

2007 Joint ADSA PSA AMPA ASAS Meeting Symposia

ADSA Production Division: Improving Production, Viability, and Reproduction of Dairy Cattle during Periods of Heat Stress

- Introduction, R. Pearson, Virginia Polytechnic Institute and State University
- Biological impact of heat stress on reproductive performance. P.J. Hansen*, *University of Florida, Gainesville.*
- Feeding programs that meet the challenges of heat stress. J. N. Spain* and D.E. Spiers, *University of Missouri, Columbia.*
- Environmental modifications to address heat stress. M. J. Brouk*¹, J. P. Harner, III¹, J. F. Smith¹, and D. V. Armstrong², ¹*Kansas State University, Manhattan,* ²*University of Arizona, Tucson.*
- What we have learned about the genes involved in the response to heat stress. R. J. Collier* and R. P. Rhoads, *University of Arizona.*

ADSA Southern Branch: Keeping Dairying Going and Growing

- Introductions and Welcome. W. M. Graves, University of Georgia, Athens.
- Structural shifts in the dairy industry. G. A. Benson*, *North Carolina State University, Raleigh.*
- Attracting Dairies to Your Market. P. D. Stroup*, Hilmar Cheese Company, Hilmar, CA.
- Problems associated with a dairy expansion effort. J. F. Keown*, *University of Nebraska, Lincoln.*
- Southern Section Honors Award. J. K. Bernard*, University of Georgia, Tifton.
- Southern Section Graduate Student Paper Competition Awards. C. C. Williams*, Louisiana State University, Baton Rouge.
- The Custom Dairy Heifer Rearing Industry. D. L. Gardner*, Huddleston, VA.
- Adopting a management focus. R. A. Milligan*^{1,2}, ¹*Dairy Strategies, LLC., St. Paul, MN,* ²*Cornell University, Ithaca, NY.*

Alpharma Beef Cattle Nutrition Symposium: Manipulation of Nutrient Synchrony

- Introduction. C. R. Krehbiel, *Oklahoma State University.*
- Nutrient synchrony: Sound in theory, elusive in practice. M. B. Hall*, *U.S. Dairy Forage Research Center, USDA-ARS, Madison, WI.*
- Nitrogen recycling and the nitrogen economy of ruminants – asynchronous symbiosis. C. K. Reynolds*¹ and N. B. Kristensen², ¹*The University of Reading, England,* ²*University of Aarhus, Denmark.*
- Opportunities to enhance performance and efficiency through nutrient synchrony in forage-fed ruminants. M. J. Hersom*, *University of Florida, Gainesville.*
- Opportunities to enhance performance and efficiency through nutrient synchrony in concentrate-fed ruminants. N. A. Cole*, *USDA-ARS-CPRL, Bushland, TX.*

Animal Behavior & Well-Being: New Methodologies in Animal Well-Being Analysis Theme: The Science of Assessing Animal Behavior and Well-being

- Utilizing neural network analysis in animal behavior studies. W. B. Roush*, *USDA-ARS Poultry Research Unit, Mississippi State, MS.*
- Identification of QTL affecting disposition in *Bos indicus* influenced cattle. C. A. Gill*, C. R. Boldt, C. A. Abbey, M. A. Wegenhoft, D. K. Lunt, J. E. Sawyer, A. D. Herring, and J. O. Sanders, *Texas A&M University, College Station.*
- Mathematical modeling and analysis of use of space. M. C. Christman*¹, C. P. Miller¹, and I. Estevez², ¹*University of Florida, Gainesville,* ²*University of Maryland, College Park.*
- Major pitfalls in animal welfare research. J. J. McGlone*¹, L. E. Hulbert¹, N. Krebs¹, M. A. Sutherland¹, and J. W. Dailey², ¹*Texas Tech University, Lubbock,* ²*USDA Livestock Issues Research Unit, Lubbock, TX.*

ARPAS: Current and Future On-Farm Auditing & Assessment

- Animal welfare assessment and auditing. S. E. Curtis*, *University of Illinois, Urbana.*
- Auditing and assessing nutrient management for water quality. A. L. Sutton*, *Purdue University, West Lafayette, IN.*
- Auditing and assessing nutrient management for air quality. N. A. Cole*¹, R. W. Todd¹, B. Auvermann², and D. B. Parker³, ¹*USDA-ARS-CPRL, Bushland, TX,* ²*Texas Agricultural Experiment Station, Amarillo,* ³*West Texas A&M University, Canyon.*
- Training and certification of animal auditors. A. K. Baysinger*, *Farmland Foods, Bruning, NE.*
- Roundtable Discussion.

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Bioethics: The Ethics of Food Animal Production, Processing and Marketing

- Introduction. R. D. Reynnells*, *USDA/CSREES/PAS, Washington, DC.*
- The end of husbandry. B. E. Rollin*, *Colorado State University, Fort Collins.*
- Changing social dynamics and questions of ethics. W. Jamison*, *Dordt College, Sioux Center, IA.*
- Ethical aspects of regulating production. J. C. Swanson*, *Kansas State University, Manhattan.*
- Environmental aspects of ethical animal production. J. M. Siegford* and W. J. Powers, *Michigan State University, East Lansing.*

Bioethics: The Ethics of Food

- The ethics of food. J. M. Regenstein*, *Cornell University, Ithaca, NY.*
- The ethics of semantics: do we clarify or obfuscate reality to influence perceptions of food animal production? C. C. Croney*¹ and R. D. Reynnells², ¹*Oregon State University, Corvallis*, ²*US Department of Agriculture, Cooperative State Research, Washington, DC.*
- What would the world be like without animals for food, fiber, and labor? Are we morally obligated to do without them? S. L. Davis*, *Oregon State University, Corvallis.*
- Ethics and the role of academics, scientists and veterinarians in the formation of public attitudes and societal decisions. W. R. Stricklin*, *University of Maryland, College Park.*
- Production, processing and marketing: An advocate's view of ethical issues. K. Laughlin*, *Humane Farm Animal Care, Herdon, VA.*
- Production, processing and marketing: an integrated industry's view of ethical issues. C. Klippen*, *Klippen & Associates, LLC, Audubon, PA.*

Breeding & Genetics: New Challenges and Opportunities from Automation of Animal Data Recording

- Introduction – Automation and Animal Data Recording. M. Faust¹ and F. Miglior², ¹*ABS Global, Agriculture and Agri-Food Canada.*
- Current and near term technologies for automated recording of animal data for precision dairy farming. G. Katz*¹, A. Arazi¹, N. Pinsky¹, I. Halachmi², Z. Schmilovitz², E. Aizinbud^{1,2}, and E. Maltz², ¹*SAE Afimilk, Kibbutz Afikim, Israel*, ²*Institute of Agricultural Engineering, Agricultural Research Organization - The Volcani Center, Bet Dagan, Israel.*
- Thriving in a declining market – the new service paradigm for DHI's. N. Petreny*, *CanWest Dairy Herd Improvement, Guelph, Ontario, Canada.*
- Harnessing automatic data collection to enhance genetic improvement programs. G. R. Wiggins*¹, M. A. Faust², and F. Miglior^{3,4}, ¹*Agricultural Research Service, USDA, Beltsville, MD*, ²*ABS Global, Inc., Deforest, WI*, ³*Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada*, ⁴*Canadian Dairy Network, Guelph, ON, Canada.*
- Using tomorrow's data for dairy management. C. Holtz, *Holtz-Nelson Dairy Consultants, LLC, Dryden, NY.*
- Panel Discussion.

Companion Animals: Pet Food Ingredients – Mining, Dredging, and Extrapolating Effective Nutrient Delivery

- Introduction and Opening Comments. G. Aldrich, *Pet Food & Ingredient Technology, Inc.*
- Advances in evaluating pet food ingredients: Methodologies. G. C. Fahey, Jr.* , *University of Illinois, Urbana.*
- AntiNutrients: Factors limiting utilization of nutrients in pet food ingredients. C. M. Grieshop* and G. Kuhlman, *The Iams Company, Lewisburg, OH.*
- Proteins: Advances in rendering animal and marine products. C. R. Hamilton* and D. Kirstein, *Darling International Inc., Irving, TX.*
- Fatty acids: Approaches to prevent or modify nutrient damage from oxidation. R. G. Brannan*, *Ohio University, Athens.*
- Minerals: Effect of form on requirements and bioavailability. L. L. Southern*, *LSU Agricultural Center, Baton Rouge, LA.*

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Contemporary & Emerging Issues: Human Health and Economic Ramifications of Livestock and Poultry Diseases

- Avian H5N1: still an animal virus? F. C. Leung*, *The University of Hong Kong, Hong Kong, HK-SAR, China*.
- Bovine spongiform encephalopathy in the United States. J. A. Richt*, *National Animal Disease Center-ARS-USDA, Ames, IA*.
- Scenario and economic analysis of a hypothetical link between MAP and Crohn's disease. H. Groenendaal* and F. Z. Zagmutt, *Vose Consulting, Boulder, CO*.
- Tuberculosis: a re-emerging disease at the interface of domestic animals and wildlife. M. V. Palmer*, *National Animal Disease Center, ARS, USDA, Ames, IA*.

Dairy Foods/Milk Protein & Enzymes: Proteomics and Milk

- Recent developments in proteomics: Implications for dairy protein research. P. Qi*, *USDA-ARS-ERRC, Wyndmoor, PA*.
- Quantitative proteomic analysis of bacterial enzymes released in cheese during ripening. V. Gagnaire, D. Molle, J. Jardin, and S. Lortal*, *INRA, Rennes, France*.
- Instrumentation and Technology of Proteomics today. Mi. Salemi* and B. Phinney, *University of California-Davis*.
- Proteomics and the mammary gland and mammary cell. J. McManaman*, *University of Colorado, Ft. Collins*.
- Discussion.

Dairy Foods: The Dairy Management Inc. National Dairy Foods Research Center Program: Responding to Industry Needs for New Technologies, Products & Markets

- The Dairy Management Inc.™ National Dairy Foods Research Center Program: responding to industry needs for new and improved technologies, products and ingredients. J. K. Kondo*, *Dairy Management, Inc., Rosemont, IL*.
- Manufacture and application of casein concentrates. L. E. Metzger*, *South Dakota State University, Brookings*.
- Creating new dairy ingredients uses – getting beyond the dairy case. P. S. Tong*, *California Polytechnic State University, San Luis Obispo*.
- Defining the flavor of dairy products. M. A. Drake*, *North Carolina State University, Raleigh*.
- Improving the quality of low fat cheese. D. J. McMahon*, *Western Dairy Center, Nutrition & Food Sciences Dept., Utah State University, Logan, UT*.
- Process techniques to enhance the utilization of whey ingredients. J. A. Lucey*¹, S. Damodaran¹, and K. Smith², ¹*University of Wisconsin, Madison*, ²*Wisconsin Center for Dairy Research, Madison*.
- Breaking the 21 to 28 day shelf-life barrier on refrigerated HTST pasteurized milk. D. M. Barbano* and K. J. Boor, *Cornell University, Northeast Dairy Foods Research Center, Department of Food Science, Ithaca, NY*.
- Specialized Starter Cultures for Enhancing the Properties of Pasteurized Hispanic-Style Cheeses. D. Van Hekken*, *USDA/ARS/ERRS, Dairy Processing and Products Research Unit, Wyndmoor, PA*.
- Discussion.

Dairy Foods: On the road from analysis and discovery of functional milk bioactives to new products and health outcomes

- An approach to capturing and translating the biological activities and health outcomes of milk components. S. L. Freeman*, *University of California, Davis*.
- The glycome and the glycoproteome of milk. C. Lebrilla*, B. German, D. Mills, and S. Freeman, *University of California, Davis*.
- Production and use of high CLA foods in human health. D. E. Bauman*¹, C. Tyburczy¹, A. M. O'Donnell¹, and A. L. Lock², ¹*Cornell University, Ithaca, NY*, ²*University of Vermont, Burlington*.
- Sources and characteristics of milk fat globule membranes. R. E. Ward*, *Utah State University, Logan*.
- Whey protein changes glucose and lipid metabolism and its implications for weight management in the clinics. S. Karakas, *University of California, Davis*.
- Discussion.

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Distillers Grains Symposium

- Market confusion of the varying nutrient contents of distillers feed products. L. Forester, *ADM*.
- How to utilize distillers grains based on nutrient content. C. Parsons, *University of Illinois, Urbana*.
- Environmental impacts (beneficial and detrimental) of feeding distillers grains relative to other feedstuffs. T. Klopfenstein, *University of Nebraska, Lincoln*.
- Overview of the ethanol industry, current energy environment and energy bill. B. Dineen*, *Renewable Fuels Association*.
- Total energy picture and ethanol: Petroleum interaction. TBA.
- Environmental impact of renewable fuels and sustainable agriculture. D. Walters*, *University of Nebraska, Lincoln*.
- Results of RFA/AFIA task force study evaluating analytical methods of distillers grains for precision, replicability and "in-use" methodology compliance. R. Sellers*, *AFIA, Arlington, VA*.
- Corn: Ethanol – Supply and demand outlook. TBA.

Food Safety: Current and Future Salmonella Challenges

- Introduction. H. S. Hussein*, *University of Nevada, Reno*.
- ASAS Early Career Achievement Award: Gastrointestinal microbial ecology and the safety of our food supply as related to *Salmonella*. T. R. Callaway*, T. S. Edrington, J. A. Byrd, R. C. Anderson, R. B. Harvey, K. J. Genovese, J. L. McReynolds, and D. J. Nisbet, *Food and Feed Safety Research Unit, College Station, TX*.
- Current and future *Salmonella* challenges: Background, serotypes, pathogenicity, and drug resistance. S. L. Foley*, *Marshfield Clinic Research Foundation, Marshfield, WI*.
- Current and future *Salmonella* challenges: Prevalence of *Salmonella* in beef and dairy cattle and potential pathogenicity of their isolates. C. R. Jackson*, P. J. Fedorka-Cray, J. Haro, and B. M. McGlinchey, *USDA-ARS, Athens, GA*.
- Current and future *Salmonella* challenges: Prevalence in swine and poultry and potential pathogenicity of their isolates. S. L. Foley*, *Marshfield Clinic Research Foundation, Marshfield, WI*.

Forages & Pastures: Understanding Diet Selection in Temperate Biodiverse Pasture Systems

- Introduction. K. Soder, *USDA-ARS, Pasture Systems and Watershed Management Research Unit*.
- Dietary selection: The current state of knowledge. A. J. Rook*, *Private Consultant, Okehampton, UK*.
- Genetic control of dietary choice in farm animals: A combination of nature and nurture. R. M. Lewis*¹ and G. C. Emmans², ¹*Virginia Polytechnic Institute and State University, Blacksburg*, ²*Scottish Agricultural College, Edinburgh, Scotland, UK*.
- Learning and dietary choice. J. J. Villalba*, *Utah State University, Logan*.
- Forage factors and dietary choice. D. F. Chapman*¹, A. J. Parsons², J. Hill¹, and K. Venning¹, ¹*University of Melbourne, Melbourne, Victoria, Australia*, ²*AgResearch, Palmerston North, New Zealand*.
- New approaches to grazing effects on pasture composition and productivity. E. A. Laca*, *Plant Sciences, University of California, Davis*.
- Discussion.

Forages & Pastures: Tropical forages: Management and Environmental Issues Affecting Use Efficiency

- Programming grazing, irrigation and fertilization cycles based on physiological and environmental data for tropical grasses. J. Rodriguez-Absi*¹ and E. Gutierrez-Ornelas², ¹*Raesa Mexico, Queretaro, Queretaro, Mexico*, ²*Universidad Autonoma de Nuevo Leon, Marín, Nuevo Leon, Mexico*.
- Agroforestry livestock feeding systems in tropical America. T. Clavero*¹ and J. Iglesias², ¹*Facultad de Agronomía, Universidad del Zulia, Maracaibo, Zulia, Venezuela*, ²*Estacion Experimental Indio Hatuey, Matanzas, Cuba*.
- Use of limpgrass (*Hemarthria altissima*) in cow-calf grazing systems in southern Florida. J. D. Arthington*, *University of Florida-IFAS, Range Cattle Research and Education Center, Ona*.
- Managing tropical forages: production, environmental benefits and risks. B. C. Pengelly* and J. G. McIvor, *Agricultural Landscapes, CSIRO Sustainable Ecosystems, St Lucia, Qld, Australia*.
- Discussion.

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Goat Species: Nutrient Requirements of Goats

- Goat species: Nutrient requirements of goats - Introduction. J. E. Huston*, *Texas A&M University, San Angelo*.
- Energy and protein requirements of goats. M. Huerta Bravo*, *Universidad Autónoma Chapingo, Chapingo, México*.
- Vitamin requirements of goats. B. W. Hess*, *University of Wyoming, Laramie*.
- Revised guidelines for mineral requirements of goats. S. G. Solaiman*, *Tuskegee University, Tuskegee, AL*.

Growth & Development: Transcriptional factors and cell mechanisms for regulation of growth and development with application to animal agriculture

- Postnatal myogenesis: A tale of transcription factors. Z. Yablonka-Reuveni*, I. Kirillova, G. Shefer, K. Rider, R. Almuly, A. Vine, B. Kwiatkowski, and K. Day, *University of Washington*.
- The role of microRNAs in muscle development. T. P. L. Smith*¹, T. G. McDanel¹, M. E. Doumit², L. K. Matukumalli³, T. S. Sonstegard³, L. L. Coutinho⁴, and R. T. Wiedmann¹, ¹USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE, ²Michigan State University, East Lansing, ³USDA, ARS, Bovine Functional Genomics Laboratory, Beltsville, MD, ⁴University of Sao Paulo, Brazil.
- Cellular and molecular regulation of muscle growth and development in meat animals. W. R. Dayton*, M. E. White, and M. R. Hathaway, *University of Minnesota, St Paul*.
- Application of cellular mechanisms to growth and development of food producing animals. B. J. Johnson*, *Kansas State University, Manhattan*.

Horse: Recent advances in Understanding Metabolic Disorders in Horses

- The impact of variability in pasture forages on horse metabolism. B. McIntosh*^{1,2}, D. Kronfeld¹, R. Geor¹, W. Staniar¹, P. Harris³, and D. Ward⁴, ¹Virginia Polytechnic and State University, Blacksburg, ²Blue Seal Feeds Inc., Londonderry, NH, ³WALTHAM Centre for Pet Nutrition, Melton Mowbray, United Kingdom, ⁴Rutgers University, Bridgeton, NJ.
- Advances in diagnosis and management of equine polysaccharide storage myopathy (PSSM). M. E. McCue*, S. J. Valberg, and J. R. Mickelson, *University of Minnesota, St. Paul*.
- Management of obesity and insulin resistance in horses. R. J. Geor*, R. A. Carter, and K. H. Treiber, *Virginia Polytechnic and State University, Middleburg*.

Informal Nutrition Symposium: The Impact of Imprinting on Biological and Economic Performance of Animals

- Symbolism for the advisor and the mentor - remembering Dr. David Sklan. M. Sifri*, *ADM Alliance Nutrition, Inc., Quincy, IL*.
- Embryonic and neonatal (perinatal) imprinting: (a team presentation): 1. Introductions, definitions and overview. P. R. Ferket*, *North Carolina State University, Raleigh*.
- Embryonic and neonatal (perinatal) imprinting: (a team presentation): 2. Molecular and biological mechanisms. C. M. Ashwel*, *North Carolina State University, Raleigh*.
- Embryonic and neonatal (perinatal) imprinting: (a team presentation): 3. Maternal and developmental impact. Z. Uni*, *Hebrew University of Jerusalem, Rehovot, Israel*.
- Embryonic and neonatal (perinatal) imprinting: (a team presentation): 4. Embryonic and neonatal nutritional and environmental status. P. R. Ferket*, *North Carolina State University, Raleigh*.
- Oral immune tolerance in birds and mammals: the digestive tract development determines the strategy. A. Friedman*, *Hebrew University of Jerusalem, Rehovot, Israel*.
- Microbial imprinting in gut development and health. J. Dibner*, *Novus International, St. Charles, MO*.
- Discussions, conclusions, messages and recommendations. W. Guenter*¹ and M. E. Cook², ¹University of Manitoba, Canada, ²University of Wisconsin, Madison.

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International Animal Agriculture: Global Livestock and Poultry Issues

- Factors affecting milk price and revenues of dairy farms in the central region of Thailand. J. A. Rhone*¹, R. Ward¹, S. Koonawootrittriron², and M. A. Elzo¹, ¹University of Florida, Gainesville, ²Kasetsart University, Bangkok, Thailand.
- Factors affecting bacterial score and bulk tank somatic cell count of dairy farms in the central region of Thailand. J. A. Rhone*¹, S. Koonawootrittriron², and M. A. Elzo¹, ¹University of Florida, Gainesville, ²Kasetsart University, Bangkok, Thailand.
- Effects of supplementing finger millet straw with concentrates differing in partitioning factor on microbial biomass synthesis in crossbred dairy cows. W. Jackson*¹, S. Sudha², U. Krishnamoorthy², R. Bhaskaran², and P. Robinson¹, ¹University of California, Davis, ²Karnataka Veterinary, Animal & Fisheries Sciences University, Bangalore, Karnataka, India.
- Livestock, livelihoods and the environment in developing countries. A. Freeman*¹, and J. Dijkman², ¹International Livestock Research Institute, Kenya, ²FAO Pro-Poor Livestock Initiative.
- Role of livestock in human health and nutrition in developing countries. T. F. Randolph*¹, E. Schelling², and J. Zinsstag², ¹International Livestock Research Institute, Kenya, ²Swiss Tropical Institute, Switzerland.
- Poultry. TBA.

Joint National Extension Workshop: Accountability Issues in Extension: Identifying, Measuring and Reporting Impacts

- Introduction and Washington update. R. D. Reynnells*, USDA/CSREES/PAS, Washington, DC.
- Accountability for administrators—impacts with impact. B. D. Moser*, The Ohio State University, Columbus, OH.
- How to lessen the pain of reporting: multiple uses for the same information. J. Carey, Texas A&M University, College Station.
- What information do I need to keep Extension funded? J. C. Wade*, National Association of State Colleges and Land Grant Universities, Washington, DC.
- How plans of work and annual reports are used at the federal level. S. K. Stout*, Cooperative State Research Education Extension Service.
- Background and future of the Risk Management Education Center. J. Newkirk.
- Discussion.

Joint ASAS/ADSA/PSA Extension Workshop: Changing the Future of Food Animal Production

- Introduction to the symposium: the lengthening chain of change. R. E. Stup*, The Pennsylvania State University, University Park.
- Change management—how to get organizations to change. M. Hemenover, Avenues For Change, St. Louis, MO.
- Adapting extension to rapidly changing industries: A pork industry experience. M. T. See*, North Carolina State University, Raleigh.
- Adapting extension to the rapidly changing dairy industry. E. R. Jordan*, The Texas A&M University System, Dallas.
- Extension's responsibility in responding to emergency and controversial issues. J. F. Ort*, North Carolina State University, Raleigh.
- Discussion.

Meat Science & Muscle Biology: Meat Packaging and Shelf Life

- Overview of meat life cycle from harvest to consumer. R. D. Huffman*¹ and J. C. Brooks², ¹American Meat Institute Foundation, Washington, DC, ²Texas Tech University, Lubbock.
- Defining spoilage: What is shelf life and how is it determined? T. L. Brown¹, S. L. Jaax¹, M. M. Brashears², and S. J. Eilert*¹, ¹Cargill Meat Solutions, Wichita, KS, ²Texas Tech University, Lubbock.
- Is there a link between food safety and food spoilage? J. C. Brooks*, M. M. Brashears, and M. F. Miller, Texas Tech University, Lubbock.

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Meat Science & Muscle Biology: Meat Marination

- Impact of functional ingredients on food safety. S. R. McKee^{*1}, C. Z. Alvarado², and J. W. Bowers¹, ¹Auburn University, Auburn, ²Texas Tech University, Lubbock.
- The role of functional ingredients in marinated meat and poultry. B. S. Smith^{*}, John R. White Company, Inc., Birmingham, AL.
- Impact of marination and deboning time on poultry meat tenderness. C. M. Owens^{*}, University of Arkansas, Fayetteville.
- Characterizing the safety and quality of fresh beef cuts subjected to deep muscle marination. M. M. Brashears^{*}, J. C. Brooks, and M. F. Miller, Texas Tech University, Lubbock.
- Spices and seasonings in marinades. L. Windecker^{*}, Griffith Laboratories, Alsip, IL.
- Panel Discussion.

Non-ruminant Nutrition: Lessons and Logistics of Application of Digestible Amino Acids in Diet Formulation

- Amino acid digestibility measurements of feedstuffs – Lessons from poultry studies. V. Ravindran^{*1} and W. L. Bryden², ¹Massey University, Palmerston North, New Zealand, ²University of Queensland, Gatton, Australia.
- Methodology for endogenous flow estimates for standardization of digestible amino acids. S. A. Adedokun^{*1}, O. Adeola¹, C. M. Parsons², M. S. Lilburn³, and T. J. Applegate¹, ¹Purdue University, West Lafayette, IN, ²University of Illinois, Urbana/Champaign, ³The Ohio State University, OARDC Wooster.
- Ileal digestibility of amino acids: Lessons from pig studies. O. Adeola^{*}, Purdue University, West Lafayette, IN.
- Digestible amino acid formulation of poultry feeds; practical considerations. D. J. Burnham^{*}, Aviagen, Inc, Huntsville, AL.

Non-ruminant Nutrition: Understanding Protein Synthesis and Degradation and Their Pathway Regulations for Improving Monogastric Production Efficiency & Product Quality

- Postnatal ontogeny of skeletal muscle protein synthesis in pigs. T. A. Davis^{*}, A. Suryawan, R. A. Orellana, and M. L. Fiorotto, USDA/ARS Children's Nutrition Research Center, Baylor College of Medicine, Houston, TX.
- Measuring in vivo intracellular protein degradation rates in animal systems. W. G. Bergen^{*}, Auburn University, Auburn, AL.
- The non-lysosomal Ca²⁺-dependent protein degradation pathway: The calpains, proteasome, and myofibrillar protein turnover. D. E. Goll^{*}, G. Neti, S. W. Mares, and V. F. Thompson, University of Arizona, Tucson.
- The mTOR-signaling pathway in regulating metabolism and growth. X. Yang^{*}, C. Yang, A. Farberman, C. F. M. de Lange, J. France, and M. Z. Fan, University of Guelph, Guelph, Ontario, Canada.

Non-ruminant Nutrition: Natural Phytobiotics for Health of Young Animals: Mechanisms and Application

- Introduction. S. W. Kim, Texas Tech University, Lubbock.
- Natural phytobiotics for health of young piglets and poultry: Mechanisms and application. W. Windisch^{*1} and A. Kroismayr², ¹University of Natural Resources and Applied Life Sciences, Vienna, Austria, ²BIOMIN GmbH, Herzogenburg, Austria.
- The use of bioactive herbal saccharides in China. X. Piao^{*1}, S. Yuan¹, S. W. Kim², D. Li¹, and D. Ou¹, ¹China Agriculture University, Beijing, China, ²Texas Tech University, Lubbock.
- Effect of a phytogenic feed additive on reproduction performance of sows. A. Kroismayr^{*1,4}, C. Hsun², M. Racousier³, and T. Steiner⁴, ¹University of Natural Resources and Applied Life Sciences, Vienna, Austria, ²BIOMIN America Inc, San Antonio, Texas, ³Universidad Mayor, Santiago, Chile, ⁴BIOMIN GmbH, Herzogenburg, Austria.
- Effects of phytobiotics on nursery pig performance. R. C. Sulabo^{*1}, J. Y. Jacela¹, J. M. DeRouche¹, M. D. Tokach¹, F. Neher², R. D. Goodband¹, S. S. Dritz¹, and J. L. Nelssen¹, ¹Kansas State University, Manhattan, ²Biomim Inc., San Antonio, TX.
- Dietary supplementation with *Acanthopanax Senticosus* extracts enhances the digestion and absorption of dietary protein and amino acids in weaned pigs. F. G. Yin^{*1}, X. F. Kong¹, Y. L. Yin¹, H. J. Liu¹, F. F. Xing¹, Q. H. He¹, T. J. Li¹, R. L. Huang¹, P. Zhang¹, and G. Y. Wu^{1,2}, ¹Institute of Subtropical Agriculture, The Chinese Academy of Sciences, Changsha, Hunan, China, ²Texas A&M University, College Station.

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Physiology & Endocrinology: Role of Lipids and Fatty Acids in Regulation of Reproductive Function

- The role of omega-3 and -6 fatty acids in regulation of reproductive function in horses. E. L. Squires*, *Colorado State University, Fort Collins.*
- Addition of protected fat in ewes with different corporal condition on superovulation and conception rate. P. Molina¹, T. Sánchez¹, O. Mejía², J. Nuñez², E. García^{*3}, O. D. Montañez-Valdez⁴, J. Cordero¹, J. Peralta¹, M. E. Ortega¹, R. Nieto⁵, E. Mendoza¹, and R. Avila¹, ¹*Colegio de Postgraduados, Montecillo, Estado de México, México,* ²*Facultad de Medicina Veterinaria y Zootecnia, UNAM, Tres Mariás, Municipio de Huitzilac, México,* ³*Centro Universitario de la Costa Sur de la Universidad de Guadalajara, Autlán, Jalisco, México,* ⁴*Centro Universitario del Sur de la Universidad de Guadalajara, Ciudad Guzmán, Jalisco, México,* ⁵*Instituto Tecnológico Agropecuario No.6, Huejutla, Hidalgo, México.*
- Dietary omega-3 and omega-6 fatty acids and reproduction in dairy cattle. L. Badinga* and C. Caldari-Torres, *University of Florida, Gainesville.*
- Reproductive function in dairy cows fed a lipid encapsulated conjugated linoleic acid supplement. G. E. Mann^{*1}, A. L. Lock², D. E. Bauman³, and N. R. Kendall¹, ¹*University of Nottingham, Sutton Bonington, Loughborough, UK,* ²*University of Vermont, Burlington,* ³*Cornell University, Ithaca, NY.*
- Dietary lipids and reproduction in beef cattle. R. N. Funston*, *University of Nebraska, West Central Research and Extension Center, North Platte.*
- The role of dietary omega-3 and omega-6 fatty acids in swine reproduction. S. K. Webel*, J. D. Spencer, and A. M. Gaines, *JBS United, Inc., Sheridan, IN.*

Poultry-Breeding and Hatchery: Semen Evaluation and Fertility Determination in Poultry

- Introduction.
- Using sperm penetration values to evaluate broiler breeder performance and reproductive efficiency. R. K. Bramwell*, *University of Arkansas, Fayetteville.*
- Advances in sperm cell biology stemming from the analysis of sperm mobility. D. Froman*, *Oregon State University, Corvallis.*
- Using the Sperm Quality Analyzer Vt for dosimetry of turkey semen in commercial turkey operations; the potential impact on fertility, and the economic implications of better utilization of sires with superior growth potential. K. K. Krueger*, *Diamond K Research, Marshville, NC.*
- Using egg breakout to estimate flock fertility. J. L. Wilson*, *University of Georgia, Athens.*
- Round Table Discussion. Moderator: Julie Long, *ARS-USDA, Beltsville, MD.*

Production, Management & Environment: The Evolving National Animal Identification System

- Introductions. J. Paterson, *Montana State University, Bozeman.*
- Update on the National Animal Identification System. N. Hammerschmidt*, *Holstein Association, Brattleboro, VT.*
- The Canadian Livestock Traceability System. J. M. Stitt*, *Canadian Cattle Identification Agency, Calgary, Alberta, Canada.*
- Report on NAIS Pilot Projects and Field Trials. D. Morris*, *USDA/APHIS/VS/NCAHP/SIP/NAIS, Fort Collins, CO.*
- Issues surrounding existing and potentially disruptive RFID technologies for the identification of food producing animals. D. A. Blasi*, *Kansas State University, Manhattan.*

Ruminant Nutrition: Corn Milling Co-Products - Dairy (start of an abstract session)

- Introduction to Corn Milling Co-Products (Dairy). P. Kononoff, *University of Nebraska, Lincoln.*
- Maintaining milk components when feeding co-products of corn ethanol production. L. Armentano*, *University of Wisconsin, Madison.*

Ruminant Nutrition: Corn Milling Co-Products - Beef (start of an abstract session)

- Introduction to Corn Milling Co-Products (Beef). S. Gunter, *University of Arkansas.*
- Environmental concerns with feeding corn milling co-products in feedlot diets. T. J. Klopfenstein* and G. E. Erickson, *University of Nebraska, Lincoln.*

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Ruminant Nutrition: Opportunities to Improve Forage Utilization and Rumen Function

- Introduction to Symposium. D. Bohnert, *Oregon State University*.
- Utilizing fats and carbohydrates in forage-based diets for lactating cows. M. S. Allen*, *Michigan State University, East Lansing*.
- The role of ionophores in improving utilization of forage and forage-based diets. V. Fellner*, *North Carolina State University, Raleigh*.
- Lactating dairy cow responses to yeast products. P. H. Robinson*¹ and L. J. Erasmus², ¹*University of California, Davis*, ²*University of Pretoria, Pretoria, South Africa*.
- Enzymes to improve forage utilization by ruminants: What's on the horizon. K. A. Beauchemin* and J. -S. Eun, *Agriculture and Agri-Food Canada, Lethbridge, AB, Canada*.

Sheep: Biology and Management of Low-input Lambing Management in Easy-Care Systems

- Genetic and physiological effects on maternal behavior and lamb survival. C. M. Dwyer*, *SAC, Edinburgh, UK*.
- Management of maternal-offspring behaviour to improve lamb survival in low input systems. J. Everett-Hincks* and K. Dodds, *AgResearch, Invermay Agricultural Centre, Mosgiel, Otago, New Zealand*.
- Evaluation of Dorper, Dorset, Katahdin, and Rambouillet crossbred ewes in high- and low-input production systems. K. A. Leymaster*, *USDA-ARS, U.S. Meat Animal Research Center, Clay Center, NE*.
- Pasture lambing prolific sheep. J. W. McNally*, *Tamarack Lamb & Wool, Hinckley, MN*.
- What does it mean to be locally adapted and who cares, anyway? F. D. Provenza*, *Utah State University, Logan*.

Swine Species: Impact of Season on the Boar and Sow

- Introduction. M. Wilson*, *Ralco Nutrition, Madison, WI*.
- Nutritional regimes that may reduce infertility influences of season. O. Peltoniemi*, *University of Helsinki, Finland*.
- Immunology of heat stress and summer infertility. J. Crenshaw*, *APC, Inc., Ankeny, IA*.
- Heat stress and management ways to handle heat stress. TBA.

Triennial Growth Symposium: Exploring the interface between growth biology and immunology

- Introduction. N. E. Forsberg*, *Oregon State University, Corvallis*.
- Welcome from the Sponsors. K. Purser¹ and M. Miranda², ¹*Prince-Agri Products*, ²*USDA-CSREES-NRI*.
- Brain-immune-periphery cross talk: Shared signals that link pathogen sensing and growth biology. J. L. Burton*, *Michigan State University, East Lansing*.
- Integrating the immune system with the regulation of growth and efficiency. M. Spurlock*, *Iowa State University, Ames*.
- Interleukin-15: A cytokine which modulates fat:lean body composition. L. S. Quinn*^{1,2}, ¹*University of Washington, Seattle*, ²*VA Puget Sound Health Care System, Seattle, WA*.
- Regulation of muscle growth by pathogen associated molecules. R. A. Frost* and C. H. Lang, *Pennsylvania State University, Hershey*.
- Insulin resistance by TNF-alpha in skeletal muscle and fat. M. Lorenzo*, S. Fernandez-Veledo, R. Vila-Bedmar, L. Garcia-Guerra, and I. Nieto-Vazquez, *Biochemistry Department, Pharmacy Faculty, Complutense University, 28040-Madrid, Spain*.
- Proinflammatory changes in adipose tissue: Effects of diet-induced obesity. D. K. Brake, H. Wu, C. M. Ballantyne, and C. W. Smith*, *Baylor College of Medicine, Houston, TX*.
- Critical control points in the impact of proinflammatory immune response on growth and metabolism. T. H. Elsasser*¹, S. Kahl², and J. L. Sartin², ¹*USDA-ARS-Growth Bio Lab, Beltsville, MD*, ²*Auburn University, Auburn, AL*.
- Bi-directional communication: Growth and immunity in domestic animals. J. A. Carroll*, *USDA-ARS Livestock Issues Research Unit, Lubbock, TX*.

World's Poultry Science Association Lecture

- Impact on the world poultry industry of the global shift to biofuels. P. Aho, *Poultry Perspective, Storrs, CT*.

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Teaching Related Symposia

Enhancing the Undergraduate Learning Experience in Animal Agriculture, Through the Integration of Teaching and Research

- Enhancing learning through inquiry. B. Wuetherick*, *University of Alberta, Edmonton, Alberta, Canada.*
- Why should we integrate our teaching and research? C. Colbeck*, *Pennsylvania State University, University Park.*
- Integrating research and teaching in an introductory course setting: There's a heifer in your tank. F. E. Robinson*, N. J. Wolanski, B. Wuetherick, and S. Varnhagen, *University of Alberta, Edmonton, AB, Canada.*
- Integrating research and teaching in a senior course setting. W. L. Hurley*, *University of Illinois, Urbana.*
- Teaching opportunities for graduate students: Who benefits? N. J. Wolanski* and F. E. Robinson, *University of Alberta, Edmonton, Alberta, Canada.*
- Researching teaching. C. K. Varnhagen*, *University of Alberta, Edmonton, Alberta, Canada.*

From Choosing a Graduate Program to Embarking on a Successful Career: A Guide for Livestock and Poultry Science Students

- Choosing a graduate program. D. R. Notter*, *Virginia Polytechnic Institute and State University, Blacksburg.*
- Research and teaching: what else? The unwritten guide to graduate school. C. C. Taylor-Edwards*, *University of Kentucky, Lexington.*
- Opportunities outside of the lab, international experience, networking, and professional societies? J. S. Radcliffe*, *Purdue University, West Lafayette, IN.*
- The defense is scheduled, now what? A job? S. R. Jordan*, *AgriTech Placement LLC.*

Swine Undergraduate Teaching Symposium

- Introduction.
- Enrollment in swine classes at 49 four-year institutions during academic years 1998-99 to 2005-06. D. E. Reese*, K. M. Eskridge, and D. A. Travnicek, *University of Nebraska, Lincoln.*
- Regionalization of teaching efforts? - Midwest Poultry Consortium experience. M. M. Beck*¹ and B. C. Wentworth², ¹*Clemson University, Clemson, SC,* ²*University of Wisconsin, Madison.*
- Regionalization of swine teaching efforts. D. J. Meisinger*, *US Pork Center of Excellence, Ames, IA.*
- Discussion: Create a Library or Depository of Teaching Resources?
- Panel Discussion - W.L. Flowers, R.D. Goodband and T.J. Safranski.
 - Student perceptions of and enrollment in swine management courses at North Carolina State University. W. L. Flowers*, *North Carolina State University, Raleigh.*
 - A survey of student demographics enrolled in a distance education swine production class. R. D. Goodband* and B. C. Minshal, *Kansas State University, Manhattan.*
 - Teaching swine production as a capstone experience in the writing intensive curriculum. T. J. Safranski*, *University of Missouri, Columbia.*

Shaping Animal Sciences Curricula for 2020

- Introduction - Shaping Animal Sciences Curricula for 2020.
- Animal sciences curricula: A historical perspective. J. A. Sterle*, *Texas A&M University, College Station.*
- Changing demographics and enrollment trends. K. L. Esbenshade*, *North Carolina State University, Raleigh.*
- Curricular trends: Shifts in traditional animal sciences courses and degree programs. J. C. Swanson* and D. A. Nichols, *Kansas State University, Manhattan.*
- Thinking outside of the box: Incorporating innovative experiential & inquiry-based learning opportunities. J. N. Spain*, *University of Missouri, Columbia.*
- Thinking outside the box: Linkages with agencies and educational opportunities for undergraduates and graduate students. M. A. Ottinger*, *University of Maryland, College Park.*
- Animal sciences curricula: Future directions. T. Field*, *Colorado State University, Fort Collins.*

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Visual Learning in Animal Science

- Introductory Remarks.
- The role of the NSF/National Science Digital Library in the dissemination of science, technology, engineering and mathematics information and in support of innovations in teaching and learning. L. Salisbury*^{1,2}, ¹University of Arkansas Libraries, Fayetteville, ²National Science Digital Library.
- The importance of images to the pork industry. D. J. Meisinger*, *US Pork Center of Excellence, Ames, IA.*
- Image coupling – simplifying and linking information for enhanced learning. S. Gerard¹, A. C. Oki², and P. L. Senger*², ¹Oei Graphics, Bellevue, WA, ²Current Conceptions, Inc., Pullman, WA.
- Digital Image Gallery to assist learning animal science: Photos and illustrations solicited. J. W. Riesen*¹, H. D. Hafs², G. K. McCone³, P. A. Schoknecht⁴, and M. R. Stokes⁵, ¹University of Connecticut, Storrs, ²Rutgers University, New Brunswick, NJ, ³National Agricultural Library, Beltsville, MD, ⁴Wagner College, Staten Island, NY, ⁵University of Maine, Orono.
- ASAS operational structure for the animal science image gallery. M. C. Wulster-Radcliffe*, *American Society of Animal Science, Savoy, IL.*
- Images for Animal Breeding, Archives, Extension, and Poultry - Panel Discussion - D. S. Buchanan, G. E. Dahl, J. B. Hess and G. K. McCone.
 - The OSU Breeds of Livestock Library. D. S. Buchanan*, *Oklahoma State University, Stillwater.*
 - Images for animal breeding, archives, extension, and poultry. D. S. Buchanan*¹, G. E. Dahl², J. B. Hess³, and G. K. McCone⁴, ¹Oklahoma State University, Stillwater, ²University of Florida, Gainesville, ³Auburn University, Auburn, AL, ⁴National Agricultural Library, Beltsville, MD.