Traits, Meat Quality, Nutrition


W312 Effects of small ruminant species and origin in Ethiopia (Highland vs. Lowland areas) and lengths of rest and feeding on harvest measures. G. Abebe1, G. Kannan2, and A. L. Goetsch3, 1Ethiopia Sheep and Goat Productivity Program,
Addis Ababa, Ethiopia, †Agricultural Experiment Station, Fort Valley State University, Fort Valley, GA, ‡American Institute for Goat Research, Langston University, Langston, OK.

W313 Growth performance and carcass characteristics of goat kids fed diets containing sericica lespedeza. S. Solaiman*, J. Thomas, N. Gurung, Y. Dupree, and C. Drake, Tuskegee University, Tuskegee, AL.

W314 Effects of level of barley and corn in concentrate diet fed to Boer kids on growth, meat quality and muscle fatty acid composition. M.-E. Brassard1,2, R. Gervais3, C. Gariépy2, P. Y. Chouinard3, and D. Cinq-Mars1. 1Université Laval, Québec, QC, Canada, 2Food Research and Development Centre, Saint-Hyacinthe, QC, Canada.

W315 Comparative postweaning growth among four groups of percentage Dorper and Katahdin wethers. W. R. Getz*, W. Kimble II, J. Mack, and T. Harris, Georgia Small Ruminant Research and Extension Center, Fort Valley State University, Fort Valley, GA.

W316 Body composition of growing meat and lactating dairy goats. A. T. Ngwa1, L. J. Dawson1,2, R. Puchala3, G. D. Detweiler1, R. C. Merkel1,1, Z. Wang1, K. Tesfai1, T. Sahl1, C. L. Ferrell3, and A. L. Goetsch1. 1American Institute for Goat Research, Langston University, Langston, OK, 2College of Veterinary Medicine, Oklahoma State University, Stillwater, 3USDA, ARS, US Meat Animal Research Center, Clay Center, NE.

W317 Carcass traits of finishing lambs fed crude glycerin derived from biodiesel agro industry. J. F. Lage1, P. V. R. Paulino1,2, L. G. R. Pereira3, M. S. Duarte1, J. P. I. S. Monnerat2, E. Detmann1, N. K. P. Souza1, M. L. Chizzotti1, and S. C. Valadares Filho1. 1Universidade Federal de Viçosa, Viçosa, MG, Brazil, 2EMBRAPA – Semi–Árido, Petrolina, PE, Brazil.


W320 Effect of shed type and supplementation on fatty acid profile in lamb tissues. M. A. Brown1,2, Y. S. Peng2, and J. P. Wu3. 1USDA-ARS, Grazinglands Research Laboratory, El Reno, OK, 2Gansu Agricultural University, Lanzhou, Gansu, PRC.

W321 Fatty acid profile from the longissimus muscle of grazing Merino lambs with or without winter supplementation in Northern Patagonia. L. Villar1,2, E. Pavan1, C. Giraud1, and F. Santini3. 1INTA-EEA Bariloche, Bariloche, Rio Negro, Argentina, 2INTA-EEA Balcarce, Balcarce, Buenos Aires, Argentina, 3INTA-CIA Castelar, Hurlingham, Buenos Aires, Argentina.


W324 The use of glycerin in lamb and ewe diets. M. Terrá1, P. Casado2, M. Salas1, and A. Bach1,2. 1IRTA-Unitat de Remugants, Barcelona, Spain, 2General de Piensos de Soria S.A., Soria, Spain, 3ICREA, Barcelona, Spain.

W325 Methane emission by goats consuming condensed tannin-containing forage at different frequencies. R. Puchala1, G. Animut1, A. L. Goetsch1, T. Sahl1, V. H. Varel1, and J. Wells3. 1American Institute for Goat Research, Langston University, Langston, OK, 2USDA, ARS, US Meat Animal Research Center, Clay Center, NE.


W327 Voluntary intake of silage from corn hybrids harvested at two physiological stages. J. P. F. Silveira1, R. Belintani1,2, V. L. Tierzo1, D. H. Vieira1, T. F. Silveira1, P. R. L. Meirelles1, L. F. D. Medeiros4, and C. Costa1. 1São Paulo State University, Botucatu, SP, Brazil, 2University of Agrarian Sciences - University of Marília, Marília, SP, Brazil, 3Center of Creation of Animals of Laboratory, Rio de Janeiro, RJ, Brazil, 4Rural Federal University of Rio de Janeiro, Seropedica, RJ, Brazil, 5Agricultural Municipal School Adolfo Alves Rezende, Campina Verde, MG, Brazil.

W328 Effect of corn hybrid and ensiling process on voluntary intake of lambs. J. P. F. Silveira1, R. Belintani1,2, V. L. Tierzo1, P. R. L. Meirelles1, D. H. Vieira1, P. Persichetti Junior1, C. Costa1, L. F. D. Medeiros4, and T. F. Silveira5.
W329 Chemical composition, in vitro degradability, intake and digestibility of pigeon-pea (Cajanus cajan var. guerrero) and guinea-grass hay by goats. A. A. Rodríguez*, D. Carmona, L. González, E. Valencia, and P. Randel, University of Puerto Rico, Mayaguez, PR.

W330 Effects of feeding peanut skins on growth performance and carcass traits of Kiko × Spanish growing male goat kids. A. Stone*, N. Gurung1, S. Solaiman, D. Rankins Jr., G. Abraham2, and W. McElhenney1, Tuskegee University, Tuskegee, AL, Alabama A & M University, Normal, Auburn University, Auburn, AL.

W331 Effects of soybean meal on quality of free amino acids and small peptide in lactating goats. L. Wang, Z.-J. Cao*, H. Liu, and S.-L. Li, College of Animal Science and Technology, China Agricultural University, Beijing, China.


W334 Nitrogen balance and ruminal and metabolic carbon and nitrogen of Saanen dairy goats infused abomasally with different levels and combination of starch and pectin. M. Sari, A. A. Naserian*, R. Valizadeh, and S. Salari, Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran.


W336 Blood mineral concentration of goats in semi-arid rangelands of central zone in Mexico during the rainy and dry season. R. Rojo-Rubio*, A. Z. M. Salem1, A. Omedo-Juárez1, A. Hernández-Rodríguez1, B. Albarrán-Portillo3, D. López-Aguirre1, S. Rebollar-Rebollar1, J. F. Vázquez-Armijo1, D. Cardoso-Jiménez1, and J. Hernández-Martínez1, Centro Universitario UAEM, Temascaltepec, Universidad Autónoma del Estado de México, Temascaltepec, Estado de México, México, Department of Animal Production, Facul...

W337 Anti-obesity effect of ethanol extract of seed sprouts in porcine preadipocytes. M.-Y. Lee1, J.-J. Lee1, H.-J. Lee2, and S.-H. Oh3, Department of Food and Nutrition, College of Natural Sciences, Chosun University, Gwangju, Chonnam, South Korea, Department of Nutrition and Culinary Science, Hankyong National University, Ansan, Gyeonggi, South Korea, Department of Animal Sciences, North Carolina A&T State University, Greensboro.


W339 Variation in backfat depth and its relations to testicular hypertrophy and reproductive development in boars. D. O. Umesiobi*, Field of Animal Reproductive Physiology, School of Agriculture and Environmental Sciences, Central University of Technology, Bloemfontein, South Africa.


W341 A survey of North American sow farm reproductive management. R. Knox*, T. Safranski, D. Levis, and W. Singleton, University of Illinois, Urbana, University of Missouri, Columbia, University of Nebraska, Concord, Purdue University, West Lafayette, IN.

W342 Combined Acanthopanax senticosus extract and inulin improves growth performance, diarrhea and intestinal Swine Species

W337 Anti-obesity effect of ethanol extract of seed sprouts in porcine preadipocytes. M.-Y. Lee1, J.-J. Lee1, H.-J. Lee2, and S.-H. Oh3, Department of Food and Nutrition, College of Natural Sciences, Chosun University, Gwangju, Chonnam, South Korea, Department of Nutrition and Culinary Science, Hankyong National University, Ansan, Gyeonggi, South Korea, Department of Animal Sciences, North Carolina A&T State University, Greensboro.


W339 Variation in backfat depth and its relations to testicular hypertrophy and reproductive development in boars. D. O. Umesiobi*, Field of Animal Reproductive Physiology, School of Agriculture and Environmental Sciences, Central University of Technology, Bloemfontein, South Africa.


W341 A survey of North American sow farm reproductive management. R. Knox*, T. Safranski, D. Levis, and W. Singleton, University of Illinois, Urbana, University of Missouri, Columbia, University of Nebraska, Concord, Purdue University, West Lafayette, IN.

W342 Combined Acanthopanax senticosus extract and inulin improves growth performance, diarrhea and intestinal Swine Species

W337 Anti-obesity effect of ethanol extract of seed sprouts in porcine preadipocytes. M.-Y. Lee1, J.-J. Lee1, H.-J. Lee2, and S.-H. Oh3, Department of Food and Nutrition, College of Natural Sciences, Chosun University, Gwangju, Chonnam, South Korea, Department of Nutrition and Culinary Science, Hankyong National University, Ansan, Gyeonggi, South Korea, Department of Animal Sciences, North Carolina A&T State University, Greensboro.


W339 Variation in backfat depth and its relations to testicular hypertrophy and reproductive development in boars. D. O. Umesiobi*, Field of Animal Reproductive Physiology, School of Agriculture and Environmental Sciences, Central University of Technology, Bloemfontein, South Africa.


W341 A survey of North American sow farm reproductive management. R. Knox*, T. Safranski, D. Levis, and W. Singleton, University of Illinois, Urbana, University of Missouri, Columbia, University of Nebraska, Concord, Purdue University, West Lafayette, IN.

W342 Combined Acanthopanax senticosus extract and inulin improves growth performance, diarrhea and intestinal Swine Species
morphology in weaned piglets. X. Wu¹, Y. Yin¹, F. Yan¹, X. Kong¹, R. Huang¹, T. Li¹, and L. Chen², ¹Laboratory of Animal Nutritional Physiology and Metabolic Process, Institute of Subtropical Agriculture, the Chinese Academy of Sciences, Changsha, Hunan, China, ²Guang An Biological Technique Company, China.

W343 Microarray analysis of genes in small intestine of IUGR piglets. R. Chen, Y. Yin*¹, J. Pan, Y. Gao, and X. Song, Key Laboratory of Animal Nutritional Physiology and Metabolic Process, Institute of Subtropical Agriculture, the Chinese Academy of Sciences, Changsha, Hunan, China.


W345 Dietary requirement of true digestible lysine for growing pigs. Y. Zhang¹,², Y. Yin¹, J. Li¹, R. Huang¹, and Y. Chen¹,², ¹Key Laboratory of Subtropical Agro-ecology, Institute of Subtropical Agriculture, The Chinese Academy of Sciences, Changsha, Hunan, The People’s Republic of China, ²The Graduate University of Chinese Academy of Sciences, Beijing, The People’s Republic of China.

W346 Effect of diet enriched with rapeseed or sunflower oil on fatty acid profile of backfat and intramuscular fat in gilts. G. Battacome*, A. Nudda, M. G. Manca, C. Dimauro, and G. Pulina, Dipartimento di Scienze Zootecniche, Università di Sassari, Sassari, Italy.

W347 Mechanisms for transcellular transport of glucose in swine small intestine. M. Al-Ramahi¹, A. Moran¹, D. Batchelor¹, E. Coultér¹, N. Jones¹, C. Ionescu², D. Bravo³, and S. Shirazi-Beechey³, ¹Department of Veterinary Preclinical Sciences, University of Liverpool, Liverpool, UK, ²Pancosma SA, Geneva, Switzerland.

W348 Expression of sweet taste receptor, gustducin and carbohydrate responsive gut hormones in swine small intestine. M. Al-Ramahi¹, A. Moran¹, D. Batchelor¹, E. Coultér¹, N. Jones¹, C. Ionescu², D. Bravo³, and S. Shirazi-Beechey³, ¹Department of Veterinary Preclinical Sciences, University of Liverpool, Liverpool, UK, ²Pancosma SA, Geneva, Switzerland.

W349 Microbiological and molecular analysis of bacterial community by probiotic mixture in wearing pig in vivo intestinal models. Y. S. Kim¹, Y. Kim¹, K. Y. Whang², S. H. Kim², and S. Oh*³, ¹Division of Animal Science, Chonnam National University, Gwangju, Korea, ²Department of Food Bioscience and Division of Biotechnology, Korea University, Seoul, Korea.

W350 Administration of probiotics influences enterotoxigenic Escherichia coli F4 attachment and expression of intestinal cytokines in weaned pigs. J.-F. Daudelin¹,², M. Lessard³, F. Beaudoin³, N. Bissonnette³, E. Nadeau³, and J. M. Fairbrother¹, ¹Reference laboratory for E. coli (EcL), Université de Montréal, St-Hyacinthe, Quebec, Canada, ²Dairy and Swine Research and Development Centre, Agriculture and Agri-Food Canada, Sherbrooke, Quebec, Canada.

W351 Inclusion of live yeast S. cerevisiae boulardii (CNCM I-1079) in sow lactation diets: Effects on sows and nest performances. F. Mariella¹, A. Agazzi², G. Invernizzi³, G. Savoini¹, E. Chevaux³, and Y. Le Treut³, ¹University of Milan Faculty of Veterinary Medicine, Milan, Italy, ²Lallemand S.A.S., Blagnac, France.

W352 Consumer preferences for U.S. pork in urban China. D. Ortega¹, H. Wang¹, and L. Wu², ¹Purdue University, West Lafayette, IN, ²China Agricultural University, Beijing, P. R. China.

W353 Gastrointestinal morphology of pigs farrowed in indoor versus outdoor management systems and weaned into an indoor, off-site nursery. E. Davis¹, C. V. Maxwell¹, J. D. Spencer¹, R. L. Moser¹, J. Rehberger¹, and T. Rehberger¹, ¹Agttech Products, Inc., Waukesha, WI, ²University of Arkansas, Fayetteville, ³JBS United, Inc., Sheridan, IN.


W355 The effect of a Bacillus based direct fed microbial on the microbiota of grow-finish pigs. J. Rehberger*, E. Davis¹, C. V. Maxwell¹, and T. Rehberger¹, ¹Agttech Products, Inc., Waukesha, WI, ²Department of Animal Science, University of Arkansas, Fayetteville.


W357 Effects of supplementing piglets post-weaning with an oral rehydration solution or lactic acid on growth and performance. L. Seefeldt*, S. I. Kehoe, and G. Onan, University of Wisconsin, River Falls.

W358 Comparison of growth performance for pigs raised indoor and outdoor. T. White*, I. Martinez, T. Barrios, and S.-H.
### SYMPOSIA AND ORAL SESSIONS

**Animal Behavior and Well-Being**

**Behavior-Nutrition Interaction**

Chair: Ted Friend, Texas A&M University

**510ac**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:30 AM</td>
<td>504</td>
<td>Behavior-nutrition interaction in goats. A. L. Goetsch*, T. A. Gipson¹, and A. R. Askar²</td>
<td>American Institute for Goat Research, Langston University, Langston, OK, Animal and Poultry Nutrition Department, Desert Research Center, Cairo, Egypt.</td>
</tr>
<tr>
<td>11:00 AM</td>
<td>505</td>
<td>Selection of tannins by sheep in response to gastro-intestinal nematode infections.</td>
<td>J. J. Villalba*, F. D. Provenza¹, J. O. Hall², and L. D. Lisonbee¹, Utah State University, Department of Wildland Resources, Logan, Utah State University, Department of Animal, Dairy and Veterinary Sciences, Logan.</td>
</tr>
<tr>
<td>11:15 AM</td>
<td>506</td>
<td>Feed volatile compounds affect lambs and ewes palatability. T. Rapisarda¹, A. Mereu², A. Cannas², V. Giovanetti³, S. Carpino⁴, and G. Licitra¹, CoRFiLaC, Regione Siciliana, Ragusa, Italy, Dipartimento di Scienze Zootecniche, University of Sassari, Italy, Agris Sardegna, DRPA, Olmedo, Italy, D.A.C.P.A. University of Catania, Italy.</td>
<td></td>
</tr>
<tr>
<td>11:30 AM</td>
<td>507</td>
<td>Behavior-nutrition interactions in horses. D. Sigler*, Department of Animal Science, Texas A&amp;M University, College Station.</td>
<td></td>
</tr>
</tbody>
</table>

**SYMPOSIUM**

ASAS Graduate Student Symposium

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

Chair: Amy E. Radunz, The Ohio State University

**511ad**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:30 AM</td>
<td>510</td>
<td>Extension employment opportunities following the completion of a M.S. degree in animal science.</td>
<td>G. P. Lardy*, North Dakota State University, Fargo.</td>
</tr>
<tr>
<td>11:10 AM</td>
<td>512</td>
<td>Unique and non-traditional opportunities with an advance degree in animal science.</td>
<td>J. L. Garrett*, JG Consulting Services, Dowling, MI.</td>
</tr>
<tr>
<td>11:30 AM</td>
<td></td>
<td>Panel discussion</td>
<td></td>
</tr>
<tr>
<td>11:40 AM</td>
<td>513</td>
<td>Should I go get a Ph.D. and if so, is a post-doc warranted?</td>
<td>M. Hogberg*, Iowa State University, Ames.</td>
</tr>
<tr>
<td>12:00 PM</td>
<td>514</td>
<td>Developing a competitive research program and securing tenure as a new faculty hire.</td>
<td>B. W. Hess*, University of Wyoming, Laramie.</td>
</tr>
</tbody>
</table>
Breeding and Genetics

Bowel Cattle & Sheep Breeding

Chair: Janice M. Rumph, Michigan State University

513ef

10:30 AM  515  Genotype by region and season interactions for postweaning gain in beef cattle. J. L. Williams¹, M. Lukaszewicz¹, I. Miszta¹, and J. K. Bertrand¹, ¹University of Georgia, Athens, ²Institute of Genetics and Animal Breeding, Polish Academy of Sciences, Jastrzebiec, Poland.

10:45 AM  516  Estimation of genetic parameters for mature weight in Angus cattle. R. B. Costa¹, I. Misztal¹, J. K. Bertrand¹, and S. Northcut¹, ¹University of Georgia, Athens, ²American Angus Association, St. Joseph, MO.

11:00 AM  220  Identification of single nucleotide polymorphisms influencing feed efficiency and performance in multi-breed beef cattle using a candidate gene approach. M. K. Abo-Ismail⁴, M. J. Kelly¹, E. J. Squires¹, K. C. Swanson¹, J. D. Nkrumah¹, and S. P. Miller¹, ¹University of Guelph, Guelph, ON, Canada, ²Igenity Livestock Production Business Unit, Merial Ltd., Duluth, GA.


11:30 AM  518  Breed comparison of post partum ovarian activity in cows. C. Disenhauß⁴, E. Cutulic¹, F. Blanc², and J. Agabriel¹, ¹INRA UM1080 Dairy Production, 35000 Rennes, France, ²ENITAC, 63370 Lempdes, France, ³INRA UR1213 Unité de recherches sur les herbivores, Theix 63122, Saint-Genès-Champagnelle, France.

11:45 AM  519  Prediction of wool fibre diameter from protein and metabolisable energy digestibility coefficients in crossbred sheep. A. E. O. Malau-Aduli¹, R. E. Walker, and W. C. Bignell, University of Tasmania, Hobart, Tasmania 7001, Australia.

12:00 PM  520  Wool quality and growth traits of Tasmanian pasture-fed crossbred lambs and relationships with plasma metabolites. A. E. O. Malau-Aduli*, C. F. Ranson, and C. W. Bignell, University of Tasmania, Hobart, Tasmania 7001, Australia.

12:15 PM  521  Bayesian estimation of genetic parameters for body weight traits and litter size of Moghanis sheep using Gibbs sampling. N. Ghavi Hossein-Zadeh⁴, ¹University of Tehran, Karaj, Iran, ²University of Guilan, Rasht, Iran.

Dairy Foods

Dairy Foods/Microbiology

Chair: James Steele, University of Wisconsin

513cd

10:30 AM  522  Molecular and technological characterization of lactic acid bacteria isolated from the Egyptian white pickled cheese. M. El Soda*, M. Mohammed, S. Anwar, and S. Awad, Department of Dairy Science, Faculty of Agriculture, Alexandria University, Alexandria, Egypt.

10:45 AM  523  Physiological and transcriptional response of Lactobacillus casei ATCC 334 to acid stress. R. Thompson⁴, V. Deibel⁴, J. Steele², and J. Broadbent¹, ¹Utah State University, Logan, ²University of Wisconsin, Madison, ³TracMicro, Madison, WI.

11:00 AM  524  Genotyping for strain-level differentiation of Bifidobacterium animalis ssp. lactis. J. R. Loquasto¹, E. P. Briczinski², A. M. Roberts¹, E. G. Dudley¹, R. Barrangou¹, and R. F. Roberts¹, ¹Pennsylvania State University, State College, ²University of Wisconsin, Madison, ³Danisco USA Inc., Madison, WI.

11:15 AM  525  CpG oligodeoxynucleotide from Streptococcus thermophilus regulates anti-inflammatory responses. T. Shimosato*¹, M. Tohno¹, T. Sato¹, and H. Kitazawa¹, ¹Shinshu University, Kamiina, Nagano, Japan, ²Tohoku University, Sendai, Miyagi, Japan, ³Yokohama City University, Yokohama, Kanagawa, Japan.
11:30 AM 526 Survival of probiotic adjunct cultures added to low-fat, reduced-fat, and full fat cheddar cheese. C. J. Oberg*, L. Moyes, C. Brotherson, and D. J. McMahon, 1Microbiology Department, Weber State University, Ogden, UT, 2Western Dairy Center, Utah State University, Logan.

11:45 AM 527 Intrinsic resistance and stress responses to hydrogen peroxide in bifidobacteria. T. S. Oberg, S. C. Ingham, J. L. Steele, and J. R. Broadbent, 1Utah State University, Logan, 2University of Wisconsin, Madison.

12:00 PM 528 Cholesterol removing ability and bile tolerance of lactic acid bacteria isolated from fermented yak milk. Y. Jiao, L. Zhang, and H. Yi, 1Heilongjiang University of Chinese Medicine, Harbin, China, 2College of Food science and engineering, Harbin Institute of Technology, Harbin, China.

12:15 PM 529 Factors affecting the total bacteria count of raw milk preserved with azidiol (liquid or tablet) and bronopol. M. O. Leite, N. J. Andrade, M. M. O. P. Cerqueira, L. M. Fonseca, and R. Rodrigues, 1Federal University of Minas Gerais (UFMG), School of Veterinary Medicine, Department of Food Technology and Inspection, Belo Horizonte, MG, Brazil, 2Laboratory of Milk Quality Analysis, UFMG, Belo Horizonte, MG, Brazil, 3Federal University of Viçosa, Viçosa, MG, Brazil.

**Extension Education**

**Chair:** Lane Ely, University of Georgia

### 511be

10:30 AM 530 A diagnostic tool to assess calf welfare and management on-farm. E. Vasseur, J. Rushen, A. M. de Passillé, D. Lefebvre, G. Fecteau, and D. Pellerin, 1Université Laval, Quebec city, Quebec, Canada, 2Pacific Agri-Food Research Centre, Agriculture and Agri-Food Canada, Agassiz, British Columbia, Canada, 3Valacta, Dairy Production Centre of Expertise Quebec-Atlantic, Sainte-Anne-de-Bellevue, Quebec, Canada, 4Veterinary Faculty, Université de Montréal, Sainte-Hyacinte, Quebec, Canada.

10:45 AM 531 Expanding use of high accuracy AI sires in Missouri beef cattle enterprises. D. C. Busch, N. R. Leitman, D. A. Mallory, J. F. Bader, D. J. Wilson, S. E. Poock, M. F. Smith, J. L. Parcell, and D. J. Patterson, University of Missouri, Columbia.

11:00 AM 532 On-line access to the Cattle Producer's Library for disseminating beef cattle educational information. J. C. Whittier, J. W. Oltjen, J. A Paterson, D. R. Zobell, and Western Beef Resource Committee, 1Colorado State University, Fort Collins, 2University of California, Davis, 3Montana State University, Bozeman, 4Utah State University, Logan, 5WBRC, 12 Western USA States.

11:15 AM 533 Using audience response software in equine extension programs. K. Martinson, University of Minnesota, St. Paul.


11:45 AM 535 Maximizing reach via the internet while providing tools for information dissemination in traditional extension environments. E. A. Greene, A. S. Griffin, K. P. Anderson, and C. D. Skelly, 1University of Vermont, Burlington, 2University of Kentucky, Lexington, 3University of Nebraska, Lincoln, 4Michigan State University, Lansing.

**Growth and Development**

**Fetal Development**

**Chair:** Tom Welsh, Texas A&M University

### 511cf

10:30 AM 536 Inadequate protein levels during gestation in gilts affect gestation body mass and fatness as well as offspring birth weight and insulin sensitivity at 10 wk of age. C.C. Metges, I.S. Lang, S. Goers, P. Junghans, U. Hennig, B. Stabenow, F. Schneider, W. Otten, and C. Rehfeldt, Research Institute for the Biology of Farm Animals (FBN), Dummerstorf, MV, Germany.
<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>11:00 AM</td>
<td>538</td>
</tr>
<tr>
<td>11:30 AM</td>
<td>540</td>
</tr>
<tr>
<td>11:45 AM</td>
<td>541</td>
</tr>
</tbody>
</table>
| 10:30 AM | 510bd | SYMPOSIUM  
International Animal Agriculture  
ASAS-EAAP Global Issues  
Chair: Melvin Yokoyama, Michigan State University  
510bd |
| 11:10 AM | 543 | Adaptation of the livestock sector to global climate change: Opportunities and options for animal genetic resources and management systems in developing countries. S. Fernandez-Rivera*, Instituto Nacional de Investigaciones Forestales, Agrícolas y Pecuarias, Mexico City, D.F., Mexico. |
| 11:40 AM | 544 | The role for animal genetic resources under global climate change conditions and rapid development of the livestock sector. I. Hoffmann*, FAO, Rome, Italy. |
| 12:10 PM | 545 | The impact of global climate change, utilization of genetic resource management and livestock sector development on nutrition and health in developing countries. Y. Plante*, and H. Blackburn*, 1Agriculture and Agri-Food Canada, Saskatoon, SK, Canada, 2United States Department of Agriculture, Fort Collins, CO. |
| 10:30 AM | 512ae | Lactation Biology 2  
Chair:  
512ae |
<p>| 10:45 AM | 546 | Prolactin, insulin and cortisone regulate expression of GLUT8 gene in bovine mammary explants. K. Zhao*, H. Y. Liu, and J. X. Liu, Institute of Dairy Science, Ministry of Education Key Laboratory of Molecular Animal Nutrition, Zhejiang University, Hangzhou, P. R. China. |
| 10:45 AM | 547 | Effect of the milking-induced prolactin release on galactopoiesis in dairy cows. V. Lollivier*, R. M. Bruckmaier*, P. Lacasse*, and M. Boutinaud1, 1INRA, AGROCOMPUS OUEST, UMR1080, St. Gilles, France, 2University of Bern, Bern, Switzerland, 3AAFC, Dairy and Swine R&amp;D Centre, Sherbrooke, Canada. |
| 11:00 AM | 548 | Effects of unilateral frequent milking of dairy heifers during early lactation. J. B. Wright*, E. H. Wall, and T. B. McFadden, University of Vermont, Burlington. |</p>
<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>11:15 AM</td>
<td>549</td>
<td>Effects of reduced frequency of milk removal on gene expression in the bovine mammary gland. M. Littlejohn&lt;sup&gt;a&lt;/sup&gt;, C. Walker&lt;sup&gt;b&lt;/sup&gt;, H. Ward&lt;sup&gt;c&lt;/sup&gt;, K. Lehnert&lt;sup&gt;d&lt;/sup&gt;, R. Snell&lt;sup&gt;e&lt;/sup&gt;, G. Verkerk&lt;sup&gt;f&lt;/sup&gt;, R. Spelman&lt;sup&gt;g&lt;/sup&gt;, D. Clark&lt;sup&gt;h&lt;/sup&gt;, and S. Davis&lt;sup&gt;i&lt;/sup&gt;, &lt;sup&gt;a&lt;/sup&gt;DairyNZ Ltd, Hamilton, New Zealand, &lt;sup&gt;b&lt;/sup&gt;ViLaCtion Biosciences Ltd, Auckland, New Zealand, &lt;sup&gt;c&lt;/sup&gt;Livestock Improvement Corporation, Hamilton, New Zealand.</td>
<td></td>
</tr>
<tr>
<td>11:30 AM</td>
<td>550</td>
<td>The ability of exogenous growth hormone to maintain milk production during prolonged lactation in the mouse is more evident with reduced nursing frequency. D. L. Hadsell&lt;sup&gt;j&lt;/sup&gt;, W. Olea&lt;sup&gt;k&lt;/sup&gt;, A. F. Parlow&lt;sup&gt;l&lt;/sup&gt;, and R. J. Collier&lt;sup&gt;m&lt;/sup&gt;, &lt;sup&gt;j&lt;/sup&gt;Baylor College of Medicine, Houston, TX, &lt;sup&gt;k&lt;/sup&gt;Harbor-UCLA Medical Center, Torrance, CA, &lt;sup&gt;m&lt;/sup&gt;The University of Arizona, Tucson.</td>
<td></td>
</tr>
<tr>
<td>12:00 PM</td>
<td>552</td>
<td>Fluoxetine and phenelzine disrupt tight junctions in primary bovine mammary epithelial cells. L. L. Hernandez&lt;sup&gt;o&lt;/sup&gt;, R. J. Collier&lt;sup&gt;p&lt;/sup&gt;, and N. D. Horseman&lt;sup&gt;q&lt;/sup&gt;, University of Cincinnati, Cincinnati, OH, University of Arizona, Tucson.</td>
<td></td>
</tr>
<tr>
<td>12:15 PM</td>
<td>553</td>
<td>Detection of bioluminescent Staphylococcus aureus through bovine mammary gland tissue ex vivo. J. Curbelo&lt;sup&gt;r&lt;/sup&gt;, K. Moulton, E. Schenck, and S. Willard, Mississippi State University, Mississippi State.</td>
<td></td>
</tr>
</tbody>
</table>

**Nonruminant Nutrition**

**Minerals and Vitamins**

**Chair: Gretchen Hill, Michigan State University**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:30 AM</td>
<td>554</td>
<td>Effects of phytase supplementation on apparent and standardized total tract digestibility of P in corn, soybean meal, and distillers dried grains with solubles (DDGS) fed to growing pigs. F. N. Almeida&lt;sup&gt;s&lt;/sup&gt; and H. H. Stein, University of Illinois, Urbana.</td>
<td></td>
</tr>
<tr>
<td>10:45 AM</td>
<td>555</td>
<td>Determination of the stability of Zn, Mn, Cu and Fe glycinites in aqueous solution by electrospray QqTOF mass spectrometry. S. Oguey&lt;sup&gt;t&lt;/sup&gt;, V. Vacchina&lt;sup&lt;u&lt;/sup&gt;, R. Lobinski&lt;sup&gt;u&lt;/sup&gt;, and D. Bravo&lt;sup&gt;v&lt;/sup&gt;, Pancosma, Geneva, Switzerland, UT2A, Pau, France, CNRS, Pau, France.</td>
<td></td>
</tr>
<tr>
<td>11:00 AM</td>
<td>556</td>
<td>Analysis of Zn, Mn, Cu and Fe glycinites by size-exclusion liquid chromatography coupled to an inductively coupled plasma mass spectrometry detection. S. Oguey&lt;sup&gt;w&lt;/sup&gt;, V. Vacchina&lt;sup&gt;x&lt;/sup&gt;, R. Lobinski&lt;sup&gt;y&lt;/sup&gt;, and D. Bravo&lt;sup&gt;z&lt;/sup&gt;, Pancosma, Geneva, Switzerland, UT2A, Pau, France, CNRS, Pau, France.</td>
<td></td>
</tr>
<tr>
<td>11:15 AM</td>
<td>557</td>
<td>Femurs are more accurate than fibulas as predictors of whole body bone mineral content in growing pigs. T. D. Crenshaw&lt;sup&gt;aa&lt;/sup&gt;, L. E. Hoffman, J. R. Danielson, and D. K. Schneider, University of Wisconsin, Madison.</td>
<td></td>
</tr>
<tr>
<td>11:30 AM</td>
<td>226</td>
<td>Calcium chloride and sodium nitrate as nutritional means to overcome the reduction in performance of pigs fed high potassium diets. J. Guimaraes&lt;sup&gt;ab&lt;/sup&gt;, D. Wey, C. Zhu, and C. F. M de Lange, University of Guelph, Guelph, Ontario, Canada.</td>
<td></td>
</tr>
<tr>
<td>11:45 AM</td>
<td>558</td>
<td>Effect of supplemented mined humate on growth, loin quality, and pathological status of liver and kidneys in pigs. C. M. Ballou&lt;sup&gt;ac&lt;/sup&gt;, Y. Zhao, Y. B. Kim, A. C. Chaytor, and S. W. Kim, North Carolina State University, Raleigh.</td>
<td></td>
</tr>
<tr>
<td>12:00 PM</td>
<td>559</td>
<td>Effects of EcoCare® Feed on mineral excretion of pigs during the finishing phase. T. Walraven&lt;sup&gt;ad&lt;/sup&gt;, S. Carter&lt;sup&gt;ae&lt;/sup&gt;, M. Lachmann&lt;sup&gt;af&lt;/sup&gt;, J. Bundy&lt;sup&gt;ag&lt;/sup&gt;, J. Jarrett&lt;sup&gt;ah&lt;/sup&gt;, and B. De Rodas&lt;sup&gt;ai&lt;/sup&gt;, Oklahoma State University, Stillwater, Land O' Lakes Purina Feed, Gray Summit, MO.</td>
<td></td>
</tr>
<tr>
<td>12:15 PM</td>
<td>560</td>
<td>Effects of combining multiple dietary manipulations on growth performance and nutrient excretion of finishing pigs. T. Walraven&lt;sup&gt;aj&lt;/sup&gt;, S. Carter, J. Jarrett, M. Bible, and H. J. Kim, Oklahoma State University, Stillwater.</td>
<td></td>
</tr>
</tbody>
</table>

**Physiology and Endocrinology**

**Impact of Gonadal Steroids on Brain Development and Function**

**Chair: Fredrick Stormshak, Oregon State University**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
</table>
12:30 PM 561 Feedback and fitness: Consequences of non-classical estrogen receptor α signaling in the brain. J. E. Levine*, Northwestern University, Evanston, IL.

11:25 AM 562 Nongenomic actions of estrogens directly on the ovine pituitary facilitates LH secretion. T. Nett*, A. Arevalo-Arreguin†, and T. Davis‡, 1Colorado State University, Fort Collins, 2University of Idaho, Moscow.

12:05 PM 563 Actions of androgens in regulating sexual differentiation of the sheep brain and consequent effects on sexual behavior. C. E. Roselli*1,2 and F. Stormshak3, 1Oregon Health and Science University, Portland, 2Oregon State University, Corvallis.

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


10:45 AM 54 The effect of two calving seasons on cow and calf performance in western Canada. L. C. Girardin1,2, H. A. Lardner2, A. D. Iwaasa1, S. L. Scott1, and S. H. Hendrick1, 1University of Saskatchewan, Saskatoon, Saskatchewan, Canada, 2Western Beef Development Centre, Lanigan, Saskatchewan, Canada.

11:00 AM 565 Clinical stopping rules in sequential field trials. D. B. Nielsen* and C. Enevoldsen, Faculty of Life Sciences, Department of Large Animal Clinical Sciences, University of Copenhagen, Denmark.

11:15 AM 566 Modeling cow body shape for objective estimation of body condition score from digital images. G. Azzaro1, M. Caccamo1,2, J. D. Ferguson3, S. Battiato2, G. M. Farinella3, G. C. Guarnera3, G. Puglisi3, and G. Licitra1,2, 1CoRFiLaC, Regione Siciliana, Ragusa, Italy, 2University of Pennsylvania, Kennett Square, 3IPLAB, University of Catania, Italy.

11:30 AM 567 Effects of calf bedding acidification on microbial content and fly larvae density. M. S. Calvo*, T. L. Armitage, Y. E. Pan, A. Gerry, J. McGarvey, and F. M. Mitloehner, University of California, Davis.


Ruminant Nutrition
Dairy Calves

Effects of free-access feeding and milk replacer acidification on calf performance and development of digestive anatomy. C. G. Todd†, T. J. DeVries‡, K. E. Leslie†, J. M. Sargeant†, N. G. Anderson†, and S. T. Millman†. 1Department of Population Medicine, University of Guelph, Guelph, ON, Canada, 2Department of Animal Poultry Science, University of Guelph, Kemptville Campus, Kemptville, ON, Canada, 3Ontario Ministry of Agriculture, Food and Rural Affairs, Fergus, ON, Canada, 4Veterinary Diagnostic and Production Animal Medicine, Iowa State University, Ames.


Determination of oro-sensorial preferences for energy ingredients in weaned calves. C. Montoro†, F. Boe†, I. Ipharraguerre†, and A. Bach1,2. 1ICREA, Barcelona, Spain, 2Ruminant Production-IRTA, Caldes de Montbui, Spain.

High dietary iron negatively impacts gene products important in iron and manganese metabolism in young calves. S. L. Hansen*, M. S. Ashwell, R. S. Fry, and J. W. Spears, North Carolina State University, Raleigh.

Chair: JoAnne Knapp, Fox Hollow Consulting, LLC

Ruminant Nutrition
Rumen Microbiology

Metagenomics analysis reveals shifts in functional profiles and population dynamics of rumen microbial communities in response to developmental and dietary changes. R. W. Li†, M. E. Sparks†, Y. Huang‡, W. Li‡, E. E. Connor†, R. L. Baldwin VI†, C. Li†, and T. Sonstegard†. 1United States Department of Agriculture, Agricultural Research Service, Bovine Functional Genomics Laboratory, Beltsville, MD, 2University of California, San Diego.

pH dynamics and bacterial community composition in the rumen of lactating dairy cows. A. Palmonari†, D. M. Stevenson†, D. R. Mertens†, C. W. Cruyven†, and P. J. Wiemer†. 1DIMORFIPA, University of Bologna, Bologna, Italy, 2USDA-ARS-U.S. Dairy Forage Research Center, Madison, WI, 3Department of Animal Science, University of Stellenbosch, Stellenbosch, Republic of South Africa.

Effect of supplemental carbohydrate source and level on in vitro gas production estimates. A. Britos†, N. Pomáis†, J. L. Repetto‡, and C. Cajarville†. 1Department of Animal Nutrition, Faculty of Veterinary, UdelaR, Montevideo, Uruguay, 2Department of Bovines, Faculty of Veterinary, UdelaR, Montevideo, Uruguay.

Effect of ruminal protozoa on urea-nitrogen recycling in growing lambs fed varying dietary protein concentrations. D. Kiran* and T. Mutsvangwa, University of Saskatchewan, Saskatoon, Saskatchewan, Canada.

Differential chemotaxis by entodiniomorphids and isotrichids toward glucose after incubation with emulsified polyunsaturated fatty acids. H. L. Diaz*, A. M. Stallford, K. N. Barr, and J. L. Firkins, The Ohio State University, Department of Animal Sciences, Columbus.

From Redox potential field measurement to its bioenergetic meaning in the rumen. J. P. Marden†, E. Ungerfeld†, R. A. Kohn*, C. Julien†, E. Auclair†, R. Moncoulon†, and C. Bayouthe†. 1Université de Toulouse, INRA, Castanet-Tolosan, France, 2Lesaffre Feed Additives, Marquette-Lez-Lille, France, 3Agriculture and Agri-Food Canada, Lethbridge, Canada, 4University of Maryland, College Park.
### Ruminant Nutrition 2

**Chair: Cathy Bandyk, Quality Liquid Feeds**

<table>
<thead>
<tr>
<th>Time</th>
<th>Page</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:30 AM</td>
<td>582</td>
<td>Pharmacological amounts of nicotinic acid can reduce isoproterenol-stimulated lipolysis in cattle, but also reduce feed intake. K. S. Spivey, E. C. Titgemeyer*, and B. J. Bradford, Kansas State University, Manhattan.</td>
</tr>
<tr>
<td>10:45 AM</td>
<td>583</td>
<td>Effects of niacin infusion on transcript and protein abundance of the niacin receptor GPR109A in bovine tissues. B. J. Bradford*, L. K. Mamedova, K. S. Spivey, and E. C. Titgemeyer, Kansas State University, Manhattan.</td>
</tr>
<tr>
<td>11:45 AM</td>
<td>587</td>
<td>In vitro evaluation of four bacterial species as potential probiotics in the rumen. T. W. Priambodo, J. Hummel, S. Kehraus, and K.-H. Südekum*, University of Bonn, Bonn, Germany.</td>
</tr>
<tr>
<td>12:00 PM</td>
<td>588</td>
<td>Feeding behaviour of wethers fed a temperate pasture with different time of access to food and supplemented with or without additives. A. Pérez-Ruchel, J. L. Repetto*, M. Michelini, L. Pérez, G. Soldini, and C. Cajarville, Departamento de Nutrición Animal, Facultad de Veterinaria, Montevideo, Uruguay, Departamento de Bovinos, Facultad de Veterinaria, Montevideo, Uruguay.</td>
</tr>
</tbody>
</table>

### Small Ruminant Nutrition

**Chair: Ken Andries, Kentucky State University**

<table>
<thead>
<tr>
<th>Time</th>
<th>Page</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:45 AM</td>
<td>590</td>
<td>Effect of yeast (Saccharomyces cerevisiae) culture supplementation to medium-quality hay on nutrient digestibilities by goats of two different body sizes. D. V. G. Krishna Mohan, J. Hummel, and K.-H. Südekum*, Sri Venkateswara Veterinary University, Tirupati, Andhra Pradesh, India, University of Bonn, Bonn, Germany.</td>
</tr>
<tr>
<td>11:00 AM</td>
<td>591</td>
<td>Performance of lambs fed ensiled orange pulp treated with exogenous enzymes. H. Gado, A. Z. M. Salem, H. Alsersy, B. E. Borhami, and M. El-Adawy, Faculty of Agriculture, Ain Shams University, Egypt, Faculty of Agriculture, Alexandria University, Egypt, Animal Production ARC, Ministry of Agriculture, Egypt, Universidad Autónoma del Estado de México, Centro Universitario UAEM, Temascaltepec, México.</td>
</tr>
<tr>
<td>11:15 AM</td>
<td>592</td>
<td>Effect of tea saponin and soybean oil on performance of growing lambs and protozoa community in the rumen. H. L. Mao, J. K. Wang, and J. X. Liu, Institute of Dairy Science, Ministry of Education Key Laboratory of Molecular Animal Nutrition, Zhejiang University, Hangzhou, P.R. China.</td>
</tr>
<tr>
<td>11:30 AM</td>
<td>593</td>
<td>The effects of replacing dried citrus pulp with barley grain on the performance of Iranian Saanen kids. A. Naserian, M. Mahdi Sargolzehi, and H. Gholizadeh, Ferdowsi University of Mashhad, Mashhad/Khuran Razavi Province, Iran.</td>
</tr>
<tr>
<td>Time</td>
<td>Page</td>
<td>Content</td>
</tr>
<tr>
<td>------------</td>
<td>------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>12:15 PM</td>
<td>596</td>
<td>Factors affecting dietary intake and colostrum production in ewes. A. G. Fahey*, T. F. Crosby, and T. M. Boland, School of Agriculture, Food Science, and Veterinary Medicine, University College Dublin, Belfield, Dublin, Ireland.</td>
</tr>
</tbody>
</table>

**OTHER EVENTS**

**Mixed Models**  
520ad  
10:30 AM–12:30 PM

**SYMPOSIA AND ORAL SESSIONS**

**SYMPOSIUM**

**ADSA Production Division Symposium**  
Driving Forces in the Dairy Industry That Will Change Dairy Farm Management  
Chair: John Vicini, Monsanto  
524

<table>
<thead>
<tr>
<th>Time</th>
<th>Page</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:00 PM</td>
<td>597</td>
<td>Introduction. Karen Plaut (Michigan State University) and Tony Capuco (USDA).</td>
</tr>
<tr>
<td>2:05 PM</td>
<td>598</td>
<td>The dairy scientist’s role in re-connecting the dairy food-chain. K. Murphy*, Food-Chain Communications, Lee's Summit, MO.</td>
</tr>
<tr>
<td>3:25 PM</td>
<td></td>
<td>Break</td>
</tr>
<tr>
<td>4:20 PM</td>
<td></td>
<td>Affects of climate change and environmental regulation on management of dairy farms. W. Powers* and D. Meyer*, 1 Michigan State University, East Lansing, 2 University of California, Davis.</td>
</tr>
</tbody>
</table>

**Animal Health**  
Calf Health, Respiratory Disease, etc.  
Chair: Isis Mullarky, Virginia Polytechnic Institute and State University  
511cf
mRNA expression of genes regulating oxidative phosphorylation in the muscle of beef cattle divergently ranked on residual feed intake. A. K. Kelly1, S. M. Waters2, M. McGee3, C Carberry1,2, D. H. Crews Jr2, T. M. Boland1, and D. A. Kenny1, 1School of Agriculture, Food Science and Veterinary

Beef Species

Health, Efficiency and Beef Quality

Chair: Ryon Walker, University of Minnesota

519


3:30 PM Break


4:30 PM 622 Fatty acid profile in beef meat and baby food based on beef meat. A. Nudda, G. Battacone, R. Boe, M. G. Manca, M. Mele, A. Serra, and G. Pulina. Dipartimento di Scienze Zootecniche, University of Sassari, Italy. Dipartimento di Agronomia e Gestione dell'Agroecosistema, University of Pisa, Italy. Agricultural Research Agency of Sardinia - AGRIS Sardegna, Sassari, Italy.

Breeding and Genetics

Breeding and Genetics Workshop

Chair: Ronnie Green, Pfizer Animal Genetics

512ae


2:45 PM 624 Recent developments in genetic evaluation tools. D. Garrick. Iowa State University, Ames.

Breeding and Genetics

Molecular Genetics II

Chair: Cathy Ernst, Michigan State University

510bd
Development and validation of SNP markers comprising the IGENITY® profile for carcass traits and ADG in beef cattle. B. W. Woodward*, J. D. Nkrumah, Merial Ltd., Duluth, GA.


Whole genome candidate gene approaches to identifying gene SNP markers influencing fat deposition and carcass merit in beef cattle. C. Li1,2, M. Vinsky1, R. Crews1, E. Okine2, S. S. Moore2, and D. H. Crews Jr.2,4. 1Agriculture and Agri-Food Canada, Lacombe Research Centre, Lacombe, Alberta, Canada. 2Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, Alberta, Canada. 3Agriculture and Agri-Food Canada, Lethbridge Research Centre, 5403-1st Avenue South, Lethbridge, Alberta, Canada. 4Colorado State University, Fort Collins.


Reproductive responses of dairy cows to supplemental fat. J. D. Ferguson1, D. W. Remsburg*1, E. Block2, and Z. Wu1. 1University of Pennsylvania, New Bolton Center, Kennett Square. 2Arm and Hammer Animal Nutrition Group, Church & Dwight Co. Inc., Princeton, NJ.

Differential gene expression in Suffolk ewes exposed to subacute dietary nitrate. R. C. Cockrum1, K. J. Austin1, P. A. Ludden1, J. F. Taylor2, J. W. Kim3, S. C. Fahrenkrug1, J. R. Garbe1, and K. M. Cammack1. 1University of Wyoming, Laramie. 2University of Missouri, Columbia. 3University of Minnesota, St. Paul.

Effects of high-sulfur water on growth performance and gene expression of steers fed forage-based diets. K. L. Kessler1, K. C. Olson2, C. L. Wright2, K. J. Austin1, K. McInerney1, P. S. Johnson2, and K. M. Cammack1. 1University of Wyoming, Laramie. 2South Dakota State University, Brookings. 3University of Montana, Bozeman.

Development and independent validation of SNP markers comprising the IGENITY® profile for feed intake and efficiency in indicus-influenced beef cattle. B. W. Woodward*1, J. D. Nkrumah1, P. A. Lancaster2, G. E. Carstens2, and D. J. Johnston3. 1Merial Limited, Duluth, GA. 2Texas A&M University, College Station. 3University of New England, Armidale, NSW, Australia.

Effects of single nucleotide polymorphisms in stearoyl CoA desaturase and fatty acid synthase on milk yield, composition, and fatty acid profile in lactating Holstein cows. L. Clark*, S. Moore, and M. Oba, University of Alberta, Edmonton, Alberta, Canada.


Analysis of quantitative trait loci affecting female fertility and twinning rate in Israeli Holsteins on chromosome 7. J. I. Weller*1, M. Oba, G. Glick1, M. Golik1, E. Ezra2, Y. Zeron3, E. Seroussi1, and M. Ron1. 1ARO, The Volcani Center, Bet Dagan, Israel. 2Israele Cattle Breeders Association, Cuesaria, Israel. 3Sion, Shikmim, Israel.

Seasonal based genetic regulation of reproductive traits in a male turkey line. L. A. Case, University of Guelph.

SYMPOSIUM
Contemporary and Emerging Issues Joint with Extension Education
Science-Based Approaches to Address Consumer Concerns with the Processing and Marketing of Animal Products
### Chair: Kerry Kaylegian, Pennsylvania State University

2:00 PM Opening remarks. Stephanie Clark (Washington State Univ.) and Kerry Kaylegian (Pennsylvania State Univ.).

2:05 PM Effects of cattle production practices on environmental quality. F. M. Mitloehner*, University of California, Davis.


3:05 PM Lactose intolerance and milk avoidance: An unnecessary risk for low calcium intake and poor bone health. D. A. Savaiano*, Purdue University, West Lafayette.

3:25 PM Break


4:15 PM Panel discussion

### SYMPOSIUM

### CSAS Symposium

#### Functional Foods, Probiotics and Animal Health

Chair: Xin Zhao, McGill University

2:00 PM Introduction

2:05 PM Postnatal development of the mucosal immune system in domestic animals and consequences on health in adulthood. M. Bailey*, University of Bristol, Bristol, UK.

2:35 PM Use of probiotics and prebiotics to modulate intestinal health in monogastric farm animals. M. Lessard*, X. Zhao2, and F. Guay3, 1Dairy and Swine Research and Development Centre, Agriculture and Agri-Food Canada, Sherbrooke, Quebec, Canada, 2McGill University, Department of Animal Science, Montreal, Quebec, Canada, 3Université Laval, Département des sciences animales, Quebec, Quebec, Canada.

3:05 PM A review of the use of direct-fed microbials to mitigate pathogens and enhance production in cattle. T. A. McAllister4, K. A. Beauchemin1, J. Baah1, R. M. Teather1, and K. Stanford1, 1Agriculture and Agri-Food Canada Research Centre, Lethbridge, Alberta, Canada, 4Alberta Agriculture and Rural Development, Lethbridge, Alberta, Canada.

3:35 PM Influence of functional food on intestinal microbiota and their subsequent relationship with health. J. Escobar* and M. A. Ponder, Virginia Polytechnic Institute and State University, Blacksburg.

4:05 PM Influence of fermented products on health. E. Farnworth*, Food Research and Development Centre, Agriculture and Agri-Food Canada, Saint Hyacinthe, QC, Canada.

4:35 PM Closing

### SYMPOSIUM

Dairy Foods

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

2:00 PM 648 Introduction to scientific principles and engineering technologies in microencapsulation as applicable to dairy foods. K. Kailasapathy*, University of Western Sydney, Richmond, NSW, Australia.

2:30 PM 649 Benefits of encapsulation of probiotics during processing and storage of dairy products. C. P. Champagne*, Agriculture and Agri-Food Canada, St. Hyacinthe, QC, Canada.

3:00 PM 650 Strategies to improve survival of probiotic bacteria using microencapsulation and to reduce the size of microcapsules for food applications. W.-K. Ding and N. P. Shah*, Victoria University, Melbourne, Victoria, Australia.

3:30 PM 651 Food protein micro/nano particles for controlled nutraceutical delivery in functional foods. L. Chen*1 and M. Subirade2, 1University of Alberta, Edmonton, AB, Canada, 2Université Laval, Quebec, QC, Canada.

4:00 PM 652 Microencapsulation of recombinant enzymes for application in accelerated cheese ripening. B. H. Lee*1,2, 1Agriculture and Agri-Food Canada, Food R&D Centre, St-Hyacinthe, QC, Canada, 2McGill University, Montreal, QC, Canada.

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

2:00 PM 653 Indigenous enzymes in mammalian milk: Scientific, technological and physiological significance. A. Kelly*, University College Cork, Cork, Ireland.


3:00 PM 655 Proteolytic enzymes associated with somatic cell count and their relevance in raw milk and dairy products. L. B. Larsen*, Institute of Food Science, Faculty of Agricultural Sciences, Aarhus University, Denmark.

3:30 PM 656 Lipases and lipolysis in milk and dairy products. H. C. Deeth*, School of Land, Crop and Food Sciences, University of Queensland, Brisbane, Queensland, Australia.

4:00 PM 657 Native proteases in milk: Current knowledge and relevance to dairy industry. B. Ismail*1 and S. Nielsen*, 1University of Minnesota, St. Paul, 2Purdue University, West Lafayette, IN.

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

2:00 PM Introduction. Tamilee Nennich.

2:05 PM 658 To keep or cull a cow: An economic decision. A. De Vries*, University of Florida, Gainesville.

2:35 PM 659 Modeling the economic impact of reproductive change. M. W. Overton*, University of Georgia, Athens.

3:05 PM 660 Modeling nutrition decisions. M. D. Hanigan*, Virginia Polytechnic Institute and State University, Blacksburg.
3:35 PM 661 A large Markovian linear program model for dairy herd decision-making. V. E. Cabrera*, University of Wisconsin, Madison.

4:05 PM 662 Impact of disease on dairy production decisions. D. Galligan*, University of Pennsylvania, Kennett Square.

4:35 PM Discussion

Forages and Pastures
Harvested Forages, Ensiling and Forage Utilization
Chair: 510ac


2:15 PM 664 Amaferm level and form on digestibility of forage differing in quality. J. Nocek*1 and H. Jensen2, 1Spruce Haven Research Center, Auburn, NY, 2Biozyme Inc, St Joseph, MO.

2:30 PM 665 The ability of enterococci to survive the ensiling process. S. N. Masiello* and C. S. Petersson-Wolfe, Virginia Polytechnic Institute and State University, Blacksburg.

2:45 PM 666 Expression of genes related to cell wall digestibility of tropical forages. S. S. Stable1, L. Jank1, A. P. Bodin1, N. S. Oliveira1, L. V. Marçot1, and L. F. P. Silva91, 1Universidade de Sao Paulo, Pirassununga, SP, Brazil, 2EMBRAPA, Campo Grande, MS, Brazil.

3:00 PM 667 Effect of citrate synthase genes transformed into alfalfa on aluminum tolerance of its cells. F. Fan*, J. J. Li, Y. M. Wu, and J. X. Liu, Zhejiang University, Hangzhou, P. R. China.

3:15 PM 668 A survey of condensed tannin concentrations in vegetative and mature legume forages in western Canada. N. Berard1, K. Omini*1, K. Wittenberg1, D. Krause1, T. McAllister2, and Y. Wang2, 1University of Manitoba, Agriculture and Agri-Food Canada.

3:30 PM 669 Development of prediction equations to estimate hay intake of beef cows under limited access feeding times. T. S. Dennis*1, T. D. Nemich1, R. P. Lemenager1, C. J. Fleenor1, S. L. Lake2, and L. J. Unruh-Snyder1, 1Purdue University, West Lafayette, IN, 2University of Wyoming, Laramie.

3:45 PM 670 Whole plant barley NDF digestibility and its relationship with chemical constituents and dry matter yield. M. L. Swift*1, M. Oba2, P. E. Juskiw1, and J. H. Helm1, 1Alberta Agriculture and Rural Development, Lacombe, AB, Canada, 2University of Alberta, Edmonton, AB, Canada.

4:00 PM 671 Forage quality of biomass vs. conventional alfalfa cut at early bud or late flower maturity. H. G. Jung*1, K. P. Rock2, and J. F. S. Lamb1, 1USDA-ARS, St. Paul, MN, 2University of Minnesota, St. Paul.


Nonruminant Nutrition
Feed Additives
Chair: Janet Remus, Danisco Animal Nutrition 518

2:00 PM 673 Effects of supplementation of yeast culture to sow diets on reproductive performance and physiological changes in sows and nursing piglets. S. W. Kim*1, C. Vasquez2, A. Saraiva1, and L. Yoon1, 1North Carolina State University, Raleigh, 2Texas Tech University, Lubbock, 3Diamond V Mills, Cedar Rapids, IA.

2:15 PM 674 Effects of supplementation of yeast culture to diets of sows and offspring on growth and meat quality of offspring. A. C. Chaytor*1, C. Vasquez2, V. Fellner1, I. Yoon1, and S. W. Kim1, 1North Carolina State University, Raleigh, 2Texas Tech University, Lubbock, 3Diamond V Mills, Cedar Rapids, IA.
Use of a phytonic feed additive in sows during the lactation. Y. Acosta Aragón¹, D. Uribe López², A. Pedroche Quevedo³, and T. Steiner*¹, ¹Biomin Holding GmbH, Herzogenburg, Lower Austria, Austria, ²Agropecuaria ALFA S.A., Cundinamarca, Colombia, ³NUTRECO S.A., Bogotá, Colombia.

Selection of probiotic strains for combined competitive exclusion treatment in piglets. V. Klose¹, K. Bayer¹, R Bruckbeck¹, V. A. Sattler¹, A. P. Lobmer³, C. Mair², and G. Schatzmayer¹, ¹BOKU-University, Vienna, Department IFA-Tulln, A-3430 Tulln, Austria, ²BOKU-University, Vienna, Department of Food Sciences and Technology, A-1180 Vienna, Austria, ³BIOMIN Research Center, A-3430 Tulln, Austria.


Digestible energy in resistant starch and dietary fiber sources fed to pigs. S. K. Cervantes-Pahn*, B. G. Kim, and H. H. Stein, University of Illinois, Urbana.

Feed additives for the amelioration of aflatoxicosis in growing pigs. A. F. Harper*¹, M. J. Estienne¹, J. B. Meldrum², R. J. Harrell³, and D. E. Diaz³, ¹Virginia Polytechnic Institute and State University, Blacksburg, ²VA-MD Regional College of Veterinary Medicine, Blacksburg, VA, ³Novus International, Inc., St. Charles, MO.

Xylanase supplementation improves nutrient and energy digestibility in pigs fed corn-soybean meal diets containing 20% corn dried distillers' grains. J. A. Jendza¹, A. Owusu-Asiedu², P. H. Simmons³, and O. Adeola¹, ¹Purdue University, West Lafayette, IN, ²Danisco Animal Nutrition, Marlborough, UK.

Effect of processing method and enzyme supplementation on the apparent metabolizable energy (AMEₐ) of different oilseed meals. B. Jayaraman*¹, E. F. Mader, S. M. Rogers, S. Issa, A. C. Fahrenholz, L. J. McKinney, J. D. Hancock, and K. C. Behnke, Kansas State University, Manhattan.

Effect of adding a pelleted protein supplement to processed corn in diets for nursery pigs. S. M. Williams*, E. F. Mader, S. M. Rogers, S. Issa, A. C. Fahrenholz, L. J. McKinney, J. D. Hancock, and K. C. Behnke, Kansas State University, Manhattan.

Effect of a dry organic acid blend on pig performance during the Paylean® phase of growth. R. J. Harrell*, F. Navarro¹, J. Zhao¹, M. Vazquez-Anón¹, B. R. Hinson², G. L. Allee², and C. D. Knight¹, ¹Novus International, Inc., St. Charles, MO, ²University of Missouri, Columbia.

**Physiology and Endocrinology**

**Livestock Physiology**

Chair: Rhonda C. Vann, Mississippi State University

513ab

Plant-based diets enriched with linseed oil or marine algae and organic selenium modify sperm fertility parameters in boiler breeders over the reproductive cycle. C. Coss¹, C. Brèque¹, R. Gervais², C. Lessard¹, D. Venne¹, M. R. Lefrançois², P. Y. Chouinard², G. Vandenberg³, and J. L. Bailey¹, ¹Centre de recherche en biologie de la reproduction, Québec, QC, Canada, ²Département des sciences animales, Université Laval, Québec, QC, Canada, ³Couvoir Scott Léée, Scott Jonction, QC, Canada.

Evaluation of sperm fertilizing capability in stored semen collected from boars fed a diet supplemented with organic selenium. S. Speights¹, M. Estienne¹, B. Whitaker², A. Harper², R. Crawford¹, and J. Knight¹, ¹Virginia Polytechnic Institute and State University, Blacksburg, ²Ferrum College, Ferrum, VA.

Use of infrared thermal imaging of the muzzle as a measure of body temperature in sheep and cattle. R. W. Godfrey¹, R. C. Ketting¹, S. S. Robinson¹, and S. T. Willard², ¹University of the Virgin Islands, Agricultural Experiment Station, St Croix, VI, ²Mississippi State University, Department of Animal and Dairy Sciences and Department of Biochemistry and Molecular Biology, Mississippi State.

Relationship of rumen temperature with estrus in beef cows. C. L. Bailey*, M. J. Prado-Cooper, E. C.
Physiology and Endocrinology

Metabolic Physiology

Chair: Rhonda C. Vann, Mississippi State University

514

2:00 PM 695  Tumor necrosis factor alpha increases triglyceride content and alters transcript abundance of metabolic genes in the liver of lactating dairy cattle. B. J. Bradford*, L. K. Mamedova, J. E. Minton, J. S. Drouillard, and B. J. Johnson, Kansas State University, Manhattan.

2:15 PM 696  Effects of feeding colostrum on somatotrophic axis, metabolic traits and vital signs of Holstein bull calves. D. Qadimi, A. Zare Shahne, A. Nikkhah, M. Moradi, and R. Masoumi*, University of Tehran, Iran.

2:30 PM 697  Continuously infused obestatin increased pancreatic β-cell function in response to an intravenous glucose tolerance test. J. R. Roche¹, A. J. Sheahan¹, L. M. Chagas³, J. K. Kay¹, and R. C. Boston², ¹DairyNZ, Hamilton, NZ, ²University of Pennsylvania, Kennett Square.

2:45 PM 698  Residual feed intake and heat production of Holstein cows throughout lactation. A. Brosh¹, A. Asher¹, J. Miron¹, A. Shabtai¹, G. Adin³, U. Moalem², Y. Aharoni¹, and A. Arieli³, ¹Agricultural Research Organization, Ramat Yishay, Israel, ²Agricultural Research Organization, Bet-Dagan, Israel, ³Extension Service, Ministry of Agriculture, Bet-Dagan, Israel, ⁴Hebrew University of Jerusalem, Faculty of Agricultural, Rehovot, Israel.

3:00 PM 699  IGF-1 concentrations following sustained release growth hormone treatment in ewes. T. A. Wilmoth*, J. M. Koch, C. O. Lemley, and M. E. Wilson, West Virginia University, Morgantown.


3:45 PM 702  The acute phase response: Differentiating corticotrophin-releasing hormone (CRH) versus...
Fibroblast growth factor 21 (FGF21) expression is increased in hepatic tissue of feed-restricted cows and during the transition from pregnancy to lactation. K. J. Harvatine*1 and Y. R. Boisclair, 1Penn State University, University Park, 2Cornell University, Ithaca, NY.

Expression of thyroid hormone responsive spot 14 and a homologous protein (MIG12) are dynamically regulated in adipose tissue of dairy cows during modification of energy balance. K. J. Harvatine*1, Y. R. Boisclair, and D. E. Bauman, 1Penn State University, University Park, 2Cornell University, Ithaca, NY.

TNFα and factors related to insulin signaling in adipose tissue of dry- and early lactating dairy cows. H. Sadri1,2, A. van Dorland1, G. R. Ghorbani2, H. R. Rahmani2, and R. M. Bruckmaier*1, 1University of Bern, Vetsuisse Faculty, Veterinary Physiology, Bern, Switzerland, 2Isfahan University of Technology, Department of Animal Science, Isfahan, Iran.

Differential effects of propionate on mRNA abundance of adiponectin receptors and G protein-coupled receptor GPR41 in bovine subcutaneous and perirenal adipose tissue explants in vitro. A. Hosseini*, H. Sauerwein, and M. Mielenz, University of Bonn, Bonn, Germany.

---

**Ruminant Nutrition**

**Dairy 2**

**Chair: Paul Kononoff, University of Nebraska**

**516c**

Effect of grain type and processing method on rumen fermentation and milk rumenic acid production. R. Mohammed*1, J. J. Kennelly2, J. K. G. Kramer3, K. A. Beauchemin4, C. S. Stanton4, and J. J. Murphy4, 1University of Alberta, Edmonton, AB, Canada, 2Agriculture and Agri-Food Canada, Guelph, ON, Canada, 3Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, 4Teagasc, Moorepark, Co. Cork, Ireland.


Feeding dairy cows barley grain treated with lactic acid and heat increased milk fat content and prevented the decline of rumen pH to sub-clinical ruminal acidosis (SARA) values. Z. Zebeli*, S. M. Dunn, and B. N. Ametaj, University of Alberta, Edmonton, AB, Canada.

Overfeeding energy prepartum dramatically affects peripartal expression of mRNA transcripts in subcutaneous adipose tissue compared with controlling energy intake prepartum. N. A. Janovick*1, J. J. Loor1, P. Ji1, R. E. Everts1, H. A. Lewin1,2, S. L. Rodriguez-Zas3, and J. K. Drackley1, 1University of Illinois, Urbana, 2Institute for Genomic Biology, Urbana, IL.


Effects of replacing corn grain with molasses on ruminal fermentation and milk component production in dairy cows. C. A. Martel*, E. C. Tiggesmeyer, and B. J. Bradford, Kansas State University, Manhattan.

Effects of feeding increasing levels of wet corn gluten feed on digestibility, rumen pH, and VFA concentrations of lactating Holstein cows. C. R. Mullins*1, L. K. Mamedova1, K. N. Grigsby2, and B. J. Bradford1 1Kansas State University, Manhattan, 2Cargill Inc., Blair, NE.

Effects of wet corn gluten feed inclusion rates on productivity of lactating Holstein cows. C. R.
4:00 PM 714 Response of lactating dairy cows to high protein distillers grains or three other protein supplements. K. A. Christen*1, D. J. Schingoethe1, K. F. Kalscheur1, A. R. Hippen1, K. Karges2, and M. L. Gibson2. 1South Dakota State University, Brookings, 2Dakota Gold Research Association, Sioux Falls, SD.


4:30 PM 716 Effects of forage type on nitrogen utilization in dairy cows consuming diets high in wet distillers grains with solubles. A. M. Gehman* and P. J. Kononoff, University of Nebraska, Lincoln.


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

2:00 PM 719 ADSA Pioneer:

2:00 PM 719 ADSA Pioneer: Thirty-eight years of vitamin D and calcium research: From dairy cows to humans. R. L. Horst*, Heartland Assays, Inc., Ames, IA.

2:30 PM 720 The optimum dietary Ca concentration to minimize the risk of hypocalcaemia in dairy cows is affected by dietary cation-anion difference. M. Oba*, A. Oakley1, and G. Tremblay2, 1University of Alberta, Edmonton, AB, Canada, 2Agriculture and Agri-Food Canada, Quebec, QC, Canada.

2:45 PM 721 Effects of copper deficiency on gene expression profiles of copper transporters and chaperones in steers. R. S. Fry*, M. S. Ashwell1, S. L. Hansen1, T. E. Engle2, H. Han2, and J. W. Spears1, 1North Carolina State University, Raleigh, 2Colorado State University, Fort Collins.

3:00 PM 722 Strategic use of naturally selenium-rich milling coproducts to manage selenium deficiency. J. B. Taylor*, USDA, Agricultural Research Service, Dubois, ID.

3:15 PM 723 Effects of nutritional plane and selenium supply on intestinal mass, cellularity, and proliferation in the ewe. A. M. Meyer*, J. J. Reed1, T. L. Neville1, L. R. Coupe1, J. B. Taylor2, L. P. Reynolds1, D. A. Redmer1, K. A. Vonnahme1, and J. S. Caton1, 1North Dakota State University, Fargo, 2USDA-ARS, U.S. Sheep Experiment Station, Dubois, ID.

3:30 PM 724 Mineral balances in California dairy farms. A. R. Castillo*, N. St-Pierre2, and N. Silva del Rio1, 1University of California, Cooperative Extension, Merced, 2The Ohio State University, Columbus.


4:00 PM 726 Impact of phosphorus form on utilization in lactating dairy cows. K. J. Lager*, M. J. Brouk, B. J. Bradford, and J. P. Harner, Kansas State University, Manhattan.

4:15 PM 727 Effect of 4-Plex® on milk production, reproduction and claw integrity of dairy cows. J. M. DeFrain*, M. T. Socha1, D. J. Tomlinson1, and D. Kluth1, 1Zinpro Corporation, Eden Prairie, MN, 2Standard Dairy Consultants, Omaha, NE.

4:30 PM 728 Metabolic and productive responses to supplemental chromium in early-lactation heat-stressed cows. M. Mirzaei1, G. R. Ghorbani1, M. Khorvash1, H. R. Rahmani1, and A. Nikkhah2,1, Isfahan University
### OTHER EVENTS

**Mixed Models**  
**520ad**  
**2:00 PM–5:00 PM**

---

### SYMPOSIA AND ORAL SESSIONS

#### Thursday, July 16

**Animal Behavior and Well-Being 2**  
**Chair: Marina von Keyserlingk, University of British Columbia**  
**511ad**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Authors and Affiliations</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30 AM</td>
<td>729</td>
<td>Behavior-nutrition interaction in swine. J. N. Marchant-Forde*</td>
<td>USDA-ARS, West Lafayette, IN</td>
</tr>
<tr>
<td>9:00 AM</td>
<td>730</td>
<td>Effect of distance moved during loading, lairage time, and distance moved to stun on blood lactate concentration of pigs in a commercial slaughter plant. L. N. Edwards*1, T. Grandin1, T. E. Engle1, M. J. Ritter2, A. Sosnicki3, B. A. Carlson1, and D. B. Anderson1, 1Colorado State University, Fort Collins, 2Elanco Animal Health, Greenfield, IN, 3PIC, Hendersonville, TN.</td>
<td></td>
</tr>
<tr>
<td>9:15 AM</td>
<td>218</td>
<td>The effect of animal location during transit on heart rate of pigs transported to slaughter using two vehicle types. J. A. Correa*1, H. Gonyou2, R. Bergeron3, S. Torrey3, T. Crowe3, T. Widowski1, J. P. Laforest1, C. Dewey1, N. Lewis6, and L. Faucitano1, 1Prairie Swine Centre, Saskatoon, Saskatchewan, Canada, 2University of Saskatchewan, Saskatoon, Saskatchewan, Canada, 3University of Manitoba, Winnipeg, Manitoba, Canada.</td>
<td></td>
</tr>
<tr>
<td>9:30 AM</td>
<td>731</td>
<td>Validation of saliva sampling techniques in swine in order to assess stress responses. S. M. Hayne*1, N. J. Cook2, and H. W. Gonyou12, 1Prairie Swine Centre, Saskatoon, SK, Canada, 2Alberta Agriculture and Rural Development, Edmonton, AB, Canada, 3University of Saskatchewan, Saskatoon, SK, Canada.</td>
<td></td>
</tr>
<tr>
<td>9:45 AM</td>
<td>732</td>
<td>Influence of season on the behaviour of market weight pigs transported 2 hours to slaughter. S. Torrey*1, S. Hayne2, R. Bergeron3, L. Faucitano1, T. Widowski3, N. Lewis4, T. Crowe5, C. Dewey3, and H. Gonyou23, 1Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, 2Prairie Swine Centre, Saskatoon, SK, Canada, 3University of Guelph, Guelph, ON, Canada, 4University of Manitoba, Winnipeg, MB, Canada, 5University of Saskatchewan, Saskatoon, SK, Canada.</td>
<td></td>
</tr>
<tr>
<td>10:00 AM</td>
<td>733</td>
<td>Effects of linoleic and α-linolenic acid intake on pig behaviour, and its relationship with brain DHA. J. E. Bolhuis, I. van Kerkhof, and W. J. J. Gerrits*, Wageningen University, Wageningen, the Netherlands.</td>
<td></td>
</tr>
<tr>
<td>10:15 AM</td>
<td>734</td>
<td>The motivation of gestating sows for environmental enrichment in a stall. M. R. Elmore*1, J. P. Garner1, A. K. Johnson2, R. D. Kirkden1, E. G. Patterson-Kane1, B. T. Richert1, and E. A. Pajor2, 1Purdue University, West Lafayette, IN, 2Iowa State University, Ames.</td>
<td></td>
</tr>
<tr>
<td>10:45 AM</td>
<td>735</td>
<td>Effect of premolar eruption on growth and behaviour of weaned piglets. A. L. Tucker* and T. M.</td>
<td></td>
</tr>
</tbody>
</table>
Anhalt, Germany

8:30 AM 738

8:45 AM 739

9:00 AM 740
Positive percent heterosis for fat-corrected milk per day of life from Holstein-Jersey diallel. R. D. Shanks*, B. G. Cassell, K. M. Olson, A. J. McAllister, and S. P. Washburn, University of Illinois, Urbana, Virginia Polytechnic Institute and State University, Blacksburg, University of Kentucky, Lexington, North Carolina State University, Raleigh.

9:15 AM 741

9:30 AM 742

9:45 AM 743
Break

10:00 AM 744
Montbeliarde-sired crossbred cows compared to pure Holstein cows for body weight, body condition score, hip height, dry matter intake, and production during the first 150 days of first lactation. A. R. Hazel*, B. J. Heins, L. B. Hansen, A. J. Seykora, D. G. Johnson, and J. G. Linn, University of Minnesota, Saint Paul.

10:15 AM 745

10:30 AM 746
Preliminary analysis of NRF-Holstein crossbred cattle in Israel. E. Ezra1, Y. Zeron2, and J. I. Weller3, 1Israel Cattle Breeders Association, Caesaria, Israel, 2Sion, Shikmin, Israel, 3ARO, The Volcani Center, Bet Dagan, Israel.

10:45 AM 747
Brown Swiss × Holstein crossbreds compared to pure Holsteins for production, SCS, milking speed, days to first breeding and days open. S. Bloettner3, M. Wensch-Dorendorf4, H. H. Swalve1, B. J. Heins2, and L. B. Hansen2, 1Group Animal Breeding, Halle (Saale), Saxony-Anhalt, Germany, 2Department of Animal Breeding, Saint Paul, MN.

11:00 AM 748
Brown Swiss × Holstein crossbreds compared to pure Holsteins for body weight, back fat thickness and udder measurements during the first two lactations. S. Bloettner3, M. Wensch-Dorendorf4, H. H. Swalve1, J. Guehne2, B. J. Heins2, and L. B. Hansen2, 1Group Animal Breeding, Halle (Saale), Saxony-Anhalt, Germany, 2Technical College for Agriculture, Haldensleben, Saxony-Anhalt, Germany, 3Department of Animal Science, St. Paul, MN.
### Dairy Foods

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

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30 AM</td>
<td><strong>ADSA Pioneer:</strong> Whey—From gutter to gold. P. J. Jelen*, University of Alberta, Edmonton, AB, Canada.</td>
<td></td>
</tr>
<tr>
<td>9:00 AM</td>
<td>Protein-interactions in heat-treated milk and effect on rennet coagulation. P. Kethireddipalli*, D. G. Dalgleish, and A. R. Hill, University of Guelph, Guelph, ON, Canada.</td>
<td></td>
</tr>
<tr>
<td>9:30 AM</td>
<td>Impact of bleaching on the flavor of whey protein concentrate. A. E. Croissant*, J. Kang1, R. E. Campbell1, E. Bastian2, and M. A. Drake1, 1North Carolina State University, Raleigh, 2Glanbia Nutritionals, Twin Falls, ID.</td>
<td></td>
</tr>
<tr>
<td>10:00 AM</td>
<td>Development of rapid method for measurement of lactose in model solutions using a hand-held blood glucose biosensor. J. Amamcharla*, K. Shah, and L. Metzger, South Dakota State University, Brookings.</td>
<td></td>
</tr>
<tr>
<td>10:30 AM</td>
<td>Dairy food intake among historically African American college campus students. A. M. Patterson* and S. A. Ibrahim, North Carolina A&amp;T State University, Greensboro.</td>
<td></td>
</tr>
</tbody>
</table>

### Forages and Pastures

**Grazing and Pasture Utilization**  
**Chair:**  
**514**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30 AM</td>
<td>Effect of fall grazing system on annual ryegrass quality and beef cattle performance. J. M. Kelzer*, S. Bird2, R. D. Mathison2, P. R. Peterson1, and R. S. Walker3, 1University of Minnesota, St. Paul, 2University of Minnesota, Grand Rapids, 3University of Minnesota, Andover.</td>
</tr>
<tr>
<td>9:00 AM</td>
<td>Economic feasibility of stocker cattle grazing tall fescue infected with a novel endophyte in the Southern Great Plains of the USA. J. T. Biermacher*, R. Reuter1, B. J. Cook1, M. A. Islam2, A. Hopkins1, J. H. Bouton1, and T. J. Butler1, 1Samuel Roberts Noble Foundation, Ardmore, OK, 2University of Wyoming, Laramie.</td>
</tr>
<tr>
<td>9:30 AM</td>
<td>Effects of supplemental cottonseed meal versus part-time annual ryegrass grazing on performance of beef heifers grazing stockpiled limpograss pastures. J. M. B. Vendramini* and J. D. Arthurington, University of Florida, Ocala.</td>
</tr>
</tbody>
</table>

10:00 AM 762 Prediction of nitrogen utilization efficiency from plant constituents in lactating cows fed pasture-based diets. R. E. Vibart*, B. A. Barrett, and D. Pacheco, AgResearch Limited, Palmerston North, New Zealand.


10:30 AM 764 Sequence grazing of perennial and annual cool-season grasses to extend the grazing season for stocker calves. B. K. Northup1, W. A. Phillips4, and A. A. Hopkins5, 1USDA-ARS Grazinglands Research Laboratory, El Reno, OK, 2Noble Foundation Inc., Ardmore, OK.

10:45 AM 765 Comparison of fescues versus orchardgrass—Forage characteristics and stocker performance. M. H. Ramos6, J. W. Lehmkuhler2, and K. A. Albrecht3, 1University of Missouri, Columbia, 2University of Kentucky, Lexington, 3University of Wisconsin, Madison.

11:00 AM 766 Use of N fertilization versus interseeded legume—Forage characteristics and stockers performance. M. H. Ramos6, J. W. Lehmkuhler2, and K. A. Albrecht3, 1University of Missouri, Columbia, 2University of Kentucky, Lexington, 3University of Wisconsin, Madison.

11:15 AM 767 Performance of Holstein steers, beef steers and beef heifers under rotational grazing. M. H. Ramos6, J. W. Lehmkuhler2, and K. A. Albrecht3, 1University of Missouri, Columbia, 2University of Kentucky, Lexington, 3University of Wisconsin, Madison.

---

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

8:30 AM 768 Introductions


9:45 AM 769 Break

10:00 AM 769 Expression of intestinal monosaccharide transporters and the sweet taste receptor in equine small intestine. D. Arora*, M. Al-Rammahi, K. Salmon, C. Proudman, and S. Shirazi-Beechey, University of Liverpool, Liverpool, UK.

10:15 AM 770 Fatty acid synthesis in equine adipose and liver tissue explants. J. K. Suagee*, B. A. Corl1, M. V. Crisman2, J. G. Wearn3, L. J. McCutcheon1, and R. J. Geor3, 1Virginia Polytechnic Institute and State University, Blacksburg, 2Virginia-Maryland Regional College of Veterinary Medicine, Blacksburg, 3Virginia-Maryland Regional College of Veterinary Medicine, Blacksburg.

10:30 AM 771 Effects of the insulin sensitizing drug, pioglitazone, on genes regulating glucose and fat metabolism in horses. J. K. Suagee*, R. J. Geor1, L. J. McCutcheon1, J. G. Wearn3, M. V. Crisman2, B. A. Corl1, and M. W. Hulver1, 1Virginia Polytechnic Institute and State University, Blacksburg, 2Virginia-Maryland Regional College of Veterinary Medicine, Blacksburg, 3Michigan State University, East Lansing.

10:45 AM 772 The use of a handheld glucometer for measuring glucose concentrations from whole blood collected from the horse. C. D. Gunkel*, J. S. Drouillard, and T. L. Slough, Kansas State University, Manhattan.

11:00 AM 772 Break

11:15 AM 773 The effect of consuming endophyte-infected tall fescue on lameness in the horse. K. C. Gradert*, J. M. Bormann1, S. F. DeWitt2, L. W. Lomas3, J. M. Kouba1, and T. L. Slough1, 1Kansas State University, Manhattan, 2Woodside Equine Clinic, Ashland, VA, 3Southeast Agricultural Research Center, Parsons, KS.

11:30 AM 774 The use of thermal imaging to monitor temperature in the hoof of horses consuming endophyte-infected tall fescue. K. C. Gradert*, J. M. Bormann1, S. F. DeWitt2, L. W. Lomas3, J. M. Kouba1, and T. L.
Nonruminant Nutrition

Fats and Oils

Chair: 516ab

8:30 AM 775 Effect of rice oil supplementation in diets for weanling pigs. G. J. M. M. Lima1, L. Wortmann2, and A. Mior1. Embrapa, Concordia, SC, Brazil, 2Helmut Tessmann Vegetable Oils, Camaquã, RS, Brazil.

8:45 AM 776 Apparent and true ileal digestibility of acid hydrolyzed ether extract in various feed ingredients fed to growing pigs. B. G. Kim*, D. Y. Kil, and H. H. Stein, University of Illinois, Urbana.

9:00 AM 777 The impact of dried distillers grains with solubles withdrawal programs on swine carcass fatty acid profiles and bacon quality. J. Stevens, A. Schinckel, B. Richert, and M. Latour*, Purdue University, West Lafayette, IN.


9:30 AM 779 The role of linoleic and ω-6-linolenic acid for synthesis of long chain polyunsaturated fatty acids in liver and brain: A model study with growing pigs. W. Smink, J. Van Baal, R. Hovenier, and W. J. J. Gerrits*, Wageningen University, Wageningen, the Netherlands.

9:45 AM 780 Comparing oxidation of fatty acids in pigs fed starch, animal fat or soy oil using 13C labeled fatty acids. J. J. G. C. van den Borne1, E. M. A. M. Bruininx1, E. Van Heugten1, J. Van Milgen1, and W. J. J. Gerrits*. 1Wageningen University, Wageningen, the Netherlands, 2North Carolina State University, Raleigh, 3INRA, UMR1079, Systèmes d’Elevage, Nutrition Animale et Humaine, St Gilles, France.

10:00 AM 781 Essential oil micro encapsulation increases stability during pelleting and premix and feed storage. D. Bravo, C. Ionescu*, A. Vienne, and S. Oguey, Pannosma, Geneva, Switzerland.

Production, Management and the Environment

Beef

Chair: Joe Dalton, University of Idaho

513ab

8:30 AM 782 An evaluation of residual feed intake estimates obtained with computer models versus empirical regression. C. B. Williams*, C. L. Ferrell, and T. G. Jenkins, USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE.

8:45 AM 783 Influence of feed management on random herd curves from random regression test-day model. M. Caccamo1, R. F. Veerkamp2, J. D. Ferguson1, R. Petriglieri1, F. La Terra1, and G. Licitra1, 1CorFiLaC, Regione Siciliana, Ragusa, Italy, 2Animal Breeding and Genomics Centre, ASG, WageningenUR, Lelystad, The Netherlands, 3University of Pennsylvania, Kennett Square, 4D.A.C.P.A. University of Catania, Italy.


9:30 AM 786 Predicting the success of fixed-time AI from passive monitoring of body temperature in beef heifers. J. A. Small1, A. D. Kennedy2, L. M. Pfeifer3, and J. Singh3. 1Agriculture and Agri-Food Canada, Brandon, MB, Canada, 2University of Manitoba, Winnipeg, MB, Canada, 3University of Saskatchewan, Saskatoon, SK, Canada, 4Nova Scotia Agricultural College, Truro, NS, Canada.
Does fertility-associated antigen on sperm collected from Nellore (Bos indicus) bulls affect fertility at first-service timed AI? J. C. Dalton 1, L. Deragon2, J. L. M. Vasconcelos3, and A. Ahmadzadeh4, 1University of Idaho, Caldwell, 2Alta Genetics Brazil, Uberaba, MG, Brazil, 3FMVZ-UNESP, Botucatu, SP, Brazil, 4University of Idaho, Moscow.

Mastitis in beef bulls caused by Arcanobacterium pyogenes. S. C. Nickerson1, E. Rollin2, D. T. Ensley2, and R. D. Berghaus3, 1University of Georgia, College of Agricultural and Environmental Sciences, Department of Animal and Dairy Science, Athens, 3University of Georgia, College of Veterinary Medicine, Department of Population Health, Athens.

Ruminant Nutrition

Dairy 3

Chair: Allen Young, Utah State University

511cf

Short-term changes in forage dry matter affect milk production responses in dairy cows. D. R. Mertens1, and P. Berzaghi1, 1US Dairy Forage Research Center, Madison, WI, 2University of Padua, Italy.

Meta-analysis of influence of dietary NDF on energy partitioning in dairy cows. D. Sauvant1, O. Martin1, and D. Mertens1, 1, 2Agroparistech-INRA, Paris, France, 3US Dairy Forage Center, Madison, WI.


Assessment of dietary ratios of red clover and corn silages on milk production and milk quality in dairy cows. J. M. Moorby6, N. M. Ellis, D. W. R. Davies, and D. R. Davies, 1Institute of Biological, Environmental and Rural Sciences, Aberystwyth, UK.

Determining fiber requirements in dairy cows by modeling digestive responses to dietary physically effective NDF. Q. Zebeli1,2, D. Mansmann1,2, H. Steingass2, W. Drochner2, and B. N. Ametaj3, 1University of Alberta, Edmonton, AB, Canada, 2University of Hohenheim, Stuttgart, Germany.

Nutritional value of bahiagrass, bahiagrass-alfalfa, or brown mid rib sorghum baleage for lactating Holstein cows. M. E. McCormick1,2, V. R. Moreira1, D. C. Blouin2, and K. J. Han3, 1Louisiana State University Agricultural Center, Southeast Research Station, Franklinton, 2Louisiana State University Department of Experimental Statistics, Baton Rouge.

Diurnal patterns of rumen pH and function in dairy cows on high quality temperate pastures of the South Island of New Zealand. J. Gibbs5 and J. Laporte, 1Lincoln University, Canterbury, New Zealand.

Effect of pre-grazing herbage mass and daily herbage allowance on rumen, plasma and milk fatty acids. R. A. Palladino1, M. O'Donovan1, J. J. Murphy2, M. McEvoy1,2, and D. A. Kenny1, 1University College Dublin, Belfield, Dublin, Ireland, 2Teagasc, Fermoy, Co. Cork, Ireland.

Comparison of energy expenditure, physical activity and feeding behavior in dairy cows grazing pasture grass or fed the same grass indoors. L. D. Kaufmann1, A. Münger1, M. Rérat1, P. Junghans2, S. Görs1, C. C. Metges2, and F. Dohme1, 1Agroscope Liebefeld-Posieux, Research Station ALP, Postieux, FR, Switzerland, 2Research Institute for the Biology of Farm Animals (FBN), Dummerstorf, Germany.

Relationship between milk fat and nutrition in lactating Holstein cows. M. Vazirigohar*, A. Nejati Javaremi, and A. Nikkhah, University of Tehran, Karaj, Tehran, Iran.

Profitability and milk yield response to protein supplementation in mid-lactation dairy cows. A. E. O. Malau-Aduli* and J. C. Beattie, School of Agricultural Science, University of Tasmania, Hobart, Tasmania, Australia.

Pigeon peas as a supplement for lactating dairy cows fed corn silage based diets. V. A. Corriher1, G. M. Hill1, J. K. Bernard1, T. Jenkins2, and B. G. Mullinix1, 1University of Georgia, Tifton, 2University of Idaho.
Ruminant Nutrition
Research Methods
Chair: Masahito Oba, University of Alberta

8:30 AM 57 Comparison of NRC-2001 chemical approach with biological approach (in situ animal study) in the determination of digestible nutrients and energy values of dry distillers grains with solubles in ruminants. W. G. Nuez Ortin* and P. Yu, University of Saskatchewan, Saskatoon, SK, Canada.

8:45 AM 801 Everting the omasum into the reticulum to identify the sensory receptors in the omasum of the sheep. W. L. Grovum*, Department of Biomedical Sciences, Ontario Veterinary College, University of Guelph, Guelph, Ontario, Canada.

9:00 AM 802 Standardization of an in vitro method using Streptomyces griseus enzyme to predict rumen undegraded protein. I. Schadt*, P. J. Van Soest*, and G. Licitra1,3, 1CoRFILac, Regione Siciliana, Ragusa, Italy, 1Cornell University, Ithaca, NY, 3D.A.C.P.A. University of Catania, Italy.


9:45 AM 805 Do the time of access to food, the supplementation with additives and the graze affect ruminal inocula used for in vitro gas production trials? A. Pérez-Ruchel1, A. Britos1, E. Almanza1, J. L. Repetto2, N. Pomiés1, and C. Cajarville*, 1Departamento de Nutrición Animal, Facultad de Veterinaria, Montevideo, Uruguay, 2Departamento de Bovinos, Facultad de Veterinaria, Montevideo, Uruguay.

10:00 AM 806 In vitro assessment of effects of microalgae type, protection of microalgae, and dilution rate on dry matter disappearance and methane emission in a rumen simulation system. R. Kinley*, K. Glover1, R. Teather2, S. Iverson3, and A. Fredeen1, 1Nova Scotia Agricultural College, Truro, Nova Scotia, Canada, 2Agriculture and Agri-Food Canada, Leithbridge, Alberta, Canada, 3Dalhousie University, Halifax, Nova Scotia, Canada.


10:30 AM 808 Evaluation of supplementation or controlled-release capsule (CRC) to supply n-alkane as an intake marker in steers fed switchgrass or alfalfa hay. S. Chavez*, C. Lane, M. Braxton, A. Bruner, E. Leonard, J. Burns, and G. Huntington, North Carolina State University, Raleigh.

SYMPOSIUM
Swine Species
Environmental Concerns Based on Swine Production
Chair: Brett R. White, University of Nebraska-Lincoln

8:30 AM Introduction

8:35 AM 809 Research and extension needs in air and water quality. D. J. Meisinger*, US Pork Center of Excellence, Ames, IA.

8:50 AM 810 Occupational and environmental concerns in swine production. K. Donham*, University of Iowa, Iowa City.

9:30 AM 811 The potential ability of swine nutrition to influence environmental factors positively. S. T. Petersen*, Land O'Lakes Purina Feed LLC, Shoreview, MN.
10:10 AM Break

10:25 AM 812 Potential of anaerobic digestion to address current environmental concerns on swine operations. D. I. Massé*, Agriculture and Agri-Food Canada, Sherbrooke, Québec, Canada.

11:05 AM 813 Fate and transport of zoonotic bacterial, viral, and parasitic pathogens during swine manure treatment, storage, and land application. C. Ziemer*, J. Bonner, Task Force Members for CAST Special Publication No. 29, D. Cole (cochair), and J. Vinjé (cochair), National Soil Tilth Lab ARS-USDA, Ames, IA, Council for Agricultural Science and Technology, Ames, IA, Georgia Division of Public Health, Atlanta, GA, Centers for Disease Control and Prevention, Atlanta, GA.

OTHER EVENTS

Mixed Models
512ae
8:30 AM–11:30 AM

Writers' Workshop
525
8:30 AM–5:00 PM