All Rooms are in the Baltimore Convention Center unless otherwise noted. Rooms and times are subject to change. Please check the Daily Newsletter for any updates.

FASS AND CONTEMPORARY AND EMERGING ISSUES 1

SYMPOSIUM

Agricultural Biotechnology in the Global Marketplace

Sponsored by *ADSA, ASAS, CAST, FASS*

Chair: Marjorie Faust, Iowa State University, Ames

Monday, 8:00 a.m. – 4:30 p.m.
Room: Ballroom 1

8:00 Introduction - Marjorie Faust, Iowa State University, Ames.

8:10 Genomics and Nutritional Physiology 101. Abigail Salyers, University of Illinois, Urbana.

8:40 Transgenic Animals for Livestock Production: Current Status of the Technology, Opportunities, and Risks. Elliott Entis, A/F Protein, Waltham, MA.

9:10 Transgenic Animals for Nutraceuticals and Pharmaceutical Production: Current Status of the Technology, Opportunity and Risks. Mike West, Advanced Cell Technology, Inc., Worchester, MA.

9:40 **DISCUSSION/BREAK**

10:00 Regulatory Process for Transgenic Crops, Jeff Stein, Novartis Seeds, Research Triangle Park, NC.

10:30 Livestock Performance: Feeding Biotech Crops. Jimmy Clark, University of Illinois, Urbana.

11:00 Livestock Products: Composition and Detection of Transgenic DNA/Proteins. Marjorie Faust, Iowa State University, Ames.

11:30 Regulatory Process for Transgenic Animals. Tom Howard, Gala Design, LLC, Sauk City, WI.

12:00 Lunch

1:00 **INVITED EAAP SPEAKER** Environmental Impact of Biotech Crops. Phil Dale, John Innes Centre, Norwich, UK.

1:30 Impact of Biotechnology on Trade: Panel Session.

Grain: David Bossman, American Feed Industry Association, Arlington, VA.

Meat: Leonard Condon, American Meat Institute. Arlington, VA.

Milk: Jaime Castaneda, National Milk Producers Federation, Arlington, VA.

European Viewpoint: Phil Dale, John Innes Center, Norwich, UK, and Louis Aimé, Aumaitre, INRA, Saint Gilles, France.

3:00 Communicating Science and Agricultural Biotechnology to the Consumer. Eric Abbott, Iowa State University, Ames.

3:30 **DISCUSSION/BREAK**

3:50 **Keynote Address**: Current and Future Promises of Biotechnology. Robert Bremel, Gala Design, LLC, Sauk City, WI.

4:40 **DISCUSSION**

DAIRY FOODS

SPECIAL PRE-MEETING WORKSHOP

The Basics of Flavor Development in Cheese

Sponsored by *Rhodia Inc.*

Chair: M. A. Drake, Mississippi State University, Mississippi State

Monday, 9:00 a.m. – 4:00 p.m.
Room: 318

Description

A professional development opportunity exclusively for undergraduate and graduate students, and industry professionals involved in cheese production, product quality assurance, or market development. Pre-registration required: undergraduate and graduate students $40; professional ADSA members $175; and, non-members $200. Workshop fees include lunch, two breaks and a binder of workshop materials.

Invited Presenters:

9:00 Introduction - M. A. Drake, Mississippi State University, Mississippi State.

9:15 Role of lactic acid bacteria in cheese flavor development. Jeffery Broadbent, Utah State University, Logan.

10:30 **BREAK**

10:45 Role of lactic acid bacteria in cheese flavor development. James Steele, University of Wisconsin, Madison.

12:00 **LUNCH**

1:00 Formation of flavor compounds and their contribution to flavor impact. Scott Rankin, University of Maryland, College Park.

2:15 **BREAK**

2:30 The role of the cheese make-process in cheese flavor development. Mark Johnson, University of Wisconsin, Center for Dairy Research, Madison.

3:45 **DISCUSSION**

OPENING SESSION

From Research to Innovation

Sponsored by *ASAS Past Presidents' Pool and Rabobank, The Netherlands*

Monday, 6:30 p.m. – 9:30 p.m.
Room: Ballroom 1-4

At the opening session two distinguished speakers, Prof. G. Van Dijk, director of NCR, National Cooperative Council for agriculture and horticulture, from The Netherlands and Bobby Moser from The Ohio State University, will discuss the interaction between research and innovation in the United States and the European Union. They will describe the current challenges to the research community to provide information that is viewed as being in the interest of the public taxpayers who support the research. Further, they will discuss the public perception of animal science research and the changed environment in which we must strive to retain public trust and confidence. They will provide their perspectives on how effectively research information is translated into innovations that affect the lives of our public supporters.

Prof. Van Dijk has studied mechanisms of transfer in the European Union and will share his insights and conclusions. Bobby Moser, an official at The Ohio State University and former president of ASAS, will discuss the situation in the United States and put the new demands on American Land Grant universities in perspective.

Time	Abstract Number	
6:30		**WELCOME AND INTRODUCTIONS** H. E. Swaisgood, President ADSA D. H. Beermann, President ASAS D. K. Beede, Overall Program Chair
7:00	2000	Innovation in transferring research into practice. B. D. Moser*, The Ohio State University.
7:30	2001	Governance of innovation in animal production: New roles for science, business and the public sector G. van Dijk*[1] and P.W.J. van Boekel[2], [1]Wageningen University, The Netherlands, [12]Nyenrode University, Breukelen, The Netherlands
8:00		**OPENING RECEPTION** A reception will immediately follow the conclusion of the Opening addresses. This is a good time to catch up with friends and colleagues. All meeting attendees and families are invited. Please register on the registration form.

INDUSTRY/TECH FORUM

ANIMAL BEHAVIOR AND WELL-BEING 1 and CONTEMPORARY AND EMERGING ISSUES 2

SYMPOSIUM

Livestock Transport: Industry Issues and Research Challenges

Sponsored by *USDA-CSREES, University of Maryland, NCR-131*

Co-Chairs: H. G. Kattesh, University of Tennessee, Knoxville and J. Morrow-Tesch, USDA ARS, Lubbock, TX.

Tuesday, 8:00 a.m. - 5:00 p.m.

Room: Ballroom 2

Time	Abstract Number	
8:00		Welcome and symposium overview. H. G. Kattesh, University of Tennessee, Knoxville and J. Morrow-Tesch, USDA ARS, Lubbock, TX.
8:10	1	**INVITED** History and development of European and North American transport regulations including trade issues. T.C. Harris*, AATA - Animal Transportation Association.
8:40		**INVITED** Economic factors associated with the transport of livestock. G. Slack, National Institute for Animal Agriculture, Inc., Bowling Green, KY.

Industry perspectives on issues related to the transport of livestock:

9:10		**INVITED** Horse – R. Maxwell, Sallee Horse Vans, Inc., Lexington, KY.
9:30		**INVITED** Beef cattle – S. Armbruster, Steven Armbruster Consulting, Stillwater, OK.
9:50		**BREAK**
10:10		**INVITED** Dairy cattle – G. Jones, Monsanto, Underwood, WA.
10:30		**INVITED** Swine – A. Sosnicki, PIC, Franklin, KY.

How research on transportation impacts the formulation of policy:

10:50		**INVITED** Horse transport animal welfare/transport policy in general. C. Stull, University of California, Davis.
11:10		**INVITED** Status of the U.S. horse transport regulations. T. Cordes, USDA, APHIS Veterinary Services, Riverdale, MD.
11:30		**BREAK**
12:00		Lunch and Keynote Address Room 303 Ticket Required:
	2	**INVITED** Perspectives on transportation issues.T. Grandin*,Colorado State University.

Livestock Transportation: Research Challenges for the New Millennium

1:30	3	**INVITED EAAP SPEAKER** Overview of the biology of stress. E.H. von Borell*, Martin Luther University Halle Wittenberg, Germany.
2:00		**INVITED EAAP SPEAKER** Behavioral research and its application to livestock transport and policy: A European's perspective. P. Le Neindre, INRA Unité de Recherche Sur les Hervivores, Champanelle, France.

Livestock transport: what do we know and what do we need to know?

2:30		**INVITED** Horse transportation research – T. Friend, Texas A&M University, College Station.
2:50	4	**INVITED** Cattle transport: historical and future perspectives. J. C. Swanson*[1] and J. Morrow-Tesch[2], [1]Kansas State University, Manhattan, KS, [2]USDA-ARS, Lubbock, TX.
3:10		**BREAK**
3:30	5	**INVITED** Transportation of cattle in the dairy industry: current research and future directions. S. D. Eicher*, USDA-ARS, West Lafayette, IN.
3:50	6	**INVITED** Swine transportation: a critical review.A.J. Zanella*[1],[1]Department of Animal Science, Michigan State University, East Lansing.

4:10 **QUESTION AND ANSWER PERIOD**

INDUSTRY/TECH FORUM

ANIMAL HEALTH 1

Infectious Diseases and Animal Nutrition

Chair: R. Erskine, Michigan State University, East Lansing

Tuesday, 8:00 a.m. – 11:45 a.m.
Room: 314

Time	Abstract Number	
8:00	156	Effect of Immunization with Ferric Citrate Receptor FecA from *Escherichia coli* on Experimentally Induced Coliform Mastitis. K. Takemura*, J. S. Hogan, and K. L. Smith, Ohio Agricultural Research and Development Center, The Ohio State University, Wooster, OH.
8:15	157	Evaluation of the California mastitis test for screening dairy cows for intramammary infection at calving. J.M. Sargeant[1], K.E. Leslie*[2], J.E. Shirley[1], M.E. Sheffel[1], G.H. Lim[2], and B.J. Pulkrabek[1], [1]Kansas State University, Manhattan, [2]University of Guelph, Guelph, Ontario, Canada.
8:30	158	Transgenic mice that secrete lysostaphin into milk are resistant to mastitis caused by *Staphylococcus aureus*.D.E. Kerr*[1], K. Plaut[1], A.J. Bramley[1], K.D. Wells[2], K. Moore[2], and R.J. Wall[2], [1]University of Vermont, Burlington, [2]USDA-ARS, Beltsville, MD.
8:45	159	Tail docking dairy cattle. C.B. Tucker* and D.M. Weary, University of British Columbia Vancouver, Canada.
9:00	160	Oxytocin as a means of improving wound healing. M. N. Collins*, T. H. Friend, and I. Tizard, Texas A&M University, College Station, TX.
9:15	161	The effect of orally administered Seramune® as a colostrum supplement on growth, IgG levels, weaning age, morbidity, and mortality in Holstein heifer calves. A. L. Skidmore*[1], W. J. Prokop[1], D. A. Braun[1], D. Myers[2], C. Wright[2], and N. Wohlgemuth[2], [1]Attica Veterinary Associates, PC, Attica, New York, [2]Sera, Inc., Shawnee Mission, KS.
9:30		**BREAK**
10:00	162	Effect of rumenocentesis on health and productivity in dairy cows. Helen Aceto*, Aliza J. Simeone, and James D. Ferguson, University of Pennsylvania School of Veterinary Medicine, Kennett Square, PA.
10:15	163	Johne's disease prevalence and transmission in an infected dairy herd. S.J. Wells*[1], R.H. Whitlock[2], and J.R. Stabel[3],[1]University of Minnesota, St. Paul, MN, [2]University of Pennsylvania, Kennett Square, PA, [3]USDA-Agricultural Research Service, Ames, PA.
10:30	164	The influence of injectable copper on immune response to bovine respiratory disease and occurence of injection site blemishes. J.E. Rowntree*[1] and M.E. Boyd[2], [1]Michigan State University, [2]Mississippi State University.
10:45	165	The use of inactivated *Propionibacterium acnes* as an immunostimulant in off-site reared piglets compared to conventionally reared piglets. J.B. Morris*[1], D.H. Hellwig[1], and S.L. Krumpleman[1], University of Arkansas, Fayetteville.
11:00	166	Infection of weaned pigs with *Actinobacillus pleuropneumoniae* fails to alter circulating interleukin 1β, tumor necrosis factor α, and interferon γ. R. Balaji[1], K. J. Wright[1], J. L. Turner[1], C. M. Hill[1], S. S. Dritz[1], B. Fenwick[1], J. A. Carroll[2], M. E. Zannelli[3], L. A. Beausang[3], and J. E. Minton*[1], [1]Kansas State University, Manhattan, [2]Animal Physiology Research Unit, Agricultural Research Service, USDA, Columbia, MO, [3]Endogen, Inc., Woburn, MA.
11:15	167	Insulin-like growth factor-1 (IGF-1) modulation of porcine lymphocyte function. C.T. Collier*[1], T.H. Welsh, Jr.[2], and J.C. Laurenz[1], [1]Texas A&M University-Kingsville, [2]Texas A&M University-College Station.

11:30 168 Levels of interleukin 6 mRNA in pigs infected with *Salmonella typhimurium*. R. Balaji, D. M. Grieger, K. J. Wright, S. S. Dritz, J. C. Nietfeld, and J. E. Minton*, Kansas State University, Manhattan.

BREEDING AND GENETICS 1

SYMPOSIUM

A Tribute to A. E. Freeman, Iowa State University

Sponsored by *Genex Cooperative, Inc./CRI, Holland Genetics/CR Delta*
Chair: J. R. Thompson, Thompson Consulting, Ithaca, NY

Tuesday, 8:00 a.m. - 12:00 noon
Room: Ballroom 1

Time	Abstract Number	
8:00	10	**INVITED** The contributions of A. E. Freeman. R. E. Pearson*[1], [1]Virginia Polytechnic Institute and State University, Blacksburg.
8:45	11	**INVITED** What can animal breeders and corn breeders learn from each other? K. G. Boldman*, Monsanto Company, Savoy, IL.
9:30	12	**INVITED** Poultry breeding: structure, traits, realized responses, and the future.M. T. Kuhn*,Hy-Line International.
10:15		**BREAK**
10:30	13	Genetic control of dairy cattle behavior. M. M. Schutz* and E. A. Pajor, Purdue University, West Lafayette, IN.
11:15	14	**INVITED EAAP SPEAKER** Genetic improvement of resistance to infectious diseases in livestock. J.C. Detilleux*[1], [1]University of Liege - Faculty of Veterinary Medicine.

Tuesday, 1:30 p.m. – 5:00 p.m.
Room: Ballroom 1

Time	Abstract Number	
1:30	15	**INVITED** Methods to combine information from separate sources. P.M. VanRaden*, Animal Improvement Programs Laboratory, Agricultural Research Service, USDA, Beltsville, MD.
2:15	16	**INVITED** The effect of Holsteinization on intensive pastoral dairy farming in New Zealand. B. L. Harris*[1] and E. Kolver[2], [1]Livestock Improvement, Hamilton, New Zealand, [2]Dairy Research Corporation, Hamilton, New Zealand.
3:00		**BREAK**
3:15	17	**INVITED** 2020 Vision? - The future of dairy cattle breeding from an academic perspective. P.J. Boettcher*, University of Guelph, Guelph, ON, Canada.
4:00	18	**INVITED** A futuristic look at the dairy cattle genetics industry. R. D. Welper*, Alta Genetics Inc.
4:45		**REMARKS** - A.E. Freeman, Iowa State University, Ames.

INDUSTRY/TECH FORUM

CONTEMPORARY AND EMERGING ISSUES 2 AND ANIMAL BEHAVIOR AND WELL-BEING 1

SYMPOSIUM

Livestock Transport: Industry Issues and Research Challenges

Sponsored by *USDA-CSREES, University of Maryland, NCR-131*

Co-Chairs: H. G. Kattesh, University of Tennessee, Knoxville and J. Morrow-Tesch, USDA ARS, Lubbock, TX.

Tuesday, 8:00 a.m. - 5:00 p.m.
Room: Ballroom 2

INDUSTRY/TECH FORUM

DAIRY FOODS 1

POSTER SESSION

Dairy Foods - Products, Processing, Chemistry

Chair: K. Schmidt, Kansas State University, Manhattan

Tuesday, 8:00 a.m. - 5:00 p.m.
Authors of even numbered boards
8:30 a.m. - 10:30 a.m.
Authors of odd numbered boards
10:00 a.m. - 12:00 noon
Room: Exhibit Hall AB

Board No.	Abstract No.	
1	341	Rheological properties of high fat creams containing added whey proteins and homogenized at different pressures. S. Adapa and K. Schmidt*, Kansas State University, Manhattan.
2	342	The concentration of FFA and free amino groups in raw milk from cows fed high or low amounts of concentrate. H. Alkanhal*, M. Alshaikh, M. Salah, and H. Mogawer, [1]King Saud University, Riyadh, Saudi Arabia.

3 343 Effect of lipids supplementation in the ration on production of conjugated linoleic acid (CLA) and milk fat composition of dairy cows. F.L. Santos*, R.P. Lana, M.T.C. Silva, S.C.C. Brandao, and L.H. Vargas, Universidade Federal de Vicosa, Vicosa-MG, Brazil.

4 344 Properties of docosahexaenoic acid enriched milk, Cheddar cheese and butter. H. W.ng* and A. Hill, University of Guelph, Ontario, Canada.

5 345 Influence of feeding cows fish oil, extruded soybeans, or their combination on the composition of milk, cream, and butter. N. Ramaswamy*, R. J. Baer, D. J. Schingoethe, A. R. Hippen, L. A. Whitlock, and K. M. Kasperson, MN-SD Dairy Foods Research Center, South Dakota State University, Brookings.

6 346 Storage stability of frozen sheep milk. S.L. Rausch-enberger*, B.J. Swenson, and W.L. Wendorff, University of Wisconsin, Madison.

7 347 Effect of shelf-life and light exposure on acetaldehyde concentration in milk packaged in HDPE and PETE bottles. M. Van Aardt*, S.E. Duncan, D. Bourne, J.E. Marcy, T. Long, and C.R. Hackney, Virginia Tech, Blacksburg.

8 348 Rheological properties of aging Monterey Jack goat cheese. D. L. Van Hekken*[1], M. H. Tunick[1], and Y. W. Park[2], [1]USDA, ARS, ERRC, Wyndmoor, PA, [2]Agric. Res. Station, Fort Valley State University, GA.

9 349 Electrophoretic characterization of aging Monterey Jack goat cheese. D.L. Van Hekken*[1] and Y.W. Park[2], [1]USDA, ARS, ERRC, Wyndmoor, PA, [2]Agric. Res. Station, Fort Valley State University, GA.

10 350 Evaluation of sensory and chemical properties of Manchego cheese manufactured from ovine milk of different somatic cell levels. J.J. Jaeggi*[1], K.B. Houck[1], M.E. Johnson[1], R. Govindasamy-Lucey[1], B.C. McKusick[2], D.L. Thomas[2], and W.L. Wendorff[2], [1]Center for Dairy Research, University of Wisconsin-Madison, [2]University of Wisconsin-Madison.

11 351 Origin and behaviour of acid phosphatase in Cheddar cheese during ripening. R. Akuzawa*[1] and P.F. Fox[2], [1]Nippon Veterinary and Animal Science. University, Tokyo/Japan, [2]University College Cork,Cork/Ireland.

12 352 Effect of homogenization pressure and selected additives on some physical properties of retort-processed dairy beverages. C.A. Lin* and R.L. Richter, Texas A&M University, College Station, TX.

13 353 The effect of bitter flavor on the consumer acceptability of coffee flavored ice cream. L.F. Osorio* and J.U. McGregor, Louisiana State University, LAES, LSU Agricultural Center, Baton Rouge.

14 354 Acceptable usage levels of textured whey proteins in hamburger patties. A. Hale*, C. Carpenter, and M. Walsh, Utah State University, Logan.

15 355 Estimating milk density from milk composition and temperature. A. Ueda and A. Hill*, University of Guelph, Ontario, Canada.

16 356 Stability of vitamin A and D in skim milk delivered by beta-lactoglobulin isolated from whey. Q. Wang, J. Allen, and H. Swaisgood, Southeast Dairy Foods Research Center, North Carolina State University, Raleigh.

17 357 Selective purification of a-lactalbumin from whey protein isolate using a peptide ligand obtained from a combinatorial library. P.V. Gurgel*, R.G. Carbonell, and H.E. Swaisgood, North Carolina State University, Raleigh.

18 358 Fractionation of bovine transferrin from whey using immobilized gangliosides. M.K. Walsh* and S.H. Nam, Utah State University, Logan.

19 359 Fractionation of peptide mixtures from b-lactoglobulin enzymatic hydrolysate by means of isoelectric focusing. P.E. Groleau*[1,2], Y. Pouliot[1], S.F. Gauthier[1], and R. Jimenez-Flores[2], [1]Centre de recherche STELA, Universite Laval, Quebec City, Canada, [2]Dairy Product Technology Center, California Polytechnic State University, San Luis Obispo.

20 360 Effect of hydrodynamic conditions on the fractionation of a b-lactoglobulin peptide mixture by nanofiltration membranes. J-F. Lapointe*, Yves Pouliot, and Sylvie F. Gauthier, Centre de recherche STELA, Quebec, Canada.

21 361 Modification of rheological properties of whey protein isolate through limited crosslinking with microbial transglutaminase immobilized on porous glass. C.P. Wilcox* and H.E. Swaisgood, North Carolina State University, Raleigh.

22 362 Study of protein-polysaccharide interactions, using whey protein-dextran systems. G. Lemay* and S. L. Turgeon, Dairy Research Center, Laval University, Quebec, Canada.

23 363 Interactions between diatomites or synthetic silicates and calcium phosphocaseinate: effect of adsorbent properties. N. Martin*[3], Y. Pouliot[1], R. Jimenez-Flores[2], M. Britten[3], and P.S. Tong[2], [1]Centre de Recherche en Sciences et Technologie du Lait, Ste-Foy, Quebec, Canada, [2]Dairy Products Technology Center, San Luis Obispo, California, U.S.A, [3]Food Research and Development Center, St-Hyacinthe, Quebec, Canada.

24 364 Influence of fractionation sequence and filtration temperatures on the physical and chemical properties of milk fat fractions. K.E. Kaylegian*[1], [1]Wisconsin Center for Dairy Research, Madison.

25 365 Low cholesterol Mozzarella cheese obtained from homogenized and beta-cyclodextrin-treated milk. H. S. Kwak*, C. G. Nam, and J. Ahn, Sejong University, Seoul, Korea.

26 366 Configuration of an unconventional bioreactor for milk lactose hydrolysis. A.N. Genari[1], F.M.L. Passos*[1], and H.E. Swaisgood[2], [1]Universidade Federal de Vicosa, Vicosa, MG, Brazil, [2]North Carolina State University, Raleigh.

27 367 Application of optical light microscopy to monitor air cell changes in ice cream during freezing in a batch freezer. Y.H. Chang*, R.W. Hartel, and R.W. Hartel, University of Wisconsin-Madison.

27A 1315 Formulation and processing of reduced-fat dairy emulsions on the benchtop scale. M. T. Dineen*, K. L. Parkin, University of Wisconsin, Madison.

GRADUATE STUDENT PAPER COMPETITION

DAIRY FOODS 2

Chair: S. Rankin, University of Maryland, College Park

Tuesday, 8:15 a.m. - 11:00 a.m.
Room: 318

Time	Abstract Number	
8:15	559	Bioavailability of vitamin A provided as a β-lactoglobulin Complex. J. Jean Shaw*, J. C. Allen, and H. Swaisgood, North Carolina State University, Raleigh.
8:30	560	Impact of low concentration factor (CF) microfiltration (MF) on the composition and aging of Cheddar cheese. M. Neocleous*, D.M. Barbano, and M.A. Rudan, Northeast Dairy Foods Research Center, Cornell University, Ithaca, NY.
8:45	561	Response of bifidobacteria to acid adaptation. Virginia Deibel* and James Steele, University of Wisconsin, Madison.
9:00	562	Survival of acid adapted and non-acid adapted enterohemorrhagic *Escherichia coli* O157:H7 during the manufacturing and curing of reduced-fat Cheddar cheese. P. Kaothien* and D.R. Henning, Minnesota-South Dakota Dairy Foods Research Center, South Dakota State University, Brookings.
9:15	563	Application of Chemometrics to Sensory, Analytical and Gas Chromatography Olfactometry Data of Ragusano Cheese from Milk from Pasture and TMR fed Cattle. S. Carpino*[1,2], D.M. Barbano[1], T.E. Acree[1], G. Licitra[2], and K.J. Siebert[1], [1]Cornell University, Ithaca, NY, [2]Consorzio Ricerca Filiera Lattiero-Casearia, Ragusa, Italy.
9:30		**BREAK**
9:45	564	Characterization of a novel phage resistance mechanism in *Lactococcus lactis*. J. D. Bouchard*, E. Dion, and S. Moineau, Universite Laval, Quebec, Canada.

10:00 565 Human Flavor Threshold for Acetaldehyde in Milk of Various Fat Content, Chocolate Milk, and Spring Water. M. Van Aardt*[1], S.E. Duncan[1], and D. Bourne[1], [1]Virginia Tech, Blacksburg.

10:15 566 Citrate catabolism and succinate production by Cheddar cheese nonstarter lactobacilli. E. G. Dudley*[1] and J. L. Steele[2], [1]University of Wisconsin-Madison Department of Bacteriology, [2]University of Wisconsin-Madison Department of Food Science.

10:30 567 Effect of the combination of milk pre-acidification and cream homogenization on the post-baking chewiness and whiteness of low fat (6%) Mozzarella cheese. P. R. Benitez*[1], D. M. Barbano[1], and P. S. Kindstedt[2], [1]Cornell University, Ithaca NY, [2]University of Vermont, Burlington.

10:45 568 Effect of dissolved carbon dioxide on the thermal destruction of *Pseudomonas fluorescens* R1-232 in milk. C Loss*[1] and JH Hotchkiss[1], [1]Cornell University, Ithaca, NY.

INDUSTRY/TECH FORUM

DAIRY FOODS 3

Microbiology

Chair: J. Moran, Kraft Foods, Inc., Waukegan, IL

Tuesday, 8:15 a.m. - 11:00 a.m.
Room: 320

Time	Abstract Number	
8:15	368	Isolation and characterization of lactococcal bacteriophages infecting EPS-producing strains. H. Deveau* and S. Moineau, Universite Laval, Quebec, Canada.
8:30	369	Identification and characterization of the anti-receptor gene of *Streptococcus thermophilus* bacteriophages. M. Duplessis* and S. Moineau, Universite Laval, Quebec, Canada.
8:45	370	Survivability of lactic acid bacteria and bifidobacteria in a spreadable yogurt cheese product. T. Pritchard*, M. Guo, A. Zielinski, and P. Kindstedt, Northeast Dairy Research Center, University of Vermont, Burlington.
9:00	371	Enhancement of AbiK anti-phage activity on low-copy plasmids. J. D. Bouchard* and S. Moineau, Universite Laval, Quebec, Canada.
9:15	372	Sensory aroma characteristics of milk spoilage by *Pseudomonas* species. W. W. Hayes*, C. H. White, P. D. Gerard, and M. A. Drake, Mississippi State University, Mississippi State.
9:30		**BREAK**
9:45	373	Manufacture of hard cheese inoculated with pathogenic bacteria in a Bio-Safety Level 3 pilot plant. J. E. Schlesser *[1], A. Teo[2], and D. Englehardt[2], [1]Food and Drug Administration, NCFST, Summit-Argo, IL, [2]Illinois Institute of Technology, Chicago, IL.
10:00	374	Effects of incorporation of proteolytic strains of *Lactobacillus delbrueckii* ssp. *bulgaricus* in commercial ABT cultures on EPS production, textural properties of yogurt and survival of bacteria. A. Shihata and N.P. Shah*, Victoria University of Technology, Melbourne, Australia.
10:15	375	Casein and whey proteins degradation patterns by selected lactic bacteria. A. Shihata and N.P. Shah*, Victoria University of Technology, Melbourne, Australia.
10:30	376	Quantitation of a proteinase secreted by a strain of *Pseudomonas fluorescens* using rocket immunoelectrophoresis. A. Zahran*[1] and B. Ward[2], [1]Minia University, Egypt, [2]University of Edinburgh, UK.
10:45	377	Purification and characterization of a heat stable proteinase secreted by *Pseudomonas fluorescens* R8. A. Zahran*[1] and B. Ward[2], [1]Minia University, Egypt, [2]University of Edinburgh, UK.

INDUSTRY/TECH FORUM

DAIRY FOODS 4, GOAT SPECIES 1 AND SHEEP SPECIES 1

SYMPOSIUM

Small Ruminant Dairy Research - Production

Sponsored by *Kinder Goat Breeders Association*

Chair: D. Van Hekken, USDA, ARS, Eastern Regional Research Center, Wyndmoor, PA

Tuesday, 8:30 a.m. - 12:00 noon
Room: 316

Time	Abstract Number	
8:30		Symposium Introduction – D. Van Hekken, USDA, ARS, ERRC, Wyndmoor, PA.
8:45	23	**INVITED** Past, present, and future perspectives of small ruminant dairy research. G.F.W. Haenlein*, University of Delaware, Newark, DE.
9:30	24	**INVITED** Effects of breed, management system, and nutrition on milk yield and milk composition of dairy sheep. D. L. Thomas, Y. M. Berger, and B. C. McKusick, University of Wisconsin-Madison, Madison, WI.
10:00		**BREAK**
10:15	25	**INVITED** Genetic evaluation of yield and type traits of dairy goats. G.R. Wiggans*, Animal Improvement Programs Laboratory, Agricultural Research Service, USDA, Beltsville, MD.
10:45	26	**INVITED** Nutrition for the high producing dairy doe. S. P. Hart*, E (Kika) de la Garza Institute for Goat Research, Langston University, Langston, OK.
11:15	27	**INVITED** Milk somatic cells and lactation in small ruminants. M. J. Paape*[1], A. V. Capuco[1], A. Contreras[2], and J. C. Marco[3], [1]USDA-ARS, Beltsville, MD, [2]Universidad de Murcia, Murcia, Spain, [3]Maria Diaz de Haro, Bilboa, Spain.
11:45		**DISCUSSION**

Small Ruminant Dairy Research - Milk Quality and Dairy Foods

Sponsored by *Genzyme Transgenics Corporation*

Co-Chairs: D. Van Hekken, USDA, ARS,
Eastern Regional Research Center, Wyndmoor, PA and Y. Park, Fort Valley State University, Fort Valley, GA.

Tuesday, 1:15 p.m. - 5:00 p.m.
Room: 316

Time	Abstract Number	
1:15		Symposium Introduction – D. Van Hekken, USDA, ARS, ERRC, Wyndmoor, PA.

1:30 28 **INVITED** Hydration of native and rennin-coagulated caprine caseins as determined by oxygen-17 nuclear magnetic resonance. A. Mora-Gutierrez*[1] and H.M. Farrell, Jr.[2], [1]Prairie View A&M University, CARC, Prairie View,TX, [2]USDA, ARS, ERRC, Wyndmoor, PA.

2:00 29 **INVITED** Seasonal changes in the chemical composition of commingled goat's milk. M.R. Guo*[1], P.H. Dixon[1], Y.W. Park[2], J.A. Gilmore[1], and P.S. Kindstedt[1], [1]Northeast Dairy Foods Research Center,University of Vermont, Burlington, [2]Agricultural Research Station, Fort Valley State University, GA.

2:30 30 **INVITED** Is there a future for goat and sheep milk cheesemaking in the U.S.? Technical and research considerations. P.S. Kindstedt*, M.R. Guo, and P.H. Dixon, University of Vermont, Burlington.

3:00 **BREAK**

3:15 31 **INVITED** Freezing qualities of raw sheep milk for further processing. W.L. Wendorff*[1], [1]University of Wisconsin, Madison.

3:45 32 **INVITED** Proteolysis and Lipolysis of Goat Milk Cheese. Young Park*[1], [1]Fort Valley State University, Fort Valley, GA.

4:15 **DISCUSSION**

DAIRY SPECIES

SYMPOSIUM

Endocrinology and Metabolism in Transition Dairy Cows

Sponsored by *Consolidated Nutrition*

Chair: D. S. Lough, USDA, AMS, Science and Technology, Washington, DC

Tuesday, 8:00 a.m. - 11:30 a.m.
Room: 309

Time	Abstract Number	
8:00		**Introduction**
8:05	45	**INVITED** The future of feed intake regulation research. C.A. Baile*,University of Georgia, Athens.
8:50	46	**INVITED** Changes in the somatotrophic axis associated with the initiation of lactation. M.C. Lucy*, H. Jiang, and Y. Kobayashi, University of Missouri, Columbia.
9:35		**BREAK**
9:45	47	**INVITED** Adaptations of glucose and fatty acid metabolism in liver of dairy cows during the periparturient period. J. K. Drackley*, University of Illinois, Urbana.
10:30	48	Effects of monensin and growth hormone on glucose kinetics in the prepartum cow. A. Arieli*[1], J.E. Vallimont[2], G.A. Varga[2], and Y. Aharoni[3], [1]Hebrew University of Jerusalem, Rehovot Israel, [2]Pennsylvania State University, University Park, [3]Agricultural Research Organization, Ramat Yishay, Israel.
10:45	49	Challenging a mechanistic model of dairy cattle metabolism to describe changes in body fat of high producing dairy cattle fed various diets during early lactation. J. Sage*, J. Phillips, T. Citron, and J. McNamara, Washington State University, Pullman.
11:00	50	Indirect measurement of muscle protein degradation in lactating dairy cattle to challenge a metabolic model's ability to describe body protein usage. T. L. Citron*, J. J. Sage, J. G. Phillips, and J. P.

McNamara, Washington State University, Pullman.

11:15 **DISCUSSION**

INDUSTRY/TECH FORUM

FOOD SAFETY 1

Farm-to-Table Food Safety

Chair: M. Wiedmann, Cornell University, Ithaca, NY

Tuesday, 8:00 a.m. - 10:15 a.m.
Room: 313

Time	Abstract Number	
8:00	451	A comparison of antibiotic resistance patterns from swine farms using or excluding antibiotics. M. Beckmann*, F. R. Jackson, and A. G. Mathew, The University of Tennessee, Knoxville.
8:15	452	Effect of drug combinations and regimens on antibiotic resistance in bacteria from swine. F. R. Jackson*, M. Beckmann, and A. G. Mathew, The University of Tennessee, Knoxville.
8:30	453	Prevalance of verotoxin-producing *Escherichia coli* in sheep grazing Great Basin irrigated pastures. S. L. Lake*, B. H. Thran, H. S. Hussein, S. F. Khaiboullina, M. R. Hall, and H. A. Glimp, University of Nevada, Reno.
8:45	454	Determining incidence levels of Salmonella and Escherichia coli 0157:H7 on beef cattle. A.R. Barham*[1], G.H. Locke[2], D.M. Allen[2], J.R. Blanton[1], and M.F. Miller[1], [1]Texas Tech University, [2]Excel Corporation.
9:00		**BREAK**
9:15	455	*Escherichia coli* O157:H7 becomes resistant to sodium chlorate in pure, but not mixed culture or in vivo. T. R. Callaway*[1], R. C. Anderson[1], S. A. Buckley[1], M. A. Carroll[2], L. F. Kubena[1], and D. J. Nisbet[1], [1]USDA/Agricultural Research Service-Southern Plains Agricultural Research Center College Station, TX, [2]Texas A&M University, College Station, TX.
9:30	456	Tasco Supplementation in Feedlot Cattle: Effects on Pathogen Loads. L.L. Behrends, J.R. Blanton Jr., M.F. Miller, K.R. Pond, and V.G. Allen, Texas Tech University, Lubbock.
9:45	457	Technique Differences to Enumerate and Isolate *E. coli* O157:H7 from Beef Hides. M. A. Carr*[2], L. D. Thompson[1], C. B. Ramsey[1], M. San Francisco[1], S. P. Jackson[1], and M. F. Miller[1], [1]Texas Tech University, Lubbock, TX, [2]Angelo State University, San Angelo, TX.
10:00	458	Development of Beef Quality Assurance (BQA) programs for cow-calf producers: A glimpse at what worked for North Dakota. G.P. Lardy*, C.S. Stoltenow, and L. Lee, North Dakota State University, Fargo.

INDUSTRY/TECH FORUM

GOAT SPECIES 1, SHEEP SPECIES 1 AND DAIRY FOODS 4

SYMPOSIUM

Small Ruminant Dairy Research - Production
Small Ruminant Dairy Research - Milk Quality and Dairy Foods

Sponsored by *Kinder Goat Breeders Association, Genzyme Transgenics Corporation*

Chair: D. Van Hekken, USDA, ARS, Eastern Regional Research Center, Wyndmoor, PA

Tuesday, 8:30 a.m. - 12:00 noon
1:15 p.m. – 5:00 p.m.
Room: 316

GRADUATE STUDENT PAPER COMPETITION

ADSA PRODUCTION DIVISION

Chair: R. Harmon, University of Kentucky, Lexington

Tuesday, 9:30 a.m. - 11:15 a.m.
Room: 319

Time	Abstract Number	
9:30	569	Effect of incubation fluid pH on the dry and organic matter degradation of alfalfa stems treated with fibrolytic enzymes. D. Colombatto*[1], F. L. Mould[1], M. K. Bhat[2], and E. Owen[1], [1]University of Reading, UK, [2]Institute of Food Research, Norwich, UK.
9:45	570	Milk response to concentrate supplementation of high producing dairy cows grazing at two pasture allowances. F. Bargo*, L.D. Muller, J.E. Delahoy, and T.W. Cassidy, The Pennsylvania State University, University Park.
10:00	571	Milk Production and Composition from Cows Fed Fish Oil, Extruded Soybeans, or Their Combination. L. A. Whitlock*, D. J. Schingoethe, A. R. Hippen, R. J. Baer, N. Ramaswamy, and K. M. Kasperson, MN-SD Dairy Foods Research Center, South Dakota State University, Brookings.
10:15		**BREAK**
10:30	572	Ascorbic acid and a Beta-glucan product from *Saccharomyces cerevisiae* influnce on dairy calf well-being. C. A. McKee*[1], S. D. Eicher[1], and T. R. Johnson[2], [1]USDA-ARS, West Lafayette, IN, [2]Purdue University, West Lafayette, IN.
10:45	573	Alteration of apoptosis-related gene expression and 92 kDa-gelatinase activity in *Escherichia coli* infected bovine mammary glands. E. Long*[1], A.V. Capuco[2], D.L. Wood[2], T. Sonstegard[2], G. Tomita[2],

M.J. Paape[2], and X. Zhao[1], [1]McGill University, [2]USDA-ARS.

11:00 574 Pregnancy rates to a timed insemination in lactating dairy cows pre-synchronized and treated with bovine somatotropin: cyclic versus anestrus cows. F. Moreira*, C. Orlandi, C. Risco, F. Lopes, R. Mattos, and W. W. Thatcher, University of Florida, Gainesville.

INDUSTRY/TECH FORUM

GROWTH AND DEVELOPMENT 1

Impact of Clinical/Subclinical Disease on Animal Performance

Co-Chairs: M. E. Doumit and M. J. VandeHaar, Michigan State University, East Lansing

Tuesday, 8:00 a.m. - 11:00 a.m.
Room: 317

Time	Abstract Number	
8:00	575	**INVITED** Enhancing neonatal intestinal growth, development and repair following injury. J. Odle* and R.J. Harrell, North Carolina State University, Raleigh.
8:45		Questions and Answers
9:00	577	Regulation of leptin and leptin receptor (LR) expression with chronic inflammatory challenge in the growing pig. K.L. Houseknecht[1], C.P. Portocarrero[1], M.E. Johnston[2], R.D. Boyd[2], M.E. Spurlock[3], M.T. Leininger*[1], C.A. Bidwell[1], M.A. Mellencamp[2], and M.E. White[4], [1]Purdue University, [2]PIC USA, Inc., [3]Purina Mills, Inc., [4]University of Minnesota.
9:15	578	Effect of endotoxin (LPS) challenge on pituitary-thyroid axis and extrathyroidal thyroid hormone metabolism in cattle. S. Kahl*, T.H. Elsasser, and T.S. Rumsey, USDA, Agricultural Research Service, Beltsville, MD.
9:30	579	Effects of endotoxin (LPS) challenge on plasma adrenomedullin responses in cattle: correlation with maintenance of insulin-like growth factor-I (IGF-I) status. T.H. Elsasser*[1], S. Kahl[1], T.S. Rumsey[1], E.E. Connor[1], and J.L. Sartin[2], [1]USDA, Agricultural Research Service, Beltsville, MD, [2]Auburn University, Auburn, AL.
9:45	580	Biological markers of neonatal calf performance: relationships among serum IGF-1, zinc and copper to poor growth in Holstein calves. TW Graham*[1], JE Breher[1], AM Oberbauer[2], JS Cullor[2], TB Farver[2], and ME Kehrli[3], [1]Veterinary Consulting Services, Davis, Ca, [2]University of California, Davis, [3]USDA, National Animal Disease Center, Ames, IA.
10:00	581	Infection of weaned pigs with *Salmonella typhimurium* alters plasma insulin-like growth factor binding proteins. J. E. Minton[1], S. K. Durham*[2], R. Balaji[1], and S. S. Dritz[1], [1]Kansas State University, Manhattan, KS, [2]Diagnostic Systems Laboratories, Inc., Webster, TX.
10:15	582	Effects of endophyte-infected fescue seed on calf performance and physiological indices. C. Golden*, M. Nihsen, S. Wright, M. Poole, T. Denard, E. Piper, and C. Rosenkrans, Jr., University of Arkansas, Fayetteville.
10:30	583	Effects of ivermectin and immune challenge on steers consuming endophyte-infected fescue hay. M. Nihsen*, T. Bedingfield, T. Denard, M. Poole, S. Wright, Z. Johnson, E. Piper, and C. Rosenkrans, Jr., University of Arkansas, Fayetteville.
10:45	584	The effect of composition of liquid milk replacer at a low energy level on the small intestinal permeability of piglets after weaning. M.A.M. Spreeuwenberg*[1], J.M.A.J. Verdonk[2], and M.W.A. Verstegen[3], [1]Nutreco, [2]ID-TNO, [3]University of Wageningen, The Netherlands.

INDUSTRY/TECH FORUM

MEAT SCIENCE AND MUSCLE BIOLOGY 1

SYMPOSIUM

Ante-mortem Manipulation of Meat Quality

Sponsored by *Fort Dodge Animal Health*

Chair: S. M. Lonergan, Iowa State University, Ames

Tuesday, 8:00 a.m. - 12:00 noon
Room: 310

Time	Abstract Number	
8:00	91	**INVITED** Livestock handling quality assurance. T Grandin*,Colorado State University, Ft. Collins.
8:40	92	**INVITED** Influence of nutritional therapy on meat quality. A.L. Schaefer* and P.L. Dubeski, Agriculture and Agri-Food Canada, Lacombe, Alberta, Canada.
9:20	93	**INVITED** Vitamin E - A bridge between animal nutrition and meat quality. D. M. Schaefer*, University of Wisconsin, Madison.
10:00		**BREAK**
10:15	94	**INVITED** Influencing beef tenderness through manipulation of calcium metabolism with vitamin D. J. B. Morgan and D. R. Gill, Oklahoma State University, Stillwater.
10:55	95	**INVITED** Does dietary conjugated linoleic acid improve meat quality? Donald Beitz, Iowa State University, Ames.
11:35		**ROUND TABLE DISCUSSION WITH ALL SPEAKERS**

MILK SYNTHESIS 1

Chair: J. C. Byatt, Monsanto Company, St. Louis, MO

Tuesday, 8:00 a.m. - 10:15 a.m.
Room: 311

Time	Abstract Number	
8:00	689	Estrogen treatments to initiate dryoff in dairy cows. M.L. Schairer*, K.C. Bachman, M.J. Hayen, and H.H. Head, University of Florida Gainesville.
8:15	690	Exogenous *trans* 10, *cis* 12-18:2 reduces d*e novo* synthesis and desaturation of milk fatty acids in cows fed diets supplemented with high-oleic or high-linoleic oil. J. J. Loor* and J. H. Herbein, Virginia Polytechnic Institute & State University, Blacksburg.
8:30	691	Effect of conjugated linoleic acids (CLA) on lipid metabolism in lactating dairy cows. L.H. Baumgard*, B.A. Corl, D.A. Dwyer, T.R. Mackle, and D.E. Bauman, Cornell Univ., Ithaca, NY.

8:45 692 Conjugated linoleic acids as free fatty acids or triglycerides cause milk fat depression. T. W. Hanson*[1], J. G. Giesy[1], M. A. McGuire[1], E. L. Annen[1], D. E. Bauman[2], A. Saebo[3], and M. K. McGuire[4], [1]University of Idaho, Moscow, [2]Cornell University, Ithaca NY, [3]Natural Lipids, Norway, [4]Washington State University, Pullman.

9:00 693 Effect of dose of calcium salts of conjugated linoleic acid (CLA) on milk yield, fat and CLA content of milk fat in Holstein cows early in lactation. J.G. Giesy*[1], T.W. Hanson[1], H.C. Hafliger[1], M.A. McGuire[1], C.H. Skarie[2], and K. Cummings[3], [1]University of Idaho, Moscow, [2]Conlinco, Detroit Lakes, MN, [3]Church & Dwight Co. Inc., Princeton, NJ.

9:15 694 Response of milk fat to intravenous administration of the trans-10, cis-12 isomer of conjugated linoleic acid (CLA). S. Viswanadha*, T. W. Hanson, J. G. Giesy, and M. A. McGuire, University of Idaho, Moscow.

9:30 695 The role of Δ^9-desaturase in the production of *cis*-9, *trans*-11 CLA and other Δ^9 desaturated fatty acids in milk fat. B. A. Corl*[1], L. H. Baumgard[1], D. A. Dwyer[1], J. M. Griinari[2], B. S. Phillips[3], and D. E. Bauman[1], [1]Cornell Univ., Ithaca, NY, [2]Helsinki Univ., Finland, [3]NCAUR, ARS/USDA, Peoria, IL.

9:45 696 Effects of duodenal infusion of graded amounts of Leu on mammary uptake and metabolism in dairy cows. H. Rulquin*[1] and P.M. Pisulewski[2], [1]UMRPL INRA, St Gilles, France, [2]Agricultural Univ., Cracow, Poland.

10:00 697 Effects of duodenal infusion of graded amounts of His on mammary uptake and metabolism in dairy cows. H. Rulquin*[1] and P.M. Pisulewski[2], [1]UMRPL INRA, St Gilles, France, [2]Agricultural Univ., Cracow, Poland.

INDUSTRY/TECH FORUM

NONRUMINANT NUTRITION 1

Value of Supplemental Enzymes in Swine Diets

Chair: T. Stahly, Iowa State University, Ames

Tuesday, 8:00 a.m. - 11:00 a.m.
Room: 315

Time	Abstract Number	
8:00	719	Effects of level of phytase on ileal digestibility of calcium, phosphorus, crude protein, and amino acids in dehulled soybean meal. S.L. Traylor*[1], G.L. Cromwell[1], M.S. Plunkett[1], M.D. Lindemann[1], and D.A. Knabe[2], [1]University of Kentucky, Lexington, [2]Texas A&M University, College Station.
8:15	720	The effects of phytase supplementation to growing-finishing diets containing wheat middlings. N. Bekiares* and G. Apgar, Southern Illinois University, Carbondale.
8:30	721	Use of phytase to improve nutrient digestibility in growing finishing pigs fed diets containing cottonseed meal. M. J. Azain, R. D. Jones, A. Phositlimpagul, M. A. Froetschel, and H. E. Amos, University of Georgia, Athens.
8:45	722	Comparison of two genetically modified phytase sources fed to grower pigs. B. C. Robbins*[1], J. S. Radcliffe[1], T. L. Veum[2], J. P. Rice[1], and E. T. Kornegay[1], [1]Virginia Polytechnic Institute and State University, [2]University of Missouri-Columbia.
9:00	723	The effects of microbial phytase on mineral, amino acid, and energy digestibilities in grow-finish pigs fitted with steered ileo-cecal valve cannulas and fed corn-wheat-soybean meal, corn-wheat-canola, or corn-sorghum-soybean meal based diets. J. S. Radcliffe*, R. S. Pleasant, and E. T. Kornegay, Virginia Polytechnic Institute and State University, Blacksburg.

9:15 724 The effects of microbial phytase on mineral, amino acid, and energy digestibilities in grow-finish pigs fitted with SICV cannulas and fed corn-soybean meal, corn-soybean meal-wheat midds, or corn-soybean meal-meat and bone meal based diets. J. P. Rice*, J. S. Radcliffe, B. C. Robbins, R. S. Pleasant, and E. T. Kornegay, Virginia Polytechnic Institute and State University, Blacksburg.

9:30 725 Effects of Hemicell® addition to corn-soybean meal diets on energy and nitrogen balance in growing pigs. L. A. Pettey*, S. D. Carter, and B. W. Senne, Oklahoma State University, Stillwater.

9:45 726 Effect of supplemental enzyme in barley with low, medium, and high DE content fed to grower pigs. R.T. Zijlstra*[1], B.K. Sloan[2], and J.F. Patience[1], [1]Prairie Swine Centre Inc., Saskatoon, Canada, [2]Aventis Animal Nutrition, Atlanta, GA.

10:00 727 Processing of barley and enzyme supplementation in diets for early-weaned piglets. P. Medel*[1], F. Baucells[2], M.A. Latorre[1], M.I. Gracia[1], and G.G. Mateos[1], [1]Dpto. Produccion Animal. Universidad Politecnica de Madrid, [2]Pinsos Baucells. Barcelona.

10:15 728 Fermentability of pig feed treated with enzymes from stomach and pancreas, and of chyme. E. Bauer*[1,2], B. Williams[1], C. Voigt[1,2], R. Mosenthin[2], and M. Verstegen[1], [1]Wageningen Agricultural University, The Netherlands, [2]Hohenheim University, Stuttgart, Germany.

10:30 What have we learned? Xingen Lei, Cornell University, Ithaca.

INDUSTRY/TECH FORUM

NONRUMINANT NUTRITION 2

Mineral Nutrition

Chair: T. Crenshaw, University of Wisconsin, Madison

Tuesday, 10:45 a.m. - 12:00 noon
Room: 313

Time	Abstract Number	
10:45	729	The effect of dietary selenium source and level on broodmares and their foals. K.M. Janicki*, L.M. Lawrence, T. Barnes, and C.I. O'Connor, University of Kentucky, Lexington.
11:00	730	Effect of increasing available phosphorous levels on pig growth and carcass characteristics. S.A. DeCamp*[1], D.C. Kendall[1], C.T. Herr[1], K.A. Bowers[1], T.E. Weber[1], M.L. Cobb[1], C.J. Kendall[1], B.T. Richert[1], and A.L. Sutton[1], [1]Purdue University, West Lafayette.
11:15	731	Dietary available phosphorus needs of high lean pigs fed from 9 to 119 kg BW. T.S. Stahly, T.R. Lutz*, and R.D. Clayton, Iowa State University, Ames.
11:30	732	Minimum biological capacity for phosphorus excretion in pigs. B. R. Frederick* and T. S. Stahly, Iowa State University, Ames.
11:45	733	Boron affects growth performance and nutrient metabolism in growing barrows. T.A. Armstrong* and J.W. Spears, North Carolina State University, Raleigh.

PHYSIOLOGY 1

MINI-SYMPOSIUM

Luteal Cell Interactions and Function

Chair: F. Stormshak, Oregon State University, Corvallis

Tuesday, 8:00 a.m. - 10:00 a.m.
Room: 308

Time	Abstract Number	
8:00	101	**INVITED** Microvascular cycle in the primate corpus luteum: role of VEGF and angiopoietins. R. L. Stouffer*[1,2], L. K. Christenson[1], T. A. Molskness[1], and T. M. Hazzard[1], [1]Oregon Regional Primate Research Center, Beaverton, [2]Oregon Health Sciences University, Portland.
8:35	102	**INVITED** Gap junction-mediated cellular interactions in the corpus luteum (CL). A. T. Grazul-Bilska*, L. P. Reynolds, and D. A. Redmer, North Dakota State University, Fargo.
9:10	103	**INVITED** Molecular regulation of progesterone secretion in the ovine corpus luteum. G. D. Niswender*, Colorado State University, Fort Collins.
9:45		**DISCUSSION**

ADSA Foundation Scholar Award Recipient Lecture
Dairy Production Division

Chair: C. L. Hicks, University of Kentucky, Lexington Tuesday, 11:00 a.m. - 12:00 noon
Room: 308

Speaker: M. C. Lucy, University of Missouri,
Columbia.

Title: Reproductive Loss in High-Producing Dairy Cattle: Where Will It End?

INDUSTRY/TECH FORUM

PHYSIOLOGY 2 POSTER SESSION

Reproductive Biology

Tuesday, 8:00 a.m. - 5:00 p.m.
Authors of even numbered boards present
8:00 a.m. - 10:00 a.m.
Authors of odd numbered boards present
10:00 - 12:00 noon
Room: Exhibit Hall AB

Board No.	Abstract No.	
28	830	Effect of the flavonoid catechin or epicatechin on the motility of extended cooled equine spermatozoa. C. A. Woodward*, S. A. Ericsson, P. H. Phurdy, and M. D. Fox, Jr., Sul Ross State University, Texas, TX.
29	831	The effect of 2-bromo-ergocriptine on LH secretion in mature breeding stallions. K. Bennett-Wimbush*[1] and D. Keisler[2], [1]Ohio State University Agricultural Technical Institute, Wooster, Ohio, [2]University of Missouri, Columbia.
30	832	Effects of group size and bull-to-heifer ratio on sexual behavior, and concentrations of LH and testosterone in yearling beef bulls. R.D. Smith*, D.B. Imwalle, A.L. King, and K.K. Schillo, University of Kentucky, Lexington.
31	833	Peripubertal testicular characteristics in various hair sheep and meat goat breeds. B. L. Sayre* and S. Wildeus, Virginia State University.
32	834	Post-treatment reproductive characteristics of boars fed ractopamine hydrochloride during the finishing period. D. J. Jones*[1], D. H. Mowrey[1], W. P. Waitt[1], and W. L. Singleton[2], [1]Elanco Animal Health, Greenfield, IN, [2]Purdue University, West Lafayette, IN.
33	835	Insemination of lactating Angus cows with sexed sperm. S. P. Doyle[1], K. D. McSweeney*[1], J. L. Schenk[2], R. D. Green[1], and G. E. Seidel, Jr.[1], [1]Colorado State University, Fort Collins, [2]XY, Inc., Fort Collins, CO.
34	836	X and Y chromosome specific duplex PCR standardized to quantify sex ratio variation in bulls and boars. J. B. Paul*, A. M. Canal, and J. E. Chandler, LSU Agricultural Center, Baton Rouge, LA.
35	837	Cryopreservation of flow cytometrically sorted boar sperm: effects on in vivo embryo development. L. A. Johnson*[1], H. D. Guthrie[1], P. Fiser[1], W.M.C. Maxwell[2], G.R. Welch[1], and W.M. Garrett[1], [1]USDA Beltsville Agricultural Research Center, Beltsville, [2]University of Sidney, Australia.
36	838	Effects of transforming growth factor $\beta $ (TGF) on development of bovine embryos \italicize {in vitro}. A.L. King*, D.L. Funk, R.D. Smith, D.B. Imwalle, L.A. Anderson, and K.K. Schillo, University of Kentucky, Lexington.
37	839	The effects of phytohemagglutinin and pokeweed mitogen on bovine oocyte maturation *in vitro*. S. Wang[1], K.E. Panter*[2], J.N. Stellflug[3], R.C. Evans[1], and T.D. Bunch, [1]ADVS Department, Utah State University, Logan, [2]USDA-ARS, Poisonous Research Laboratory, Logan, UT, [3]3USDA-ARS, U.S. Sheep Experiment Station, Dubois, ID.
38	840	*In vitro* maturation medium supplemented with bovine follicular fluids on subsequent embryo development. S. Wang*[1], Y. Liu[1], K.E. Panter[2], J.N. Stellflug[3], R.C. Evans[1], and T.D. Bunch[1], [1]ADVS Department, Utah State University, Logan, UT, [2]USDA-ARS, Poisonous Research Laboratory, Logan, UT, [3]USDA-ARS, U.S. Sheep Experiment Station, Dubois, ID.
39	841	Embryonic development in beef cattle administered ergotamine tartrate to simulate fescue toxicosis. M. E. Hockett*, T. M. Towns, J. L. Edwards, N. R. Rohrbach, and F. N. Schrick, University of Tennessee, Knoxville.

40 842 Interaction of endophyte-infected fescue and heat stress on ovarian function in the beef heifer. J. M. Burke*[1], F. N. Kojima[2], B. E. Salfen[2], S. L. Wood[2], D. J. Patterson[2], M. F. Smith[2], M. C. Lucy[2], W. G. Jackson[1], and E. L. Piper[3], [1]USDA, ARS, Booneville, AR, [2]University of Missouri, Columbia, [3]University of Arkansas, Fayetteville.

41 843 Enhancement of superovulatory response using a norgestomet implant during the FSH treatment period. G. W. Bednar* and J. R. Pursley, Michigan State University, East Lansing.

42 844 Follicular dynamics and oocyte quality during early lactation in Holstein cattle. A.H. Walters*, T.L Bailey, J. Strauss, and F.C. Gwazdauskas, Virginia Polytechnic Institute & State University, Blacksburg.

43 845 Effects of follicle stimulating hormone (FSH) treatment on follicular development and oocyte retrieval in seasonally anestrous ewes. T. K. Stenbak*, L. P. Reynolds, D. A. Redmer, and A. T. Grazul-Bilska, Department of Animal and Range Sciences, North Dakota State University, Fargo.

44 846 Effect of FSH on in vitro growth of early antral follicles from bovine fetal ovaries. K. R. Chohan and A. G. Hunter*, University of Minnesota, Saint Paul.

45 847 Effect of culture duration on germinal vesicle and meiotic development of bovine fetal oocytes Isolated from small antral follicles K. R. Chohan and A. G. Hunter*, University of Minnesota, Saint Paul.

46 848 Temporal and spatial expression of tissue inhibitor of matrix metalloproteinase 1 (TIMP-1) in bovine corpus luteum. B. Zhang* and P.C.W. Tsang, University of New Hampshire, Durham.

47 849 Immunization of sheep against homologous placental lactogen: effects on lamb birth weight, milk production and conception rate. H. Leibovich*[1], A. Gertler[1], F.W. Bazer[2], and E. Gootwine, [1]The Hebrew University of Jerusalem, Israel, [2]Texas A&M University System Health Science Center, [3]Institute of Animal Sciences, ARO, The Volcani Center, Israel.

48 850 Lambing rates after oxytocin-induced cervical dilation, cervical manipulation, and laparoscopic artificial insemination. J. Stellflug*[1], M. Wulster-Radcliffe[2], E. Hensley[2], and G. Lewis[1], [1]USDA-ARS US Sheep Experiment Sation, Dubois ID, [2]Virginia Tech University, Blacksburg.

49 851 Progesterone down regulates the uterine immune response to infectious bacteria in gilts. M. C. Wulster-Radcliffe*[1], R. C. Seals[1], and G. S. Lewis[2], [1]Virginia Polytechnic Institute and State University, Blacksburg, VA, [2]USDA Sheep Experiment Station, Dubois, ID.

50 852 Prostaglandin modulation of the uterine responses to infections in ewes. R. C. Seals*, M. C. Wulster-Radcliffe, and G. S. Lewis, Virginia Polytechnic Institute and State University, Blacksburg.

51 853 Effects of selection for ovulation rate or uterine capacity on gravid uterine, farrowing, and weaning traits in swine. R. K. Christenson* and K. A. Leymaster, USDA, Agricultural Research Service, U.S. Meat Animal Research Center, Clay Center, NE.

52 854 Estrus and ovarian responses to P.G.600 administered after Regumate withdrawal in gilts. M.J. Estienne*, A.F. Harper, C.E. Estienne, and J.W. Knight, Virginia Polytechnic Institute and State University, Blacksburg, VA.

53 855 Effectiveness of an early pregnancy test for cows. L. A. Pagels*, M. G. Daves, and C. S. Whisnant, North Carolina State University Raleigh.

54 856 Evaluation of an early conception factor test for use in dairy cattle. B. Gandy*[1], W. Tucker[1], P. Ryan[1], A. Williams[1], A. Tucker[1], A. Moore[1], R. Godfrey[2], and S. Willard[1], [1]Mississippi State Univ., [2]Agric. Exp. Station, Univ. of Virgin Islands, St. Croix.

55 857 The use of estrous synchronization, artificial insemination and a cow side early conception test on Holstein heifers in the tropics. R.W. Godfrey*[1] and S.T. Willard[2], [1]Agricultural Experiment Station, University of the Virgin Islands, St Croix, [2]Mississippi State University, Mississippi State.

INDUSTRY/TECH FORUM

PRODUCTION AND MANAGEMENT 1

SYMPOSIUM

Management of Dairy Herds for 40,000 pounds (18,182 kilograms) of Milk Per Year

Sponsored by *ARPAS, Schering-Plough Animal Health*

Chair: B. Perkins, Monsanto Company, St. Louis, MO

Tuesday, 8:00 a.m. - 12:00 noon
Room: Ballroom 4

Time	Abstract Number	
8:00	104	**INVITED** Survey of management practices used for the highest producing DHI herds in the United States. D. W. Kellogg*[1], Z. B. Johnson[1], and J. A. Pennington[2], [1]University of Arkansas, Fayetteville, [2]Agricultural Extension Service, Little Rock.
8:25	105	**INVITED** Optimal genetic improvement for the high producing cow. B.G. Cassell*, Virginia Tech, Blacksburg.
9:00	106	**INVITED** Reproductive management of the 40,000 pound dairy herd. J.S. Stevenson, Kansas State University, Manhattan.
9:35	107	**INVITED EAAP SPEAKER** Feeding management of the Dairy Herds for 40000-lb. milk/ year. O. Kroll*, Hachaklait & Israel Cattle Breeders Association.
10:10	108	**INVITED** Feeding management of the 40,000 pound dairy herds. M.F. Hutjens*, University of Illinois, Urbana.
10:45	109	**INVITED** New technologies and decision-making tools for high producing herds. L. Jones*[1], [1]FARME Institute, Inc., Homer, NY.
11:20		**DISCUSSION**

INDUSTRY/TECH FORUM

RUMINANT NUTRITION 1

Ruminal Fermentation I

Co-Chairs: M. Allen, Michigan State University, East Lansing and K. McGuffey, Elanco Animal Health, Greenfield, IN

Tuesday, 8:00 a.m. – 12:00 noon
Room: Ballroom 3

Time	Abstract Number	
8:00	1034	**INVITED** Ionophores for dairy cattle: current status and future outlook. R. K. McGuffey*, L.F.Richardson, and J.I.D. Wilkinson, [1]Elanco Animal Health, Greenfield, IN.
8:30	1035	Milk production of Holstein x Sahiwal cows receiving monensin and a sustained release formulation of methionyl bovine somatotropin. T. P. Pelaez[1], I. A. Duque[1], D. Zambrano[1], E. Plaza[2], V. A. Reyes[2], N. S. Defaz[2], C. Gonzalez[3], E. Bernal*[3], and R. K. McGuffey[3], [1]Universidad Estatal de Quevedo, Quevedo, Ecuador, [2]Rey Sahiwal, Grupo Wong, Guayaquil, Ecuador, [3]Elanco Animal Health, Bogota, Colombia.
8:45	1036	Effects of lasalocid on the forage to concentrate ratio fed to steers maintained at pre-determined daily average ruminal pH. D.L. Prentice*, D.M. Schaefer, and G.R. Oetzel, University of Wisconsin, Madison.
9:00	1037	Monensin has anti-foaming properties. P. J. Moate*[1], T. Clarke[2], L. Davis[2], E. Bastiensen, and R. Laby[2], [1]University of Pennsylvania, [2]Agriculture Victoria Ellinbank.
9:15	1038	Effects of monensin and dietary phosphorus concentration on mineral metabolism of grazing steers. S. M. Williamson*, E. B. Kegley, T. J. Wistuba, W. K. Coblentz, C. P. West, K. P. Coffey, and D. G. Galloway, University of Arkansas, Fayetteville.
9:30	1039	Effect of salinomycin or monensin on performance and feeding behavior of cattle fed wheat- or barley-based diets. D. J. Gibb*[1], S.M.S. Moustafa[1], R. D. Wiedmeier[2], and T. A. McAllister[1], [1]Agriculture and Agri-Food Canada Research Centre, Lethbridge, AB, [2]Utah State University, Logan.
9:45		**BREAK**

Carbohydrates

10:00	1040	Effect of sugars and malate on ruminal microorganisms. S. A. Martin*, H. M. Sullivan, and J. D. Evans, University of Georgia, Athens.
10:15	1041	Effect of replacing dietary starch with sucrose on milk production in lactating dairy cows. G. A. Broderick*[1], N. D. Luchini[2], W. J. Smith[1], S. Reynal[3], G. A. Varga[4], and V. A. Ishler[4], [1]U.S. Dairy Forage Research Center, Madison, WI, [2]Conti-Group Co., Chicago, [3]University of Wisconsin, Madison, [4]Pennsylvania State University, University Park.
10:30	1042	Performance of lactating dairy cows fed citrus pulp or corn products as sources of neutral detergent-soluble carbohydrates. E. Leiva, M. B. Hall*, and H. H. Van Horn, University of Florida, Gainesville.
10:45	1043	Effects of conservation method of corn grain and dietary starch content on DMI and productivity of lactating dairy cows. M. Oba* and M. S. Allen, Michigan State University, East Lansing.
11:00	1044	Effects of conservation method of corn grain and dietary starch content on starch digestibility and efficiency of microbial N production in lactating dairy cows. M. Oba* and M. S. Allen, Michigan State University, East Lansing.
11:15	1045	Effects of Speciality Corn Hybrids on Lactation Performance of Dairy Cows. V. Akay* and J. A. Jackson, University of Kentucky, Lexington.
11:30	1046	The Lactational Response to Diets Containing Conventional or High Oil Corn Fed at Two Dietary

Energy Concentrations. L. A. Whitlock*, D. J. Schingoethe, A. R. Hippen, and K. M. Kasperson, South Dakota State University, Brookings.

11:45 1047 Utilization of barley in diets of lactating cows. R. L. Kincaid*[1], J. H. Harrison[2], W. Sanchez[3], and C. W. Hunt[4], [1]Washington State University, Pullman, [2]Washington State University, Puyallup, [3]Church and Dwight, Inc., Princeton, NJ, [4]University of Idaho, Moscow.

INDUSTRY/TECH FORUM

RUMINANT NUTRITION 2
POSTER SESSION

Dairy Calves, Heifers, and Transition Cows

Tuesday, 8:00 a.m. - 5:00 p.m.
Authors of even numbered boards present
10:00 a.m. - 12:00 noon
Authors of odd numbered boards present
1:00 p.m. - 3:00 p.m.
Room: Exhibit Hall AB

Board No.	Abstract No.	
56	1048	Growth response of post-weaned dairy heifers to level of rumen undegradable protein in the total ration dry matter. B.A. Hopkins* and L.W. Whitlow, North Carolina State University, Raleigh.
57	1049	Effects of dietary vitamin A and E on performance and scour incidence of milk replacer fed calves. B.L. Miller*[1], T.E. Johnson[1], H.B. Perry[1], M.A. Fowler[1], D.E. Housken[1], B.J. Nonnecke[2], and R.I. Horst[2], [1]Land O'Lakes, Inc., Webster City, IA, [2]National Animal Disease Center, USDA-URS, Ames, IA.
58	1050	Effects of dietary vitamins A and E on retinol, retinyl palmitate and vitamin E concentrations in plasma and tissues from neonatal calves. B.J. Nonnecke*[1], R.L. Horst[1], M.A. Fowler[2], B.L. Miller[2], J.W. Young[3], T.E. Johnson[2], H.B. Perry[2], D.E. Housken[2], and D.A. Hoy[1], [1]National Animal Disease Center, USDA-URS, Ames, IA, [2]Land O'Lakes Inc., Webster City, IA, [3]Iowa State University, Ames, IA.
59	1051	Effect of dietary vitamin A (VA) and E (VE) on function and composition of circulating leukocyte populations from milk replacer-fed, neonatal calves. B.J. Nonnecke*[1], M.A. Fowler[2], B.A. Pesch[1], B.L. Miller[2], R.L. Horst[1], T.E. Johnson[2], H.B. Perry[2], D.E. Housken[2], and J.A. Harp[1], [1]National Animal Disease Center, USDA-ARS, Ames, IA, [2]Land O'Lakes, Inc., Webster City, IA.
60	1052	The effects of supplemental lactoferrin on calf performance. R.S. Joslin[1], H.M. Santoro[1], N.L. Whitehouse[1], J.J. Rejman[2], P.S. Erickson*[1], and C.G. Schwab[1], [1]University of New Hampshire, Durham, NH, [2]ImmuCell Corp., Portland, ME.
61	1053	Growth of calves fed milk replacer containing spray-dried egg product. D. W. Kellogg*[1], K. S. Anschutz[1], Z. B. Johnson[1], K. E. Lesmeister[1], and A.K.M.A. Haque[2], [1]University of Arkansas, Fayetteville, [2]American Dehydrated Food, Inc., Springfield, MO.
62	1054	Variable amounts of ruminally degradable and undegradable protein for post-weaned dairy heifers. S. L. Cole*[1], C. G. Schwab[1], B. D. Garthwaite[1], N. L. Whitehouse[1], P. S. Erickson[1], T. P. Fairchild[1], and P. C. Hoffman[2], [1]University of New Hampshire, Durham, [2]Marshfield Agricultural Experiment Research Station, WI.
63	1055	Effect of physical form of calf starter on starter intake and days to weaning in dairy calves. D. M. Amaral-Phillips*, S. T. Franklin, and A. Polley, University of Kentucky, Lexington.
64	1056	Carnitine palmitoyltransferase activity in liver of periparturient dairy cows. H. M. Dann*, G. N. Douglas,

T. R. Overton, and J. K. Drackley, University of Illinois, Urbana.

65 1057 Prepartum energy and protein intake of dairy cows. 2. Effect on periparturient lipid metabolism. L. Doepel*[1], H. Lapierre[2], and J.J. Kennelly[1], [1]University of Alberta, Edmonton, Canada, [2]Dairy and Swine R & D Centre, Lennoxville, Canada.

66 1058 The effects of high inclusion grain mixes fed to transitioning cows on subsequent milk and milk component production. C. M. Luhman*, Land O'Lakes, Inc. and Cooperative Research Farms.

67 1059 Effects of dietary protein prepartum and postpartum on nitrogen balance and milk production from dairy cows. J. M. Moorby*, R. T. Evans, and W. J. Fisher, Institute of Grassland and Enviromental Research, Aberystwyth, UK.

68 1060 Chronic observation of gravid uterine blood flow around parturition in Holstein cows. T. Nishida*[1], S. Ando[1], M. R. Islam[1], Y. Nagao[2], and M. Ishida[1], [1]National Grassland Research Institute, [2]Utsunomiya University Farm.

69 1061 Metabolic response during the periparturient period of Holstein cows fed varied amounts of dietary protein prepartum. A.F. Park*[1], J.E. Shirley[1], E.C. Titgemeyer[1], M.J. Meyer[1], M.J. VanBaale[1], and M.J. VandeHaar[2], [1]Kansas State University, Manhattan, [2]Michigan State University, East Lansing.

70 1062 Effect of wet corn gluten feed on intake and performance during the periparturient period. A.F. Park, M.J. Meyer, J.M. DeFrain*, J.E. Shirley, E.C. Titgemeyer, T.T. Marston, J.F. Gleghorn, and L.E. Wankel, Kansas State University, Manhattan.

71 1063 Transition cow: administration of glucose precursors and probiotics. V. Dell'Orto[1], A. Agazzi[1], G. Mancin[1], and G. Savoini*[1], [1]University of Milan, Italy.

72 1064 Metabolic effects of propylene glycol in transition diets of Jersey cows. M. Birchen*, B.A. Fadl-Alla, M.R. Murphy, G.C. McCoy, and M.F. Hutjens, University of Illinois, Urbana.

INDUSTRY/TECH FORUM

RUMINANT NUTRITION 3

Beef Feeding Systems

Co-Chairs: C. Krehbiel, Oklahoma State University, Stillwater and K. Johnson, Washington State University, Pullman

Tuesday, 8:30 a.m. - 11:45 p.m.
Room: 307

Time	Abstract Number	
8:30	1065	Blood, ruminal and fecal measures of steers fed different combinations of supplemental energy and DIP while grazing winter range. T. N. Bodine*, H. T. Purvis II, and D. A. Cox, Oklahoma Agricultural Experiment Station, Stillwater.
8:45	1066	Effects of Hay and(or) Protein Supplementation with pelleted Soybean Hulls on Growth Performance of Growing Steers. J.A. Shiver*, D.L. Lalman, D.R. Gill, R.L. Ball, J.N. Carter, W.T. Choat, S.D. Carter, G.W. Horn, and T.C. Stovall, Okalhama State University, Stillwater.
9:00	1067	Relative efficiency of 40 or 160 g of moderate or high undegradable intake protein supplements with low quality forage diets. J. E. Sawyer*, C. C. Rasor, R. C. Waterman, and M. K. Petersen, New Mexico State University, Las Cruces.
9:15	1068	Effects of supplementation of limit-fed growing diets with either soybean meal or non-enzymatically browned soybean meal on steer performance. C. M. Coetzer*, J. S. Drouillard, S. P. Montgomery, T. B.

Farran, J. J. Sindt, A. M. Trater, H. J. LaBrune, R. D. Hunter, and T. A. Nutsch, Kansas State University, Manhattan.

9:30 1069 Evaluation of performance in receiving heifers fed different sources of dietary lipids. T.B. Farran, J.S. Drouillard, D.A. Blasi, H.J. LaBrune, S.P. Montgomery, J.J. Sindt, C.M. Coetzer, R.D. Hunter, T.A. Nutsch, and J.J. Higgins, Kansas State University, Manhattan.

9:45 1070 Bloodmeal increases performance of early-weaned calves late in the growing phase. J. W. Lehmkuhler* and M. S. Kerley, University of Missouri, Columbia.

10:00 1071 Effects of Feeding Fat and Normal vs. High Oleic Acid Soybeans on Feedlot Steer Performance and Carcass Characteristics. E. E. D. Felton*[1], C. L. Lorenzen[1], M. S. Kerley[1], S. D. Soderlund[2], and F. N. Owens[2], [1]University of Missouri, Columbia, Missouri, [2]Optimum Quality Grains, Des Moines, IA.

10:15 **BREAK**

10:30 1072 Influence of dietary starch source on fatty acid synthesis and the expression of fat metabolism genes in bovine adipose tissue. E. Okine*[1], D. R. Glimm[2], G. R. Khorasani[2], and J. J. Kennelly[2], [1]Western Forage/Beef Group, Lacombe, AB, Canada, [2]University of Alberta, Edmonton, AB, Canada.

10:45 1073 Effect of management strategy on average daily gain, carcass traits, and fatty acid composition in longissimus muscle of finishing steers. L. F. Laborde, I. B. Mandell*, J. J. Tosh, J. G. Buchanan-Smith, and J. W. Wilton, University of Guelph, Ontario, Canada.

11:00 1074 Effect of method of diet adaptation on animal performance and carcass characteristics of beef steers. W.T. Choat[1], M.S. Brown[2], C.R. Krehbiel*[1], G.C. Duff[3], D.A. Walker[3], K.J. Malcolm-Callis[3], and M.W. Wiseman[3], [1]Oklahoma State University, Stillwater, [2]West Texas A&M University, Canyon, [3]Clayton Livestock Research Center, Clayton, NM.

11:15 1075 Effects of previous grazing on feedlot cattle performance and carcass characteristics. W.T. Choat*[1], C.R. Krehbiel[1], G.C. Duff[2], R.E. Kirksey[3], D.A. Walker[2], K.J. Malcolm-Callis[2], M.W. Wiseman[2], L.M. Lauriault[3], and G.B. Donart[4], [1]Oklahoma State University, Stillwater, [2]Clayton Livestock Research Center, Clayton, NM, [3]Agricultural Science Center, Tucumcari, NM, [4]New Mexico State University, Las Cruces.

11:30 1076 Influence of previously grazed winter wheat or native range on nutrient digestion by growing bovine being adapted to a 90% concentrate diet. W.T. Choat*[1], C.R. Krehbiel[1], G.C. Duff[2], J.D. Rivera[2], D.A. Walker[2], K.J. Malcolm-Callis[2], M.W. Wiseman[2], and B.J. Summers[1], [1]Oklahoma State University, Stillwater, [2]Clayton Livestock Research Center, Clayton, NM.

INDUSTRY/TECH FORUM

SHEEP SPECIES 1, GOAT SPECIES 1, AND DAIRY FOODS 4

SYMPOSIUM

Small Ruminant Dairy Research – Production
Small Ruminant Dairy Research - Milk Quality and Dairy Foods

Sponsored by *Kinder Goat Breeders Association, Genzyme Transgenics Corporation*

Chair: D. Van Hekken, USDA, ARS, Eastern Regional Research Center, Wyndmoor, PA

Tuesday, 8:30 a.m. - 12:00 noon
1:15 p.m. – 5:00 p.m.
Room: 316

INDUSTRY/TECH FORUM

BEEF SPECIES 1

Tools Needed to Formulate Sustainable Integrated Beef Production Systems

Sponsored by *Fort Dodge Animal Health*

Chair: W.A. Phillips, USDA-ARS, El Reno, OK

Tuesday, 1:00 p.m. - 4:00 p.m.
Room: 317

Time	Abstract Number	
1:00	190	**INVITED** Age of calf at weaning of spring-calving beef cows and the effect on cow and calf performance and production economics. R. J. Rasby*[1] and R. T. Clark[1], [1]University of Nebraska, Lincoln.
1:20		DISCUSSION/QUESTIONS INVITED PAPER
1:30	191	The effects of age at weaning and prepubertal dietary management on performance of crossbred beef heifers. W. J. Sexten*, D. B. Faulkner, and F. A. Ireland, University of Illinois at Urbana-Champaign.
1:45	192	Early-weaning and nutritional management affect feedlot performance, carcass merit, and rate of intramuscular and subcutaneous fat deposition of Angus x Simmental heifers. A. E. Wertz*[1], L. L. Berger[1], P. M. Walker[2], D. B. Faulkner[1], and F. K. Mc Keith[1], [1]University of Illinois, Urbana, [2]Illinois State University, Normal.
2:00	193	Weaning Management Strategies for Steer Calves. R. S. Wells, D. B. Faulkner, and F. A. Ireland, University of Illinois at Urbana/Champaign.
2:15		DISCUSSION/COMMENTS ALL FOUR PRESENTERS
2:30	194	**INVITED** Implant strategies in an integrated beef production systems. S. K. Duckett*[1] and J. G. Andrae[1], [1]University of Georgia, Athens.
2:50		DISCUSSION/QUESTIONS INVITED PAPER
3:00	195	A comparison of lifetime implant strategies on production and carcass characteristics in steers. R.H. Pritchard[1], K.W. Bruns*[1], and C.P. Birkelo[2], [1]South Dakota State University, Brookings, [2]Schering Plough Animal Health.
3:15	196	Implant strategy influence on rate of marbling, carcass characteristics, longissimus tenderness, and blood metabolites of early-weaned crossbred steers R. E. Robb*, D. B. Faulkner, and F. A. Ireland, University of Illinois, Urbana.
3:30		DISCUSSION/QUESTIONS

INDUSTRY/TECH FORUM

BEEF SPECIES 2 POSTER SESSION

Tuesday, 8:00 a.m. - 6:00 p.m.
Authors present 4:00 p.m. - 6:00 p.m.
Room: Exhibit Hall AB

Board No.	Abstract No.	
73	197	Experiences of the study for sustainable development of beef cattle production. Ferenc Szabo*, Edit Zele, Peter Polgar, Zsombor Wagenhoffer, and Zoltan Lengyel, University of Veszprem, Georgikon Faculty of Agriculture, Department of Animal Husbandry, Hungary.
74	198	Effects of early-weaning and nutritional management on feedlot performance, carcass merit, and rate of intramuscular and subcutaneous fat deposition in Angus and Wagyu heifers. A. E. Wertz*[1], L. L. Berger[1], P. M. Walker[2], D. B. Faulkner[1], and F. K. McKeith[1], [1]University of Illinois, Urbana, [2]Illinois State University, Normal.

CONTEMPORARY AND EMERGING ISSUES 3 AND FASS COMMITTEE ON FOOD SAFETY, ANIMAL DRUGS AND ANIMAL HEALTH

Herbs and Botanicals in Livestock Nutrition: Current Trends, Efficacy, and Safety

The *Food and Drug Administration* participated in the support of this conference.

Chair: C. B. Ammerman, University of Florida, Gainesville

Tuesday, 1:00 p.m. – 5:00 p.m.
Ballroom 4

1:00 **INVITED** Introduction, C. B. Ammerman, University of Florida, Gainesville

1:05 **INVITED** Use of Herbs and Botanicals in European Livestock Nutrition: Current Regulations and Production of Animal Food Product.

1:35 **INVITED** Current Trends and Concerns in Use of Herbs and Botanicals in the United States Livestock Industry.

2:00 **INVITED** Herbs and Botanicals in Swine Nutrition: Recent Research.

2:30 I**NVITED** Herbs and Botanicals in Equine Nutrition: Recent Research.

3:00 **BREAK**

3:15 **INVITED** Chemistry of Herbs and Botanicals: Safety for Animals and Animal Food Products.

3:45 **INVITED** Keeping a Scientific Perspective in the Use of Herbs and Botanicals.

4:15 **DISCUSSION**

INDUSTRY/TECH FORUM

DAIRY FOODS 5 and FOOD SAFETY 2

SYMPOSIUM

Farm-to-Table Food Safety – Knowledge Gaps and Lessons Learned

Sponsored by *ALPHARMA*

Chair: K. Boor, Cornell University, Ithaca, NY

Tuesday, 1:00 p.m. - 5:00 p.m.
Room: 320

Time	Abstract Number	
1:00		Introduction. K. Boor, Cornell University, Ithaca, NY
1:05		**INVITED EAAP SPEAKER** The Bovine Spongiform Encephalitis (BSE) epidemic in Great Britain: Where it is now and what has been learned. J. W. Wilesmith, Veterinary Laboratories Agency, Weybridge, Surrey, Kent, UK.
1:35		**INVITED** Hazard Analysis and Critical Control Point (HACCP) plan development for the feedlot beef industry. R. K. Phebus, Kansas State University, Manhattan.
2:05	56	**INVITED** Pre- and post-packaging strategies to achieve safety of ready-to-eat (RTE) meat products. S Knabel*[1], [1]Penn State University, State College.
2:35		**BREAK**
2:45	57	**INVITED** Emergence and transfer of antibacterial resistance mechanisms. David White*, U.S. Food and Drug Administration, Washington, DC.
3:15		**INVITED** Current approaches for conducting microbial risk assessments. R. C. Whiting, Food and Drug Administration, Washington, DC.
3:45		**INVITED** Update on the dairy Hazard Analysis and Critical Control Point (HACCP) program pilot study. K. L. Gombas, Food and Drug Administration, Washington, DC.
4:15		**INVITED** Codex Hygiene standards – establishment of international hygiene standards for dairy products. J. C. Mowbray, Food and Drug Administration, Washington DC.
4:45		ROUND TABLE DISCUSSION WITH ALL SPEAKERS

INDUSTRY/TECH FORUM

DAIRY FOODS 6

Dairy Products

Chair: V. Alvarez, The Ohio State University, Columbus

Tuesday, 1:30 p.m. - 3:15 p.m.
Room: 313

Time	Abstract Number	
1:30	378	Application of a model system to evaluate the effect of pH on the texture of Cream cheese. M. Almena-Aliste* and P.S. Kindstedt, University of Vermont, Burlington.
1:45	379	Impact of CO_2 addition to milk on selected analytical testing methods. Y Ma*, D Barbano, J Hotchkiss, and S Murphy, Northeast Dairy Food Research Center, Cornell University, Ithaca, NY.
2:00	380	Development of colonic pre-cancerous lesions in rats fed synthetic and natural sources of conjugated linoleic acids and nordihydroguaiaretic acid. D. D. Gallaher*[1], C. M. Gallaher[1], H-J. Cho[1], A. Saari Csallany[1], and R.J. Baer[2], [1]MN-SD Dairy Foods Research Center, University of Minnesota, St. Paul, MN, [2]MN-SD Dairy Foods Research Center, South Dakota State University, Brookings.
2:15		**BREAK**
2:30	381	Sensory characteristics of milks with different casein to serum protein ratios. D.M. Barbano*, M.A. Rudan, and Y. MA, Northeast Dairy Foods Research Center, Cornell University, Ithaca, NY.
2:45	382	Quality attributes of vanilla ice cream in the North Carolina market. A.P. Hansen* and M.D. Keziah, North Carolina State University, Raleigh.
3:00	383	Quality attributes of cottage cheese in the North Carolina marketplace. A.P. Hansen* and M.D. Keziah, North Carolina State University, Raleigh.

EXTENSION EDUCATION 1

SYMPOSIUM

Extension Education - A Dynamic Paradigm

Chair: A. J. McAllister, University of Kentucky, Lexington

Tuesday, 1:00 p.m. - 2:40 p.m.
Room: 315

Time	Abstract Number	
1:00		**INVITED** The integrator's perspective. M. T. Coffey, Murphy Farms, Rose Hill, NC.
1:20	51	**INVITED** Our evolving audience and their needs: The producer's perspective. H.D. Ritchie*, D.D. Buskirk, and S.R. Rust, Michigan State University, East Lansing.

1:40		**INVITED** The agent's perspective. S. Fultz, Frederick County, MD.
2:00		**INVITED** The administrator's perspective. S. Umberger, Virginia Tech, Blackburn.
2:20		**DISCUSSION**
2:40		**BREAK**

Responding Proactively

Chair: G. L. M. Chappell, University of Kentucky, Lexington

Tuesday, 3:00 p.m. - 4:55 p.m.
Room: 315

Time	Abstract Number	
3:00	52	**INVITED** A multi-state approach to extension programming. A.J. Pescatore*[1], K.W. Koelkebeck[2], R.L. Adams[3], C.J. Flegal[4], A.H. Cantor[1], F.V. Muir[5], M.A. Latour[3], C.M. Parsons[2], M.W Orth[4], and K.D. Roberson[4], [1]University of Kentucky, [2]University of Illinois, [3]Purdue University, [4]Michigan State University, [5]The Ohio State University.
3:20	53	**INVITED** Multi-state extension programming. S.P. Washburn*[1], [1]North Carolina State University, Raleigh.
3:40	54	**INVITED** Responding proactively: Distance learning opportunities. K.K. Ragland* and G.L.M. Chappell, University of Kentucky, Lexington.
4:00		**INVITED** The electronic interface. R. A. Cady, Monsanto Dairy Business, St. Louis, MO.
4:20	55	The ADDS Center InfoBase: the technical aspects behind a multi-media information resource for agriculture. D.R. Beermann*[1], D.E. Boardman[1], M.B. Opperman[1], J.M. Mattison[1], and B.R. Eastwood[2], [1]ADDS Center, [2]USDA-CSREES.
4:35		**DISCUSSION**

FASS COMMITTEE ON FOOD SAFETY, ANIMAL DRUGS AND ANIMAL HEALTH AND CONTEMPORARY AND EMERGING ISSUES 3

Herbs and Botanicals in Livestock Nutrition: Current Trends, Efficacy, and Safety

The *Food and Drug Administration participated in the support of this conference.*

Chair: C. B. Ammerman, University of Florida, Gainesville

Tuesday, 1:00 p.m. – 5:00 p.m.
Room: Ballroom 4

INDUSTRY/TECH FORUM

FOOD SAFETY 2 and DAIRY FOODS 5

SYMPOSIUM

Farm-to-Table Food Safety – Knowledge Gaps and Lessons Learned

Sponsored by *ALPHARMIA*

Chair: K. Boor, Cornell University, Ithaca, NY

Tuesday, 1:00 p.m. - 5:00 p.m.
Room: 320

INDUSTRY/TECH FORUM

FORAGES AND PASTURES 1 AND RUMINANT NUTRITION 4

SYMPOSIUM

Protein Nutrition in Forage-Fed Ruminants

Sponsored by *Novus International, Inc.*

Chair: J. Caton, North Dakota State University, Fargo

Tuesday, 1:00 p.m. - 4:00 p.m.
Room: 314

Time	Abstract Number	
1:00		**INVITED EAAP SPEAKER** Nitrogen recycling in ruminants. G. Lobley, Rowett Research Institute, Aberdeen, Scotland.
2:00	58	**INVITED** Estimating forage protein degradation in the rumen. T. Klopfenstein*, R. Mass, K. Creighton, and T. Patterson, University of Nebraska, Lincoln.
3:00		**INVITED**. Amino acid nutrition, demand and supply in forage-fed ruminants. E. Titgemeyer, Kansas State University, Manhattan.

GROWTH AND DEVELOPMENT 2

MINI-SYMPOSIUM

Molecular Mechanisms of Endocrine and Metabolic Action

Co-Chairs: P.C. Hoffman, University of Wisconsin, Marshfield and M.E. Spurlock, Purdue University, West Lafayette, IN

Tuesday, 1:00 p.m. - 5:00 p.m.
Room: 308

Time	Abstract Number	
1:00	62	**INVITED** Acetyl-CoA carboxylase-α (ACC-α): gene stucture-function relationships. M. T. Travers* and M. C. Barber, Hannah Research Institute, Ayr, UK.
1:45	63	**INVITED** Regulation of the acid-labile subunit of the 150 kDa IGF-binding protein complex and its role in the circulating IGF system. Y.R. Boisclair*[1], G.T. Ooi[2], M.L. Tremblay[3], R.P. Rhoads[1], and I. Ueki[1], [1]Cornell University, Ithaca, NY, [2]Prince Henry's Institute of Medical Research, Clayton, Victoria, Australia, [3]McGill University, Montreal, Canada.
2:30		**INVITED** Mode of action of β-agonists. D. L. Hancock, Elanco Animal Health Inc., Greenfield, IN.
3:15		**INVITED** Effects of steroids in growth physiology of beef cattle. D. Thomson, Texas Tech University, Lubbock.
4:00	64	Insulin Action and Signalling in Sheep Adipose and Mammary Tissue. R. G. Vernon and E. Finley, Hannah Research Institute, Ayr, Scotland.
4:15	65	P27 Knockout Mice Response to Growth Hormone. H.B. Arnold*, D.L. Hartzell, X-L. Chen, and C.A. Baile, The University of Georgia, Athens.
4:30	66	Hepatocyte nuclear factor-4 may be responsible for the expression of the growth hormone receptor gene in liver. H. Jiang* and M. Lucy, University of Missouri, Columbia.
4:45	67	Mammary growth in Holstein calves: bromodeoxyuridine incorporation and steroid receptor localization. A. V. Capuco*[1], R. M. Akers[2], S. E. Ellis[3], and D. L. Wood[1], [1]USDA-ARS, Beltsville, MD, [2]Virginia Polytechnic Institute and State University, Blacksburg, [3]Medical College of Georgia, Augusta.

INDUSTRY/TECH FORUM

HORSE SPECIES 1

POSTER SESSION

Equine Research and Extension

Tuesday: 8:00 a.m. - 5:00 p.m.
Authors present: 3:00 p.m. - 5:00 p.m.
Room: Exhibit Hall AB

Board No.	Abstract No.	
75	627	Correlation of real-time ultrasonic measurement of longissimus muscle area of thoroughbred horses

with lifetime earnings and average earnings per win. R. L. Dobec*, M. L. Borger, and D. B. Foye, The Ohio State University Agricultural Technical Institute, Wooster.

76 628 Tibial optical bone density is positively correlated with bone strength. K.L. Waite*, B.D. Nielsen, D.S. Rosenstein, and K.D. Roberson, Michigan State University, East Lansing.

77 629 Effects of Matua hay on gestating and lactating mares and their foals. K. A. Ball*[1], H. A. Brady[1], V. G. Allen[1], K. R. Pond[1], and M. L. Galyean[1], Texas Tech University.

78 630 Nutrient utilization of various grasses by grazing horses. L. A. Vogedes*, H. S. Hussein, J. P. Tanner, H. Tokuyama, and H. Han, University of Nevada,Reno.

79 631 Michigan 4-H Horse Judges Program Exhibits Quality and Continuing Education. S.A. Doumit* and C.G. McLachlan, Michigan State University, East Lansing.

INDUSTRY/TECH FORUM

MEAT SCIENCE AND MUSCLE BIOLOGY 2

POSTER SESSION

Ante-mortem Management of Meat Composition and Quality

Tuesday, 8:00 a.m. - 5:00 p.m.
Authors present 3:00 p.m. - 5:00 p.m.
Room: Exhibit Hall AB

Board No. **Abstract No.**

80 655 Pork quality of pigs finished indoors or outdoors under a commercial setting. J.G. Gentry, J.R. Blanton, J.J. McGlone, and M.F. Miller*, Texas Tech University, Lubbock.

81 656 The effect of magnesium supplementation on pork quality. R. vanLaack*, University of Tennessee, Knoxville.

82 657 Effect of chromium-methionine supplementation on the apparent muscle fiber number in newly hatched Japanese quail (Coturnix coturnix japonica)under heat stress condition. G. Contreras*, F. Rios, and R. Barajas, Universidad Autonoma de Sinaloa.

83 658 Enhancement of conjugated linoleic acids in beef steers fed different levels of full-fat extruded soybeans. Matt Madron*[1], Dan Peterson[1], Debbie Dwyer[1], Don Beermann[2], and Dale Bauman[1], [1]Cornell University, Ithaca, NY, [2]University of Nebraska, Lincoln.

84 659 Effect of pre-harvest oral calcium gel administration on tenderness. S. K. Duckett*[1], J. G. Andrae[1], G. T. Pritchard[1], S. L. Cuvala[1], and J. Church[1], [1]University of Idaho, Moscow.

85 660 Impact of high oil corn on beef steak quality. S.K. Duckett[1], B.A. Gardner*[2], M.A. Hinds[3], and F.N. Owens[3], [1]University of Georgia, Athens, [2]Oklahoma State University, Stillwater, [3]Optimum Quality Grains, L.L.C., Des Moines, IA.

86 661 Impact of high oil corn on meat quality. B.J. Johnson*[1], D.M. Wulf[1], M.S. Eibs[1], B.J. Reuter[1], J.M. Bok[1], B.D. Rops[1], and F.N. Owens[2], [1]South Dakota State University, Brookings, [2]Optimum Quality Grains, Des Moines, IA.

87 662 Effect of Dietary Lycopene Supplementation for Eight Weeks before Slaughter on Lycopene Accumulation in Tissue, Fat Color, and Meat Quality during Display in Japanese Black Steers. M. Mitsumoto*[1], K. Sasaki[1], T. Ito[2], K. Hodate[1], H. Abe[1], Y. Kawakita[1], S. Oshima[3], and T. Inakuma[3], [1]National Institute of Animal Industry, Tsukuba, Japan, [2]Nagano Animal Industry Experiment Station, Shiojiri, Japan, [3]Kagome Research Institute, Nishinasuno, Japan.

88 663 Carcass, sensory, and adipose tissue traits of Brangus steers fed casein-formaldehyde-protected

starch and(or) canola lipid. C. D. Gilbert*, D. K. Lunt, R. K. Miller, and S. B. Smith, Texas A&M University, College Station.

89 664 Fatty acid composition of muscle from beef cattle fed pre-slaughter rations based on grass silage or maize silage. A.P. Moloney*[1], P. French[1], P. O'Kiely[1], and C. Stanton[2], [1]Teagasc, Grange Research Centre, Dunsany, Co. Meath, Ireland, [2]Teagasc, Dairy Products Research Centre, Moorepark, Co. Cork, Ireland.

90 665 Carcass and meat quality of calf-fed, short- and long-yearling steers. R. D. Sainz, M.C. Coelho, and R.F. Vernazza*, University of California, Davis.

91 666 Effects of pre-feedlot growth rate on carcass composition and meat tenderness. I.T. Brigman*[1], R.K. Miller[1], G.E. Carstens[1], and F.M. Rouquette[2], [1]Texas A&M University, College Station, [2]Texas A&M University, Overton.

INDUSTRY/TECH FORUM

NONRUMINANT NUTRITION 3

Swine Breeding Herd Nutrition

Chair: B. Newton, Carl S. Akey Company, Lewisburg, OH

Tuesday, 1:00 p.m. - 3:00 p.m.
Room: 311

Time	Abstract Number	
1:00	734	Strategic application of Aureomycin chlortetracycline in lactation diets reduces sow mortality and improves reproductive performance. J. Deen*[1], S. Keay[2], R.D. Boyd[2], D. Appleton[2], P. Matzat[3], and T. Wolff[3], [1]University of Minnesota, St. Paul, [2]PIC USA, Franklin, KY, [3]Roche Vitamins Inc., Parsippany, NJ.
1:15	735	Effects of diet acidification on sow and litter performance. C. W. Starkey*[1], J.D. Hancock[1], J.S. Park[1], C. Hankins[2], K. Herkelman[2], B. Moody[2], and R. L. Odgaard[3], [1]Kansas State University, Manhattan, [2]Farmland Industries, [3]Kemin Industries.
1:30	736	Limiting amino acids and ideal amino acid pattern for lactating sows. S. W. Kim*, D. H. Baker, and R. A. Easter, University of Illinois, Urbana.
1:45	737	Response of gilts with naturally diverse body composition to low and high dietary lysine (protein) during lactation. P.C. Penny*[1] and H.M. Miller[2], [1]JSR Healthbred Ltd, Southburn, UK, [2]University of Leeds, School of Biology, Leeds, UK.
2:00	738	Skeletal muscle mobilization in lactating sows with divergent lactational protein loss. E. J. Clowes*, V. E. Baracos, and F. X. Aherne, University of Alberta, Edmonton.
2:15	739	Predictability of body weight changes in sows during gestation. D.R. Cooper[1,2], J.F. Patience*[1], R.T. Zijlstra[1], and M. Rademacher[3], [1]Prairie Swine Centre Inc., [2]University of Saskatchewan, Saskatoon, SK, [3]Degussa-Huels AG, Hanau, Germany.
2:30	740	Impact of reduced dietary trace minerals on mineral and anti-oxidant status in swine. G. M. Hill*[1], J. E. Link[1], J. W. Spears[2], and W. L. Flowers[2], [1]Michigan State University, East Lansing, [2]North Carolina State University, Raleigh.
2:45		What have we learned? Bob Easter, University of Illinois, Urbana.

INDUSTRY/TECH FORMUM

NONRUMINANT NUTRITION 4

POSTER SESSION

Tuesday, 8:00 a.m. - 5:00 p.m.
Authors of even numbered boards present
3:00 p.m. - 5:00 p.m.
Authors of odd numbered boards present
4:00 p.m. - 6:00 p.m.
Room: Exhibit Hall AB

Board No.	Abstract No.	
92	741	Glutamine stimulates the synthesis of immunoglobulin IgG in Infected Early Weaned Pigs. Juan Hernandez[1], Arturo Borbolla*[1], Roxana Mendoza[1], and Gema García[2], [1]Facultad de Medicina Veterinaria y Zootecnia UNAM, [2]Instituto de Biomédicas UNAM.
93	742	Dietary Fat Supplementation Effects on In Vitro Nutrient Disappearance and In Vivo Nutrient Intake and Total Tract Digestibility by Horses. J.A. Bush*, D.E. Freeman, K.H. Kline, N.R. Merchen, and G.C. Fahey, Jr., University of Illinois, Urbana.
94	743	Vitamin B_{12} requirements of early weaned pigs. C.M.T. McDougall* and J.D. House, University of Manitoba, Winnipeg.
95	744	Effects of Multiple Stabilized Enzymes on growth and performance of starter pigs. A. Gueye*[1], C. R. Richardson[1], and D. A. Haverkamp[2], [1]Texas Tech University, Lubbock, [2]Natur's Way Inc, Horton, KS.
96	745	Effect of dried porcine solubles on performance of lactating sows. L. J. Johnston*[1], S. K. Baidoo[1], G. C. Shurson[1], G. Keller[2], and R. D. Walker[1], [1]University of Minnesota, Morris, [2]Nutra-Flo Protein Products, Sioux City, IA.
97	746	L-Carnitine increases muscle mass, bone mass and bone density in growing large breed puppies. K.L. Gross* and S.C. Zicker, Hill's Pet Nutrition, Inc. Topeka, KS.
98	747	Substitution of DL-Methionine by Methionine Hydroxy Analogue (MHA-FA) in the diet of weaned pigs. P.B. Lynch[1], M. Rademacher*[2], and P.G. Lawlor[1], [1]Teagasc, Moorepark Research Centre, Fermoy, Co. Cork, Ireland, [2]Degussa-Hülls AG, Feed Additives Division, 63457 Hanau-Wolfgang, Germany.
99	748	Effect of dietary supplementation with phytogen substances, carbadox, and colistin on performances and immune response in post-weaning pigs. G. Savoini*[1], G. Mancin[1], A. Agazzi[1], F. Cheli[1], A. Baldi[1], E. Monfardini[1], V. Sala[1], and V. Dell'Orto[1], [1]University of Milan, Italy.
100	749	Differing patterns of gestation and lactation feed intake on the reproductive performance of gilts and sows. D. Embury[1], S.K. Baidoo[2], and R. Funk[3], [1]University of Manitoba, Winnipeg, [2]University of Minnesota, Waseca, [3]Landmark Feeds, Landmark, MB.
101	750	The use of Solanum glaucophyllum to improve phosphorus utilization in broilers. Y-H Cheng*[1], J. P. Goff[2], J. L. Sell[3], S. Gill[4], E. Pawlak[4], M. Elena[4], and R. L. Horst[2], [1]Iowa State University/Biomedical Science, [2]National Animal Disease Center, [3]Iowa State University/Animal Science, [4]CAE, Buenos Aires, Argentina.
102	751	Effect of selection for lean growth efficiency on growth performance, blood profile, and carcass and meat quality. J. Fabian*, L. I. Chiba, D. L. Kuhlers, L. T. Frobish, K. Nadarajah, W. H. McElhenney, J. Lin, and B. L. Anderson, Auburn University, Auburn, AL.
103	752	Bioavailability of phosphorus in high available phosphorus corn and normal corn for young pigs. J. S. Sands* and O. Adeola, Purdue University, West Lafayette, IN.
104	753	Efficacy of DL-methionine and liquid DL-methionine hydroxy analogue (MHA-FA) as methionine sources for pigs. Birgit Schindler*[1], Rainer Mosenthin[1], and Meike Rademacher[2], [1]Hohenheim

University, Stuttgart, [2]Degussa-Huels AG, Hanau, Germany.

105 754 The Effect of Enzyme Treatment of Soybean Meal on Oligosaccharide Disappearance and Chick Growth Performance. K. K. Graham*, J. M. Lynch, and M. S. Kerley, University of Missouri.

106 755 Dietary zinc effects on performance and immune response of growing pigs infected with porcine reproductive and respiratory syndrome virus (PRRSv) and *Mycoplasma hyopneumoniae* (M. hyo). E. Roberts*[1], E. van Heugten[2], G. Almond[1], and J. W. Spears[2], [1]College of Veternary Medicine, [2]Department of Animal Science, North Carolina State University.

107 756 Biological availability of lysine in wheat for growing pigs. M Cervantes*[1], N Torrentera[1], S Espinoza[1], and M Cuca[2], [1]ICA, Universidad Autønoma de Baja California, Mexicali, [2]Colegio de Postgraduados, Montecillos, Edo, Mexico.

108 757 Ileal amino acid digestibility in pigs fed a wheat based diet added with a fungal protease. MA Morales[1], M Cervantes*[2], M Cuca, and N Torrentera, [1]Colegio de Postgraduados, [2]ICA, Universidad Autønoma de Baja California, Mexico.

109 758 A comparision of soybean meal versus other protein sources on pork quality. R. M. Strode*[1], M. D. Hemann[1], G. L. Brashear[1], F. K. McKeith[1], M. Ellis[1], J. L. Shelton[2], L. L. Southern[2], and T. D. Bidner[2], [1]University of Illinois, Urbana, [2]Louisiana State University Agricultural Center, Baton Rouge.

110 759 Ileum and whole-tract digestibility of carbohydrates contained in a corn- or a sorghum-acorn-based diet fed on finishing Landrace and Iberian pigs. J. Morales, J.F. Perez*, M.D. Baucells, and J. Gasa, Universidad Autonoma de Barcelona, Spain.

111 760 Differential action of dietary conjugated linoleic acids (CLA) on lipogenic gene expression in adipose tissue of two porcine genotypes. M.L. Heckart*, J.M. Eggert, A.P. Schinckel, S.E. Mills, and S.S. Donkin, Purdue University, West Lafayette, IN.

112 761 Potential for an extruded multiple protein complex (Profound™) as a replacement for fish meal in early weaned pig diets. M. E. Davis*[1], D. C. Brown[1], C. V. Maxwell[1], Z. B. Johnson[1], W. R. Walker[2], and A.K.M.H. Haque[3], [1]University of Arkansas, Fayetteville, [2]Land O'Lakes, Fort Dodge, IA, [3]American Dehydrated Foods, Inc., Springfield, MO.

113 762 Antioxidant status of puppies as affected by changes in vitamin C, E and iron/copper concentrations. K. Wedekind[1], S. Zicker[1], and D. Jewell*[1], Hills Pet Nutrition, Inc., Topeka, KS.

114 763 The rat as a model for the assessment of ileal amino acid digestibility of cottonseed meal for pigs. Lourdes Gutierrez*, Leticia Garcia, Francisco Vazquez, Diana Mendoza, Rita Ramos, and Bernardino Saavedra, Center of Research in Food and Development. Hermosillo, Sonora, Mexico.

115 764 Effects of dietary fat on pork loin quality in heavy pigs. C. Corino[1], V. Bontempo*[2], G. Pastorelli[1], G. Salvatori[2], and L. Pantaleo[1], [1]University of Milan, Italy, [2]University of Molise, Campobasso, Italy.

116 765 Effect of dietary fat on fatty acid composition of backfat in heavy pigs. V. Bontempo*[1], F. Cheli[2], G. Pastorelli[2], and C. Corino[2], [1]University of Molise, Campobasso, Italy, [2]University of Milan, Italy.

117 766 Effect of dietary glucose phosphate yeast on some blood parameters of stressed gilts. V. Bontempo*[1], A. Baldi[2], L. Rossi[2], E. Fusi[2], V. Dell'Orto[2], and G. Savoini[2], [1]University of Molise, Campobasso, Italy, [2]University of Milan, Italy.

INDUSTRY/TECH FORUM

PHYSIOLOGY 3

POSTER SESSION

Leptin, Insulin/Growth Hormone, Mammary, and Stress

Tuesday, 8:00 a.m. - 5:00 p.m.
Authors of even numbered boards present
1:00 p.m. - 3:00 p.m.
Authors of odd numbered boards present
3:00 p.m. – 5:00 p.m.
Room: Exhibit Hall AB

Board No.	Abstract No.	
118	858	Leptin secretion in heifers approaching puberty. C. S. Whisnant, H. Lowman, A. N. Elias, and L. A. Pagels, North Carolina State University, Raleigh.
119	859	Plasma leptin concentrations in dairy cows: I) Effect of short-term fasting and refeeding. P.K. Chelikani*[1], J.D. Ambrose[2], D.R. Glimm[1], T.J. Kieffer[1], and J.J. Kennelly[1], [1]University of Alberta, Edmonton, Canada., [2]Alberta Agriculture,Food & Rural Development, Edmonton, Canada.
120	860	Concentrations of leptin in serum and milk from sows that differed in body condition at farrowing. M.J. Estienne*[1], A.F. Harper[1], C.R. Barb[2], and M.J. Azain[3], [1]Virginia Polytechnic Institute and State University, Blacksburg, [2]USDA-ARS, Athens, GA, [3]University of Georgia, Athens.
121	861	Effect of leptin on release of luteinizing hormone from bovine anterior pituitary cells in vitro. T.D. Ridgway*, R.P. Wettemann, and L.J. Spicer, Oklahoma Agricultural Experiment Station, Stillwater.
122	862	Relationship of leptin and puberty in performance-tested bulls. T. M. Towns*[1], F. N. Schrick[1], F. M. Hopkins[1], F. D. Kirkpatrick[1], A. M. Saxton[1], K. W. Thompson[1], M. E. Hockett[1], and C. S. Whisnant[2], [1]University of Tennessee, Knoxville, [2]North Carolina State University, Raleigh.
123	863	Developmental changes in the gene expression of the long form leptin receptor(Ob-Rl) and related neuropeptides in the pig hypothalamus. J. Lin[1], J.B. Barrett[2], C.R. Barb[2], R.R. Kraeling[2], G.J. Hausman[2], and G.B. Rampacek[1], [1]University of Georgia, Athens, [2]USDA, Agricultural Research Service, Athens, GA.
124	864	The insulin-like growth factor system and leptin: role as possible metabolic signals for regulating puberty and growth in dairy heifers. G. Luna-Pinto*[1] and P. B. Cronje[1], [1]Department of Animal and Wildlife Sciences, University of Pretoria.
125	865	The short-term feeding responses by the changes of amino acid concentrations in plasma and brain. B.W. Kim*[1], C.H. Kim[1], J.S. Shin[1], and H. Tanaka[2], [1]Kangwon National University, Korea, [2]Utsunomiya University, Japan.
126	866	Effect of selection for milk yield on hepatic gene expression in the Holstein cow: the growth hormone (GH) receptor and insulin-like growth factor-I (IGF-I). B. A. Crooker*, L. S. Ma, W. J. Weber, L. B. Hansen, and H. Chester-Jones, University of Minnesota, St. Paul.
127	867	Evaluation of insulin receptor mRNA levels at different days pre and postpartum in liver tissue of genetically selected dairy cattle. J.A. McMullen*[1], J.H. White[1], J.R. Knapp[1], W.J. Weber[2], H. Chester-Jones[2], L.B. Hansen[2], and B.A. Crooker[2], [1]University of Vermont, Burlington, [2]University of Minnesota, St. Paul.
128	868	Effect of bST and monensin on lipogenesis and gene expression in adipose tissue during the transition to calving. S.S. Donkin*[1], C. Agca[1], A. Arieli[2], J.E. Vallimont[3], and G.A. Varga[3], [1]Purdue University, West Lafayette, IN, [2]Hebrew University of Jerusalem, Israel, [3]Pennsylvania State University, University Park.

129 869 Acute effects of estrogen on lactotroph abundance in GH_1, GH_3, GH_4C_1, MMQ and GC pituitary cell lines. X. Fu* and T. E. Porter, University of Maryland, College Park.

130 870 Sensitive sandwich assay for the determination of bovine growth hormone in blood and milk. P Lovendahl*[1], J Adamsen[1], R Lund[2], and P Lind[2], [1]Danish Institute of Agricultural Science, [2]Danish Veterinary Laboratory, Denmark.

131 871 Effects of antiserum against adipocyte plasma membrane proteins on body composition of passively immunized Sprague-Dawley rats. K. H. Paik, E. J. Kwon, T. H. Kwak, S. H. Chae, K. K. Jung, and C. B. Choi, Department of Animal Science, Yeungnam University, Korea.

132 872 Insulin sensitivity (IS) and endocrine responses to insulin in ewe lambs. S.E. Recabarren, A. Lobos, C. Vilches*, M.J. Nuez, and P. Muoz, Lab. of Animal Physiology and Endocrinology, Fac. Vet Med. Universidad de Concepcion, Chillan, Chile.

133 873 Effects of colostral immunity on lifetime performance of the female dairy cattle. R. Kliks and R. Skrzypek*, Agricultural University, Poznan, Poland.

134 874 Protein nitrotyrosine residues are associated with the nonmastitic bovine mammary gland. T. K. Ledbetter*[1], M. J. Paape[2], and L. W. Douglass[1], [1]University of Maryland, College Park, [2]USDA-ARS, Beltsville, MD.

135 875 Evaluation of udder health using differential inflammatory cell count. S. Pillai*, B. Jayarao, S. Senh, E. Kunze, K. Shafer-Weaver, and L. Sordillo, Pennsylvania State University, University Park.

136 876 Expression of angiogenic growth factors throughout lactation and during the dry period. L. Varticovski[1], A.V. Capuco[2], and R.A. Christensen*[1], [1]St. Elizabeth's MC, Tufts U. School of Medicine, Boston, MA, [2]USDA-ARS, Beltsville, MD.

137 877 Dopamine antagonist affects cortisol secretion in lactating dairy cows. A. Ahmadzadeh*, M. A. Barnes, F. C. Gwazdauskas, and A. H. Walters, Virginia Polytechnic Institute and State University, Blacksburg.

138 878 Dexamethasone treatment at birth enhances neonatal growth in swine. J.A. Carroll* and R.L. Matteri, Animal Physiology Research Unit, Agricultural Research Service, USDA, Columbia, MO.

139 879 Estradiol/progesterone treatment inhibits nitric oxide production in endotoxemic cattle. J. L. Sartin*[1], T. H. Elsasser[2], S. Kahl[2], D. D. Schwartz[1], J. Baker[1], M. A. Shores[1], and B. Steele[1], [1]Auburn University, [2]ARS/USDA.

140 880 Neonatal Quipazine treatment induced a cortisol release in pigs but did not increase hippocampal glucocorticoid receptor levels. S Weaver*[1] and M.J.M Meaney[2], [1]Livestock Behavior Research Unit, USDA-ARS, West Lafayette, IN, [2]Douglas Hospital Research Centre, Montreal, Quebec, Canada.

141 881 Molecular cloning of bovine corticotropin releasing factor receptor 1 (CRFR1) cDNA: Tissue distribution and regulation of CRFR1 mRNA expression in the anterior pituitary of endotoxemic steers. I.M. Qahwash*, C.A. Cassar, R.P. Radcliff, and G.W. Smith, Michigan State University, East Lansing.

142 882 Relationships of plasma cortisol and corticosteroid-binding globulin (CBG) concentrations, and hepatic CBG mRNA expression levels in fetal and postnatal pigs. J. Heo*[1], H. G. Kattesh[1], R. L. Matteri[2], and M. P. Roberts[1], [1]University of Tennessee, Knoxville, [2]Animal Physiology Unit, Agricultural Research Service, USDA, Columbia, MO.

143 883 Adrenocortical function in nutritionally restricted female Nubian goats. R. M. Melendez-Soto*[1], M. Gomez-Pasten[1], L. Zapata-Salinas[2], and H. R. Vera-Avila[2], [1]FES Cuautitlan-UNAM, Mexico, [2]CNIFyMA-INIFAP, Mexico.

144 884 Influence of Bos taurus and Bos indicus breedtype on production of cortisol. J.W. Koch*[1], T.H. Welsh[1], J.O. Sanders[1], D.G. Riley[1], D. Lunt[2], J.W. Holloway[3], T.D.A. Forbes[3], H. Lippke[3], F.M. Rouquette[4], and R.D. Randel[4], [1]Texas Agricultural Experiment Station, College Station, [2]McGregor, [3]Uvalde, [4]Overton.

INDUSTRY/TECH FORUM

PHYSIOLOGY 4

Estrous Synchronization and Pregnancy

Chair: J. R. Pursley, Michigan State University, East Lansing

Tuesday, 3:15 p.m. - 4:30 p.m.
Room: 312

Time	Abstract Number	
3:15	885	Does pretreatment with GnRH prior to a GnRH-PGF_{2a} (PG) protocol improve synchronization of estrus in beef cattle?. F. N. Kojima*, S. L. Wood, M. F. Smith, and D. J. Patterson, University of Missouri, Columbia.
3:30	886	Estrus and fertility in beef heifers synchronized with melengestrol acetate (MGA) and prostaglandin F_{2a} (PG) with or without GnRH. S. L. Wood*, M. C. Lucy, M. F. Smith, R. F. Randle, D. K. Hardin, and D. J. Patterson, University of Missouri, Columbia.
3:45	887	Effect of estradiol benzoate (EB) administered at insertion of an intravaginal progesterone releasing insert (CIDR) on pregnancy rates in crossbred *Bos indicus* cows. C. R. Barthle*, J. R. Kempfer, J. K. Fullenwider, J. W. Lemaster, C. L. Barnett, G. E. Portillo, and J. V. Yelich, University of Florida, Gainesville.
4:00	888	Effect of estradiol benzoate in combination with progesterone to induce follicular turnover at varying stages of the estrous cycle. V.L. Bogacz*, J.E. Huston, D.E. Grum, and M.L. Day, The Ohio State University, Columbus.
4:15	889	Association of $PGF_{2\alpha}$ and estradiol-17β with function of induced corpora lutea and maintenance of pregnancy in beef cows. P. J. Bridges*[1], D. J. Wright[1], W. I. Buford[1], N. Ahmad[1], H. Hernandez-Fonseca[1], M. L. McCormick[1], F. N. Schrick[2], R. A. Dailey[1], P. E. Lewis[1], and E. K. Inskeep[1], [1]West Virginia University, Morgantown, [2]University of Tennessee, Knoxville.

INDUSTRY/TECH FORUM

PRODUCTION AND MANAGEMENT 2

POSTER SESSION

Beef Production and Management

Tuesday, 8:00 a.m. – 6:00 p.m.
Authors of even numbered boards present
2:00 p.m. - 4:00 p.m.
Authors of odd numbered boards present
4:00 p.m. - 6:00 p.m.
Room: Exhibit Hall AB

Board No.	Abstract No.

145 935 Effects of two winter feeding methods on growth, conception, and cost of developing beef replacement heifers. C. L. Gasser*, E. W. Hawkins, R. W. Silcox, and C. W. Wiltbank, Brigham Young University, Provo, UT.

146 936 Effects of feeding beef heifers whole cottonseed or safflower seed during gestation on cold tolerance in newborn calves. R.E. Dietz*, J.B. Hall, and W.D. Whittier, Virginia Tech, Blacksburg.

147 937 Nutrient content of spent microbrewery grains and variation with pub and brew type. B.A. Altizio*, J.E. Wohlt, and P.A. Schoknecht, Cook College, Rutgers University.

148 938 Influence of simulated feedyard dust on performance of market stressed steer calves protected with or without prophylactic antibiotic. N. K. Chirase*[1,4], L. W. Greene[1,4], C. W. Purdy[2], B. W. Auvermann[1], R. W. Loan[3], D. B. Parker[4], and M. D. Hoover[5], [1]Texas Agricultural Experiment Station, Amarillo, [2]USDA/ARS, Bushland, TX, [3]Texas A&M University, College Station, [4]West Texas A&M University, Canyon, [5]Lovelace Respiratory Research Inst., Albuquerqe, NM.

149 939 Age and onset of puberty is negatively related to plasma testosterone in Nellore and Santa Gertrudis bulls. A.C. Sanches*[1], R.B. Lobo[2], and C.D.U. Magnabosco[3], [1]Universidade Catolica de Goias,Goiania,GO/Brazil, [2]Universidade de Sao Paulo, Ribeirao Preto,SP/Brazil, [3]Embrapa Cerrados,Planaltina,DF/Brasil.

150 940 Assessment of the BCS system using real-time ultrasound to measure subcutaneous fat at the 12th rib, rump, and shoulder of beef cows at calving, breeding, and weaning. M. F. Browne* and D. E. Eversole, Virginia Tech, Blacksburg.

151 941 Effects of postpartum fat supplementation on reproduction in primiparous 2-year-old and mature cows. J. F. Bader*[1], E. E. D. Felton[1], M. S. Kerley[1], D. D. Simms[2], and D. J. Patterson[1], [1]University of Missouri Columbia, Missouri, [2]Consolidated Nutrition Omaha, NE.

152 942 Additive effects of strategic deworming with fenbendazole, supplementation with bambermycins, and(or) use of TBA-estradiol implants during the grazing phase on grazing-finishing performance of yearling steers. I. Grazing performance. W. K. Rowland*[1], E. G. Johnson[1], and R. T. Brandt, Jr.[2], [1]Johnson Research, Parma, ID, [2]Intervet, Inc., Millsboro, DE.

153 943 Additive effects of strategic deworming with fenbendazole, supplementation with bambermycins, and(or) use of TBA-estradiol implants during the grazing phase on grazing-finishing performance of yearling steers. II. Finishing performance and carcass traits. W. K. Rowland*[1], E. G. Johnson[1], R. T. Brandt, Jr.[2], and W. T. Nichols[2], [1]Johnson Research, Parma, ID, [2]Intervet, Inc., Millsboro, DE.

154 944 Computer assisted semen analysis of bovine semen. H. L. Higdon III*[1], W. B. Boone[1], J. C. Spitzer[2], and W. C. Bridges, Jr.[2], [1]Greenville Hospital System, Greenville, SC USA, [2]Clemson University, Clemson, SC.

155 945 Pregnancy rates in postpartum beef cows after synchronization with GnRH, PGF_{2a}, and MGA. M. L. Borger and W. A. Greene*, The Ohio State University, Wooster.

156 946 The influence of vitamin E on immunoglobulins in the serum of cows and calves and colostrum of cows on 1, 2, 7, and 14 days after calving. A.L. Rivard*, T.A. Hoagland, K.E. Govoni, S.A. Zinn, and R.M. Hoffman, University of Connecticut, Storrs.

157 947 Effects of horn fly (Diptera: Muscidae) control on growth and reproductive performance of Angus and Brangus heifers. W. E. Wyatt*[1] and L. D. Foil[2], [1]Louisiana State University Agricultural Center, Jeanerette, [2]Baton Rouge.

158 948 Effect of dietary energy on pubertal development and reproductive traits of Brangus and Simbrah bulls. C. R. Barthle, B. A. Reiling, J. V. Yelich, R. E. Larsen, and J. W. Lemaster, Universtiy of Florida, Gainesville.

INDUSTRY/TECH FORUM

PRODUCTION AND MANAGEMENT 3

Beef Cattle Performance and Management

Chairs: B. Moore, North Dakota State University, Fargo and D. Buskirk, Michigan State

University, East Lansing

Tuesday, 1:00 p.m. - 4:30 p.m.
Room: 319

Time	Abstract Number	
1:00	949	The effect of Angus sires selected for growth or maternal traits: Preweaning and yearling reproduction traits. J. B. Barber*, H. D. Ritchie, D. R. Hawkins, B. D. Banks, S. R. Rust, and D. Neilsen, Michigan State University, East, Lansing.
1:15	950	The effect of Angus sires selected for growth or maternal traits: Feedlot performance and beef characteristics. J. B. Barber*, H. D. Ritchie, D. R. Hawkins, B. D. Banks, S. R. Rust, and D. Neilsen, Michigan State University, East Lansing.
1:30	951	Growing and finishing performance of calf-fed, short- and long-yearling steers. R. D. Sainz*, D. J. Kominek, and M. Sween, University of California, Davis.
1:45	952	Relationship between carcass and reproductive traits in Angus heifers. J.A. Minick*[1], D.E. Wilson[1], G.H. Rouse[1], A. Hassen[1], M. Pence[2], and R. Sealock[1], [1]Iowa State University, Ames, [2]University of Georgia, Athens.
2:00	954	Simulated effects of heifer replacement strategies on production and income from beef cattle production in Virginia. J. H. Schick*[1] and W. D. Hohenboken[2], [1]Case Western Reserve University, [2]Virginia Tech, Blacksburg.
2:15	955	Effect of a stair-stepped growth regimen during gestation on performance of beef heifers - prepartum growth performance. W.W. Poland*[1], K.A. Ringwall[1], M. Encinias[2], L.J. Tisor[1], G. Ottmar[1], J.W. Schroeder[2], and C.S. Park[2], [1]North Dakota State University, Dickinson, [2]North Dakota State University, Fargo.
2:30	956	Effect of a stair-stepped growth regimen during gestation on performance of beef heifers - postpartum lactation and calf performance. W.W. Poland*[1], K.A. Ringwall[1], M. Encinias[2], L.J. Tisor[1], G. Ottmar[1], J.W. Schroeder[2], and C.S. Park[2], [1]North Dakota State University, Dickinson, [2]North Dakota State University, Fargo.
2:45		**BREAK**
3:00	957	Feeding supplemental fat to mature cows. R. A. Bellows*[1], E. E. Grings[1], D. A. Phelps[1], S. E. Bellows[1], T. W. Geary[1], and D. D. Simms[2], [1]USDA-ARS and Montana Agric. Exp. Sta., Miles City, MT, [2]Consolidated Nutrition, Omaha, NE.
3:15	958	Improving the quality and value of market cows and bulls. D.L. Roeber*, K.E. Belk, J.D. Tatum, T.G. Field, J.A. Scanga, and G.C. Smith, Colorado State University, Fort Collins.
3:30	959	Comparing economic return to a group of cooperating beef producers for selling calves near weaning versus retaining ownership for a post-weaning growing period. RL Larson*, VL Pierce, and KC Olson, University of Missouri, Columbia.
3:45	960	Evaluation of a simulated fenceless livestock control system. S.B. Markus*[1], D.W. Bailey[2], and M Price[3], [1]Alberta Agriculture Food and Rural Development, [2]Montana State University, Bozeman, [3]University of Alberta, Edmonton.
4:00	961	Evaluation of a simulated livestock control system under equipment failure. S.B. Markus*[1], D.W. Bailey[2], and M Price[3], [1]Alberta Agriculture Food and Rural Development, [2]Montana State University, Bozeman, [3]University of Alberta, Edmonton.
4:15	953	Body Weight Changes in Stocker Cattle During the Initial Grazing Period on Winter Wheat Pastures. W. A. Phillips*[1], S. W. Coleman[2], and M.A. Brown[1], [1]USDA-ARS El Reno, OK, [2]USDA-ARS Brooksville, FL.

INDUSTRY/TECH FORUM

PRODUCTION AND MANAGEMENT 4

DAIRY CASE STUDY 2000

Sponsored by *Dairy Today, Monsanto Company*

Co-Chairs: N. St-Pierre, Ohio State University, Columbus and J. Pennington, University of Arkansas, Little Rock

Tuesday, 1:00 p.m. – 5:00 p.m.
Room: 318

Time	Abstract Number	
		General Description of Case Study 2000
	962	The next dairy: A case study on factors to consider when establishing a new dairy at a remote site. N.R. St-Pierre*[1], L.R. Jones[2], and J.A. Pennington[3], [1]The Ohio State University, Columbus, [2]FARME Institute, Homer, NY, [3]University of Arkansas, Little Rock.
1:00		**INVITED** Dairy relocation: Introduction to the 2000 Case Study. R. St-Pierre, The Ohio State University, Columbus.
1:15		**INVITED** Our project for locating a large dairy in Northwest Ohio. D. Young, Spruce Heaven Farms, Union Springs, NY.
2:00		**INVITED** Relocating a dairy: Natural resources issues. K. Elder, Ohio Department of Natural Resources, Columbus.
2:30		**INVITED** Relocating a dairy: Planning issues. L.R. Jones, FARME Institute, Inc., Homer, NY.
3:00		**INVITED** Relocating a dairy: Financial issues. N.R. St-Pierre, The Ohio State University, Columbus.
3:30		**GROUP DISCUSSION AND REPORT.** Should the producer proceed with the project?
4:15		**INVITED** What we did. D. Young, Spruce Heaven Farms, Union Springs, NY.
4:30		**FINAL DISCUSSION.**

INDUSTRY/TECH FORUM

ALPHARMA BEEF CATTLE NUTRITION SYMPOSIUM

Beef Cattle Behavior

Sponsored by *ALPHARMA, ASAS Foundation*

Chair: S. C. Loerch, The Ohio State University, Wooster

Tuesday, 1:00 p.m. – 4:05 p.m.
Room: 307

Abstract

Time	Number	
1:00		Introduction, S. C. Loerch, Ohio State University, Wooster.
1:05	121	**INVITED** Review of technologies and methodologies for assessing cattle behavior. J. M. Stookey*[1] and J. M. Watts[1], [1]University of Saskatchewan.
1:50	122	**INVITED** Behavioral characteristics affecting performance of grazing cattle. W.E. Pinchak*[1], [1]Texas Agricultural Experiment Station.
2:35	123	**INVITED** Effects of health status, performance, and environmental change on feeding behavior of feedlot cattle. M. N. Streeter* and M. E. Branine, Roche Animal Nutrition and Health, Parker, CO.
3:20	124	**INVITED** Behavioral Management to improve Feedlot Cattle Performance and Health. J McGlone*[1], [1]Texas Tech University, Lubbock.

INDUSTRY/TECH FORUM

RUMINANT NUTRITION 4 AND FORAGES AND PASTURES 1

SYMPOSIUM

Protein Nutrition in Forage-Fed Ruminants

Sponsored by *Novus International, Inc.*

Chair: J. Caton, North Dakota State University, Fargo

Tuesday, 1:00 p.m. - 4:00 p.m.
Room: 314

INDUSTRY/TECH FORUM

RUMINANT NUTRITION 5

The Transition Diet and Grouping of Dairy Cows

Co-Chairs: S. Stokes, Texas A&M, Stephenville and T. Overton, Cornell University, Ithaca, NY

Tuesday, 2:00 p.m. - 4:15 p.m.
Room: 309

Time	Abstract Number	
2:00	1077	**INVITED** Effect of animal grouping on feeding behavior and intake of dairy cattle. R. J. Grant*[1] and J. L. Albright[2], [1]University of Nebraska, Lincoln, [2]Purdue University, West Lafayette, IN.
2:45	1078	Relationships of body weight and condition of Holstein cows with performance traits during the periparturient period. A.F. Park*, J.E. Shirley, M.J. Meyer, M.J. VanBaale, and E.C. Titgemeyer, Kansas State University, Manhattan.
3:00	1079	Liver metabolism and production of periparturient dairy cattle fed rumen-protected choline. M. S. Piepenbrink* and T. R. Overton, Cornell University, Ithaca, NY.
3:15	1080	Splanchnic metabolism in transition dairy cows. C. K. Reynolds*, P. C. Aikman, D. J. Humphries, and D. E. Beever, University of Reading, Reading, UK.
3:30	1081	Visceral tissue mass in transition dairy cows. C. K. Reynolds*, B. Durst, D. J. Humphries, B. Lupoli, A. K. Jones, R. H. Phipps, and D. E. Beever, University of Reading, Reading, UK.
3:45	1082	Effects of high and low concentrations of UIP fed prepartum on postpartum production and health of Holstein cows during heat stress. M. L. Scott*[1] and W. B. Tucker[1], [1]Mississippi State University, Mississippi State.

4:00 1083 Prepartum energy and protein intake of dairy cows. 1. Effect on pre- and post-parturient performance. L. Doepel*[1], H. Lapierre[2], and J.J. Kennelly[1], [1]University of Alberta, Edmonton, Canada, [2]Dairy and Swine R & D Centre, Lennoxville, Canada.

INDUSTRY/TECH FORUM

RUMINANT NUTRITION 6

POSTER SESSION

Beef Feeding Systems and Byproducts

Tuesday, 8:00 a.m. - 5:00 p.m.
Authors present: 3:00 p.m. -5:00 p.m.
Room: Exhibit Hall AB

Board No.	Abstract No.	
159	1084	Effects of implanting and explanting on performance of finishing steers. B.A. Berry*[1], D. R. Gill, F. N. Owens, B. Freking, and B.A. Gardner, [1]Oklahoma State University, Stillwater.
160	1085	Dynamics of rehydration and dehydration of Wisconsin long haul bull calves. T. E. Johnson*, H. B. Perry, B. L. Miller, and M. A. Fowler, Land O'Lakes, Webster City, IA.
161	1086	Stair-step compensatory growth regimen in gestating beef heifers. A. M. Encinias*[1], H. B. Encinias[1], A. E. Radunz[1], M. L. Bauer[1], R. B. Danielson[1], G. P. Lardy[1], and C. S. Park[1], [1]North Dakota State University, Fargo.
162	1087	Dose response effect of prenatal trenbolone acetate treatment on thyroid hormone concentrations and growth and reproductive performance of beef cows. J. L. Stewart*[1], G. E. Carstens[1], R. D. Randel[2], and S. J. Falck[1], [1]Texas A&M University, College Station, [2]Texas A&M University, Overton.
163	1088	Effect of the partial substitution of corn by shop suey beans (Vigna radiata L) on the apparent digestibility of growing diets for sheep. R. Barajas*, J.F. Obregon, A. Estrada, J.L. Velarde, and F. Caro, Universidad Autonoma de Sinaloa.
164	1089	Jerusalem artichoke *Helianthus tuberosus* flour as a partial starch replacement for growing beef steers. T.C. Bramble*[1], G.V. Pollard[1], K.F. Wilson[1], B.S. Clyburn[1], A. Gueye[1], M.A. Johnson[1], J.M. Abdelrahim[1], C.R. Richardson[1], and A.J. Mjolsness[2], [1]Texas Tech University, Lubbock, [2]Premium Sweetner Products, Glyndon MN.
165	1090	Ensiling of sludge from tuna processing plant as potential ingredient in ruminant diets: effects of different levels of sucrose. A.E. Sanjuan[1], A.A. Rodriguez*[2], J.M. Kubaryk[1], and A. Sanchez[3], [1]Department of Marine Sciences, [2] Department of Animal Science, [3]Department of Chemical Engineering, University of Puerto Rico, Mayaguez Campus.
166	1091	Effect of feeding grapevine silage on apparent digestibility and performance of small ruminants. F.T. Sleiman*, N.I. Abi Aad, M.G. Uwayjan, and M.T. Farran, American University of Beirut, Beirut, Lebanon.
167	1092	Lambs fed feed mixtures amended with extruded plate waste have inconsistent performance. P.M. Walker[1], T.R. Kelley[1], S.B. Brown*[1], and A.T. Jensen[1], Illinois State University, Normal.
168	1093	Dry field peas as a component in grain starter rations for preweaned and weaned dairy calves. G.D. Marx*, University of Minnesota, Crookston.
169	1094	Combinations of wet corn gluten feed and steam-flaked corn in finishing cattle diets: effects of E. coli, total coliforms, VFA profiles, and pH. J. J. Sindt*, J. S. Drouillard, H. Thippareddi, R. K. Phebus, D. L. Lambert, T. B. Farran, S. P. Montgomery, H. J. LaBrune, and J. J. Higgins, Kansas State University, Manhattan.

INDUSTRY/TECH FORUM

RUMINANT NUTRITION 7

POSTER SESSION

Ruminal Fermentation II

Tuesday, 8:00 a.m. - 5:00 p.m.
Authors of even numbered boards present
1:00 p.m. - 3:00 p.m.
Authors of odd numbered boards present
3:00 p.m. - 5:00 p.m.
Room: Exhibit Hall AB

Board No.	Abstract No.	
170	1095	Relationship between dry matter intake, body weight, and milk yield in dairy cows: A summary of published data. A. N. Hristov*[1], K. A. Hristova[3], and W. J. Price[2], University of Idaho, Moscow, [3]Moscow High School, Moscow, ID.
171	1096	A dynamic mechanistic model of methanogenesis in the lactating dairy cow.J.A.N. Mills*[1], J. Dijkstra[2], and J. France[1], [1]The University of Reading, Reading, United Kingdom, [2]Wageningen University, Wageningen, Netherlands.
172	1097	Evaluation of two different equations for the prediction of the energy content of Canadian grown forages. A. Fournier*[1], G. Allard[1], J.F. Bernier[1], H. Lapierre[2], and D. Pellerin[1], [1]Departement des sciences animales, Universite Laval, [2]Dairy and Swine R & D Center, Agriculture and Agri-Food Canada.
173	1098	Growth and starch digestion by *Entodinium exiguum* as influenced by the source of starch and the presence of living rumen bacteria. M. Fondevila*[1] and B.A. Dehority[2], [1]University of Zaragoza, Zaragoza, Spain, [2]Ohio State University, Wooster.
174	1099	Effect of increasing levels of pure corn starch in the diet of lactating dairy cows on ruminal pH. K. M. Krause*[1], D. K. Combs[1], and K. A. Beauchemin[2], [1]University of Wisconsin-Madison, [2]Agriculture and Agri-Food Canada, Lethbridge, AB.
175	1100	Effect of subacute ruminal acidosis on the preference of cows for pellets containing sodium bicarbonate. J. L. Cumby*[1], J.C. Plaizier[1], I. Kyriazakis[2], J.E. Keunen[1], and B.W. McBride[1], [1]University of Guelph, Ontario, Canada, [2]Scottish Agricultural College, Edinburgh, UK.
176	1101	Quantification of the effectiveness of whole linted cottonseed as a forage substitute when fed with corn differing in ruminal starch availability. D.I. Harvatine*, J.E. Winkler, J.L. Firkins, and M.L. Eastridge, The Ohio State University, Columbus.
177	1102	Effects of Speciality Corn Hybrids on the Rumen Fermentation and Total Tract Digestion in Dairy Cows. V. Akay* and J. A. Jackson, University of Kentucky, Lexington.
178	1103	Effects of dietary carbohydrate source, propionate, and fat on performance of lactating dairy cows during heat stress. J. Jennings*, A. Akinyode, M. Hall, and C. Staples, University of Florida, Gainesville.
179	1104	Creating a nutritional model to induce Sub-acute Ruminal Acidosis (SARA) in the dairy cow. J.E. Keunen[1], J.C. Plaizier*[1], I. Kyriazakis[2], T. Duffield[3], and B.W. McBride[1], [1]Department of Animal and Poultry Science, University of Guelph, Ontario, Canada, [2]Animal Biology Division, Scottish Agricultural College, Edinburgh, UK., [3]Department of Population Medicine, Ontario Veterinary College, University of Guelph, Canada.
180	1105	Diet selection to attenuate decreased rumen pH in the dairy cow. J.E. Keunen*[1], J.C. Plaizier[1], I. Kyriazakis[2], T.M. Widowski[1], and B.W. McBride[1], [1]Department of Animal and Poultry Science, University of Guelph, Ontario, Canada, [2]Animal Biology Division, Scottish Agricultural College, Edinburgh, UK.

181 1106 Effects of concentrate level and feeding management on feeding behavior and saliva production by lactating dairy cows. M. Maekawa*[1], K.B. Beauchemin[2], and D.A. Christensen[1], [1]University of Saskatchewan, Saskatoon,Canada, [2]Agriculture and Agri-Food Canada, Lethbridge,AB,Canada.

182 1107 Effect of feeding corn meal or steam-rolled corn to lactating Holstein cows on total tract digestion, feeding behavior, milk yield and milk composition. K. C. Uchida*[1], C. J. Sniffen[2], C. S. Ballard[2], P. Mandebvu[2], and M. P. Carter[2], [1]Zen-Noh National Federation of Agricultural Co-operative Associations, Tokyo, Japan, [2]W. H. Miner Agricultural Research Institute, Chazy, NY.

183 1108 The effect of starch retrogradation on the nutritive value of corn hybrids. K. F. Wilson*[1], C. R. Richardson[1], and S. D. Soderlund[2], [1]Texas Tech University, Lubbock, [2]Optimum Quality Grains, West Des Moines IA.

184 1109 Comparing tempered and dry-rolled barley with and without the inclusion of yeast culture supplements in total mixed diets of early lactating dairy cows. J.W. Schroeder, M.S. Laubach*, D.B. Carlson, D.E. Schimek, W.L. Keller, and C.S. Park, North Dakota State University, Fargo.

185 1110 Ruminal digestion of alfalfa hay and alfalfa hay:wheat straw mixtures by llamas *Lama glama*. M. Sol Morales*, R. Cabrera, A. Lopez, C. Navia, H. Salazar, and A. Fuentes, Universidad de Chile.

186 1111 Effects of pH on microbial fermentation and nutrient flow in a dual flow continuous culture system. P.W. Cardozo, S. Calsamiglia*, and A. Ferret, Universitat Aut^^95noma de Barcelona, Bellaterra, Spain.

187 1112 Inhibition of fungal feed enzyme activities by silage extracts. V.L. Nsereko*[1], D.P. Morgavi[1], K.A. Beauchemin[1], L.M. Rode[1], and A.F. Furtado[1], [1]Agriculture and Agri-Food Canada.

188 1113 Impact of a Yeast Culture, Monensin or both on Production of Holstein Cows. L.J Erasmus*[1], P.H. Robinson[2], R. Hinders[3], and J.E. Garrett[4], [1]ARC - ANPI, Irene, RSA, [2]UCCE, Davis, CA, [3]Hinders Nutr. Cons., Acampo, CA, [4]Diamond V Mills Inc., Cedar Rapids, IA.

189 1114 Ruminal fermentation and duodenal nutrient flow in sheep fed diets with different antibiotics. H. Febel*[1], S. Fekete[2], and Sz. Huszar[1], [1]Research Institute of Animal Breeding and Nutrition, Herceghalom, Hungary, [2]University of Veterinary Science, Budapest, Hungary.

190 1115 Ruminal fermentation and flow of nutrients to the duodenum in goats fed ionophores and animal fat. H.V. Janacua*[1], C.V. Villalobos[1], C.S. Velez[1], F.A. Rodriguez[1], and A.D. Alarcon-Rojo[1], [1]University of Chihuahua, Chihuahua, Mexico.

191 1116 Effect of Monensin on protein fermentation of some feed sources. L. T. Cunha, R. P. Lana*, A. C. Borges, and J. S. Oliveira, Universidade Federal de Vicosa, Vicosa-MG, Brazil.

192 1117 Effect of thymol on ruminal microorganisms. J. D. Evans* and S. A. Martin, University of Georgia, Athens.

INDUSTRY/TECH FORUM

SWINE SPECIES 1

POSTER SESSION

Tuesday, 8:00 a.m. - 6:00 p.m.
Authors present 4:00 p.m. - 6:00 p.m.
Room: Exhibit Hall AB

Board No. **Abstract No.**

193 1291 The effect of age at first boar contact, feeding regime and lysine concentration in the diet on lifetime performance in female swine. M. Varley and M. Cole*, SCA Nutrition.

194 1292 The effect of gender or gonadectomy on growth and plasma cholesterol levels in pigs. C Lee[1] and K Kim*[2], [1]Cheju Agricultural Experimental Station, Cheju S. Korea, [2]Cheju National University, Cheju S.

Korea.

195 1293 Arginine deficiency in 7- to 21-day-old suckling piglets. N.E. Flynn, D.A. Knabe, B.K. Mallick, and G. Wu*, Texas A&M University, College Station.

196 1294 Optimal threonine:lysine ratio for growing pigs of different sexes. W. H. Chang[1], J. D. Kim[1], J. H. Lee[1], I. S. Shin[2], I. K. Paik[3], B. J. Chae[4], and In K. Han[1], [1]Seoul National University, Korea, [2]American Soybean Association, Korea, [3]Chung-Ang University, Korea, [4]Kangwon National University, Korea.

197 1295 Effects of extruding corn and wheat grain on growth performance and digestibility of amino acids in early-weaned pigs. B. J. Chae[1], Y. K. Kim*[1], J. D. Kim[2], W. T. Cho[2], and In K. Han[2], [1]Kangwon National University, Korea, [2]Seoul National University, Korea.

198 1296 Ileitis, intestinal microflora and performance of growing-finishing pigs fed *Saccharomyces cerevisiae*. A. A. Martinez*[1], L. E. Zapata[1], J. Sierra-Diaz[1], M. P. Perez-Olvera[2], R. P. Pradal[2], R. Mendoza[2], M. O. Velazquez-Madrazo[2], and J. A. Cuaron[1], [1]Centro Nacional de Investigacion en Fisiologia y Mejoramiento Animal, INIFAP, [2]Universidad Nacional Autonoma de Mexico.

199 1297 Effect of selection for improved piglet survival on prenatal development. J.I. Leenhouwers*[1], T. Van der Lende[1], and E.F. Knol[2], [1]Wageningen Institute of Animal Sciences, Wageningen University, The Netherlands, [2]Institute for Pig Genetics, Beuningen, The Netherlands.

200 1298 Non-invasive cryopreservation of zona pellucida intact morulae stage pig embryos: Birth of multiple litters of piglets after embryo transfer. J. R. Dobrinsky*[1], H. Nagashima[2], V. G. Pursel[3], L. L. Schreier[1], and L. A. Johnson[1], [1]USDA-ARS, GGPL, Beltsville, MD, [2]Meiji University, Tama, Kawasaki, Japan, [3]USDA-ARS, GEML, Beltsville, MD.

201 1299 The use of electrical impedance spectroscopy (EIS) for pig meat quality selection. M.A. Oliver*[1], I. Gobantes[1], J. Arnau[1], J.M. Monfort[1], J. Elvira[2], P.J. Riu[3], and N. Grabol[4], [1]IRTA-CTC. Girona. Spain, [2]NTE, S.A. Barcelona. Spain, [3]UPC. Barcelona. Spain, [4]Esteban Espuna, S.A. Girona. Spain.

INDUSTRY/TECH FORUM

SWINE SPECIES 2

INVITED ADDRESS

Sponsored by *National Pork Producers Council*

Chair: T. R. Cline, Purdue University, West Lafayette, IN

Tuesday, 4:00 p.m. - 5:00 p.m.
Room: Ballroom 3

Time

4:00 **INVITED** Effects of nutrition on pork quality. James E. Pettigrew, Pettigrew Consulting International, Louisiana, MO.

UNDERGRADUATE AND GRADUATE EDUCATION 1 AND ADSA PRODUCTION AND DAIRY FOODS DIVISIONS GRADUATE STUDENT PAPER COMPETITION COMMITTEES, AND ADSA EDUCATION COMMITTEE

WORKSHOP

(*for graduate students only)*

Equipping Graduate Students for the Workplace

Co-Chairs: R. D. Green, Colorado State University, Fort Collins and D. Amaral-Phillips, University of Kentucky, Lexington

Tuesday, 1:00 p.m. - 5:30 p.m.
Room: 310

Description:
Graduate students in the animal and dairy sciences desiring an academic appointment have limited opportunities while in graduate school to "learn the ropes" of tenure-track appointments. This workshop addresses particular issues that new faculty members will face as they enter the faculty workplace. The Workshop will involve some interactive participation by attendees.

Time	Presentation
1:00	**INVITED** Making effective use of 8 hours. Harlan Ritchie, Michigan State University, East Lansing.
1:40	**INVITED** Meeting your potential in the classroom. Linda Martin, Kansas State University, Manhattan.
2:20	**INVITED** Going from graduate student to major professor. Jim Kinder, Ohio State University, Columbus.
3:15	**INVITED** Extracurricular advising: Panel discussion with moderator Tim Marshall, University of Florida, Gainesville.
4:00	Surviving your first job interview: Presentation and panel discussion.
	INVITED Academic perspective. Ken Esbenshade, North Carolina State University, Raleigh.
	INVITED Animal/feed industry perspective. Mike Fowler, Land O'Lakes Animal Products, Ft. Dodge, IA.
	INVITED Pharmaceutical industry perspective. Jeff Veenhuizen, Monsanto Co., Animal Division, Chesterfield, MO.
	INVITED Food science industry perspective. Scott Rambo, Deans Foods, Rockford, IL**.**

INDUSTRY/TECH FORUM

RECEPTION

Sponsored by *Alltech, Inc. and Bioproducts, Inc.*

Tuesday, 5:00 p.m. - 6:30 p.m.
Room: Exhibit Hall AB

INFORMAL CALF SESSION

ROUND TABLE DISCUSSION

Chair: T. Earleywine, T C Products Co., Madison, WI

Tuesday, 8:00 p.m. - 10:00 p.m.

Room: 314

Informal round table discussion for those interested in rearing of dairy calves.