Scientific Program
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AMERICAN DAIRY SCIENCE ASSOCIATION
AMERICAN SOCIETY OF ANIMAL SCIENCE
MEXICAN ASSOCIATION OF ANIMAL PRODUCTION

June 22-26, 2003
Phoenix, AZ

Saturday, June 21, 2003
Schedule of Events

8 am – 4 pm	Modeling Nutrient Use in Farm Animals (for information contact John McNamara - mcnamara@wsu.edu)	Hyatt, Russell
8 am – 5 pm	ADSA Board of Directors Meeting	Hyatt, Cowboy Artist's Room
8 am – 5 pm	ASAS Board of Directors Meeting	Wyndham, Navajo AB
1 pm – 5 pm	ADSA-SAD Farm/City Tour	Off site
3 pm – 5 pm	Registration Open (pre-registered badge & material pick up only)	Convention Center, Lobby 2
7 pm – 10 pm	Triennial Reproduction Symposium Reception and Poster Session	Convention Center, Tucson 40-41
7:30 pm – 9 pm	ARPAS Executive Committee Meeting	Wyndham, Mohave B

Saturday, June 21, 2003
Pre-meeting Poster Session

Triennial Reproduction Symposium Poster Session

7:00 pm – 10:00 pm

Room: Tucson 40-41

Abstract Number	
1	Post-thaw fertility of bovine semen aged within an AI straw for 8.5 hours. J. L. Edwards*[1], M. N. Malone[1], F. N. Schrick[1], H. H. Dowlen[2], H. D. Moorehead[2], P. A. Lunn[2], and A. M. Saxton[1], [1]The University of Tennessee, Knoxville, [2]Dairy Experiment Station, Lewisburg, TN, USA.
2	Effects of presynchronization and/or post-breeding treatment with porcine LH or hCG on pregnancy rates in dairy cows. J. P. Kastelic*[1] and J. D. Ambrose[2], [1]Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, [2]Alberta Agriculture Food and Rural Development, Edmonton, AB, Canada.
3	Pregnancy outcome in dairy cows fed diets supplemented with flaxseed or sunflowerseed. J.D. Ambrose*[1], J.P. Kastelic[2a], R. Corbett[1], P.A. Day[1], J.A. Small[2b], and H.V. Petit[2c], [1]Alberta Agriculture Food and Rural Development, Edmonton, AB, [2a]Agriculture and Agri-Food Canada, Lethbridge, AB, [2b]Brandon, MB, [2c]Lennoxville, QC, Canada.

4 Completion of the Midwest Consortium Project: Sequencing of 21,499 reproduction ESTs and comparative mapping of 721 selected genes. C.K. Tuggle*[1], J.A. Green[2], C. Fitzsimmons[1], R. Woods[2], R.S. Prather[2], S. Malchenko[3], M.B. Soares[3], T. Kucaba[3], K. Crouch[3], and C. Smith[3], [1]Iowa State University, Ames, IA USA, [2]University of Missouri-Columbia, Columbia, MO USA, [3]University of Iowa, Iowa City, IA USA.

5 Effect of semen packaged in 0.25 and 0.50 cc straws on conception rate of lactating dairy cows. N. Michael*, C. Marti, E. Roberts, and M. Pace, ABS Global, Inc.

6 Ovarian follicular development in first parity sows subject to varied split-weaning protocols. J. Barry*, W. T. Dixon, and G. R. Foxcroft, Swine Research & Technology Centre, University of Alberta, Canada.

7 Do calcium-mediated cellular signalling pathways, PGE_2, estrogen or progesterone receptor antagonists, or bacterial toxins affect bovine placental function in vitro? C Weems*[1], Y Weems[2], T Welsh[3], G Carsten[4], and R Randel[5], [1,2]Univ. of Hawaii, [3,4,5]Texas A&M Univ.

8 Does estrous synchronization affect corpus luteum (CL) function? C Weems*[1], Y Weems[1], S Tatman[2], A Lewis[2], D Neuendorff[2], and R Randel[2], [1]Univ Hawaii, [2]Texas A&M Univ.

9 Photoperiod and diet effects on heifer development. J. A. Small*[1], A. D. Kennedy[2], and D. R. Ward[1], [1]Agriculture & Agri-Food Canada, Research Centre, Brandon, MB, Canada, [2]University of Manitoba, Winnipeg, MB, Canada.

10 Heat shock increases glutathione in bovine oocytes. R. R. Payton*[1], P. Coy[2], R. Romar[2], J.L. Lawrence[1], and J.L. Edwards[1], [1]The University of Tennessee, Knoxville, USA, [2]The University of Murcia, Murcia, Spain.

Sunday, June 22, 2003

Schedule of Events

7 am – 7 pm	Registration Open	Convention Center, Lobby 2
8 am – 12 pm	ADSA/ASAS Joint Board of Directors Meeting	Wyndham, Navajo ABC
8 am – 5 pm	Triennial Reproduction Symposium	Convention Center, Tucson 40-41
8 am – 5 pm	ARPAS Governing Board Meeting	Wyndham, Hopi A
8 am – 5 pm	Commercial Exhibits Set Up/SAD Exhibit Set Up	Convention Center, Exhibit Hall D
11 am – 12 pm	ADSA - SAD Officers and Advisor Meeting	Convention Center, Phoenix 12
11 am – 12 pm	ADSA JDS Editors Meeting	Hyatt, Remington
12 pm – 1 pm	ADSA - SAD Club Welcome Pizza Party and Orientation	Convention Center, Phoenix 11
12 pm – 1 pm	ADSA JDS Editors and Journal Management Committee Luncheon	Hyatt, Remington
1 pm – 5 pm	ADSA Journal Management Committee Meeting	Hyatt, Remington
1 pm – 5 pm	ADSA – SAD Quiz Bowl Seating/Preliminary Rounds	Convention Center, Phoenix 13-17
2 pm – 3 pm	ADSA Production Division Council Meeting	Convention Center, Yuma 25
2 pm – 3:30 pm	ADSA Foundation Board of Trustees Meeting	Wyndham, Navajo D
2 pm – 3:30 pm	ASAS Foundation Trustees Meeting	Wyndham, Apache
2 pm – 4 pm	ADSA Committee on Evaluation of Dairy Products	Convention Center, Tucson 36
3 pm – 4 pm	ADSA 2006 Centennial Task Force Committee Meeting	Convention Center, Tucson 37
3 pm – 4 pm	ADSA Production Division Nominating Committee	Convention Center, Tucson 38
3 pm – 4 pm	ADSA Production Division Resolutions Committee	Convention Center, Yuma 25
3 pm – 5 pm	ADSA – ASAS 2003 and 2004 Program Chairs and Vice Chairs Meeting	Convention Center, Yuma 26-27
3:30 pm – 5 pm	ADSA-ASAS Joint Foundation Board of Trustees Meeting	Wyndham, Apache
5 pm – 6 pm	ADSA Dairy Foods Division Council Meeting	Convention Center, Yuma 28-29
5 pm – 6 pm	ADSA Production Division Business Meeting	Convention Center, Tucson 37
6:30 pm – 7 pm	ADSA - SAD Quiz Bowl Final Round	Convention Center, Phoenix 16-17
7 pm – 8:30 pm	2003 Opening Session	Convention Center, Ballroom
8 pm – 10 pm	Commercial Exhibits Open	Convention Center, Exhibit Hall D
8:30 pm – 10 pm	2003 Opening Reception	Convention Center, Exhibit Hall D

OPENING SESSION

Animal Agriculture and Emerging Social Ethics for Animals

Dr. Bernard E. Rollin, Colorado State University

7:00 pm, Convention Center Ballroom

Sunday, June 22, 2003
Pre-meeting Symposia

SYMPOSIUM

Triennial Reproduction

Chair: Milo C. Wiltbank, University of Wisconsin-Madison

Sponsors: Monsanto, Pfizer Animal Health, and Select Sires, Inc.

Room: Tucson 40-41

Time	Abstract Number	
		Minisymposium 1 – Regulation of Follicular Growth
8:00 am	11	(Invited) Ovarian follicular growth and atresia: the relationship between cell proliferation and survival. S.M. Quirk*, R.G. Cowan, R.M. Harman, and C.-L. Hu, Cornell University, Ithaca, NY.
8:45 am	12	(Invited) Control of follicular growth: local interactions and nutritional influences. R. Webb*[1], P.C. Garnsworthy[1], J.G. Gong[2], and D.G. Armstrong[2], [1]University of Nottingham, Loughborough, UK, [2]Roslin Institute, UK.
9:30 am		Break
		Minisymposium 2 – Regulation of Conceptus Growth and Development
10:00 am	13	(Invited) Uterine and placental factors regulating conceptus growth in domestic animals. Thomas E. Spencer* and Fuller W. Bazer, Texas A&M University.
10:45 am	14	(Invited) Regulation of the development of fetuses from in vitro produced and cloned embryos. C.E. Farin* and P.W. Farin, North Carolina State University, Raleigh.
11:30 am		Presentation of Casida Award
12:00 pm		Lunch
		Breakout Session 1 (Attend 1 of 3)
1:30 pm – 2:30 pm		1. Selection of a single dominant follicle. Milo Wiltbank.
		2. Sperm physiology and preservation. James Graham, and David Guthrie.
		3. Factors regulating early pregnancy. Jeff Vallet, Peter Hansen, and Kurt Zuelke.
		Breakout Session 2 (Attend 1 of 3)
2:45 pm – 3:45 pm		4. Nutritional factors regulating fertility. Ron Butler.
		5. Factors regulating mid to late pregnancy. Jeff Vallet.
		6. Reproductive management programs for dairy cattle. Richard Pursley, and Paul Fricke.
		Minisymposium 3 – Follicular and Hormonal Factors Regulating Embryonic Development and Pregnancy
4:00 pm	15	(Invited) The impact of oocyte quality on development. R.L. Krisher*, Purdue University, West Lafayette, IN USA.
4:45 pm	16	(Invited) Pre-ovulatory, post-ovulatory and post-maternal-recognition factors that affect establishment and retention of pregnancy in cattle. E. K. Inskeep*, West Virginia University, Morgantown WV/USA.

Monday, June 23, 2003

Schedule of Events

6:15 am - 7:30 am	Poster set up	Convention Center, Exhibit Hall D
6:30 am – 4 pm	Registration Open	Convention Center, Lobby 2
6:30 am – 8 am	ADSA Production Division Extension Breakfast	Hyatt, Phoenix Ballroom
6:30 am – 8 am	ADSA Journal Editorial Board Breakfast/Meeting	Hyatt, Cowboy Artist's Room
6:30 am – 8 am	Virginia Tech Breakfast	Hyatt, Sundance
7:15 am – 8:15 am	ADSA - SAD Exhibit Set up	Convention Center, Exhibit Hall D
7:30 am – 9:30 am	Poster Sessions	Convention Center, Exhibit Hall D
7:30 am – 5 pm	Commercial Exhibits & ADSA SAD Exhibits Open	Convention Center, Exhibit Hall D
8:30 am – 9:30 am	ADSA Centennial Publications Committee Meeting	Convention Center, Yuma 32
9 am – 9:30 am	ADSA - SAD Business Meeting	Convention Center, Phoenix 13-15
9:30 am – 10:30 am	ADSA - SAD Judging of Yearbooks, Scrapbooks, Annual Reports, and Centennial Celebration Entries	Convention Center, Phoenix 11
9:30 am – 10:30 am	ADSA - SAD Interviews for Outstanding Student and Advisor Awards	Convention Center, Phoenix 12
9:30 am – 10:30 am	ADSA - SAD Activities Symposium	Convention Center, Phoenix 13-15
9:30 am – 5 pm	Scientific Sessions and Symposia	Convention Center
10 am – 12 pm	ARPAS Exam	Convention Center, Yuma 34
11 am – 12:30 pm	ADSA - SAD Undergraduate Paper Presentations	Convention Center, Phoenix 13-15
11 am – 1 pm	ASAS Publications Committee Luncheon	Wyndham, Maricopa
11:30 am – 2 pm	ADSA Past President's Luncheon	Hyatt, Curtis B
12 pm – 1 pm	Posters attended by authors/co-authors if possible	Convention Center, Exhibit Hall D
12 pm – 2 pm	Michigan State University Lunch	Wyndham, South Ballroom
1:30 pm - 3 pm	ADSA DISCOVER Steering Committee Meeting	Convention Center, Yuma 32
1:30 pm – 5 pm	ADSA - SAD Undergraduate Paper Presentations	Convention Center, Phoenix 13-15
5 pm – 7 pm	ASAS Award Winners Reception and Photo Session	Wyndham, Najavo AB
5:15 pm – 6:30 pm	ADSA Town Hall Meeting	Convention Center, Tucson 40-41
7 pm – 9 pm	ASAS/B&B/NCBA Collegiate Livestock Leaders Institute Dinner	Wyndham, Hopi A
7 pm – 8:30 pm	ASAS Awards Program	Wyndham, Grand Ballroom
8 pm – 11 pm	Iowa State Social	Wyndham, Navajo A
9 pm - 12 am	ASAS/ADSA Graduate Student Mixer	TBA
9:30 pm – 11:30 pm	SAD Student Mixer	AMF Thunderbird Bowling Center

Monday, June 23, 2003
Symposia and Oral Sessions

SYMPOSIUM

Breeding & Genetics

Molecular Genetics: Lessons From Past/New Directions

Chair: Ignacy Misztal, University of Georgia

Sponsors: ABS Global, Genetic Visions, Inc., and Monsanto

Room: Yuma 23-24

Time	Abstract Number	
9:30 am		Introduction. Ignacy Misztal, University of Georgia.
9:40 am	17	(Invited) Commercial application of marker- and gene-assisted selection in livestock: strategies and lessons. J. C. M. Dekkers*, Iowa State University.
10:15 am	18	(Invited) Lessons from QTL analyses in mice. D Pomp*[1] and E.J. Eisen[1], [1]University of Nebraska, [2]North Carolina State University.
10:50 am	19	(Invited) Potential use of microarrays and related methodologies in animal breeding. Bruce Walsh*, University of Arizona.
11:25 am		Discussion

SYMPOSIUM

Companion Animals

Nutrient Requirements of Dogs and Cats

Chair: Donald Beitz, Iowa State University

Sponsors: Alltech, Inc., Doane Pet Care Company, EAAP, Hill's Pet Nutrition, and Nestle Purina

Room: Yuma 21-22

Time	
9:30 am	Introduction. Donald Beitz, Iowa State University
9:45 am	(Invited) Carbohydrates and fiber in dog and cat nutrition, George C. Fahey, Jr., University of Illinois
10:15 am	(Invited) Energy Evaluation and Requirements. Ellen Kienzle, Ludwig-Maximillians University, Munich.
10:45 am	(Invited) Protein and amino acids: Control of food intake. James Morris, University of California-Davis.
11:00 am	(Invited) Vitamins. James Morris, University of California-Davis.

SYMPOSIUM

Food Safety

Food Safety for Animal Agriculture: What Producers Need to Know

Chair: Gerald Jones, Virginia Tech

Sponsor: Pfizer Animal Health

Room: Tucson 40-41

Time	Abstract Number	
9:30 am	20	(Invited) Animal and egg production food safety: Introduction. Gerald M. Jones*[1], Basil Eastwood[2], and Jay Mattison[3], [1]Virginia Tech, Blacksburg, VA, [2]USDA CSREES, Washington DC, [3]The ADDS Center, Verona, WI.
10:00 am	21	(Invited) Food safety for animal agriculture: What producers need to know about causes of foodborne illness. Davey B. Griffin*, Texas A&M University, College Station, TX.
10:30 am	22	(Invited) Food safety for animal agriculture: What producers need to know about drug use, resistance, and residues. Bhushan Jayarao*, Pennsylvania State University, University Park, PA.
11:00 am	23	(Invited) Food safety for animal agriculture: What producers need to know about HACCP and management practices. Gerald M. Jones*, Virginia Tech, Blacksburg, VA.
11:30 am	24	(Invited) Food safety for animal agriculture: What producers need to know about quality assurance programs. James W. Oltjen*, University of California, Davis, CA.

SYMPOSIUM

Growth & Development

Alternative Aspects of Adipocyte Function

Chair: Harry Mersmann, USDA/ARS Children's Nutrition Research Center

Sponsors: Elanco Animal Health, Monsanto, Pfizer Animal Health, and USDA-CSREES

Room: Tucson 36

Time	Abstract Number	
9:30 am	25	(Invited) Usefulness of in vitro and in vivo experimental models. J. Novakofski*, University of Illinois, Department of Animal Sciences.
10:00 am	26	(Invited) Role of fatty acids in adipocyte growth and development. M.J. Azain*, University of Georgia.
10:30 am	27	(Invited) Adipose tissue angiogenesis. G.J. Hausman, USDA-ARS.
11:00 am	28	(Invited) The adipocyte as an endocrine cell. J. L. Miner* and K. M. Hargrave, University of Nebraska.
11:30 am	29	(Invited) Metabolism and development of bovine brown adipose tissue. S.B. Smith* and G.E. Carstens, Texas A&M University, College Station, TX.

ADSA Dairy Foods Graduate Student Paper Competition and Dairy Foods*

Chair: Lloyd Metzger, University of Minnesota

Room: Phoenix 19

Time	Abstract Number	
9:30 am	30	Altered growing conditions can inhibit nisin production in lactic cultures by disrupting the signal transduction pathway. H. Li* and D. O'Sullivan, University of Minnesota.
9:45 am	31	Invasion of *Mycobacterium avium sub sp paratuberculosis*in Bovine Epithelial cells and Bovine Mammary Epithelial Cells. Dilip Patel*[1], Lisbeth Goddik[1], and Luiz Bermudez[2], [1]Food Science and Technology, Oregon State University, Corvallis, OR 97331-6602, [2]Department of Biomedical sciences, College of Vet Med, Oregon state Univ, Corvallis OR 97331-4804.
10:00 am	32	Epidemiology and ecology of *Listeria monocytogenes* at the pre-harvest food level. K.K. Nightingale*, E.D. Fortes, C.R. Nightingale, Z. Her, Y.H. Schukken, Y.T. Grohn, and M. Wiedmann, Cornell University.
10:15 am	33	The influence of sweet cream buttermilk on the compositional and rheological properties of a stirred-curd cheese. T. Lin*[1], J. Lucey[1], R. Govindasamy-Lucey[2], M. Johnson[2], and J. Jaeggi[2], [1]Department of Food Science, UW Madison, [2]Wisconsin Center for Dairy Research.
10:30 am	34*	Characterization of proteolysis in Cheddar cheeses produced with isogenic, thermolytic starters expressing various cell envelope proteinases. S. Myaka, L. Metzger*, K. Baldwin, and L. McKay, MN-SD Dairy Food Research Center, University of Minnesota, St. Paul, MN.
10:45 am	35*	Identification of fecal/mothball flavor in Cheddar cheese. M. E. Carunchia Whetstine*, Y. Yoon, and M. A. Drake, North Carolina State University.
11:00 am	36*	Analysis of physico-chemical changes during early ripening of cheese utilizing FTIR Spectroscopy. P. Upreti* and L. E. Metzger, MN-SD Dairy Foods Research Center, University of Minnesota, St. Paul, MN.
11:15 am	37*	Evaluation of salt whey as an ingredient in process cheese. R. Kapoor* and L. E. Metzger, MN-SD Dairy Food Research Center, University of Minnesota, St. Paul, MN.
11:30 am	38*	Strategies to improve stability and performance of calibration samples for infrared milk analyzers. K. E. Kaylegian* and D. M. Barbano, Northeast Dairy Foods Research Center, Cornell University.
11:45 am	39	Withdrawn

ADSA/ASAS Northeast Graduate Student Paper Competition

Chair: Thomas G. Hartsock, University of Maryland

Room: Phoenix 18

Time	Abstract Number	
9:30 am	40	Effects of *trans*-8, *cis*-10 CLA and *cis*-11, *trans*-13 CLA on milk fat synthesis. J. W. Perfield II*[1], A. Sæbo[2], and D. E. Bauman[1], [1]Cornell University, Ithaca, NY, [2]Natural ASA, Hovdebygda, Norway.
9:45 am	41	Effect of prepartum dietary carbohydrate source and monensin on dry matter intake, milk production and blood metabolites of transition dairy cows. M. M. Pickett*, T. W. Cassidy, P. R. Tozer, and G. A. Varga, The Pennsylvania State University, University Park, PA.
10:00 am	42	Photoperiod Manipulation affects milk yield and mammary growth in pubertal heifers induced to lactate. R. Thomason*[1], D. Martinez[1], G.E. Dahl[2], and T.B. McFadden[1], [1]Univestity of Vermont, Burlington Vermont, [2]University of Illinois, Urbana Illinois.

10:15 am	43	Abnormal udder conformation in pubertal heifers induced into lactation. E. Wall*, R. Thomason, D. Maynard, E. Brunst, and T.B. McFadden, University of Vermont, Burlington, VT.
10:30 am	44	A comparison of the effects of microbial inoculants designed to improve the aerobic stability of corn silage. D. H. Kleinschmit*, R. J. Schmidt, J. E. Lynch, J. M. Ladd, M. Reddish, K. E. Stratton, J. G. Carr, and L. Kung, Jr., University of Delaware, Newark, DE.

WSASAS Graduate Student Paper Competition

Chair: Dr. D.H. Crews, Jr., Agriculture and Agri-Food Canada

Room: Yuma 30 & 35

Time	Abstract Number	
9:30 am	45	Withdrawn
9:45 am	46	Effect of feeding high-linoleate safflower seeds on reproductive endocrine dynamics in postpartum beef females. M. H. J. Grant*[1], B. W. Hess[1], D. L. Hixon[1], E. A. Van Kirk[1], B. M. Alexander[1], T. M. Nett[2], and G. E. Moss[1], [1]University of Wyoming, Laramie, WY, [2]Colorado State University, Fort Collins, CO.
10:00 am	47	Effects of barley processing, bulk density and oil type on feedlot performance and carcass characteristics of finishing beef steers. M. F. McDonnell*, J.G.P. Bowman, L.M.M. Surber, J. J. Kincheloe, M. A. Thompson, K. A. Anderson, and T. K. Blake, Montana State University, Bozeman, MT.
10:15 am	48	Evaluation of time to AI with a modified Co-Synch protocol and calf removal in postpartum beef cows. R.S. Walker*[1], P.D. Burns[2], G.E. Sides[3], and D.D. Zalesky[1], [1]San Juan Basin Research Center, Hesperus, CO, USA, [2]Colorado State University, Fort Collins, CO, USA, [3]Intervet, Inc., Millsboro, DE, USA.
10:30 am	49	Glucose half-life decreased in young postpartum range cows from spring to summer. R. L. Endecott*, D. L. Dunlap, R. C. Waterman, A. C. Fitzgerald, V. A. Munn, K. L. Shirley, S. H. Cox, J. A. Hartung, C. A. Loest, and M. K. Petersen, New Mexico State University.
10:45 am	50	Withdrawn
11:00 am	51	Explant culture supports survival and proliferation of bovine spermatogonial stem cells. JM Oatley*, DJ McLean, DM de Avila, and JJ Reeves, Washington State University.
11:15 am	52	Undegradable true protein, and not ruminally-protected methionine, increases nutrient utilization by growing beef heifers. V. A. Munn*, C. A. Loest, C. P. Mathis, M. K. Petersen, P. J. Defoor, J. E. Sawyer, and C. A. Rogers, New Mexico State University, Las Cruces, NM.
11:30 am	53	*Salmonella* destruction in frankfurters using hydrostatic pressure and bacteriocins. A. W. Wolf*, S. Bandyopadhyaay, N. Kalchayanand, B. Ray, and W.J. Means, University of Wyoming, Laramie, WY, USA.
11:45 am	54	Increasing dietary high-linoleate safflower oil affects duodenal flow of esterified linoleate in wethers. R. L. Atkinson*, E. J. Scholljegerdes, S. L. Lake, V. Nayigihugu, B. W. Hess, and D. C. Rule, University of Wyoming.

Animal Health

Immunity and Health

Chair: Boon P. Chew, Washington State University

Room: Yuma 28-29

Time	Abstract Number	
9:30 am	55	Effect of dietary organically bound selenium and D-α-tocopherol acetate bolus on serum antioxidants status of transit stressed wether lambs. N. K. Chirase*[1,2], J. B. Taylor[3], T. Thelen[3], and L. W. Greene[1,2], [1]Texas Agricultural Experiment Station, Amarillo, [2]West Texas A&M University, Canyon, [3]Agriculture Research Service, Dubois, ID.
9:45 am	56	Intracellular glutathione concentration in bovine natural killer cells after infection with bovine respiratory syncytial virus or bovine viral diarrhea virus. L.A. Matulka*[1], L. Wilkie[2], C. Kuszynski[2], S. Justice[1], D. Wylie[1], K.M. Eskridge[1], D.R. Brink[1], and C.L. Kelling[1], [1]University of Nebraska, Lincoln, NE, [2]University of Nebraska Medical Center, Omaha, NE.
10:00 am	57	Effects of intravenous infusion of triglyceride emulsions varying in lipid source on lymphocyte functions in the bovine. D. Scalia[1], U. Bernabucci*[1], D. G. Mashek[2], B. Ronchi[1], R. R. Grummer[2], and N. Lacetera[1], [1]Université della Tuscia, Viterbo, Italy, [2]University of Wisconsin, Madison.
10:15 am	58	Lymphocyte functions in obese cows during transition period. U. Bernabucci*, D. Scalia, B. Ronchi, D. Pirazzi, A. Nardone, and N. Lacetera, Université della Tuscia, Italy.
10:30 am	59	In vitro modulation by beta-glucan and ascorbic acid of blood leukocyte toll-like receptor and acute phase cytokine expression. S. D. Eicher*[1], T. R. Johnson[2], and K. A. McMunn[1], [1]USDA-ARS, West Lafayette, IN, [2]Purdue University, West Lafayette, IN.
10:45 am	60	An evaluation of rumen-protected choline and a monensin controlled release capsule on the health and metabolic function of periparturient dairy cows. L.C. Zahra*[1], T.F. Duffield[1], S.J. LeBlanc[1], K.E. Leslie[1], T. Overton[2], and D. Putnam[3], [1]Department of Population Medicine, Guelph Ontario, Canada, [2]Department of Animal Science, Ithaca NY, [3]Balchem Corporation, Slate Hill NY.
11:00 am	61	Metabolism and gastric transport of ergot alkaloids in ruminants grazing endophyte-infected tall fescue. N.S. Hill*[1], A.W. Ayers[1], J.A. Stuedemann[2], F.N. Thompson[1], P.T. Purinton[1], and G. Rottinghaus[3], [1]University of Georgia, [2]USDA-ARS, J. Phil Campbell Natural Resources Laboratory, [3]University of Missouri.

International Animal Agriculture

Chair: Fernando Grignola, Monsanto Company

Room: Yuma 25

Time	Abstract Number	
9:30 am	62	Transhumance and dry-season supplementation for cattle in the Sahel. S. Fernandez-Rivera*, A. Salla, P. Hiernaux, and T. Williams, International Livestock Research Institute, Addis Ababa, Ethiopia.
9:45 am	63	Effects of the recessive naked gene on postweaning fryer performance and thermo-tolerance characters in rabbits. A. D. Rogers* and S. D. Lukefahr, Texas A&M University-Kingsville.
10:00 am	64	Study of some socioeconomic factors affacting small ruminant production in upland ranges of Balochistan. A. U. Hyder*[1], A. S. Lodhi[2], and O.U. Haider[3], [1]Department of Animal Breeding and Genetics, University of Agriculture, Faisalabad, Pakistan., [2]Department of Clinical Medicine and Surgery, University of Agriculture, Faisalabad, Pakistan., [3]Department of Agriculture, Qutta, Pakistan.
10:15 am	65	Small ruminant production in upland ranges of Balochistan-cost of enterprise. A. U. Hyder*[1], A. S. Lodhi[2], and O.U. Haider[3], [1]Department of Animal Breeding and Genetics, University of Agriculture, Faisalabad, Pakistan., [2]Department of Clinical Medicine and Surgery, University of Agriculture, Faisalabad, Pakistan., [3]Department of Agriculture, Qutta, Pakistan.

Nonruminant Nutrition

Sow Nutrition

Chair: B.V. Lawrence, Hubbard Feeds, Inc.

Sponsors: Alltech, Inc., Danbred North America, PIC, and United Feeds, Inc.

Room: Tucson 43

Time	Abstract Number	
9:30 am	66	Nucleotides in sows colostrum and milk at different stages of lactation. C. D. Mateo*, H. H. Stein, and D. N. Peters, South Dakota State University, Brookings, SD.
9:45 am	67	Impact of milk supplementation on primiparous and multiparous females' performance and piglets' growth during pre and post-weaning periods. M. E. Johnston[1], Rafael Cabrera*[2], R. D. Boyd[1], and John Vignes[3], [1]The Hanor Company, [2]Ralco-Mix Products, Inc., [3]Advanced Birthright Nutrition, Inc.
10:00 am	68	Effects of reducing particle size of corn in lactation diets on performance and nutrient utilization in multiparous sows. E. C. Baudon*, J. D. Hancock, M. D. Tokach, and J. F. Gabarrou, Kansas State University, Manhattan.
10:15 am	69	The effect of canola on reproductive performance in sows. M. R. Smiricky-Tjardes*, H. H. Stein, and D. N. Peters, South Dakota State University.
10:30 am	70	Exogenous enzyme effects on the digestibility of gestation-lactation swine diets. A.L.P. de Souza*, M.D. Lindemann, and G.L. Cromwell, University of Kentucky, Lexington.
10:45 am	71	Impact of increased valine:lysine ratio during lactation on sow and piglet performance. A. M. Gaines*[1], M. E. Johnston[2], G. L. Allee[2], R. D. Boyd[2], J. L. Usry[3], and K. J. Touchette[4], [1]University of Missouri-Columbia, [2]The Hanor Company, Inc., [3]Ajinomoto Heartland, Inc., Chicago, [4]Merrick's Inc., Union Center, WI.
11:00 am	72	Effect of protected n-3 polyunsaturated fatty acids (Fertilium™) on litter size in sows. S. K. Webel*, E. R. Otto, D. M. Webel, R. L. Moser, J. D. Spencer, and D. E. Orr, [1]United Feeds, Inc.
11:15 am		What have we learned? T.J. Prince, Akey

Production, Management, & the Environment

Chair: Kathy Soder, USDA ARS Pasture Systems and Watershed Management

Room: Tucson 37

Time	Abstract Number	
9:30 am	73	Evaluation of two evaporative cooling systems for dairy cattle under semi-arid conditions. R.J. Collier*, E.L. Annen, D.E. Armstrong, and A.L. Wolfgram, University of Arizona,Tucson, AZ.
9:45 am	74	Effects of sprinkler, shade, and fan cooling of preparturient Holstein cows on postparturient milk performance during summer heat stress. JH Urdaz*, MW Overton, D Moore, and JE Santos, Veterinary Medicine Teaching and Research Center University of California, Davis Tulare, CA/USA.
10:00 am	75	A large-scale survey evaluating the effect of cooling Holstein cows on productive and reproductive performances under sub-tropical conditions. Israel Flamenbaum*[1] and Efraim Ezra[2], [1]Ministry of agriculture, Extension service, [2]Israel Cattle Breeders Association.
10:15 am	76	Effect of low-pressure soaking frequency and high-pressure misting on respiration rate, body surface temperature and body temperature of heat stressed dairy cattle. M. J. Brouk*, J. P. Harner, J. F. Smith, T. D. Strahm, D. A. Asmar, W. F. Miller, and A. F. Park, Kansas State University.
10:30 am	77	Hair coat color may influence longevity of Holstein cattle in the tropics. CN Lee*[1], KS Baek[1,2], and A Parkhurst[3], [1]University of Hawaii-Manoa, [2]National Livestock Research Institute, Suwon, S.Korea, [3]University of Nebraska.

10:45 am	78	The impact of cooling ponds in north central Texas on milk production and culling. Michael Tomaszewski*[1], Marjolein de Haan[2], James Thompson[1], and Ellen Jordan[1], [1]Texas A&M University, [2]Wageningen University.
11:00 am	79	Evaluation of drought management strategies for cow-calf enterprises. R.E. Kruse*[1], M.W. Tess[1], R.K. Heitschmidt[2], J.A. Paterson[1], and B.F. Sowell[1], [1]Department of Animal Science, Montana State University, Bozeman, MT 59717, [2]USDA-ARS, Fort Keogh Livestock and Range Research Laboratory, Miles City, MT 59301.
11:15 am	80	Genetic analysis of the growth performance of Bhagnari and Droughtmaster x Bhagnari crossbred cows in Pakistan. A. U. Hyder*[1], A. Waheed[2], and M.S. Khan[3], [1]Department of Animal Breeding and Genetics, University of Agriculture, Faisalabad, Pakistan., [2]Department of Animal Breeding and Genetics, University of Agriculture, Faisalabad, Pakistan., [3]Department of Animal Breeding and Genetics, University of Agriculture, Faisalabad, Pakistan.
11:30 am	81	The effect of protein intake on milk protein efficiency in heat-exposed cows. A. Arieli*[1] and I Bruckental[2], [1]Hebrew University of Jerusalem, Rehovot, Israel, [2]Agricultural Research Organization, The Volcani Center, Bet Dagan, Israel.
11:45 am	677	Milking procedures and udder health management on U.S. dairy operations: Results from NAHMS dairy 2002 study. J. E. Lombard[1], B. J. McCluskey[2], and L. P. Garber[2], [1]Integrated Livestock Management, Colorado State University, Fort Collins, [2]National Animal Health Monitoring System:CEAH:USDA, Fort Collins, CO.

Ruminant Nutrition

Dairy Calves and Replacement Heifers

Chair: Katharine F. Knowlton, Virginia Tech

Room: Tucson 39

Time	Abstract Number	
9:30 am	82	Responses to feeding Apex plant extracts to neonatal calves via the milk replacer and starter. T. M. Hill*, J. M. Aldrich, and R. L. Schlotterbeck, Akey.
9:45 am	83	Effect of feeding neonatal calves milk replacers containing a blend of vegetable and animal fats. T. M. Hill*, J. M. Aldrich, and R. L. Schlotterbeck, Akey.
10:00 am	84	Characterization of a colostrum replacer containing IgG concentrate and growth factors. C. J. Hammer*[1], J. D. Quigley[2], L. Ribeiro[2], and H. D. Tyler[1], [1]Iowa State University, Ames, [2]APC, Inc., Ames, IA.
10:15 am	85	Inclusion of vegetable fats in calf milk replacers. M.L. O'Brien, K.J. Touchette, J.A. Coalson, and R.M. Costello*, Merrick's Inc. Union Center, WI USA.
10:30 am	86	Effect of feeding a novel direct fed microbial in a calf milk replacer. M.L. OBrien[1], K.J. Touchette[1], J.A. Coalson[1], R.M. Costello*[1], T. Rehberger[2], and B. Galbraith[2], [1]Merrick's Inc. Union Center, WI, [2]Agtech Products, Inc. Waukesha, WI.
10:45 am	87	Performance of Holstein and Holstein-Jersey crossbred heifer calves from birth to 84 days of age. M. L. Raeth-Knight*, J. G. Linn, D. G. Johnson, L. B. Hansen, A. J. Seykora, B. J. Heins, and R. M. Templeton, University of Minnesota, St. Paul, MN, USA, [2]West Central Research and Outreach Center, Morris, MN, USA.
11:00 am	88	Effect of feeding fatty acids to prepubertal heifers on first lactation milk production. J. M. Smith*[1] and M. E. Van Amburgh[2], [1]University of Vermont, [2]Cornell University.
11:15 am	89	Altering protein degradability and solubility on rumen fermentation, blood urea nitrogen, and nitrogen balance in 16-18 month-old heifers. G. I. Zanton* and A. J. Heinrichs, The Pennsylvania State University.

Ruminant Nutrition

Growing Cattle

Chair: Trey Patterson, South Dakota State University

Room: Tucson 38

Time	Abstract Number	
9:30 am	90	Influence of energy source and RDP on intake and digestion in beef steers fed grass hay based diets. T. A. Baumann*, G. P. Lardy, J. S. Caton, W. W. Dvorak, and V. L. Anderson, North Dakota State University, Fargo ND.
9:45 am	91	Protein utilization of pearl millet grain supplements by growing steers. G. M. Hill*[1], W. W. Hanna[2], A. C. Coy[1], B. C. Hand[1], W. B. Forlow[1], and B. G. Mullinix, Jr.[1], [1]University of Georgia, Tifton, GA/USA, [2]USDA-ARS, Tifton, GA/USA.
10:00 am	92	Use of rice mill feed and soyhulls in backgrounding diets for beef calves. W.N. Stacey* and D.L. Rankins, Jr., Auburn University.
10:15 am	93	Effects of supplementing corn or soybean hulls to steers consuming bermudagrass hay on intake and apparent nutrient digestibilities. A. I. Orr*, B. J. Rude, D. G. St. Louis, and V. T. Nguyen, Mississippi State University, Starkville.
10:30 am	94	Effect of level of added bypass protein to corn and citrus pulp supplements on performance of growing cattle. D. O. Alkire*, B. R. Austin, T. A. Thrift, and W. E. Kunkle, University of Florida, Gainesville, FL USA.
10:45 am	95	Effect of supplemental energy form and frequency on forage intake and digestibility. T.W. Loy*, J.C. MacDonald, T.J. Klopfenstein, and G.E. Erickson, University of Nebraska, Lincoln.
11:00 am	96	Nitrogen metabolism of beef steers fed either Gamagrass or Orchardgrass hay with or without a supplement. K. Magee*, M. Poore, J. Burns, and G. Huntington, North Carolina State University.
11:15 am	97	Supplemental protein to enhance nutrient utilization of steers fed high fiber hay. N. N. Paiva*[1], M. A. Froetschel[1], and G. M. Hill[1], The University of Georgia, Athens, Georgia.
11:30 am	98	Effects of ammonia load on methionine utilization in growing steers limit-fed soybean hull-based diets. M. S. Awawdeh*, E. C. Titgemeyer, K. C. Candler, and D. P. Gnad, Kansas State University, Manhattan.

Teaching/Undergraduate & Graduate Education

Chair: Bryan Reiling, University of Nebraska

Room: Yuma 26-27

Time	Abstract Number	
9:30 am	99	A partnership of universities and agri-business for an effective dairy herd management learning experience for undergraduates: the Dairy Challenge. M. Tomaszewski*[1], M.S. Weber Nielsen[2], D.K. Beede[2], D. Thorbahn[3], M. Budine[4], and D. Selner[5], [1]Texas A&M University, College Station, [2]Michigan State University, East Lansing, [3]Select Sires, Plain City, OH, [4]Cargill Animal Nutrition, Mentone, IN, [5]Shawano, WI.
9:45 am	100	Undergraduate research: a win-win proposition. C. M. Wood*, Virginia Tech.
10:00 am	101	Biotechnology for the animal science classroom - Development of an inquiry-based curricula for undergraduate and graduate students. S.T. Willard*, T.R. Smith, and P.L. Ryan, Mississippi State University, Mississippi State, MS.
10:15 am	102	Adding value to education: an undergraduate animal sciences internship program. KE Fike* and AK Lahmers, The Ohio State University.
10:30 am	103	Experiential learning through a short-term dairy internship program. Amin Ahmadzadeh*[1], M. A. McGuire[1], and R. Hatch[2], [1]University of Idaho, Moscow, [2]Kowz R Us Dairy, Castleford, ID.

10:45 am	104	Recent advances in animal welfare: a Purdue-Michigan State long distance video course. E. A. Pajor*[1] and A. J. Zanella[2], [1]Purdue University, [2]Michigan State University.
11:00 am	105	Animal welfare judging: multimedia training material. D.R. Hains* and E.A. Pajor, Purdue University.
11:15 am	106	Performance and cognitive level of questions asked by rural and urban students in a beginning Animal Science course. E. A. Beuscher* and D. R. Brink, University of Nebraska-Lincoln.
11:30 am	107	Heptachlor contamination of Oahu's fluid milk supply: A case study to teach contemporary ethical issues to undergraduate animal science majors. D. Vincent*, University of Hawaii, Honolulu.

SYMPOSIUM

Animal Health

Laminitis in Dairy Cattle

Chair: Boon P. Chew, Washington State University

Sponsors: EAAP, Elanco Animal Health, Pfizer Animal Health, and Roche Vitamins Inc.

Room: Yuma 23-24

Time	Abstract Number	
1:00 pm	111	(Invited) Biomechanical aspects of the pathogenesis of claw horn disruptions in dairy cattle. C. Lischer*[1], K. Nuss[2], S. Nacambo[2], S. Meyer[2], and P. Ossent[3], [1]Equine Clinic, University of Zurich, [2]Farm Animal Clinic, University of Zurich, [3]Institute of Veterinary Pathology, University of Zurich.
1:30 pm	108	(Invited) Subclinical laminitis, or not? The aetiology and early pathogenesis of sole and white line lesions in dairy heifers. A. J. F. Webster* and J. F. Tarlton, University of Bristol, Langford, Bristol BS405DU, UK.
2:00 pm	110	(Invited) Nutritional approaches to minimize subacute ruminal acidosis in dairy cattle. W. C. Stone*, Cornell University Ithaca, NY.
2:30 pm	109	(Invited) Environmental influences on laminitis and sub-acute ruminal acidosis (SARA) in dairy cows. Nigel B Cook* and Ken Nordlund, University of Wisconsin-Madison, School of Veterinary Medicine.
3:00 pm	112	(Invited) Monitoring techniques to minimize laminitis. K.V. Nordlund* and N.B. Cook, University of Wisconsin-Madison, School of Veterinary Medicine.

SYMPOSIUM

Companion Animals

Nutrient Requirements of Dogs and Cats

Chair: Donald Beitz, Iowa State University

Sponsors: Alltech, Inc., Doane Pet Care Company, EAAP, Hill's Pet Nutrition, and Nestle Purina

Room: Yuma 21-22

Time	
1:00 pm	(Invited) Dietary essential fatty acids in dogs and cats. John Bauer, Texas A&M University.
1:30 pm	(Invited) Minerals. Francis Kallfelz, Cornell University, and Donald Beitz, Iowa State University.
2:00 pm	(Invited) How exercise and climate affect the nutrition of dogs and cats. Richard Hill, University of Florida.
2:30 pm	(Invited) Ingredients. Keith Behnke, Kansas State University, and Donald Beitz, Iowa State University.

3:00 pm		Break
3:30 pm		(Invited) Water, other food constituents, and special considerations. David A. Dzanis, Dzanis Consulting & Collaborations.
4:00 pm		Open forum – panel discussion with audience

SYMPOSIUM

Food Safety

Emergence of Antimicrobial Resistance and Implications to Animal Agriculture

Chair: Robin Anderson, USDA/ARS, Southern Plains Agricultural Research Center
Sponsor: Pfizer Animal Health
Room: Tucson 40-41

Time	Abstract Number	
1:00 pm	113	(Invited) Epidemiological principles relating to the study of antimicrobial resistance in animal agriculture. Randall Singer*, University of Illinois, Urbana, IL.
1:50 pm	114	(Invited) Transfer of antibiotic resistance genes from farm animals to man - how likely, how dangerous?. Abigail A. Salyers*, University of Illinois, Urbana, IL.
2:40 pm		Break
3:00 pm	115	(Invited) Antimicrobial use in food animals and the search for potential alternatives. Kenneth M. Bischoff*, Todd R. Callaway, Thomas S. Edrington, Tawni L. Crippen, and David J. Nisbet, USDA-ARS, Food and Feed Safety Research Unit, College Station, TX.
3:50 pm	116	(Invited) Antimicrobial resistance in commensal and pathogenic bacteria from swine and their implications for the swine industry. Jeffrey T. Gray* and Paula J. Fedorka-Cray, USDA-ARS, Antimicrobial Resistance Research Unit, Athens, GA.

SYMPOSIUM

International Animal Agriculture

Sustainable Animal Agriculture, National and International Prospective

Co-Chairs: Sandra G. Solaiman, Tuskegee University, and Eric Bradford, University of California-Davis

Room: Yuma 25

Time	Abstract Number	
1:00 pm	117	(Invited) A global overview of sustainability in animal agriculture systems. Cornelis de Haan*, World Bank.
1:30 pm	118	(Invited) Is rangeland agriculture sustainable?. R. K. Heitschmidt*, L. T. Vermeire, and E. E. Grings, USDA-ARS, Fort Keogh LARRL, Miles City MT.
2:00 pm	119	(Invited) Contribution of animal agriculture to sustainable systems. E.R. Orskov, Macaulay Institute.
2:30 pm		Break
3:00 pm	120	(Invited) Sustainable animal agriculture: Economic perspectives. M. Garcia-Winder*, Interamerican Institute for Cooperation in Agriculture, Costa Rica.
3:30 pm	121	(Invited) Redirecting government policies to ensure agricultural sustainability. John Ikerd*, University of Missouri.
4:00 pm		Panel Discussion

SYMPOSIUM

Swine

Where Are We Headed? Integrating Moral Views With Biological Facts

Chair: Gretchen Myers Hill, Michigan State University

Sponsors: Danbred North America, EAAP, National Pork Board, and PIC

Room: Tucson 42

Time	
1:00 pm	Introduction and issues. Gretchen Myers Hill, Michigan State University, East Lansing.
1:15 pm	(Invited) The sow – a biological perspective. Jeremy N. Marchant-Forde, USDA-ARS Livestock Behavior Unit, West Lafayette, IN.
2:00 pm	(Invited) Housing systems for gestating sows. Hans H. Stein, South Dakota State University, Brookings, SD.
2:30 pm	(Invited) Mine works – 26+ pigs per year with sow group housing. Johannes V. Hansen, Denmark.
3:15 pm	Break
3:30 pm	(Invited) What the genetics will provide for success. Tom Rathje, Danbred North America, Seward, NE.
4:00 pm	(Invited) Challenges from a veterinarian's perspective. David Madsen, American Association of Swine Veterinarians.

ADSA Dairy Production Graduate Student Paper Competition &

Southern Division Paper Competition

Chair: John McNamara, Washington State University

Room: Phoenix 18

Time	Abstract Number	
1:00 pm	122	Manipulation of rumen fermentation, microbial population and blood metabolites of Holstein neonatal calves using Yeast Culture as a microbial additive. Behnam Saremi* and Abasali Naserian, Ferdowsi University of Mashhad, Khorasan, Iran.
1:15 pm	123	The effects of cottonseed hulls added to diets with and without live yeast or mannanoligosaccharide in Holstein calves. S R Hill*, B A Hopkins, S Davidson, S M Bolt, C Brownie, T Brown, G B Huntington, and L W Whitlow, North Carolina State University.
1:30 pm	124	Using controlled internal drug release (CIDR®) inserts for estrus synchronization in dairy heifers. A.K. McLean*, W.M. Graves, R.C. Smith, B.C. Lance, and L.E. Mckee, University of Georgia, Athens.
1:45 pm	125	Implantation of a pellet containing TGF-ß increases BrdU-labeling in mammary stromal cells of prepubertal heifers. S Musters*, T McFadden, T Mulvey, K Coughlan, R Maple, and K Plaut, University of Vermont, Burlington, VT USA.
2:00 pm	126	Behaviors of transition dairy cows and heifers. K. J. Daniels*, J. R. Townsend, S. S. Donkin, E. A. Pajor, A. G. Fahey, and M. M. Schutz, Purdue University, West Lafayette, IN.
2:15 pm	127	Relationship of dystocia to dairy cow health and productivity. J. E. Lombard*[1], S. M. Tomlinson[1], F. B. Garry[1], and L. P. Garber[2], [1]Integrated Livestock Management, Colorado State University, Fort Collins, CO, [2]USDA:APHIS:VS, CEAH, Center for Animal Health Monitoring, Fort Collins, CO.
2:30 pm	128	Effects of grazing fresh forages on milk fat CLA. S. J. Freeman*[1], J. A. Bertrand[1], T. C. Jenkins[1], B. W. Pinkerton[1], and D. L. Palmquist[2], [1]Clemson University, Clemson SC / USA, [2]Ohio State University, Columbus OH / USA.

2:45 pm	129	Lactation performance and milk fatty acid composition of Holstein cows fed various forms of oleic acid. J. E. Delahoy*, L. D. Muller, F. Bargo, T. W. Cassidy, and G. F. Schroeder, The Pennsylvania State University.
3:00 pm		Break
3:30 pm	130	Effect of cereal grain characteristics on production performance of lactating dairy cattle. J.A. Meier*, P. Yu, J.J. McKinnon, and D.A. Christensen, University of Saskatchewan.
3:45 pm	131	Tight junction (TJ) protein expression during engorgement of rat and bovine mammary glands. C. V. Cooper*[1,2,3], K. Stelwagen[2], C. D. McMahon[2], K. Singh[2], V. C. Farr[2], and S. R. Davis[2], [1]Dexcel Ltd., Hamilton, New Zealand, [2]AgResearch, Hamilton, New Zealand, [3]Massey University, Palmerston North, New Zealand.
4:00 pm	132	Effects of glucose concentration and presence of EGF and hormones on bovine oocyte maturation. D. J. Walker*, J. F. De La Torre-Sanchez, and G.E. Seidel, Jr., Colorado State University Fort Collins, CO 80523.
4:15 pm	133	The effects of cottonseed hulls added to diets with and without live yeast or mannanoligosaccharide in Jersey calves. S R Hill*, B A Hopkins, S Davidson, S M Bolt, C Brownie, T Brown, G B Huntington, and L W Whitlow, North Carolina State University.
4:30 pm	134	Leptin, body condition, and intake regulation of lactating dairy cows in the transition phase. D. Kumar*[1], M. A. Froetschel[1], T. D. Pringle[1], D. Keisler[2], and J. K. Bernard[1], [1]The University of Georgia, [2]The University of Missouri.
4:45 pm	135	The ability of amide versus calcium salts of soybean oil to increase unsaturated fatty acid concentration in omasal and continuous culture samples. F. P. Lundy III*, T. C. Jenkins, W. C. Bridges Jr, and J. A. Bertrand, Clemson University, Clemson, SC, 29634.
5:00 pm	136	Comparison of three estrus detection systems during summer heat stress in a large commercial dairy herd. O.A. Peralta*, R.E. Pearson, and R.L. Nebel, Virginia Polytechnic Institute and State University, Blacksburg.

WSASAS Graduate Student Paper Competition

Chair: Dr. D.H. Crews, Jr., Agriculture and Agri-Food Canada

Room: Yuma 30 & 35

Time	Abstract Number	
1:00 pm	137	Evaluation of perennial ryegrass straw as a forage source for ruminants. M. J. Fisher*[1], D. W. Bohnert[1], C. J. Ackerman[2], C. S. Schauer[1], T. DelCurto[1], A. M. Craig[2], D. L. Harmon[3], and N. F. Schrick[4], [1]Eastern Oregon Agriculture Research Center, Burns, [2]Oregon State University, Corvallis, [3]University of Kentucky, Lexington, [4]The University of Tennessee, Knoxville.
1:15 pm	138	Risk factors associated with culling females in a composite beef herd. Phoenix Rogers*[1], Charles Gaskins[1], Kristen Johnson[1], and Michael MacNeil[2], [1]Washington State University, [2]USDA-ARS LARRL.
1:30 pm	139	LHRH fusion protein vaccines block estrous cycle activity in beef heifers. J. D. Stevens*, J. M. Sosa, D. M. deAvila, J. M. Oatley, J. A. Hernandez, K. P. Bertrand, and J. J. Reeves, Washington State University, Pullman, Wa.
1:45 pm	140	Effects of fluxin meglumine on embryonic loss in stressed beef cows. M.L. Merrill*[1], R.P. Ansotegui[1], N.E. Wamsley[2], P.D. Burns[2], and T.G. Geary[3], [1]Montana State University, Bozeman, MT, [2]Colorado State University, Fort Collins, CO, [3]USDA-ARS, Miles City, MT.
2:00 pm	141	The effects of cattle gender on feedlot performance, carcass characteristics and muscle tenderness. W. T. Choat*[1], J. A. Paterson[1], B. M. Rainey[1], M. C. King[1], R. J. Lipsey[2], K. E. Belk[3], and G. C. Smith[3], [1]Montana State University, [2]American Simmental Association, [3]Colorado State University.
2:15 pm	142	Influence of protein supplementation frequency on cows consuming low-quality forage: performance, grazing time, distance traveled, distance from water, and distribution. C.S. Schauer*[1], D.W. Bohnert[1], and D.C. Ganskopp[2], [1]Eastern Oregon Agriculture Research Center, Oregon State University, Burns, OR, [2]Eastern Oregon Agriculture Research Center, ARS-USDA, Burns, OR.

2:30 pm	143	Livestock response to rest-rotation, deferred-rotation, or continuous grazing systems on forested rangeland. L. G. Wood*, K. C. Olson, R. D. Wiedmeier, and J. E. Bowns, Utah State University, Logan, UT.
2:45 pm	144	Impact of trace mineral supplementation and source on grazing beef cattle over a two-year period. J.K. Ahola*, T.E. Engle, D.S. Baker, L.R. Sharpe, P.D. Burns, R.M. Enns, and R.G. Mortimer, Colorado State University, Fort Collins, CO USA.
3:00 pm		Break
3:30 pm	145	Effects of supplemental high-linoleate or high-oleate safflower seeds on production and lipogenesis by adipose tissue of postpartum cows. S. L. Lake*, B. W. Hess, D. C. Rule, C. M. Murrieta, E. J. Scholljegerdes, V. Nayigihugu, and R. L. Atkinson, University of Wyoming.
3:45 pm	146	Balancing supply of essential amino acids to the small intestine in cattle consuming restricted amounts of forage plus supplementary ruminally undegradable protein. E. J. Scholljegerdes*, B. W. Hess, F. S. D'Angieri, and P. A. Ludden, University of Wyoming, Laramie.

Breeding & Genetics

Dairy Cattle Breeding for Production Traits

Chair: Duane Norman, USDA

Room: Yuma 28-29

Time	Abstract Number	
1:00 pm	147	Individual curve fitting of Italian Simmental cow milk test day data. N. P.P Macciotta*[1], D. Vicario[2], G. Pulina[1], and A. Cappio-Borlino, [1]Université di Sassari, [2]Italian Association of Simmental cow Breeders.
1:15 pm	148	Estimates of genetic parameters and lactation curves with a cubic spline model for Holstein cows treated with bovine somatotropin. B. J. DeGroot*[1], J. F. Keown[1], S. D. Kachman[1], and L. D. Van Vleck[2], [1]University of Nebraska, Lincoln, NE, [2]USDA, ARS, USMARC, Lincoln, NE.
1:30 pm	149	Environmental sensitivity of genetic merit for milk, fat and protein yield estimated by a random regression model. M. P. L. Calus* and R. F. Veerkamp, ID-Lelystad.
1:45 pm	150	Estimation of genetic parameters for test-day records of French Holstein cows with an AI-REML algorithm. Tom Druet*, Florence Jaffrézic, and Vincent Ducrocq, Station de Génétique Quantitative et Appliqué, INRA.
2:00 pm	151	Estimation of genetic correlations among production, body size, udder, and productive life traits over time in Holsteins. S. Tsuruta[1], I. Misztal[1], T. J. Lawlor*[2], and L. Klei[2], [1]University of Georgia, Athens GA, [2]Holstein Association USA Inc., Brattleboro VT.
2:15 pm	152	Identification of environments for AI progeny testing schemes that yield the highest heritability and correlation with second-crop evaluations for yield and type traits. N.R. Zwald* and K.A. Weigel, UW-Madison, Madison, WI.
2:30 pm	153	Accuracy of foreign dairy bull evaluations in predicting US evaluations for yield. R. L. Powell*, A. H. Sanders, and H. D. Norman, Animal Improvement Programs Laboratory, Agricultural Research Service, USDA.
2:45 pm	154	Standardization of lactation records for variance of Mendelian sampling to reduce bias in evaluations of bull dams. G.R. Wiggans*, P.M. VanRaden, and J.L. Edwards, Agricultural Research Service, USDA, Beltsville, MD.
3:00 pm		Break
3:30 pm	155	Development of a selection index for the Reggiana dairy cattle breed. M Fioretti[1], V Palucci*[1], and F Miglior[2], [1]Associazione Italiana Allevatori, Rome, Italy, [2]Agriculture and Agri-Food Canada, CDN, Guelph, ON, Canada.
3:45 pm	156	Analyses of heat tolerance for milk in Holsteins using different sources of heat-stress information. I. Misztal*, S. Oseni, and S. Tsuruta, University of Georgia, Athens, GA, USA.
4:00 pm	157	Comparison of Holstein, Holstein-Jersey crossbred, and Holstein-Normande crossbred first-parity cows for milk, fat, and protein production and SCS during the first 150 days of lactation. B.J. Heins, L.B. Hansen*, and A.J. Seykora, University of Minnesota, St. Paul.

Dairy Foods

Processed Cheese, Milk Powder, and Microbiology

Chair: K. Aryana, Louisiana State University

Room: Phoenix 19

Time	Abstract Number	
1:00 pm	158	Comparison of pilot-scale and RVA process cheese manufacture. L. E. Metzger*, P. Lehtola, and R. Kapoor, MN-SD Dairy Foods Research Center, University of Minnesota, St. Paul, MN.
1:15 pm	159	Salt whey ingredient. V. V. Mistry* and M. R. Acharya, South Dakota State University.
1:30 pm	160	Comparison of the melting properties of process cheese using a Rapid Visco Analyzer (RVA) and the Schreiber melt test. L. A. Rosenberg* and L. E. Metzger, MN-SD Dairy Food Research Center, University of Minnesota, St. Paul, MN.
1:45 pm	161	Effect of rice bran oil as a natural antioxidant on the storage stability of whole milk powder. L. F. Osorio*[1], J. U. McGregor[2], J. S. Godber[3], and N. Y. Farkye[4], [1]Escuela Agrícola Panamericana, Zamorano, Tegucigalpa, Honduras, [2]Food Science and Human Nutrition Dept., Clemson University, Clemson, SC, [3]Food Science Dept., LSU Ag Center, Baton Rouge, [4]Dairy Products Technology Center, California Polytechnic State University, San Luis Obispo, CA.
2:00 pm	162	Flavor stability of skim and whole milk powder. M. E. Carunchia Whetstine*, M. A. Drake, Y. Karagul-Yuceer, and Y.K. Avsar, North Carolina State University.
2:15 pm	163	The effects of composition and processing on milk foaming characteristics as measured by steam frothing. M. Levy[1], J. U. McGregor*[2], and W. Prinyawiwatkul[3], [1]Chef John Folse and Company, Gonzales, LA, [2]Clemson University, Dept. of Food Science and Human Nutrition, Clemson, SC, [3]Food Science Dept., LSU Ag Center, Baton Rouge.
2:30 pm	164	Distribution of milk protein at air interfaces in ice cream examined by transmission electron microscopy and immunogold labeling. H. D. Goff* and Z. Zhang, University of Guelph, Guelph, ON Canada.
2:45 pm	165	Effect of pH and ionic strength on competitive protein adsorption to air bubbles in aqueous foams made with mixed milk proteins. Z. Zhang* and H. D. Goff, University of Guelph, Guelph, ON, Canada.
3:00 pm		Break
3:30 pm	166	Elucidation of the mechanisms of casein micelle stabilization by carrageenans extracted from *Gigartina lanceata* red seaweed. D. W. Everett*[1] and Y. Hemar[2], [1]University of Otago, Dunedin, New Zealand, [2]Massey University, Palmerston North, New Zealand.
3:45 pm	167	The lactose permease of *Streptococcus thermophilus* is phosphorylated by the doubly phosphorylated form of HPr, a phosphoprotein of the phosphoenolpyruvate:sugar phosphotransferase system. A. Cochu, M. Frenette, S. Moineau, and C. Vadeboncoeur, GREB, Faculte de Medecine dentaire et Faculte des Sciences et de Genie, Universite Laval.

Dairy Foods

Natural Cheese and Butter

Chair: Jim Harper, The Ohio State University

Room: Phoenix 20

Time	Abstract Number	
1:00 pm	168	Does brine temperature influence salt uptake by Ragusano cheese?. C. Melilli*[1], D. M. Barbano[2], G. Licitra[1], G. Portelli[1], G. Di Rosa[1], and S. Carpino[1], [1]CoRFiLaC, Regione Siciliana, 97100 Ragusa, Italy, [2]Northeast Dairy Food Research Center, Department of Food Science, Cornell University, Ithaca, NY.

1:15 pm	169	The influence of native pasture plants on aroma compounds in Ragusano cheese. S. Carpino*[1], S. Mallia[1], S. La Terra[1], G. Licitra[1], P.J. Van Soest[2], and D.M. Barbano[3], [1]CoRFiLaC, Regione Siciliana, 97100 Ragusa, Italy, [2]Department of Animal Science, [3]Department of Food Science, Cornell University, Ithaca, NY.
1:30 pm	170	Withdrawn
1:45 pm	171	Lipolysis and proteolysis within blocks of Ragusano cheese at different brine temperatures. C Melilli[1], D. M. Barbano*[2], M. Manenti[1], J. M. Lynch[2], S. Carpino[1], and G. Licitra[1], [1]CoRFiLaC, Regione Siciliana, 97100 Ragusa, Italy, [2]Northeast Dairy Foods Reseach Center, Department of Food Science, Cornell University, Ithaca, NY.
2:00 pm	172	Impact of pH during aging on proteolysis, texture and melting characteristics of Mozzarella cheese. M.A.S Cortez[1], M.M. Furtado[1], M.L. Gigante[2], and P.S. Kindstedt*[3], [1]Federal University of Vicosa/CAPES, MG/Brazil, [2]State University of Campinas, Campinas, SP/Brazil, [3]University of Vermont, Burlington, VT/USA.
2:15 pm	173	Purchasing and consumption behaviors, attitudes and expectations of Taiwanese urbanites toward cheese. I. M. Tsai* and M. R. McDaniel, Oregon State University.
2:30 pm	174	Gas chromatographic profile of volatiles in cheese induced by different fat globule surface coatings. D. W. Everett*[1], J. Crownshaw[1], A. Ginestet[2], M. Leus[1], and J.-P. Dufour[1], [1]University of Otago, Dunedin, New Zealand, [2]Ecole nationale superieur de biologie applique a la nutrition et l'alimentation, Dijon, France.
2:45 pm	175	Impact of milk preacidification with carbon dioxide on the proteolysis of Cheddar cheese. B. K. Nelson* and D. M. Barbano, Northeast Dairy Foods Research Center, Cornell University.
3:00 pm		Break
3:30 pm	176	Impact of preacidification of milk with carbon dioxide on composition and yield of Cheddar cheese. B. K. Nelson* and D. M. Barbano, Notheast Dairy Foods Research Center, Cornell University.
3:45 pm	177	Effect of supplemental dietary fish oil and soy oil on production and composition of milk and properties of butter from cows with low and high atherogenic index. G. Bobe*[1], S. Zimmerman[1], E. G. Hammond[1], A. E. Freeman[1], D. H. Kelley[1], J. Dedrick[1], P. A. Porter[2], C. M. Luhman[2], and D. C. Beitz[1], [1]Iowa State University, [2]Land O'Lakes.

Marschall Rhodia International Dairy Science Award Lecture

2003 Award Chair: James W. Moran, Kraft Foods

Room: Phoenix 19

Time	
4:00 pm	Delivering probiotic cultures. Nagendra Shah, Victoria University of Technology, Victoria, Australia.

Forages & Pastures

Silages, Forage Composition

Chair: Peter Tozer, Penn State University

Room: Yuma 26-27

Time	Abstract Number	
1:00 pm	178	Evaluating chemical characteristics of mixed corn plant and tomato pomace silage using experimental silos. Reza Tahmasbi[1], Behnam Saremi*[2], and Abasali Naserian[2], [1]Dasht dairy farm, Neyshabour, khorasan, Iran., [2]Ferdowsi university of Mashhad, khorasan, Iran.
1:15 pm	179	Chemical characteristics of alfalfa silage treated with urea and sulfuric acid. E. Khafipour, M.D. Mesgaran*, and F.E. Shahroudi, Ferdowsi University of Mashhad,Mashhad,IRAN.

1:30 pm	180	Effect of hybrid, stage of maturity and use of silage innoculants on dry matter yield, nutritional value and digestibility of corn silage. Burciaga Robles, L. O.*, Ruiz Barrera, O., Arzola Alvarez, C., Grado Ahuir, A., and Castillo Castillo, Y., Universidad Autónoma de Chihuahua, Facultad de Zootecnia. Secretara de Posgrado e Investigación.
1:45 pm	181	Practical methodology for applying edible coverings to bunker silos. L.L. Berger* and J.R. Sewell, University of Illinois-Urbana.
2:00 pm	182	Production response of lactating dairy cows to corn silage harvested from different varieties at different cutting heights. J. K. Bernard*, J. W. West, D. S. Trammell, and G. H. Cross, The University of Georgia, Dept. of Animal and Dairy Science.
2:15 pm	183	Effect of crop maturity and processing of whole plant corn forage at harvest on nutrient composition and particle size distribution. K.W. Cotanch*[1], T.R. Pouliot[1], E.D. Thomas[1], C.S. Ballard[1], J.W. Darrah[1], P. Mandebvu[1], H.M. Wolford[1], C.J. Sniffen[1], and T. Sato[2], [1]W.H. Miner Agricultural Research Institute, Chazy, NY 12921, [2]ZENNOH National Federation of Agricultural Co-operative Associations, Tokyo, Japan.
2:30 pm	184	Chloride fertilization of corn grown for silage affects mycotoxin concentrations. D. P. Casper*[1], D. Spangler[1], D. Schauff[1], G. Clark[2], and D. T. Wicklow[3], [1]Agri-King, Inc., Fulton, IL, [2]University of Illinois Extension, [3]USDA-ARS, Peoria, IL.
2:45 pm	185	Effect of endophyte type on adipose tissue fatty acid composition from beef cattle grazing tall fescue. C.E. Realini*, S.K. Duckett, N.S. Hill, J.R. Sackmann, M.H. Gillis, and K.R. Smith, The University of Georgia, Athens.
3:00 pm		Break
3:30 pm	186	Stage of maturity, time of sampling, and method of drying effects on forage quality of Haybet barley. L.M.M. Surber*, S. D. Cash, J.G.P. Bowman, and K. M. Rolfe, Montana State University, Bozeman, MT 59717.
3:45 pm	187	Withdrawn

Nonruminant Nutrition

Diet and Health

Co-Chairs: J.L. Pierce, Alltech, Inc. and H. Yang, ADM Alliance Nutrition, Inc.

Sponsors: Alltech, Inc., Danbred North America, and PIC

Room: Tucson 43

Time	Abstract Number	
1:00 pm	188	Effects of n-6/n-3 fatty acid ratios in young pig diets on performance and immune function. T. A. Meyer*, M. D. Lindemann, S. T. Franklin, M. L. Vickers, H. J. Monegue, and G. L. Cromwell, University of Kentucky, Lexington, KY.
1:15 pm	189	Inclusion of oat hulls in diets for piglets based on native or cooked cereals. E. Lopez, M. A. Latorre, D. G. Valencia, R. Lazaro, and G. G. Mateos*, Universidad Politécnica de Madrid. Spain.
1:30 pm	190	Oat hulls in diets for young pigs based on cooked rice or corn without antibiotics. F. Martin, M. A. Latorre, J. M. Gonzalez-Alvarado, R. Lazaro*, and G. G. Mateos, Universidad Politécnica de Madrid. Spain.
1:45 pm	191	Rice vs wheat feeding and protein level of the diet on performance of piglets from 10 to 16 kg BW. J. Bonet[1], J. Coma[1], M. Cortés[2], P. Medel[2], and G.G. Mateos*[3], [1]Vall Companys Group, Spain, [2]Imasde Agropecuaria, S.L., Spain, [3]Universidad Politécnica de Madrid, Spain.
2:00 pm	192	Impact of spray-dried bovine serum on mortality and performance of turkeys challenged with *Pasteurella multocida*. J.M. Campbell*[1], J.D. Quigley[1], L.E. Russell[1], and L.A. Koehnk[2], [1]APC, Inc., Ames, IA, [2]ARKO Laboratories, Ltd., Jewell, IA.
2:15 pm	193	Effects of different levels of spray dried egg and lactose on the performance of weaned pigs. C.M. Shao*[1], B.G. Harmon[2], and M.A. Latour[2], [1]Wellhope Agri-Tech Co., Beijing China, [2]Purdue University, West Lafayette, IN.

2:30 pm	194	Effect of the substitution of feed growth promoter by plant extracts on the performances of broilers. D Eclache*[1] and M Besson[2], [1]GENUOL, [2]PHODE, France.
2:45 pm	195	Bioefficacy of *B. coagulans* in broiler and piglet diets: a comparative study. E. Esteve[1], A.E. Espinel[2], C. Piñeiro[3], J. Gasa[4], M. Cortes[5], and P. Medel*[5], [1]IRTA, Spain, [2]Norel, Spain, [3]PigCHAMP, Spain, [4]UAB, Spain, [5]Imasde Agropecuaria, Spain.
3:00 pm		Break
3:30 pm	196	Effects of antibiotics and a heat-stable yeast product in diets for weanling pigs. N. Llanes*, J. D. Hancock, C. L. Jones, and C. W. Starkey, Kansas State University, Manhattan.
3:45 pm	197	Efficacy of Bio-Mos® in the nursery pig diet: A meta-analysis of the performance response. J. C. Miguel*, S. L. Rodriguez-Zas, and J. E. Pettigrew, University of Illinois at Urbana-Champaign, Urbana, IL/USA.
4:00 pm	198	Use of fermented soybean meal in nursery diets. S. W. Kim, R. L. McPherson*, and F. Ji, Texas Tech University.
4:15 pm	199	Use of probiotics and fermented soybean meal in lactation diets. J. Fei* and S. W. Kim, Texas Tech University.
4:30 pm		What have we learned? J.E. Pettigrew, University of Illinois.

Physiology

Estrous Synchronization

Chair: Ray Nebel, Virginia Tech

Room: Tucson 36

Time	Abstract Number	
1:00 pm	200	A comparison of the MGA® Select and 7-11 Synch protocols to synchronize estrus in postpartum beef cows. J.E. Stegner*, F.N. Kojima, M.R. Ellersieck, M.F. Smith, and D.J. Patterson, University of Missouri.
1:15 pm	201	A comparison of two fixed-time AI programs for postpartum beef cows. F. N. Kojima*, J. E. Stegner, J. F. Bader, D.J. Schafer, R. L. Eakins, M. F. Smith, and D. J. Patterson, University of Missouri.
1:30 pm	202	Effects of CIDR in the Ovsynch protocol on AI pregnancy rate in crossbred beef cows. H. K. Baitis*[1], A. Garcia[1], W. D. Whittier[1], and J. M. DeJarnette[2], [1]Virginia Polytechnic Institute and State University, Blacksburg, VA/United States, [2]Select Sires, Inc., Plain City, OH/United States.
1:45 pm	203	Single versus a split dose of PGF_{2a} administered 18 or 19 d after a 14 d melengestrol acetate (MGA) treatment to synchronize estrus in *Bos taurus* x *Bos indicus* heifers. G.A. Bridges*, G.P. Portillo, MK. Shaw, J.W. de Araujo, and J.V. Yelich, University of Florida, Gainesville.
2:00 pm	204	Fixed-time artificial insemination of postpartum beef cows at 72 or 80 hours after treatment with the MGA® Select protocol. J.E. Stegner*, J.F. Bader, F.N. Kojima, M.R. Ellersieck, M.F. Smith, and D.J. Patterson, University of Missouri.
2:15 pm	205	A fixed-time AI program for postpartum beef cows with 7-11 Synch. F. N. Kojima*, J. E. Stegner, J. F. Bader, M. F. Smith, and D. J. Patterson, University of Missouri.
2:30 pm	206	Timing of insemination and GnRH on pregnancy rates in beef cows in a modified CO-Synch estrous synchronization system. J. B. Hall*[1], J. M. DeJarnette[2], J. C. Whittier[3], and T. W. Geary[4], [1]Virginia Tech, Blacksburg, VA, [2]Select Sires Inc., Plain City, OH, [3]Colorado State University, Fort Collins, CO, [4]USDA-ARS Miles City, MT.
2:45 pm	207	A timed insemination program for first service based on the use of estradiol cypionate (ECP) in lactating dairy cows. S.M. Pancarci, A. Arteche, F. Silvestre, S. Kamimura, and W.W. Thatcher*, University of Florida, Gainesville, FL, USA.
3:00 pm		Break
3:30 pm	208	Increased dose of GnRH in a synchronized ovulation program for lactating dairy cattle. K.E. Leslie, S.J. LeBlanc*, and C.H. Leslie, University of Guelph, Ontario, Canada.

3:45 pm	209	Resynchronization of ovulation using Ovsynch to induce second timed artificial insemination service in lactating dairy cows. P. M. Fricke*[1] and M. L. Welle[2], [1]University of Wisconsin-Madison, [2]Miltrim Dairy, Athens, Wisconsin.
4:00 pm	210	Reproductive responses following postpartum suppression of follicular development with a Deslorelin implant during summer heat stress. F.T. Silvestre*, S. Kamimura, J.A. Bartolome, A.C.M. Arteche, S.M. Pancarci, and W.W. Thatcher, University of Florida, Gainesville, FL, USA.
4:15 pm	211	Effect of ovulatory follicle size at time of GnRH injection or standing estrus on pregnancy rates and embryonic/fetal mortality in beef cattle. G. A. Perry*[1,2], M. F. Smith[1], M. C. Lucy[1], A. J. Roberts[2], M. D. MacNeil[2], and T. W. Geary[2], [1]University of Missouri, Columbia, MO, [2]USDA-ARS, Fort Keogh LARRL, Miles City, MT.
4:30 pm	212	Effect of hCG administration approximately 5 d after artificial insemination on progesterone concentrations and AI conception rates in beef heifers. R.N. Funston*[1], J.L. Olson[2], R.J. Lipsey[3], T.W. Geary[4], and A.J. Roberts[4], [1]University of Nebraska, Lincoln, [2]Montana State University, Bozeman, [3]American Simmental Association, Bozeman, MT, [4]USDA-ARS, Miles City, MT.
4:45 pm	213	Inclusion of a CIDR after initial artificial insemination concentrations of progesterone and corpus luteum volume in suckled beef cows. R. C. Wasson*, J. E Larson, D. R. Brown, and G. C. Lamb, North Central Research and Outreach Center, University of Minnesota, Grand Rapids, MN 55744.

Production, Management, and the Environment

Chair: Normand St. Pierre, The Ohio State University

Room: Tucson 37

Time	Abstract Number	
1:00 pm	214	Application of the Cornell Nutrient Management Planning System. T.P. Tylutki*[1], D.G. Fox[1], and M. McMahon[2], [1]Cornell University, Ithaca NY USA, [2]McMahons EZ Acres, Homer NY USA.
1:15 pm	215	Nutrient management practices on U.S. dairy operations: Results from the NAHMS Dairy 2002 Study. B. J. McCluskey[2], J. E. Lombard*[1], and S. Ott[2], [1]Integrated Livestock Management, Colorado State University, Fort Collins, CO, [2]USDA:APHIS:VS, CEAH, Center for Animal Health Monitoring, Fort Collins, CO.
1:30 pm	216	Culling rate and death loss associations with DHI production values. A.J. Young[1], S.C. Smith[2], and S.P. Tripp*[2], [1]Utah State University, Logan, [2]DHI Computing Service, Provo, UT.
1:45 pm	217	The simulated economic cost of extended calving intervals in dairy herds and comparison of reproductive management programs. P. D. French*[1] and R. L. Nebel[2], [1]Oregon State University, Corvallis, [2]Virginia Tech, Blacksburg.
2:00 pm	218	Herd management and cow productivity information from an autoregressive test-day model applied in southeastern Sicily. G. Azzaro[1], S. Ventura[1], J. Carvalheira[2], M. Caccamo[1], G. Licitra[1,3], E. Raffrenato*[1,4], and R.W. Blake[4], [1]CoRFiLaC, Regione Siciliana, 97100 Ragusa, Italy, [2]Universidade do Porto, Vairao, Portugal, [3]D.A.C.P.A., Université di Catania, Italy, [4]Department of Animal Science, Cornell University, Ithaca, 14853 NY, USA.
2:15 pm	219	Seasonality of productive life of dairy cows in Florida and Georgia. B. L. Butler* and A. de Vries, Department of Animal Sciences, University of Florida.
2:30 pm	220	Association between production, feed and weather on a commercial dairy - a case study. A.J. Young*[1] and S.P. Tripp[2], [1]Utah State University, Logan, [2]DHI Computing Service, Provo, Utah.
2:45 pm	221	Effects of prepartum exercise on metabolism, milk yield, and health disorders of dairy cows. J. A. Davidson* and D. K. Beede, Michigan State University, East Lansing, MI.
3:00 pm		Break
3:30 pm	222	Using activity and milk yield as predictors of fresh cow disorders. J. L. Edwards and P. R. Tozer*, The Pennsylvania State University, State College, PA.
3:45 pm	223	Monitoring electrical power quality effects on milk production of dairy herds. D. Hillman*[1], D. Stetzer[2], M. Graham[3], C. L. Goeke[4], K. Mathson[2], H. H. VanHorn[5], and C. J. Wilcox[5], [1]Michigan State University, East Lansing, MI, [2]Stetzer Electric, Inc., Blair, WI, [3]University of California, Berkeley, CA, [4]Goeke Enterprises, Mason, MI, [5]University of Florida, Gainesville, FL.

4:00 pm	224	Adoption of human resource management practices in dairy businesses. R.E. Stup*, L.A. Holden, and J. Hyde, Penn State University.
4:15 pm	225	*Mycoplasma* in bulk tank milk on U.S. dairy operations. B. J. McCluskey[2], J. E. Lombard*[1], and H. L. Hirst[1], [1]Integrated Livestock Management - Colorado State University, [2]USDA:APHIS:VS, CEAH, Center for Animal Health Monitoring.
4:30 pm	226	Sample collection depth and physical separation by screening affect aflatoxin concentration in contaminated corn. A.F. Harper[1], J.B. Meldrum[2], J. Zhao*[1], and M.J. Estienne[1], [1]Virginia Polytechnic Institute and State University, Blacksburg, [2]VA-MD Regional College of Veterinary Medicine, Blacksburg.
4:45 pm	227	Investigating effects of ambient temperature and day length on milk production of first lactation Iranian Holstein heifers. Abasali Naserian[1], Behnam Saremi[1], and Alireza Alizadeh*[2], [1]Ferdowsi University of Mashhad, Khorasan, Iran, [2]Tarbiat Modarres University, Tehran, Iran.

Ruminant Nutrition

Grazing - Rumen Metabolism - Protein

Chair: Mike Looper, USDA-ARS

Room: Tucson 38

Time	Abstract Number	
1:00 pm	228	Effect of corn silage and grazing strategy on milk production and composition of grazing dairy cows. P. Chilibroste*. F. Elizondo, and D. A. Mattiauda, Facultad de Agronomia. Est. Exp. M. A. Cassinoni.
1:15 pm	229	Effect of corn silage and grazing strategy on rumen fermentation patterns of dairy cows. P. Chilibroste*, C. Baccetta, S. Etchegaray, I. Ferreira, C. Lockhart, L. Posse, F. Elizondo, and D.A. Mattiauda, Facultad de Agronomia. Est. Exp. M. A. Cassinoni.
1:30 pm	230	Computer modeling of a dairy systems trial comparing Holstein-Friesians fed either pasture or TMR. P.C. Beukes, B.S. Thorrold, E.S. Kolver, M.E. Wastney, K.P. Bright, J.A.S. Lancaster, C.A.J. Palmer, and C.C. Palliser*, Dexcel Ltd., Hamilton, New Zealand.
1:45 pm	231	Effect of grazing systems on chewing activity, ruminal pH fluctuations and pH of milk, blood and urine of dairy cows. Christoph Graf[1], Michael Kreuzer[2], and Frigga Dohme*[1], [1]Swiss Federal Research Station for Animal Production, Posieux, Switzerland, [2]Swiss Federal Institute of Technology, Zurich, Switzerland.
2:00 pm	232	Effect of abomasal pectin infusion on digestion and nitrogen balance in dairy cows. T. F. Dunlap* and L. E. Armentano, University of Wisconsin-Madison.
2:15 pm	233	Effect of dietary cation-anion difference on the milk production of early lactation dairy cows. J.R. Roche*, S. Petch, and J.K. Kay, Dexcel (formerly Dairying Research Corporation), Hamilton, New Zealand.
2:30 pm	234	Influence of a polyclonal antibody preparation against rumen proteolytic bacteria on rumen fermentation and yield of milk and milk components. C.R. Dahlen*[1], A. DiCostanzo[2], B.M. Mitteness[3], P. Nash[3], J.E. Larson[2], N. DiLorenzo[2], and G.D. Marx[1], [1]Northwest Research and Outreach Center, University of Minnesota, [2]Department of Animal Science, University of Minnesota, [3]CAMAS, Inc.
2:45 pm	235	Urea synthesis by ruminal epithelial and duodenal mucosal cells isolated from growing sheep. M. Oba*[1], R. L. Baldwin, IV[2], S. L. Owens[1], and B. J. Bequette[1], [1]Department of Animal and Avian Sciences, University of Maryland, College Park, MD, [2]Bovine Functional Genomics Laboratory, ANRI, USDA-ARS, Beltsville, MD.
3:00 pm		Break
3:30 pm	236	Assessment of metabolizable protein recommendations for milking Jersey cows by NRC (2001). L. E. Sander* and N. R. St-Pierre, The Ohio State University.
3:45 pm	237	Effect of dietary crude protein level and degradability on ruminal fermentation and nitrogen utilization in lactating dairy cows. R. P. Etter*, A. N. Hristov, J. K. Ropp, and K. L. Grandeen, Department of Animal and Veterinary Science, University of Idaho, Moscow, ID.

4:00 pm	238	Use of milk urea nitrogen to evaluate dietary protein on commercial dairy farms. A. B. Peterson* and R. A. Kohn, University of Maryland, College Park, Maryland.
4:15 pm	239	Effect of increased rumen-undegradable protein fed prepartum on milk production and milk protein yield in early lactation for high producing Holstein cows. K.M. Kouri*, S.M. Andrew, and T.A. Hoagland, University of Connecticut, Storrs, CT, USA.
4:30 pm	240	Strategic ration balancing by supplementing lysine, methionine, and Prolak® on efficiency of milk protein production and potential environmental impact. J. H. Harrison[1], R. L. Kincaid[1], W. Schager[1], L. Johnson*[1], D. Davidson[1], L. D. Bunting[2], and W. Chalupa[3], [1]Washington State University, [2]Archer Daniels Midland Co., [3]University of Pennsylvania.
4:45 pm	241	Effect of HMB and HMBi on milk production, composition, and N efficiency of Holstein cows in early and mid-lactation. J. T. Sylvester*[1], N. R. St-Pierre[1], B. K. Sloan[2], J. L. Beckman[1], and S. M. Noftsger[1], [1]The Ohio State University, Columbus, OH, USA, [2]Adisseo, Alpharetta, GA, USA.

Ruminant Nutrition

Dairy Feedstuffs

Chair: Jeffrey Carter, Nestle Purina Pet Care

Room: Tucson 39

Time	Abstract Number	
1:00 pm	242	Effect of *bmr*-6 and *bmr*-18 brown midrib genes on forage sorghum silage in lactating dairy rations. A.L. Oliver*[1], R.J. Grant[1], and J.F. Pedersen[2], [1]University of Nebraska, Lincoln, NE, [2]USDA/ARS, Lincoln, NE.
1:15 pm	243	Comparison of a corn silage hybrid with high cell wall content and digestibility with a lower cell wall hybrid on lactational performance of Holstein cows. S. K. Ivan*[1], R. J. Grant[1], D. Weakley[2], and J. Beck[3], [1]University of Nebraska, Lincoln, NE, [2]Purina Mills, St. Louis, MO, [3]Syngenta Seeds, Golden Valley, MN.
1:30 pm	244	Effect of endosperm type of corn grain on starch degradability by ruminal microbes in vitro. M. S. Allen*[1], R. J. Grant[2], G. W. Roth[3], W. P. Weiss[4], and J. F. Beck[5], [1]Michigan State University, [2]University of Nebraska, Lincoln, [3]Pennsylvania State University, University Park, [4]The Ohio State University/OARDC, Wooster, [5]Syngenta Seeds, Golden Valley, MN.
1:45 pm	245	Effects of corn grain endosperm type and brown midrib corn silage on milk production and feeding behavior of lactating dairy cows. C. C. Taylor* and M. S. Allen, Michigan State University, East Lansing.
2:00 pm	246	Dairy cattle performance, health, and milk composition when fed silage and grain from Bt (Cry1F) and near-isogenic control hybrids. M. A. Faust*[1], B. Smith[2], M. Hinds[2], and G. Dana[2], [1]Iowa State University, Ames, [2]Pioneer Hi-bred International, Inc., Johnston, IA.
2:15 pm	247	Effects of feeding corn silage produced from corn containing MON810 and GA21 genes on feed intake, milk production and composition in lactating dDairy cows. S. Calsamiglia*[1], B. Hernandez[1], G. F. Hartnell[2], and R. H. Phipps[3], [1]Universidad Autonoma de Barcelona, Spain, [2]Monsanto Company, St. Louis, MO, [3]University of Reading, UK.
2:30 pm	248	Effects of replacing chopped alfalfa hay with alfalfa silage in total mixed rations fed to lactating dairy cows at two levels of concentrate inclusion. M.S. Einarson*[1], J. M. Calberry[2], B.W. McBride[2], K.M. Wittenberg[1], and J.C. Plaizier[1], [1]Department of Animal Science, University of Manitoba, [2]Department of Animal and Poultry Science, University of Guelph.
2:45 pm	249	Effects of different dietary ratios of alfalfa and corn silages on milk production and rumen metabolism in lactating dairy cows. Andre F. Brito*[1] and Glen A. Broderick[2], [1]University of Wisconsin-Madison, [2]US Dairy Forage Research Center.
3:00 pm		Break
3:30 pm	250	Comparison of sample preparation methods for in situ digestion of processed and unprocessed corn silage. K.W. Cotanch*[1], C.S. Ballard[1], E.D. Thomas[1], S.M. Leach[1], M.P. Carter[1], P. Mandebvu[1], C.J. Sniffen[1], and T. Sato[2], [1]W.H. Miner Agricultural Research Institute, Chazy, NY 12921, [2]ZENNOH National Federation of Agricultural Co-operative Associations, Tokyo, Japan.

3:45 pm	251	Effect of carbohydrate source on ruminal fermentation and nitrogen utilization in lactating dairy cows. A. N. Hristov*, J. K. Ropp, K. L. Grandeen, S. Abedi, R. P. Etter, A. Melgar, and A. E. Foley, Department of Animal and Veterinary Science, University of Idaho, Moscow, ID.
4:00 pm	252	Linted and delinted cottonseed as feeds for lactating dairy cows. V. R. Moreira*[2], L. D. Satter[1,2], and B. Harding[3], [1]U.S. Dairy Forage Research Center, Madison, USDA - Agricultural Research Service, [2]Department of Dairy Science, University of Wisconsin - Madison, [3]Buckeye Technologies, Memphis, TN.
4:15 pm	253	Physical effectiveness of whole cottonseed as affected by lint and particle size. M.L.M. Lima*, J.L. Firkins, J.T. Sylvester, S.K.R. Karnati, and W. Mattos, [1]Escola de Veterinaria - UFG, Goiania, GO - Brazil, [2]The Ohio State University, Columbus - OH, [3]Universidade de Sao Paulo, ESALQ, Piracicaba - SP - Brazil.
4:30 pm	254	Effect of changes in peNDF and starch source on intake, milk production and milk composition of dairy cows. P. Berzaghi*[1,2] and D.R. Mertens[2], [1]University of Padova, Italy, [2]US Dairy Forage Research Center, Madison, WI.
4:45 pm	255	Effect of dietary calcium concentration on solubility of phosphorus in feces. M. J. Aguerre*[2] and L. D. Satter[1,2], [1]U.S. Dairy Forage Research Center, USDA-Agricultural Research Service, [2]University of Wisconsin, Madison.

Tuesday, June 24, 2003

Schedule of Events

6:15 am – 7:30 am	Poster set up	Convention Center, Exhibit Hall D
6:30 am – 3:30 pm	Registration Open	Convention Center, Lobby 2
6:30 am – 8 am	ADSA Dairy Foods Division Extension Breakfast	Hyatt, Remington AB
6:30 am – 8 am	University of Illinois Breakfast	Wyndham, Navajo AB
6:30 am – 8 am	Kentucky Breakfast	Wyndham, Navajo CD
6:30 am – 8 am	Penn State Breakfast	Wyndham, Hopi
6:30 am – 8:30 am	ASAS New Board Orientation Breakfast	Wyndham, Apache A
7:30 am – 9:30 am	Poster Sessions	Convention Center, Exhibit Hall D
7:30 am – 3 pm	Commercial Exhibits & ADSA SAD Exhibits Open	Convention Center, Exhibit Hall D
8 am – 5 pm	ASAS/B&B/NCBA Collegiate Livestock Leaders Institute	Wyndham, Apache B
8 am – 8:30 am	ADSA - SAD Business Meeting – Election of Officers	Convention Center, Phoenix 13-15
8:45 am – 11:45 am	ADSA – SAD Student Careers Symposium: Congressional Insights Progam	Convention Center, Phoenix 19
9:30 am – 5 pm	Scientific Sessions and Symposia	Convention Center
11 am – 12 pm	ARPAS Business Meeting	Convention Center, Yuma 21-22
11 am – 12 pm	ADSA Dairy Foods Division Business Meeting	Convention Center, Phoenix 18
12 pm – 1 pm	NE ADSA/ASAS Executive Committee Luncheon	Convention Center, Yuma 32
12 pm – 1 pm	ADSA Dairy Foods Division Program Planning Lunch	Hyatt, Remington A
12 pm – 1 pm	Posters attended by authors/co-authors if possible	Convention Center, Exhibit Hall D
12 pm – 1:30 pm	ASAS Section Editors Luncheon	Wyndham, Mohave B
12 pm – 2 pm	2003 Spouse's Luncheon	Wyndham, South Ballroom
12 pm – 2 pm	ADSA - SAD Awards Luncheon	Convention Center, Phoenix 11-12
12 pm – 2 pm	ASAS Past President's Luncheon	Wyndham, Navajo B
1 pm – 5 pm	Southern Branch ADSA Symposium and Business Meeting	Convention Center, Phoenix 20
1:30 pm – 3:30 pm	ARPAS Exam	Convention Center, Yuma 34
2 pm – 3 pm	ADSA SAD Award Photos	Convention Center, Phoenix 11-12
2 pm – 3 pm	SAD Committee Meeting – Old and New Officers & Advisors	Convention Center, Phoenix 13-15
3 pm – 4 pm	ADSA 2006 Centennial Planning and Budget Committee	Convention Center, Phoenix 13-15
3 pm – 6 pm	Commercial Exhibits Dismantle	Convention Center, Hall D
3:30 pm – 5:30 pm	ASAS New Section Editors Meeting	Wyndham, Navajo CD
5 pm – 6:30 pm	ADSA Award Donor Dinner	Hyatt, Phoenix Ballroom
5 pm – 7 pm	Informal Calf Gathering	Hyatt, Sundance
7 pm – 9:30 pm	ADSA Awards Program & Foundation Auction & Raffle	Hyatt, Regency Ballroom
8:30 pm – 9:30 pm	2003 Joint Ice Cream Social	Hyatt, Regency Ballroom & Foyer

Tuesday, June 24, 2003
Symposia and Oral Sessions

ADSA Foundation Scholar Award Lecture - Dairy Foods

Chair: Kathryn J. Boor, Cornell University

Room: Phoenix 16-17

Time	
9:30 am	ADSA Foundation Scholar Award Lecture - Dairy Foods. Defining dairy flavors: Merging sensory analysis with flavor chemistry. MaryAnne Drake, North Carolina State University.

ADSA Foundation Scholar Award Lecture - Dairy Production

Chair: Kathryn J. Boor, Cornell University

Room: Phoenix 16-17

Time	
10:45 am	ADSA Foundation Scholar Award Lecture - Dairy Production. It's a girl! Exploring the impact of sexed semen on dairy cattle improvement programs. Kent A. Weigel, University of Wisconsin.

SYMPOSIUM

ARPAS/FASS

AAALAC International Accreditation at State Universities and Land Grant Colleges: Trends, Challenges, and Potential Solutions

Chair: John McGlone, Texas Tech University

Room: Yuma 21-22

Time	
9:30 am	(Invited) History of AAALAC International and general findings from AAALAC site visits at agricultural institutions. Kathryn Bayne, MS,PhD,DVM, Associate Director, AAALAC International.
10:15 am	(Invited) Analysis of arguments for and against AAALAC accreditation at agricultural institutions. Neal Merchen, PhD, University of Illinois.
10:50 am	(Invited) Veterinary care and OHS issues at agricultural institutions. Wendy Underwood, D.V.M, Director of Animal Care, Eli Lilly.
11:25 am	(Invited) ACUC, husbandry and physical plant issues at agricultural institutions. John McGlone, PhD, Texas Tech University.
12:00 pm	Panel discussion and audience questions

SYMPOSIUM

Growth & Development

Somatotropic Axis Function in Health and Disease

Chair: Doug Burrin, Children's Nutrition Research Center

Sponsors: Elanco Animal Health, Monsanto, Pfizer Animal Health, and USDA-CSREES

Room: Tucson 40-41

Time	Abstract Number	
9:30 am	256	(Invited) Somatotropic function: The somatomedin theory revisited. T.D. Etherton*, Penn State University.
10:00 am	257	(Invited) A new plasmid-mediated approach to enhance somatotropin function in pigs. R. Draghia, MD, PhD*, ADViSYS Inc.
10:30 am	258	(Invited) Somatotropin regulation of skeletal muscle protein deposition in pigs. T.A. Davis, J.A. Bush, R.C. Vann, A. Suryawan, and D.G. Burrin, USDA-ARS Children's Nutrition Research Center.
11:00 am	259	(Invited) Alteration of somatotropic function by proinflammatory cytokines. Robert A. Frost* and Charles H. Lang, Penn State University College of Medicine.

SYMPOSIUM

Physiology

The Role of the AI Sire in Maintaining Reproductive Rates of Holstein Cows

Chair: Matt Lucy, Missouri

Sponsor: Monsanto, Pfizer Animal Health, and Select Sires, Inc.

Room: Yuma 23-24

Time	Abstract Number	
9:30 am	260	(Invited) Relationship between conception rate and in vitro sperm viability. J.J. Parrish*, University of Wisconsin, Madison, WI.
10:00 am	261	(Invited) Accessory sperm and embryo quality: insights to male fertility. R. G. Saacke*, Department of Dairy Science, Virginia Tech.
10:30 am	262	(Invited) Genetic selection for improved reproduction. Kent Weigel*, University of Wisconsin.
11:00 am	263	(Invited) Sustaining the fertility of artificially inseminated dairy cattle: The role of the artificial insemination industry. J. M. DeJarnette, C. E. Marshall, R. W. Lenz, D. R. Monke, W. H. Ayars, and C. G. Sattler, Select Sires, Inc., Plain City, OH, USA.

Breeding & Genetics

Swine, Sheep, Goat and Dog Breeding

Chair: Brent Woodward, USDA

Room: Yuma 28-29

Time	Abstract Number	
9:30 am	264	Relative importance among sow productivity traits in the selection criterion for purebred dam lines, based on a modified profit function with causal relationships between traits. V. M. Quinton*[1], J. W. Wilton[1], J. A. B. Robinson[1], and P. K. Mathur[2], [1]University of Guelph, Guelph, Canada, [2]Canadian Centre for Swine Improvement, Ottawa, Canada.
9:45 am	265	Comparison of two models to estimate breeding values for intramuscular fat percentage in Duroc pigs. D. W. Newcom* and T. J. Baas, Iowa State University, Ames, IA.
10:00 am	266	Evaluation of Dorset, Finnsheep, Romanov, Texel, and Montadale breeds of sheep: Productivity of F_1 ewes in fall breeding seasons. E. Casas*, B. A. Freking, and K. A. Leymaster, USDA-ARS, U.S. Meat Animal Research Center.
10:15 am	267	Pedigree analysis of a closed population of crossbred sheep. K. M. MacKinnon*, L. A. Kuehn, and D. R. Notter, Virginia Polytechnic Institute and State University, Blacksburg, Virginia.
10:30 am	268	Competing risks analysis of lamb mortality. B. R. Southey*[1], S. L. Rodriguez-Zas[1], and K. A. Leymaster[2], [1]University of Illinois Champaign-Urbana, Urbana, IL, [2]USDA, ARS, USMARC, Clay Center, NE.
10:45 am	269	Genetic correlations for litter weight weaned with reproduction and wool characteristics in Rambouillet, Columbia, Targhee and Polypay sheep. K. J. Hanford*[1], L. D. Van Vleck[1], and G. D. Snowder[1,2], [1,2]USDA, ARS, U.S. Meat Animal Research Center, [1]Lincoln, NE, [2]Clay Center, NE.
11:00 am	270	Influence of birth weight and birth rank on lamb survivability. C.S. Welsh*[1], B.L. Golden[1], R.M. Enns[1], D.J. Garrick[1], and G.B. Nicoll[2], [1]Colorado State University, Fort Collins, CO, USA, [2]Landcorp Farming Ltd, Rotorua, New Zealand.
11:15 am	271	Caprine genetic resource conservation program. J. M. Dzakuma*[1], S. A. Ericsson[2], B. L. Sayre[3], T. A. Gipson[4], and H. D. Blackburn[5], [1]Prairie View A&M University, Prairie View, TX, [2]Sul Ross State University, Alpine, TX, [3]Virginia State University, Petersburg, VA, [4]Langston University, Langston, OK, [5]USDA-ARS-National Animal Gerplasm Program, Fort Collins, CO.
11:30 am	272	Population genetic structure of a colony of German Shepherd and Labrador Retriever dog guides. J. B. Cole*[1], D. E. Franke[1], and E. A. Leighton[2], [1]Louisiana State University, Baton Rouge, LA, [2]The Seeing Eye, Inc., Morristown, NJ.

Companion Animals

Chair: Gail Czarnecki-Maulden, Nestle Purina Research

Sponsor: Nestle Purina

Room: Yuma 26-27

Time	Abstract Number	
9:30 am	273	Human-animal-relationship as a risk factor for overweight pets. E. Kienzle*[1] and R. Bergler[2], [1]Chair of Animal Nutrition, Ludwig-Maximilians-University, Munich, Germany, [2]Psychological Institute, University of Bonn, Bonn, Germany.
10:00 am	274	Effect of temperament on stress response of stray adult dogs in a shelter environment. C. L. Coppola*, T. Grandin, and R. M. Enns, Colorado State University, Fort Collins, CO USA.
10:15 am	275	Use of expert system software in teaching problem solving in a companion animal nutrition class. John P. McNamara*, Washington State University.

10:30 am	276	Investigations on the energy requirements of adult cats. G. Edtstadtler-Pietsch[1], R. Rudnick[2], and E. Kienzle*[1], [1]Chair for Animal Nutrition, Ludwig-Maximilians-University, Munich, Germany, [2]Nestle Purina PetCare Research.
10:45 am	277	Prediction of energy digestibility based on total dietary fiber (AOAC-method) in complete dry food for dogs and cats. E. Kienzle*[1], V. Biourge[2], and A. Schönmeier[1], [1]Chair of Animal Nutrition, Ludwig-Maximilians-University, Munich, Germany, [2]Royal Canin, Research Center, Aimargues, France.
11:00 am	278	Comparison of in vitro nutrient disappearance to in vivo nutrient digestibility and fermentablility using the ileal-cannulated dog model. E.A. Flickinger*, A.M. Gajda, C.M. Grieshop, L.L. Bauer, N.R. Merchen, and G.C. Fahey, Jr., University of Illinois Department of Animal Sciences.
11:15 am	279	Influence of diet on fecal *Lactobacillus* population. C. J. Fu*[1], J. N. Carter[2], J. H. Porter[1], and M. S. Kerley[1], [1]University of Missouri-Columbia, [2]Nestle Purina PetCare Company.

Dairy Foods

Goat Cheeses and International Milk Sources

Chair: Young Park, Fort Valley State University

Room: Phoenix 18

Time	Abstract Number	
9:30 am	280	Effects of refrigeration and extended frozen-storage on organic acid profiles of commercial soft goat milk cheeses. Young W. Park*, Jung H. Lee, and Sung J. Lee, Fort Valley State University, Fort Valley, GA.
9:45 am	281	Effects of 3 month frozen-storage and refrigeration on proteolysis of soft goat milk cheeses determined by SDS-PAGE and gel image analysis. Sung J. Lee[1], Jung H. Lee[1], James Rhodes[2], and Young W. Park*[1], [1]Fort Valley State University, Fort Valley, GA, [2]The University of Georgia, Athens, GA.
10:00 am	282	Tocopherol concentrations and their changes in caprine milk cheeses during extended refrigeration and frozen storage. Jung H. Lee*, Sung J. Lee, Bhargava L Gadiyaram, and Young W. Park, Fort Valley State University, Fort Valley, GA.
10:15 am	283	Capacity of milk processing industry in Hungary. G. Virag[1], J. S. Zsarnoczai*[2], and H. F. Salem[2], [1]Agricultural Intervention Centre, Budapest, Hungary, [2]Szent Istvan University, Godollo, Hungary.
10:30 am	284	Subsidy for private storing butter and cream in Hungary. I. Feher[1], G. Virag[2], S. J. Zsarnoczai*[1], H. F. Salem[1], and L. Villanyi[1], [1]Szent Istvan University, Godollo, Hungary, [2]Agricultural Intervention Centre, Budapest, Hungary.

Horse

Equine Production & Management

Chair: Mark Arns, University of Arizona

Room: Yuma 25

Time	Abstract Number	
9:30 am	285	Effect of n-3 polyunsaturated fatty acid source on plasma fatty acid profiles of horses. P.D. Siciliano*[1], S.K. Webel[2], L.S. Brown[2], L.K. Warren[1], T.E. Engle[1], and P.D. Burns[1], [1]Colorado State University, Fort Collins, CO/USA, [2]United Feeds, Inc., Sheridan, IN/USA.
9:45 am	286	Development of a model for treating insulin resistance in mares. M. M. Vick, D. R. Sessions, S. E. Reedy, B. A. Murphy, E. L. Kennedy, and B. P. Fitzgerald, University of Kentucky, Lexington KY.

10:00 am	287	Factors associated with mare reproductive loss syndrome in central Kentucky and surrounding areas. SL Gray*[1], DL Cross[1], KE Panter[2], WC Bridges[1], and T Gimenez[1], [1]Clemson University, Clemson, SC, [2]USDA Poisonous Plants Research Lab, Logan, UT.
10:15 am	288	Effects of feeding endophyte-infected tall fescue diets on embryo survival in mares during early gestation. R.C. Youngblood*[1], B.J. Rude[1], D.L. Christiansen[1], N.M. Filipov[1], R. Hopper[1], N.S. Hill[2], B.P. Fitzgerald[3], and P.L. Ryan, [1]Mississippi State University, Mississippi State, MS, [2]University of Georgia, Athens, GA, [3]University of Kentucky, Lexington, KY.

Meat Science & Muscle Biology

Muscle Proteinases and Meat Quality

Chair: Elisabeth Huff-Lonergan, Iowa State University

Room: Tucson 42

Time	Abstract Number	
9:30 am	289	(Invited) The Calpain system and animal agriculture. D. E. Goll*, Muscle Biology Group,University of Arizona,Tucson, Arizona 85721.
10:00 am	290	The influence of calcium metabolism on beef tenderness. T. A. Walsh*, R. H. Pritchard, D. M. Wulf, and K. W. Bruns, South Dakota State University, Brookings, SD/USA.
10:15 am	291	Influence of early postmortem protein oxidation on beef quality. L. J. Rowe, K. R. Maddock, A. Asmus, S. M. Lonergan, and E. Huff-Lonergan, Iowa State University.
10:30 am	292	Effects of oxidation on beef tenderness and mu-calpain activity. L. J. Rowe*, K. R. Maddock, A. Trenkle, S. M. Lonergan, and E. Huff-Lonergan, Iowa State University.
10:45 am	293	Effects of oxidation on inactivation of calpastatin in beef. K.R. Maddock, L.J. Rowe, E. Huff-Lonergan, and S. M. Lonergan*, Iowa State University.
11:00 am	294	Effect of pH and ionic strength on calpastatin inhibition of μ- and m-calpain. K.R. Maddock*, E. Huff-Lonergan, L.J. Rowe, and S.M. Lonergan, Iowa State University, Ames, IA.
11:15 am	295	Degradation of calcium regulating and intermediate filament proteins is related to fresh pork quality. A.E. Asmus*[1], E.P. Berg[2], J.L. Melody[1], S.M. Lonergan[1], and E. Huff-Lonergan[1], [1]Iowa State University Ames, IA, [2]University of Missouri Columbia, MO.

Nonruminant Nutrition

Feed Ingredients

Chair: C.P.A. van de Ligt, Cargill Animal Nutrition

Sponsor: Alltech, Inc.

Room: Tucson 43

Time	Abstract Number	
9:30 am	296	Influence of variation in particle size on the flow characteristics of ground corn. C. N. Groesbeck*, R. D. Goodband, M. D. Tokach, J. L. Nelssen, S. S. Dritz, C. W. Hastad, and K. R. Lawrence, Kansas State University, Manhattan.
9:45 am	297	Effects of soybean meal source and level on growth performance of weanling pigs. K. R. Lawrence*, R. D. Goodband, M. D. Tokach, S. S. Dritz, J. L. Nelssen, J. M. DeRouchey, C. W. Hastad, B. W. James, and M. G. Young, Kansas State University, Manhattan.
10:00 am	298	Effect of Poultry by-product meal on pig performance. J.R. Orozco-Hernandez*, J.J. Uribe, S.G. Bravo, V.O. Fuentes-Hernandez, A. Aguilar, and O.H. Navarro, Centro Universitario de los Altos, Universidad de Guadalajara, Tepatitlan, Jalisco, Mexico.

10:15 am	299	Effect of inulin and sugar beet pulp on the growth performance and carcass characteristics of wean to finish pigs. G.F. He*, S.K. Baidoo, Q. Yang, and R.D. Walker, Southern Research and Outreach Center, University of Minnesota, Waseca, MN 56093.
10:30 am	300	Effect of ractopamine on the performance and carcass characteristics in finishing pigs. G. He*, S.K. Baidoo, Q.M. Yang, and R.D. Walker, Southern Research and Outreach Center, University of Minnesota, Waseca.
10:45 am	301	Comparison of grain sources (barley, white corn, and yellow corn) for swine diets and their effect on fatty acid composition and fat quality. J.F. Lampe*, T.J. Baas, and J.W. Mabry, Iowa State University.

Production, Management, and the Environment

Chair: Vincent Varel, USDA ARS, R.L. Hruska Meat Animal Research Center

Room: Tucson 39

Time	Abstract Number	
9:30 am	302	Effect of scraping frequency in a free stall barn on volatile N loss from dairy manure during summer. V. R. Moreira*[2] and L. D. Satter[1,2], [1]U.S. Dairy Forage Research Center, Madison, USDA - Agricultural Research Service, [2]Department of Dairy Science, University of Wisconsin - Madison.
9:45 am	303	The effect of dietary calcium and phosphorus on water extractable phosphorus in feces of dairy cows. J. D. Ferguson, S. R. Michelone*, C. F. Ramberg, Jr., and Z. Dou, University of Pennsylvania, School of Veterinary Medicine.
10:00 am	304	Slow-release thyme oil granules for control of odor and pathogens in feedlot cattle waste. Vincent Varel*, Daniel Miller, and Elaine Berry, USDA, ARS, Roman L. Hruska U.S. Meat Animal Research Center.
10:15 am	305	Changes in concentrations of selected malodorous compounds from dairy manures associated with storage and composting. L. B. Willett*, D. C. Borger, and D. L. Elwell, The Ohio State University/OARDC, Wooster, OH. USA.
10:30 am	306	Adding potassium, clinoptilolite zeolite and yucca extract to feedlot diets to reduce nitrogen losses from manure. K. S. Eng*[1], R. Bectel[2], and D. P. Hutcheson[3], [1]Eng, Inc., San Antoino, Texas, USA, [2]Advance Agricultural Testing, Baden, Ont. Canada, [3]Animal-Agricultural Consulting, Inc., Amarillo, Texas, USA.
10:45 am	307	Demonstrations to show the economic value of dairy manure as fertilizer. J.A. Pennington*[1], K.W. VanDevender[1], J.A. Hawkins[2], and R.L. Duncan[3], [1]University of Arkansas Cooperative Extension Service, Little Rock, [2]University of Arkansas Cooperative Extension Service, Conway, [3]University of Arkansas Cooperative Extension Service, Berryville.
11:00 am	308	Production of eight byproducts over a ten-year period for California and seven countries with estimates of phosphorus and potential ethanol production. J.N. Asmus and J.G. Fadel*, Univeristy of California, Davis, CA.
11:15 am	309	Gravity belt thickener with polymer assisted separation out-performs static gravity screen-roll press combination for separating the solid and liquid fractions of swine slurry. P.M. Walker, T.R. Kelley, K.E. Earing*, and J.E. Ringler, Illinois State University, Normal, IL/USA.
11:30 am	310	Relationship between dystocia and calf morbidity and mortality. S.M. Tomlinson*[1], J.E. Lombard[1], F.B. Garry[1], V. Khunkhun[1], and L.P. Garber[2], [1]Integrated Livestock Management, Colorado State University, Fort Collins, CO, [2]USDA:APHIS:VS, CEAH, Center for Animal Health Monitoring, Fort Collins, CO.
11:45 am	678	Biological considerations pertaining to use of the retinal vascular pattern for permanent identification of livestock J.C. Whittier[1], J. Doubet[2], D. Henrickson[2], J. Cobb[2], J. Shadduck[2], B.L. Golden[1,2], [1]Colorado State University, [2]Optibrand, Ltd LLC.

Ruminant Nutrition

Minerals and Vitamins

Chair: Terry Engle, Colorado State University

Room: Tucson 38

Time	Abstract Number	
9:30 am	311	(Invited) Role of trace minerals and vitamins in optimizing immune function of cattle. E. B. Kegley*, University of Arkansas, Fayetteville.
10:00 am	312	Incidence of bovine respiratory disease in receiving heifers: effects on weight gain and carcass characteristics. S. P. Montgomery*, J S. Drouillard, J. J. Sindt, M. A. Greenquist, W.F. Miller, J. N. Pike, E. J. Good, E. R. Loe, M. J. Sulpizio, and T. J. Kessen, Kansas State University.
10:15 am	313	Effect of copper source and level on performance and copper status of cattle consuming molasses-based supplements. J. D. Arthington*[1], F. M. Pate[1], and J. W. Spears[2], [1]University of Florida - IFAS, Ona, [2]North Carolina State University.
10:30 am	314	Evaluation of Na requirements for finishing feedlot heifers. C. B. Wilson*, G. E. Erickson, C. N. Macken, and T. J. Klopfenstein[1], [1]University of Nebraska, Lincoln, NE.
10:45 am	315	Effect of feeds naturally high in selenium on performance and selenium concentration in various tissues of finishing beef steers. T. L. Lawler*[1], J. B. Taylor[2], J. W. Finley[3], and J. S. Caton[1], [1]North Dakota State University, Fargo, ND, [2]USDA-ARS, Dubois, ID, [3]USDA-ARS, Grand Forks, ND.
11:00 am	316	Effect of total dissolved solids and sulfates in drinking water for growing steers. H. H. Patterson, P. S. Johnson, and W. B. Epperson, South Dakota State University, Brookings, SD.

SYMPOSIUM

Alpharma Beef Cattle

Key Nutritional Management Decisions to Assure Safe Wholesome Beef Production

Chair: M.N. Streeter, Alpharma Animal Health

Sponsors: Alpharma and American Society of Animal Science Foundation

Room: Yuma 21-22

Time	
1:00 pm	Introduction
1:05 pm	(Invited) Current trends in the incidence of foodborne diseases arising from beef consumption.
1:50 pm	(Invited) Pre-harvest epidemiology as a guide to control of food-borne pathogens. Guy H. Loneragan, West Texas A&M University, Canyon.
2:35 pm	Break
2:50 pm	(Invited) What are we doing about E. coli 0157:H7 and other foodborne pathogens? Todd R. Callaway, Ph.D., Research Microbiologist, Food and Feed Safety Research Unit, Southern Plains Agricultural Research Center.
3:35 pm	Discussion

SYMPOSIUM

Dairy Foods

Hispanic-Style Cheeses

Chair: Diane Van Hekken, USDA-ARS

Room: Phoenix 18

Time	Abstract Number	
1:00 pm	317	(Invited) Overview of Hispanic cheese. Nana Y. Farkye*, Dairy Products Technology Center, California Polytechnic State University, San Luis Obispo, CA.
1:30 pm	318	(Invited) The growing Hispanic cheese market and distribution. Russ Poe*, Sequoia Valley.
2:00 pm	319	(Invited) Starter cultures for Hispanic-style cheeses: The case of Queso-Fresco. Belinda Vallejo-Cordoba*, Maria J. Torres-Llanez, Miguel A. Mazorra-Manzano, and Aaron F. Gonzalez-Cordova, Centro de Investigacion en Alimentacion y Desarrollo, A. C., Hermosillo, Sonora, Mexico, 83000.
2:30 pm	320	(Invited) Effect of fatty acid modification to lower saturates on quality of Queso Blanco. Sean O'Keefe* and Annelisse Aigster, Virginia Tech Department of Food Science.
3:00 pm		Break
3:30 pm	321	(Invited) Crumbliness of Queso Fresco. Sundaram Gunasekaran*[1], [1]University of Wisconsin-Madison.
4:00 pm	322	(Invited) Cheeses from different countries of Latino America. Valente Alvarez*[1] and Rafael Jimenez-Flores[2], [1]The Ohio State University, [2]DPTC-California Polytechnic State University.
4:30 pm	323	(Invited) Functional and rheological attributes of Hispanic-style cheeses. D. L. Van Hekken*[1], M. H. Tunick[1], D. W. Olson[1], F. J. Molina-Corral[2], A. A. Gardea[2], and P. M. Tomasula[1], [1]USDA, ARS, Eastern Regional Research Center, [2]Centro de Investigacion en Alimentacion y Desarrollo, Cuauhtemoc, Mexico.

SYMPOSIUM

Dairy Foods

Listeria Monocytogenes: A Model Pathogen for Farm-to-Table Intervention

Chair: Kathryn Boor, Cornell University

Sponsor: EAAP

Room: Phoenix 16-17

Time	Abstract Number	
1:00 pm		Introduction
1:15 pm	324	(Invited) Transmission of Listeria monocytogenes in the dairy food system, overview. Martin Wiedmann*, Cornell University, Ithaca, NY.
1:45 pm	325	(Invited) Ecology and transmission of *Listeria monocytogenes* in ruminants and the farm environment. K.K. Nightingale*, E.D. Fortes, C.R. Nightingale, Z. Her, Y.H. Schukken, Y.T. Grohn, and M. Wiedmann, Cornell University.
2:15 pm	326	(Invited) Human listeriosis outbreaks linked to dairy products: a European perspective. J. Lunden* and H. Korkeala, Helsinki University, Helsinki, Finland.
2:45 pm	327	(Invited) Control of *Listeria monocytogenes* in dairy processing plant environments. Paul A. Hall*, Kraft Foods - North America.

3:15 pm	328	(Invited) The Listeria risk assessment: Dairy foods. Sherri Dennis*, John Hicks, Clark Carrington, and Richard Whiting, Food and Drug Administration, College Park, MD.
3:45 pm		Discussion

SYMPOSIUM

FDA-CVM and CAST

FASS Issues in Animal Agriculture

Chair: Barbara Glenn, Federation of Animal Science Societies

Room: Tucson 40-41

Time		
1:30 pm		(Invited) University research – FDA expectations. Timothy Schell, Food and Drug Administration, Center for Veterinary Medicine, Rockville, MD.
2:15 pm		Discussion and questions
2:30 pm		(Invited) A future look at biotechnology in the barnyard – An overview of the CAST issue paper. Terry D. Etherton, Pennsylvania State University, State College.
3:15 pm		Discussion and questions
3:30 pm		(Invited) Livestock agriculture and asymmetric bioterrorism. Norman C. Steele, Science Applications International Corporation, McLean, VA 22102.

SYMPOSIUM

Horse

Nutrient Management

Chair: Dr. Bill Schurg, University of Arizona

Sponsors: Evergreen Equine Products and Purina Mills, LLC

Room: Yuma 25

Time	Abstract Number	
3:00 pm	329	(Invited) Knee deep in manure: what do horse owners do with it? L. K. Warren*, Colorado State University, Fort Collins, CO USA.
3:30 pm	330	(Invited) Nutrient management regulations and the North Carolina equine industry. R Mowrey*, North Carolina State University.
4:00 pm	331	(Invited) Potential impact of new concentrated animal feeding operation regulations on the equine industry. Don R. Topliff*, West Texas A&M University.
4:45 pm		Discussion

SYMPOSIUM

Southern Branch ADSA

How Can We Best Work Together to Serve Tomorrow's Dairy Industry?

Chair: D.D. Johnson, Burkmann Feeds

Room: Phoenix 20

Time	Abstract Number	
1:00 pm		Introduction
1:05 pm		(Invited) Introdution & overview of the dairy industry-history & trends. K.E. Olson, FASS, Savoy, IL.
1:25 pm	332	(Invited) How best can we work together to serve tomorrow's dairy industry: university extension faculty perspective. L. O. Ely*, University of Georgia.
1:45 pm		(Invited) University research faculty perspective. R. E. James, Virginia Polytechnic Institute and State University, Blacksburg, VA.
2:05 pm		(Invited) University administration perspective. R. J. Harmon, University of Kentucky, Lexington, KY.
2:25 pm		(Invited) Private dairy consultant perspective. G. Bethard, Wytheville, VA.
2:45 pm		Break
3:00 pm		(Invited) What does biotechnology offer to tomorrow's dairy industry? T.P. Lyons and K.A. Dawson, Alltech, Inc., Nicholasville, KY
3:20 pm		(Invited) Sustainable dairying in 2020. S. E. Koenig, Bioproducts, Inc., Fairlawn, OH.
3:40 pm		(Invited) Four state cooperative effort. M. F. Hutjens, University of Illinois, Champaign, IL.
4:00 pm		Roundtable discussion with presenters
4:30 pm		Southern Branch of the American Dairy Science Association Business Meeting

Animal Health

Diseases and Mammary Health

Chair: J. Ernest Minton, Kansas State University, Manhattan

Room: Tucson 36

Time	Abstract Number	
1:00 pm	333	Changes in the mechanical properties and the lesion score of the sole horn in first lactation dairy heifers. Betina Winkler and Jean K Margerison*, University of Plymouth, Seale Hayne.
1:15 pm	334	Muscle protein tyrosine nitration patterns during chronic subclinical intramuscular parasitism: Co-localization to fiber type and ubiquitin. T. H. Elsasser*[1], S. Kahl[1], J.L. Sartin[2], R. Fayer[1], A. Martinez[3], F. Cuttitta[3], and J. Hinson[4], [1]USDA-ARS, Beltsville, MD, [2]Auburn University, Auburn, AL, [3]NIH-NCI, Bethesda, MD, [4]University of Arkansas, Little Rock, AR.
1:30 pm	335	A relative comparison of diagnostic tests for Johne's disease. T Duffield[1], D Kelton[1], K Leslie[1], K Lissemore[1], and M Archambault[2], [1]Department of Population Medicine, University of Guelph, [2]Animal Health Laboratory, University of Guelph.
1:45 pm	336	Detection of *Aspergillus fumigatus* in hemorrhagic bowel syndrome in dairy cattle. Steven Puntenney*, Yong-qiang Wang, and Neil Forsberg, Oregon State University, Corvallis OR.

2:00 pm	337	The potential of infrared thermography as an early detection method for mastitis: Seasonal effects on predictability. R. J. Berry[1], A. D. Kennedy*[1], S. L. Scott[2], D. Fulawka[1], F. I. L. Hernandez[2], and A. L. Schaefer[3], [1]University of Manitoba, Winnipeg, Manitoba, Canada, [2]Ag Canada Research Station, Brandon, Manitoba, Canada, [3]Ag Canada Research Station, Lacombe, Alberta, Canada.
2:15 pm	338	Protective efficiency of a mix DNA-protein vaccination strategy against *Staphylococcus aureus* mastitis in dairy cows. L. Shkreta*[1], B. G. Talbot[1], M.S. Diarra[2], and P. Lacasse[2], [1]University of Sherbrooke, QC, Canada, [2]Dairy and Swine R&D Centre, Lennoxville, QC, Canada.
2:30 pm	339	Effectiveness of an internal teat sealant in the prevention of new intramammary infections during the dry and early lactation periods in dairy cows when used with an intramammary antibiotic. S. Godden*[1], P. Rapnicki[1], S Stewart[1], A Johnson[2], R Bey[1], and R Farnsworth[1], [1]University of Minnesota, St. Paul, MN, [2]Total Herd Management Services, Clintonville, WI.

Breeding & Genetics

Beef Cattle Breeding

Chair: Denny Crews, Agriculture and Agri-Food Canada

Room: Yuma 28-29

Time	Abstract Number	
1:00 pm	340	Factors to adjust birth and weaning weights of Red Angus calves for age of dam. J.M. Rumph*[1], L.S. Gould[2], R.L. Hough[2], and L.D. Van Vleck[3], [1]University of Nebraska, Lincoln, [2]Red Angus Association of America, Denton, Texas, [3]USDA, ARS, USMARC, Lincoln, Nebraska.
1:15 pm	341	Effects of genetic groups to account for selection on estimates of genetic parameters for a line of Hereford cattle. L. D. Van Vleck*[1], K. J. Hanford[1], and M. D. MacNeil[2], [1]USDA, ARS, USMARC, Lincoln, NE, [2]USDA, ARS, LARRL, Miles City, MT.
1:30 pm	342	Maternal performance of Hereford, Angus, Red Angus, Simmental, Gelbvieh, Limousin, and Charolais sired two-year-old crossbred females. Larry V. Cundiff*, USDA, ARS, Roman L. Hruska U.S. Meat Animal Research Center.
1:45 pm	343	Genetic trends resulting from selection based on an index of birth weight and yearling weight. M. D. MacNeil*, USDA-ARS, Fort Keogh LARRL, Miles City, MT.
2:00 pm	344	Bayesian estimation of breed-specific and segregation genetic variances applied to a Nelore-Hereford population. F. F. Cardoso*[1] and R.J. Tempelman[1], [1]Michigan State University.
2:15 pm	345	Feedlot performance and carcass traits of Bonsmara, Angus, and Brahman steers. J. J. Cleere*[1], F. M. Rouquette, Jr.[1], R. D. Randel[1], T. H. Welsh[2], J. W. Holloway[3], and M. F. Miller[4], [1]Texas Agricultural Experiment Station, Overton, [2]Texas A&M University, College Station, [3]Texas Agricultural Experiment Station, Uvalde, [4]Texas Tech University, Lubbock.
2:30 pm	346	Redesigning beef cattle to have a more healthful fatty acid composition. T.J. Knight*, J.A. Minick, J.R. Tait, Jr., G.H. Rouse, D.E. Wilson, D.R. Strohbehn, J.M. Reecy, A.E. Wertz, A.H. Trenkle, and D.C. Beitz, Iowa State University, Ames.
2:45 pm	347	Genetic relationships of body condition score with carcass traits in Limousin cattle. D.R. Eborn* and D.W. Moser, Kansas State University, Manhattan, KS.
3:00 pm		Break
3:30 pm	348	Heritability and repeatability of back fat and rump fat thickness in Angus cattle. A. Hassen*, D. E. Wilson, and G. H. Rouse, Iowa State University, Ames, IA.
3:45 pm	349	Genetic parameter estimates of udder scores in Gelbvieh cattle. R. L Sapp*, R. Rekaya, J. K. Bertrand, I. Misztal, and K. A. Donoghue, The University of Georgia, Athens, GA.
4:00 pm	350	Comparison of methods for handling missing fertility records in beef cattle data. K. A. Donoghue*[1], R. Rekaya[1], J. K. Bertrand[1], D. J. Johnston[2], and C. Teseling[3], [1]The University of Georgia, Athens GA, USA, [2]Animal Genetics and Breeding Unit, Armidale NSW, Australia, [3]The Angus Society of Australia, Armidale NSW, Australia.
4:15 pm	351	Estimates of genetic parameters for respiratory disease in beef calves before weaning. Gary Snowder*, Dale Van Vleck, Larry Cundiff, Keith Gregory, and Gary Bennett, USDA, ARS, Roman L. Hruska U.S. Meat Animal Research Center.

4:30 pm	352	Simulation of net return using days to finish estimated breeding values in beef production. M.A. Cleveland*, R.M. Enns, W.J. Umberger, and B.L. Golden, Colorado State University, Fort Collins, CO.
4:45 pm	353	Comparison of different selection criteria in populations simulated under growth curve parameters of Brazilian zebu cattle. E.S. Sakaguti*[1], E.N. Martins[1], and L.O.C. Silva[2], [1]Universidade Estadual de Maringa, Maringa, Brazil, [2]Embrapa Gado de Corte, Campo Grande, Brazil.

Companion Animals

Chair: Russell Kelley, The Iams Company

Sponsor: Nestle Purina

Room: Yuma 26-27

Time	Abstract Number	
1:00 pm	354	A new approach to testing nutraceuticals in animals: a placebo-controlled evaluation of a milk-based ''immuno-nutritional'' product in dogs. DA Gingerich* and JD Strobel, SMBI, Cincinnati, OH, USA.
1:30 pm	355	Measuring absorption of a purified, crystalline lutein additive in the canine. L. B. Deffenbaugh*, Kemin Nutrisurance, Inc.
1:45 pm	356	Evaluation of stabilized rice bran as an ingredient in dry extruded dog diets. J. K. Spears*, C. M. Grieshop, and G. C. Fahey, Jr., University of Illinois at Urbana-Champaign, Urbana, IL USA.
2:00 pm	357	Defining safe lower and upper limits for selenium (Se) in adult cats. K. Wedekind*[1], C. Kirk[1], S. Yu[1], and R. Nachreiner[2], [1]Hill's Pet Nutrition, Inc., Topeka, KS, [2]Michigan State University, East Lansing, MI.
2:15 pm	358	Docosapentaenoic acid accumulates in plasma phosphatidyl choline but not cholesteryl ester fractions in linseed oil fed dogs. J.E. Bauer*[1], A.L. Spencer[1], and M.K. Waldron[2], [1]College of Veterinary Medicine, Texas A&M university, College Station, TX, [2]Nestle-Purina Pet Care, St. Louis, MO.
2:30 pm	359	Lifetime diet restriction impact on carbohydrate metabolism affects survival and time-to-first treatment for chronic disease in dogs. B.T. Larson*[1], D.F. Lawler[1], E.L. Spitznagel, Jr.[2], and R.D. Kealy[1], [1]Nestle Purina PetCare Company, St. Louis MO, [2]Washington University, St. Louis MO.

Forages & Pastures

Grasslands, Forage Supplementation

Chair: Marcia Endres, University of Minnesota

Room: Tucson 37

Time	Abstract Number	
1:00 pm	360	Effect of defoliation system and nitrogen input on nitrate losses from grassland systems. M Wachendorf*, M Buechter, H Trott, and F Taube, University of Kiel, Kiel, Germany.
1:15 pm	361	Metabolic changes in Brangus stocker calves grazing wheat pasture. L. A. Appeddu*[1], M. A. Brown[2], and W. A. Phillips[2], [1]Southwestern Oklahoma State University, Weatherford, OK, [2]USDA-ARS Grazinglands Research Laboratory, El Reno, OK.
1:30 pm	362	Effect of field pea based supplement on intake, digestion, and ruminal fermentation of nursing steer calves grazing native range in western North Dakota. A. A. Gelvin*[1], G. P. Lardy[1], J. S. Caton[1], and D. G. Landblom[2], [1]North Dakota State University, Fargo, North Dakota/USA, [2]Dickinson Research Extension Center, Dickinson, North Dakota/USA.
1:45 pm	363	Reproductive responses and carcass characteristics of ram lambs fed endophyte-infected tall fescue. J. M. Burke*[1], C. F. Rosenkrans[2], R. W. Rorie[2], C. Golden[2], and J. K. Apple[2], [1]USDA, Agricultural Research Service, Dale Bumpers Small Farms Research Center, [2]University of Arkansas, Department of Animal Science.

2:00 pm	364	Comparison of urea and soybean meal as nitrogen supplements to cool-season, low-quality forage: I. Daily and alternate day supplementation effects on digestion and ruminal fermentation in steers. D. W. Bohnert*[1], C. S. Schauer[1], S. J. Falck[1], and D. L. Harmon[2], [1]Eastern Oregon Agriculture Research Center, Burns, [2]University of Kentucky, Lexington.
2:15 pm	365	Comparison of urea and soybean meal as nitrogen supplements to cool-season, low-quality forage: II. Daily and alternate day supplementation effects on efficiency of nitrogen use in lambs. D. W. Bohnert, S. J. Falck*, and C. S. Schauer, Eastern Oregon Agriculture Research Center, Burns.
2:30 pm	366	Animal performance and forage quality effects on steers intensively grazing summer perennials. A. M. Bowers*, M. E. Boyd, and D. J. Lang, Mississippi State University.
2:45 pm	367	Effect of protein supplementation of warm versus cool season forages on intake, digestibility, and ruminal fill in beef steers. G. D. Pulsipehr*, D. W. Bohnert, T. DelCurto, K. J. Walburger, M. S. Wells, and J. J. White, Eastern Oregon Agriculture Research Center, Union, OR.
3:00 pm		Break
3:30 pm	368	Effect of backgrounding growth rate and forage or concentrate finishing on beef quality. C.E. Realini*[1], S.K. Duckett[1], J.P.S. Neel[2], J. Fontenot[3], and W.R. Clapham[2], [1]The University of Georgia, Athens, [2]USDA-ARS Beaver, WV, [3]Virginia Tech University, Blacksburg.
3:45 pm	369	Effect of feed intake level and forage source on kinetics of fiber digestion in situ and nutrient digestibility in beef cattle. S. A. Bhatti[1], J. G. P. Bowman[1], A. V. Grove*[1], and C. W. Hunt[2], [1]Montana State University, [2]University of Idaho.
4:00 pm	370	Milk production of dairy cows fed total mixed rations after a grazing period with or without supplementation. F. Bargo*, J. E. Delahoy, and L. D. Muller, The Pennsylvania State University.
4:15 pm	371	Effect of forage diversity on intake and productivity of grazing lactating dairy cows. K. J. Soder*[1], M. A. Sanderson[1], L. D. Muller[2], and J. L. Stack[2], [1]USDA-ARS Pasture Systems and Watershed Mgmt. Research Unit, University Park, PA, [2]The Pennsylvania State University, University Park, PA.

Growth & Development

Somatotropic Axis and Adipose Development

Co-Chairs: Erin Connor, USDA Beltsville, and Mike Van Amburgh, Cornell University

Sponsors: Elanco Animal Health, Monsanto, Pfizer Animal Health, and USDA-CSREES

Room: Tucson 42

Time	Abstract Number	
1:00 pm	372	Preadipocyte recruitment is enhanced by ciglitazone or troglitazone in subcutaneous adipose stromal-vascular (S-V) cell cultures, but not intramuscular S-V cell cultures. Sylvia Poulos* and Gary Hausman, Univ. of GA and USDA-ARS.
1:15 pm	373	Investigation of the molecular mechanism underlying the anti-adipogenic action of retinoic acid in cultured pig preadipocytes. T.D. Brandebourg* and C.Y. Hu, Oregon State University, Corvallis, OR / USA.
1:30 pm	374	Effects of Ralgro implantation to gestating sows on sow and piglet performance and components of the somatotrophic axis. T. A. Strauch*, J. A. Carroll, E. L. Berg, and B. E. Salfen, Animal Physiology Research Unit, ARS-USDA, Columbia, MO.
1:45 pm	375	Level of nutrition and breed can influence basal and β-adreneregic stimulated fat mobilization in lambs. B. J. Leury[1] and F. R. Dunshea*[2], [1]School of Agriculture & Food Systems, The University of Melbourne, Victoria, 3010, [2]Department of Primary Industries, VIAS, Werribee, Vic, 3030.
2:00 pm	376	Peripheral leptin administration alters hormone and metabolite levels in the young pig. T.G. Ramsay*[1], J.A. Bush[2], J.P. McMurtry[1], M.C. Thivierge[2], and T.A. Davis[2], [1]USDA-ARS, [2]USDA-ARS Children's Nutrition Research Center.
2:15 pm	377	Porcine somatotropin reduces the magnitude of, and the variation in, back fat. F.R. Dunshea*[1] and R.G. Trainor[2], [1]Department of Primary Industries, VIAS, Werribee, Vic 3030, Australia, [2]Alpharma Animal Health, Toorak, Vic 3142, Australia.

2:30 pm	378	Validation of a ghrelin radioimmunoassay (RIA) for use in evaluating physiological factors that influence plasma ghrelin concentrations in beef cattle. A. E. Wertz*, T. J. Knight, C. C. Ribeiro-Filho, D. C. Beitz, and A. Trenkle, Iowa State University, Ames.
2:45 pm	379	Dose dependent growth suppression of broiler chicks injected with 5a-dihydrotestosterone. S.E. Nicolich*, T.D. Faidley, and D.R. Thompson, Merck Research Laboratories, Somerville, NJ.
3:00 pm		Break
3:30 pm	380	Expression of myostatin and myogenin in Landrace barrows selected for increased loin eye compared to a control line. G.N. Scheuermann[1,2], K. Nadarajah[1], D.L. Kuhlers[1], S.P. Lino[1], and D.R. Mulvaney*[1], [1]Auburn University, Auburn, AL, [2]EMBRAPA, Brazil.
3:45 pm	381	Insulin signaling in bovine myogenic cells. R.A. Hill*[1], M.V. Dodson[2], A. Gertler[3], N.J. Hughes[1], D. Henderson[1], and T.A. Kokta[1], [1]University of Idaho, [2]Washington State University, [3]Hebrew University of Jerusalem, Israel.
4:00 pm	382	Two-site evaluation of the relation between *in vivo* and carcass dual energy x-ray absorptiometry (DXA) in pigs. A.M. Scholz*[1], A.D. Mitchell[2], M. Foerster[1], and V.G. Pursel[2], [1]University Munich, Experimental Farm, Germany, [2]USDA, Agricultural Research Service, Beltsville, MD.
4:15 pm	383	Development and evaluation of a growth model to assist individual cattle management. L. O. Tedeschi* and D. G. Fox, Cornell University, Ithaca, NY 14853.
4:30 pm	384	A feedlot model: predicting carcass quality and yield grade at re-implant time using real-time ultrasound. P. B. Wall*, G. H. Rouse, D. E. Wilson, R. G. Tait, and W. D. Busby, Iowa State University Ames, IA.
4:45 pm	385	Phenotypical characterisation regarding growth, hormones, and meat quality in bulls of two types of cattle as a source for segregating family structures. O Bellmann*, J Wegner, F Schneider, F Teuscher, and K Ender, Research Institute for the Biology of Farm Animals.

Nonruminant Nutrition

Minerals and Vitamins

Co-Chairs: T.A. Armstrong, Elanco Animal Health and S. Radcliffe, Purdue University

Sponsors: Alltech, Inc., Danbred North America, and PIC

Room: Tucson 43

Time	Abstract Number	
1:00 pm	386	Withdrawn
1:15 pm	387	Effects of dietary L-carnitine on semen characteristics in boars. D.M. Kozink, M.J. Estienne, A.F. Harper*, and J.W. Knight, Virginia Polytechnic Institute and State University, Blacksburg, VA.
1:30 pm	388	Vitamins B9 (folic acid), B12 and methionine in growing-finishing pigs. A. Giguere*, C.L. Girard, and J.J. Matte, Agriculture and Agri-Food Canada, Lennoxville (QC), Canada.
1:45 pm	389	Transport of zinc chloride radiotracer in small intestine brush border membrane vesicles prepared from weanling pigs. C. E. Huntington*[1], D. W. Bollinger[1], J. S. Morris[2], and T. L. Veum[1], [1]University of Missouri, Columbia, MO USA, [2]University of Missouri Research Reactor Columbia, MO USA.
2:00 pm	390	Available phosphorus requirement to maximize growth and bone mineralization in 24 to 50-kg pigs. R.W. Fent*[1], G.L. Allee[1], D.M. Webel[2], J.D. Spencer[2], A.M. Gaines[1], D.C. Kendall[1], and J.W. Frank[1], [1]University of Missouri-Columbia, [2]United Feeds Inc., Sheridan, IN.
2:15 pm	391	Effect of dietary available/digestible phosphorus regimen on P and N utilization in pigs. T.S. Stahly* and T.R. Lutz, Iowa State University, Ames.
2:30 pm	392	Evaluation of EcoPhos™ phytase in growing pigs weighing 36 to 56 kg. R.W. Fent*[1], D.M. Webel[2], J.D. Spencer[2], T.S. Torrance[2], B.W. Ratliff[1], and G.L. Allee[1], [1]University of Missouri-Columbia, [2]United Feeds Inc., Sheridan, IN.

2:45 pm	393	Effects of a solid-state fermented phytase on growth performance, bone traits and P digestibility of growing pigs fed corn-soybean meal diets containing wheat middlings. J. S. Park*[1], S. D. Carter[1], J. D. Schneider[1], T. B. Morillo[1], and J. L. Pierce[2], [1]Oklahoma State University, Stillwater, [2]Alltech, Inc., Nicholasville, KY.
3:00 pm		Break
3:30 pm	394	Comparative effectiveness of *Aspergillus niger* wild-type and variant phytases in the hydrolysis of phytate-phosphorous in the diets for weanling pigs. S.E. Crowe*, T.W. Kim, K.R. Roneker, and X.G. Lei, Cornell University, Ithaca, NY USA.
3:45 pm	395	Pharmacological levels of zinc reduce phytase efficacy *in vivo*. N.R. Augspurger*[1], D.M. Webel[2], J.D. Spencer[2], and D.H. Baker[1], [1]University of Illinois at Urbana-Champaign, [2]United Feeds Inc., Sheridan, IN.
4:00 pm	396	Differences in total tract and ileal digestibility coefficients of calcium and phosphorus in growing pigs fed low phytate corn, normal corn, soybean meal, and corn soybean meal based diets. R. A. Bohlke*, H. H. Stein, A. R. Wirt, and R. C. Thaler, South Dakota State University.
4:15 pm	397	Phytase additions to conventional or low-phytate corn-soybean meal diets on performance, bone traits, and phosphorus excretion of growing pigs. E. G. Xavier*, G. L. Cromwell, and M. D. Lindemann, University of Kentucky, Lexington.
4:30 pm		What have we learned? M. D. Lindemann, University of Kentucky

Physiology

Nutrition-Reproduction, Stress, and Growth

Chair: Brian Crooker, University of Minnesota

Room: Yuma 23-24

Time	Abstract Number	
1:00 pm	398	Effects of experimental fascioliasis on pubertal development in heifers. M. J. Paczkowski*, T. M. Craig, D. D. Magee, J. A. Thompson, and D. W. Forrest, Texas A&M University, College Station, TX.
1:15 pm	399	Leptin modulates fertility in oMt1a-oGH transgenic mice. A.T. Thomas*, T.R. Famula, J.D. Murray, and A.M. Oberbauer, University of California, Davis, California.
1:30 pm	400	Orexin-B modulates LH and GH secretion: Interaction with the brain-pituitary axis in the pig. C. R. Barb*[1], J. B. Barrett[1], R. R. Kraeling[1], and R. L. Matteri[2], [1]USDA-ARS, Athens, GA, [2]USDA-ARS, Columbia, MO.
1:45 pm	401	Associations among circulating concentrations of IGF-1 and GH during the postpartum period with resumption of estrus, calf weights, and milk production in mature crossbred cows fed varying levels of energy intake. A. J. Roberts*[1] and T. G. Jenkins[2], [1]USDA-ARS, Fort Keogh LARRL, Miles City, MT, [2]USDA-ARS, MARC, Clay Center, NE.
2:00 pm	402	Endocrine responses to 72 h feed deprivation in weanling pigs. B.E. Salfen*[1], J.A. Carroll[1], and D.H. Keisler[2], [1]Animal Physiology Research Unit, Agricultural Research Service-USDA, [2]University of Missouri-Columbia.
2:15 pm	403	Influence of short-term fasting on ovarian follicular development in ewes. M. McFarland*, Z. Kiyma, E.A. Van Kirk, and G.E. Moss, University of Wyoming, Laramie.
2:30 pm	404	Effect of fish meal supplementation on endometrial sensitivity to oxytocin in beef heifers having low luteal phase progesterone. N.E. Wamsley*, P.D. Burns, T.E. Engle, and R.M. Enns, Colorado State University, Fort Collins, CO.
2:45 pm	405	Growth hormone (GH) binding in liver of periparturient Holstein cows is correlated with growth hormone receptor (GHR) 1A mRNA. R. P. Radcliff*[1], B. L. McCormack[1], B. A. Crooker[2], and M. C. Lucy[1], [1]University of Missouri, Columbia, [2]University of Minnisota, St. Paul.
3:00 pm		Break
3:30 pm	406	Obesity disrupts the duration of the estrous cycle in the mare. B.P. Fitzgerald*, S.E. Reedy, D.R. Sessions, M.M. Vick, and B.A. Murphy, University of Kentucky, Lexington KY.

3:45 pm	407	Characterization of equine bacterial artificial chromosomes (BACs) relevant to endocrine and immune system regulation. T. M. Bryan*, C. A. Abbey, T. Raudsepp, B. P. Chowdhary, C. A. Gill, and T. H. Welsh, Jr., Texas A&M University System, College Station.
4:00 pm	408	Breedtype influences adrenal responsiveness to corticotropin-releasing hormone (CRH) in beef steers. R.J. Hollenbeck*[1], D.A. Neuendorff[2], A.W. Lewis[2], T.A. Strauch[2], R.D. Randel[2], and T.H. Welsh, Jr.[1], [1]Texas Agricultural Experiment Station, College Station, [2]Texas Agricultural Experiment Station, Overton.
4:15 pm	409	Effect of transportation on hypothalamic-pituitary-adrenal axis activation and subsequent responsiveness to trophic hormone stimulation in cattle. M. Knights* and G.W. Smith, Michigan State University, East Lansing, MI.
4:30 pm	410	Effects of bromocriptine treatment on prolactin, prolactin receptor, and immune function of calves on different photoperiods. T. L. Auchtung* and G. E. Dahl, University of Illinois, Urbana, IL.
4:45 pm	411	Weight gain, carcass and meat characteristics of pasture fed LHRH immunocastrated, castrated and intact bulls. E. Ribeiro*[1], J. Hernandez[2], E. Zanella[3], M. Shimokomaki[1], S. Ferreira[1], E. Youssef[1], H. Ribeiro[1], and J. Reeves[2], [1]Universidade Estadual de Londrina, [2]Washington State University, [3]Universidade e Passo Fundo.

Ruminant Nutrition

Nutritional Management & Transition

Chair: J. W. Schroeder, North Dakota State University

Room: Tucson 38

Time	Abstract Number	
1:00 pm	412	Nutritional management of the dairy cow: Minimizing disorders to optimize production and maximize profitability. T. R. Overton* and M. R. Waldron, Cornell University, Ithaca NY.
1:30 pm	413	Feeding glycerol to transition dairy cows: Effects on dry matter intake, milk production, and blood metabolites. J.M. DeFrain*[1], A.R. Hippen[1], K.F. Kalscheur[1], and P.W. Jardon[2], [1]South Dakota State University, Brookings, [2]West Central Soy, Ralston, IA.
1:45 pm	414	Effects of prepartum diet and postpartum drenching on production performance and blood parameters of early lactation primiparous and multiparous Holstein cows. B. M. Visser*, J. G. Linn, S. M. Godden, and M. L. Raeth-Knight, University of Minnesota, St. Paul, MN, USA.
2:00 pm	415	Interrelationships of prepartum dry matter intake with postpartum intake and hepatic lipid accumulation. J. K. Drackley*, University of Illinois, Urbana, IL.
2:15 pm	416	Compariosn of three fresh cow feeding programs. W. F. Miller*, J. E. Shirley, E. C. Titgemeyer, A. F. Park, A. K. Hammond, M. V. Burgos, and M. V. Scheffel, Kansas State University.
2:30 pm	417	Effects of prepartum dietary energy concentration and Ca-propionate on transition performance. A.E. Beem*[1], H.G. Bateman[1], C.C Williams[1], C.C. Stanley[1], D.T. Gantt[1], Y.H. Chung[1], and F.R. Valdez[2], [1]LSU AgCenter, Baton Rouge, LA, [2]Kemmin Americas, Des Moines, IA.
2:45 pm	418	Prepartum dry matter intake, serum nonesterified fatty acids, liver lipid and glycogen contents, body weight, and body condition score for cows fed different diets during the dry period. H. M. Dann*, N. B. Litherland, J. P. Underwood, M. Bionaz, and J. K. Drackley, University of Illinois, Urbana.
3:00 pm		Break
3:30 pm	419	Prepartum nutrient intake alters metabolism by liver slices from peripartal dairy cows. N. B. Litherland*, H. M. Dann, A. S. Hansen, and J. K. Drackley, University of Illinois, Urbana.
3:45 pm	420	Prepartum nutrient intake has minimal effects on postpartum dry matter intake, serum nonesterified fatty acids, liver lipid and glycogen contents, and milk yield. H. M. Dann*, N. B. Litherland, J. P. Underwood, M. Bionaz, and J. K. Drackley, University of Illinois, Urbana.
4:00 pm	421	Responses to epinephrine challenges in peripartal Holstein cows fed two amounts of metabolizable protein in prepartum diets. J.P. Underwood*, J.K. Drackley, G.E. Dahl, and T.L. Auchtung, University of Illinois, Urbana, IL.

4:15 pm	422	Metabolism of dairy cows as affected by prepartum dietary carbohydrate source and supplementation with chromium throughout the periparturient period. K. L. Smith*[1], M. R. Waldron[1], T. R. Overton[1], J. K. Drackley[2], and M. T. Socha[3], [1]Cornell University, [2]University of Illinois, Urbana, [3]Zinpro Corporation, Eden Prairie, MN.
4:30 pm	423	Influence of cobalt supplementation to dry and lactating dairy cow diets with monensin on microbial fermentation in continuous culture. R.L.K. Hulbert*[1], G.I. Crawford[1], K.A. Caperoon[1], M.D. Stern[1], and M.T. Socha[2], [1]University of Minnesota, St. Paul, [2]Zinpro Corporation, Eden Prairie, MN.
4:45 pm	424	Prediction of urine volume and urinary output of nitrogen and minerals in lactating dairy cows. T. D. Nennich*[1], J. H. Harrison[1], L. Johnson[1], D. Meyer[2], W. Weiss[3], N. St-Pierre[3], R. L. Kincaid[4], M. Wattiaux[5], and D. L. Davidson[1], [1]Washington State University, Puyallup, [2]University of California, Davis, [3]The Ohio State University, [4]Washington State University, Pullman, [5]University of Wisconsin.

Ruminant Nutrition

Feedlot

Chair: Michael Van Koevering, Elanco Animal Health

Room: Tucson 39

Time	Abstract Number	
1:00 pm	425	Effect of wintering system and feedlot sorting on performance and economics of yearling steer production systems. J. D. Folmer*, C. N. Macken, M. P. Blackford, G. E. Erickson, and T. J. Klopfenstein, University of Nebraska, Lincoln, NE.
1:15 pm	426	Effects of live cultures of *Lactobacillus acidophilus* (Strains 45 and 747) *Propionibacterium freudenreichii* on performance, carcass and intestinal. N.A. Elam*, J.F. Gleghorn, J.D. Rivera, M.L. Galyean, M.M. Brashears, and S.M. Younts-Dahl, Texas Tech University.
1:30 pm	427	Influence of sire breed on residual feed intake as an indicator of efficiency in steers. C.L. Ferrell*, T.G. Jenkins, and H.C. Freetly, USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE.
1:45 pm	428	Ruminal biohydrogenation and conjugated linoleic acid formation in beef cattle fed finishing diets containing crude fish oil and/or different oil sources. S. K. Duckett*[1], B. Jacob, M. H. Gillis, C. E. Realini, K. R. Smith, A. Parks, and R. Eggleston, [1]The University of Georgia.
2:00 pm	429	Effect of source of energy, and rate of growth in the growing phase on performance and carcass characteristics of steers. J. P. Schoonmaker*[1], M. J. Cecava[2], F. L. Fluharty[1], H. N. Zerby[1], and S. C. Loerch[1], [1]The Ohio State University, Wooster, OH, [2]ADM Alliance, Decatur, IN.
2:15 pm	430	Effect of source of energy, and rate of growth in the growing phase on adipocyte cellularity, and lipogenic enzyme activity in the intramuscular and subcutaneous fat depots of Holstein steers. J. P. Schoonmaker, F. L. Fluharty, and S. C. Loerch, The Ohio State University, Wooster, OH.
2:30 pm	431	Ground flaxseed as a component of finishing cattle diets. E. J. Good*, J. S. Drouillard, T. J. Kessen, E. R. Loe, M. J. Sulpizio, M. A. Greenquist, S. P. Montgomery, J. J. Sindt, J. N. Pike, and K. A. Hachmeister, Kansas State University, Manhattan, KS.
2:45 pm	432	Comparison of concentrated separator byproduct with cane molasses and the relationship of blood glucose concentration at arrival to finishing performance and carcass characteristics of heifers. E. R. Loe*, J. S. Drouillard, T. J. Kessen, S. P. Montgomery, J. N. Pike, J. J. Sindt, and M. J. Sulpizio, Kansas State University.
3:00 pm		Break
3:30 pm	433	Effects of dietary crude protein level and degradability on performance and carcass characteristics of growing-finishing beef steers. J. F. Gleghorn*[1], N. A. Elam[1], M. L. Galyean[1], G. C. Duff[2], and N. A. Cole[3], [1]Texas Tech University, Lubbock, TX, [2]University of Arizona, Tuscon, AZ, [3]USDA-ARS-CPRL, Bushland, TX.
3:45 pm	434	Processing methods that influence characteristics of steam-flaked corn. J. J. Sindt*, J. S. Drouillard, S. P. Montgomery, and E. R. Loe, Kansas State University, Manhattan.

4:00 pm	435	Effect of full-fat corn germ and vitamin E on performance and carcass characteristics of beef cattle fed finishing diets containing dried-rolled or steam-flaked corn. S. P. Montgomery*, J. S. Drouillard, J. J. Sindt, M. A. Greenquist, B. E. Depenbusch, E. J. Good, E. R. Loe, M. J. Sulpizio, and T. J. Kessen, Kansas State University.
4:15 pm	436	Influence of dietary crude protein on potential ammonia emissions from beef cattle manure. N. A. Cole*[1], R. N. Clark[1], R. W. Todd[1], C. R. Richardson[2], A. Gueye[2], L. W. Greene[3], and K. McBride[3], [1]USDA-Agricultural Research Service, Bushland, TX, [2]Texas Tech University, Lubbock, TX, [3]Texas Agricultural Experiment Station, Amarillo, TX.
4:30 pm	437	Finishing diets with elevated levels of a-linolenic acid increase adipose tissue a-linolenic acid, but do not alter stearoyl Co-A desaturase activity. S. L. Archibeque*[1], D. K. Lunt[1], R. K. Tume[2], and S. B. Smith[1], [1]Texas A&M University, College Station, TX, [2]Food Science Australia, Tingalpa D. C. Queensland, Australia.
4:45 pm	438	Conjugated Linoleic Acid in tissues from beef cattle fed different lipid supplements. S. F. Porter*[1], T. R. Dhiman[1], D. P. Cornforth[1], R. D. Wiedmeier[1], K. C. Olson[1], B. R. Bowman[1], and N. D. Luchini[2], [1]Utah State University, Logan, UT, [2]Bioproducts Inc., Fairlawn, OH.

Wednesday, June 25, 2003

Schedule of Events

6:15 am – 7:30 am	Poster set up	Convention Center, Exhibit Hall D
6:30 am – 8 am	Purdue Breakfast	Wyndham, Navajo A
7 am – 3 pm	Registration Open	Convention Center, Lobby 2
7:30 am – 9:30 am	Poster Sessions	Convention Center, Exhibit Hall D
9:30 am – 10 am	FASS Business Meeting (Joint ADSA/ASAS Business Meeting)	Convention Center, Yuma 28-29
10 am – 10:30 am	ADSA Business Meeting	Convention Center, Yuma 23-24
10 am – 10:30 am	ASAS Business Meeting	Convention Center, Yuma 28-29
10:30 am – 1 pm	ASAS Board of Directors Meeting	Wyndham, Navajo CD
10:30 am – 5 pm	Scientific Sessions and Symposia	Convention Center
11 am – 1 pm	ADSA Board of Directors Meeting	Hyatt, Russell
11 am – 1 pm	NE ADSA/ASAS Business Meeting and Awards Luncheon	Wyndham, Apache Room
11:30 am – 1 pm	ADSA DF Division Milk Proteins & Enzyme Committee	Hyatt, Remington C
12 pm – 1 pm	Poster attended by authors/co-authors if possible	Convention Center, Exhibit Hall D
12 pm – 2 pm	WSASAS Business Meeting and Awards Luncheon	Wyndham, South Ballroom
12 pm – 2 pm	Block & Bridle Club Advisors Meeting	Wyndham, Navajo CD
1 pm – 3 pm	ARPAS Exam	Convention Center, Yuma 34
1 pm – 5 pm	DMI Dairy Research Summit	Hyatt, Phoenix Ballroom
2:30 pm – 3:30 pm	2003 Retirees Social	Convention Center, Yuma 32
4:30 pm – 6 pm	2003 International/Closing Reception	Convention Center, Exhibit Hall D
5 pm – 6 pm	Reception for Larry Satter	Convention Center, Tucson 40-41
6 pm – 9 pm	Korean Scientists and Students Dinner	TBA

Wednesday, June 25, 2003
Symposia and Oral Sessions

SYMPOSIUM

Dairy Foods

Dairy Foods Research Success Stories

Chair: Bill Sandine, Oregon State University

Sponsors: California Dairy Research Foundation, Dairy Management, Inc., Land O'Lakes Inc., and Southeast Dairy Foods Research Center

Room: Yuma 21-22

Time	Abstract Number	
10:30 am	439	Dairy foods research success stories. W. Sandine*[1], C. White[2], D. Hettinga[3], J. Hotchkiss[4], R. Thunell[5], M. Mangino[6], and D. Willrett[7], [1]Oregon State University, [2]Mississippi State University, [3]Land O' Lakes, Inc., [4]Cornell University, [5]DSM.
10:45		A brief history of Dairy Foods research and its contribution to the American way of life. Dave Hettinga, Land O'Lakes.
11:00		The dramatic impact of market milk shelf life extension on industry profits. Charlie White, Mississippi State University.
11:15		The value of cheese starter culture media developments to industry profitability. Doug Willrett, Rhodia.
11:30		The defined strain starter culture program for Cheddar cheese plants: Economic impact. Randy Thunell, DSM Food Specialties USA Inc.
11:45		Carbon dioxide and shelf life extension in cottage cheese for an expanded market. Joe Hotchkiss, Cornell University.
12:00		The whey research success story. Mike Mangino, The Ohio State University.

Beef Species

Beef Cattle Performance

Chair: Jim Sprinkle, University of Arizona

Sponsor: Intervet

Room: Tucson 43

Time	Abstract Number	
10:30 am	440	Influence of breed on performance and dry matter intake by feedlot bull calves in Brazil. R. Almeida*[1,2] and D.P.D. Lanna[2], [1]UFPR and PUCPR, PR, Brazil, [2]LNCA-ESALQ/USP, SP, Brazil.
10:45 am	441	Evaluation of yearling bull sale prices at six regional locations. Dustin Dean* and Andy Herring, Texas A&M University, College Station.

11:00 am	442	Evaluation of forage sources for finishing diets containing wet corn gluten feed. C.R. Dahlen[1], A. DiCostanzo*[2], R.T. Ethington[3], T.L. Durham[4], J.E. Larson[2], and G.C. Lamb[5], [1]Northwest Research and Outreach Center, University of Minnesota, [2]Department of Animal Science, University of Minnesota, [3]Kansas Feeds, Inc, [4]ADM Corn Processing, [5]North Central Research and Outreach Center, University of Minnesota.
11:15 am	443	Evaluation of implants containing different combinations of trenbolone acetate and estradiol on performance and carcass merit of short-fed finishing heifers. W. T. Nichols*, J. P. Hutcheson, C. D. Reinhardt, and G. E. Sides, Intervet, Inc., Millsboro, DE.
11:30 am	444	Evaluation of Revalor®-IS, Revalor®-S and Component®-ES on performance and carcass merit of short-fed finishing steers. J. P. Hutcheson, C. D. Reinhardt, G. E. Sides*, and W. T. Nichols, Intervet, Inc., Millsboro, DE.
11:45 am	445	Evaluation of single and re-implant programs on performance and carcass merit of finishing steers. C. D. Reinhardt*, J. P. Hutcheson, W. T. Nichols, and G. E. Sides, Intervet, Inc., Millsboro, DE.

Breeding & Genetics

Statistical Methods in Animal Breeding and Genetics

Chair: Ignacy Misztal, University of Georgia

Room: Tucson 42

Time	Abstract Number	
10:30 am	446	Response to selection by marker assisted BLUP with use of approximate gametic variance covariance matrices. L.R. Totir*, R.L. Fernando, and J.C.M. Dekkers, Iowa State University.
10:45 am	447	A simulation program using finite loci with infinite possibilities, FLIP. P. L. Spike*, R. R. Benson, R. L. Fernando, J. C. M. Dekkers, P. J. Berger, and B. R. Skaar, Iowa State University.
11:00 am	448	A simple method for joint analysis of multiple binary responses. R. Rekaya* and T. Averill, The University of Georgia.
11:15 am	449	Comparison of estimation methods for heterogeneous residual variances with random regression models. S. Tsuruta*[1], I. Misztal[1], and T. Druet[2], [1]University of Georgia, Athens GA, [2]Station de Génétique Quantitative et Appliqué, INRA, Jouy-en-Josas Cédex, France.
11:30 am	450	Plotting covariance functions from random regression models. A. Legarra*[1], I. Misztal[1], and J. Jamrozik[2], [1]University of Georgia, Athens, GA, [2]University of Guelph, Guelph, ON, Canada.
11:45 am	451	Joint optimisation of the number of animals to test and to select. M.E. Goddard*[1], [1]University of Melbourne and Victorian Institute of Animal Science, Australia.

Extension Education

Management and Profitability

Chair: Michael M. Schutz, Purdue University

Room: Yuma 28-29

Time	Abstract Number	
10:30 am	452	Entrepreneurial characteristics of dairy farming differences between Dutch and Pennsylvania Farmers. R.H.M. Bergevoet*[1] and L.A. Holden[2], [1]Wageningen University, [2]Penn State University.
10:45 am	453	Whole farm planning for the production of grass-finished beef. T. M. Johnson*[1], R. E. Morrow[1], C. A. Wells[1], M. L. Thomas[1], and J. K. Apple[2], [1]National Center for Appropriate Technology, Fayetteville, AR, [2]University of Arkansas, Fayetteville.

11:00 am	454	A model for data collection and reporting for cow/calf and feedlot operations. M. Coe*[1], D. ZoBell[2], and B. Bowman[2], [1]Global Animal Management/Schering-Plough Animal Health, [2]Utah State University.
11:15 am	455	Comparison of feedyard performance and profitability by percent Bos indicus in TAMU Ranch to Rail-South steers. J. C. Paschal*[1], N. C. Tipton III[2], M. J. De la Zerda[3], S. F. Allen[1], and J. W. McNeill[2], [1]Texas Cooperative Extension, [2]Texas A&M University, [3]Texas Beef Council.
11:30 am	456	Comparison of carcass merit and tenderness by percent Bos indicus in TAMU Ranch to Rail-South steers. J. C. Paschal*[1], N. C. Tipton III[2], M. J. De La Zerda[3], S. F. Allen[1], and J. W. McNeill[2], [1]Texas Cooperative Extension, [2]Texas A&M University, [3]Texas Beef Council.
11:45 am	457	CalfTrack: A system of dairy calf workforce management, training, and evaluation and health evaluation. A. J. Heinrichs*[1], C. M. Jones[1], L. R. VanRoekel[2], and M. A. Fowler[2], [1]The Pennsylvania State University, [2]Land O'Lakes Animal Milk Products, Co.

Food Safety

A Look at Antimicrobial Resistance in Dairy and Swine

Chair: Christine Bruhn, University of California, Davis

Room: Yuma 25

Time	Abstract Number	
10:30 am	458	Serotype prevalence and anti-microbial resistance of *Salmonella* isolated from dairy cattle in the Southwestern United States. T.S. Edrington*[1], K.M. Bischoff[1], M.L. Looper[2], T.R. Callaway[1], K.J. Genovese[1], Y.S. Jung[1], R.C. Anderson[1], and D.J. Nisbet[1], [1]USDA-ARS, Food and Feed Safety Research Unit, College Station, TX, [2]USDA-ARS, Dale Bumpers Small Farm Research Center, Booneville, AR.
10:45 am	459	Molecular epidemiology of beta-lactam resistant Gram-negative bacteria in dairy cattle. A. A. Sawant* and B. M. Jayarao, Pennsylvania State University, University Park, PA.
11:00 am	460	Prevalence, distribution, and characterization of oxytetracycline resistant *Escherichia coli* in lactating dairy cattle. A. A. Sawant * and B. M. Jayarao, Pennsylvania State University, University Park, PA.
11:15 am	461	The commensal bacterial populations of swine feces and stored swine manure: Reservoirs of antibiotic resistance? T. R. Whitehead*[1], M. A. Cotta[1], G. Whittle[2], N. Shoemaker[2], and A. A. Salyers[2], [1]National Center for Agricultural Utilization Research, Peoria, IL, [2]University of Illinois, Urbana, IL.

Lactation Biology

Chair: Joanne Knapp, University of Vermont

Room: Yuma 39

Time	Abstract Number	
10:30 am	462	Late gestation and advanced lactation at cessation of milking do not delay mammary epithelial apoptosis in dairy cattle. E.L. Annen*[1], A.V. Capuco[2], P.C. Gentry[1], L.H. Baumgard[1], and R.J. Collier[1], [1]University of Arizona, Tucson, [2]USDA-ARS, Bovine Functional Genomics Lab, BARC, Beltsville, MD.
10:45 am	463	Microarray analysis of bovine mammary gene expression following abrupt cessation of lactation. S.R. Davis*[1], A.J. Molenaar[1], K. Stelwagen[1], T.T. Wheeler[1], C.J. McMahon[1], D.B. Baird[3], H.V. Henderson[1], V. C. Farr[1], L. Good[1], K. Odin[1], K. Singh[1], D.L. Hyndman[2], and T. Wilson[2], [1]AgResearch Hamilton, [2]Dunedin, [3]Lincoln, New Zealand.
11:00 am	464	Evidence of cisternal recoil after milk letdown in the udder of dairy cows. G. Caja*[1], M.A. Ayadi[1], and C.H. Knight[2], [1]Universitat Autonoma de Barcelona, Spain, [2]Hannah Research Institute, UK.

11:15 am	465	Kinetics of glucose transport and metabolism in lactating bovine mammary glands measured in vivo with a paired nutrient/indicator dilution technique. F. Qiao*, C. Xiao, D.R. Trout, and J.P. Cant, University of Guelph, Ontario, Canada.
11:30 am	466	The effect of phenotypic selection for milk production on hepatic expression of prolactin receptor. P.H. Luimes*[1], E.H. Beaupre[1], J.H. White[1], W.J. Weber[2], H. Chester-Jones[2], L.B. Hansen[2], B.A. Crooker[2], and J.R. Knapp[1], [1]University of Vermont, Burlington, [2]University of Minnesota, St. Paul.
11:45 am	467	Quantitative analysis of estrogen-related receptor a, estrogen receptor a and estrogen receptor ß mRNAs throughout bovine mammary gland development. E.E. Connor*[1], A.V. Capuco[1], T.S. Sonstegard[1], A.F. Mota[1], D.L. Wood[1], W. Garrett[1], G.L. Bennett[2], and J. Williams[3], [1]USDA-ARS, Beltsville, MD, [2]USDA-ARS, Clay Center, NE, [3]Roslin Institute, Roslin, Midlothian, Scotland.
12:00 pm	468	Effects of varying energy intakes on estrogen receptor, cell proliferation, and tissue composition in mammary tissue of pre-pubertal heifers. J.W. Forrest*[1], R.M. Akers[1], R.E. Pearson[1], E.G. Brown[2], M.J. VandeHaar[2], and M.S. Weber Nielsen[2], [1]Virginia Tech, Blacksburg, [2]Michigan State University, East Lansing.

Physiology

Gamete Physiology

Chair: Sherrill Echternkamp, USDA - ARS

Room: Tucson 36

Time	Abstract Number	
10:30 am	469	Combining *in vitro* embryo production and sexed semen technologies. R.D. Wilson*, K.A. Weigel, P.M. Fricke, M.L. Leibfried-Rutledge, D.L. Matthews, and V.R. Schutzkus, University of Wisconsin - Madison, Madison, WI.
10:45 am	470	Timed insemination of superovulated heifers with sexed sperm. J. L. Schenk*[1], W. B. Henderson[2], and G. E. Seidel, Jr.[3], [1]XY, Inc., [2]Cyagra/EmTran, [3]Colorado State University.
11:00 am	471	Fertility and distribution of estrus among cows following prostaglandin induced embryonic/fetal mortality. T. W. Geary*, USDA-ARS, Fort Keogh LARRL, Miles City, MT.
11:15 am	472	Insulin like growth factor-I (IGF-I), IGF binding proteins (IGFBP), and steroids in dominant follicles of postpartum beef cows. F.J. White*, I. Rubio, C.A. Lents, N.H. Ciccioli, R.P. Wettemann, and L.J. Spicer, Oklahoma Agricultural Experiment Station, Stillwater.
11:30 am	473	Effect of dietary fat prepartum on first ovulation and reproductive performance in lactating dairy cows. M. Frajblat and W.R. Butler*, Cornell University, Ithaca, NY.
11:45 am	474	Ovarian follicular populations before weaning in sows are dependent on GnRH-induced LH release. C.J. Bracken*, B.L. McCormack, T.C. Cantley, R.P. Radcliff, and M.C. Lucy, University of Missouri.

Production, Management, & the Environment

Chair: Ralph M. Cleale, Fort Dodge Animal Health

Room: Tucson 37

Time	Abstract Number	
10:30 am	475	Interrelationship between various measurements of temperament in Brahman cows and their Brahman calves. K. O. Curley*, D. A. Neuendorff, A. W. Lewis, and R. D. Randel, Texas A&M University Agricultural Experiment Station, Overton, TX.
10:45 am	476	Interrelationship between various measurements of temperament in Brahman cows and their Hereford-sired calves. K. O. Curley*, D. A. Neuendorff, A. W. Lewis, and R. D. Randel, Texas A&M University Agricultural Experiment Station, Overton, TX.

11:00 am	477	Breed type and gender effects on chute exit velocity and chute temperament score in beef calves. J. F. Baker*[1], R. D. Randel[2], and C. R. Long[2], [1]University of Georgia, Tifton, GA/USA, [2]Texas Agricultural Expt. Station, Overton, TX/USA.
11:15 am	478	Breed of sire and gender effects on chute exit velocity and chute temperament score in beef calves. R. C. Vann*[1] and R. D. Randel[2], [1]MAFES/Brown Loam Experiment Station-Raymond, [2]Texas Agricultural Experiment Station-Overton.
11:30 am	479	Effects of ranch management on performance of newly received feedlot calves. S.M. Holt*[1], R.H. Pritchard[1], and T.A. Wittig[1], [1]South Dakota State University.
11:45 am	480	Thermoregulation and weight change in Hereford and Senepol steers as affected by forage type and estrogen therapy. R. Browning, Jr.*, S. H. Kebe, M. Byars, E. Lane, and C. Johnson, Tennessee State University, Nashville.

Ruminant Nutrition

Beef Cows and Heifers

Chair: Greg Lardy, North Dakota State University

Sponsors: Alltech, Inc. and Purina Mills, LLC

Room: Tucson 38

Time	Abstract Number	
10:30 am	481	(Invited) Fat supplementation and reproduction in beef females. R.N. Funston*, University of Nebraska, Lincoln.
11:00 am	482	Microbial crude protein efficiency in nursing calves and gestating cows. M.J. Lamothe, J.C. MacDonald*, T.J. Klopfenstein, D.C. Adams, G.E. Erickson, and J.A. Musgrave, University of Nebraska - Lincoln; Lincoln, NE.
11:15 am	483	Effect of age, pregnancy, and diet on urinary creatinine excretion in heifers and cows. K.M. Whittet*, T.J. Klopfenstein, G.E. Erickson, T.W. Loy, and R.A. McDonald, University of Nebraska, Lincoln, NE.
11:30 am	484	Methionine improves nitrogen retention of young gestating beef cows consuming low quality forages. R.C. Waterman*, W.D. Bryant, C.A. Loest, and M.K. Petersen, New Mexico State University.
11:45 am	485	Domperidone administered to heifers can ameliorate deleterious reproductive parameters and weight gain reductions associated with ingesting endophyte-infected fescue. K. L. Jones*[1], S. S. King[1], K. E. Griswold[1], D. Cazac[1], and D. L. Cross[2], [1]Southern Illinois University, Carbondale, IL, [2]Clemson University, Clemson, SC.

Ruminant Nutrition

Feed Intake

Chair: Scott Laudert, Elanco Animal Health

Room: Tucson 40-41

Time	Abstract Number	
11:00 am	486	(Invited) Recently identified signals for feed intake regulation. J.L. Miner*, University of Nebraska.
11:30 am	487	Ghrelin, a growth hormone secretagogue, is expressed by bovine rumen. P. C. Gentry*[1], J. P. Willey[1], and R. J. Collier, [1]University of Arizona.

11:45 am	488	Evaluation of the DMI predictions of the Cornell Net Carbohydrate and Protein System model with Holstein and dual-purpose lactating cattle in the tropics. D. O. Molina*[1], I. Matamoros[2], Z. Almeida[2], L. O. Tedeschi[1], and A. N. Pell[1], [1]Cornell University. Ithaca, NY, USA, [2]Escuela Agrédcola Panamericana Zamorano. Honduras.

Sheep

Sheep Production and Management

Chair: Jay Daniel, South Dakota State University

Room: Yuma 30 & 35

Time	Abstract Number	
10:30 am	489	Out-of-season breeding in hair sheep using Melengestrol Acetate (MGA). N. C. Whitley[1], D. J. Jackson*[1], and S. Schoenian[2], [1]University of Maryland Eastern Shore, [2]Maryland Cooperative Extension, WMREC.
10:45 am	490	Effect of breed type on shear force, sensory analyses and fatty acid content of lamb. S.P. Greiner*[1], S.K. Duckett[2], and D.R. Notter[1], [1]Virginia Polytechnic Institute and State University, Blacksburg, [2]University of Georgia, Athens.
11:00 am	491	Effects of low protein and limit-fed corn based diets on diet digestibility and metabolism of N and P in sheep. M. Abdullah*[1], S.C. Loerch[2], P. Tirabasso[2], and G.D. Lowe[2], [1]University of Agriculture, Faisalabad, Pakistan, [2]OARDC, The Ohio State University, Wooster, OH 44691.

SYMPOSIUM

Animal Behavior & Well Being

Alternative Housing for Livestock

Chair: Dr. Don Lay, Agricultural Research Service

Sponsors: EAAP, Elanco Animal Health, Humane Society of the United States (HSUS), Michigan State University, and USDA-ARS Livestock Behavior Research Unit

Room: Yuma 28-29

Time	Abstract Number	
1:00 pm	679	(Invited) Current and future trends in dairy housing. G. L. Bethard*[1], J. G. Martin[2], [1]G&R Dairy Consulting, Inc., [2]Joseph G Martin Consulting Engineer.
1:50 pm	619	(Invited) Housing the sow without crates - challenges and solutions. J.N. Marchant-Forde*[1], [1]USDA-ARS.
2:40 pm	492	(Invited) Animal welfare and international trade: European and American perspectives. A. Lawrence*[1] and D. Oglethorpe[1], [1]The Scottish Agricultural College.

SYMPOSIUM

Contemporary Issues and FASS Biotech Committee

Assessing the Safety of Bioengineered Feed Crops

Chair: Gary Hartnell, Monsanto Company

Sponsors: Elanco Animal Health and American Society of Animal Science Foundation

Room: Yuma 26-27

Time	
1:00 pm	Introduction
1:05 pm	(Invited) EU approach for assessing safety and nutritive value. Andrew Chesson, UK, representing OECD.
1:45 pm	(Invited) Canadian approach for assessing safety and nutritive value. Linda Morrison, Canadian Food Inspection Agency.
2:15 pm	Break
2:30 pm	(Invited) US approach for assessing safety and nutritive value. Bill Price, US FDA.
3:00 pm	(Invited) Japanese approach for assessing safety and nutritive value.
3:30 pm	Panel discussion

SYMPOSIUM

Forages & Pastures

Forage Strategies for Arid Climates

Chair: Jack Whittier, Colorado State University

Room: Tucson 39

Time	Abstract Number	
1:00 pm	493	(Invited) Supplementing grazing beef cattle: If, when, with what, and especially how often?. J. E. Huston*, Texas Agricultural Experiment Station, Texas A&M University System.
1:30 pm	494	(Invited) Complementary forages and grazing systems for beef cattle production on arid rangelands in the Western US. T. DelCurto*, D. W. Bohnert, C. S. Schauer, and G. D. Pulsipher, Eastern Oregon Agricultural Research Center, Oregon State University, Union and Burns.
2:00 pm	495	(Invited) Management strategies for optimal distribution and use of arid rangelands. D. W. Bailey*, Montana State University.
2:30 pm	496	(Invited) Whole ranch management systems to optimize forage use and meet multiple use goals. L.R. Roath*[1], [1]Colorado State University.

SYMPOSIUM

Goat Species

Assisted Reproduction in Goats

Chair: Stephan Wildeus, Virginia State University

Room: Yuma 30 & 35

Time	Abstract Number	
1:00 pm	497	(Invited) Update on estrus synchronization in a minor species. N.C. Whitley*, University of Maryland Eastern Shore, Princess Anne, MD.
1:30 pm	498	(Invited) Current status of cryopreserving goat semen. P.H. Purdy*, [1]USDA-ARS National Animal Germplasm Program, Fort Collins, CO.
2:00 pm	499	Effects of short-term nutritional priming and multiple superovulation regimes on superovulated dairy goats. N. Buzzell, S. Blash, M. Cutler, D. Melican, J. Jameson, P. Flanagan, M. Olson, and W. Gavin, GTC Biotherapeutics Inc., Spencer MA.
2:15 pm	500	Effect of breed and progesterone priming on pregnancy rates in anestrous meat goats in response to the buck effect. L. Nuti*, S. Woldesenbet, and G. Newton, Prairie View A&M University, Prairie View, Tx 77446.
2:30 pm	501	Ovarian response and fertility in postpubertal does and hair sheep ewes to an induced estrus using either MGA feeding or progesterone sponges. S. Wildeus*[1], J. R. Collins[1], and D. H. Keisler[2], [1]Virginia State University, Petersburg, VA, [2]University of Missouri, Columbia, MO.
2:45 pm	502	Effect of fat supplementation of goats in different body condition and under increased photoperiod upon ovarian activity and preovulatory endocrine profiles. C. A. Meza H.*[1,3], M. E. Hernandez L.[1], J. G. Chavez-Perchez[2], H. Salinas[3], J. Urrutia M.[3], and M. Mellado[4], [1]Universidad Autonoma Chapingo-URUZA, [2]Radiodiagnostico y Ultrasonografia, [3]INIFAP, [4]UAAAN.

SYMPOSIUM

Production, Management, & the Environment

Impact of Animal Feeding Operations on the Environment

Chair: Michel Wattiaux, University of Wisconsin

Sponsors: Babcock Institute, EAAP, Elanco Animal Health, Monsanto, United Feeds Inc., and USDA-ARS

Room: Tucson 40-41

Time	Abstract Number	
1:00 pm		Introduction
1:10 pm		(Invited) US EPA regulations impacting production animal agriculture. Jean-Mari Peltier.
1:40 pm	503	(Invited) Overview of nitrogen in the environment. J. N. Galloway*, University of Virginia.
2:10 pm	504	(Invited) Management to reduce nitrogen losses in animal production. C. Alan Rotz*[1], [1]USDA / ARS.
2:30 pm		Break
2:50 pm	505	(Invited) Quantitative assessment of phosphorus transport to surface and groundwaters. J. L. Havlin*, North Carolina State University, Raleigh, NC.
3:20 pm	506	(Invited) Animal management to reduce phosphorus losses to the environment. K. F. Knowlton*, Virginia Polytechnic Institute and State University, Blacksburg, VA.

3:40 pm	507	(Invited) Water quality and the grazing animal. R.K. Hubbard*[1], G.L. Newton[2], and G.M. Hill[2], [1]USDA-ARS, Tifton, GA, [2]University of Georgia, Tifton, GA.
4:00 pm	508	(Invited) Governmental policies and measures regulating agricultural nitrogen and phosphorus in the European Union. O. Oenema*, Wageningen University and Research Center, Wageningen, The Netherlands.
4:30 pm		(Invited) Sustainable livestock production, what's next? Larry Satter.
4:45 pm		Question and answer, Michel Wattiaux, University of Wisconsin.

Breeding & Genetics

Dairy Cattle Breeding for Nonproduction Traits

Chair: Daryl Nash, Ferrum College

Room: Tucson 42

Time	Abstract Number	
1:00 pm	509	Selection for mastitis in Norwegian dairy cattle. A. Karlsen*[1], B. Heringstad[2], E. Sehested[1], and M. Svendsen[1], [1]GENO Breeding and A.I. Association, [2]Department of Animal Science, Agricultural University of Norway.
1:15 pm	510	Associations of lactoferrin concentrations in milk with indicators of mastitis in dairy cows. A. A. Martin*, M. A. Faust, L. J. Rowe, and E. J. Lonergan, Iowa State University, Ames 50011.
1:30 pm	511	Measure of the impact of somatic cell count on longevity of Holstein and Jersey cows using survival analysis. D. Z. Caraviello*, K. A. Weigel, G. Shook, and P. Ruegg, University of Wisconsin - Madison.
1:45 pm	512	Effect of synchronization protocols on genetic parameters of reproductive traits in dairy cattle. R.C. Goodling*[1], G.E. Shook[1], K.A. Weigel[1], N.R. Zwald[1], and R.D. Welper[2], [1]University of Wisconsin-Madison, [2]Alta Genetics, Inc.
2:00 pm	513	The effect of using body condition score and dairy character as indicators for genetic resistance to diseases in Danish Holstein. J. Lassen*[1,3], M. Hansen[1], M. K. Sorensen[1], G. P. Aamand[2], L. G. Christensen[3], and P. Madsen[1], [1]Danish Institute of Agricultural Sciences, Denmark., [2]The Danish Agricultural Advisory Centre, Denmark., [3]The Royal Veterinary and Agricultural University, Denmark.
2:15 pm	514	Comparison of First-Parity Holstein, Holstein-Jersey crossbred, and Holstein-Normande crossbred cows for dystocia and stillbirths. B.J. Heins*, L.B. Hansen, and A.J. Seykora, University of Minnesota, St. Paul.
2:30 pm	515	Effect of mating Holstein females to Holstein versus Jersey AI sires on fertility, dystocia, calf weight, and retained placenta. B.J. Heins, A.J. Seykora*, L.B. Hansen, J.G Linn, D.G. Johnson, and W.P. Hansen, University of Minnesota, St. Paul.
2:45 pm	516	Genetic correlation estimates among body condition score, dairy form, days open and production traits for US Holsteins. C.D. Dechow*[1], G.W. Rogers[1], T.J. Lawlor[2], L. Klei[2], and P.M. VanRaden[3], [1]University of Tennessee, [2]Holstein Association USA Inc., [3]Animal Improvement Programs Laboratory.
3:00 pm		Break
3:15 pm	517	Seasonality of days open in US Holsteins. S. Oseni and I. Misztal, University of Georgia, Athens, GA, USA.
3:30 pm	518	A new genetic evaluation for calving ease in the Italian Holstein. F. Canavesi*, S. Biffani, and A.B. Samore, ANAFI.
3:45 pm	519	Characteristics of genetic evaluations for daughter fertility in relation to other fitness traits. H. D. Norman*, J. R. Wright, P. M. VanRaden, and M. T. Kuhn, Animal Improvement Programs Laboratory, Agricultural Research Service, USDA, Beltsville, MD.
4:00 pm	520	Definition of traits and comparison of models for genetic evaluation of cow fertility. P.M. VanRaden* and M.E. Tooker, Animal Improvement Programs Laboratory, Animal Research Service, USDA, Beltsville, MD.

4:15 pm	521	Quality of data included in genetic evaluations for daughter pregnancy rate. P.M. VanRaden, M.E. Tooker*, A.H. Sanders, and G.R. Wiggans, Animal Improvement Programs Laboratory, Agricultural Research Service, USDA, Beltsville, MD.
4:30 pm	522	Use of early lactation days open records for genetic evaluation of cow fertility. M.T. Kuhn* and P.M. VanRaden, Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD.

Food Safety

On Farm Food Safety: Assessment of Costs, Tools and Management

Chair: Todd Callaway, USDA/ARS, Southern Plains Agricultural Research Center

Room: Yuma 25

Time	Abstract Number	
1:00 pm	523	Economic assessment of food safety in the dairy chain. Natalia Valeeva*, Miranda Meuwissen, and Ruud Huirne, Wageningen University, Wageningen, the Netherlands.
1:15 pm	524	Bactericidal efficacy of quaternary ammonium compounds against species of bacteria isolated from feces of dairy cattle. A. A. Sawant *, N. V. Hegde, S. C. Donaldson, K. B. Buck, and B. M. Jayarao, Pennsylvania State University, University Park, PA.
1:30 pm	525	Antimicrobial effect of alpha-linolenic acid against *Escherichia coli}* O157:H7, *Listeria monocytogenes}*, and *Salmonella}* spp. in ground beef from finishing cattle fed flaxseed. M. A. Greenquist*, J. S. Drouillard, R. K. Phebus, L. J. Franken, B. E. Depenbusch, E. J. Good, C. M. Gordon, S. P. Montgomery, and J. J. Sindt, Kansas State University, Manhattan, KS.
1:45 pm	526	Effects of diet and monensin on ruminal persistence and fecal shedding of *Escherichia} coli}* O157:H7 in cattle. M.J. VanBaale*[1], J.M. Sargeant[1], D.P. Gnad[1], B.M. Debey[1], K.F. Lechtenberg[2], and T.G. Nagaraja[1], [1]Kansas State University, Manhattan, KS, [2]Midwest Veterinary Services, Oakland, NE.
2:00 pm	527	Bactericidal effect of 2-nitropropanol against selected foodborne pathogens *in vitro}*. Y. S. Jung*, R. C. Anderson, T. R. Callaway, T. S. Edrington, K. J. Genovese, R. B. Harvey, T. L. Poole, and D. J. Nisbet, USDA-ARS, Food and Feed Safety Research Unit, College Station, TX.
2:15 pm	528	Origanox as a natural ingredient to inhibit the growth of foodborne pathogens. S. A. Ibrahim*, North Carolina A&T State University, Greensboro, NC.
2:30 pm	529	Experimental chlorate product treatment reduces *Salmonella}* populations in swine during lairage. T. R. Callaway*[1], R. C. Anderson[1], T. S. Edrington[1], K. J. Genovese[1], C. H. Stahl[2], Y. S. Jung[1], K. M. Bischoff[1], T. L. Poole[1], R. B. Harvey[1], and D. J. Nisbet[1], [1]USDA-ARS, Food and Feed Safety Research Unit, College Station, TX, [2]Iowa State University, Ames, IA.
2:45 pm	530	Vermont Cattle Health Improvement Project. C.A. Rossiter-Burhans*[1], J.W. Barlow[2], and T.E. Johnson[3], [1]Poulin Grain Inc., Newport, VT, [2]University of Vermont, Burlington, VT, [3]Vermont State Department of Agriculture, Montpelier, VT.

Growth & Development

Intestinal Development - Colostrum Symposium

Chair: Geoff Dahl, University of Illinois

Sponsors: Elanco Animal Health, Monsanto, Pfizer Animal Health, and USDA-CSREES

Room: Yuma 21-22

Time	Abstract Number	
1:00 pm	531	(Invited) Over-expression of IGF-I effects on piglet intestinal growth. S.M. Donovan*, J.L. Hartke, M.H. Monaco, and M.B. Wheeler, University of Illinois.

1:30 pm	532	Intestinal growth and development in piglets suckling insulin-like growth factor-I (IGF-I) transgenic sows. J. L. Hartke*, M. H. Monaco, M. B. Wheeler, and S. D. Donovan, University of Illinois, Urbana, IL.
1:45 pm	533	Intestinal development in neonatal calves: Effects of glucocorticoids and dependence on colostrum feeding. S. N. Sauter[1], P. Guilloteau[2], J. W. Blum[1], and H. M. Hammon*[1], [1]University of Berne, Berne, Switzerland, [2]INRA, Rennes, France.
2:00 pm	534	(Invited) Effects of bioactive components of colostrum and milk on neonatal health, growth and intestinal development. T. McFadden*, University of Vermont.
2:30 pm	535	Effects of dexamethasone on the somatotropic axis in neonatal calves and dependence on colostrum intake. S. N. Sauter[1], E. Ontsouka[1], M. Pfaffl[2], J. W. Blum[1], and H. M. Hammon*[1], [1]University of Berne, Berne, Switzerland, [2]Technical University of Munich, Freising, Germany.
2:45 pm	536	Effects of plasma IgG concentration and milk replacer feeding on hormone and growth responses in stressed calves. J. D. Quigley, III*[1,2], T. A. Wolfe[2], and T. H. Elsasser[3], [1]APC, Inc., Ames, IA, [2]Iowa State University, Ames, [3]USDA-ARS, BARC-East, Beltsville, MD.
3:00 pm		Break
3:30 pm	537	(Invited) Effects of intestinal development on calf growth. R.L. Baldwin, VI*[1], J. Klotz[2], R.N. Heitmann[2], and K.R. McLeod[3], [1]USDA, ARS, [2]Univ. of Tennesse, [3]Univ of Kentucky.
4:00 pm	538	Influence of dietary nucleotides on calf health. C. E. Oliver*, M. L. Bauer, C. M. De Jesus Arias, W. L. Keller, and C. S. Park, North Dakota State University, Fargo, North Dakota.
4:15 pm	539	Effect of various levels of crude fiber and form of diet on rumen development in calves. J.A. Booth*[1], H.D. Tyler[1], and J.D. Quigley III[2], [1]Iowa State University, [2]APC Company, Inc.
4:30 pm	540	Influence of ratio of dietary fat to protein on body composition of Jersey bull calves. S. Bascom*[1], R. James[1], E. Hovingh[1], M. VanAmburgh[2], and M. McGilliard[1], [1]Virginia Tech, [2]Cornell University.

Meat Science & Muscle Biology

Genetics and Management of Meat Quality

Chair: T. Dean Pringle, The University of Georgia

Room: Tucson 37

Time	Abstract Number	
1:00 pm		(Invited) Practical implications of pork quality. F.W. McKeith.
1:30 pm	541	Effect of sire line and slaughter weight on pork quality. M. A. Latorre[1], M. D. García-Cachín[2], A. Fuentetaja[3], R. Lazaro*[1], and G. G. Mateos[1], [1]Universidad Politécnica de Madrid. Spain, [2]Estación Tecnológica de la Carne. Salamanca, Spain, [3]Copese S.A. Segovia, Spain.
1:45 pm	542	The effect of lorry type on meat quality.. Cs. Abrahám*, J. Seenger, and E. Szücs, Szent István University, Gödöllo-Hungary.
2:00 pm	543	Effects of available dietary carbohydrate and pre-slaughter stress on glycolytic potential and quality traits of pig muscles. Giuseppe Bee*, Swiss Federal Research Station for Animal Production, Posieux Switzerland.
2:15 pm	544	Growth parameters and carcass merit of market hogs supplemented creatine monohydrate in conjunction with ractopamine hydrochloride (Paylean) and a high glycemic carbohydrate. C. A. Stahl*[1], M. S. Carlson[1], D. L. McNamara[1], T. B. Schmidt[1], D. J. Newman[1], C. M. Schultz Kaster[2], and E. P. Berg[1], [1]University of Missouri, Columbia, MO, [2]Premium Standard Farms, Milan, MO.
2:30 pm	545	Fresh pork quality of Rendement Napole and/or Halothane carriers supplemented with magnesium through drinking water. B. R. Frederick*, E. van Heugten, and M. T. See, North Carolina State University, Raleigh, NC.
2:45 pm	546	Carcass cutability, belly firmness, and fatty acid composition of Ractopamine supplemented pigs sorted into backfat thickness classes. K.J. Mimbs*[1], T.D. Pringle[1], M.J. Azain[1], and T.A. Armstrong[2], [1]The University of Georgia, Athens, GA, [2]Elanco Animal Health, Greenfield, IN.

3:00 pm		Break
3:30 pm	547	Effects of supplemental corn oil or rumen-protected conjugated linoleic acid on lipid deposition of finished beef cattle. K. R. Smith*, S. K. Duckett, M. H. Gillis, and C. E. Realini, The University of Georgia.
3:45 pm	548	Comparison cooking and measuring methods as well as anatomical location on tenderness in M. longissimus dorsi in beef. J. Seenger*[1], Cs. Abrahám[1], G. Holló[2], K. Ender[3], and E. Szücs[1], [1]Szent István University, Gödöllo-Hungary, [2]University of Kaposvár, Kaposvár-Hungary, [3]Research Institute for the Biology of Farm Animals, Dummerstorf-Germany.

Nonruminant Nutrition

Energy and Amino Acids

Co-Chairs: D.A. Nelson, Land O'Lakes and D.M. Webel, United Feeds

Sponsors: Alltech, Inc., Danbred North America, and PIC

Room: Tucson 43

Time	Abstract Number	
1:00 pm	549	Evaluation of the true ileal digestible (TID) lysine requirement for 7 to 14 kg pigs. A.M. Gaines*[1], D.C. Kendall[1], G.L. Allee[1], M.D. Tokach[2], S.S. Dritz[2], and J.L Usry[3], [1]University of Missouri-Columbia, Columbia, [2]Kansas State University, Manhattan, [3]Ajinomoto Heartland Inc., Chicago.
1:15 pm	550	Effects of lysine source on growth performance of 11 to 25 kg pigs. D. C. Kendall*[1], G. L. Allee[1], G. Gourley[2], D. R. Cook[3], and J. L. Usry[4], [1]University of Missouri-Columbia, [2]Swine Graphics Enterprises, [3]North American Nutrition Companies, Inc., [4]Ajinimoto Heartland Inc.
1:30 pm	551	Estimation of the ideal ratio of sulfur amino acids:lysine in diets for nursery pigs weighing 11-22 kg. A. M. Gaines*[1], D.C. Kendall[1], R.W. Fent[1], J.W. Frank[1], G.F. Yi[1], B.W. Ratliff[1], G.L. Allee[1], and C.D. Knight[2], [1]University of Missouri-Columbia, [2]Novus International, St. Louis, MO.
1:45 pm	552	Determination of the TID tryptophan:lysine ratio for 90 kg barrows. D. C. Kendall*[1], B. J. Kerr[2], R. D. Boyd[3], J. W. Frank[1], A. M. Gaines[1], B. Ratliff[1], R. W. Fent[1], and G. L. Allee[1], [1]University of Missouri-Columbia, [2]USDA-ARS-MWA-SOMMRU, Ames, IA, [3]The Hanor Company, Spring Green, WS.
2:00 pm	553	A meta-analysis to estimate the optimum threonine to lysine ratio in growing pigs. J. van Milgen*[1] and L. Le Bellego[2], [1]INRA-UMRVP, St-Gilles, France, [2]Ajinomoto Eurolysine, Paris, France.
2:15 pm	554	Prediction of the energy value of corn from the dietary composition in piglets. J. Noblet*[1] and M. Champion[2], [1]INRA, UMRVP, Saint Gilles, France, [2]Limagrain Genetics, Chappes, France.
2:30 pm	555	Effect of pelleting and body weight on digestibility of energy and fat of two corns in pigs. J. Noblet*[1] and M. Champion[2], [1]INRA, UMRVP, Saint Gilles, France, [2]Limagrain Genetics, Chappes, France.
2:45 pm	556	Effect of high ambient temperature and feeding level on fatty acid deposition in growing pigs. M. Kloareg, L. Le Bellego, J. Mourot, J. Noblet, and J. van Milgen*, INRA-UMRVP, St-Gilles, France.
3:00 pm		Break
3:30 pm	557	Partitioning of metabolizable energy for maintenance and growth by growing salmonids using a factorial approach: Species, size/age and diet effects. P.A. Azevedo*[1], S. Leeson[1], C.Y. Cho[1], S. Birkett[1], H. Bayley[2], and D.P. Bureau[1], [1]Department of Animal and Poultry Science, University of Guelph, Canada, [2]Department of Human Biology and Nutritional Sciences, University of Guelph, Canada.
3:45 pm	558	Effect of betaine on energy partitioning in growing pigs. J. van Milgen*, J. Noblet, and S. Dubois, INRA-UMRVP, St-Gilles, France.
4:00 pm	559	Quantitative relationship between mitochondrial bioenergetics and efficiency of animal growth. T.R. Lutz* and T.S. Stahly, Iowa State University, Ames.

4:15 pm	560	Effect of body weight and dietary protein level on heat production and energy utilization in growing pigs. J. Noblet*[1], P. Dimon[1], J. van Milgen[1], S. Dubois[1], L. Le Bellego[2], and M. Rademacher[3], [1]INRA, UMRVP, Saint Gilles, France, [2]Ajinomoto Eurolysine, Paris, France, [3]Degussa AG, Hanau, Germany.
4:30 pm		What have we learned? L.L. Southern, Louisiana State University.

Physiology

Uterus, Gamete, Embryo, and Growth

Chair: Gary Williams, Texas A&M Beeville

Room: Tucson 36

Time	Abstract Number	
1:00 pm	561	Sheep oviductal secretory glycoprotein and mRNA expression in prepubertal ewe lambs, and mature ewes after natural or progestin-synchronized estrus. J. G. Berardinelli* and D. Burgess, Montana State University, Bozeman.
1:15 pm	562	Mifepristone treatment on d 2 of pregnancy decreases uterine capacity in swine. J. L. Vallet* and R. K. Christenson, USDA, ARS, US Meat Animal Research Center.
1:30 pm	563	Molecular cloning and endometrial expression of porcine high density lipoprotein receptor SR-BI during the estrous cycle and early pregnancy. J.G. Kim*, J.L. Vallet, and R.K. Christenson, [1]USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE.
1:45 pm	564	Timing of dinitrophenol treatment during in vitro culture of bovine embryos. J.F. De La Torre-Sanchez* and G.E. Seidel, Jr., Colorado State University, Fort Collins, CO USA.
2:00 pm	565	Two-step vitrification and in-straw dilution of in vitro produced bovine embryos. L. F. Campos-Chillon*[1], J. F. de la Torre-Sanchez[2], and G. E. Seidel, Jr.[2], [1]College of Veterinary Medicine and Biomedical Sciences, Colorado State University, [2]Animal Reproduction and Biotechnology Laboratory, Colorado State University.
2:15 pm	566	The size of the morula and the timing of blastocyst formation influence the resistance of bovine blastocysts to pro-oxidant agents. J.M. Feugang *, I. Donnay, F. Dessy, and A.-S. Lequarre, Veterinary Unit, Catholic University of Louvain, 1348 Louvain-la-Neuve.
2:30 pm	567	Physiology of pregnancy and calving characteristics of Holstein cows bred to Holstein or Gir (*Bos indicus}*) sires. S. J. Schmidt*, B. S. Gandy, F. Hoholm, K. Graves, J. White, and S. T. Willard, Mississippi State University, Mississippi State, MS.
2:45 pm	568	Marked physical changes occur in yearling beef bulls during natural breeding. R. W. Ellis*[1], G. P. Rupp[1], P. J. Chenoweth[2], L. V. Cundiff[3], and D. D. Lunstra[3], [1]Great Plains Veterinary Educational Center, University of Nebraska, Clay Center, NE, [2]Kansas State University, Manhattan, KS, [3]USDA, ARS, US Meat Animal Research Center, Clay Center, NE.
3:00 pm		Break
3:30 pm	569	Semen and libido characteristics in boars given repeated injections of Lutalyse. M.J. Estienne* and A.F. Harper, Virginia Polytechnic Institute and State University, Blacksburg, VA.
3:45 pm	570	Breed effects on immune and endocrine profiles in growing pigs. M. A. Sutherland*, M. Ellis, and J. L. Salak-Johnson, University of Illinois, Urbana-Champaign, IL.
4:00 pm	571	Assessments of velvet antler growth rates using digital infrared thermography in red deer stags. S. Bowers*[1], S. Gandy[1], D. Neuendorff[2], T. Dickerson[1], S. Mozisek[2], R. Randel[2], and S. Willard[1], [1]Mississippi State University, Mississippi State, MS, [2]Texas A&M University - TAES, Overton, TX.
4:15 pm	572	Relationship between placental characteristics, delivery parameters and placental retention. A.L. Riddle*[1], H.D. Tyler[1], and J.D. Quigley[2], [1]Iowa State University, Ames, IA, [2]APC Company, Inc., Ames, IA.
4:30 pm	573	The effect of using of Ovsynch with supplemental GnRH on pregnancy rates of Holstein heifers in the tropics. R.W. Godfrey, R.E. Dodson*, A.J. Weis, and O.T. Isles, University of the Virgin Islands, Agricultural Experiment Station, St. Croix.

4:45 pm	574	The effect of hair coat color on rectal and surface temperatures of Holstein heifers in the tropics. R.W. Godfrey, O.T. Isles*, A.J. Weis, and R.E. Dodson, University of the Virgin Islands, Agricultural Experiment Station, St. Croix.

Ruminant Nutrition

Fats and Fatty Acids

Chair: Clay Zimmerman, Blue Seal Feeds

Sponsors: Alltech, Inc. and Purina Mills, LLC

Room: Yuma 23-24

Time	Abstract Number	
1:00 pm	575	(Invited) Conjugated linoleic acid (CLA) and milk production. M.A. McGuire*[1] and J.M. Griinari[2], [1]University of Idaho, Moscow, [2]University of Helsinki, Finland.
1:30 pm	576	(Invited) The challenges of supplying omega fatty acids to body tissues of cattle to meet critical metabolic and physiologic functions. T. C. Jenkins* and A. AbuGhazaleh, Clemson University, Clemson, SC 29634.
2:00 pm	577	Increasing milk fat *cis}*-9, *trans}*-11 conjugated linoleic acid content in pasture-fed cows. J.K. Kay*[1], J.R. Roche[1], N.A. Thomson[1], J.M. Griinari[2], and K.J. Shingfield[3], [1]Dexcel, New Zealand, [2]University of Reading, UK, [3]University of Helsinki, Finland.
2:15 pm	578	Dose response to supplementation with calcium salts of conjugated linoleic acid during the transition period and early lactation. E. Castaneda-Gutierrez*, T. R. Overton, and D. E. Bauman, Cornell University, Ithaca N.Y.
2:30 pm	579	Comparison of the effect of different rumen protected forms of CLA on milk fat synthesis. M. J. de Veth*[1], J. W. McFadden[1], J. M. Griinari[2], S. K. Gulati[3], N. D. Luchini[4], and D. E. Bauman[1], [1]Cornell University, Ithaca, NY, [2]Clanet Ltd, Espoo, Finland, [3]University of Sydney, Rumentek (Pty) Ltd, Australia, [4]Bioproducts Inc., Fairlawn, OH.
2:45 pm	580	Lactational response of cows to different levels of ruminally protected conjugated linoleic acids. R. Gervais*[1], R. Spratt[2], and P.Y. Chouinard[1], [1]Universite Laval, [2]Agribrands Purina Canada.
3:00 pm		Break
3:30 pm	581	Synthesis of Trans fatty acids and isomers of conjugated linoleic acid in the rumen of cows fed grass silage based diets supplemented with rapeseed, soybean and linseed oil. K. J. Shingfield*[1], S. Ahvenjärvi[2], V. Toivonen[2], P. Huhtanen[2], and J. M. Griinari[3], [1]School of Food Biosciences, The University of Reading, UK, [2]Animal Production Research, MTT Agrifood Research Finland, Jokioinen, Finland, [3]Department of Animal Science, University of Helsinki, Finland.
3:45 pm	582	Withdrawn
4:00 pm	583	Effect of alfalfa forage preservation method and particle length on performance of dairy cows fed corn silage-based diets and tallow. S. G. Onetti, S. M. Reynal, and R. R. Grummer*, UW - Madison.
4:15 pm	584	Effects of feeding raw, micronized and extruded flaxseed on rumen fermentation parameters and nutrient utilization by lactating dairy cows. Christian Gonthier*[1], Arif F. Mustafa[1], Daniel R. Ouellet[2], Robert Berthiaume[2], and Helene V. Petit[2], [1]Macdonald Campus of McGill University, [2]Dairy and Swine Research and Development Centre, Agriculture and Agri-Food Canada.
4:30 pm	585	Effects of rumen-inert fat saturation on feed intake, milk production, and plasma metabolites in lactating dairy cows. K. J. Harvatine* and M. S. Allen, Michigan State University, East Lansing.
4:45 pm	586	Interrelationships of hepatic palmitate and propionate metabolism, liver composition, blood metabolites, and cow performance. M. S. Piepenbrink* and T. R. Overton, Cornell University, Ithaca, NY.

Ruminant Nutrition

Additives, Enzymes and Feedstuff Analysis

Chair: H. Gale Bateman, Louisiana State University

Room: Tucson 38

Time	Abstract Number	
1:00 pm	587	Effects of cinnamaldehyde, garlic and monensin on nitrogen metabolism and fermentation profile in continuous culture. M. Busquet[1], S. Calsamiglia*[1], A. Ferret[1], and C Kamel[2], [1]Universidad Autonoma de Barcelona, Spain, [2]University of Leeds, UK.
1:15 pm	588	Malate in concentrate improves growth performance and digestibility of intensively fattened lambs. C. Flores[1], G. Caja*[1], R. Romero[1], and J. Mesia[2], [1]Universitat Autonoma de Barcelona, [2]Norel & Nature Nutrition, Spain.
1:30 pm	589	Effects of fibrolytic enzyme supplementation on the performance of growing cattle fed bermudagrass hay and molasses-based liquid supplements. B. R. Austin*, D. O. Alkire, T. A. Thrift, and W. E. Kunkle, University of Florida, Gainesville, FL.
1:45 pm	590	Effect of fibrolytic enzyme preparations containing esterase, cellulase, and endogalacturonase activity on the digestibility of mature, tropical grass hays. N. Krueger*, D. Dean, W. Krueger, C. Staples, and A. Adesogan, [1]University of Florida, Gainesville, FL USA.
2:00 pm	591	Effect of fibrolytic enzyme preparations containing high esterase activity on the digestibility of mature, tropical grass hays. N. Krueger*, D. Dean, W. Krueger, C. Staples, and A. Adesogan, University of Florida. Gainesville, FL USA.
2:15 pm	592	The potential for enhancing the digestion of C4 grass hays with proprietary fibrolytic enzymes. D Dean*, N Krueger, L Sollemberger, and A Adesogan, [1]University of Florida, Gainesville, FL/USA.
2:30 pm	593	Effects of dietary sodium bicarbonate and sodium chloride on ruminal pH and digesta characteristics in dairy cows. C. S. Mooney* and M. S. Allen, Michigan State University, East Lansing.
2:45 pm	594	Feeding fibrolytic enzymes to enhance DM and nutrient digestion, and milk production by dairy cows. P. Mandebvu*[1], C. S. Ballard[1], M. P. Carter[1], K. W. Cotanch[1], C. J. Sniffen[1], T. Sato[2], K. Uchida[2], A. Teo[3], U. D. Nhan[3], and T. H. Meng[3], [1]W. H. Miner Agricultural Research Institute, Chazy, NY, [2]ZENNOH National Federation of Agricultural Co-operative Associations, Tokyo, Japan, [3]Kemin Industries (Asia), Pte, Ltd, Singapore.
3:00 pm		Break
3:30 pm	595	Effect of pH and enzyme supplementation to a total mixed ration on microbial fermentation in continuous culture. Dario Colombatto*[1,2], Gonzalo Hervas[3], Wen Yang[1], and Karen Beauchemin[1], [1]Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada, [2]Facultad de Agronomia, Universidad de Buenos Aires, Argentina, [3]Estacion Agricola Experimental (CSIC), Leon, Spain.
3:45 pm	596	Effect of the sequence of fat and antibiotic-ionophores on ruminal fermentation and microbial lipids. M.G. Daves* and V. Fellner, North Carolina State University, Raleigh, NC.
4:00 pm	597	Comparison of different starch analysis methods for feedstuffs. K.-H. Suedekum*[1], M.B. Hall[2], and M. Paschke-Beese[1], [1]University of Kiel, Germany, [2]University of Florida, Gainesville.
4:15 pm	598	A novel technique to assess particle distribution of rations and forages using digital imaging. A. Bach*[1], A. Anglada[1], X. Puigvert[2], and Ll. Bosch[2], [1]ICREA-IRTA Dairy Systems, Spain, [2]Universitat de Girona, Spain.
4:30 pm	599	Comparison of three systems to estimate the fraction of non-fiber carbohydrate, and its ruminal digestibility, in common feedstuffs. Anne Offner* and Daniel Sauvant, INA P-G INRA, Paris, France.
4:45 pm	600	Near infrared reflectance spectroscopy prediction of digestion rates for cereal grains. C Lanzas* and A.N. Pell, Cornell University, Ithaca, NY.

Thursday, June 26, 2003
Schedule of Events

8 am – 10 am	Registration Open	Convention Center, Lobby 2
8 am – 12 pm	DMI Dairy Research Summit	Hyatt, Phoenix Ballroom
8 am – 12 pm	Scientific Sessions and Symposia	Convention Center

Thursday, June 26, 2003
Symposia and Oral Sessions

SYMPOSIUM

Contemporary Issues

Designing Animal Experiments for Power

Chair: Marjorie A. Faust, ABS Global, Inc.

Sponsors: Elanco Animal Health and American Society of Animal Science Foundation

Room: Tucson 36

Time	Abstract Number	
8:00 am		Introduction. Bill Price.
8:15 am	601	(Invited) Designing trials to test the bio-equivalency of treatments for animal performance. Ian McMillan*[1], [1]University of Guelph, Animal and Poultry Science.
8:45 am	602	(Invited) The power of tests for feed experiments with poultry. W.B. Roush*[1] and P. Tozer[2], [1]USDA-ARS Mississippi State, MS, [2]Penn State University, University Park, PA.
9:15 am	603	(Invited) How many pigs? Statistical power considerations in swine nutrition experiments. D. K. Aaron* and V. W. Hays, University of Kentucky, Lexington.
9:45 am		Break
10:15 am	604	(Invited) Experimental design in companion animal and equine nutrition: issues and insights. C. M. Grieshop* and E. A. Flickinger, University of Illinois.
10:45 am	605	(Invited) Design of experiments for bioequivalence testing of biotechnology derived crops as feeds for dairy cattle. R. J. Tempelman*[1] and M. A. Faust[2], [1]Michigan State University, [2]Iowa State University.
11:15 am	680	Power of the test considerations for beef cattle experiments. C. R. Richardson*[1], G. A. Nunnery[1], D. B. Wester[1], N. A. Cole[2], M. L. Galyean[1], [1]Texas Tech University, Lubbock, TX, [2]USDA-ARS-CPRL, Bushland, TX.
11:15 am		Discussion

SYMPOSIUM

Lactation Biology

Altering the Lactation Cycle in Dairy Cows

Chair: Suzanne Sechen, FDA's Center for Veterinary Medicine

Sponsors: Monsanto and Pfizer Animal Health

Room: Yuma 21-22

Time	Abstract Number	
8:00 am	606	(Invited) Why re-evaluate length of dry period? R.R. Grummer* and R.R. Rastani, University of Wisconsin, Madison.
8:30 am	607	(Invited) Effect of POSILAC® (bST) and dry period management strategy on milk yield. E.L. Annen*[1], M.A. McGuire[2], J.L. Vicini[3], and R.J. Collier[1], [1]Univ. of Arizona, Tucson, [2]Univ. of Idaho, Moscow, [3]Monsanto Co., St. Louis, MO.
9:15 am	608	(Invited) Effects of varying dry period length and prepartum diet on metabolic profiles and lactation of periparturient dairy cattle. R.R. Rastani*, R.R. Grummer, S.J. Bertics, A. Gümen, M.C. Wiltbank, D.G. Mashek, and M.C. Rich, University of Wisconsin, Madison.
9:45 am	609	Milk production from Holstein half-udders after concurrent 30 and 70d dry periods. M.S. Gulay*, K.C. Bachman, M.J. Hayen, and D.R. Bray, University of Florida, Gainesville.
10:00 am		Discussion and Break
10:30 am	610	(Invited) Effect of delayed breeding and POSILAC® on milk production and reproduction of dairy cows during 2 lactations. M. McGrath*[1], S. Bettis[1], C. Bilby[1], R. Hintz[1], E. Plunkett[1], J. Vicini[1], D. Armstrong[2], J. Fetrow[3], D. Galton[4], and J. Shearer[5], [1]Monsanto, St. Louis, MO, [2]Univ. of Arizona, Tucson, [3]Univ. of Minnesota, St. Paul, [4]Cornell Univ., Ithaca, NY, [5]Univ. of Florida, Gainesville.
11:00 am	611	(Invited) Induced lactation: the need for enhanced mammary development and differentiation. B.A. Crooker*[1], R.J. Collier[2], J.L. Vicini[3], M.F. McGrath [3], and W.J. Weber[1], [1]University of Minnesota, St. Paul, [2]University of Arizona, Tucson, [3]Monsanto Agricultural Group, St. Louis, MO.
11:30 am		Discussion

SYMPOSIUM

Nonruminant Nutrition

Energy Density of Pig Diets

Chair: J.E. Pettigrew, University of Illinois

Sponsors: Fats and Proteins Research Foundation, Inc. and EAAP

Room: Tucson 40-41

Time	Abstract Number	
8:00 am		(Invited) The core issue: The biological principles. Roger Campbell, United Feeds/Ausgene, Gridley, IL.
8:30 am		(Invited) How to measure: An overview of energy systems (DE, ME, NE, EE, etc.). John Patience, Prairie Swine Centre, Inc., Saskatoon, SK, Canada.
9:00 am	612	(Invited) Energy density of pig diets: effect of energy evaluation system, technology and pig body weight. J. Noblet* and J. van Milgen, INRA, UMRVP, Saint Gilles, France.
9:30 am		Break
10:00 am		(Invited) Practical aspects: Dietary energy density and finishing pig performance & profits. Mike Tokach, Kansas State University, Manhattan, KS.

10:30 am		(Invited) Practical aspects: Dietary fat effects on pork quality. Floyd McKeith, University of Illinois, Urbana, IL.
11:00 am		(Invited) Practical aspects: Dietary fiber effects on disease resistance. John Pluske, Murdoch University, Murdoch, WA, Australia.

Animal Behavior & Well Being

Production Challenges

Chair: Ed Pajor, Purdue University

Room: Tucson 43

Time	Abstract Number	
8:00 am	613	Is iodide responsible for the heat-relief effects of *Ascophyllum nodosum*? P. A. Eichen*, M. J. Leonard[1], M. A. Kozma[1], B. M. Kronk1, L. E. McVicker[1], D. E. Spiers[1], and D. P. Colling[1], [1]University of Missouri, Columbia, MO, [2]Acadian AgriTech, Kansas City, MO.
8:15 am	614	Monitoring fescue toxicosis in a pasture environment and evaluating the effect of prior treatment with *Ascophyllum nodosum}*. D.E. Spiers*[1], L.E. McVicker[1], J.E. Williams[1], P.A. Eichen[1], L. Thompson[1], G. Rottinghaus[1], and D.P. Colling[2], [1]University of Missouri, Columbia, MO, [2]Acadian AgriTech, Kansas City, MO.
8:30 am	615	Effect of social regrouping and relocation on the hypothalamic-pituitary-adrenal axis and immune function of finishing beef steers. S. Gupta*[1,2], B. Earley[1], S. T. L. Ting[1,2], and M. A. Crowe[2], [1]Teagasc, Grange Research Centre, Dunsany, Co. Meath, Ireland, [2]Faculty of Veterinary Medicine, University College Dublin, Belfield,Dublin 4, Ireland.
8:45 am	616	Restaurant audits have maintained high standards of stunning and handling at beef slaughter plants. T Grandin*[1], [1]Colorado State University, Fort Collins, CO USA.
9:00 am	617	The pharmacological effect of small doses of naloxone on sexual exhaustion in white New Zealand male rabbits. V.O. Fuentes*, C. Villagran, R. Orozco, and J.J. Alvarez, Centro universitario de los Altos, Universidad de Guadalajara.
9:15 am	618	The pharmacological effect of implanted and injected naloxone on plasma testosterone levels in bucks during the breeding and non-breeding seasons. V.O. Fuentes*, J.G. Ruiz, P.I. Fuentes, and R. Sanchez-Gutierrez, [1]Centro universitario de los Altos, Universidad de Guadalajara.
9:30 am		Break

Animal Behavior & Well Being

Housing Environments

Chair: Don Lay, USDA-ARS

Room: Tucson 43

Time	Abstract Number	
	619	See Animal Behavior & Well Being, Wednesday, 1:50 pm (p 80)
10:00 am	620	Behavioral and physical variation among cloned litters of pigs. Gregory S. Archer*[1], T.H. Friend[1], J. Piedrahita[2], C.H. Nevill[1], and S. Walker[2], [1]Department of Animal Science, Texas A&M University, College Station, [2]College of Veterinary Medicine, Texas A&M University, College Station.
10:30 am	621	Effect of stressors on serum concentration of acute phase proteins and performance in pigs. C. Pineiro*[1], E. Lorenzo[1], J. Morales[1], E. Gomez[2], and G.G. Mateos[3], [1]PigCHAMP Pro Europa S.A., Spain, [2]CPP Hontalbilla, JCyL, Spain, [3]UPM, Spain.
10:45 am	622	Effects of pre-natal stress on immunological response and weight gain during the grower finisher period. M.J. Toscano*[1], K.A. Scott[1], H.K. Smith[1], J.E. Cunnick [2], M.J. Daniels[3], and D.C. Lay, Jr.[1], [1]USDA-ARS-MWA-LBRU, [2]Iowa State University, [3]University of Florida.

11:00 am	623	Evaluation of drop versus trickle feeding for crated and penned pregnant gilts: productivity measures. John McGlone*[1], Julie Morrow[2], and Jerry Smith[1], [1]Texas Tech University, [2]USDA-ARS.
11:15 am	624	The effects of dietary sodium bicarbonate on abnormal behavior and heart rate in sows. J. N. Marchant-Forde*[1] and E. A. Pajor[2], [1]USDA-ARS, [2]Purdue University.
11:30 am	625	Effect of housing systems on implantation in sows. Leena Anil*, Samuel Baidoo, Roger Walker, John Deen, Rebecca Morrison, and Sukumaran Anil, University of Minnesota, Saint Paul, Minnesota.
11:45 am	626	Swine Welfare Assurance Program. A. K. Johnson*[1], E. A. Lautner[1], and P. L. Sundberg[1], [1]National Pork Board.
12:00 pm	627	Factors affecting cow preference for stalls with different freestall bases in pens with different stocking rates. W. K. Fulwider*[1] and R. W. Palmer[1], [1]University of Wisconsin-Madison.

Breeding & Genetics

Molecular Genetics and Analyses of Microarray Data

Chair: Milt Thomas, New Mexico State University

Room: Tucson 42

Time	Abstract Number	
8:00 am	628	Analysis of gene expression patterns in the cattle digestive system. S. L. Rodriguez-Zas*[1], M. R. Band[2], R. E. Everts[1], B. R. Southey[1], Z. L. Liu[1], and H. A. Lewin[1,2], [1]University of Illinois at Urbana-Champaign, Urbana, IL, [2]W. M. Keck Center for Comparative and Functional Genomics, University of Illinois, Urbana, IL.
8:15 am	629	Analysis of microarray data: are you better off by replicating genes or arrays?. R. Rekaya*[1], [1]The University of Georgia.
8:30 am	630	Normalization, replication, and significance tests in cDNA microarray experiments. G. J. M. Rosa*, R. J. Tempelman, S. Suchyta, S. A. Madsen, J. L. Burton, and P. M. Coussens, Michigan State University, East Lansing, MI.
8:45 am	631	Accounting for genotyping errors in QTL analyses. G. J. M. Rosa*, Michigan State University, East Lansing, MI.
9:00 am	632	Power to detect loci linked to common diseases of dairy cattle using identical-by-descent based methods of half-sib pair linkage analysis. Roger L. Vallejo*[1], [1]Department of Dairy and Animal Science, Penn State University.
9:15 am	633	Combining breed and family information to detect QTL in crosses of outbred populations. S.K. Musani* and G.B. Jansen, University of Guelph, Guelph, ON Canada.
9:30 am		Break
9:45 am	634	Positional candidate genes for reproductive traits in a Meishan-White Composite resource population on pig chromosome 10. D. Nonneman* and G.A. Rohrer, USDA-ARS, U.S. Meat Animal Research Center, Clay Center, Nebraska.
10:00 am	635	QTL mapping in extended halfsib families. N. Vukasinovic*[1] and M.L. Martinez[2], [1]Monsanto Animal Genomics, [2]Embrapa - CNPGL.
10:15 am	636	Comparison of statistical methods used to analyze marker data from daughter design with selective genotyping. Yule Pan[1,2], Nicolas Caron[1], Gerald B. Jansen[3], Edward B. Burnside[1,2], and Jacques P. Chesnais[1,2], [1]The Semex Alliance, Saint-Hyacinthe, Quebec, Canada, [2]L'Alliance Boviteq, Saint-Hyacinthe, Quebec, Canada, [3]University of Guelph, Guelph, Ontario, Canada.
10:30 am	637	Superiority of QTL-assisted selection in dairy cattle populations with nucleus herds. G. A. Abdel-Azim*[1] and A. E. Freeman[1], [1]Iowa State University.

10:45 am	638	Detection of QTL affecting milk production and conformation traits on six chromosomes in Holstein cattle. J.A.B. Robinson*[1], G. Vander Voort[1], G.B. Jansen[1], J.C. Byatt[2], L.A. Messer[2], F.X. Du[2], and M.M. Lohuis[2], [1]Centre for Genetic Improvement of Livestock, [2]Monsanto Company.
11:00 am	639	Putative quantitative trait loci affecting perinatal survival in eleven Holstein families. P. J. Berger*[1], J. Koltes[1], M. H. Healey[1], M. S. Ashwell[2], R. D. Shanks[3], H. Schlesser[3], and H. A. Lewin[3], [1]Iowa State University, Ames, IA, [2]USDA-ARS-GEML, Beltsville, MD, [3]University of Illinois, Urbana, IL.
11:15 am	640	Genome scan of BTA1 for QTL affecting weaning weight, yearling weight and postweaning growth in Japanese Black cattle. A. E. O. Malau-Aduli*[1], T. Niibayashi[1], T. Kojima[1], K. Oshima[1], Y. Mizoguchi[2], Y. Sugimoto[2], and M. Komatsu[1], [1]Dept of Livestock & Grassland Science, National Agric Res Center for W/Region, Oda, Shimane, Japan., [2]Shirakawa Institute of Animal Genetics, Fukushima, Japan.
11:30 am	641	Different images of putative quantitative trait loci on BTA6 for correlated milk traits. G. Freyer*[1], P. Sorensen[2], C. Kuehn[1], and R. Weikard[1], [1]Research Institute for the Biology of Farm Animals, [2]Danish Institute for Agricultural Science.

Extension Education

Extension Education and Evaluation Programs

Co-Chairs: Joe C. Paschal, Texas A&M University, and Richard J. Norell, University of Idaho

Room: Tucson 37

Time	Abstract Number	
8:00 am	642	Using the internet for exchange of dairy genetic evaluations and research information for the dairy industry. A. H. Sanders*, F. A. Ross, and H. D. Norman, Animal Improvement Programs Laboratory, Agricultural Research Service, USDA.
8:15 am	643	Effectiveness of presenting a national beef breeding management educational program via the internet. K. D. Bullock*[1], D. R. Strohbehn[2], E. J. Pollak[3], B. L. Golden[4], J. K. Bertrand[5], and D. E. Wilson[2], [1]University of Kentucky, Lexington, Kentucky, [2]Iowa State University, Aimes, Iowa, [3]Cornell University, Ithica, New York, [4]Colorado State University, Fort Collins, Colorado, [5]University of Georgia, Athens, Georgia.
8:30 am	644	Use of a Dairy Whole Farm Nutrient Balance Education Tool (Dairy WFNBET) to teach dairy producers and their advisers about nutrient management concepts at the whole-farm level. J. H. Harrison*[1], T. Nennich[1], J. Gillies[2], and C. A. Rotz[3], [1]Washington State University, [2]NRCS, [3]USDA/ARS, University Park, PA.
8:45 am	645	Development of an educational program to promote the performance of dairy farms in North-East of Iran. Abasali Naserian and Toktam Vafa*, Ferdowsi university of Mashhad, khorasan, Iran.
9:00 am	646	The south Texas "Cow Camp'' program. R. L. Stanko*[1], J. Ford[2], F. Escobedo[2], R. Mercado[2], B. Wymore[2], J. McManus[2], J. Lopez[2], R. Garza[2], H. Buehring[2], and J. C. Paschal[3], [1]Texas A&M University-Kingsville, Kingsville, TX, [2]Texas A&M University CEA, South Texas, [3]Texas A&M University Cooperative Extension Service.
9:15 am	647	A Spanish language milker's school for Idaho dairy employees. K.S. Jensen*, J.C. Dalton, W. Cook, D. Falk, and R. Norell, University of Idaho Cooperative Extension, Caldwell, ID.
9:30 am		Break
10:00 am	648	A novel method to aid in determining focus of 4-H youth programming. J. A. Nadeau*[1], E. A. McCabe-Alger[2], K. Chameroy[1], and T. Hoagland[1], [1]University of Connecticut, Dept. of Animal Science, [2]University of Connecticut, Dept. of Extension.
10:15 am	649	Arkansas 4-H dairy and meat goat conferences. J.A. Pennington*[1], [1]University of Arkansas Cooperative Extension Service, Little Rock.
10:30 am	650	Reducing catastrophic injury through helmet safety awareness. J. A. Nadeau[1], E. A. McCabe-Alger*[2], and A. Bialczak[2], [1]University of Connecticut, Dept. of Animal Science, [2]University of Connecticut, Dept. of Extension.
10:45 am	651	Fish farmer certification: In-depth classes for producers of catfish or freshwater prawns. G. J. Burtle*, University of Georgia, Tifton, GA/USA.

11:00 am	652	Comparison of IgG concentrations and total protein concentration in the blood plasma of newborn dairy calves. D. T. Vines*, R. Rodgers, A. B. Bodine, and W. C. Bridges, Clemson University, Clemson, SC, USA.

Growth & Development

CLA's, Leptin and Mammary Development

Chair: Mike Akers, Virginia Tech

Room: Yuma 23-24

Time	Abstract Number	
8:00 am	681	Effects of conjugated linoleic acid (CLA) and trans- C$_{18:1}$ fatty acids (TFA) on energetic metabolites and subcutaneous adipose tissue fatty acid composition. L. H. Baumgard*[1], S. R. Sanders[1], C. Davis[1], B. A. Corl[2], J. W. Perfield, II[2], D. E. Bauman[2], and G. C. Duff[1], [1]The University of Arizona, Tucson, [2]Cornell University, Ithaca NY.
8:15 am	682	Effect of conjugated linoleic acid on DNA fragmentation in cultured adipocytes. K. M. Hargrave* and J. L. Miner, University of Nebraska.
8:30 am	683	IGF-I infusion alters gene expression profile of prepubertal bovine mammary parenchyma. B. E. Etchebarne*, L.F.P. Silva, G.J.M. Rosa, P. M. Coussens, M. S. Weber Nielsen, and M. J. VandeHaar, Michigan State University.
8:45 am	684	Leptin intramammary infusion alters the gene expression profile of prepubertal bovine mammary parenchyma. B. E. Etchebarne*, L.F.P. Silva[1], G.J.M. Rosa, P. M. Coussens, M. S. Weber Nielsen, and M. J. VandeHaar, Michigan State University.
9:00 am	685	Intramammary infusion of leptin decreases proliferation of mammary epithelial cells in prepubertal heifers. L.F.P. Silva*, J. S. Liesman, M. S. Weber Nielsen, and M. J. VandeHaar, Michigan State University.
9:15 am	686	Compensatory growth during late gestation and its effects on metabolic status and health of transition heifers. M. S. Laubach*, D. B. Carlson, W. L. Keller, and C. S. Park, North Dakota State University, Fargo ND/USA.

Production, Management, & the Environment

Chair: Michael T. Socha, Zinpro Corporation

Room: Tucson 39

Time	Abstract Number	
8:00 am	653	A system to characterize feeding behavior of dairy cows and feeding behavior of periparturient and mid-lactation cows. M. A. DeGroot* and P. D. French, Oregon State University, Corvallis.
8:15 am	654	Effect of supplementing intensely grazed late gestation and early lactation dairy cows with chromium-L-methionine. M. A. Bryan[1], M. T. Socha*[2], and D. J. Tomlinson[2], [1]Central Southland Veterinary Services Limited, Winton, Southland, New Zealand, [2]Zinpro Corporation, Eden Prairie, Minnesota, USA.
8:30 am	655	The buffering activity of a potassium clinoptilolite zeolite in steers fed a high concentrate steam flaked grain- corn silage diets. K. S. Eng*[1], R. Bectel[2], and D. P. Hutcheson[3], [1]Eng, Inc., San Antonio, Texas, USA, [2]Advance Agricultural Testing, Baden, Ont. Canada, [3]Animal-Agricultural Consulting, Inc., Amarillo, Texas, USA.
8:45 am	656	Effect of prepartum dietary cation-anion difference on subsequent milk production and plasma metabolites in dairy cattle. S. B. Puntenney, K. N. Higgs, M. A. DeGroot, and P. D. French, Oregon State University, Corvallis.

9:00 am	657	Effect of grazing growth rate on subsequent feedlot and carcass traits in cattle. J. J. Cleere*[1], A. D. Herring[2], J. W. Holloway[3], C. R. Long[1], H. Lippke[3], M. F. Miller[4], W. E. Pinchak[5], F. M. Rouquette[1], and B. G. Warrington[3], [1]Texas Agricultural Experiment Station, Overton, [2]Texas A&M University, College Station, [3]Texas Agricultural Experiment Station, Uvalde, [4]Texas Tech University, Lubbock, [5]Texas Agricultural Experiment Station, Vernon.
9:15 am	661	Performance of market cows consuming hay and various levels of rice bran. D.W. Sanson*[1], S.M. DeRouen[2], and D.H. Foster[3], [1]LSU Ag. Center, Rosepine Reserch Station, Rosepine, [2]LSU Ag. Center, Hill Farm Reseach Station, Homer, [3]U.S. Market News Service, Baton Rouge.
9:30 am		Break
10:00 am	662	Effects of calving date and weaning age on cow and calf production in the Northern Great Plains. E. E. Grings*, R. E. Short, and R. K. Heitschmidt, USDA-ARS, Fort Keogh LARRL, Miles City, MT.
10:15 am	660	Corn silage and haylage variability within bunker silos. W. C. Stone*, L. E. Chase, and T. L. Batchelder, Cornell University. Ithaca, NY.
10:30 am	658	Use of FEB-200™ to increase productivity of cattle grazing fescue pasture. D. G. Ely*[1], D. K. Aaron[1], J. Wyles[1], and V. Akay[2], [1]University of Kentucky, Lexington, KY, [2]Alltech, Inc., Nicholasville, KY.
10:45 am	659	Cow tympanic temperature response to supplementation with FEB-200™. D. K. Aaron*[1], D. G. Ely[1], J. Wyles[1], and V. Akay[2], [1]University of Kentucky, Lexington, KY, [2]Alltech, Inc., Nicholasville, KY.
11:00 am	663	The effect of early calf weaning on performance and measures of stress during the feedlot receiving period. J. D. Arthington*[1] and J. W. Spears[2], [1]University of Florida - IFAS, Ona, [2]North Carolina State University.
11:15 am	664	Fertility and greenhouse gas emissions in dairy cows. P.C. Garnsworthy*, University of Nottingham, Loughborough, UK.
11:30 am	665	Early detection of a change in pregnancy rate with control charts. A. de Vries*, University of Florida.
11:45 am	666	Weaning at the onset of the breeding season fails to improve hind performance traits in Red Deer. R. D. Randel*, S. A. Mozisek, D. A. Neuendorff, and A. W. Lewis, Texas A&M University Agricultural Research & Extension Center, Overton, Texas USA.

Ruminant Nutrition

Metabolism - Modeling

Chair: David Bohnert, Oregon State University

Room: Tucson 38

Time	Abstract Number	
8:00 am	667	Evaluation of empirical equations to predict microbial efficiency. A.M. Mueller*, L.M. Lake, M.R. Ellersieck, and M.S. Kerley, University of Missouri-Columbia.
8:15 am	668	Effect of RDP and roughage level on microbial efficiency in continuous culture. C.A. Willis* and M.S. Kerley, Univeristy of Missouri-Columbia.
8:30 am	669	Measuring ruminal pool size and duodenal flow of protozoal N using real-time PCR. J. T. Sylvester*[1], S. K. R. Karnati[1], M. L. M. Lima[2], J. L. Firkins[1], Z. Yu, and M. Morrison[1], [1]The Ohio State University, Columbus, OH, USA, [2]Universidade Federal de Goi^^e1s, Goi^^e2nia, GO, Brasil.
8:45 am	670	Ruminal urease activity and fermentation traits as affected by urease-containing feed sources. Q. X. Meng*[1] and X. M. Min[1], China Agricultural University.
9:00 am	671	Nutritional improvement of rice husks. J. Vadiveloo[1], [1]MARA University of Technology.
9:15 am	672	Does level of dietary protein inclusion influence the ruminal degradability of the protein. L. R. Legleiter* and M. S. Kerley, Department of Animal Science, University of Missouri, Columbia.
9:30 am		Break

10:00 am	673	Dry matter and protein digestibility of alfalfa hay or silage in the rumen and intestine of steer measured by mobile nylon bag technique. E. Khafipour, M.D. Mesgaran*, and F.E. Shahroudi, Ferdowsi University of Mashhad,Mashhad,IRAN.
10:15 am	674	Rumen degradation and intestinal digestibility of crude protein and amino acids from tropical forages. Lidia Miranda*[1], Norberto Rodriguez[2], Roberto Sainz[3], Elzania Pereria[4], Miguel Gontijo Netto[5], Cristina Veloso[6], Augusto Queiroz[7], and Paulo Fernandes[8], [1]FEAD-Minas, Brazil, [2]Universidade Federal Minas Gerais, Brazil, [3]University of California- Davis, USA, [4]Universidade Estadual Oeste Parana, Brazil, [5]EMBRAPA Gado de Corte, Brazil.
10:30 am	675	A model of net removal of amino acids from blood and absorptive supplies by portal drained viscera in the cow. M. D. Hanigan*[1], C. K. Reynolds[2], F. E. Standaert[1], and J. D. Sutton[2], [1]Purina Mills, LLC, St. Louis, MO, [2]The University of Reading, Reading, UK.
10:45 am	676	A concordance coefficient to compare model predictions to observed data. N. R. St-Pierre*[1], The Ohio State University, Columbus.
	677	See Production, Management and the Environment, Monday, 11:45 am (p 40)
	678	See Production, Management, and the Environment, Tuesday, 11:45 am (p 61)
	679	See Animal Behavior & Well Being, Wednesday, 1:00 pm (p 80)
	680	See Contemporary Issue Symposium, Thursday, 11:15 am (p 90)
	681	See Growth & Development, Thursday, 8:00 am (p 95)
	682	See Growth & Development, Thursday, 8:15 am (p 95)
	683	See Growth & Development, Thursday, 8:30 am (p 95)
	684	See Growth & Development, Thursday, 8:45 am (p 95)
	685	See Growth & Development, Thursday, 9:00 am (p 95)
	686	See Growth & Development, Thursday, 9:15 am (p 95)

ADSA Student Affiliate Division

Monday, June 23, 2003

Undergraduate Paper Presentations

Chair: Kasimu Ingawa, DRMS, North Carolina State University

Room: Phoenix 13-15

Time	Abstract Number	
		Original Research/Independent Study Undergraduate Paper Presentations
11:00 am	687	Performance of Holstein and Holstein-Jersey crossbred heifer calves when using an intensive feeding program from birth to 84 days of age. E. E. Hammell*, M. L. Raeth-Knight, E. Ballinger, J. G. Linn, A. J. Seykora, and L. B. Hansen, University of Minnesota, St. Paul, MN, USA.
11:15 am	688	Effect of prepartum dietary carbohydrate source and monensin on postpartum immuune function. H. R. Springer*[1], G. A. Varga[1], M. M. Pickett[1], J. P. Goff[2], J. R. Stabel[2], and T. W. Cassidy[1], [1]The Pennsylvania State University, University Park, PA, [2]USDA-ARS, National Animal Disease Center, Ames, IA.
11:30 am	689	Growth and incidence of scouring in Holstien calves fed high fat (28\%) milk replacer (MR) compared to those fed lower fat (20\%) milk replacer. H. E. Carpenter*, J. S. Birney, and K. A. Koudele, Andrews University.
11:45 am	690	Evaluation of intensified liquid feeding programs for dairy calves. B. C. Pollard*, H. M. Dann, and J. K. Drackley, University of Illinois, Urbana, IL.
12:00 pm	691	The effect of cobalt supplementation in free choice salt on fiber digestion by cattle. L. J. Odens*, C. L. Steigert, J. J. Michal, K. A, Johnson, and R. L. Kincaid, [1]Washington State University, Pullman, WA.
12:15 pm	692	The costs and returns associated with select Wood Model lactation lengths. E. A. Vaaler* and G. L. Hadley, [1]University of Wisconsin-River Falls.
12:30 pm		Lunch
		Dairy Production Undergraduate Paper Presentations
1:30 pm	693	Effects of seasonality on the incidents of double ovulation in lactating Holstein cows. K. L. Genho*, R. W. Silcox, and D. L. Eggett, Brigham Young University.
1:45 pm	694	Are dogs "man's best friend" or "cattle's worst enemy?"'. Jessica Carrey*,, Louisiana State University.
2:00 pm	695	Crossbreeding in the dairy industry:A new era in dairy production. L. Brooke Core*, [1]University of Kentucky.
2:15 pm	696	Organic dairy production: Past present and future. W. T. Wencl* and S. C. Kelm, University of Wisconsin -River Falls.
2:30 pm	697	Effects of photoperiodic manipulation of dairy cattle. Gary Brauning III*,, Virginia Tech, Blacksburg, Virginia.
2:45 pm	698	Crossbreeding in the dairy industry: why now? J. D. Hushon*[1] and D. R. Olver[1], [1]Pennsylvania State University.
3:00 pm	699	Utilizing milk forward contracting as a risk management tool. Vance Ahlem*, California Polytechnic State University, San Luis Obispo.
3:15 pm		Break

Dairy Foods Undergraduate Paper Presentations

3:30 pm	700	Dairy case wars: "got milk?" vs. "not milk?". J.H. Krall*[1] and D.R. Olver[1], [1]Pennsylvania State University.
3:45 pm	701	Phage peptide inhibition of phage infection in cheese fermentation. J. Woodcock*,, University of Kentucky.
4:00 pm	702	Will the "real" milk please stand up? L. Ward,, Louisiana State University.
4:15 pm	703	Wazzu's famous variety. J. DeVoe*,, Washington State University.
4:30 pm	704	On-farm dairy processing: Opportunity for diversification of small farms. E. Moss*, Virginia Polytechnic Institute and State University.
4:45 pm	705	Innovative applications of membrane filtration. C. Machado*, Califonia Polytechnic State University, San Luis Obispo.

Notes

Poster Presentations

Monday, June 23, 2003

7:30 am – 9:30 am

Exhibit Hall D

Physiology

Control of the Estrous Cycle and Pregnancy

M1 Induced twinning by artificial insemination and embryo transfer fails to increase pregnancy rates but increases total fetus numbers in beef cows. G. C. Lamb*[1], R. C. Wasson[1], D. R. Brown[1], and C. R. Dahlen[2], [1]North Central Research and Outreach Center, University of Minnesota, Grand Rapids 55744, [2]North West Research and Outreach Center, University of Minnesota, Crookston, 56716.

M2 Effect of administration of GnRH on day 5 or day 5 and 11 post-insemination on pregnancy rates and serum progesterone concentrations in dairy cows during different seasons. A. E. Sweetman*, L. I. aNordbladh, and C. S. Whisnant, North Carolina State University, Raleigh, NC.

M3 Effect of treatment with hCG or GnRH on day 5 after AI on conception rates in lactating dairy cows during the summer. M. P. Beltran, J.L.M. Vasconcelos*, R. M. Santos, D.G.B. Demetrio, F. S. Wechsler, and A. B. Teixeira, FMVZ - UNESP - Botucatu.

M4 The effects of supplemental GnRH administration following Ovsynch on pregnancy rates of lactating dairy cattle during the summer and fall seasons. T. Dickerson*, K. Graves, J. White, S. Bowers, L. Evans, B. Gandy, S. Schmidt, and S. Willard, Mississippi State University.

M5 Effect of bovine somatotropin and breed of recipient on pregnancy rates following timed embryo transfer with in vitro produced embryos. J. Block*[1], R. L. Monson[2], J. J. Rutledge[2], R. M. Rivera[1], F. F. Paula-Lopes[1], O. M. Ocon[1], H. Rosson[1], Y. M. Al-Katanani[1], and P. J. Hansen[1], [1]University of Florida, Gainesville, FL, [2]University of Wisconsin-Madision, Madision, WI.

M6 Synchronization protocols in lactating crossbred Holstein-Gir cows. W. R. Garcia*, J.L.M. Vasconcelos, M. Meneghetti, E.P.B.C. Silva, A. H. Souza, and F. S. Wechsler, FMVZ - UNESP.

M7 Effect of incorporation of a low dose of estradiol cypionate (ECP) into a timed artificial insemination protocol on estrous behavior and conception rates in beef cattle. A. Ahmadzadeh*[1], D. G. Falk [1], R. Manzo[1], C. B. Sellars[1], and J. C. Dalton[2], [1]University of Idaho, Moscow, [2]Southwest Research and Extension Center, Caldwell, ID.

M8 Comparison of synchronization protocols for beef heifers using melegesterol acetate, prostaglandin, GNRH, and timed artificial insemination. K. E. Miller*, W. S. Mackay, J. C. Whittier, R. M. Enns, and R. K. Peel, Colorado State University Department of Animal Sciences.

M9 Melengestrol acetate (MGA) pretreatment or estradiol cypionate (ECP) in short duration synchronization systems to improve synchrony of estrus and ovulation in yearling beef heifers. S. K. Johnson* and J. S. Stevenson, Kansas State University.

M10 Synchronization protocol using CIDR/ECP/PGF2a/GnRH increase conception in lactating dairy cows. J.L.M. Vasconcelos*, W. R. Garcia, R. M. Santos, T.G.R. Amaral, and V. C. Bolzani, FMVZ - UNESP.

M11 Concentration of estradiol-17ß (E2) in milk of dairy cows; effect of injection of E2 cypionate. D. M. Henricks*, J. J. Owenby, and S. L. Gray, Clemson University, Clemson, SC/USA.

M12 Timed AI (TAI) with estradiol cypionate (ECP) or insemination at detected estrus in lactating dairy cows. R.L.A. Cerri*[1], K.N. Galvao[1], S.O. Juchem[1], R.C. Chebel[1], and J.E.P. Santos[1], [1]University of California Davis.

M13 Use of CIDR devices in a synchronization of ovulation protocol using GnRH and PGF_{2a} for first AI service and for resynchronizing return to estrus for second AI service in Holstein dairy heifers. H. Rivera*, H. Lopez, and P.M. Fricke, University of Wisconsin - Madison.

M14 Administration of estradiol cypionate (ECP) or GnRH after the end of a CIDR-based fixed-time AI program in dairy heifers. A. Garcia*, I.D. Peeler, O.A. Peralta, and R.L. Nebel, Virginia Polytechnic Institute and State University, Blacksburg.

M15 Effect of estradiol cypionate (ECP) and estradiol benzoate (EB) on synchronization of follicle wave and luteal function in dairy heifers. K.N. *[1], R.C. Chebel[1], A.C. Coscioni[1], J.E.P. Santos[1], R.L.A. Cerri[1], and S.O. Juchem[1], [1]University of California - Davis.

M16 Reproductive management of dairy heifers using synchronization of ovulation and fixed-time artificial insemination (TAI) or artificial insemination after removed tail chalk. H. Rivera*, H. Lopez, and P.M. Fricke, University of Wisconsin - Madison.

M17 Effect of a rapid resynchronization of nonpregnant cows with estradiol cypionate (ECP) and PGF2a on pregnancy rates (PR) and pregnancy loss (PL) in lactating dairy cows. R.C. Chebel*[1], R.L.A. Cerri[1], K.N. Galvao[1], S.O. Juchem[1], and J.E.P. Santos[1], [1]University of California - Davis.

M18 Use of intravaginal progesterone-releasing devices (CIDR) to resynchronize postpartum dairy cows previously synchronized for anestrus. S. McDougall[1], S. H. Loeffler*[2], and R Tiddy[3], [1]Animal Health Centre, P.O. Box 21, Morrinsville, New Zealand, [2]Riverside Veterinary Services, Ashburton, New Zealand 8300, [3]Pharmacia Animal Health, New Zealand.

M19 Selective re-synchronization of estrus and timed insemination in lactating dairy cows. J. A. Bartolome*[1], A. Sozzi[1], J. McHale[2], A. Arteche[1], F. Silvestre[1], P. Melendez[1], K. Swift[2], D. Kelbert[2], L. F. Archbald[1], and W. W. Thatcher[1], [1]University of Florida, Gainesville, Florida, USA, [2]NFH Inc., Bell, Florida, USA.

M20 Enhancing the efficiency of AI in dairy cattle through modified systematic breeding protocols utilizing heat detection and timed AI. J.C. Dalton[1], R. Manzo*[2], and A. Ahmadzadeh[2], [1]Caldwell Research and Extension Center, Caldwell, ID, [2]University of Idaho, Moscow, ID.

M21 Reproductive efficiency in cattle selected for ovulation and twinning rate. S. E. Echternkamp* and K. E. Gregory, USDA, ARS, RLH US Meat Animal Research Center.

M22 CIDR-based protocols for synchronizing bovine embryo transfer recipients without estrus detection. M. G. Colazo[1], J. P. Kastelic*[2], P. R. Whittaker[1], and R. J. Mapletoft[1], [1]WCVM, University of Saskatchewan, [2]Agriculture and Agri-Food Canada, Lethbridge, AB.

M23 Effect of a single treatment with estradiol cypionate (ECP) on dominant follicle (DF) and superovulatory response in dairy heifers. R. C. Chebel*, A. C. Coscioni, K. N. Galvao, R. L. A. Cerri, S. O. Juchem, and J. E. P. Santos, Veterinary Medicine Teaching and Research Center, University of California - Davis.

M24 Small follicle numbers in a selected population of Holstein cows: Association with superovulation response. S. B. Sherwood, R. W. Silcox*, S. Mertens, D. L. Eggett, and J. E. Knowles, Brigham Young University, Provo, UT.

M25 Adrenal production of cortisol and progesterone in lactating dairy cows with ovarian follicular cysts. T. B. Hatler*[1], A. S. McGinnis, and W. J. Silvia, University of Kentucky, Lexington, Kentucky.

M26 Effects of immunization of gilts against 17a-hydroxyprogesterone on follicular size distributions and follicular steroid synthesis. N. Post*[1], D. Kreider[1], K. Cole[1], M. Nihsen[1], and C. Maxwell, [1]University of Arkansas.

M27 A direct injection of vascular endothelial growth factor (VEGF) gene to the ovary promotes follicular development in miniature gilts. T. Shimizu, H. Sasada, and E. Sato*, Tohoku University, Sendai, Japan.

M28 Effects of the ovulatory response to the first GnRH injection on synchronization and pregnancy rates in lactating dairy cows. R. M. Santos*[1]J. L. M. Vasconcelos[2], M. Meneghetti[2], E. P. B. C. Silva[2], and F. S. Wechsler, [1]FCAV - Unesp, Jaboticabal, [2]FMVZ - Unesp, Botucatu.

M29 Effects of nutrition and progesterone therapy on ovulation, embryonic survival, and pregnancy rates in ewes. B. R. Faris*, J. E. Otero, T. T. Ross, A. S. Carmen, R. W. Montgomery, L. A. Terrazas, and D. M. Hallford, New Mexico State University, Las Cruces, NM/USA.

M30 Effects of feeding supplemental safflower seed with human chorionic gonadotropin following AI on pregnancy rates in heifers. R. S. Walker*[1], P. D. Burns[2], G. E. Sides[3], and D. D. Zalesky[1], [1]San Juan Basin Research Center, Hesperus, CO, USA, [2]Colorado State University, Fort Collins, CO, USA, [3]Intervet, Inc., Millsboro, DE, USA.

M31 Effect of exogenous progesterone before calf removal and prostaglandin F_{2a} on estrous response and pregnancy rates in 3-year-old beef cows. J. L. Olson*[1], A. J. Roberts[2], J. A. Paterson[1], and R. N. Funston[3], [1]Montana State University, Bozeman, [2]USDA-ARS, Miles City, Mt, [3]University of Nebraska, Lincoln.

M32 Effects of glucose concentration and presence of EGF and hormones on bovine oocyte maturation. D. J. Walker*, J. F. De La Torre-Sanchez, and G.E. Seidel, Jr., Colorado State University Fort Collins, CO 80523.

Triennial Reproduction Symposium

M33 Post-thaw fertility of bovine semen aged within an AI straw for 8.5 hours. J. L. Edwards*[1], M. N. Malone[1], F. N. Schrick[1], H. H. Dowlen[2], H. D. Moorehead[2], P. A. Lunn[2], and A. M. Saxton[1], [1]The University of Tennessee, Knoxville, [2]Dairy Experiment Station, Lewisburg, TN, USA.

M34 Effects of presynchronization and/or post-breeding treatment with porcine LH or hCG on pregnancy rates in dairy cows. J. P. Kastelic*[1] and J. D. Ambrose[2], [1]Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, [2]Alberta Agriculture Food and Rural Development, Edmonton, AB, Canada.

M35 Pregnancy outcome in dairy cows fed diets supplemented with flaxseed or sunflowerseed. J. D. Ambrose*[1], J. P. Kastelic[2], R. Corbett[1], P. A. Day[1], J. A. Small[3], and H. V. Petit[4], [1]Alberta Agriculture Food and Rural Development, Edmonton, AB, [2]Agriculture and Agri-Food Canada, Lethbridge, AB, [3]Brandon, MB, [4]Lennoxville, QC, Canada.

M36 Completion of the Midwest Consortium Project: Sequencing of 21,499 reproduction ESTs and comparative mapping of 721 selected genes. C. K. Tuggle*[1], J. A. Green[2], C. Fitzsimmons[1], R. Woods[2], R. S. Prather[2], S. Malchenko[3], M. B. Soares[3], T. Kucaba[3], K. Crouch[3], C. Smith[3], D. Tack[3], N. Robinson[3], B. O'Leary[3], T. Scheetz[3], T. Casavant[3], D. Pomp[4], J. B. Edeal[4], Y. Zhang[1], Z. Hu[1], M. F. Rothschild[1], K. Garwood[5], and W. Beavis[5], [1]Iowa State University, Ames, IA, [2]University of Missouri-Columbia, Columbia, MO, [3]University of Iowa, Iowa City, IA, [4]University of Nebraska, Lincoln, NE, [5]National Center for Genomic Resources, Sante Fe, NM.

M37 Effect of semen packaged in 0.25 and 0.50 cc straws on conception rate of lactating dairy cows. N. Michael*, C. Marti, E. Roberts, and M. Pace, ABS Global, Inc.

M38 Ovarian follicular development in first parity sows subject to varied split-weaning protocols. J. Barry*, W. T. Dixon, and G. R. Foxcroft, Swine Research & Technology Centre, University of Alberta, Canada.

M39 Do calcium-mediated cellular signalling pathways, PGE_2, estrogen or progesterone receptor antagonists, or bacterial toxins affect bovine placental function in vitro? C. Weems*[1], Y. Weems[2], T. Welsh[3], G. Carsten[4], and R. Randel[5], [1,2]Univ. of Hawaii, [3,4,5]Texas A&M Univ.

M40 Does estrous synchronization affect corpus luteum (CL) function? C Weems*[1], Y Weems[1], S Tatman[2], A Lewis[2], D Neuendorff[2], and R Randel[2], [1]Univ Hawaii, [2]Texas A&M Univ.

M41 Photoperiod and diet effects on heifer development. J. A. Small*[1], A. D. Kennedy[2], and D. R. Ward[1], [1]Agriculture & Agri-Food Canada, Research Centre, Brandon, MB, Canada, [2]University of Manitoba, Winnipeg, MB, Canada.

M42 Heat shock increases glutathione in bovine oocytes. R. R. Payton*[1], P. Coy[2], R. Romar[2], J.L. Lawrence[1], and J.L. Edwards[1], [1]The University of Tennessee, Knoxville, USA, [2]The University of Murcia, Murcia, Spain.

Lactation Biology

M43 Intramammary infusion of prostaglandin E_2 (PGE) increases mammary development and milk yield of cows induced to lactate. J. M. Lukas*[1], W. J. Weber[1], R. J. Collier[2], J. L. Vicini[3], M. F. McGrath[3], and B. A. Crooker[1], [1]University of Minnesota, St. Paul, [2]University of Arizona, [3]Monsanto Agricultural Group, St. Louis, MO.

M44 Effects of induced lactation on milk fatty acid profiles in multiparous Holstein cows. H. C. Hafliger, III*[1], L. H. Baumgard[1], W. J. Weber[2], M. Chahine[2], G. C. Lamb[2], T. H. Klusmeyer[3], M. F. McGrath[3], J. L. Vicini[3], and B. A. Crooker[2], [1]University of Arizona, [2]University of Minnesota, [3]Monsanto Animal Agriculture Group, St. Louis, MO.

M45 Effects of different milking intervals on composition of cisternal and alveolar milk in dairy cows. M.A. Ayadi, G. Caja*, X. Such, and E. Albanell, Universitat Autónoma de Barcelona, Spain.

M46 Description of glucose transport in isolated bovine mammary epithelial cells by a 3-compartment model. C. T. Xiao*, V. M. Quinton, and J. P. Cant, University of Guelph, Ontario, Canada.

M47 Over-expression of IGF-I in lactating porcine mammary tissue has a differential effect on amino acid transport systems. D. E. Gronlund, W. L. Hurley*, M. H. Monaco, M. B. Wheeler, and S. M. Donovan, University of Illinois.

M48 The acyclic period postpartum in automatic and conventional milking. D. Weiss*[1], M. Reist[2], and R. M. Bruckmaier[1], [1]Inst. of Physiology, Technical Univ. Munich, Germany, [2]Novartis Centre de Recherche Sante Animal St-Aubin, Switzerland.

M49 Change from conventional to automatic milking in cows with and without previous experience. D. Weiss* and R.M. Bruckmaier, Institute of Physiology, Technical University Munich, Germany.

M50 Use of digital pictures to study udder morphology in dairy sheep. M. Rovai*[1], D. L. Thomas[1], Y. M. Berger[1], and G. Caja[2], [1]University of Wisconsin-Madison, [2]Universitat Autonoma de Barcelona, Bellaterra, Spain.

M51 Udder traits of dairy ewes on U.S. commercial farms and their effects on milk yield. M. Rovai*[1], D. L. Thomas[1], Y. M. Berger[1], and G. Caja[2], [1]Univ. of Wisconsin-Madison, [2]Univ. Autonoma de Barcelona, Spain.

M52 Udder traits of U.S. dairy ewes and their effects on milking time and milk yield. M. Rovai*[1], D. L. Thomas[1], Y. M. Berger[1], and G. Caja[2], [1]Univ. of Wisconsin-Madison, [2]Univ. Autonoma de Barcelona, Spain.

Animal Health

M53 Binding of IgM to non-apoptotic bovine blood neutrophils. S. N. Knight*, M. Worku, and P. L. Matterson, NC Agricultural & Technical State University, Greensboro, NC.

M54 Dissociation of glucocorticoid and tumor necrosis factor-a (TNF-a) responses to repeated endotoxin (LPS) challenges: effects of individual versus group penning. S. Kahl* and T.H. Elsasser, USDA, Agricultural Research Service, Beltsville, MD.

M55 Effects of age at transport on health and development of neonatal dairy calves. T. A. Johnson*[1] and S. D. Eicher[2], [1]Purdue University, West Lafayette, IN, [2]USDA-ARS, West Lafayette, IN.

M56 Carbadox does not alter immune cell phenotypes in mesenteric lymph nodes of pigs challenged with *Salmonella enterica* serotype Typhimurium. K. A. Skjolaas, T. E. Burkey, M. R. Barker, S. S. Dritz, and J. E. Minton*, Kansas State University.

M57 Effects of conjugated linoleic acid (CLA) and trans-$C_{18:1}$ fatty acids (TFA) on production variables and immune indices following castration in beef cattle. L. H. Baumgard*[1], C. E. Moore[1], C. R. Baily[1], M. BenAbdallah[1], P. S. Cuneo[1], S. Dial[1], D. Luchini[2], and G. C. Duff[1], [1]The University of Arizona, Tucson, [2]BioProducts Inc., Fairlawn OH.

M58 Suppression of Th1-like BoCD4+ T lymphocyte proliferative response by BoCD8+ T lymphocytes stimulated with staphylococcal enterotoxin C is induced by type II cytokines. Y. H. Park*[1], W. A. Ferens[2], W. C. Davis[3], J. S. Ahn[4], N. H. Kwon[1], and G. A. Bohach[2], [1]Seoul National University, Seoul, Korea, [2]University of Idaho, Moscow, USA, [3]Washington State University, Pullman, USA, [4]National Veterinary Research and Quarantine Services, Anyang, Korea.

M59 Increased levels of LPS-binding protein (LBP) in bovine blood and milk following bacterial lipopolysaccharide challenge. D. Bannerman*[1], M. Paape[1], W. Hare[1], and E. J. Sohn[2], [1]USDA-ARS, Beltsville, MD, [2]University of Maryland, College Park, MD.

M60 Establishment of a bovine cell-culture system to study the genomic response of mammary epithelial cells to infection with *Staphylococcus aureus*. O. Wellnitz* and D. E. Kerr, University of Vermont, Burlington, VT.

M61 Results of bovine mastitis target pathogen susceptibility monitoring program for 2001. C. J. Lindeman*, E. S. Portis, and S. A. Salmon, Pharmacia Animal Health.

M62 Comparison of Petrifilm™ with standard and augmented culture techniques for the isolation of pathogens on milk samples. B. O. Silva, D. Z. Caraviello*, and P. L. Ruegg, University of Wisconsin - Madison.

M63 Effect of intramammary infection at calving caused by environmental pathogens on lactation performance, mastitis incidence, and somatic cell counts in lactating Holstein cows. S. O. Juchem*[1], L. G. Corbellini[2], K. N. Galvao[1], J.E.P. Santos[1], and M. Villasenor[1], [1]Veterinary Medicine Teaching and Research Center, University of California - Davis, [2]Universidade Federal do Rio Grande do Sul - Brazil.

M64 Safety and compatibility of Orbeseal® during the dry period and early lactation when used in conjunction with commercially-available intramammary dry cow therapies. R. Hassfurther*[1], D. Earley[2], and N. A. Evans[2], [1]Pfizer Veterinary Medicine, Terre Haute, IN USA, [2]Pfizer Animal Health Group, New York, NY USA.

M65 Test-day milk loss associated with elevated test-day somatic cell score. R. H. Miller*, H. D. Norman, G. R. Wiggans, and J. R. Wright, Animal Improvement Programs Laboratory, Agricultural Research Service, USDA, Beltsville, MD.

Breeding & Genetics

M66 Optimising genetic gain in a small population. A. Karlsen*, T. Steine, and E. Sehested, GENO Breeding and A.I. Association.

M67 Identification of quantitative trait loci affecting birth and weaning weights in pigs. J. W. Holl*[1], J. P. Cassady[2], and R. K. Johnson[1], [1]University of Nebraska, Lincoln, NE, [2]North Carolina State University, Raleigh, NC.

M68 Detecting quantitative trait loci for twinning and production traits in Holstein dairy cattle. J. Cruickshank*[1], M. R. Dentine[1], P. J. Berger[2], and B. W. Kirkpatrick[1], [1]University of Wisconsin-Madison, Madison, Wisconsin, [2]Iowa State University, Ames, Iowa.

M69 Development of three repeat microsatellite loci in Korean cattle. S. Chen, H. Chung*, D. Yoon, I. Cheong, and S. Lee, National Livestock Research Institute, Suwon, Korea.

M70 Graphical approach to evaluate genetic estimates of calf survival. H. Schlesser*[1], R. Shanks[1], J. Berger[2], and M. Healey[2], [1]University of Illinois Urbana-Champaign, [2]Iowa State University.

M71 Analysis of health and fertility traits for proven and young sires in herds participating in a progeny test program using data from on-farm herd management software. N. R. Zwald*[1], K. A. Weigel[1], and B. Welper[2], [1]UW-Madison, [2]Alta Genetics.

M72 Post-weaning relative growth in body weight of black bengal and its half bred kids. L. B. Singh*[1], D. K. Singh[1], N. Kumar[1], N. S. Singh[1], A. K. Pal[1,2], and S. B. Jadhao[2], [1]Ranchi Veterinary College,Ranchi 834007, [2]Agricultural Research Service, Central Instt. Fisheries Education, Mumbai400061,India.

M73 Genetic correlations among body condition score, dairy form and disease from the US. C. D. Dechow*[1], G. W. Rogers[1], T. J. Lawlor[2], L. Klei[2], A. E. Freeman[3], and G. Azim[3], [1]University of Tennesse, [2]Holstein Association USA, Inc., [3]Iowa State University.

M74 Estimation of genetic parameters in Japanese Holsteins using random regression test-day models with Legendre polynomials. C. Fujii* and M. Suzuki, Obihiro University of A & VM, Obihiro-shi Japan.

M75 Comparisons of purebreds and multi-breed crosses for preweaning performance, in swine. A. Barreras-Serrano*, J.G. Soto-Avila, and M. Montaño-Hodgers, Universidad Autónoma de Baja California, Mexicali, B.C. México.

M76 Genetic parameters for longevity in a colony of German Shepherd dog guides. J. B. Cole*[1], D. E. Franke[1], and E. A. Leighton[2], [1]Louisiana State University, Baton Rouge, LA, [2]The Seeing Eye, Inc., Morristown, NJ.

M77 Genetic parameters for net feed efficiency of beef cattle measured during postweaning growing versus finishing periods. D. H. Crews, Jr.*, N. H. Shannon, B. M. A. Genswein, R. E. Crews, C. M. Johnson, and B. A. Kendrick, Agriculture and Agri-Food Canada Research Centre, Lethbridge, Alberta, Canada.

M78 Preliminary study of daily gain in central station-tested Nelore bulls. J.A.C. Pereira*[1] and J. E. Chavez[2], [1]Gabriel Rene Moreno University, [2]ASOCEBU.

M79 Setting up the Gelbvieh Multiple Breed Evaluation. A. Legarra*[1], T. Strabel[2], J.K. Bertrand[1], and I. Misztal[1], [1]University of Georgia, Athens, GA, [2]Agricultural University of Poznan, Poznan, Poland.

M80 Differences in growth trajectories in seven beef breeds. J. Bohmanova*[1], I. Misztal[1], and J. Pribyl[2], [1]University of Georgia, Athens, GA, [2]Research Institute of Animal Production, Prague, Czech Republic.

Swine

Impact of Weight and Sex on Meat Quality, Affect of Age and Management on Biochemical Parameters, Disinfectant, Gilt Selection and Sow Longevity

M81 Economic evaluation of sow longevity using data from commercial herds. S. L. Rodriguez-Zas*[1], B. R. Southey[1], R. Knox[1], J. F. Connor[2], J. F. Lowe[2], and B. Roskamp[2], [1]University of Illinois Champaign-Urbana, Urbana, IL, [2] Carthage Veterinary Service, Ltd., Carthage, IL.

M82 Gilt selection based on age at first estrus and breeding herd efficiency. J. L. Patterson*[1], G. R. Foxcroft[2], M. J. Pettitt[1], and E. Beltranena[1], [1]Prairie Swine Centre, Inc., Saskatoon, SK, [2]Swine Research & Technology Centre, University of Alberta, Edmonton, AB.

M83 Reproductive survival of exotic sows in the humid tropics of Samoa. C. Okere* and A. O. Ajuyah, The University of the South Pacific.

M84 Use of the DF-200 HF decontamination foam in swine farrowing facilities. K Christensen* and J. D. Thomas, New Mexico State University.

M85 Fat content of corn, animal plasma and fish and soybean meals is the main single parameter affecting retention of aromatic compounds typical of a strawberry flavor. I. Perez-Portabella, C. Ibañez, C. Puyuelo, R. Fontanillas, J. Sola, I. Blanco, and E. Roura*, Lucta, S.A, Barcelona, Spain.

M86 Effect of feeding management and feeding time on urea nitrogen levels in swine research. I. Moreira*[1], M. Kutschenko[1], A. Fraga[2], E. Sakaguti[1], G. Oliveira[1], and D. Souza[1], [1]Universidade Estadual de Maringa-Maringá-PR/BRAZIL, [2]UNESP-Jaboticabal-SP/BRAZIL.

M87 Evaluation of various factors affecting pigs blood (plasma or serum) urea nitrogen value. I. Moreira*[1], M. Kutschenko[1], A. Fraga[2], G. Oliveira[1], E. Sakaguti[1], and I. Sartori[1], [1]Universidade Estadual de Maringa-Maringá-PR/BRAZIL, [2]UNESP/Jaboticabal-SP/BRAZIL.

M88 Serum enzyme profile and biochemical constituents of blood in cross-bred pigs during growth. DilipKumar Garikipati*[1] and Prasad P.E[2], [1]Washington state University, [2]A.N.G.R.Agricultural University.

M89 The effect of exogenous leptin on immunological parameters in growing pigs. T. E. Weber* and M. E. Spurlock, Purdue University, West Lafayette, IN.

M90 Evaluation of migratory distance and readability of passive transponders injected in different body sites of Iberian pigs. M. Hernandez-Jover*, G. Caja, X. Alabern, P. Virtudes, D. Garin, and B. Farriol, Universitat Autonoma de Barcelona, Spain.

M91 Sex effect on performance and carcass quality of heavy pigs. J. Peinado*[1], A. Fuentetaja[2], M.A. Latorre[3], G.G. Mateos[3], and P. Medel[1], [1]Imasde Agropecuaria, S.L., Spain, [2]COPESE, S.A., Spain, [3]Universidad Politécnica de Madrid, Spain.

M92 Effect of sex, castration, and slaughter weight on pork quality. J. Peinado*[1], J. Guirao[2], M. Nieto[3], G.G. Mateos[4], and P. Medel[1], [1]Imasde Agropecuaria, S.L., Spain, [2]Estación Tecnológica de la Carne de Guijuelo, Spain, [3]COPESE, S.A., Spain, [4]Universidad Politécnica de Madrid, Spain.

M93 Influence of sex and castration of males and females on performance and carcass quality of pigs. J. Peinado*[1], G.G. Mateos[2], A. Fuentetaja[3], J. Sánchez[1], and P. Medel[1], [1]Imasde Agropecuaria, S.L., Spain, [2]Universidad Politécnica de Madrid, Spain, [3]COPESE, S.A., Spain.

M94 Effect of sex, castration and slaughter weight on pig performance and carcass. P. G. Lawlor*[1], P. B. Lynch[1], J. Kerry[2], and P. Allen[3], [1]Teagasc, Moorepark, Fermoy, Co. Cork, Ireland, [2]Dept. of Food Technolgy, University College, Cork, Ireland, [3]National Food Centre, Ashtown, Dublin 15, Ireland.

M95 Effects of feeding blends of grains naturally-contaminated with *Fusarium* mycotoxins on antibody-mediated immune response and brain neurochemistry in starter pigs. H.V.L.N. Swamy[1], T. K. Smith[1], E. J. MacDonald[2], N. A. Karrow[1], and H. J. Boermans[1], [1]University of Guelph, Guelph, ON, Canada, [2]University of Kuopio, Kuopio, Finland.

Nonruminant Nutrition

Diet and Health

M96 Effect of dietary supplementation of 1% L-glutamine on the intestinal morphology of early weaned piglets 14d and challenged with transmissible gastroenteritis virus. H. Herrera*[1], A. G. Borbolla[1], H. Ramirez[1], and G. Mariscal[2], [1]Universidad Nacional Autonoma de Mexico, [2]INIFAP CENID Fisiologia.

M97 Effects of levels of organic acid complex and lactose in starter diet on growth performance and intestinal environments of weaned pigs. Y. W. Shin*, J. G. Kim, Y. H. Park, and K. Y. Whang, Korea university, Seoul, Korea.

M98 Bone mineral content gain is reduced in weaned pigs fed diets with low-buffer capacity and organic acids. G. Biagi*[1], A. Piva[1], T. D. Hill[2], D. K. Schneider[2], and T. D. Crenshaw[2], [1]University of Bologna, Italy, [2]University of Wisconsin, Madison, WI.

M99 Effects of feeding antibiotics versus mannanoligosaccharides on the growth performance of weanling pigs. J. Pulliam*, R. Clift, S. Chattin, and A. G. Mathew, The University of Tennessee, Knoxville TN USA.

M100 Effects of antibiotics versus mannanoligosaccharides on intestinal pH and volatile fatty acid concentrations in weanling pigs. J. Pulliam*, R. Clift, S. Chattin, and A. G. Mathew, The University of Tennessee, Knoxville TN USA.

M101 Use of probiotics in the diet of weanling and growing pigs. A. C. Murry, Jr.*[1] and A. Hinton, Jr.[2], [1]The University of Georgia, [2]Agricultural Research Service/United States Department of Agriculture, Athens.

M102 Dietary supplementation with botanical compounds depresses piglet feed intake while fecal E. coli counts remain unchanged. P. Bikker[1], R. Fontanillas*[2], and N. D. Roura[2], [1]Institute for Animal Nutrition, De Schothorst, Lelystad, The Netherlands, [2]Lucta, S.A. Barcelona, Spain.

M103 Plant extracts enhance performance in broilers under Clostridium perfringens challenge. C. Kamel*[1] and R. McKay[2], [1]AXISS France SAS, [2]MLF Agresearch.

M104 The effects of herbal plant mixture(MIRACLE 20® supplementation on the growth performance, nutrient digestibility and serological changes in finishing pigs. O. S. Kwon*[1], I. H. Kim[1], J. W. Hong[1], J. H. Kim[2], Y. M. Seol[3], B. J. Min[1], W. B. Lee[1], and K. S. Son[1], [1]Department of Animal Resource & Science, Dankook University, [2]Agribrands Purina Korea, Inc, [3]Hanpel tech. co. Ltd.

M105 Effect of feeding germanium biotite on growth performance, nutrient digestibility and serum characteristics in nursery pigs. W. B. Lee*[1], I. H. Kim[1], J. W. Hong[1], O. S. Kwon[1], B. J. Min[1], K. S. Son[1], and Y. K. Jung[2], [1]Department of Animal Resource & Science, Dankook University, [2]SEOBONG BioBestech Co., Ltd.

M106 Effect of dietary green tea on productivity and egg composition in laying hens. C. J. Yang *[1], D. Uuganbayar[1], S. S. Sun[2], and J. D. Firman[3], [1]Sunchon National University, Suncheon, Korea, [2]Chonnam National University, Chonnam, Korea, [3]University of Missouri, Columbia, MO.

M107 Effect of dietary Korean, Japanese and Chinese green tea on growth performance and body composition in broiler chicks. C. J. Yang *[1], D. Uuganbayar[1], K. Sayama[2], N. Ishihara[3], and I. S. Shin[4], [1]Sunchon National University, Suncheon, Korea, [2]Shizuoka University, Shizuoka, Japan, [3]Central Research Laboratories, Taiyo Kagaku, Japan, [4]American Soybean Association, Seoul, Korea.

M108 Effect of dietary Korean, Japanese and Chinese green tea on productivity and egg composition in laying hens. D. Uuganbayar*[1], C. J. Yang, Y. M. Cho, and I. C. Park, Sunchon National University, Korea.

M109 Feeding seaweed extract to nursery pigs alters circulating thyroid hormones. J. L. Turner[1], S. S. Dritz[2], and J. E. Minton*[2], [1]New Mexico State University, [2]Kansas State University.

M110 Effect of supplementing meal (Macrocystis pyrifera) to wheat based diets for weaning pigs. R. Gomez*, M. Cervantes, N. Torrentera, and S. Baca, Instituto de Ciencias Agricolas. UABC. Mexico.

M111 Supplementation of kelp meal (Macrocystis pyrifera) to wheat based diets for growing pigs. M. Cervantes*[1], E. Chi[2], J. Yañez[1], J. Baeza[2], N. Torrentera[1], and M.A. Barrera, [1]Instituto de Ciencias Agrícolas, UABC, [2]Colegio de Postgraduados.

M112 Effect of kelp (Macrocystis pyrifera) meal supplementation to wheat based diets for finishing pigs. J. Yañez[1], M. Cervantes*[1], F. Copado[2], N. Torrentera[1], J. L. Figueroa[2], and M. Barrera[1], [1]Instituto de Ciencias Agrícolas, Universidad Autónoma de Baja California, México, [2]Colegio de Postgraduados, Montecillos, México.

M113 Effects of kelp meal supplementation in lactation sow diet on the body condition of sows and early growth of piglets. J. G. Kim*, Y. W. Shin, H. J. Lim, Y. H. Park, and K. Y. Whang, Korea University, Seoul, Korea.

M114 A comparison of the effects of supplementations of probiotic and humad on egg production and quality during the late laying period in hens. M. A. Yoruk[1], M. Gul[1], A. Hayirli*[1], and M. Macit[2], [1]Department of Animal Nutrition and Nutritional Diseases, School of Veterinary Medicine, [2]Department of Animal Sciences, College of Agriculture, Ataturk University, Erzurum 25700, Turkey.

M115 Withdrawn

Nonruminant Nutrition

Feed Ingredients and Nutrient Utilization

M116 The effect of feeding processed soy protein on the growth performance in weanling pigs. B. J. Min*[1], I. H. Kim[1], J. W. Hong[1], O. S. Kwon[1], W. B. Lee[1], K. S. Son[1], J. H. Kim[2], and W. C. Cho[3], [1]Department of Animal Resource & Science, Dankook University, [2]Agribrands Purina Korea, Inc, [3]Genebiotech Co. Ltd.

M117 Potential for an animal-based fish meal analog protein as a replacement for fish meal in early-weaned pig diets. M. E. Davis*[1], C. V. Maxwell[1], Z. B. Johnson[1], and P. L. Bond, Jr.[2], [1]University of Arkansas, Fayetteville, [2]Mid-South Milling Company, Inc., Memphis, TN.

M118 Comparison of swine performance when fed diets containing corn root worm protected corn, parental line corn, or conventional corn grown during 2000 in Nebraska. R. L. Fischer[1], P. S. Miller*[1], Y. Hyun[2], G. F. Hartnell[2], and E. P. Stanisiewski[2], [1]University of Nebraska, Lincoln, [2]Monsanto Company, St. Louis, MO.

M119 Performance comparison of growing-finishing pigs fed diets containing Corn Root Worm Protected corn (Event MON 863) or conventional corn hybrids. G. E. Bressner[1], Y. Hyun*[2], E. P. Stanisewski[2], G. F. Hartnell[2], and M. Ellis[1], [1]University of Illinois, Urbana, IL, USA, [2]Monsanto Company, St. Louis, USA.

M120 A comparison of swine performance when fed diets containing Roundup Ready® wheat (event MON 71800) and conventional wheat varieties. B. A. Peterson*[1], Y. Hyun[2], E. P. Stanisiewski[2], G. F. Hartnell[2], and M. Ellis[1], [1]University of Illinois, Urbana, IL, [2]Monsanto Company, St. Louis, MO.

M121 Pea and Lupin (*lupinus albus*) as an alternative protein source in growing pig diets. F. Masoero[1], A. Prandini[1], G. Piva*[1], M. Morlacchini[2], M. Moschini[1], and D. Diaz[3], [1]Université Cattolica del Sacro Cuore, Piacenza, Italy, [2]CERZOO, San Bonico, Piacenza, Italy, [3]Fondazione Parco Tecnologico Padano, Lodi, Italy.

M122 Methods of improving the nutritive value of Jackbean for poultry industry in the tropics. B. O. Esonu* and A. B. I. Udedibie, Federal University of Technology, Owerri, Nigeria.

M123 Growth performance of growing-finishing pigs fed low-protein, low-energy, grain sorghum-soybean meal diets. J. L. Figueroa*[1], M. Mendez[1], M. Cervantes[2], and J. M. Cuca[1], [1]Ganaderia, Colegio de Postgraduados, [2]Instituto de Ciencias Agricolas, Universidad Autonoma de Baja California.

M124 Effect of amino acid intake on fecal digestibility of amino acids and on urinary amino acid excretion of adult roosters. L. Babinszky*, J. Tossenberger, and K. R. Kovacs, University of Kaposvar, Faculty of Animal Science, Hungary.

M125 Evaluation of the effects of dietary fat, conjugated linoleic acid and ractopamine on the fatty acid profiles of fat and muscle tissue of lean gilts. T. E. Weber[1], B. T. Richert[1], M. A. Belury[2], Y. Gu[3], and A. P. Schinckel*[1], [1]Purdue University, [2]The Ohio State University, [3]Research Institute of Bastyr University.

M126 Withdrawn

M127 A case for expanded spreadsheet use in animal science research. N. D. Paton*, Akey, Lewisburg OH.

M128 In vitro gas production of Iranian barley silage treated and untreated by urea and formaldehyde. A. Taghizadeh[1], M. Danesh Mesgaran*[2], R. Valizadeh[3], F. Eftekhar Shahroodi[4], and K. Stanford[5], [1]Ferdowsi university,Mashhad,Iran, [2]Ferdowsi university,Mashhad,Iran, [3]Ferdowsi university,Mashhad,Iran, [4]Ferdowsi university,Mashhad,Iran, [5]Lethbridge Research center,Alberta,Canada.

M129 The effects of dietary crude protein concentration on nitrogen absoption and retention by feedlot steers. A. Gueye[1], C. R. Richardson[1], J. H. Mikus[1], G. A. Nunnery*[1], N. A. Cole[2], and L. W. Greene[3], [1]Texas Tech University, Lubbock, Texas, [2]USDA-ARS-CPRL, Bushland, Texas, [3]Texas Agricultural Experimentation Station, Amarillo, Texas.

M130 Effects of dietary crude protein on serum and urine urea nitrogen in feedlot steers. A. Gueye*[1], C. R. Richardson[1], J. H. Mikus[1], G. A. Nunnery[1], N. A. Cole[2], and L. W. Greene[3], [1]Texas Tech University, Lubbock, Texas, [2]USDA-ARS-CPRL, Bushland, Texas, [3]Texas Agricultural Experimental Station, Amarillo, Texas.

M131 Effect of a *Yucca Schidigera*-based surfactant on ruminal degradability of corn grain dry matter and starch. A. N. Hristov[1], J. K. Ropp*[1], and D. Greer[2], [1]Department of Animal and Veterinary Science, University of Idaho, Moscow, ID, [2]AgriChem, Inc., Ham Lake, MN.

M132 Effect of grain type and *Yucca Schidigera*-based surfactant on bacterial utilization of ruminal ammonia *in vitro*. K. L. Grandeen[1], A. N. Hristov*[1], J. K. Ropp[1], and D. Greer[2], [1]Department of Animal and Veterinary Science, University of Idaho, Moscow, ID, [2]AgriChem, Inc., Ham Lake, MN.

M133 Changes in serum metabolites and growth characteristics of Korean steers fed alcohol-fermented feedstuffs. J. S. Shin*[1], B. W. Kim[1], and M. L. Eastridge[2], [1]Kangwon National University, [2]The Ohio State University.

M134 Effects of long-acting estrogen implant with and without trenbolone acetate on performance, carcass characteristics and meat tenderness in Holstein steers. J. L. Beckett*[1], R. N. Brewer[1], L. K. Hendricks[1], R. Botts[2], D. Cook[2], and P. Anderson[2], [1]Cal Poly State University, [2]VetLife, LLC.

M135 Use of exogenous fibrolytic enzymes and bluegrass seed straw in wintering beef cow feeding regimes. J. I. Szasz*[1], C. W. Hunt[1], K. A. Johnson[2], J. J. Michal[2], and D. J. Coonrad[2], [1]University of Idaho, [2]Washington State University.

M136 Evaluation of alfalfa cubes with or without incorportated barley in beef cattle diets. P. A. Szasz*, C. W. Hunt, J. I. Szasz, and T. M. McCalmant, University of Idaho.

M137 Fermentation characteristics of ensiling wet corn distillers grains in combination with corn silage. K. F. Kalscheur*, A. D. Garcia, A. R. Hippen, and D. J. Schingoethe, South Dakota State University, Brookings.

M138 Increasing glucogenic precursors in range supplements fed to young pospartum beef cows. R. L. Endecott*[1], D. L. Dunlap[1], R. C. Waterman[1], A. C. Fitzgerald[1], V. A. Munn[1], C. A. Loest[1], D. E. Hawkins[1], K. K. Kane[1], F. Valdez[2], and M. K. Petersen[1], [1]New Mexico State University, [2]Kemin Industries, Inc.

M139 Effects of corn flake weight on nutrient intake and retention by finishing heifers. B. S. Obeidat*, C. A. Loest, P. J. Defoor, J. E. Sawyer, V. A. Munn, and E. Y. Bsoul, New Mexico State University, Las Cruces, NM.

M140 Effects of processing and bulk density of barley when fed to backgrounding calves. D. L. Boss*, J.G.P. Bowman, L.M.M. Surber, D. G. Sattroiva, and T. K. Blake, Montana State University.

M141 Effect of water and mineral source on performance of growing heifers. J. H. Mikus*, C. R. Richardson, G. A. Nunnery, and A. Gueye, Texas Tech University, Lubbock, TX.

M142 Effects of barley or corn on steer performance and digestibility in finishing diets. J. J. Kincheloe*, J.G.P. Bowman, L.M.M. Surber, D. L. Boss, M. F. McDonnell, K. A. Anderson, and T. K. Blake, Montana State University, Bozeman, MT, USA.

M143 Growth and carcass fatty acid composition of beef steers fed soybean oil for increasing duration before slaughter. P. A. Ludden*, B. W. Hess, D. C. Rule, and W. J. Means, University of Wyoming.

M144 Influence of grinding oats and barley on cattle performance and in vitro starch degradability. M. H. Poore* and J. A. Moore, North Carolina State University, Raleigh, NC.

M145 Effects of exposure to ammoniated wheat straw as a suckling calf on subsequent utilization as a yearling beef heifer. R. D. Wiedmeier*, P. R. Schmidt, B. A. Kent, B. R. Bowman, and D. M. Meek, Utah State University, Logan, Utah.

M146 Effects of RumaPro on plasma ammonia and urea concentrations in beef steers. G. Huntington and J. Spears, North Carolina State University, Raleigh NC.

M147 Effects of five grain conditioners, water, and bulk density on processing ease and flake quality with regards to steam-flaking corn. C. R. Richardson[1], K. F. Wilson*[2], and G. V. Pollard[3], [1]Texas Tech Univ., Lubbock, [2]Loveland Ind., Greeley, CO., [3]Southwest Texas State Univ., San Marcos.

M148 Effects of five grain conditioners, water, and bulk density on the chemical constituents of steam-flaked corn. G. V. Pollard*[1], K. F. Wilson[2], and C. R. Richardson[3], [1]Southwest Texas State Univ., San Marcos, [2]Loveland Ind., Greeley, CO., [3]Texas Tech Univ., Lubbock.

M149 Finishing diets with elevated levels of a-linolenic acid increase feed efficiency but do not alter beef carcass quality. S. L. Archibeque*[1], D. K. Lunt[1], R. K. Tume[2], and S. B. Smith[1], [1]Texas A&M University, College Station, TX, [2]Food Science Australia, Tingalpa D. C. Queensland, Australia.

M150 Effect of feeding diets containing corn grain with corn rootworm protection (event MON863), control, or conventional varieties on steer feedlot performance and carcass characteristics. L. L. Berger*[1], N. D. Robbins[1], J. R. Sewell[1], E. P. Stanisiewski[2], and G. F. Hartnell[2], [1]University of Illinois-Urbana, [2]Monsanto Company, St. Louis, MO.

M151 Effects of trace mineral source and growth implants on performance and lipid metabolism of steers. K.L. Dorton*, T.E. Engle, C.V. Kimberling, G. Parsons, D.R. Ames, and R.M. Ames, Colorado State University.

M152 Influence of linseed supplementation on quality and fatty acids in beef. I. Holló[1], E. Szûcs[2], K. Ender[3], J. Csapó[1], G. Holló[1], J. Seregi[1], J. Seenger*[2], and I. Repa[1], [1]University of Kaposvár, Kaposvár-Hungary, [2]Szent István University, Gödöllo-Hungary, [3]Research Institute for the Biology of Farm Animals, Dummerstorf-Germany.

M153 Sodium monensin and Lasalocid used in growing calves consuming high levels of brewers grain. JA Piña, JA Fernandez, JI Aguilera, R Bañuelos*, CF Arechiga, and S Mendez, UAMVZ-Universidad Autonoma de Zacatecas, Zacatecas, Mexico.

M154 Effect of condensed-tannins addition to a corn-sunflower meal based feedlot diet. A.J. Pordomingo*[1], M.P. Azcarate[1], and N.A. Juan[1], [1]INTA Anguil Experiment Station, La Pampa, Argentina.

M155 Effect of age, sex, and grain processing method on rate and efficiency of gain of beef cattle. B. M. Rainey*, J. A. Paterson, M. C. King, L. W. Barney, and W. T. Choat, Montana State University, Bozeman, MT.

M156 The effects of cottonseed hulls added to diets with and without live yeast or mannanoligosaccharide in Holstein calves. S. R. Hill*, B. A. Hopkins, S. Davidson, S. M. Bolt, C. Brownie, T. Brown, G. B. Huntington, and L. W. Whitlow, North Carolina State University.

M157 Effects of grazing fresh forages on milk fat CLA. S. J. Freeman*[1], J. A. Bertrand[1], T. C. Jenkins[1], B. W. Pinkerton[1], and D. L. Palmquist[2], [1]Clemson University, Clemson SC / USA, [2]Ohio State University, Columbus OH / USA.

M158 Effect of dietary cation-anion difference and crude protein content on milk yield and blood metabolites of lactating dairy cows during hot weather. C. D. Wildman*, J. W. West, and J. K. Bernard, The University of Georgia, Tifton, GA.

M159 Amino acid composition of ruminant feeds and feed fractions. D. A. Ross* and M. E. Van Amburgh, Cornell University, Ithaca, NY.

M160 Effects of feeding graded amounts of liquid molasses to high producing dairy cows. G.A. Broderick* and W.J. Radloff, U.S. Dairy Forage Research Center, Madison, WI.

M161 Soy hulls as barley grain replacement in pellets fed to lactating cows; effect on digestion and milk performance. J. Miron, E. Yosef*, M. Nikbachat, E. Maltz, and D. Ben-Ghedalia, Dept of Dairy Science, The Volcani Center, ARO, Israel.

M162 Effects of prepartum dietary energy level and calcium propionate supplementation on energy metabolism in transition dairy cows. C. C. Stanley*[1], C. C. Williams[1], H. G. Bateman[1], A. E. Beem[1], D. T. Gant[1], Y. H. Chung[1], and F.R. Valdez[2], [1] Louisiana State University Agricultural Center, Baton Rouge, LA, [2]Kemin Americas, Des Moines, IA.

M163 Conjugated linoleic acid and transvaccenic acid content of milk from cows fed fish meal and extruded soybeans for an extended period of time. A. A. AbuGhazaleh*, D. J. Schingoethe, A. R. Hippen, K. F. Kalscheur, South Dakota state University, Brookings.

M164 The effect of short vs long term yeast supplementation during the transition period of Holstein cows. J. D. Ward*[1], [1]LSU AgCenter, Southeast Research Station.

M165 Silymarin and lycopene in peripartum dairy cows: effect on milk productivity and quality. D. Tedesco*[1], S. Galletti[1], M. Tameni[1], S. Steidler[1], A. Costa[1], and P. Morazzoni[2], [1]Department VSA, University of Milan, Italy, [2]Indena S.p.A., Milan, Italy.

M166 Development of a method to assess nutritional motivation in dairy cattle. K. V. Shore*, T. M. Widowski, J. P. Cant, W. J. Bettger, and B. W. McBride, University of Guelph, Guelph, Ontario, Canada.

M167 Production efficiency of mid-lactation dairy cows fed yeast culture during the summer. K. N. Linke[1], D. J. Schingoethe*[1], K. F. Kalscheur[1], A. R. Hippen[1], D. R. Rennich[1], and I. Yoon[2], [1]South Dakota State University, Brookings, [2]Diamond V Mills, Inc., Cedar Rapids, IA.

M168 Effects of diet forage:concentrate ratio on splanchnic nutrient metabolism in lactating dairy cows. C. K. Reynolds*[1], J. A. Benson[1], P. C. Aikman[1], B. Lupoli[1], M. D. Hanigan[2], D. E. Beever[1], and J. C. MacRae[3], [1]The University of Reading, Reading, UK, [2]Purina Mills LLC, St. Louis, MO, [3]The Rowett Research Institute, Aberdeen, UK.

M169 Effect of the replacement of corn by citrus pulp on fiber effectivity. G. A. Andrade[1], J. C. Teixeira*[1], J.R.O. Perez[1], J. A. Muniz[1], P.C.A. Paiva[1], and J. S. Oliveira[2], [1]Universidade Federal de Lavras, [2]Embrapa Gado de Leite.

M170 Feed consumption and efficiency of lactating cows submitted to part and total replacement of corn by citrus pulp. J. C. Teixeira*[1], G. A. Andrade[1], J. S. Oliveira[2], P.C. A. Paiva[1], J. A. Muniz[1], and J. R. O. Perez[1], [1]Universidade Federal de Lavras, [2]EMBRAPA Gado de Leite.

M171 Effect of the replacement of corn by citrus pulp on nutrient consumption by lactating cows. G. A. Andrade[1], J. C. Teixeira*[1], J. A. Muniz[1], J. R. O. Perez[1], J. S. Oliveira[2], and P. C. A. Paiva[1], [1]Universidade Federal de Lavras, [2]EMBRAPA - Gado de Leite.

M172 Use of intra-ruminal monensin capsules in dairy cows under alfalfa grazing conditions. I. Milk yield and composition. M. R. Gallardo[1], A. R. Castillo*[2], M. C. Gaggiotti[1], H. C. Castro[1], S. Aronna[1], S. Lettieri[1], D. Quatrin[1], and H. Perez-Monti[3], [1]Experimental Station Rafaela, INTA, Argentina., [2]UC Davis Cooperative Extension, U.S.A., [3]Elanco Animal Health Div. Argentina.

M173 Intake and milking performance of high producing cows fed starchy vs primary cell wall- rich pelleted additive. J. Miron[1], E. Yosef*[1], M. Nikbachat[1], E. Maltz[2], I. Halachmi[2], and D. Ben-Ghedalia[1], [1]Institute of Animal Science, [2]Institute of Agricultrural Engineering.

M174 Effect of whole cottonseed, whole canola seed and crushed canola seed on milk yield and composition of primiparous Holstein cows. L. J Erasmus*[1], P. C Haasbroek[2], and J. B. J. Van Ryssen[1], [1]Dept. Animal and Wildlife Sciences,University of Pretoria, Pretoria, South Africa, [2]Agricultural Research Council, Pretoria, South Africa.

M175 Hepatic palmitate metabolism of periparturient dairy cows as affected by nutrients supplied in vitro. M. S. Piepenbrink* and T. R. Overton, Cornell University, Ithaca, NY.

M176 Evaluation of dry matter intake equations by examining predicted change in bodyweight throughout lactation in dairy cows. J. L. Ellis*, F. Qiao, and J. P. Cant, University of Guelph, Guelph, Ontario, Canada.

M177 Effect of Tween 80 on milk production by Holstein cows. J. Baah*[1], J. A. Shelford[2], T. A. McAllister[1], and K.-J. Cheng[3], [1]Agriculture and Agri-Food Canada Research Centre, Lethbridge, AB, [2]University of British Columbia, Vancouver, Canada, [3]Academia Sinica, Taipei, Taiwan ROC.

M178 Comparison of analytical methods and the influence of milk components on milk urea nitrogen recovery. A. B. Peterson*, R. A. Kohn, and E. Russek-Cohen, University of Maryland, College Park, Maryland.

M179 Feed intake and milk production of Holstein cows fed rations with glucogenic supplements during the transition period. T. I. Belloso*, M. S. Gulay, M. Liboni, M. J. Hayen, and H. H. Head, University of Florida.

M180 Effects of prepartum dietary carbohydrate source and monensin on expression of gluconeogenic enzymes in liver of transition dairy cows. E. L. Williams*[1], M. M. Pickett[2], L. C. Griel[2], K. S. Heyler[2], G. A. Varga[2], and S. S. Donkin[1], [1]Purdue University, [2]Pennsylvania State University.

M181 Effects of method of lipid supplementation and physical form of the forage on milk yield and fatty acid composition of milk fat. J. J. Brownfield, E. J. DePeters, J. W. Pareas, and S. J. Taylor, University of California Davis.

M182 Effect of a liquid oral drench at parturition on blood metabolites and incidence of metabolic diseases in Holstein cows. M. A. von Keiserlingk*[1], W. K. Vanderkooi[2], and L. M. Rode[3], [1]University of British Columbia, Vancouver, BC, [2]Nutritech Solutions Ltd., Abbotsford, BC, [3]Rosebud Technology Development Ltd., Lethbridge, AB.

M183 Feeding behaviour of dairy cows at peak lactation. T. J. DeVries*, M. A. G. von Keyserlingk, D. M. Weary, and K. A. Beauchemin, The University of British Columbia, Vancouver, Canada.

M184 Implementation of a "user friendly" rumen simulation model through mixed language programming. J. A. N. Mills*, E. Kebreab, L. A. Crompton, and J. France, The University of Reading, Reading, UK.

M185 Manipulating rumen fermentation of dairy cows fed fresh alfalfa using feed additives. A. R. Castillo*[1], M. R. Gallardo[2], M. C. Gaggiotti[2], M. S. Garcia[2], O. Quaino[2], and C. Arakiki[2], [1]UC Davis, Cooperative Extension, U.S.A., [2]Experimental Station Rafaela, INTA. Argentina.

M186 Evaluation of a novel anionic product for transition dairy cows. P. C. Aikman*[1], E. Virtanen[2], U. Tennberg[2], A. K. Jones[1], C. K. Reynolds[3], and D. E. Beever[1], [1]CEDAR, The University of Reading, UK, [2]Kemira Animal Nutrition, Helsingborg, Sweden, [3]The Ohio State University, Wooster.

M187 Effect of parity and prior energy intake on development of fatty liver during feed restriction in dairy cattle. M. C. Rich*, S. J. Bertics, D. G. Mashek, and R. R. Grummer, University of Wisconsin, Madison.

M188 A mechanistic model of glucose metabolism and ketosis development in early lactation cows. J Guo*, R Kohn, and R Peters, University of Maryland at College Park Maryland.

M189 Effect of an exogenous phytase enzyme blend and dietary phosphorus content on P excretion in lactating cows. K. F. Knowlton*[1], J. M. McKinney[1], K. F. Wilson[2], and C. Cobb[2], [1]Virginia Polytechnic Institute and State University, [2]Loveland Industries, Inc.

M190 Milk fatty acids profile of dairy cows fed fresh alfalfa and different feed additives. A.R. Castillo*[1], P.T. Garcia[2], R.B. Páez[2], M.A. Taverna[2], M.S. Garcia[2], M.C. Gaggiotti[2], N. Pensel[2], and A. Quatrin[2], [1]UC Davis Cooperative Extension, U.S.A., [2]Estación Experimental Agropecuaria Rafaela, CICV, INTA, Argentina.

M191 Prediction of methane emission from ruminal coenzyme M. M. S. Oatley, M. L. Nelson*, K. A. Johnson, and M. Ney, [1]Washington State University, Pullman.

M192 Leucine metabolism in skeletal muscle of lactating dairy cows. K. A. Cummins* and D. R. Mulvaney, Auburn University, AL.

M193 Effects of short-term drenching of transition cows with propylene glycol on early lactation performance and health. V. E. Lenkaitis, L. L. Contreras, C. M. Ryan, and T. R. Overton*, Cornell University, Ithaca NY.

M194 A commercial blend of essential oil components reduces ruminal degradation of protein supplements in ruminants. R Molero[1], M Ibaras[1], S Calsamiglia[1], A Ferret[1], M Frehner*[2], P Williams[3], and R Losa[2], [1]Universitat Autonoma de Barcelona, Bellaterra. Spain, [2]Crina S.A. / Akzo Nobel, Gland, Switzerland, [3]Akzo Nobel, Davis, CA.

M195 Methodology for estimation of Volatile Fatty Acid (VFA) kinetics in cattle. X. Markantonatos[1], J.W. Young[2], R. Tucker[2], L.F. Richardson[2], and G.A. Varga*[1], [1]The Pennsylvania State University, [2]Elanco Animal Health.

M196 Effects of supplemental amylase on *in vitro* fermentation by mixed ruminal cultures and the growth of pure cultures of ruminal bacteria. J. M. Tricarico* and A. E. Kozenski, Alltech Biotechnology Inc. Nicholasville KY.

M197 Oxidation of glucose, glutamate, and glutamine by isolated ovine enterocytes in vitro is decreased by presence of other metabolic fuels. M. Oba*[1], R. L. Baldwin, IV[2], and B. J. Bequette[1], [1]Department of Animal and Avian Sciences, University of Maryland, College Park, MD, [2]Bovine Functional Genomics Laboratory, ANRI, USDA-ARS, Beltsville, MD.

M198 Effects of urea and ammonia treatment on nutritive value of corn silage. Ahmad Davtalabzarghi*, Reza Valizadeh, and Abasali Naserian, Ferdowsi University of Mashhad, Khorasan, Iran.

Production, Management, and the Environment

M199 Determining the relationships among milk urea nitrogen and milk production and milk components from lactating dairy cows in Texas. G. M. Goodall*[1], M. A. Tomaszewski[2], D. A. Knabe[2], R. B. Schwart[2], J. W. Stuth[2], and L. W. Greene[3], [1]Goodall's Consulting, College Station, TX/USA, [2]Texas A&M University, College Station, TX/USA, [3]Texas A&M Research and Extension Center, Amarillo, TX/USA.

M200 Feedlot performance and carcass characteristics of feeder lambs implanted and re-implanted with zeranol implants. S. J. Talley, M. W. Salisbury*, B. J. May, M. A. Carr, C. B. Scott, and G. R. Engdahl, Angelo State University, San Angelo, Texas.

M201 An evaluation of rumen papillae in Holstein heifers during the transition period. W. C. Stone*, S. L. Bulkley, D. J. Aneshansley, and A. L. Alcaraz, Cornell University. Ithaca, NY.

M202 Nitrogen, phosphorus, and other minerals in Idaho dairy diets. A. N. Hristov*[1], R. P. Etter[1], A. Melgar[1], J. I. Szasz[1], K. L. Grandeen[1], S. Abedi[1], J. K. Ropp[1], D. Falk[1], W. Hazen[2], and R. Ohlensehlen[2], [1]Department of Animal and Veterinary Science, [2]Agricultural Cooperative Extension, University of Idaho, Moscow, ID.

M203 Pasture performance, feedlot gain, and carcass traits of Romosinuano crossbred, F-1 (Hereford x Brahman), and Brahman steers. F. M. Rouquette, Jr.*[1], R. D. Randel[1], C. R. Long[1], C. C. Chase, Jr.[4], J. C. Paschal[3], and R. K. Miller[2], [1]Texas A&M University Agricultural Research & Extension Center, Overton, TX/USA, [2]Texas A&M University, College Station, TX/USA, [3]Texas Cooperate Extension, Corpus Christi, TX/USA, [4]USDA-ARS Brooksville, FL/USA.

M204 Urinary pH and mineral serum levels of periparturient Holstein and Jersey cows fed diets varying in dietary cation-anion difference. E. Gutierrez-Ornelas, H. Bernal-Barragan, H. Solis-Medina, J. Colin-Negrete, and H. Morales-Treviño, Universidad Autonoma de Nuevo Leon.

M205 A field study of milk production and reproductive performance in dairy cows fed different levels of phosphorus. J Fiorini*[1], JD Ferguson[1], S Alexander[1], RA Kohn[2], LD Chase[3], KF Knowlton[4], Z Wu[5], and Z Dou[1], [1]University of Pennsylvania, [2]University of Maryland, [3]Cornell University, [4]Virginia Polytechnic Institute and State University, [5]Penn State University.

M206 Conversion efficiencies of N and P to exportable product on Vermont dairy farms. G. W. Weber*[1], W. E. Jokela[2], S. C. Bosworth[2], and W. S. Burhans[3], [1]Vermont Dairy Farm Sustainability Project, Inc., [2]University of Vermont, [3]Poulin Grain, Inc.

M207 Supplementation of FEB-200™ to alleviate endophyte toxicosis in steers. V. Akay*[1], M. Foley[1], J. A. Jackson[2], M. Kudupoje[1], and K. A. Dawson[1], [1]Alltech Biotechnology, Inc., Nicholasville, KY, [2]University of Kentucky, Lexington, KY.

M208 Influence of previous cattle and elk grazing on the subsequent quality and quantity of diets for cattle, deer and elk grazing late-summer mixed-conifer rangelands. D. Damiran*[1], T. DelCurto[1], S. L. Findholt[2], G. D. Pulsipher[1], and B. K. Johnson[2], [1]Eastern Oregon Agricultural Research Center, Oregon State University, Union, [2]Oregon Department of Fish and Wildlife, La Grande.

M209 Changes in forage quantity and quality with continued cattle grazing in a mountain riparian pasture. E. Darambazar*[1], T. DelCurto[1], C. J. Ackerman[2], G. D. Pulsipher[1], and D. Damiran[1], [1]Eastern Oregon Agricultural Research Center, Oregon State University, Union, [2]Department of Animal Sciences, Oregon State University, Corvallis.

M210 Effects of whole corn versus cracked corn on performance of growing-finishing Angus bulls. S. M. Emberson, B. J. May*, M. W. Salisbury, M. A. Carr, G. R. Engdahl, G. G. Hilton, C. B. Scott, and R. L. Reed, Angelo State University, San Angelo, Texas, USA.

M211 Validation of a prediction equation for energy balance in Holstein cows and heifers. J. D. Brixey*[1], M. A. McGuire, and W. J. Price, [1]University of Idaho.

M212 Incidence of Escherichia coli 0157:H7 contamination in fecal, wool, and carcass samples from feedlot lambs. M. Long*[1], T. T. Ross[1], T. Edrington[2], J. D. Thomas[1], and K. Christensen[1], [1]New Mexico State University, [2]USDA ARS.

Forages & Pastures

Silages, Forage Supplementation

M213 In vitro dry matter digestibility and fermentation characteristics of sawdust-wheat bran mixtures fermented by *Aspergillus oryzae*, *Formitella fraxinea*, and *Sarcodon aspratus*. Y. K. Kim[1] and D. J. Schingoethe[2], [1]Chungnam National University, Chungnam, Republic of Korea, [2]South Dakota State University, Brookings.

M214 Nutrient content and protein quality in grass silages. W. Heimbeck*[1], M. Coenen[2], K. Suedekum[3], Lars Hogeback[2], S. Hoepken[2], and K. Eicken[4], [1]Degussa AG, Feed Additives, Hanau, Germany, [2]School of Veterinary Medicine, Hannover, Germany, [3]Christian-Albrechts University, Kiel, Germany, [4]Veterinarian Practice, Ovelgoenne, Germany.

M215 The effect of *Lactobacillus buchneri* 40788 on the fermentation of alfalfa silage ensiled for an extended period of time. M. P. Lynch, D. H. Kleinschmit*, J. M. Neylon, T. E. Ebling, M. Reddish, J. M. Ladd, J. E. Lynch, M. Steifel, T. Gassert, and L. Kung, Jr., University of Delaware, Newark, DE.

M216 The effect of *Lactobacillus buchneri* 40788 and *Pediococcus pentosaceus* on the fermentation and aerobic stability of corn silage. D. H. Kleinschmit*, R. J. Schmidt, J. E. Lynch, J. M. Ladd, K. E. Stratton, J. G. Carr, M. Reddish, and L. Kung, Jr., University of Delaware, Newark, DE.

M217 A summary of the effect of *Lactobacillus buchneri* on the fermentation and aerobic stability of silage. D. H. Kleinschmit* and L. Kung, Jr., University of Delaware, Newark, DE.

M218 Effects of amino acid fermentation liquor byproducts upon corn silage fermentation and stability. P. G. Summer*[1], [1]Ajinomoto U.S.A., Inc., Eddyville, Iowa.

M219 Feeding brown midrib-3 corn silage or conventional corn silage cut at either 20 or 66 cm of height to early lactation cows. D. D. Dominguez*[2] and L. D. Satter[1,2], [1]U.S. Dairy Forage Research Center, USDA-ARS, [2]Dairy Science Department, University of Wisconsin, Madison.

M220 Forage intake and digestibility of tropical grass and rhizome perennial peanut hay (Arachis glabrata) supplemented with fish silage. H. Diaz*, A. Rodriguez, T. Ruiz, and R. Fuentes, University of Puerto Rico.

M221 Fermentation characteristics of corn hybrids ensiled in mini-silos. D.J.R. Cherney*, J. H. Cherney, and W. J. Cox, Cornell University, Ithaca, NY.

M222 Intake and milk yield of cows fed diets containing L. bucheri-inoculated corn silage and high moisture corn or acetic acid supplement. D. K. Combs* and P. C. Hoffman, University of Wisconsin, Madison, USA.

M223 Characterization of corn endosperm properties in 33 germplasm sources for potential improvements in ruminal starch degradability. D. Majee*, R. D. Shaver, and J. G Coors, University of Wisconsin-Madison.

M224 Nitrate leaching in silage maize production on sandy soils. M. Wachendorf*, M. Buechter, K. Volkers, and F. Taube, University of Kiel, Kiel, Germany.

M225 Effects of forage quality and type of protein supplement on intake and digestibility in beef steers and performance of postpartum beef cows. J. J. White*[1], G. D. Pulsipher[1], and T. DelCurto[1], Eastern Oregon Agriculture Research Center, Union, OR.

M226 Protein supplementation of Brangus stocker calves grazing winter Tallgrass Prairie. L. A. Appeddu*[1] and M. A. Brown[2], [1]Southwestern Oklahoma State University, Weatherford, OK, [2]USDA-ARS Grazinglands Research Laboratory, El Reno, OK.

M227 Interseeding triticale with windrowed millet as a winter feeding program for developing heifers. W. S. Mackay*, J. C. Whittier, D. Couch, and D. N. Schutz, Colorado State University, Fort Collins, CO USA.

M228 Forage intake and in vivo digestibility of two rhizoma peanut genotypes harvested for hay in the tropics. T. Ruiz* and L. Rivera-Estremera, University of Puerto Rico, Mayaguez.

M229 Apparent digestible dry matter intake of ammoniated wheat straw diets in beef cows as affected by wheat middlings and biotin supplementation. R.D. Wiedmeier*[1], P.R. Schmidt[1], B.A. Kent[1], and D.R. ZoBell[1], [1]Utah State University, Logan, Utah.

M230 Influence of supplementing soybean hulls to steers consuming endophyte infected tall fescue pasture. R. B. Pugh*, J. B. Pulliam, J. C. Waller, and C. J. Richards, University of Tennessee, Knoxville TN.

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M231 Nitrogenous fractions of *Pithecellobium dulce* in tropical dry forest. T. Clavero* and R. Razz, Centro de Transferencia de Tecnologia en Pastos y Forrajes. La Universidad del Zulia. Venezuela.

M232 Silage quality of *Leucaena leucocephala* ensiled with molasses. T. Clavero* and R. Razz, Centro de Transferencia de Tecnologia en Pastos y Forrajes. La Universidad del Zulia. Venezuela.

M233 The effects of rumen liquor pre-treatment of desiccated coconut waste on the performance of Growing Pigs in Samoa. A. O. Ajuyah, C. Okere*, and S. Kumar, The University of the South Pacific, Alafua Campus, Apia, Samoa.

M234 Prediction of the amino acid content in wheat based on the crude protein value. M. Cervantes*[1], F. Copado[2], R. Soto[1], N. Torrentera[1], S. Espinoza[1], and J.L. Figueroa[2], [1]Instituto de Ciencias Agrícolas, Universidad Autónoma Baja California, Mexicali, [2]Colegio de Postgraduados, Montecillos, México.

M235 Effect of prepartum body condition and breed on production performance in crossbred dual purpose cows. O. Araujo-Febres, J. A. Gutierrez, La Universidad del Zulia, Maracaibo, Venezuela.

Poster Presentations

Tuesday, June 24, 2003

7:30 am – 9:30 am

Exhibit Hall D

Physiology

Nutrition-Reproduction, Gametes and Uterus

T1 Effects of supplemental high-linoleate safflower seeds on ovarian follicular development and hypophyseal gonadotropins and GnRH Receptors. E. J. Scholljegerdes*, B. W. Hess, E. A. Van Kirk, and G. E. Moss, University of Wyoming.

T2 Reproductive effects of feeding lambs high-oleate or high-linoleate safflower seeds. Z. Kiyma*, B. W. Hess, M. R. Bolte, E. A. Van Kirk, and G. E. Moss, University of Wyoming, Laramie.

T3 Feed intake, serum leptin, and puberty in Brangus heifers sired by bulls with differing EPDs for growth and scrotal circumference. K.L. Shirley*[1], M.G. Thomas[1], D.H. Keisler[2], D.M. Hallford[1], D.M. Montrose[1], G.A. Silver[1], M.D. Garcia[1], and L.A. Narro[1], [1]New Mexico State University, Las Crucs, [2]University of Missouri, Columbia.

T4 Intracerebroventricular infusion of Neuropeptide Y and leptin differentially influence the episodic secretion patterns of GH in well-fed ovariectomized cows. L. A. Narro*[1], M. G. Thomas[1], M. D. Garcia[1], D. H. Keisler[2], M. Amstalden[3], G. L. Williams[3], and D. M. Hallford[1], [1]New Mexico State University, Las Cruces, [2]University of Missouri, Columbia, [3]Texas A&M Unversity Agricultural Research Station, Beeville.

T5 Concentrations of antigonadatropic decapeptide in ovine tisses. S. N. Sandstede*, M. E. Wise, and D. M. Hallford, New Mexico State University, Las Cruces, NM/USA.

T6 Pituitary expression of ghrelin mRNA during the luteal phase of the bovine estrous cycle. H. C. Moore*, P. C. Gentry, R. J. Collier, and A. M. Turzillo, University of Arizona, Tucson, AZ.

T7 Effects of short-term fasting on reproductive function in beef cows. A. Ramos III*[1], K. K. Kane[1], D. E. Hawkins[1], W. D. Bryant[1], D. M. Hallford[1], G. E. Moss[2], and R. S. Kelling[1], [1]New Mexico State University, [2]University of Wyoming.

T8 Reproductive performance of dairy cows under the pasture production system of New Zealand. Z. Z. Xu, L. J. Burton, and D. L. Johnson, Livestock Improvement Corporation Ltd, Hamilton, New Zealand.

T9 Effect of genetic potential for milk yield on the onset of reproductive activity and corpus luteum function in Holstein cows. W. J. Weber*[1], S. J. Kolath[2], M. C. Lucy[2], H. Chester-Jones[1], L. B. Hansen[1], and B. A. Crooker[1], [1]University of Minnesota, St. Paul, [2]University of Missouri, Columbia. USA.

T10 Comparison of artificial insemination (AI) versus embryo transfer (ET) in lactating dairy cows. R. Sartori*, A. Gümen, J. N. Guenther, A. H. Souza, and M. C. Wiltbank, University of Wisconsin-Madison.

T11 Effects of varying dry period length and prepartum diet on reproduction in dairy cattle. A. Gümen, R. R. Rastani, R. R. Grummer, and M. C. Wiltbank, University of Wisconsin-Madison.

T12 Relationship between milk production and estrous behavior of lactating dairy cows. H. Lopez*[1], L. D. Satter[1,2], and M. C. Wiltbank[1], [1]Dairy Science Department, University of Wisconsin, [2]US Dairy Forrage Research Center, USDA-ARS, Madison, WI.

T13 Milk urea nitrogen and conception rate: a population study using test-day records. J. E. Vallimont[1], G. W. Rogers*[2], L. A. Holden[1], M. L. O'Connor[1], J. B. Cooper[2], C. D. Dechow[2], and J. S. Clay[3], [1]Penn State University, [2]University of Tennessee, [3]Dairy Records Management Systems.

T14 The effect of daily drenching with propylene glycol during the transition period on LH pulsatility and the fate of the first follicle wave in dairy cows. S. T. Butler* and W. R. Butler, Cornell University.

T15 Reproductive and metabolic parameters associated with low postovulatory progesterone secretion in lactating dairy cows. G. E. Mann*[1], L. M. Hicking[1], and D. Blache[2], [1]University of Nottingham,Sutton Bonington,UK, [2]University of Western Australia, Nedlands, Australia.

T16 Effect of gossypol intake on plasma and uterine gossypol concentrations and on embryo development and viability in vivo and in vitro. M. Villasenor*, A. C. Coscioni, K. N. Galvao, S. O. Juchem, J.E.P. Santos, and B. Puschner, University of California - Davis.

T17 Effect of gossypol intake and plasma gossypol concentrations on follicle development and luteal function in dairy heifers. A. C. Coscioni*[1], K. N. Galvao[1], M. Villasenor[1], J.E.P. Santos[1], B. Puschner[1], and L.M.C. Pegoraro[2], [1]University of California - Davis, [2]EMBRAPA - Brazil.

T18 Effect of gossypol intake on plasma and uterine gossypol concentrations and on embryo quality and development in superovulated Holstein dairy heifers. A. C. Coscioni*[1], M. Villasenor[1], K. N. Galvao[1], R. C. Chebel[1], J.E.P. Santos[1], J. H. Kirk[1], B. Puschner[1], and L.M.C. Pegoraro[2], [1]University of California - Davis, [2]EMBRAPA - Brazil.

T19 Enhancing ability of bovine sperm to survive cryopreservation with cyclodextrin and cholesterol. A. Kaya*[1,2] and J. J. Parrish[1], [1]University of Wisconsin Madison, Wisconsin, [2]University of Selçuk Konya, Turkey.

T20 Wisconsin avian extender yields better post-thaw motility for rooster semen than Minnesota avian extender after cryopreservation. L. E. Enwall*[1], A. Kaya[2], L. N. Geiger[1], and J. J. Parrish[1], [1]University of Wisconsin Madison, Wisconsin, [2]Selçuk University Konya, Turkey.

T21 The effect of time and fluid volume on the rate of boar sperm settling using a commercial extender. KL Willenburg*, KJ Rozeboom, BR Lindsey, and ME Wilson, Minitube of America, Verona, WI.USA.

T22 Boar seminal plasma effects on AI outcomes. A.L. Ruiz-Sanchez*, R. O'Donoghue, and G. Foxcroft, University of Alberta, Edmonton, Alberta, Canada.

T23 Evaluation of post-thaw boar semen characteristics of two genotypes using three extenders. H. D. Blackburn*, USDA-ARS-National Animal Germplasm Program.

T24 Effect of fetal bovine serum on the development of in vitro produced porcine embryos. J.N. Caamano*[1], J. Mao[1], T.C. Cantley[1], A.R. Rieke[1], R. Farwell[1], C. Murphy[1], B.A. Didion[2], and B.N. Day[1], [1]Univeristy of Missouri, Columbia MO, [2]Monsanto, St. Louis, Mo.

T25 Effect of follicular size on developmental competence of porcine oocytes in vitro. J. Mao*, J. N. Caamano, T. C. Cantely, R. Farwell, A. R. Rieke, M. F. Smith, and B. N. Day, University of Missouri-Columbia.

T26 Effects of bovine somatotropin (bST) on IGF-I and IGF-binding proteins in non-lactating cyclic and pregnant Holstein cows on day 17 after estrus. T. R. Bilby*, A. Guzeloglu, S. Kamimura, F. Michel, and W. W. Thatcher, University of Florida, Gainesville, FL, USA.

T27 Molecular characterization and endometrial expression of porcine Smad1. J. G. Kim*, J. L. Vallet, D. Nonneman, G. A. Rohrer, and R. K. Christenson, [1]USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE.

T28 Relative amounts of mRNA encoding endothelial and inducible nitric oxide synthase in the bovine corpus luteum. W. D. Bryant*, K. K. Kane, J. S. Nelson, A. Ramos III, and D. E. Hawkins, New Mexico State University.

T29 Factors affecting postpartum placental blood volume. A. L. Riddle* and H. D. Tyler, Iowa State University, Ames, IA.

Lactation Biology

T30 Expression of leptin and leptin receptor messenger RNA during mammary gland development in mice. J. L. Smith* and L. G. Sheffield, University of Wisconsin, Madison.

T31 Impact of growth factors on expression of leptin and leptin receptor in cultured mammary epithelial cells. J. L. Smith and L. G. Sheffield*, University of Wisconsin, Madison.

T32 Local ablation of leptin receptor inhibits mammary alveolar development. J. L. Smith* and L. G. Sheffield, University of Wisconsin, Madison.

T33 Evidence for shifts in prolactin sensitivity in cows exposed to long or short day photoperiod during the dry period. A. G. Rius*[1], T. L. Auchtung[1], P. E. Kendall[1], T. B. McFadden[2], and G. E. Dahl[1], [1]University of Illinois, [2]University of Vermont.

T34 Short day photoperiod during the dry period improves immune cell response of dairy cattle. T. L. Auchtung*, D. E. Morin, C. C. Mallard, J. L. Salak-Johnson, and G. E. Dahl, University of Illinois, Urbana.

T35 Milk fat decreases when lactating mice are fed selected *trans* fatty acid containing diets. B. B. Teter*[1], J. Sampugna[1], R. A. Erdman[1], P. Yurawecz[2], and D. Luchini[3], [1]University of Maryland, College Park, MD/USA, [2]Center for Food Safety and Applied Nutrition, FDA, College Park, MD/USA, [3]Bioproducts, Inc. Fairlawn, OH/USA.

T36 Effects of milk yield and milk fat production on milk *cis*-9, *trans*-11 CLA and ?9-desaturase enzyme activity. A. L. Lock*[1,2], D. E. Bauman[2], and P. C. Garnsworthy[1], [1]University of Nottingham, UK, [2]Cornell University, Ithaca, USA.

T37 Abomasal infusion of a mixture of conjugated linolenic acid (C18:3) isomers had no effect on milk fat synthesis. A. Si?bo[1], J. W. Perfield*[2], and D. E. Bauman[2], [1]Natural ASA, Hovdebygda, Norway, [2]Cornell Univ., Ithaca, NY.

T38 Feeding increasing amounts of conjugated linoleic acid (CLA) progressively reduces milk fat synthesis immediately postpartum. C. E. Moore*[1], H. C. Hafliger III[1], O. B. Mendivil[1], D. Luchini[2], D. E. Bauman[3], and L. H. Baumgard[1], [1]The University of Arizona, [2]BioProducts, Inc., Fairlawn, OH, [3]Cornell University, Ithaca, NY.

Animal Health

T39 Differences in production traits between scrapie resistant and scrapie susceptible ewes. B. M. Alexander*[1], R. H. Stobart[1], W. C. Russell[1], K. I. O'Rourke[2], and G. E. Moss[1], [1]University of Wyoming, [2]USDA-ARS.

T40 Effect of calving season on colostrum quality and growth of dairy calves in a hot arid region. J S. Saucedo*[1], L. Avendaño[1], F. D. Alvarez[1], T. B. Rentería[1], J. F. Moreno[1], M. F. Montaño[1], and M. P. Gallegos[2], [1]Universidad Autónoma de Baja California, Mexicali, Baja California, México, [2]Universidad Juárez del Estado de Durango, Durango, México.

T41 Effect of batch and high-temperature-short-time pasteurization on IgG concentrations in colostrum. L. Green*, S. Godden, and J. Feirtag, University of Minnesota, St. Paul, MN.

T42 The absorption of immunoglobulins from a plasma-based IgG supplement. A. L. Riddle*[1], H. D. Tyler[1], M. L. O'Brien[2], K. J. Touchette[2], and J. A. Coalson[2], [1]Iowa State University, Ames, IA, [2]Merrick's Inc., Union Center, WI.

T43 Practical considerations related to installation and use of commercial pasteurization units for on-farm pasteurizing of milk and colostrum. L. Green, S. Godden, and J. Feirtag*, University of Minnesota.

T44 Destruction of *Mycobacterium paratuberculosis*, *Salmonella* sp., and *Mycoplasma* sp. in raw milk by a commercial on-farm high-temperature, short- time pasteurizer. J. R. Stabel*[1], S. Hurd[1], L. Calvente[2], and R. F. Rosenbusch[2], [1]USDA-ARS-National Animal Disease Center, Ames, IA, [2]Iowa State University, Ames, IA.

T45 Factors associated with transition cow ketosis incidence in selected New England herds. W. S. Burhans*[1], A. W. Bell[1], R. Nadeau[2], and J. R. Knapp[2], [1]Cornell University, Ithaca, NY, [2]University of Vermont, Burlington, VT.

T46 Prevalence of subclinical hypocalcemia in U.S. dairy operations. R. L. Horst*[1], J. P. Goff[1], and B. J. McCluskey[2], [1]USDA-ARS-National Animal Disease Center, Ames, IA, [2]Centers for Epidemiology and Animal Health, Fort Collins, CO.

T47 The relationship between disease occurrence, feeding management and return over feed. C.J. McLaren*[1], K.D. Lissemore[1], K.E. Leslie[1], T.F. Duffield[1], D.F. Kelton[1], and B. Grexton[2], [1]University of Guelph, Department of Population Medicine, [2]Ontario Dairy Herd Improvement Corporation.

T48 Effects of intravenous infusion of triglyceride emulsions varying in lipid source on development of bovine fatty liver. D. G. Mashek*, S. J. Bertics, and R. R. Grummer, University of Wisconsin, Madison.

T49 Anti-diabetic potentials of *Momordica charanta* and *Andrographis paniculata* and their effects on estrus cyclicity of Alloxan-induced diabetic rats. B. Reyes[1], N. Bautista[2], R. Magtoto[3], N. Tanquilut*[2], A. Leung[2], Z. Battad[2], G. Sanchez[2], R. V. Anunciado[4], H. Tsukamura[5], and K.-I. Maeda[5], [1]Thomas Jefferson University, Philadelphia, Penn., [2]Pampanga Agricultural College, Magalang, Pampanga, Philippines, [3]Iowa State University, Ames Iowa, [4]University of the Philippines, Los Banos, Philippines, [5]Nagoya University, Nagoya, Japan.

T50 Induction of apoptosis by butyrate correlates with increasing level of protein ubiquitination in bovine kidney epithelial cells (MDBK). C. Li* and T. Elsasser, [1]USDA-ARS, Beltsville, MD.

T51 Anthelmintic efficacy in a Maryland small ruminant flock. C. M. Fletcher*, D. J. Jackson, and N. C. Whitley, University of Maryland Eastern Shore.

T52 Field trial evaluation of selected topical parasiticides in stocker cattle. T. A. Yazwinski*, C. A. Tucker, D. Hubbell, J. Robins, and Z. B. Johnson, University of Arkansas, Department of Animal Science.

T53 Performance and biochemical parameter of weanling pigs consuming fumonisin contaminated diets with or without the addition of activated charcoal. A. Piva[1], D. E. Diaz*[2], G. Casadei[3], G. Pagliuca[1], F. Galvano[4], M. Solfrizzo[5], R. T. Riley[3], and G. Piva, [1]University of Bologna, Bologna Italy, [2]Fondazione Parco Technologico Padano, Lodi Italy, [3]Universita' Cattolica S. Coure, Piacenza Italy, [4]CNR - Istituto di Scienze delle Produzioni Alimentari, Bari Italy, [5]R.B. Russell Research Center USDA/ARS/SAA, Athens Georgia USA.

T54 The effect of biotin supplementation on milk yield, reproduction and lameness in dairy cattle. J. K. Margerison*[1], B. Winkler[1], G. Penny[1], and A. Packington[2], [1]University of Plymouth, UK, [2]Roche Vitamins, UK.

T55 Influence of a biogenic substance on growth, health, and meat quality in pigs[1]. O. Bellmann*, E. Kanitz, M. Tuchscherer, and K. Ender, Research Institute for the Biology of Farm Animals, Dummertsorf.

T56 Effects of pretransit supranutritional levels of dietary selenium and D-a-tocopherol acetate on selenium content of specific tissues in wether lambs. J. B. Taylor*[1], N. K. Chirase[2,3], and T. Thelen[1], [1]Agriculture Research Service, Dubois, ID, [2]Texas Agriculture Experiment Station, Amarillo, [3]West Texas A&M University, Canyon.

T57 Silymarin PHYTOSOME* against AFB1 in broilers. D. Tedesco*[1], S. Galletti[1], S. Steidler[1], M. Tameni[1], O. Sonzogni[1], and P. Morazzoni[2], [1]Department VSA, University of Milan, Italy, [2]Indena S.p.A., Milan, Italy.

T58 Inhibition of fungal growth with OmniGen-AF: a new anti-fungal feed additive. Y. Wang*, S. Puntenney, and N. Forsberg, Oregon State University.

T59 Effects of swainsonine on digestion in wethers consuming locoweed. M. M. Reed[1], B. S. Obeidat*[1], J. R. Strickland[1], C. R. Krehbiel[2], J. B. Taylor[3], C. A. Loest[1], G. S. Bell[1], W. D. Bryant[1], J. D. Rivera[1], and J. L. Jim[1], [1]New Mexico State University, [2]Oklahoma State University, [3]USDA, ARS, USSES.

T60 Development of quantitative diagnostic assays for assessment of mycotic infections. N. Forsberg*, S. Puntenney, and Y. Wang, Oregon State University.

T61 The impact of tunnel ventilation cooling and brown mid-rib (BMR) corn silage on heat stress in lactating dairy cows. R. J. Williams*[1], A. M. Chapa[1], T. O. Riley[2], D. O. Pouge[2], S. T. Willard[1], and T. R. Smith[1], [1]Department of Animal and Dairy Sciences, Mississippi State University, [2]North Mississippi Branch Experiment Station, Holly Springs, MS.

Breeding & Genetics

T62 Meta-analysis to detect QTL in two connected F2 swine populations using simulation. B. R. Southey* and S. L. Rodriguez-Zas, University of Illinois Champaign-Urbana, Urbana, IL.

T63 Detection of SNPs on the ovine skeletal muscle specific calpain gene using PCR-SSCP analysis. H. Chung*[1], S. Chen[1], D. Yoon[1], I. Cheong[1], S. Lee[1], M. Davis[2], and C. Hines[2], [1]National Livestock Research Institute, Suwon, Korea, [2]The Ohio State University, Columbus, USA.

T64 Relationships between DGAT1 and Pit-1 genes polymorphism and milk yield in Holstein cattle. S. Hori-Oshima and A. Barreras-Serrano*, Universidad Autónoma de Baja California, Mexicali, B.C. México.

T65 Use of intra-ruminal monensin capsules in dairy cows under alfalfa grazing conditions. II. Reproductive performance. A. A. Abdala[1], M. G. Maciel[1], M. R. Gallardo[1], M. E. Castelli[1], A. Quatrin[1], D. Lettieri[1], S. P. Allassia[1], N. Zanoni[1], and A. R. Castillo*[2], [1]Experimental Station Rafaela, INTA, Argentina, [2]UC Davis Cooperative Extension, USA.

T66 Estimation of additive and nonadditive genetic parameters in the Chilean multibreed dairy cattle population using restricted maximum likelihood procedures. M. A. Elzo*[1], A. Jara[2], and N. Barria[2], [1]University of Florida, Gainesville, [2]University of Chile, Santiago, Chile.

T67 Estimation of genetic trend for milk yield in two dairy herds involving inheritance of holstein cows in baja california, mexico. A. Perez*[1], J. Ponce[1], A. Correa[1], M. Montaño[1], J. Guerrero[2], and S. Cobos[1], [1]Universidad Autónoma de Baja California, Mexicali, Baja California, Mexico, [2]University of California, Holville CA. USA.

T68 Genetic evaluation of male and female fertility using longitudinal binary data. T. Averill* and R. Rekaya, The University of Georgia.

T69 Genetic relationships between ewe mature size and measures of lamb feed efficiency and postweaning growth in Targhee sheep. B. W. Woodward*[1] and G. D. Snowder[2], [1]USDA-ARS, US Sheep Experiment Station, Dubois, ID, [2]USDA-ARS, US Meat Animal Research Center, Clay Center, NE.

T70 Estimates of genetic parameters for reproduction and weight in the progeny of Nubian, French Alpine, Saanen, Toggenburgh, and Spanish goats mated to Boer sires. A. Perez*[1], J. Ponce[1], A. Correa[1], M. Montaño[1], and J. Guerrero[2], [1]Universidad Autónoma de Baja California, Mexicali, Baja California, Mexico, [2]University of California, Holville CA. USA.

T71 Relationships among measures of body weight, thoracic diameter and age to scrotal circumferences of boer goat. A. Perez*[1], J. Ponce[1], A. Correa[1], M. Montaño[1], and J. Guerrero[2], [1]Universidad Autónoma de Baja California, Mexicali, Baja California, Mexico, [2]University of California, Holville CA. USA.

T72 Calving ease of heifers bred to Angus and Simmental sires selected for decreased dystocia. H. C. Van Wagoner[1], R. P. Ansotegui*[1], M. D. Ropp[2], and R. J. Lipsey[2], [1]Montana State University, [2]American Simmental Association.

T73 Odds ratios for failure to calve and wean for Senepol- and Tuli-Angus cows compared to Brahman-Angus cows. D. G. Riley*[1], K. S. Barling[2], C. C. Chase, Jr.[1], T. A. Olson[3], A. C. Hammond[4], and S. W. Coleman[1], [1]USDA, ARS, STARS, Brooksville, FL, [2]Texas A&M University, College Station, [3]University of Florida, Gainesville, [4]USDA, ARS, SAA, Athens, GA.

T74 Divergent selection for blood serum insulin-like growth factor I concentration does not change age of Angus heifers at puberty. A. Yilmaz[1], M. E. Davis*[1], and R. C. M. Simmen[2], [1]Department of Animal Sciences, The Ohio State University, [2]Department of Animal Science, University of Florida.

T75 Effectiveness of performance testing for beef carcass traits to use embryonic cloning technique in Wagyu. K. Kuchida*[1], M. Ogasawara[1], S. Hidaka[1], T. Sakai[2], A. Minamihashi[2], and Y. Yamamoto[2], [1]Obihiro University of A&VM, Obihiro-shi Japan, [2]Hokkaido Animal Research Center, Shintoku-cho Hokkaido Japan.

T76 Effect of calving difficulty on cow survival. Sara McClintock*[1], John Morton[2], Kevin Beard[3], and Michael Goddard[1,4], [1]University of Melbourne, [2]Department of Primary Industry, [3]Australian Dairy Herd Improvement Scheme, [4]Victorian Institute of Animal Science.

Nonruminant Nutrition

Vitamins and Minerals

T77 Effects of supplemental pantothenic acid during all or part of the grow-finish period on growth performance and carcass composition. J.S. Radcliffe*, B.T. Richert, L. Peddireddi, and S.A. Trapp, Purdue University, West Lafayette, IN.

T78 Effect of supplemental *myo*-inositol in diets for weanling pigs. S. E. Crowe*, K. R. Roneker, M. Villa-Garcia, and X. G. Lei, Cornell University, Ithaca, NY USA.

T79 Influence of dietary Δ-aminolevulinic acid on growth performance and skin color in weaned pigs. J. W. Hong*[1], I. H. Kim[1], B. J. Min[1], O. S. Kwon[1], J. H. Lee[2], J. H. Kim[3], W. B. Lee[1], and K. S. Son[1], [1]Department of Animal Resource & Sciences, Dankook University, [2]Easybio System, Inc., Seoul, Korea, [3]Agribrands Purina Korea, Seoul, Korea.

T80 Selenium and measures of oxidative stress in the developing porcine fetus. C. E. Hostetler*[1] and R. L. Kincaid[1], [1]Washington State University.

T81 Withdrawn

T82 Effect of chromium methionine supplementation on egg size and serum concentration of glucose, protein, ferritin and iron in breeders of Japanese quail. G. Contreras*[1], L. García[1], A. Montoya[1], and R. Barajas[1], [1]FMVZ-Universidad Autónoma de Sinaloa (México), Culiacan.

T83 Effect of chromium methionine supplementation on internal and external egg quality characteristics in Japanese quail. F. G. Ríos*, J. J. Portillo, C. Angulo, M. R. Hernández, and R. Barajas, FMVZ-Universidad Autónoma de Sinaloa, Culiacan, México.

T84 Relative availability of calcium of different source for broiler chickens. E. Muniz*, A. Arruda, E. Pereira, C. Leseux, and N. Tsuzuki, Universidade Estadual do Oeste do Parana, Brasil.

T85 The digestibility of phosphorus (P) in dicalcium phosphate in pigs. T.S. Stahly and T.R. Lutz*, Iowa State University, Ames.

T86 Efficacy of microbial phytase in swine diets. R. N. Dilger*[1], S. A. Adedokun[1], J. A. Jendza[1], J. S. Sands[2], P. H. Simmins[2], and O. Adeola[1], [1]Purdue University, West Lafayette, IN, [2]Danisco Animal Nutrition, Marlborough, UK.

T87 Effects of the addition of phytase and monocalcium phosphate to sorghum-soybean meal diets on growing commercial pigs. H. Bernal-Barragan*, Z. Ruiz-Chavez, J. Colin-Negrete, E. Gutierrez-Ornelas, and H. Morales-Treviño, Universidad Autonoma de Nuevo Leon.

T88 Phytase additions to conventional or low-phytate corn-soybean meal diets on phosphorus balance in growing pigs. E. G. Xavier*, G. L. Cromwell, and M. D. Lindemann, University of Kentucky, Lexington.

T89 Ileal amino acid digestibility in pigs fed grain sorghum-soybean meal diets added with a phytase. M. Cervantes*[1], M. A. Barrera[1], F. Copado[2], J. L. Figueroa[2], W. Sauer[3], M. Cuca[2], and N. Torrentera, [1]Instituto de Ciencias Agrícolas, UABC, Mexicali, [2]Colegio de Postgraduados, Montecillos, México, [3]University of Alberta, Canada.

T90 Effect of phytase and/or pancreatin supplementation to grain sorghum-soybean meal diets on the apparent ileal amino acid digestibility in pigs. F. Copado[2], M. Cervantes*[1], J.L. Figueroa[2], M. Cuca[2], J. Yañez[1], and W. Sauer[3], [1]Instituto de Ciencias Agrícolas, Universidad Autónoma Baja California, Mexicali, [2]Colegio de Postgraduados, Montecillos, México, [3]University of Alberta, Canada,.

T91 Phytase and crystalline amino acids supplementation to grain sorghum-soybean meal diets for growing pigs. F. Copado[2], M. Cervantes*[1], J.L. Figueroa[2], M.A. Barrera[1], J. Yañez[1], M. Cuca[2], S. Espinoza[1], and N. Torrentera[1], [1]Instituto de Ciencias Agrícolas, Universidad Autónoma Baja California, Mexicali, [2]Colegio de Postgraduados, Montecillos, México.

Companion Animals

T92 Effects of diet and age on metabolic characteristics and gene expression profile in the dog. Part 1: Metabolic characteristics. Kelly S. Swanson*, Kristy N. Kuzmuk, Larry B. Schook, and George C. Fahey, Jr., University of Illinois, Urbana, IL.

T93 Effects of diet and age on metabolic characteristics and gene expression profile in the dog. Part 2: Gene expression profiling. Kelly S. Swanson*, Kristy N. Kuzmuk, Larry B. Schook, and George C. Fahey, Jr., University of Illinois, Urbana, IL.

T94 Case study of preparing a submission for regulatory clearance of a new ingredient. L. B. Deffenbaugh*, Kemin Nutrisurance, Inc.

T95 Effects of spray-dried animal plasma on apparent digestibility, intake and fecal consistency in adult Beagles. J. D. Quigley, III*, K. Dahm, and T. A. Wolfe, APC, Inc., Ames, IA.

T96 Effects of supplemental spray dried plasma on food intake, nutrient digestibility, and gastrointestinal microflora in healthy adult dogs. J. M. Dust*[1], G. C. Liu[1], C. M. Grieshop[1], N. R. Merchen[1], J. D. Quigley, III[2], and G. C. Fahey, Jr.[1], [1]University of Illinois, Urbana, IL, [2]APC, Inc., Ames, IA.

T97 Corn hybrid impacts ileal and total tract nutrient digestibility by dogs. A. M. Gajda, E. A. Flickinger*, C. M. Grieshop, N. R. Merchen, and G. C. Fahey, Jr., University of Illinois, Urbana, IL U.S.A.

T98 Evaluation of low-oligosaccharide low-phytate whole soybeans and soybean meal in canine foods. R.M. Yamka*[1], B.M. Hetzler[1], and D.L. Harmon[1], [1]Department of Animal Sciences, University of Kentucky, Lexington, KY 40546.

T99 Accounting for the proportion of alpha-amino nitrogen in crude protein improves metabolizable energy prediction in dry extruded dog foods. R. M. Yamka*[1], K. R. Mcleod[1], D. L. Harmon[1], H. C. Freetly[2], and W. D. Schoenherr[3], [1]Department of Animal Sciences, University of Kentucky, Lexington, KY 40546, [2]USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE 68933, [3]Hill's Pet Nutrition, Topeka, KS 66617.

T100 Estimation of the proportion of bacterial nitrogen in canine feces using diaminopimelic acid as an internal bacterial marker. L. K. Karr-Lilienthal[1], C. M. Grieshop[1], J. K. Spears[1], A. Patil[2], N. M. Merchen[1], and G. C. Fahey, Jr.[1], [1]Unversity of Illinois at Urbana-Champaign, IL USA, [2]Nestle Purina Research, St Joseph, MO USA.

T101 The effect of preservation time length and thawing on *Lactobacillus* population from fecal material. C. J. Fu and M. S. Kerley, University of Missouri-Columbia.

T102 Effect of dietary antioxidants on immune system parameters in dogs and cats. D. Jewell*[1], K. Friesen[1], L. Larson[2], T. Sharp[2], and R. Schultz[2], [1]Hill's Pet Nutrition, Inc, [2]The University of Wisconsin - Madison.

T103 Evaluation of delta-6 desaturase kinetics in canine liver microsomes for alpha-linolenic acid in the presence of competitive amounts of linoleic acid. J. E. Bauer* and B. L. Dunbar, [1]Texas A&M University.

T104 The effect of dietary fat on the fatty acid composition of olfactory mucosal tissues in young adult dogs. C. T. Middendorf, K. A. Cummins*, E. A. Altom, and Margaret Craig-Schmidt, Auburn Univeristy, AL.

T105 Heritability of hypoadrenocorticism in the Portuguese Water Dog and the Leonberger. A. M. Oberbauer*, K. N. Simpson, J. M. Belanger, and T. R. Famula, University of California, Davis, CA.

Horse

T106 Use of ass's milk for novel probiotic beverages. E. Salimei*[1], E. Sorrentino[2], M. Succi[2], F. Fantuz[3], G. Varisco[4], and R. Coppola[2], [1]Dept. SAVA, Univ. of Molise, CB Italy, [2]Dept. STAAM, Univ. of Molise, CB Italy, [3]Dept. Sci. Vet., Univ. of Camerino, MC Italy, [4]Ist. Sperim. Zooprofilattico, Brescia Italy.

T107 The influence of training on flat walking temporal variables of Tennessee Walking Horse yearlings. K.M. Holt* and M.C. Nicodemus, Mississippi State University, Mississippi State, MS.

T108 Walking temporal variables of the padded Tennessee Walking Horse. M. C. Nicodemus* and K. M. Holt, Mississippi State University, Mississippi State, MS.

T109 Effects of post-partum ivermectin administration to broodmares on the incidence of foal-heat diarrhea. S. E. Harris[1], M. M. Vogelsang*[1], E. E. Bass[2], and G. D. Potter[1], [1]Texas A&M University, College Station, TX USA, [2]University of Georgia, Athens, GA USA.

T110 Body condition scores and biometric measurements to predict body weight in warm blood German riding horses. S. Schramme and E. Kienzle*, Chair of Animal Nutrition, Ludwig-Maximilians-University, Munich, Germany.

T111 Effects of feeding a blend of grains naturally-contaminated with *Fusarium* mycotoxins on feed intake and indices of athletic performance of horses. S. L. Raymond*, T. K. Smith, and H.V.L.N. Swamy, University of Guelph.

Rabbit

T112 Effect of doe-litter separation on reproductive performance of lactating rabbits does. A. Espinosa, R. Lazaro*, R. Carabaño, and P.G. Rebollar, Universidad Politecnica de Madrid. Spain.

T113 Milk production evaluation in rabbits milking one or two times a day. R. Salcedo-Baca*[1,2], J. L. Echegaray-Torres[2], and A. Robinson[1], [1]University of Guelph, Guelph, ON, Canada, [2]Universidad Autonoma Chapingo, Texcoco, Estado de Mexico, Mexico.

T114 Parturition synchronization in rabbits using prostaglandins: Optimal time for hormone application. J. L. Echegaray-Torres*[1], R. Salcedo-Baca[1,2], and C. Flores-Martinez[3], [1]Universidad Autonoma Chapingo, Chapingo, Edo. de Mexico, [2]University of Guelph, Guelph, ON, Canada, [3]Instituto Tecnológico Agropecuario de Oaxaca, Oaxaca, Mexico.

T115 The shape of the lactation curve in rabbits milking once or twice a day, and the function to estimate the total milk production. R. Salcedo-Baca*[1,2], J. L. Echegaray-Torres[2], and A. Robinson[1], [1]University of Guelph, Guelph, ON, Canada, [2]Universitad Autonoma Chapingo, Texcoco, Edo. de Mexico, Mexico.

Ruminant Nutrition

Dairy and Beef

T116 Effects of rumen degradable protein and fiber quality on extracellular proteolytic activity in continuous culture. D. Hastings, K. Griswold*, T. Kochman, B. Jacobson, and G. Apgar, Southern Illinois University.

T117 Relative transite time of chyme between duodenal and jejunal segments of the small intestine of cattle. V. M. Gonzalez[1], E. G. Arellano[1], G. Mendoza[1], F. G. Monge[1], A. Plascencia*[1], E. Silva-Pena[1], C. Vasquez[1], and R. A. Zinn[2], [1]Universidad Autonoma de Baja California, Mexico, [2]University of California, Davis.

T118 Effects of feeding a slow-release urea on ruminal nitrogen dynamics in steers. K. C. Hanson*[1], S. E. Kitts[1], N. B. Kristensen[1], D. E. Axe[2], and D. L. Harmon[1], [1]University of Kentucky, Lexington, [2]IMC, Lake Forest, IL.

T119 Effect of a novel hexadecatrienoic acid from marine algae (*Chaetoceros*) and olive oil on methane production by ruminal fluid in vitro. E. M. Ungerfeld*[1], S. R. Rust[1], M. T. Yokoyama[1], R. Burnett[1], and J. K. Wang[2], [1]Michigan State University, East Lansing, MI, USA, [2]University of Hawaii at Manoa, Honolulu, HI, USA.

T120 Short-term energy and protein supplementation affects ammonia, urea and glucose flux across portal-drained viscera (PDV) and liver in Holstein steers. J. H. Eisemann*[1], J. E. Ramirez[1], K. E. Govoni[2], S. A. Zinn[2], and G. B. Huntington[1], [1]North Carolina State University, [2]University of Connecticut.

T121 Is ruminal biotin availability decreased by low pH?. O. Rosendo*[1], D. Bates[1], C. R. Staples[1], L. R. McDowell[1], R. J. McMahon[1], W. M. Seymour[2], and N. Wilkinson[1], [1]University of Florida, Gainesville, Fl., [2]Roche Vitamins, Inc., Parsippany, NJ.

T122 Ammonia production rate from five protein sources. E. B. Venable* and M. S. Kerley, University of Missouri-Columbia.

T123 Influence of abomasal carbohydrates on small intestinal sodium-dependent glucose co-transporter activity and abundance in steers. S. M. Rodriguez*[1], K. C. Guimaraes[1], J. C. Matthews[1], K. M. McLeod[1], R. L. Baldwin[2], and D. L. Harmon[1], [1]University of Kentucky, Lexington, [2]USDA, ARS, Beltsville, MD.

T124 Effects of combinations of ethyl 2-butynoate and crotonic acid or 3-butenoic acid on ruminal degradability and microbial efficiency in vitro. E. M. Ungerfeld*, S. R. Rust, and R. Burnett, Michigan State University, East Lansing, MI, USA.

T125 Amino acid profiles of tropical forages and of residues after incubation in the rumen and phosphate borate buffer corrected by the ADIP amino acid profile. L. Miranda[1], N. Rodriguez[2], R. Sainz*[3], E. Pereria[4], M. Gontijo Netto[5], C. Veloso[6], and P. Fernandes[7], [1]FEAD-Minas, Brazil, [2]Universidade Federal Minas Gerais, Brazil, [3]University of California- Davis, USA, [4]Universidade Estadual Oeste Parana, Brazil, [5]EMBRAPA Gado de Corte, Brazil.

T126 Contribution of degraded starch to the prediction of fermentable organic matter for ruminants. A. Offner* and D. Sauvant, INA P-G INRA, Paris, France.

T127 Using Synchrotron infrared microspectroscopy to probe molecule chemical difference between two types of barley with distinguished biodegradation behaviors. P. Yu*[1], J. J Mckinnon[1], C. Christensen[2], M. D. Drew[1], B. G. Rossnagel [3], and D. A Christensen[1], [1]Department of Animal and Poultry Science, University of Saskatchewan, [2]BioMedical Imaging Group, [3]Department of Plant Sciences, University of Saskatchewan.

T128 Improved method for measuring processing degree and gelatinized starch in steam-flaked grain. Marcus Meilahn[1] and Davy Brown*[2], [1]Weld Laboratories, [2]Agland, Inc.

T129 Comparative effect of pork meat meal and chicken meat meal on apparent digestibility of diets for sheep. A. Estrada*[1], R. Barajas[1], and J. F. Obregon[1], [1]FMVZ-Universidad Autónoma de Sinaloa (México).

T130 Effects of intranasal administration of a lysozyme/zinc/carbopol preparation on health and performance of newly received beef cattle. J. D. Rivera*[1], J. T. Richeson[1], J. F. Gleghorn[1], N. A. Elam[1], M. L. Galyean[1], M. E. Hubbert[2], and S. E. Bachman[2], [1]Texas Tech University, Lubbock, TX, [2]Ganado Research, Amarillo, TX.

T131 Effect of N-source on in vitro microbial crude protein and glycogen yields and NDF digestion from NDF and sucrose fermentations. L. Holtshausen* and M. B. Hall, Department of Animal Sciences, University of Florida, Gainesville, FL USA.

T132 Biohydrogenation of unsaturated fatty acids and duodenal flow of CLA and *trans*-fatty acids in dairy cows fed a high-concentrate diet supplemented with linseed, sunflower, or fish oil. J. J. Loor*[1,2], K. Ueda[1], A. Ferlay[1], Y. Chilliard[1], and M. Doreau[1], [1]INRA, 63122 St.-Genes Champanelle, France, [2]Department of Animal Sciences, University of Illinois.

T133 Conjugated linoleic acids (CLA) and *trans*-fatty acid profiles of blood plasma and milk fat in dairy cows fed a high-concentrate diet supplemented with linseed, sunflower, or fish oil. J. J. Loor*[1,2], A. Ferlay[1], A. Ollier[1], K. Ueda[1], M. Doreau[1], and Y. Chilliard[1], [1]INRA, 63122 St.-Genes Champanelle, France, [2]Department of Animal Sciences, University of Illinois.

T134 Effect of chromium methionine supplementation in diet on milk production of holstein pure breed and 3/4 holstein cows receiving recombinant bovine somatotropin in hormone injection. R. Barajas*[1], R. Zambada[1], J. J. Portillo[1], L. M. Rubio[1], C. Lizarraga[2], Z. Verdugo[1], and N. Gonzalez[1], [1]FMVZ-Universidad Autonoma de Sinaloa (Mexico), [2]Establo Lechero.

T135 Comparison of inorganic and complexed trace element supplements on performance of dairy cows. R. L. Kincaid*[1], J. D. Cronrath[1], and M. T. Socha[2], [1]Washington State University, [2]Zinpro Corporation.

T136 Effects of Lactonin on milk production of dairy cow during weeks 20 through 42 of lactation. Z. M. Shen*[1], R. F. Zhang[1], F. Chen[2], and T. S. Lu[3], [1]Nanjing Agricultural University, Nanjing, China, [2]Shanghai Bright Group, China, [3]Shanghai Walcom Bio-Chem Co., Ltd, China.

T137 Serum ß carotene concentrations and variability factors in US dairy herds. T. H. Herdt[1] and W. M. Seymour*[2], [1]Michigan State University, [2]Roche Vitamins Inc.

T138 Phosphorus balance in dairy cows fed sub-optimal dietary phosphorus. K. V. Shore*, T Mutsvangwa, T. M. Widowski, J. P. Cant, W. J. Bettger, and B. W. McBride, University of Guelph, Guelph, Ontario, Canada.

T139 Effects of supplemental conjugated linoleic acid and *trans*-octadecenoic fatty acids on the insulin-like growth factor system in periparturient Holstein cows. K. T. Selberg, A. C. Dinges, C. R. Staples, and L. Badinga*, University of Florida, Gainesville.

T140 Effects of feeding calcium salts of fatty acids with methionine hydroxy analog and bacterial fermentation residue vs. tallow-vegetable blend and plant proteins on lactational performance and in-vitro fermentation. K. A. Koudele*[1], W. K. Sanchez[2], L. H. Adams[1], D. E. Weber[2], D. R. Metzger[3], N. R. St-Pierre[4], and E. Block[2], [1]Andrews University, Berrien Springs, MI, [2]Arm & Hammer Nutrition Group, Church & Dwight Co, Inc., Princeton, NJ, [3]Metzger Cousulting Services, Goshen, IN, [4]Ohio State University, Columbus, OH.

T141 Effects of saturation ratio of supplemental dietary fat on production performance of lactating Holstein cows in early lactation. M. A. Ballou*, E. J. DePeters, H. Perez-Monti, S. J. Taylor, and J. W. Pareas, University of California, Davis.

T142 Techniques to measure the bioavailability of rumen-protected methionine supplements. C. E. Moore*[1], B. Sloan[2], D. A. Henderson[1], and L. H. Baumgard[1], [1]University of Arizona, Tucson, AZ, [2]Adisseo, Alpharetta, GA.

T143 Comparison of abomasal infusion of free fatty acid and methyl ester forms of conjugated linoleic acids on milk fat depression in dairy cows. M. J. de Veth*[1], J. M. Griinari[2], A. M. Pfeiffer[3], and D. E. Bauman[1], [1]Cornell University, Ithaca, NY, [2]Clanet Ltd, Espoo, Finland, [3]BASF-AG, Offenbach, Germany.

T144 *Trans*-fatty acids (*t*FA), CLA isomers, and milk fat depression (MFD) in dairy cows receiving incremental doses of fish oil. J. J. Loor*[1,3], J. M. Chardigny[2], J. Chabrot[1], M. Doreau[1], A. Ollier[1], J. L. Sebedio[2], and Y. Chilliard[1], [1]INRA, 63122 St.-Genes Champanelle, France, [2]INRA, 21065 Dijon, France, [3]Department of Animal Sciences, University of Illinois.

T145 *Trans* fatty acids (*t*FA) and CLA in liquid-associated (LAB) and solid-adherent (SAB) ruminal bacteria from dairy cows fed diets varying in forage:concentrate ratio (F:C) and level of linseed, sunflower, or fish oil. J. J. Loor*[1,2], K. Ueda[1], A. Ferlay[1], Y. Chilliard[1], and M. Doreau[1], [1]INRA, 63122 St.-Genes Champanelle, France, [2]Department of Animal Sciences, University of Illinois.

T146 Effects of free methionine and lysine on performance and ruminal fermentation of late lactation Holstein cows. Y. H Chung*, H. G. Bateman, C. C. Williams, C. C. Stanely, P. A. Terrell, and D. T. Gantt, LSU AgCenter, Baton Rouge, LA.

T147 Transfer of dietary fatty acids and hydrogenation intermediates from duodenum to milk in cows fed diets varying in forage:concentrate ratio and level of linseed, sunflower, or fish oil. J. J. Loor*[1,2], K. Ueda[1], A. Ferlay[1], M. Doreau[1], and Y. Chilliard[1], [1]INRA, 63122 St.-Genes Champanelle, France, [2]Department of Animal Sciences, University of Illinois.

T148 Effect of level of dietary crude protein on milk yield and ruminal metabolism in lactating dairy cows. J. J. Olmos Colmenero*[1] and G. A. Broderick[2], [1]University of Wisconsin-Madison, [2]U.S. Dairy Forage Research Center.

T149 Feeding calcium salts of linoleic and linolenic essential fatty acids to pre and post-partum Holstein cows improves reproduction, health and profit. W. K. Sanchez*, E. Block, and K. R. Cummings, ARM & HAMMER Animal Nutrition Group, Church & Dwight Co, Inc., Princeton, N.J.

T150 Effect of dietary soybean oil on lactation performance and conjugated linoleic acid (CLA) concentration in milk of cows on commercial dairy farms. N. Plourde*, J. P. Faucher, J. Delisle, D. Pellerin, and P.Y. Chouinard, Universite Laval.

T151 Effects of essential oils and monensin on ruminal pH, ammonia concentration and in situ degradation of dry matter and nitrogen in the rumen of lactating dairy cows. C. Benchaar*[1,2], T. D. Whyte[2], H. V. Petit[1], R. Berthiaume[1], D. R. Ouellet[1], and P. Y. Chouinard[3], [1]Agriculture and Agri-Food Canada, Lennoxville, Quebec, Canada, [2]Nova Scotia Agricultural College, Truro, Nova Scotia, Canada, [3]Universite Laval, Ste-Foy, QC, Canada.

T152 Effect of vitamin E supplementation in late lactation on milk production and milk fatty acid profile. J. K. Kay, L. H. Baumgard, E. S. Kolver, and J. R. Roche, [1]Dexcel (formerly Dairying Research Corporation), Hamilton, New Zealand, [2]University of Arizona, Tucson, Arizona.

T153 Partial replacement of corn grain with calcium salts of fatty acid in the concentrate fed to grazing primiparous and multiparous dairy cows. G. F. Schroeder*[1,2], G. A. Gagliostro[3], L. I. Vidaurreta[1], J. J. Couderc[1,2], P. Gatti[4], A. Rodriguez[4], and G. Eyherarbide[1], [1]Fac. Cs. Agrarias. UNMdP, [2]CONICET, [3]INTA EEA Balcarce, [4]INTI CITIL PTM, Argentina.

T154 Biotin supplementation for periparturient dairy cows. O. Rosendo[1], C. R. Staples*[1], L. R. McDowell[1], R. J. McMahon[1], and W. M. Seymour[2], [1]University of Florida, Gainesville, FL, [2]Roche Vitamins, Inc., Parsippany, NJ.

T155 Effects of dietary addition of essential oils and monensin on nutrient digestibility, nitrogen retention, milk production and milk composition of Holstein cows. C. Benchaar*[1,2], T. D. Whyte[2], R. Berthiaume[1], H. V. Petit[1], D. R. Ouellet[1], and P. Y. Chouinard[3], [1]Agriculture and Agri-Food Canada, Lennoxville, Quebec, Canada, [2]Nova Scotia Agricultural College, Truro, Nova Scotia, Canada, [3]Universite Laval, Ste-Foy, QC, Canada.

T156 Relation of arterial concentration of lysine and methionine milk and milk protein production: a twenty-year literature review. R. A. Patton*[1], M. J. Stevenson[2], and A. J. Duffield[1], [1]Nittany Dairy Nutrition, Mifflinburg, PA, [2]Degussa Corporation, Kennesaw, GA.

T157 Response of pre-partum and early lactation dairy cows to dietary inclusion of ruminally inert conjugated linoleic acid. T. R. Dhiman*[1], M. S. Zaman[1], and N. D. Luchini[2], [1]Utah State University, Logan, UT, [2]Bioproducts, Incorporated, Fairlawn, OH.

T158 Comparison of commercially available rumen-stable choline products. L. Kung, Jr.*[1], D. E. Putnam[2], and J. E. Garrett[2], [1]University of Delaware, Newark, DE, [2]Balchem Encapsulates, New Hampton, NY.

T159 A comparison of the 1989 and 2001 National Research Council models on predicting protein requirements for dairy cows. K. Guo*[1] and R. Kohn[1], [1]University of Maryland.

T160 Influence of HMBi concentration on in vitro estimated organic matter digestibility of diets varying in proportion of corn silage relative to concentrate. J. C. Robert*, S. Paquet, C. Richard, and B. Bouza, Adisseo, Antony, France.

T161 Milk production and composition and prostaglandin secretion in dairy cows fed different fat sources. H. V. Petit*[1], C. Germiquet[2], and D. Lebel[2], [1]Agriculture and Agri-Food Canada, Dairy and Swine Research and Development Centre, [2]Département de Biologie, Université de Sherbrooke.

T162 Effects of monensin and (or) high levels of zinc on ruminal degradation of free lysine and liquid hydroxymethylthiobutanoic acid. H. G. Bateman, II*[1], C. C. Williams[1], D. T. Gantt[1], Y. H. Chung[1], A. E. Beem[1], C. C. Stanley[1], G. E. Goodier[1], P. G. Hoyt[2], and L. D. Bunting[3], [1]LSU AgCenter, Baton Rouge, LA, [2]LSU School of Vet Medicine, Baton Rouge, LA, [3]Archer Daniels Midland Company, Quincy, IL.

T163 Influence of HMBi, HMB and combination of both on ruminal metabolism in vivo. J. C. Robert*, E. Madiot, C. Richard, and B. Bouza, Adisseo, Antony, France.

T164 Milk choline concentration as an index of bioavailability of rumen-protected choline. J. R. Newbold* and J. Lavrijssen, Provimi Research and Technology Centre, Brussels, Belgium.

T165 Lactation performance of dairy cows fed different amounts of protein. E. B. Groff* and Z. Wu, Pennsylvania State University.

T166 Limiting amino acids of some tropical forages and their residues after rumen incubation, related to milk protein amino acidic composition. Lidia Miranda[1], Norberto Rodrigues[2], Roberto Sainz*[3], Elzania Pereira[4], Miguel Gontijo Netto[5], Cristina Veloso[6], and Augusto Queiroz[7], [1]FEAD-Minas, Brazil, [2]Universidade Federal Minas Gerais, Brazil, [3]University of California- Davis, USA, [4]Universidade Estadual Oeste Parana, [5]EMBRAPA Gado de Corte, Brazil.

T167 Changes in volatile fatty acid and *trans* fatty acid concentrations in the rumen of lactating Holstein cows fed four concentrations of unsaturated free fatty acids. S. A. Mosley, E. J. Thies, E. E. Mosley, and T. C. Jenkins*, Clemson University, Clemson, SC 29634.

T168 Milk protein response to rumen protected methionine in two commercial herds in central Mexico. H. Gutierrez*[1], G. Zavala[2], and R. A. Patton[3], [1]Ganaderos Asociados de Queretaro, Queretaro, Mexico, [2]Degussa Mexico, Mexico City, Mexico, [3]Nittany Dairy Nutrition, Mifflinburg, PA.

T169 Rumen undegradable protein characterization of three protein sources. W.H. Kolath*[1], P.L. Bond Jr.[2], and M.S. Kerley[1], [1]University of Missouri - Columbia, [2]Mid South Milling, Memphis, TN.

T170 Effects of nonfiber carbohydrate source and protein degradability on lactation performance and ruminal pH of Holstein cows. C. C. Larson* and M. B. Hall, University of Florida, Gainesville, Florida, USA.

T171 Production and reproductive performance of dairy herds fed different amounts of phosphorus. T. D. Edwards*, S.K. Tallam, and Z. Wu, Pennsylvania State University.

T172 The new French available phosphorus allowances for ruminants. F. Meschy and A. Offner*, Institut National de la Recherche Agronomique Paris France.

T173 Tolerance of inorganic selenium in wether sheep. L. A. Cristaldi, L. R. McDowell*, C. D. Buergelt, N. S. Wilkinson, and F. G. Martin, University of Florida, Gainesville, FL.

T174 Effect of diet on biotin balance in sheep. T. E. Peterson*[1], L. R. McDowell[1], R. J. McMahon[1], W. M. Seymour[2], N. S. Wilkinson[1], F. G. Martin[1], and P. R. Henry[1], [1]University of Florida, Gainesville, FL, [2]Roche Vitamins Inc., Parsippany, NJ.

T175 Effect of VFA on [^{15}N]ammonia utilization for amino acid and urea synthesis by ruminal epithelial and duodenal mucosal cells isolated from growing sheep. M. Oba*[1], R. L. Baldwin, IV[2], S. L. Owens[1], and B. J. Bequette[1], [1]Department of Animal and Avian Sciences, University of Maryland, College Park, MD, [2]Bovine Functional Genomics Laboratory, ANRI, USDA-ARS, Beltsville, MD.

Production, Management, and the Environment

T176 Use of electronic rumen boluses for identification of sheep in the U.S. G. Caja*[1], D. L. Thomas[2], M. Rovai[1], Y. M. Berger[2], and T. A. Taylor[2], [1]Universitat Autonoma de Barcelona, Bellaterra, Spain, [2]University of Wisconsin-Madison.

T177 Effects of bolus features on retention performance in the electronic identification of cattle. J. J. Ghirardi, G. Caja*, D. Garin, and M. Hernandez-Jover, Universitat Autónoma de Barcelona, Spain.

T178 Effect of different alum applications on the environment of dairy calf hutches. J. C. Lin*[1], B. R. Moss[1], K. A. Cummins[1], P. J. Tyler[1], W. H. McElhenney[1], and C. W. Wood[2], [1]Animal Science Department, [2]Agronomy and Soils Department, Auburn University, AL.

T179 Growth performance and health of dairy calves bedded with different types of materials. R. Panivivat*[1], J. A. Pennington[2], E. B. Kegley[1], D. W. Kellogg[1], and S. L. Krumpelman[1], [1]University of Arkansas, Fayetteville, [2]University of Arkansas Cooperative Extension Service, Little Rock.

T180 Effect of free-stall design on cow behavior and performance. R. J. Norell[1], S. Mosley[2], A. Ahmadzadeh[2], and P. Deaton[1], [1]University of Idaho, Idaho Falls, [2]University of Idaho, Moscow.

T181 The effects of cooling strategy and level of milk production on milk constituents and body composition quality traits during summer heat stress in lactating Holstein dairy cattle. H. Evans[1,2], J. Murphey[3], E. Cuadra[4], T. Dickerson[2], S. Gandy[2], S. Willard[2], and R. Vann*[1], [1]Brown Loam Branch Experiment Station, Raymond, MS, [2]Mississippi State University, Mississippi State, MS, [3]Coastal Plains Branch Experiment Station, Newton, MS, [4]Alcorn State University, Alcorn State, MS.

T182 Relationships between body condition score and peak milk in Holsteins. M. L. Theurer*[1], M. A. McGuire[1], and J. J. Higgins[2], [1]University of Idaho, Moscow, [2]Standard Nutrition, Richland, WA.

T183 BeefSys: An interactive database program for on-going experiments and archival of livestock data. F. M. Rouquette, Jr.*, K. D. Norman, G. M. Clary, and C. R. Long, Texas A&M University Agricultural Research & Extension Center, Overton, TX/USA.

T184 Contribution of manure and legume nitrogen to crop fertilization plans of Wisconsin dairy farms. B. J. Towns* and M. A. Wattiaux, University of Wisconsin-Madison.

T185 Impact of manure application timing in dairy pastures on the migration of nitrates to groundwater. T. Downing*[1], B. Lambert[1], and M. Gamroth, [1]Oregon State University.

T186 Effect of trucking density and transport time of market pigs on behavioural pattern during transport, plasma concentrations of stress-related biochemical markers and carcass quality. J. H. Woo, D. M. Ha, C. Y. Lee, and D. H. Kim*, [1]Regional Animal Industry Research Center, Jinju National University.

T187 Exposure to short days during the dry period increase milk production in subsequent lactation in dairy goats. Sameer J mabjeesh*[1], Avi Shamay[2], Geoff E Dahl[3], and Thomas T McFadden[4], [1]The Hebrew University of Jerusalem, The Faculty of Agriculture, Israel., [2]The Volcani center, Agricultural Research Organization, Israel, [3]University of Illinois, Urbana, [4]University of Vermont, Burlington.

Forages & Pastures

T188 Forage mineral concentrations in West Virginia pastures. E. B. Rayburn, W. L. Shockey*, and R. M. Wallbrown, West Virginia University, Morgantown, WV.

T189 The effects of irrigation of soil and stage of harvest on mineral contents of grasslands located at high altitude. A. Hayirli*[1], I. Kaya[2], K. Haliloglu[3], and B. karademir[4], [1]Dept. of Animal Nutrition, School of Veterinary Medicine, Ataturk University, Erzurum 25700, Turkey, [2]Dept. of Animal Nutrition, College of Veterinary Medicine, Kafkas University, Kars 36100, Turkey, [3]Dept. of Agronomy, College of Agriculture, Ataturk University, Erzurum 25100, Turkey, [4]Dept. of Internal Medicine, College of Veterinary Medicine, Kafkas University, Kars 36100, Turkey.

T190 Effects of soil irrigation and maturity stage on organic macronutrient composition and nutritive value of grasslands at high altitude. I. Kaya[1], A. Hayirli*[2], K. Haliloglu[3], and S. Yildiz[4], [1]Dept. of Animal Nutrition, College of Veterinary Medicine, Kafkas University, Kars 36100, Turkey, [2]Dept. of Animal Nutrition, School of Veterinary Medicine, Ataturk University, Erzurum 25700, Turkey, [3]Dept. of Agronomy, College of Agriculture, Ataturk University, Erzurum 25100, Turkey, [4]Dept. of Physiology, College of Veterinary Medicine, Kafkas University, Kars 36100, Turkey.

T191 Nitrate concentration of cereal forage species at three stages of maturity. L.M.M. Surber*, S. D. Cash, J.G.P. Bowman, and M. C. Meuchel, Montana State University, Bozeman, MT USA.

T192 Relationship of ADICP and NDICP to crude protein and soluble protein in forages fed to dairy cattle. R. T. Ward*[1], M. J. Stevenson[2], and R. A. Patton[3], [1]Cumberland Valley Analytical Service, Maugansville, MD, [2]Degussa Canada, Inc., Burlington, ON, [3]Nittany Dairy Nutrition, Mifflinburg, PA.

T193 Relationship of starch content in common forages to dry matter, crude protein, non-fiber carbohydrate and neutral detergent fiber. R. T. Ward[1], M. J. Stevenson[2], and R. A. Patton*[3], [1]Cumberland Valley Analytical Service, Maugansville, MD, [2]Degussa Canada, Inc., Burlington, ON, [3]Nittany Dairy Nutrition, Mifflinburg, PA 17844.

T194 Sugar content in common forages and its relationship to non-fiber carbohydrate percentage. R. T. Ward*[1], M. J. Stevenson[2], and R. A. Patton[3], [1]Cumberland Valley Analytical Service, Maugansville, MD, [2]Degussa Canada, Inc., Burlington, ON, [3]Nittany Dairy Nutrition, Mifflinburg, PA.

T195 Utility of near infrared reflectance spectroscopy to predict forage energy content derived by summative models. K. L. Lundberg*, P. C. Hoffman, and L. M. Bauman, University of Wisconsin-Madison.

T196 Optimal sampling schedule of diet components. B. Cobanov*[1] and N. R. St-Pierre[1], [1]The Ohio State University.

T197 Evaluation of the profile of fatty acids extracted from fresh alfalfa. C. V. D. M Ribeiro*, M. L. Eastridge, and D. L. Palmquist, The Ohio State University.

T198 The relationship between non-structural carbohydrates and total dry matter yield in cool season grasses. T. Downing*[1], A. Buyserie[1], and M. Gamroth[1], [1]Oregon State University.

T199 Influence on ration formulation of on-farm variability in methionine and lysine content of alfalfa haylage and corn silage. M. J. Stevenson*[1] and R. McKay[2], [1]Degussa Canada Inc., Burlington, ON, [2]Maple Leaf Feeds Agresearch, Burford, ON.

T200 Effect of different storage forms of alfalfa hay on the digestion characteristics in Holstein steers. M. Lopez[1], M. Cervantes*[1], and J. Guerrero[2], [1]ICA. Universidad Autónoma de Baja California, Mexicali, [2]Desert Research and Extension Center, University of California, Davis.

T201 Effect of method of conservation on the n-alkane C_{31} concentration of alfalfa and two temperate grasses. M. R. Reyes-Reyes[1], S. E. Buntinx*[1], F. S. Barajas-Torres[2], I. C. Gavilan-Garcia[2], and F. A. Castrejon-Pineda[1], [1]Facultad de Medicina Veterinaria y Zootecnia, [2]Facultad de Quimica, Universidad Nacional Autonoma de Mexico.

T202 The effect of milling on physical material lost through dacron bags of 53 micron pore size. C. W. Cruywagen*[1], G. Bunge, and L. Goosen, [1]University of Stellenbosch, South Africa.

T203 Measuring detergent insoluble protein and fiber in corn silage using crucibles or filter bags. G. Ferreira*[1,2] and D. R. Mertens[2], [1]Univ. of Wisconsin, [2]USDA-ARS, US Dairy Forage Research Center, Madison, WI.

T204 Orchardgrass soluble carbohydrate and digestibility levels in sward horizons under defoliation sequences initiated in morning and evening. T. C. Griggs[1], J. W. MacAdam[1], H. F. Mayland*[2], and J. C. Burns[3], [1]Utah State University, Logan, UT, [2]USDA-Agricultural Research Service, Kimberly, ID, [3]USDA-ARS, Raleigh, NC, and North Carolina State Univ., Raleigh, NC.

T205 Nutritional quality of seventy four accessions of elephantgrass (*Pennisetum purpureum* Schum) from Embrapa's Brazil collection. A. V. Pereira[1], H. Carneiro*[1], F. de S. Sobrinho[1], and M. Villaquiran[2], [1]EMBRAPA CNPGL, Minas Gerais, Brazil, [2]E. (Kika) de la Garza. American Institute for Goat Research, Langston, OK.

T206 Yield and growth of *Panicum maximum* Jacq under different fertilization levels with N and P in humid tropical forest conditions. A. Rodriguez-Petit* and J. Zambrano, Universidad Nacional Experimental Sur del Lago.

T207 Evaluation of energy efficiency and CO_2 emission from forage production systems. M Wachendorf*, M Kelm, and F Taube, University of Kiel, Kiel, Germany.

T208 Impact of maturation on cell wall degradability in corn stem internodes. H. G. Jung*, USDA-ARS, St. Paul, MN.

Dairy Foods

Cultured Dairy Products and Dairy Proteins

T209 Dissociation of casein supramolecules. B. S. Oommen* and D. J. McMahon, Department of Nutrition and Food Sciences, Utah State University.

T210 Antimicrobial activity of bovine milkfat globule membranes: A cautionary tale. D. A. Clare*, T. R. Klaenhammer, H. M. Hassan, G. L. Catignani, and H. E. Swaisgood, North Carolina State University, Raleigh, N.C. / USA.

T211 *In Vitro* stability of aß-galactosidase microcapsules. H. S. Kwak, J. B. Lee, B. J. Jeon, and J. Ahn, Sejong University, Seoul, Korea.

T212 Microencapslation of water-soluble isoflavone and physico-chemical property in milk. J. S. Seok, I. H. Ko, and H. S. Kwak, Sejong University, Seoul, Korea.

T213 FAT free sugar free plain set yogurt fortified with folic acid. C. A. Boeneke* and K. J. Aryana, Louisiana State University Agricultural Center, Baton Rouge, LA.

T214 Microstructure of folic acid fortified fat free sugar free plain set yogurt. K. J. Aryana*, [1]Louisiana State University Agricultural Center, Baton Rouge, LA.

T215 Development of cholesterol-removed compound whipping cream by ß-cyclodextrin. S. Y. Shim, H. J. Choi, and H. S. Kwak, Sejong University, Seoul, Korea.

T216 Development of cholesterol-removed compound whipping cream by ß-cyclodextrin. S. Y Shim, H. J. Choi, and H. S. Kwak, Sejong University, Seoul, Korea.

T217 Aerobic endospore distribution in a process to produce high phospholipid ingredients from commercial reconstituted buttermilk. L. Lassonde* and R. Jimenez-Flores, Cal Poly DPTC.

T218 Time-intensity measurement of "creaminess" in dairy mixes. T.M. Kruel*[1], K Adhikari[1], H Heymann[2], and I.U. Gruen[1], [1]University of Missouri-Columbia, [2]University of California-Davis.

T219 Identification of aroma compounds in whey powder. S. Mahajan, M. Qian*, and L. Goddik, Oregon State University.

T220 Ingredient interactions with derivatized whey protein powders. J. D Firebaugh* and C. R. Daubert, North Carolina State University, Raleigh, NC.

T221 Effect of drying methods on the physical and chemical properties of whole milk powder. L. F. Osorio*[1], J. U. McGregor[2], J. S. Godber[3], and N. Y. Farkye[4], [1]Escuela Agrícola Panamericana, Zamorano, Tegucigalpa, Honduras, [2]Food Science and Human Nutrition Dept., Clemson University, Clemson, SC, [3]Food Science Dept., LSU Ag Center, Baton Rouge, [4]Dairy Products Technology Center, California Polytechnic State University, San Luis Obispo, CA.

T222 Effect of drying technologies on the microstructure of whole milk powder. L. F. Osorio*[1], J. U. McGregor[2], J. S. Godber[3], and N. Y. Farkye[4], [1]Escuela Agícola Panamericana, Zamorano, Tegucigalpa, Honduras, [2]Food Science and Human Nutrition Dept., Clemson University, Clemson, SC, [3]Food Science Dept., LSU Ag Center, Baton Rouge, [4]Dairy Products Technology Center, California Polytechnic State University, San Luis Obispo, CA.

T223 Effect of glycomacropeptide and homogenization pressure on particle size and torsional fracture of heat induced whey protein emulsion gels. R. Suhareli, G. Perez-Hernandez*, and R. L. Richter, Texas A&M University.

T224 Rheological properties at fracture of thermally induced whey protein with lecithin emulsion gels. G. Perez-Hernandez*, R. Suhareli, and R. L. Richter, Texas A&M University, College Station, TX.

T225 Microencapsulated iron for drink yogurt fortification. H. S. Kwak, J. Ahn, and J. S. Seok, Sejong University, Seoul, Korea.

T226 Impact of flax oil emulsion composition on the oxidative stability of omega-3 enriched milk beverages. S. Lamothe*[1], G. Trudeau[2], and M. Britten[1], [1]FRDC, Agriculture and Agri-Food Canada, St-Hyacinthe, Qc, Canada, [2]Agropur, Granby, Qc, Canada.

T227 Rheological properties of concentrated skim milk: Influence of heat treatment and genetic variants on the changes in viscosity during storage. A Bienvenue[1], H Singh[2], and R Jimenez-Flores*[1], [1]Cal Poly Dairy Products Technology Center, [2]Massey University, New Zealand.

T228 Effect of pore size and temperature on the fractionation of buttermilk using microfiltration. P. Morin*[1], R. Jimenez-Flores[2], and Y. Pouliot[1], [1]Centre de recherche STELA, Universite Laval, Quebec, Canada, [2]Dairy Products Technology Center, California Polytechnic State University, San Luis Obispo, CA.

T229 Microbiological effects of pressurization with carbon dioxide on raw milk. M Rajagopal*, JH Hotchkiss, and BG Werner, Northeast Dairy Foods Research Center, Ithaca, NY/ USA.

T230 Observation of bacterial exopolysaccharide in dairy products using cryo-scanning electron microscopy. Ashraf Hassan*[1], Joseph Frank[1], and Morsi Elsoda[2], [1]The University of Georgia, USA, [2]Alexandria University, Egypt.

T231 Fat-level dependent impact of selected flavor volatiles on strawberry-flavored ice creams. S. T. Loeb*[1], I. U. Gruen[1], H. Heymann[2], K. Adhikari[1], L. N. Fernando[1], and R. D. Linhardt[1], [1]University of Missouri, Columbia, [2]University of California, Davis.

T232 Microencapsulation of vitamin C and it's effect on iron bioavailability in iron fortified milk. H. S. Kwak, J. B. Lee, and Y. J. Lee, Sejong University, Seoul, Korea.

T233 Effect of light exposure on flavor and oxidative stability of milk fortified with alpha-tocopherol and ascorbic acid. M van Aardt*[1], S.E. Duncan[1], T.E. Long[2], S.F. O'Keefe[1], J.E. Marcy[1], and S.R. Nielsen-Sims[3], [1]Food Science and Technology, Virginia Tech, [2]Chemistry, Virginia Tech, [3]Eastman Chemical Co.

T234 The storage stability of IGF-I fortified dairy products and its improvement by microencapsulation. S. H. Kang*[1], J. W. Kim[2], J. Y. Imm[3], S. J. Oh[4], and S. H. Kim[2], [1]Seoul Dairy Cooperatives, [2]Korea University, Division of Food Science, [3]Kookmin University, Dept. Food & Nutrition, [4]Korea Yakult Co. Lt.

T235 Use of chemical mutagenesis approach and spiral-sheet bioreactor for the production of lactose free milk. S. A. Ibrahim*[1], M. M. Salameh[1], G. Shahbazi[1], R. R. Shaker[2], and V. Shirley[1], [1]North Carolina A&T State University, [2]Jordan University of Science and Technology.

T236 Milk protein composition and its role in the phase separation phenomenon in soft-serve ice cream. C. Vega* and D. Goff, University of Guelph, Guelph, ON, Canada.

T237 Optimization of Solid Phase Microextraction(SPME) for the analysis of volatile compounds in milk. H. Clarkson*, S. Duncan, and S. O'Keefe, Virginia Polytechnic Institute and State University, Blacksburg, VA.

Poster Presentations

Wednesday, June 25, 2003

7:30 am – 9:30 am

Exhibit Hall D

Physiology

Metabolism, Growth, and Stress

W1 Identification and initial characterization of the adipocyte hormone adiponectin in Holstein bull calves. R. C. Cheatham*[1], P. C. Gentry[1], G. C. Duff[1], and R. J. Collier[1], [1]University of Arizona.

W2 Effect of physiological state and somatotropin on the response to lipolytic and antilipolytic signalling in ovine adipose tissue. M. H. Carvalho, E. F. Delgado, D.P.D. Lanna, R. Machado Neto, and I. Susin, Universidade de Sao, Piracicaba SP/Brazil.

W3 Feeding Holstein cows anionic and cationic diets prepartum coupled with short dry periods and bST. M. S. Gulay*, M. J. Hayen, and H. H. Head, University of Florida, Department of Animal Sciences.

W4 Milk production of dairy cows injected with low dose of bovine somatotropin (bST) during the transition period and lactation. M. Liboni*, M. S. Gulay, T. I. Belloso, M. J. Hayen, and H. H. Head, Department of Animal Sciences - University of Florida.

W5 Use of bST in transition dairy cows: Effects on dry matter intake, body weight, BCS and milk yields. M. S. Gulay*[1], M. J. Hayen[1], T. I. Belloso[1], M. Liboni[1], and H. H. Head[1], [1]University of Florida.

W6 Effect of low dose of bovine somatotropin (bST) on hormone, IGF-I and metabolite concentrations during the transition period. M. S. Gulay*[1], M. J. Hayen[1], and H. H. Head[1], [1]University of Florida.

W7 Nutritional modulation of hepatic growth hormone responsiveness in late-lactating dairy cows. R. P. Rhoads*[1], L. H. Baumgard[2], M. E. Van Amburgh[1], and Y. R. Boisclair[1], [1]Cornell University, Ithaca, NY, [2]University of Arizona, Tucson, AZ.

W8 Mammary gene expression analysis in peripartal dairy cows using a bovine cDNA microarray. J. J. Loor*, J. K. Drackley, H. M. Dann, R. E. Everts, S. L. Rodriguez-Zas, and H. A. Lewin, University of Illinois, Urbana, IL.

W9 Hepatic gene expression analysis in peripartal dairy cows using a bovine cDNA microarray. J. J. Loor*, J. K. Drackley, H. M. Dann, R. E. Everts, S. L. Rodriguez-Zas, and H. A. Lewin, University of Illinois, Urbana, IL.

W10 Preliminary evaluation of a sustained-release delivery system of porcine (p) somatotropin (ST) in pigs. H. S. Ringrose*[1], K. E. Govoni[1], T. A. Hoagland[1], S. Martinod[2], and S. A. Zinn[1], [1]University of Connecticut, [2]Smart Drug Systems, Inc.

W11 Actions of lipopolysaccharide, prostaglandin-F2a, and the nitric oxide generator, sodium nitroprusside dihydrate, on oocyte maturation and embryonic development in cattle. P Soto[1], RP Natzke[1], and PJ Hansen*[1], [1]Dept. of Animal Sciences, University of Florida.

W12 Postpartum changes in hormones and metabolites during early lactation in summer and winter calving Holstein cows. L. I. Nordbladh*, A. E. Sweetman, and C. S. Whisnant, North Carolina State University, Raleigh, NC.

W13 Differences in sensitivity to heat-shock between preimplantation embryos from heat-tolerant (Brahman and Romosinuano) and heat-sensitive (Angus) breeds. J Hernández-Cerón*[1], CC Chase Jr[2], and PJ Hansen[3], [1]Dept. de Reproducción, Universidad Nacional Autónoma de México, México D.F., [2]USDA-ARS Subtropical Agricultural Research Station, Brooksville, FL, [3]Dept. of Animal Sciences, University of Florida, Gainesville, FL 32611-0910.

W14 Differences in sensitivity to heat-shock between preimplantation embryos from heat-tolerant (Brahman and Romosinuano) and heat-sensitive (Angus) breeds. J Hernández-Cerón*[1], CC Chase Jr[2], and PJ Hansen[3], [1]Dept. de Reproducción, Universidad Nacional Autónoma de México, México D.F., [2]USDA-ARS Subtropical Agricultural Research Station, Brooksville, FL, [3]Dept. of Animal Sciences, University of Florida, Gainesville.

W15 Heat shock protein-70 is upregulated in retained testicles of cryptorchid stallions. J. N. Oyarzo*[1], P. C. Gentry[1], G. R. Dawson[1], R. L. Ax[1], and R. J. Collier[1], [1]University of Arizona, Tucson AZ.

W16 Nucleotide and predicted amino acid sequence of equine *bmal1*: a key biological clock component showing high homology to human *bmal1*. B. A. Murphy* and B. P. Fitzgerald, [1]University of Kentucky, Lexington, Kentucky.

W17 Characterization of soluble CD14 in bovine milk. J.-W. Lee*[1], X. Zhao[1], and M. J. Paape[2], [1]Department of Animal Science, McGill University, [2]IDRL, USDA-ARS, Beltsville, MD.

W18 Effects of recombinant bovine growth hormone on levels of the bacteria *Edwardsiella ictaluri* in channel catfish (*Ictalurus punctatus*). B.C. Peterson* and A.L. Bilodeau, [1]USDA/ARS.

W19 Effect of Iranain Kilka fish meal on performance and some blood metabolites in early lactating dairy cows. A.R. Heravi M*[1], M. Danesh Mesgaran[1], D. Zamiri[2], and F. Eftekhary[1], [1]Department of Animal Science, Ferdowsi University, Mashhad, Iran, [2]Department of Animal Science, Shiraz University, Shiraz, Iran.

W20 Withdrawn

W21 The relation between milking characteristics and adrenergic receptor mRNA-expression and ligand binding in the mammary gland of dairy cows. T. Inderwies, M. W. Pfaffl, and R. M. Bruckmaier*, Techn. Univ. Munich-Weihenstephan, Inst. of Physiology.

Lactation Biology

W22 Characterization of a 4,600 gene bovine microarray. C.M. Stiening*[1], J. Hoying[1], A. Hoying[1], D. Henderson[1], P. Gentry[1], Y. Kobayashi[2], and R. Collier[1], [1]Univ. of Arizona, [2]Michigan State Univ.

W23 Effects of varying energy intakes on the deposition of type IV collagen (Col IV) and fibronectin (FN) in the mammary tissue of pre-pubertal heifers. J. W. Forrest*[1], R. M. Akers[1], R. E. Pearson[1], E. G. Brown[2], M. J. VandeHaar[2], and M. S. Weber Nielsen[2], [1]Virginia Tech, Blacksburg, VA, [2]Michigan State University, East Lansing, MI.

W24 Regional expression of IGF-I and estrogen receptor-alpha within prepubertal bovine mammary parenchyma and fat pad. M. J. Meyer*, R. P. Rhoads, Y. R. Boisclair, and M. E. Van Amburgh, Cornell University, Ithaca, NY.

W25 Expression of translation initiation factors in mammary glands of lactating and dry dairy cows. C. A. Toerien*, J. P. Cant, and C. K. Stewart, Univ. of Guelph, ON, Canada.

W26 Insulin-like growth factor-I (IGF-I) modulates the process of mammary apoptosis after weaning in IGF-I transgenic pigs. M. H. Monaco*, W. L. Hurley, M. B. Wheeler, and S. M. Donovan, University of Illinois, Urbana, IL.

W27 Changes of steroid hormone receptor expression and localization in the bovine mammary gland during different functional stages. D. Schams*[1], S. Kohlenberg[1], W. Amselgruber[2], B. Berisha[1], M. W. Pfaffl[1], and F. Sinowatz[3], [1]Institute of Physiology, TUM, Freising-Weihenstephan, Germany, [2]Dept. Anatomy and Physiology, Univ. Hohenheim, Stuttgart, Germany, [3]Dept. Animal Anatomy II, LMU Munich, München, Germany.

W28 Ontogenetic regulation of progesterone receptor (PR) expression in bovine mammary gland. E. E. Connor*, A. V. Capuco, D. L. Wood, T. S. Sonstegard, and A. F. Mota, USDA-ARS, BARC, Beltsville, MD.

W29 Mammary mRNA expression of bovine haptoglobin and LPS-induced alterations. S. Hiss*[1], M. Mielenz[1], S. Schmitz[2], R. M. Bruckmaier[2], and H. Sauerwein[1], [1]Institute of Physiology, Biochemistry and Animal Hygiene, Bonn University, Germany, [2]Institute of Physiology, Techn. Univ. Munich, Germany.

W30 mRNA expression of apoptosis-related genes in mammary tissue and milk cells in response to LPS treatment and during subclinical mastitis. A. Didier and R. M. Bruckmaier*, Institute of Physiology, Technical University of Munich, Germany.

W31 Gene expression profiles in porcine mammary gland tissue during formation of colostrum. P. M. Schnulle and W. L. Hurley*, University of Illinois, Urbana.

W32 Tight junction (TJ) protein expression during engorgement of rat and bovine mammary glands. C. V. Cooper*[1,2,3], K. Stelwagen[2], C. D. McMahon[2], K. Singh[2], V. C. Farr[2], and S. R. Davis[2], [1]Dexcel Ltd., Hamilton, New Zealand, [2]AgResearch, Hamilton, New Zealand, [3]Massey University, Palmerston North, New Zealand.

W33 Developmental regulation of glucosidase II in mouse mammary gland. J. Feng and I. K. Vijay, University of Maryland, College Park.

Growth & Development

W34 Impact of 5α-dihydrotestosterone on musculoskeletal status of mature laying hens. T. D. Faidley, S. E. Nicolich, D. R. Thompson, Merck Research Laboratories, Somerville, NJ.

W35 Fetus growth at day 78 of gestation in nutrient restricted ewes. M. M. Schwope*, W. J. Means, A. W. Wolf, B. W. Hess, and S. P. Ford, University of Wyoming, Laramie WY/USA.

W36 Dietary supplementation of nucleosides in late pregnant and lactating rats. C. M. De Jesus Arias*, C. E. Oliver, W. L. Keller, and C. S. Park, North Dakota State University, Fargo ND/USA.

W37 Effects of specific conjugated linoleic acid (CLA) isomers on growth characteristics in obese Zucker (fa/fa) rats. S.R. Sanders*[1], M.K. Teachey[1], A. Ptock[2], K. Kraemer[2], O. Hasselwander[2], E.J. Henriksen[1], and L.H. Baumgard[1], [1]University of Arizona, Tucson AZ, [2]BASF AG, Ludwigshafen, Germany.

W38 Body composition and carcass fatty acid profiles in hybrid striped bass treated with recombinant bovine somatotropin (rbST). S. R. Sanders*[1], J. L. Collier[2], L. H. Baumgard[1], and R. J. Collier[1,2], [1]University of Arizona, [2]AquaTrophics Inc., Tucson, AZ.

W39 Effect of restricted post-weaning growth resulting from reduced floor and feeder space on pig growth performance in a wean-to-finish system. B. F. Wolter[1], M. Ellis[2], J. M. DeDecker*[2], B. P. Corrigan[2], S. E. Curtis[2], E. N. Parr[3], and D. M. Webel[3], [1]The Maschhoffs LLC, Carlyle, IL/USA, [2]University of Illinois, Urbana, IL/USA, [3]United Feeds, Inc., Sheridan, IN/USA.

W40 Refolding and purification of unprocessed porcine myostatin expressed in *E. coli*. H.J. Jin, Y.S. Kim*, and M.A. Dunn, University of Hawaii, Honolulu HI.

W41 Effect of flax supplementation and a combined trenbolone acetate and estradiol implant on muscle satellite cell activity in beef cattle. J. D. Dunn*, A. T. Waylan, J. P. Kayser, E. K. Sissom, and B. J. Johnson, Kansas State University, Manhattan.

W42 Walking temporal variables of the sound and lame dairy cow. M. C. Nicodemus* and A. M. Chapa, Mississippi State University, Mississippi State, MS.

W43 Effect of melengestrol acetate (MGA) on bovine muscle satellite cell proliferation and differentiation. E. K. Sissom*, J. P. Kayser, A. T. Waylan, J. D. Dunn, and B. J. Johnson, Kansas State University, Manhattan.

W44 Ontogenetic changes in fatty acid profiles from different tissues in growing Holstein bull calves. H. C. Hafliger, III*, P. C. Gentry, S. R. Sanders, L. H. Baumgard, and R. J. Collier, University of Arizona, Tucson, AZ.

W45 Tissue deposition rates and empty body composition of purebred and crossbred Nellore bulls. A. Berndt[1], G. M. da Cruz[2], G. F. Alleoni[2], M. Alencar[3], and D.P.D. Lanna*[1], [1]ESALQ/USP, Piracicaba, SP, Brazil, [2]CPPSe, EMBRAPA, Sao Carlos, SP, Brazil, [3]IZ, Nova Odessa, SP, Brazil.

W46 Morphological, behavioral and physiological measurements and their relationships with growth in beef cattle. K. Uetake*[1], T. Ishiwata[1], N. Abe[2], and T. Tanaka[1], [1]School of Veterinary Medicine, Azabu University, [2]Faculty of Agriculture, Tamagawa University.

W47 Parameters for a refined model of ruminant growth and composition. J. W. Oltjen*[1], A. B. Pleasants[2], T. K. Soboleva[2], and V. H. Oddy[3], [1]University of California, Davis, California, [2]Ag Research, Hamilton, New Zealand, [3]Meat and Livestock Australia, Sydney, Australia.

W48 A dynamic model to predict the composition of fat-free matter gains in cattle. C. B. Williams*, USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE.

W49 The effect of nitrogen and forage source on feed efficiency and structural growth of prepubertal Holstein heifers. P.J. Kononoff*[1], A.J. Heinrichs[1], and M.T. Gabler[1], [1]Department of Dairy and Animal Science, The Pennsylvania State University.

W50 Effects of Prepubertal Growth Rate and POSILAC® Treatment of Replacement Dairy Heifers on Subsequent Milk Production and Economics. J. L. Vicini*[1], D. T. Galligan[2], S. E. Bettis[1], C. R. Bilby[1], S. C. Denham[1], R. L. Hintz[1], J. L. Holst[1], T. H. Klusmeyer[1], E. D. Plunkett[1], B. A. Crooker[3], W. J. Weber[3], and M. E. Van Amburgh[4], [1]Monsanto Co, St. Louis, MO, [2]University of Pennsylvania, Kennett Square, PA, [3]University of Minnesota, St. Paul, MN, [4]Cornell University, Ithaca, NY.

W51 Effects of feed management program and POSILAC® on prepubertal growth rate of replacement dairy heifers. J. L. Vicini*[1], S. E. Bettis[1], C. R. Bilby[1], S. C. Denham[1], R. L. Hintz[1], J. L. Holst[1], E. D. Plunkett[1], B. A. Crooker[2], W. J. Weber[2], H. Chester-Jones[2], and M. E. Van Amburgh[3], [1]Monsanto Co., St. Louis, MO, [2]University of Minnesota, St. Paul, MN, [3]Cornell University, Ithaca, NY.

W52 Associations between first lactation milk yields and pepubertal and peripubertal growth rates of Holstein heifers fed diets with different concentrations of protein and energy, protein:energy ratios and injected with bST. T.I. Belloso*, M. Liboni, M.S. Gulay, M.J. Hayen, K.C. Bachman, and H.H. Head, University of Florida.

W53 IGF binding protein-2 reduces the mitogenic effect of IGF-I, but not des-IGF-I, in MAC-T bovine mammary epithelial cells. B. E. Etchebarne* and M. J. VandeHaar, Michigan State University.

W54 Changes in plasma leptin from birth to puberty in dairy cattle. S. S. Block*, J. M. Smith, R. A. Ehrhardt, M. C. Diaz, R. P. Rhoads, M. E. Van Amburgh, and Y. R. Boisclair, Cornell University.

W55 Calf socialization, non-forage fiber supplementation and rumen development in white and pink veal production systems. C. W. Cruywagen*[1] and L. C. Hoffman, [1]University of Stellenbosch, South Africa.

W56 Glucose metabolism in neonatal calves: effects of glucocorticoids and dependence on colostrum feeding. S. N. Sauter, J. W. Blum, and H. M. Hammon*, University of Berne, Berne, Switzerland.

W57 Effects of age and accelerated growth on circulating concentrations of ß-carotene and vitamins A, E, and D in milk replacer-fed calves. M. R. Foote*[1], B. J. Nonnecke[2], M. A. Fowler[3], B. L. Miller[3], T. E. Johnson[3], D. C. Beitz[1], and R. L. Horst[2], [1]Iowa State University, Ames, IA, [2]National Animal Disease Center, ARS, USDA, Ames, IA, [3]Land O'Lakes Inc., Webster City, IA.

W58 Cell proliferation, apoptosis and B- and T-lymphocyte numbers in gut-associated lymphoid tissue and thymus of neonatal calves: Effects of dexamethasone (DEXA) and colostrum feeding. J. Norrman*, C. D. David, S. N. Sauter, H. M. Hammon, and J. W. Blum, University of Berne, Berne, Switzerland.

W59 Growth hormone, insulin, and glucose responses to infusion of amino acids in developing dairy calves. C. C. Williams*, I. A. Norris, C. C. Stanley, L. R. Gentry, D. L. Thompson, Jr., H. G. Bateman, and D. T. Gantt, Louisiana State University Agricultural Center, Baton Rouge, LA.

W60 Cell proliferation and apoptosis rates and B- and T-lymphocytes numbers in gut-associated lymphoid tissues, thymus, and lymphnodes of pre-term and full-term calves. C. W. David, J. Norrman, H. M. Hammon, and J. W. Blum*, University of Berne, Berne, Switzerland.

W61 Effects of dexamethasone (DEXA) and growth hormone (ST) on glucose production in calves. H. M. Hammon*[1], J. W. Blum[1], and S. S. Donkin[2], [1]University of Berne, Berne, Switzerland, [2]Purdue University, West Lafayette, IN.

W62 The response of the somatotropic axis to growth hormone (ST) and dexamethasone (DEXA) in calves. H. M. Hammon*[1], H. Sauerwein[2], J. W. Blum[1], and S. S. Donkin[3], [1]University of Berne, Berne, Switzerland, [2]Bonn University, Germany, [3]Purdue University, West Lafayette, IN.

W63 Small intestinal and colon morphometry, epithelial cell proliferation, and absorptive capacity in neonatal calves fed milk-derived insulin-like growth factor-I (IGF-I) or a colostrum extract. B. Roffler[1], A. Fäh[1], S. N. Sauter[1], H. M. Hammon[1], P. Gallmann[2], G. Brem[3], and J. W. Blum*[1], [1]University of Berne, Berne, Switzerland, [2]Swiss Federal Dairy Research Station, Liebefeld, Switzerland, [3]University of Vienna, Vienna, Austria.

W64 Effect of a short-term fast on intestinal disaccharidase activity and villus morphology in piglets suckling insulin-like growth factor-I (IGF-I) transgenic sows. J. L. Hartke*, M. H. Monaco, M. B. Wheeler, and S. D. Donovan, University of Illinois, Urbana, IL.

W65 Temporal and spatial expression of MUC1 mRNA along the gastrointestinal tract. C. Liu*, A. K. Erickson, and D. R. Henning, South Dakota State University, Brookings SD/USA.

W66 Cloning and characterization of the bovine class 1 and class 2 insulin-like growth factor-I mRNA. Y. Wang*, S. E. Price, D. E. Eversole, and H. Jiang, Virginia Polytechnic Institute & State University.

W67 Effects of fasting on serum insulin-like growth factor I and liver insulin-like growth factor I and growth hormone receptor mRNA in cattle. Y. Wang, S. Eleswarapu, W. E. Beal, W. S. Swecker, R. M. Akers, and H. Jiang*, Virginia Polytechnic Institute & State University.

W68 The bovine growth hormone receptor promoter 1 is positively regulated by hepatocyte nuclear factor 4? via the same element for hepatocyte nuclear factor 4a. H. Jiang*[1], M. C. Lucy[2], and Q. Xu[1], [1]Virginia Polytechnic Institute & State University, [2]University of Missouri.

W69 Gender differences in serum insulin-like growth factor (IGF)-I and IGF binding proteins in eight exotic species. K.E. Govoni*, D. Goodman, R.M. Maclure, and S.A. Zinn, University of Connecticut, Storrs, CT.

Meat Science & Muscle Biology

Manipulation of Meat Quality

W70 Antioxidant effects of rosemary extract and whey powder on the oxidative stability of wiener sausages during 10 months frozen storage. S. A. Coronado[1], F. R. Dunshea[2], and N. P. Shah[1], [1]Victoria University, Melbourne, Australia, [2]Victorian Institute of Animal Science, Werribee, Australia.

W71 Chemical composition and meat quality of pale, soft and exudative, and red, firm and non-exudative pork meat. F. Figueroa*[1], C. Perez[1], A. D. Alarcon[2], F. J. Solis[2], J. A. Jimenez[2], and G. Erosa[2], [1]Universidad Autonoma de Baja California, [2]Universidad Autonoma de Chihuahua.

W72 SDS-PAGE profile of sarcoplasmic and myofibrillar proteins of pale, soft and exudative and red, firm and non exudative pork meat. F. Figueroa*[1], C. Perez[1], A. D. Alarcon[2], F. J. Solis[2], J. A. Jimenez[2], and G. Erosa[2], [1]Universidad Autonoma de Baja California, [2]Universida Autonoma de Chihuahua.

W73 Structure and ultrastructure of pale, soft and exudative and red, firm and non-exudative pork meat. F. Figueroa*[1], C. Perez[1], A. D. Alarcon[2], F. J. Solis[2], J. A. Jimenez[2], and G. Erosa[2], [1]Universidad Autonoma de Baja California, [2]Universida Autonoma de Chihuahua.

W74 Oxidative stability, shear force, and color of stored pork from pigs heterozygous for Rendement Napole and/or Halothane genes and consuming magnesium through drinking water. B. R. Frederick*, E. van Heugten, and M. T. See, North Carolina State University, Raleigh, NC.

W75 The influence of dietary protein on market barrows and gilts supplemented creatine monohydrate in conjunction with a high glycemic carbohydrate. C. A. Stahl*[1], B. R. Wiegand[2], M. S. Carlson[1], D. L. McNamara[1], T. B. Schmidt[1], and E. P. Berg[1], [1]University of Missouri, Columbia, MO, [2]Illinois State University, Normal, IL.

W76 Improving pork tenderness using hydrodynamic pressure. M.B. Solomon* and V. Pursel, USDA-ARS, Beltsville, MD USA.

W77 Densitometric analysis of myofibrillar proteins in muscle samples from Angus bulls with high or low blood serum IGF-I concentration. A. Yilmaz[1], M. E. Davis*[1], R. C. M. Simmen[2], and M. Yamaguchi[3], [1]Department of Animal Sciences, The Ohio State University, [2]Department of Animal Science, University of Florida, [3]Department of Veterinary Biosciences, The Ohio State University.

W78 Effect of fish oil and/or canola oil supplementation to beef cattle fed finishing diets on animal performance, carcass quality, and fatty acid composition. M. H. Gillis*, S. K. Duckett, B. Jacob, K. R. Smith, and C. E Realini, The University of Georgia, Athens.

W79 Effect of genotype and diet on daily weight gain and carcass quality traits. I. Holló[1], E. Szûcs[2], G. Holló[2], J. Seregi[1], Z. Andrássy[1], Cs. Abrahám*[2], and I. Repa, [1]University of Kaposvár, Kaposvár H-7401, [2]Szent István University, Gödöllö H-2103.

W80 Evaluation of marbling by US scoring system and video image analysis. J. Tözsér[1], I. Holló[2], G. Holló[2], E. Szûcs*[1], R. Zándoki[1], J. Seregi[2], and I. Repa[2], [1]Szent István University, Gödöllö, H-2103, [2]University of Kaposvár, Kaposvár H-7401.

W81 Evaluation of ultrasonic estimates of fat thickness and *longissimus* muscle area in de-haired hanging beef carcasses at chain speed. T. Perkins* and A. Rimal, Southwest Missouri State University.

W82 Effect of breed, sex, and slaughter weight on meat quality of lambs. J. Peinado*[1], P. De Miguel[2], D. García[3], M. Cortés[1], and M.I. Gracia[1], [1]Imasde Agropecuaria, S.L., Spain, [2]GRUPO CARNICO MAGNUS, S.A., Spain, [3]Estación Tecnológica de la Carne de Guijuelo, Spain.

W83 Cholesterol level and sensory evaluation of lambs of various hair x wool sheep crosses. S. Wang*, T.D. Bunch, R.C. Evans, C.P. Brenand, D.R. Whittier, and B.J. Taylor, Utah State University, Logan, Utah, USA, .

Breeding & Genetics

W84 Estimation of correlations of reproductive traits with blood serum IGF-I concentration in Angus beef cattle. A. Yilmaz[1], M. E. Davis*[1], R. C. M. Simmen[2], and H. C. Hines[1], [1]Department of Animal Sciences, The Ohio State University, [2]Department of Animal Science, University of Florida.

W85 Molecular characterisation of myostatin gene in mexican Beefmaster cattle. A. M. Sifuentes-Rincon[1], X. F. De la Rosa-Reyna*[1], A. Del Bosque [2], and H. A. Barrera-Saldana[1], [1]Centro de Biotecnologia Genomica-IPN, [2]Fac. de Agronomia. UANL.

W86 Association between promoter region insulin-like growth factor-I polymorphism and genetic merit for production traits in Holstein sires. G. W. Kazmer*[1], [1]University of Connecticut.

W87 Genetic polymorphism at the kappa casein locus in Holstein and Iranian native cattle Sarabi by use of PCR-SSCP. A. G Tahvildarzadeh[1], J. Shoja[1], M. Torchi[2], A. M. Tahmasbi*[1], and S. Alijanii[1], [1]Dept. of Animal Sci. Tabriz University, [2]Dept of Plant Breeding and Genetic, Tabriz University, Iran.

W88 Type trait evaluations and heritabilities of Holstein dairy cattle in northeastern Iran. M. Jafarikia*, F.E. Shahroudi, and A.A. Naserian, Ferdowsi University of Mashhad, Mashhad, Iran.

W89 Performance of Holsteins that originated from embryo transfer or twin births. H. D. Norman, J. R. Wright*, and R. L. Powell, Animal Improvement Programs Laboratory, Agricultural Research Service, USDA.

W90 Measures of lactation persistency for Iranian Holstein dairy cattle. M.B. Montazer Torbati*[1], M. Moradi Shahrbabak [1], S.R. Mirae Ashtiani [1], and M.B. Sayadnezhad [2], [1]Tehran University, Karaj, Iran, [2]Animal Breeding Center of Iran, Karaj, Iran.

W91 Genetic correlations between boar semen traits. S.-H Oh*[1], M. T. See[1], T. E. Long[2], and J. M. Galvin[2], [1]North Carolina State University, Raleigh, NC, [2]NPD USA, Roanoke Rapids.

W92 Effect of selection for testosterone production on testicular morphology and daily sperm production in pigs. S. Walker*, O. W. Robison, C. S. Whisnant, and J. P. Cassady, North Carolina State University, Raleigh, NC.

W93 Effect of selection for high or low mature weigth and its reciprocal crossing on reproductive response in Japanese quail. J. J. Portillo*, R. Barajas, I. V. Ferrer, and F. G. Ríos, FMVZ-Universidad Autónoma de Sinaloa (México).

W94 Effect of selection of high or low mature weight and its reciprocal crossing on egg quality characteristics in Japanese quail. J. J. Portillo*[1], F. G. Rios[1], I. V. Ferrer[1], and R. Barajas[1], [1]FMVZ-Universidad Autónoma de Sinaloa (Mexico).

W95 Heritability estimates for semen charcteristics of inbred and non-inbred Hereford bull. B. Tseveenjav*[1], H. D. Blackburn[2], and R. M. Enns[1], [1]Department of Animal Sciences Colorado State University, [2]National Animal Germplasm Program ARS-USDA.

W96 Estimates of genetic parameters os carcass traits in limousin cattle. J. S. Jubileu*, N. Maiwashe, M. Cleveland, B. Tseveenjav, R. M. Enns, and D. J. Garrick, Colorado State University.

W97 Colorado State University Center for Genetic Evaluation of Livestock: Current approaches to performing large scale beef cattle genetic evaluations. S. E. Speidel*, R. M. Enns, D. J. Garrick, C. S. Welsh, and B. L. Golden, Colorado State University, Fort Collins, CO.

W98 Identification and characterization of an AFLP marker for protein yield in Canadian Holsteins. B. S. Sharma*[1], Z. Jiang[2], and G. B. Jansen[1], [1]Department of Animal and Poultry Science, University of Guelph, Canada, [2]Department of Animal Science, Washington State University, USA.

Nonruminant Nutrition

Enzymes and Sow Nutrition

W99 Enzyme addition as a tool to improve early postweaning piglet performance. E. Gómez[1], M. Cortés[2], J. Sánchez[2], F.J. Guzmán[2], and P. Medel*[2], [1]Centro de pruebas de porcino, Hontalbilla, Spain, [2]Imasde Agropecuaria, S.L., Spain.

W100 Xylanase, glucanase and amylase supplementation to piglet diets. P. Medel*[1], M. I. Gracia[1], E. McCartney[2], A. Knox[3], and J. McNab[3], [1]Imasde Agropecuaria, Spain, [2]Pen & Tec Consulting, Spain, [3]Roslin Nutrition, Scotland.

W101 Enzyme supplementation to piglet diets. A. Morillo[1], D. Villalba[2], E. McCartney[3], M. I. Gracia[4], and P. Medel*[4], [1]Test & Trials, Spain, [2]U de Lleida, Spain, [3]Pen & Tec Consulting, Spain, [4]Imasde Agropecuaria, S.L.

W102 Activity of disaccharidase in small intestinal membranes of piglets as influenced by age. Q. M. Yang*[1,2], D. F. Li[1], and S. Y. Qiao[1], [1]College of Animal Science and Technology, CAU, Beijing, P.R. China, [2]Southern Research and Outreach Center, University of Minnesota.

W103 Effects of feeding flaxseeds on the production traits of sows. S. K. Baidoo*[1,2], G. Azunaya[1], and A. Fallah-Rad[1], [1]Department of Animal Science, University of Manitoba, [2]Southern Research and Outreach Center, University of Minnesota.

W104 Dietary effects of flaxseed and vitamin E on the concentration of serum progesterone and vitamin E in sows. S. K. Baidoo*[1,2], A. Fallad-Rad[1], and Q. Yang[2], [1]Department of Animal Science, University of Manitoba, [2]Southern Research and Outreach Center, University of Minnesota.

W105 Dietary effects of flaxseed and vitamin E on lipid profiles of sows. S. K. Baidoo*[1,2], A. Fallad-Rad[1], and Q. M. Yang[2], [1]Department of Animal Science, University of Manitoba, [2]Southern Research and Outreach Center, University of Minnesota.

W106 Carry over effect of dietary protein supplied to pregnant sows on protein utilization during lactation. P.K. Theil*, H. Jorgensen, and K. Jakobsen, Danish Institute of Agricultural Sciences, Denmark.

W107 A dynamic computer-model to estimate the changes of body composition during lactation in sows. J. G. Kim* and K. Y. Whang, Korea University, Seoul, Korea.

Animal Behavior & Well-Being

Social and Physical Environments

W108 Analysis of the effect of gestation housing systems on fertility and piglet death. L. Anil*, S. Baidoo, J. Deen, R. Walker, S. Anil, and R. Morrison, University of Minnesota.

W109 Effect of a cooling system to reduce heat stress during the dry period. L. Avendao-Reyes*[1], D. Alvarez-Valenzuela[1], F. Rivera-Acua[1], R. Hurtado-Durn[1], A. Correa-Caldern[1], S. Saucedo-Quintero[1], J. Verdugo-Zarate[1], and P.H. Robinson[2], [1]ICA, Universidad Autonoma de Baja California, Mexicali, Mexico, [2]UCCE, Dept. of Anim. Sci., UC Davis, Davis, CA.

W110 Validation of 24h Polar RR recorder for measuring heart rate variability in pigs. R. M. Marchant-Forde*[1], D. J. Marlin[2], and J. N. Marchant-Forde[3], [1]De Montfort University, Lincoln, UK, [2]Animal Health Trust, Newmarket, UK, [3]USDA-ARS, West Lafayette, USA.

W111 Use of digital infrared thermography to assess thermal temperature gradients and pathologies of the bovine claw. S. J. Schmidt*[1], S. D. Bowers[1], K. B. Graves[1], R. Carroll[2], J. White[1], and S. T. Willard[1], [1]Mississippi State University, Mississippi State, MS, [2]Carroll Trimming, Palastine, TX.

W112 Evaluation of drop versus trickle feeding for crated and penned pregnant gilts: Immune measures. Leslie Dabovich*[1], Julie Morrow[2], Anthony Rudine[1], Lindsey Hulbert[1], Barbara Smith[1], and John McGlone[1], [1]Texas Tech University, [2]USDA-ARS.

W113 Evaluation of drop versus trickle feeding for crated and penned pregnant gilts: behavioral measures. L. Hulbert*[1], J. Morrow[2], J. Dailey[2], and J. McGlone[1], [1]Texas Tech University, [2]USDA-ARS.

W114 Effect of mixing and transportation on behavior and cortisol response in relation to Salmonella infection in swine. D. C. Lay Jr.*[1], T. J. Stabel[2], M. J. Toscano[1], and B. A. Vote[2], [1]ARS-USDA, Livestock Behavior Research Unit, [2]ARS-USDA, National Animal Disease Center.

W115 Effects of an environmental enrichment on the behavior, physiology and growth of beef cattle. T. Ishiwata*[1], K. Uetake[1], N. Abe[2], and T. Tanaka[1], [1]School of Veterinary Medicine, Azabu University, [2]Faculty of Agriculture, Tamagawa University.

W116 Age and castration stress influence the thermal nociceptive response of calves. S. T. L. Ting[1,2], B. Earley[1], I. Veissier[3], S. Gupta*[1,2], and M. A. Crowe[2], [1]Teagasc, Grange Research Centre, Dunsany, Co. Meath, Ireland, [2]Faculty of Veterinary Medicine, University College Dublin, Belfield, Dublin 4, Ireland, [3]INRA, Centre Clermont-Ferrand-Theix, F-63122 Saint Genes Champanelle, France.

W117 Effects of age at transport on development of neonatal dairy calves. T. A. Johnson*[1], S. D. Eicher[2], J. N. Marchant-Forde[2], and A. G. Fahey[1], [1]Purdue University, West Lafayette, IN, [2]USDA-ARS, West Lafayette, IN.

Goat Species

Forage/Browse Utilization

W118 Goat kid preference for forage. T. W. White*, H. G. Bateman, C. C. Williams, and S. Alford, Louisiana State University Agricultural Center, Baton Rouge, LA.

W119 Effect of feeding shrub and tree leaves on carcass characteristics in growing goat kids. M. Guerrero-Cervantes, A. S. Juarez-Reyes, F. Rios-Rincon, and M. A. Cerrillo-Soto*, Universidad Juarez del Estado de Durango. Durango, Dgo. Mexico.

W120 Effects of method of exposure of crossbred Boer wether goats to Eastern red cedar foliage on cedar consumption. G. Animut*[1,2], A. L. Goetsch[1], R. C. Merkel[1], G. Detweiler[1], L. J. Dawson[3], R. Puchala[1], T. Sahlu[1], and R. E. Estell[4], [1]E (Kika) de la Garza American Institute for Goat Research, Langston University, Langston, OK, [2]Animal Science Department, Oklahoma State University, Stillwater, OK, [3]School of Veterinary Medicine, Oklahoma State University, Stillwater, OK, [4]USDA ARS Jornada Experimental Range, Las Cruces, NM.

W121 Evaluation of tropical legume forages (*Medicago sativa*, *Dolichos lablab*, *Leucaena leucocephala*, and *Desmanthus virgatus*) for growing goats. J. Kanani*[1], S. D. Lukefahr[1], and R. L. Stanko[1], [1]Texas A&M University-Kingsville.

W122 Cell wall degradability of the diet consumed by grazing goats in North Mexico. A. S. Juarez-Reyes, R. Montoya-Escalante, G. Nevarez-Carrasco, and M. A. Cerrillo-Soto, Universidad Juarez del Estado de Durango. Durango. Dgo. Mexico.

W123 Effects of different quality diets consumed continuously or after a lower quality diet on characteristics of growth of young Spanish goats. T. Wuliji, A. L. Goetsch, T. Sahlu*, R. Puchala, S. A. Soto-Navarro, R. C. Merkel, G. Detweiler, and T. A. Gipson, E (Kika) de la Garza American Institute for Goat Research, Langston University, Langston, OK.

W124 Effects of diet quality and age of meat goat wethers on early subsequent growth while grazing wheat forage. A. L. Goetsch*, G. Detweiler, T. Sahlu, R. Puchala, R. C. Mekel, and S. A. Soto-Navarro, E (Kika) de la Garza American Institute for Goat Research, Langston University, Langston, OK.

W125 Spatial-temporal relationships of grazing goats and sheep and their guardian dog monitored by global positioning system collars. T.A. Gipson*, M. Villaquiran, J. Joseph, and A. L. Goetsch, E (Kika) de la Garza American Institute for Goat Research, Langston University, Langston, OK.

W126 Global positioning system for monitoring spatial relationships of grazing goats within and across pastures. M. Villaquiran*, T. A. Gipson, J. Joseph, and A. L. Goetsch, E (Kika) de la Garza American Institute for Goat Research, Langston University, Langston, OK.

Goat Species

Physiology

W127 Metabolizable protein requirements for maintenance, gain, and mohair fiber growth by Angora goats. J. Luo*, A. L. Goetsch, and T. Sahlu, E (Kika) de la Garza American Institute for Goat Research, Langston University, Langston, OK.

W128 Adrenal and metabolic response to exogenous ACTH stimulation in pregnant and non-pregnant Angora and Spanish does. C. A. Toerien*, R. Puchala, and T. Sahlu, E (Kika) de la Garza Institute for Goat Research, Langston, OK.

W129 Heat production by Alpine, Angora, Boer, and Spanish wether goats consuming different quality diets at a maintenance level of intake. I. Tovar-Luna*, A. L. Goetsch, R. Puchala, and T. Sahlu, E (Kika) de la Garza American Institute for Goat Research, Langston University, Langston, OK.

W130 Effecs of genotype, diet, and feed intake on the relationship between energy expenditure and heart rate in goats. R. Puchala*[1], I. Tovar-Luna[1], A. L. Goetsch[1], T. Sahlu[1], and Z. B. Johnson[2], [1]E (Kika) de la Garza American Institute for Goat Research, Langston University, Langston, OK, [2]Department of Animal Science, University of Arkansas, Fayetteville, AR.

W131 Interactions among body condition, protein supplementation, serum insulin levels and ovarian activity in goats. C. A. Meza H.*[1,3], J. M. Sanchez S.[1], J. G. Chavez-Perches[2], H. Salinas[3], J. Urrutia M.[3], and M. Mellado[4], [1]Universidad Autonoma Chapingo-URUZA, [2]Radiodiagnostico y Ultrasonografia, [3]INIFAP, [4]UAAAN.

Goat Species

Management

W132 Performance of lactating does fed different levels of ruminally undegradable intake protein. I. Tovar-Luna*[1], N. Y. Castillo-Ceron[1], and D. M. Hallford[2], [1]Universidad Autonoma Chapingo, URUZA. Bermejillo, Dgo. México, [2]New Mexico State University, Las Cruces, NM, USA.

W133 Effect of recombinant bovine somatotropine (rBST) on milk production in goats of the North of Mexico. R. Rodriguez-Martínez*[1], G. Arellano-Rodriguez[1], P. A. Robles-Trillo[1], and J. E. Verdugo[2], [1]Universidad Autonoma Agraria Antonio Narro - Unidad Laguna, Torreon, Coahuila, Mexico, [2]Private consultor.

W134 Growth performance by Alpine, Angora, Boer, and Spanish wether goats consuming 50 or 75% concentrate diets. M. Urge[1,2], R. C. Merkel*[2], T. Sahlu[2], G. Animut[1,2], and A. L. Goetsch[2], [1]Animal Science Department, Alemaya University, Dire Dawa, Ethiopia, [2]E (Kika) de la Garza American Institute for Goat Research, Langston University, Langston, OK.

W135 Economical feedstuffs for on-farm meat goat diets. S. Schoenian*[1], N. C. Whitley[2], and E. Johnson[1], [1]Maryland Cooperative Extension, Keedysville, MD, [2]University of Maryland Eastern Shore, Princess Anne, MD.

W136 Effect of breed type and feed level on production efficiency in meat goats. S. E. Kom*, N. C. Beckford, and J. M. Dzakuma, Prairie View A&M University, Prairie View, TX.

W137 Effect of level of dietary copper on the copper status of lactating does and their nursing kids. J-M. Luginbuhl*, M. H. Poore, J. W. Spears, and T. T. Brown, North Carolina State University, Raleigh, NC.

W138 Evaluation of goat eye mucous membrane scoring for determination of the need for anthelmintic treatment. S. P. Hart*[1], W. Pomroy[2], and T. A. Gipson[1], [1]E (Kika) de la Garza Institute for Goat Research, Langston University, OK, [2]Massey University, Palmerston North, New Zealand.

Sheep

Sheep Production & Management

W139 Withdrawn

W140 Effect of transport stress on hair sheep moving from a subtropical to a semiarid climate in north-central Mexico. S. Franco-Shaffer, R. Batista-D\'{\i }az, R. M. Rincon, F. Echavarria, R. Bañuelos, and C. F. Arechiga*, UAMVZ-Universidad Autonoma de Zacatecas. Zacatecas, Mexico.

W141 Effect of pre- and post-mating FGA-intravaginal sponges on estrous synchronization and embryo recovery in hair ewes. E. Avila-Hernandez2, H. Rodriguez-Frausto1, R.M. Rincon1, J.J. Chavez1, R. Bañuelos1, and C. F. Arechiga*1, 1UAMVZ-Universidad Autonoma de Zacatecas, Zacatecas, Mexico., 2FMVZ-Universidad Autonoma de Nayarit, Nayarit, Mexico.

W142 Luteal function of pubertal hair ewes exposed to estrous synchronization and laparoscopic insemination in a semiarid climate in north-central Mexico. A. Muro-Reyes, H. Rodriguez-Frausto, R. M. Rincon, R. Bañuelos, J. I. Aguilera, and C. F. Arechiga*1, Universidad Autonoma de Zacatecas, Zacatecas, Mexico.

W143 Assesment of different extenders for ovine semen cryopreservation. M. A. Lopez*1, C. F. Arechiga1, M. A. Castillo-Pecina1, M. Perez2, and J. Gutierrez2, 1UAMVZ-Universidad Autonoma de Zacatecas, Zacatecas, Mexico., 2FZ-Universidad Autonoma de Chihuahua, Chihuahua, Mexico.

W144 Evaluation of synchronized-ovulation (Ovsynch) schemes to be implemented in programmed breeding of hair sheep. B. I. Camargo-Salcedo2, Y. Garcia-Guevara3, H. Rodriguez-Frausto1, R. M. Rincon1, J. I. Aguilera1, R. Ba\~{n}uelos, and C. F. Arechiga*1, 1Universidad Autonoma de Zacatecas, 2Universidad Autonoma de Nayarit, 3Universidad Autonoma de Guerrero, Mexico.

W145 Estimation of the supply of metabolizable protein in diets consumed by grazing sheep in a semiarid region of North Mexico. A. S. Juarez-Reyes*, J. Arzola-Nevarez, G. Nevarez-Carrasco, and M. A. Cerrillo-Soto, Universidad Juarez del Estado de Durango. Durango, Dgo. Mexico..

W146 Effects of the energy source (rendered beef fat or sugar cane molasses) on performance in lambs of hair sheep breeds fed whole rations. J. A. Chavez, I. Martinez, F. M. Loya, E. G. Cienfuegos, J. C. Martinez, and A. Gonzalez*, Agronomia, Universidad Autonoma de Tamaulipas.

W147 Feed efficiency, growth rates, carcass evaluation and sensory evaluation of lambs of various hair x wool sheep crosses. T. D. Bunch*, R. C. Evans, S. Wang, C. P. Brenard, D. R. Whittier, and B. J. Taylor, Utah State University, Logan, Utah, USA.

Beef Species

Beef Cattle Performance and Genetic Relationships in the Feedlot

W148 Genetic relations among carcass fat, tenderness, and age at slaughter in beef cattle managed under a constant finishing program. T. L. Fernandes*[1], J. W. Wilton[1], I. B. Mandell[1], and C.J.B. Devitt[2], [1]University of Guelph, Department of Animal and Poultry Science, [2]Beef Improvement Ontario.

W149 Effects of growth promotant (Revalor-G) implantation on feed efficiency and meat quality in Korean native cattle. S. Sun*[1], B. Ahn[1], K. Myung[1], Y. Cho[2], and K.C. Olson[3], [1]Chonnam national Univeristy, Gwangju, Korea, [2]National Livestock research Institute, Namwon, Korea, [3]University of Missouri, Columbia, MO.

Ruminant Nutrition

Dairy and Beef

W150 Ruminal and intestinal protein digestion of tropical alfalfa and corn silage measured by mobile nylon bag technique in steer. A. Taghizadeh, M. Danesh Mesgaran*, R. Valizadeh, and F. Eftekhar shahroodi, Ferdowsi university,Mashhad,Iran.

W151 Influence of low-level protein supplementation on forage intake, diet digestion and selection by beef steers grazing tallgrass-prairie range during the fall. D. A. Llewellyn*, R. C. Cochran, T. T. Marston, C. G. Farmer, and T. A. Wickersham, Kansas State University, Manhattan.

W152 Rumen digestibility of five forages estimated from the *in situ* degradation and rate of passage. M. Murillo-Ortiz*[1], F. O. Carrete-Carreon[2], and O. Ruiz-Barrera[3], [1]Juarez University of Durango State, [2]INIFAP-DGO., [3]University of Chihuahua.

W153 Mean ruminal residence time of five forages estimated from the degradation and passage rates. F. O. Carrete-Carreon*[1], M. Murillo-Ortiz[2], and O. Ruiz-Barrera[3], [1]INIFAP-DGO., [2]Juarez University of Durango State, [3]University of Chihuahua.

W154 Effect of urea treatment and Fibrozyme® addition on *in situ* dry-matter degradability of corn bran. J. I. Aguilera*[1], M. A. Castillo-Pecina[1], C. F. Arechiga[1], C. Arzola[2], and O. Ruiz-Barrera[2], [1]UAMVZ-Universidad Autonoma de Zacatecas, Zacatecas, Mexico, [2]FZ-Universidad Autonoma de Chihuahua, Chihuahua, Mexico.

W155 Effect of urea treatment and Fibrozyme® addition on *in situ* dry-matter degradability of oat hulls. J. I. Aguilera*[1], M. A. Castillo-Pecina[1], C. F. Arechiga[1], C. Arzola[2], and O. Ruiz-Barrera[2], [1]UAMVZ-Universidad Autonoma de Zacatecas, Zacatecas, Mexico, [2]FZ-Universidad Autonoma de Chihuahua, Chihuahua, Mexico.

W156 Effect of exogenous fibrolytic enzyme on digestibility of ammoniated or non-ammoniated bluegrass seed straw fed to beef cattle. J. I. Szasz*[1], C. W. Hunt[1], L. R. Kennington[1], and K. A. Johnson[2], [1]University of Idaho, [2]Washington State University.

W157 Effect of exogenous fibrolytic enzymes (Fibrozyme) on dry matter and cell wall *in vitro* digestibility of Guinea grass (*Panicum maximum*. var Mombasa) hay. J. H. Avellaneda-Cevallos[1], S. S. Gonzalez*[2], J. M. Pinos-Rodriguez[3], A. Hernandez[2], R. Barcena[2], M. Cobos[2], D. Hernandez-Sanchez[2], and O. Montanez-Valdez[2], [1]Universidad Tecnica Estatal de Quevedo, Ecuador, [2]Colegio de Postgraduados, Mexico, [3]Universidad Autonoma de San Luis Potosi, Mexico.

W158 Effect of exogenous fibrolytic enzymes (Fibrozyme) on *vitro* digestibility of dry matter and cell wall of *Brachiaria* cultivars hays. J. H. Avellaneda-Cevallos[1], S. S. Gonzalez*[2], J. M. Pinos-Rodriguez[3], A. Hernandez[2], R. Barcena[2], M. Cobos[2], D. Hernandez-Sanchez[2], and M. Crosby-Galvan[2], [1]Universidad Tecnica Estatal de Quevedo, Ecuador, [2]Colegio de Postgraduados, Mexico, [3]Universidad Autonoma de San Lius Potosi, Mexico.

W159 Effect of Leucaena (*Leucaena leucocephala*) supplementation on Aleman-grass (*Echinochloa polystachya*) ruminal degradability. J. Vergara-Lopez*[1], A. Rodriguez-Petit[2], A. Atencio[2], and C. Navarro[2], [1]Instituto Nacional de Investigaciones Agrícolas (INIA), [2]Universidad Experimental Sur del Lago (UNESUR).

W160 Effect of barley varieties harvested for forage on backgrounding steer performance and diet digestibility. A. L. Todd*, J.G.P. Bowman, L.M.M. Surber, M. A. Thompson, J. J. Kincheloe, M. F. McDonnell, and P. F. Hensleigh, Montana State University, Bozeman, MT.

W161 Continuous culture fermentation of three fescue varieties supplemented at four energy levels. R. E. Vibart*, S. P. Washburn, V. Fellner, and J. T. Green, North Carolina State University, Raleigh.

W162 Effect of field peas inclusion on in situ disappearance rate of grass hay, soybean hulls, and field peas in beef steers fed medium concentrate diets. S. A. Soto-Navarro*, G. J. Williams, M. L. Bauer, G. P. Lardy, D. Landblom, and J. S. Caton, North Dakota State University, Fargo.

W163 Effects of sun-curing, formic acid-treatment or microbial inoculation on ruminal kinetic parameters of timothy. R. Martineau*[1], H. Lapierre[2], D. R. Ouellet[2], D. Pellerin[1], and R. Berthiaume[2], [1]Universite Laval, Quebec, Canada, [2]Dairy and Swine R&D Centre, Agriculture and Agri-Food Canada, Lennoxville, Quebec, Canada.

W164 The effects of distillers dried grain with solubles as the protein source in a creep feed. P. Lancaster*, J. Williams, J. Corners, L. Thompson, and M. Ellersieck, University of Missouri-Columbia, Columbia, Missouri.

W165 Sodium and magnesium sulphates reduce water consumption by beef cattle. A.S. Zimmerman*[1], D.M. Veira[2], D.M. Weary[1], M.A.G. von Keyserlingk[1], and D. Fraser[1], [1]University of British Columbia Animal Welfare Program, [2]Agriculture and Agri-Food Canada.

W166 Kinetic parameters of digesta flow in calves under different herbage allowances of *Panicum maximum* cv. Tanzania-1. M.M. Gontijo Neto[1], D. Nascimento Júnior[2], V.P.B. Euclides[1], A.J. Regazzi[2], J.C. Pereira[2], L.F. Miranda*[3], D.M. Fonseca[2], and O.G. Pereira[2], [1]Embrapa Gado de Corte, Brazil, [2]Universidade Federal de Viçosa, Brazil, [3]FEAD-Minas, Centro de Gestao Empreendedora, Brazil.

W167 Comparison of commercial white and yellow corn from Sinaloa Mexico, on starch composition, in vitro digestibility, and physical characteristics. O.G. Lozano*[1], M. Chaidez-Ibarra[1], A. Sanchez-Bautista[1], X. Perales-Sanchez[1], C. Mora-Uzeta[1], and E. Vazquez-García[1], [1]Universidad Autonoma de Sinaloa. Mexico.

W168 Fractionation and in vitro degradation kinetics of carbohydrates constituents of sugar cane with different cycles of production and three cut times. A. Fernandes*[1], A. Queiroz[2], E. Pereira[3], L. Cabral[4], and A. Alex[3], [1]Universidade Estadual do Norte Fluminense, [2]Universidade Federal de Viçosa, [3]Universidade Estadual do Oeste do Paraná, [4]Universidade Federal do Mato Grosso.

W169 Digestion of alfalfa and alfalfa:sainfoin mixture preserved as hay or as silage. Y. Wang*[1], B. P. Berg[2], L. R. Barbieri[1], and T. A. McAllister[1], [1]Agriculture and Agri-Food Canada Research Centre, Lethbridge, AB, [2]Alberta Agriculture, Food and Rural Development, Lethbridge, AB.

W170 Evaluation of associative effects of feeds using in vitro gas production. G. Getachew*[1], P.H. Robinson[1], and J.W. Cone[2], [1]Department of Animal Science, UC Davis, [2]ID TNO Animal Nutrition,Lelystad, The Netherlands.

W171 Effect of condensed tannins on in vitro digestion of alfalfa and mixed alfalfa:sainfoin silages. Y. Wang*[1], Z. Xu[1], B. P. Berg[2], L. R. Barbieri[1], and T. A. McAllister[1], [1]Agriculture and Agri-Food Canada Research Centre, Lethbridge, AB, [2]Alberta Agriculture, Food and Rural Development, Lethbridge, AB.

W172 The effect of concentrate restriction on performance of Holstein steers fed only liquid whey instead of water. A. R. Bayat*, R. Valizadeh, and A. Naseian, College of Agriculture - Ferdowsi University - Mashhad - Iran.

W173 Effects of dry and steam processing on in situ ruminal digestion kinetics of barley grain. A. Nikkhah and G. R. Ghorbani*, Isfahan university of Technology, Isfahan, Iran.

W174 Effect of the processing method of soybean meal on production response of lactating cows. C. Leonardi*[1], W. Stockland[2], and L.E. Armentano[1], [1]University of Wisconsin-Madison, [2]AG Processing Inc., Omaha, NE.

W175 Sugar cane fiber effectiveness in dairy rations. M.L.M. Lima*[1], W. Mattos[2], and L. G. Nussio[2], [1]Escola de Veterinaria, Goiania - GO - Brazil, [2]Universidade de Sao Paulo, ESALQ, Piracicaba - SP - Brazil.

W176 The effects of preweaning starter supplement and postweaning protein level on growth rates of Holstein heifers. U. Moallem*, B. Erez, and R.A. Erdman, University of Maryland, College Park.

W177 Physical and chemical properties and ruminal digestion of different corn grani genotypes in cows. M. San Martín[1], J. C. Elizalde[1], F. J. Santini[2], and G. A. Pieroni[3], [1]Faculty of Agriculture, Nat. Univ. of Mar del Plata, [2]Nat. Res. Agric. Inst. (INTA) Balcarce, [3]Manantiales Exp. Res. Sta. Bs As.

W178 Effect of ground canola on milk fat composition and milk yield of lactating dairy cattle. M. Chichlowski*, J. W. Schroeder, C. S. Park, W. L. Keller, and D. E. Schimek, North Dakota State University, Fargo ND/USA.

W179 Evaluation of pet food grade poultry protein meal as supplement for lactating dairy cattle fed high fat and fiber rations. M. A. Canseco, M. A. Froetschel*, H. E. Amos, and J. K. Bernard, The University of Georgia, Athens, Georgia.

W180 Effects of physically effective NDF on rumen fermentation and digestion of dairy cows fed diets based on barley or corn silage. W. Z. Yang*[1] and K. A. Beauchemin[1], [1]Agriculture and Agri-Food Canada, Lethbridge, Canada.

W181 Increased concentrations of wet corn distillers grains in dairy cow diets. A. R. Hippen*[1], K. N. Linke[1], K. F. Kalscheur[1], D. J. Schingoethe[1], and A. D. Garcia[1], South Dakota State University, Brookings.

W182 Performance of lactating dairy cows fed wet corn gluten feed. G. D. Marx*[1], C. R. Dahlen[1], A. DiConstanzo[2], T. L. Durham[3], and R. T. Ethington[4], [1]University of Minnesota, Crookston, [2] University of Minnesota, St. Paul, [3] ADM Corn Processing, Marshall, MN, [4]Kansas Feeds, Inc., Dodge City, KS.

W183 Total antioxidant capacity: A tool for evaluating the nutritional status of dairy heifers and cows. P. Mandebvu*[1,2], J. B. Castillo[1], D. J. Steckley[1], and E. Evans[1], [1]Maple Leaf Foods Agresearch, Guelph, ON, Canada, [2]W.H. Miner Agricultural Research Institute, Chazy, NY 12921, USA.

W184 Utilization of sugarbeet pulp and a high-sugar product for early lactation dairy cows. G. D. Marx*[1], C. R. Dahlen[1], and A. C. Cox[2], [1]University of Minnesota, Crookston, MN, [2]Malt-O-Meal Company, Northfield, MN.

W185 The effect of corn silage particle size on eating behavior, chewing activities, and rumen fermentation in lactating dairy cows. P. J. Kononoff*, A. J. Heinrichs, and H. A. Lehman, The Pennsylvania State University.

W186 Effect of forage to concentrate ratio on the efficiency of utilization of energy for milk production in dairy cows. E. Kebreab*[1], J. France[1], J.A.N. Mills[1], L.A. Crompton[1], R.E. Agnew[2], and T. Yan[2], [1]The University of Reading, Reading, United Kingdom, [2]The Agricultural Research Institute of Northern Ireland, Hillsborough, United Kingdom.

W187 Estimation of mean ruminal retention time of DNDF in dairy cows based on combined data from rumen evacuations and marker excretion curves. P. Lund*, M.R. Weisbjerg, and T. Hvelplund, Danish Institute of Agricultural Sciences, Denmark.

W188 Prediction of Elephantgrass (*Pennisetum purpureum*, Schum.) dry matter intake and rumen-fill of lactating cows from degradation characteristics. J.P.G. Soares[1,4], L.J.M. Aroeira*[2], T.T. Berchielli[3], F. Deresz[2], R.S. Verneque[2], and P. Andrade[3], [1]Embrapa Rondonia, Porto Velho-RO-Brasil, [2]Embrapa Gado de Leite, Juiz de Fora-MG-Brasil, [3]FCAVJ/UNESP, Jaboticabal-SP-Brasil, [4]Part of Ph.D. Thesis of the 1st author at FCAV/UNESP- Jaboticabal, Supported by FAPESP.

W189 The effect of amylase on rumen development in neonatal dairy calves. A. M. Gehamn, A. J. Heinrichs*, M. R. Long, and K. E. Lesmeister, The Pennsylvania State University.

W190 Grain processing, forage:concentrate, and forage length effects on ruminal N degradation and flows of amino acids to duodenum in lactating dairy cows. W. Z. Yang*[1], K. A. Beauchemin[1], and L. M. Rode[2], [1]Agriculture and Agri-Food Canada, Lethbridge, Canada, [2]Rosebud Technologies Development, Ltd. Lethbridge, Canada.

W191 Grain processing, forage:concentrate, and forage length effects on intestinal digestibility of amino acids by lactating dairy cows. W. Z. Yang*[1], K. A. Beauchemin[1], and L. M. Rode[2], [1]Agriculture and Agri-Food Canada, Lethbridge, Canada, [2]Rosebud Technologies Development, Ltd. Lethbridge, Canada.

W192 Chemical composition of sugar cane varieties (Saccharum spp l.) with different cycles of production in three cut time. A. Fernandes*[1], A. Queiroz[2], L. Cabral[3], E. Pereira[4], and A. Arruda[4], [1]Universidade Estadual do Norte Fluminense, [2]Universidade Federal de Viçosa, [3]Universidade Estadual do Oeste do Paraná, [4]Universidade Estadual do Oeste do Paraná.

W193 Statistical properties of nutrients within selected conserved forages. P. R. Tozer*, Pennsylvania State University.

W194 Effect of feeding a live yeast product (LYP) to bull calves with failure of passive transfer on performance and patterns of antibiotic resistance. K.N. Galvao*, S.O. Juchem, A. Coscioni, M. Villasenor, W.M. Sischo, J.E.P. Santos, P.G Nunes, and C.J. Pinto, University of California - Davis.

W195 Effect of age on ruminal fermentation in growing calves fed high concentrate diets with two levels of NDF. A. Rotger, A. Ferret*, S. Calsamiglia, and X. Manteca, Universitat Autonoma de Barcelona.

W196 Effect of age on in situ degradation kinetics of plant protein supplements in growing calves fed high concentrate diets with two levels of NDF. A. Rotger, A. Ferret*, S. Calsamiglia, and X. Manteca, Universitat Autonoma de Barcelona.

W197 Effect of substitution of a corn-canola meal blend by cull chickpeas on apparent digestibility of diets for sheep. J. F. Obregon*, R. Barajas, and A. Estrada, FMVZ-Universidad Autónoma de Sinaloa (México).

W198 Silage characteristics,apparent digestibility,and performance of lambs fed apple pomace ensiled with different levels of wheat straw. F.T. Sleiman*, R.A. Sarkis, M.G. Uwayjan, E.K. Barbour, M.T. Farran, and M.N. Nimah, American University of Beirut, Beirut, Lebanon.

W199 Effect of substitution of alfalfa hay by hay from long time stored mature Clitoria ternatea on apparent digestibility of diets for growing sheep. A. Estrada*, R. Barajas, and J. F. Obregon, [1]FMVZ-Universidad Autonoma de Sinaloa (México).

W200 Effect of substitution of alfalfa hay by clitoria hay (Clitoria ternatea L.) on performance of sheep feed growing diets. A. Estrada*, R. Barajas, and J. F. Obregon, FMVZ-Universidad Autonoma de Sinaloa (Mexico).

W201 Ruminal degradation of dry matter of sudan grass hay grew in a subtropical weather, harvested at two ages in rumen of sheep using nylon bag technique. R. Barajas*[1], J.F. Obregon[1], and A. Estrada[1], [1]FMVZ-Universidad Autónoma de Sinaloa (México).

W202 Effect of substitution of sesame meal by cotton seed meal on apparent digestibility of diets for sheep. R. Barajas*, J. F. Obregon, and J. J. Portillo, FMVZ-Universidad Autónoma de Sinaloa (México).

W203 Effect of *Aspergillus oryzae* fermentation extract on zoospore physiology and carbon source utilization in the rumen fungus *Neocallimastix frontalis*, EB 188. J. Schmidt, S. Albright, K. Tsai, G. Calza, J. Chang, and R. Calza*, Washington State University, Pullman.

W204 Effects of *Aspergillus oryzae* fermentation extract on growth, enzyme production, and carbon source utilization of rumen bacteria grown separately and in co-culture with and without rumen fungi. S. Albright, G. Calza, and R. Calza*, Washington State University, Pullman.

W205 RUSITEC to characterize *Aspergillus oryzae* extracts effects on *in vitro* fermentation and populations of microorganisms. R. Calza*[1], F. McIntosh[2], J. Wallace[2], and J. Newbold[2], [1]Washington State University, Pullman/U.S.A., [2]Rowett Research Institute, Aberdeen/Scotland.

W206 Growth antagonist in *Aspergillus oryzae* fermentation extract: Effects on *Bacillus subtilis* and the rumen fungus, *Neocallimastix frontalis* EB188 and component analysis. J. Schmidt, S. Albright, E. Harper, G. Calza, and R. Calza*, Washington State University, Pullman.

W207 Ruminal degradation of crude protein of raw cull Chop suey beans (Vignia radiata L.,Wilzek) in sheep. J. F. Obregon*, J. C. Robles, R. Barajas, and A. Estrada, FMVZ-Universidad Autónoma de Sinaloa (México).

W208 Effects of slick vs non-slick bunk management on intake, performance, and carcass merit responses by finishing beef steers. P. J. Defoor*, D. A. Walker, and K. J. Malcolm-Callis, New Mexico State University, Clayton Livestock Research Center, Clayton, NM.

W209 Effects of winter implant status and monensin feeding on winter and subsequent summer performance by steers grazing tallgrass prairie. T. N. Bodine, H. T. Purvis II, G. W. Horn, and D. A. Cox, Oklahoma Agricultural Experiment Station.

W210 Correlation of marbling and yearling weight EPD's with performance and carcass characteristics of early-weaned Simmental steers. N.A. Pyatt*[1], L.L. Berger[1], D.B. Faulkner[1], and P.M. Walker[2], [1]University of Illinois at Urbana-Champaign, [2]Illinois State University, Normal.

W211 Effects of weaning programs on performance and serum concentrations of non-esterified fatty acids and urea nitrogen in first calf heifers or mature cows. T. R. Whitney}, G. C. Duff, S. P. Cuneo, D. W. Shaefer, and D. A. Henderson, The University of Arizona, Department of Animal Sciences, Tucson 85721.

Production, Management, and the Environment

W212 Serum progesterone in cycling ewes treated with progesterone-impregnated intravaginal inserts on the day of estrus. J. L. Duffey*, D. M. Hallford, C. A. Gifford, and R. L. Rosencrans, New Mexico State University, Las Cruces, NM/USA.

W213 Progesterone release and clearance patterns of progesterone-impregnated intravaginal inserts in ewes. C. A. Gifford*, J. L. Duffey, R. L. Rosencrans, and D. M. Hallford, New Mexico State University, Las Cruces, NM/USA.

W214 Effects of seminal traits and mating behavior on number of progeny sired in multi-sire herds. W. A. Whitworth[1], D. W. Forrest*[1], L. R. Sprott[1], B. G. Warrington[2], and J. W. Holloway[2], [1]Department of Animal Science, Texas A&M University, College Station, [2]Texas Agricultural Experiment Station, Uvalde.

W215 Effects of an injectable trace mineral supplement on conception rate of lactating dairy cows. J. A. Vanegas*, J. Reynolds, and R. Atwill, University of California, Davis. Veterinary Medicine Teaching and Research Center, Tulare CA.

W216 Techniques for measuring carcass attributes in live cattle with ultrasound. J. R. Brethour*[1], [1]KSU Agricultural Research Center - Hays.

W217 Effect of a birth weight selection index on Hereford calves from inbred and outcross matings. D. C. Anderson*[1], D. D. Kress[2], and K. C. Davis[2], [1]Northern Agricultural Research Center, Havre, [2]Montana State University, Bozeman.

W218 Study of selected physical environmental factors on feed intake of performance-tested beef bulls. G.T. Tabler, Jr.*, A.H. Brown, Jr., E.E. Gbur, Jr., K.C. Thompson, I.L. Berry, and D.W. Kellogg, University of Arkansas.

W219 Effect of live weight, preslaughter handling, and gender on blood acid-base status in finishing pigs. D. Hamilton*[1], M. Ellis[1], T. Bertol[1], and K. D. Miller[2], [1]University of Illinois, Urbana, IL, USA, [2]Elanco Animal Health, Greenfield, IN, USA.

W220 Prediction of wool base, vegetable matter base, fiber diameter, and prickle factor of greasy wool with near-infrared reflectance spectroscopy (NIRS). C. J. Lupton*, J. W. Walker, B. S. Engdahl, and F. A. Pfeiffer, Texas Agricultural Experiment Station, San Angelo.

W221 Field versus lab measurements for four important wool traits. F. A. Pfeiffer*, C. J. Lupton, and A. A. Simpson, Texas Agricultural Experiment Station, San Angelo.

W222 Protocols of reproductive management and their influences on improvement of fertility in Iranian Holstein dairy cattle. Ghasem Koolabadi[1], Reza Tahmasbi[1], Behnam Saremi*[2], and Abasali Naserian[2], [1]Dasht Dairy Farm, Neyshabour, Khorasan, Iran, [2]Ferdowsi University of Mashhad, Khorasan, Iran.

W223 Milk citrate as a potential metabolic indicator in dairy cows. L.L. Masson*[1], T.T. Mottram[1], and P.C. Garnsworthy[2], [1]Silsoe Research Institute, Silsoe, U.K., [2]University of Nottingham, Sutton Bonington, U.K.

W224 A survey of mortality and calf management in U.S. Jersey herds. S. Bascon*, R. James, M. McGilliard, and E. Hovingh, Virginia Tech.

W225 Effects of ozonation of the swine nursery building on air quality and growth performance of weanling piglets. K. W. Kim, J. H. Woo, D. H. Kim, and C. Y. Lee*, [1]Regional Animal Industry Research Center, Jinju National University.

W226 Honeybee-keeping sector in Hungary. Levente Nyars[2], J Sandor Zsarnoczai*[1], and Huda F Salem[1], [1]Szent Istvan University, Godollo, Hungary, [2]Research and Information Institute for Agricultural Economics, Budapest, Hungary.

W227 Particle size, feed intake, milk yield and chewing activity in Holstein cows. Pedro Melendez*[1], Nathan Back[2], Shelly Lanhart[1], and Art Donovan[1], [1]College of Veterinary Medicine, University of Florida, [2]North Florida Holstein, Inc.

W228 Behaviors of transition dairy cows and heifers. K. J. Daniels*, J. R. Townsend, S. S. Donkin, E. A. Pajor, A. G. Fahey, and M. M. Schutz, Purdue University, West Lafayette, IN.

Forages & Pastures

Grazing, Cultivars, Forage Management

W229 Nutritional quality of twenty alfalfa (*Medicago sativa* L) cultivars from Embrapa's Brazil germplasm bank. H. Carneiro*[1], M. de A. Botrel[1], F. de S. Sobrinho[1], and M. Villaquiran[2], [1]EMBRAPA, CNPGL, Minas Gerais, Brazil, [2]E (Kika) de la Garza American Institute for Goat Research, Langston University, Langston, OK.

W230 Forage production and quality of triticale cultivars in north Alabama. M. Lema*, E. Cebert, and V. Sapra, Alabama A & M University.

W231 Grazing and supplementation effects of lablab (*Lablab purpureus*) on weight gains of St. Croix White hair sheep lambs during the dry season. E. Valencia*, R. W. Godfrey, and S. Weiss, University of the Virgin Islands, Agricultural Experiment Station.

W232 Horse preference for alfalfa-grass hay harvested in afternoon or morning. L.C. MacKay*[1], H.F. Mayland[2], and W.P. MacKay[3], [1](H.S. Student) Los Altos, El Paso, Texas, [2]USDA-ARS, Kimberly, Idaho, [3]University of Texas, El Paso, Texas.

W233 Rabbit preference, intake and digestibility of afternoon- or morning-cut alfalfa hay fed ad libitum as pellets. H.F. Mayland*[1], J.C. Burns[2], and B.E. Mackey[3], [1]USDA-ARS, Kimberly, ID, [2]USDA-ARS, Raleigh, NC, [3]USDA-ARS, Albany, CA.

W234 Effect of previous exposure of sheep to monoterpene odors on intake of alfalfa pellets treated with camphor or a-pinene. R. E. Estell*[1], E. L. Fredrickson[1], D. M. Anderson[1], K. M. Havstad[1], and M. D. Remmenga[2], [1]USDA, ARS, Jornada Experimental Range, Las Cruces, NM, [2]New Mexico State University, Las Cruces, NM.

W235 Effects of polyethylene glycol and feed blocks on carbohydrate fermentation of woody species. Aziza Boubaker[1], Chedly Kayouli[1], and André Buldgen[2], [1]Institut National Agronomique Tunis, [2]Faculté des Sciences Agronomiques Gembloux Belgique.

W236 Effects of windrowed or baled forage on forage quality and beef cattle production during the winter. V. Nayigihugu*[1], A. D. Schleicher[1], B. W. Hess[1], D. W. Koch[2], and J. W. Flake[2], [1]Department of Animal Science, [2]Department of Plant Science, University of Wyoming.

W237 Performance comparison of three hay rake designs. W. A. Greene*, D. A. Munn, and G. L. Sautter, The Ohio State University, Wooster USA.

W238 Effect of weaning date and pasture rotation frequency on performance by fall calving cows grazing tall fescue pastures - 2-year summary. K. P. Coffey*, W. K. Coblentz, T. F. Smith, D. A. Scarbrough, D. S. Hubbell, III, B. C. McGinley, J. E. Turner, and C. F. Rosenkrans, Jr., University of Arkansas, Fayetteville, AR.

W239 Effect of weaning date and pasture rotation frequency on post-weaning performance by fall-born calves grazing tall fescue pastures - 2-year summary. K. P. Coffey*, W. K. Coblentz, T. F. Smith, D. A. Scarbrough, D. S. Hubbell, III, B. C. McGinley, J. E. Turner, and C. F. Rosenkrans, Jr., University of Arkansas, Fayetteville, AR.

W240 Performance of cow/calf pairs grazing common crabgrass. D. W. Sanson*[1], E. K. Twidwell[2], and B. C. Venuto[3], [1]LSU Ag. Center, Rosepine Research Station, Rosepine, [2]LSU Ag. Center, Agronomy Department, Baton Rouge, [3]LSU Ag. Center, Southeast Research Station, Franklinton.

W241 Effects of corn or soybean hulls supplementation to bermudagrass hay on ruminal *in situ* disappearance of DM, NDF, ADF and CP of hay, corn and soybean hulls. V. T. Nguyen*, I. A. Orr, B. J Rude, and D. G. St. Louis, Mississippi State University, MS.

W242 Effect of wintering period growth rate on finishing growth rate, final weight and carcass parameters from forage or high concentrate finished cattle. J. P. S. Neel*[1], J. P. Fontenot[2], W. M. Clapham[1], and S. K. Duckett[3], [1]USDA-ARS, AFSRC, Beaver, WV, [2]Virginia Tech, Blacksburg, [3]The University of Georgia, Athens.

W243 Comparative performance of yearling crossbred beef heifers grazing three cool-season grass species under irrigation in northern utah using management intensive grazing practices. C. A. Fitzgerald, R. D. Wiedmeier*, P. R. Schmidt, B. A. Kent, and J. L. Walters, Utah State University, Logan, Utah.

W244 Influence of turning cows out to pasture on fatty acid profile of milk. R. C. Khanal*[1], T. R. Dhiman[1], and R. L. Boman[1], [1]Department of Animal, Dairy and Veterinary Sciences, Utah State University.

W245 Consumer acceptability characteristics of conjugated linoleic acid (C LA) enriched milk and cheese. R. C. Khanal*[1], T. R. Dhiman[1], C. Brennand[1], R. L. Boman[1], and D. J. McMahon[1], [1]Utah State University.

W246 Influence of genotype, heading date and cutting date on fatty acid composition of ryegrass. V. R. Loyola*[1,3], J. J. Murphy[2], M. O'Donovan[2], N. Gowen[2], M. D. S. Oliveira[3], and C. Stanton[1], [1]Teagasc, Dairy Products Research Centre, Moorepark, Fermoy, Ireland, [2]Teagasc, Dairy Production Research Centre, Moorepark, Fermoy, Ireland, [3]Universidade Estadual Paulista, UNESP, Jaboticabal, Brasil, supported by FAPESP.

Extension Education

W247 Consumer response to beef quality assurance certification of producers. J. W. Comerford*[1], J. P. Slayton[2], and L. Zerby[2], [1]Penn State University, University Park, PA USA, [2]Pennsylvania Beef Council, Middletown, PA USA.

W248 Dairy beef: Maximizing quality & profits—an educational program for dairy producers. D.A. Moore[1], J. Kirk[1], F. Garry[2], W. Wailes[2], J. Dalton*[3], J. Busboom[4], D.J. Klingborg[1], M. Payne[1], J. Marchello[5], and M. Poe[1], [1]University of California, Davis, [2]Colorado State Univeristy, [3]University of Idaho, [4]Washington State University, [5]University of Arizona.

W249 Bacteria counts on the surface and subsurface of italicize{Klebsiella pneumoniae inoculated sand and wood shavings. L. Clow, R. Bey, J. Reneau*, and R. Farnsworth, University of Minnesota, St. Paul, MN 55108.

W250 Oregon dairy environmental stewardship program. M. E. French*, T. W. Downing, and P. D. French, Oregon State University, Corvallis, OR/USA.

W251 Effect of artificial insemination versus natural service breeding on production and reproduction parameters. J. W. Smith, L. O. Ely, W. D. Gilson, and W. M. Graves, University of Georgia.

W252 Ranking of dairy farms based on economic measures per cwt milk sold and per cwt milk equivalent. A. E. M. de Araujo* and A. de Vries, University of Florida.

W253 Lamb carcass education program for Oregon sheep producers indentifies characteristics that determine carcass value. R. R. Mills*, J. M. Thompson, and K. Walburger, Oregon State University, Corvallis, OR.

W254 Financial performance of dairies in Florida and Georgia in 2001. L. O. Ely*[1], A. deVries[2], and R. G. Giesy[2], [1]University of Georgia, [2]University of Florida.

W255 Biological and economical efficiency of an accelerated, value-added cow-calf production system. R. D. Wiedmeier*, D. L. Snyder, M. D. Neibaur, P. R. Schmidt, C. A. Stonecipher, and B. A. Kent, Utah State University, Logan, Utah.

W256 Dairy herd expansion and modernization options available in UW-FARM. S. M. Combs, S. M. Lindsey, and D. K. Combs, University of Wisconsin-Madison.

W257 Net present value economic analysis model for adoption of photoperiod manipulation in lactating cow barns. R. L. Crill*, J. J. Hanchar, C. A. Gooch, and S. T. Richards, Cornell University, Ithaca, NY.

W258 Regionalization of dairy Extension in-service training in the Mid-Atlantic and Northeast states. R. R. Peters*[1], M. L. O'Connor[2], L. J. Hutchinson[2], M. L. Westendorf[3], E. A. Claypoole[4], G. W. Anderson[5], D. P. Marcinkowski[5], W. E. Graves[6], S. M. Andrew[7], W. L. Shockey[8], P. S. Erickson[9], and J. W. Barlow[10], [1]University of Maryland, [2]Pennsylvania State University, [3]Rutgers University, [4]Cornell Cooperative Extension, [5]University of Maine, [6]University of Massachusetts, [7]University of Connecticut, [8]West Virginia University, [9]University of New Hampshire, and [10]University of Vermont.

W259 Relationship of cow hygiene scores and SCC. J. K. Reneau*, A. J. Seykora, B. J. Heins, R. F. Bey, M. I. Endres, and R. J. Farnsworth, University of Minnesota.

W260 Implementation of a pilot Dairy Quality Management Program in Maryland. R. R. Peters*[1], R. A. Kohn[1], J. W. Simms[1], D. M. Schwartz[1], S. W. Fultz[1], M. R. Bell[1], J. E. Hall[1], J. Fearer[2], D. Booth[2], M. Clarke[2], K. Hendricks[2], and D. Shinham[2], [1]University of Maryland, College Park, MD, [2]Maryland Department of Agriculture, Annapolis, MD.

Dairy Foods

Microbiology and Cheese

W261 EPS and lactic acid production by *S. thermophilus* 1275: influence of pH, temperature, nutrients and co-culturing with non-EPS starter. B. Zisu*[1], G. Harvey[2], and N. P. Shah[1], [1]Victoria University, Melbourne, Australia, [2]Dairy Farmers, Tingalpa, Queensland, Australa.

W262 selection of prebiotics utilization from *Lactobacillus acidophilus* ATCC 43121 for synbiotics. E. Y. An*[1], S. Oh[2], and S. H. Kim[1], [1]Korea University, [2]Hnkuk Yakult Institute.

W263 Factors affecting autoaggregation behavior of bifidobacteria. S. A. Ibrahim*, O. A. Hassan, C. W. Seo, Y. Murad, M. Worku, and G. Shahbazi, North Carolina A&T State University.

W264 Screening and selection of acid and bile resistant *Lactobacillus reuteri*. S. A. Ibrahim*, S. Ahmad, C. W. Seo, G. Shahbazi, M. M. Salameh, and M. Worku, North Carolina A&T State University.

W265 Fourier transform infrared (FTIR) spectroscopy for rapid detection, identification, and enumeration of bacteria in foods. H. Yang, C. W. Seo, and S. A. Ibrahim*, North Carolina A&T State University.

W266 Encapsulation of *Lactobacillus reuteri* with sodium alginate for continuous production of lactic acid. S. A. Ibrahim*, C. W. Seo, S. Phetsomphou, and G. Shahbazi, North Carolina A&T State University.

W267 Antimicrobial activity of *Lactobacillus reuteri* against *Escherichia coli* O157:H7. S. A. Ibrahim*, M.M. Salameh, W.M. Brown, G. Shahbazi, and C. W. Seo, North Carolina A&T State University.

W268 Development of endospore-specific primers for the analysis of microbial populations in milk powder. M Arendts*[1], C Kitts[2], and R Jimenez-Flores[1], [1]Cal Poly DPTC, [2]Cal Poly Biological Sciences.

W269 The effect of the incorporation of lactobacilli and whey protein isolate on the level of cell glutathion and immunoglobulin M(ig M). Y. H. Yoon*[1] and J. R. Byun, [1]Department of Animal Science and Technology, Chung-Ang University.

W270 Evaluation of modified Elliker agar as an enumeration medium for selected Lactic acid bacteria. D. Patel*, L. Goddik, K. Kido, and P. Elliker, Food Science and Technology, Oregon State University.

W271 Effects of co-culturing EPS and non-EPS starter cultures and supplementation with WPC on syneresis, textural and rheological properties of set yoghurt. T. Amatayakul*[1], B. Zisu[1], F. Sherkat[2], and N.P. Shah[1], [1]Victoria University, Melbourne, Australia, [2]RMIT University, Melbourne, Australia.

W272 Thermophilin 110: a broad spectrum bacteriocin of *Streptococcus thermophilus*. G. A. Somkuti* and D. H. Steinberg, Eastern Regional Research Center, ARS-USDA.

W273 The influence of cold adaptation on cryotolerance of *Bifidobacterium infantis*. A. Gevorgyan* and R. F. Roberts, [1]The Pennsylvania State University.

W274 Effect of c2 phage peptide on acid development in milk inoculated with *Lactococcus lactis* spp *lactis* C2 with and without c2 phage infection. I. Surjawan and C. L. Hicks*, University of Kentucky, Lexington, KY 40546.

W275 Inhibition of *Salmonella* and *Escherichia coli* phage with c2 phage peptide. C. L. Hicks, J. Tang, and I. Surjawan, University of Kentucky, Lexington, KY 40546.

W276 Correlation between the USU stretch test and the pizza fork test. B. L. Moyes*[1], D. J. McMahon[1], and C. J. Oberg[2], [1]Utah State University, Department of Nutrition and Food Sciences, [2]Weber State University, Department of Microbiology.

W277 Impact of cheese defects on U.S. graded cheeses. M Smukowski*[1], W. L. Wendorff[2], Y. Ping[1], and R. D. Rao[2], [1]WI Center for Dairy Research, Madison, WI, USA, [2]University of Wisconsin-Madison, Madison, WI, USA.

W278 Microencapsulated Iron fortification and flavor development in Cheddar cheese. H. S. Kwak, H. J. Ahn, J. Ahn, and J. S. Seok, Sejong University, Seoul, Korea.

W279 Comparison of microbial populations of unfrozen and frozen control goat cheeses with those of 3 month frozen-stored ones. J. H. Lee*, S. J. Lee, A. Kalantari, and Y. W. Park, Fort Valley State University, Fort Valley, GA.

W280 Quantitative analysis of water-soluble volatile free fatty acids in commercial Swiss-type cheeses. T. Ji, W. Harper, and V. Alvarez, The Ohio State University, Columbus, Ohio.

W281 Compositional differences between whey, salty whey, and press whey from commercial manufacture of cheddar cheese. R. D Rao* and W. L. Wendorff, University of Wisconsin-Madison, Madison, WI, USA.

W282 Physico-chemical and microbiological characteristics of Cheddar cheese manufactured with a cholesterol lowering spread and oil high in omega-3 fatty acids. K. J. Aryana* and R. Gough, Louisiana State University Agricultural Center.

W283 RAPID method of cheese sample preparation for microstructural studies by electron microscopy. K. J. Aryana*[1] and M. C. Henk[2], [1]Louisiana State University Agricultural Center, [2]Louisiana State University.

W284 Effect of setting pH on the properties of mozzarella cheese made from whole milk and dry milk protein concentrate by direct acidification. S. Rehman, N. Farkye, and Y. Boorus, California Poly technic State University, San Luis Obispo, CA.

W285 Effect of calcium on functionality of fat free Mozzarella cheese. N. S. Joshi, R. I. Dave, and K. Muthukumarappan, South Dakota State University, Brookings, SD.

W286 Changes in microstructure of part skim Mozzarella cheese as a function of calcium. N. S. Joshi, K. Muthukumarappan, and R. I. Dave, South Dakota State University, Brookings, SD.

W287 Effects of stage of lactation and aging on functional properties of Colby and Cheddar cheeses manufactured from goats' milk. D. W. Olson*[1], D. L. Van Hekken[1], M. H. Tunick[1], K. A. Soryal[2], and S. S. Zeng[2], [1]USDA, ARS, Eastern Regional Research Center, Wyndmoor, PA, [2]Garza Institute for Goat Research, Langston University, Langston, OK.

W288 Effects of milk pasteurization and aging on functional properties of Mexican Mennonite cheese. D. W. Olson*[1], D. L. Van Hekken[1], M. H. Tunick[1], P. M. Tomasula[1], F. J. Molina-Corral[2], and A. A. Gardea[2], [1]USDA, ARS, Eastern Regional Research Center, Wyndmoor, PA, [2]Centro de Investigacion en Alimentacion y Desarrollo, Cuauhtemoc, Chihuahua, Mexico.

W289 Proteolysis and rheology of soft goat milk cheese after frozen storage. D. L. Van Hekken*[1], M. H. Tunick[1], D. W. Olson[1], and Y. W. Park[2], [1]USDA, ARS, Eastern Regional Research Center, Wyndmoor, PA, [2]Fort Valley State University, Fort Valley, GA.

W290 Effect of sodium chloride and acid on rennet coagulation and curd firmness of high heat-treated milk. M. R. Acharya* and V. V. Mistry, MN-SD Dairy Foods Research Center, South Dakota State University.

W291 An accelerated cheese ripening in cholesterol-reduced Cheddar cheese by ß-cyclodextrin. H. S. Kwak, C. S. Jung, H. J. Ahn, and J. Ahn, Sejong University, Seoul, Korea.

W292 Influence of feeding strategy (pasture vs TMR) on proteolysis in Ragusano cheese during ripening. V. Fallico*[1], L. Chianese[2], J. Horne[1], S. Carpino[1], and G. Licitra[1], [1]CoRFiLaC, Regione Siciliana, 97100 Ragusa, Italy, [2]Food Science Department, Naples University, Portici, Italy.

W293 Effect of sodium citrate on structure-function relationships of Cheddar cheese. A. J. Pastorino*, C. L. Hansen, and D. J. McMahon, Western Dairy Center. Nutrition and Food Sciences Dept. Utah State University.

W294 Continuous manufacture of mozzarella cheese using concentrated microfiltration retentate and recovery of virgin whey proteins. A. V. Ardisson* and S.S.H. Rizvi, North East Dairy Foods Research Center. Cornell University.

W295 Lexicon development of appearance and texture descriptors for melted cheddar cheese. K. M. Asato*, I. M. Tsai, and M. R. McDaniel, Oregon State University, Corvallis, OR.

W296 Monitoring spores and spore-forming bacteria populations in commercial skim milk powder production plants using conventional and molecular methods. C. Murillo*[1], C. Kitts[2], and R. Jimenez-Flores[1], [1]Cal Poly Dairy Products Technology Center, [2]Cal Poly Biological Sciences Department.

W297 Enterotoxigenic *Bacillus* spp. DNA fingerprints revealed in powdered milk products using rep-PCR. R. M. Cooper* and J. L. McKillip, Ball State University, Muncie, IN.

Food Safety

Food Safety: Methods, Prevalence, and Control

W298 Detection of viable Enterobacteriaceae in milk by using real-time broad-range RT-PCR. S. H. Choi* and S. B. Lee, Sangji University, Wonju, Korea.

W299 Use of real-time polymerase chain reactions (PCR) for the detection of pathogenic microbes in bulk-tank milk. J. S. Karns*, J. S. Van Kessel, and M. L. Perdue, USDA-ARS, Beltsville, MD.

W300 Survey of bulk tank milk in the United States for food-borne bacterial pathogens. J. S. Van Kessel*[1], J. S. Karns[1], B. J. McCluskey[2], and M. L. Perdue[1], [1]USDA-ARS, Beltsville, MD, [2]USDA-APHIS, Fort Collins, CO.

W301 Efficacy of lactic acid to prevent rapid *Salmonella* infection in market weight swine. M. D. Howard*[1], H. S. Hurd[2], and J. K. Gailey[2], [1]National Swine Research and Information Center, [2]National Animal Disease Center, Ames, IA.

Program at a Glance - Sunday, June 22

SUNDAY, JUNE 22			
Room	**8 am - 5 pm**	**8 am - 5 pm**	**1 pm - 5 pm**
Yuma 21-22	**Set up Exhibit Hall D**	AMPA	AMPA
Yuma 23-24			
Yuma 25			(3 pm - 4 pm) ADSA Prod Div. Res Comm
Yuma 26-27			(3 pm - 5 pm) '03 & '04 Program Chairs Meeting
Yuma 28-29			
Yuma 30 & 35			
Tucson 36			(2 pm - 4 pm) ADSA Cmt on Eval of Dairy Prods
Tucson 37			(3 pm - 4 pm) ADSA '06 Task Force
Tucson 38			(3 pm - 4 pm) ADSA Prod. Div. Nom. Meeting; (5 pm - 6 pm) ADSA Prod. Div. Bus. Meeting
Tucson 39			
Tucson 40-41		Triennial Growth Symposium	Triennial Growth Symposium
Tucson 42			
Tucson 43			
Phoenix 11		*SAD Activities*	(12 pm - 1pm) SAD Welcome Pizza Party/ Orientation
Phoenix 12		(11 am - 12 pm) SAD Officers/Advisors Meeting	*SAD Activities*
Phoenix 13-15		*SAD Activities*	SAD Quiz Bowl Seating & Preliminary Rounds
Phoenix 16-17			(1 pm - 5pm) ADSA SAD Quiz Bowl Seating & Preliminary Rounds; (6:30 pm - 7pm), SAD Quiz Bowl Final Round
Phoenix 18			(5 pm - 6pm) ADSA DF Council Meeting
Phoenix 19			
Phoenix 20			
Ballroom			(7 pm - 8:30 pm) Opening Session
Show Management			
Yuma 31		8 am - 12 pm Speaker Ready Room	1 pm - 5 pm Speaker Ready Room
Yuma 32		8 am - 12 pm Show Office	1 pm - 5 pm Show Office
Yuma 33		8 am - 12 pm Media Room	1 pm - 5 pm Media Room
Yuma 34		8 am - 12 pm Show Management	1 pm - 5 pm Show Management

Program at a Glance - Monday, June 23

MONDAY, JUNE 23			
Room	**7:30 am - 9:30 am**	**9:30 am - 12 pm**	**1 pm - 5 pm**
Yuma 21-22	**Posters Only in Exhibit Hall D**	Companion Animal Symposium	Companion Animal Symposium
Yuma 23-24		Breeding and Genetics Symposium	Animal Health Symposium
Yuma 25		International Animal Agriculture	International Animal Agriculture Symposium
Yuma 26-27		Teaching/UG & Grad Education	Forages and Pastures
Yuma 28-29		Animal Health	Breeding and Genetics
Yuma 30 & 35		WSASAS Grad Student Paper Competition	WSASAS Grad Student Paper Competition
Tucson 36		Growth and Development Symposium	Physiology
Tucson 37		Production, Management & the Environment	Production, Management & the Environment
Tucson 38		Ruminant Nutrition	Ruminant Nutrition
Tucson 39		Ruminant Nutrition	Ruminant Nutrition
Tucson 40-41		Food Safety Symposium	Food Safety Symposium; (5:15 pm - 6:15 pm) ADSA Town Hall Meeting
Tucson 42		Rare Breeds International	Swine Symposium
Tucson 43		Nonruminant Nutrition	Nonruminant Nutrition
Phoenix 11		(9:30 am - 10:30 am) SAD Judging of Yearbooks	*SAD Activities*
Phoenix 12		(9:30 am - 10:30 am) SAD Interviews for Outstanding Student & Advisor Awards	*SAD Activities*
Phoenix 13-15		(9 am - 9:30 am) Business Meeting; (9:30 am - 10:30 am) SAD Student Activities Symposium; (11 am - 12:30 pm) ADSA SAD Undergraduate Paper Presentations	(1:30 pm - 5 pm) ADSA SAD Undergraduate Paper Presentations
Phoenix 16-17			
Phoenix 18		ADSA-ASAS NE Grad Student Paper Competition	ADSA Dairy Production Grad Student Paper Competition & Southern Division Paper Competition
Phoenix 19		ADSA Dairy Foods Grad Student Paper Competition	Dairy Foods (4 pm - 5 pm) Rhodia Lecture
Phoenix 20			Dairy Foods
Show Management			
Yuma 31		8 am - 12 pm Speaker Ready Room	1 pm - 5 pm Speaker Ready Room
Yuma 32		8 am - 12 pm Show Office	1 pm - 5 pm Show Office
Yuma 33		8 am - 12 pm Media Room	1 pm - 5 pm Media Room
Yuma 34		8 am - 12 pm Show Management	1 pm - 5 pm Show Management

Program at a Glance - Tuesday, June 24

TUESDAY, JUNE 24			
Room	**7:30 am - 9:30 am**	**9:30 am - 12 pm**	**1 pm - 5 pm**
Yuma 21-22	**Posters Only in Exhibit Hall D**	(9:30 am - 12 pm) ARPAS - FASS Symp. (12 pm - 1 pm) ARPAS Business Meeting	Alpharma Beef Cattle Symposium
Yuma 23-24		Physiology Symposium	Physiology
Yuma 25		Horse	Horse Symposium
Yuma 26-27		Companion Animals	Companion Animals
Yuma 28-29		Breeding and Genetics	Breeding and Genetics
Yuma 30 & 35			
Tucson 36			Animal Health
Tucson 37			Forages and Pastures
Tucson 38		Ruminant Nutrition (Invited)	Ruminant Nutrition
Tucson 39		Production, Management & the Environment	Ruminant Nutrition
Tucson 40-41		Growth and Development Symposium	FDA-CVM and CAST Symposium
Tucson 42		Meat Science and Muscle Biology	Growth and Development
Tucson 43		Nonruminant Nutrition	Nonruminant Nutrition
Phoenix 11		*SAD Activities*	(12 pm - 2 pm) Student Awards Luncheon; (2 pm - 3 pm) SAD Pictures
Phoenix 12		*SAD Activities*	(12 pm - 2 pm) Student Awards Luncheon; (2 pm - 3 pm) SAD Pictures
Phoenix 13-15		(8 am - 8:30 am) SAD Business Meeting - Election of Officers	(2 pm - 3 pm) SAD Committee Meeting - Old/ New Officers & Advisors; (3 pm - 4 pm) '06 Budget Planning
Phoenix 16-17		(9:30 am - 10:30 am) ADSA Dairy Foods Scholar Lecture; (10:45 am - 11:45 am) ADSA Dairy Production Scholar Lecture	Dairy Foods Listeria Symposium
Phoenix 18		Dairy Foods; (11am - 12pm) Business Meeting	Dairy Foods Hispanic Style Cheeses Symposium
Phoenix 19		(8:45 am - 11:45 am) Student Careers Symposium: Congressional Insights Program	
Phoenix 20			ADSA Southern Branch Symposium
Show Management			
Yuma 31		8 am - 12 pm Speaker Ready Room	1 pm - 5 pm Speaker Ready Room
Yuma 32		8 am - 12 pm Show Office	1 pm - 5 pm Show Office
Yuma 33		8 am - 12 pm Media Room	1 pm - 5 pm Media Room
Yuma 34		8 am - 12 pm Show Management	1 pm - 5 pm Show Management

Program at a Glance - Wednesday, June 25

WEDNESDAY, JUNE 25			
Room	**7:30 am - 9:30 am**	**10:30 am - 12 pm**	**1 pm - 5 pm**
Yuma 21-22	**Posters Only in Exhibit Hall D**	Dairy Foods Symposium	Growth and Development Symposium
Yuma 23-24		(10 am - 10:30 am) ADSA Business Meeting	Ruminant Nutrition Fats and Fatty Acids
Yuma 25		Food Safety	Food Safety
Yuma 26-27		(10 am - 10:30 am) ASAS Business Meeting	Contemporary Issues Symposium & FASS Biotech Committee
Yuma 28-29		Extension Education	Animal Behavior and Well Being Symposium
Yuma 30 & 35		Sheep	Goat Species Symposium
Tucson 36		Physiology	Physiology
Tucson 37		Production, Management & the Environment	Meat Science/Muscle Biology (Invited)
Tucson 38		Ruminant Nutrition	Ruminant Nutrition
Tucson 39		Lactation Biology	Forages and Pastures Symposium
Tucson 40-41		Ruminant Nutrition (Feed Intake)	Production, Management & the Environment Symposium (*web based option available)
Tucson 42		Breeding and Genetics	Breeding and Genetics
Tucson 43		Beef Species	Nonruminant Nutrition
Show Management			
Yuma 31		8 am - 12 pm Speaker Ready Room	1 pm - 5 pm Speaker Ready Room
Yuma 32		8 am - 12 pm Show Office	1 pm - 5 pm Show Office
Yuma 33		8 am - 12 pm Media Room	1 pm - 5 pm Media Room
Yuma 34		8 am - 12 pm Show Management	1 pm - 5 pm Show Management

Program at a Glance - Thursday, June 26

THURSDAY, JUNE 26	
Room	**8 am - 12 pm**
Yuma 21-22	Lactation Biology Symposium
Yuma 23-24	Growth & Development
Yuma 25	
Yuma 26-27	
Yuma 28-29	
Yuma 30 & 35	
Tucson 36	Contemporary Issues Symposium
Tucson 37	Extension Education
Tucson 38	Ruminant Nutrition
Tucson 39	Production, Management & the Environment
Tucson 40-41	Nonruminant Nutrition Symposium (*web based option available)
Tucson 42	Breeding and Genetics
Tucson 43	Animal Behavior and Well Being
Show Management	
Yuma 31	8 am - 12 pm Speaker Ready Room
Yuma 32	8 am - 12 pm Show Office
Yuma 33	8 am - 12 pm Media Room
Yuma 34	8 am - 12 pm Show Management

Author Index

Numbers following names refer to abstract numbers: a number alone indicates an oral presentation, an M prior to a number indicates a Monday poster, a T indicates a Tuesday poster, and a W indicates a Wednesday poster.

The author index is created directly and automatically from the abstracts. If an author's name is typed differently on multiple abstracts, the entries in the author index will reflect these discrepancies. Efforts have been made to make this index consistent; however, errors from author entry contribute to inaccuracies.

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