

Western Section

**American Society
of
Animal Science**

72nd Annual Meeting



University of
California

Davis, California

June 21-23, 2000

Western Section American Society of Animal Science

Summary of Scheduled Events

Tuesday, June 20, 2000

2:00 p.m. - 5:00 p.m. Registration, Primero Grove Community Center

Wednesday, June 21, 2000

7:15 a.m. - 5:00 p.m. Registration, Rm 1100, Social Sciences Bldg.
8:00 a.m. - 4:00 p.m. Symposium: "Visions for U.S. Beef Production Systems" - Rm 1100,
Social Sciences Bldg.
6:00 p.m. - 8:00 p.m. Registration, Primero Grove Community Center
6:00 p.m. - 9:00 p.m. Informal Reception - Primero Grove Community Center

Thursday, June 22, 2000

8:00 a.m. - 5:00 p.m. Registration, Rm 1100, Social Sciences Bldg.
8:00 a.m. - 8:40 a.m. Distinguished Service Award Presentation, Dr. Robert Short, USDA-
ARS, Miles City, MT, Rm 1100, Social Sciences Bldg.
8:30 a.m. - 5:00 p.m. Spouses and Youth Tours, Primero Grove Community Center
8:45 a.m. - 12:00 p.m. Graduate Student Competition, Rm 1100, Social Sciences Bldg.
12:05 p.m. - 1:55 p.m. Graduate Student Career Forum, East Room, Memorial Union Bldg.
12:30 p.m. - 5:30 p.m. Posters: Ruminant and Non-Ruminant Nutrition, Rm II (Second Floor),
Memorial Union Bldg. (Authors Present: 3:30 p.m. - 5:30 p.m.)
1:00 p.m. - 3:00 p.m. Extension Symposium: "Innovative Extension Programs in the West", Rm
1130, Hart Hall
2:00 p.m. - 3:15 p.m. Graduate Student Competition, Rm 1100, Social Sciences Bldg.
3:30 p.m. - 5:00 p.m. Breeding and Genetics/Extension/Teaching, Rm 1100, Social Sciences
Bldg.
3:30 p.m. - 5:00 p.m. Pastures and Forages, Rm 1130, Hart Hall
3:30 p.m. - 5:00 p.m. Growth and Development/Meat Science/Environment and Livestock, Rm
1150, Hart Hall
6:30 p.m. - 9:00 p.m. Awards - Barbecue Dinner, Putah Creek Lodge

Friday, June 23, 2000

8:00 a.m. - 12:00 p.m. Registration, Rm 1100, Social Sciences Bldg.
8:00 a.m. - 8:55 a.m. Business Meeting, Rm 1100 Social Sciences Bldg.
8:00 a.m. - 1:00 p.m. Posters: Room II (Second Floor), Memorial Union Bldg. (Authors
Present: 9:00 a.m. - 11:00 a.m.)
9:00 a.m. - 12:00 p.m. Ruminant Nutrition/Non-Ruminant Nutrition, Rm 1100, Social Sciences
Bldg.
9:00 a.m. - 12:00 p.m. Pastures and Forages/Environment and Livestock, Rm 1130, Hart Hall
9:00 a.m. - 11:30 a.m. Physiology, Rm 1150, Hart Hall

PROGRAM

Wednesday, June 21, 2000

SYMPOSIUM

Visions for U.S. Beef Production Systems

Dr. Rodney Preston, Pagosa Springs, CO, Presiding

Wednesday, 8:00 a.m. - 4:00 p.m.

Room: 1100 Social Science

- 8:00 a.m. Introduction
Dr. James Sprinkle, University of Arizona, Payson
- 8:15 a.m. Historical overview of U.S. beef production (1870-2000)
Mr. Charles Ball (Author - "Building the Beef Industry"), Amarillo, TX
- 9:00 a.m. Can the cattle industry be structured to lower production costs and be less capital
intense
Mr. David Pratt, Ranch Management Consultants, LLC, Fairfield, CA
- 9:45 a.m. Break
- 10:10 a.m. New approaches for enhancing grazing productivity
Dr. Karen Launchbaugh, University of Idaho, Moscow
- 10:55 a.m. Environmental stewardship in the future
Dr. Michael Galyean, Texas Tech University, Lubbock
- 11:40 a.m. Introduction of sponsors
- 11:50 a.m. Lunch
- 1:00 p.m. Future technologies available and applied by the beef industry
Dr. Robert Bellows, USDA-ARS, Miles City, MT
- 1:45 p.m. Beef production systems in the future
Dr. Larry Corah, Certified Angus Beef Program, Manhattan, KS
- 2:30 p.m. Break
- 2:50 p.m. Panel discussion: Characteristics of a profitable cattle operation
Dr. Jack Whittier, Colorado State University, Ft. Collins, Moderator
Mr. James Almond, V.P. & General Manager, Grierson Ranch, Hysham, MT
Dr. Larry Corah, Certified Angus Beef Program, Manhattan, KS
Dr. James Oltjen, University of California, Davis
Mr. Dennis Sun, CRM Consultant, Wyoming Department of Agriculture
- 3:30 p.m. Questions to panel from the audience

INFORMAL RECEPTION

Wednesday, 6:00 p.m. - 9:00 p.m.
Primero Grove Community Center

Thursday, June 22, 2000

DISTINGUISHED SERVICE AWARD PRESENTATION

1999 Awardee

Dr. Robert Short, USDA-ARS, Miles City, MT

Thursday, 8:00 a.m. - 8:40 a.m.
Room 1100 Social Sciences

GRADUATE STUDENT COMPETITION

Chair: Dr. Thomas Geary
(Chair of Competition Committee)
USDA-ARS, Miles City, MT

Thursday, 8:45 a.m. - 12:00 p.m.
Room: 1100 Social Sciences

	Abstract	
Time	No.	
8:45	1	Maternal biological efficiency in beef cattle. J. D. Stevens* ¹ , D. D. Kress ¹ , D. C. Anderson ² , and K. C. Davis ¹ , ¹ Montana State University, Bozeman, ² Northern Agricultural Research Center, Havre, MT.
9:00	2	Effects of season of use on beef cattle distribution patterns and subsequent vegetation use in mountain riparian areas. C. Parsons* ¹ , P. Momont ¹ , T. DelCurto ² , and J. Sharp ² , ¹ University of Idaho, Caldwell, ² Oregon State University, Union.
9:15	3	Profitability analysis of Holstein steers on various implant regimes. S. L. Fowler* ¹ , J. Algeo ² , and J. L. Beckett ¹ , ¹ California Polytechnic State University, San Luis Obispo, ² Algeo Nutrition Consulting, Paso Robles.
9:30	4	Developing replacement heifers grazing winter range: forage nutrients and responses to supplementation. R. C. Waterman* ¹ , J. E. Sawyer ¹ , G. D. Pulsipher ¹ , K. K. Kane ¹ , D. E. Hawkins ¹ , J. Horton ² , and M. K. Petersen ¹ , ¹ New Mexico State University, Las Cruces, ² Kemin Industries, Inc.
9:45	5	Appearance of giant cotyledons in the Large Offspring Syndrome. M. Bertolini*, T.R. Famula, and G.B. Anderson, University of California, Davis.
10:00		BREAK
10:15	6	Fecal progestins in the early gestation ewe monitored by gas chromatography/mass spectrometry. C.W. Miller*, H.H. Meyer, and D.W. Holtan, Oregon State University, Corvallis.
10:30	7	A one-year investigation of prevalence of verotoxin-producing <i>Escherichia coli</i> in dairy heifers grazing an irrigated pasture. B. H. Thran*, H. S. Hussein, S. F. Khaiboullina, and M. R. Hall, University of Nevada, Reno.
10:45	8	Windrow grazing versus feeding baled meadow hay to beef cows. A. D. Schleicher*, B. W. Hess, D. W. Koch, L. J. Held, J. W. Flake, and L. Brokaw, University of Wyoming, Laramie.
11:00	9	Effects of supplemental energy and DIP on performance, grazing behavior, forage intake and digestion of steers grazing winter range. T. N. Bodine*, H. T. Purvis II, and D. A. Cox, Oklahoma State University, Stillwater.
11:15	10	Supplement and forage intake by grazing ewes fed either a block or pelleted supplement. N. Taylor* ¹ , P. G. Hatfield ¹ , B. F. Sowell ¹ , J.G.P. Bowman ¹ , J. S. Drouillard ² , and D. V. Dhuyvetter ³ , ¹ Montana State

University, Bozeman, ²Kansas State University, Manhattan, ³Farmland Industries, Kansas City, KS.

11:30 11 Improving the feed value of barley for finishing steers. T. C. Blackhurst*, J.G.P. Bowman, L.M.M. Surber, T. K. Daniels, and T. K. Blake, Montana State University, Bozeman.

11:45 12 Effects of postpartum supplementation with two types of cracked safflower on production, reproduction, metabolites, and hormonal profiles of primiparous beef heifers. J.D. Bottger*¹, D.L. Hixon¹, B.W. Hess¹, R.N. Funston², D.M. Hallford³, L.F. Woodard¹, and G.E. Moss¹, ¹University of Wyoming, Laramie, ²USDA-ARS, Miles City, MT, ³New Mexico State University, Las Cruces.

GRADUATE STUDENT CAREER FORUM

Moderator: Ria de Grassi, Director of National Affairs & Research, California Farm Bureau, Sacramento

Thursday, 12:05 p.m. - 1:55 p.m.
East Room, Memorial Union

Box lunch provided, courtesy of Western Section Executive Committee

Panelists: Mr. Patrick Blacklock, Vice-President, Government Relations, California Cattlemen's Association
Dr. Eric Erba, Economist, Dairy Marketing Branch, California Department of Food & Agriculture
Dr. Carl Old, Nutrition Consultant, LeGrand, California
Dr. Jan Roser, Department of Animal Science, University of California, Davis

EXTENSION SYMPOSIUM

Innovative Extension Programs in the West

Dr. Rodney Kott, Montana State University,
Bozeman, Presiding

Thursday, 1:00 p.m. - 3:00 p.m.
Room: 1130 Hart Hall

Software Tools for Rangeland Management Plans
John Harper, University of California Cooperative Extension.

"A to Z Retained Ownership, Inc": Cattle for Grid 2000
Pat Momont, University of Idaho.

Risk Management In Retained Ownership Programs
Ben Bruce and Ron Torell, University of Nevada.

Montana Beef-ability
Marc King and Ron Carlstrum. Montana State University.

Oregon Steer Feeding Trials: An Extension Demonstration Project for Alternative Marketing Options and the Genetic Improvement of Commercial Beef Cattle
R.R. Mills, D.D. Knutson, J.B. Carr, W.P. Broderick, and W.A. Zollinger, Oregon State University.

Marketing Strategies for Cow-Calf Operations
Glenn Nader. University of California Cooperative Extension.

Montana Beef Network
Leif Anderson and John Paterson, Montana State University.

Achieving and Surviving Improved Beef Quality
Dan Drake and Jim Oltjen, University of California Cooperative Extension.

Resource for the Future: Cow-Calf Management Guide on CD-ROM

Benton Glaze, University of Idaho.
Oregon Feed Library and Winter Feeding Nutrition Programs
Ron Hathaway, Oregon State University.

GRADUATE STUDENT COMPETITION

Chair: Dr. Thomas Geary, USDA-ARS, Miles City, MT

Thursday, 2:00 p.m. - 3:15 p.m.
Room: 1100 Social Sciences

Time	Abstract No.	
2:00	13	Effects of oscillating dietary protein on ruminal fermentation and flows of N fractions to the small intestine in sheep. T. L. Wechter*, P. A. Ludden, B. W. Hess, J. D. Heeg, E. J. Scholljegerdes, L. Brokaw, A. D. Schleicher, J. Gould, and K. R. Bessler, University of Wyoming, Laramie.
2:15	14	Winter supplementation of primiparous heifers grazing winter range based on the Metabolizable Protein System versus the Crude Protein System. H. H. Patterson*, D. C. Adams, T. J. Klopfenstein, and B. Teichert, University of Nebraska, Lincoln.
2:30	15	Effect of increasing undegradable intake protein (UIP) on net portal and hepatic flux of nutrients and insulin in beef heifers that consume low-quality forage. G. D. Pulsipher*, C. R. Krehbiel, L. A. Balstad, B. M. Capitan, M. S. Brown, and D. M. Hallford, New Mexico State University, Las Cruces.
2:45	16	Effect of ethanol and oil supplementation on site and extent of digestion in wethers fed forage-based diets. J. Gould*, E. Scholljegerdes, B. Hess, P. Ludden, and D. Rule, University of Wyoming, Laramie.
3:00	17	The influence of level of feed restriction on forage digestibility by beef cattle. E. J. Scholljegerdes*, B. W. Hess, and P. A. Ludden, University of Wyoming, Laramie.

BREEDING & GENETICS, EXTENSION, TEACHING

Chair: Dr. Roberto Sainz, University of California, Davis

Thursday, 3:30 p.m. - 5:00 p.m.
Room: 1100 Social Sciences

Time	Abstract No.	
3:30	18	Effect of inbreeding and age of dam on Hereford scrotal growth and circumference. D. C. Anderson* ¹ , D. D. Kress ² , D. L. Boss ¹ , and K.C. Davis ² , ¹ Northern Agricultural Research Center, Havre, MT, ² Montana State University, Bozeman.
3:45	19	Economic values for tenderness in beef cattle. P.L. Charteris* ¹ , D.L. Hoag ¹ , S.K. Koontz ¹ , P.R. Amer ² , and B.L. Golden ¹ , ¹ Colorado State University, Fort Collins, ² Invermay Agricultural Center, Mosgiel, New Zealand.
4:00	20	Development of economic expected progeny differences. K. Giacomini* and J. L. Beckett, California Polytechnic State University, San Luis Obispo.
4:15	21	Trace minerals for beef cattle on the web. D. Drake*, L. Smith, J. Maas, J. Oltjen, and A. Ahmadi, University of California, Davis.
4:30	22	Survey of production practices of Colorado cow-calf producers. D.E. Mount*, J.C. Whittier, and D.L. Hoag, Colorado State University, Fort Collins.
4:45	23	Randomizing variables in quantitative animal science assignments. J. L. Beckett*, Cal Poly State University, San Luis Obispo.

PASTURES/FORAGES

Chair: Dr. James Sprinkle, University of Arizona, Payson

Thursday, 3:30 p.m. - 5:00 p.m.
Room: 1130 Hart Hall

Time	Abstract No.	
3:30	24	Relationship between esophageal diet samples, clipped forage samples, and weight gain of steers. M. Blummel* and E. E. Grings, USDA-ARS, Fort Keogh LARRL, Miles City, MT.
3:45	25	Variation of trace minerals in forage by season and species and the effects of mineral supplementation upon beef cattle production. J. E. Sprinkle*, E. J. Bicknell, T. H. Noon, C. Reggiardo, D. F. Perry, and H. M. Frederick, University of Arizona, Tucson.
4:00	26	Influence of cow age on consumption of hand-fed supplements and subsequent performance of beef cows winter grazing stockpiled forage. N. A. Suverly* ¹ , T. DelCurto ² , J. Jaeger ² , and M.R. Keller ¹ , ¹ Oregon State University, Corvallis, ² Eastern Oregon Agricultural Research Center, Oregon State University, Union.
4:15	27	Determination of genetic markers associated with forage quality of barley for beef cattle. L.M.M. Surber*, J.G.P. Bowman, T. K. Blake, V. E. Nettles, A. L. Grindeland, M. T. Stowe, R. L. Endecott, K. N. Robison, B. L. Robinson, and D. R. See, Montana State University.
4:30	28	Altering the ratio and amount of undegradable intake protein in range supplements influences nutrient partitioning in young postpartum cows. J. E. Sawyer*, G. D. Pulsipher, R. C. Waterman, D. E. Hawkins, E. E. Parker, S. Cox, and M. K. Petersen, New Mexico State University, Las Cruces.
4:45	29	Summer grazing and fall grazing pressure effects on protein content and digestibility of fall range diets in the Nebraska Sandhills. H. H. Patterson*, T. J. Klopfenstein, D. C. Adams, W. H. Schacht, P. E. Reece, and A. E. Herron, University of Nebraska, Lincoln.

GROWTH/DEVELOPMENT, MEAT SCIENCE, ENVIRONMENT/LIVESTOCK MGT

Chair: Dr. Pat Hatfield, Montana State University, Bozeman

Thursday, 3:30 p.m. - 5:00 p.m.
Room: 1150 Hart Hall

Time	Abstract No.	
3:30	30	PCR cloning and expression of chicken myostatin cDNA in <i>E.coli</i> . Y.S. Kim* ¹ , K.S. Baek ² , M.A. Dunn ¹ , and D. Borthakur ¹ , ¹ University of Hawaii at Manoa, Honolulu, ² National Livestock Research Institute, Namwon, Korea.
3:45	31	Ultimate pH affects the tenderness of longissimus muscle in callipyge lamb. Y. B. Lee* and S. Zhang, University of California, Davis.
4:00	32	Marketing lamb as a branded product. T. P. Ringkob* ¹ , H. A. Glimp ¹ , D. W. Holcombe ¹ , R. F. Butler ¹ , and E. F. Cox ² , ¹ School of Veterinary Medicine, University of Nevada, Reno, ² Meat Marketing Consultant, Reno, NV.
4:15	33	Prevalence of verotoxin-producing <i>Escherichia coli</i> in sheep grazing Great Basin range forages. H. S. Hussein, S. L. Lake*, B. H. Thran, S. F. Khaiboullina, M. R. Hall, and H. A. Glimp, University of Nevada, Reno.
4:30	34	Preliminary description of swainsonine flux across ovine splanchnic tissue. J. B. Taylor* ¹ , J. R. Strickland ¹ , and C. R. Krehbiel ² , ¹ New Mexico State University, Las Cruces, ² Oklahoma State University, Stillwater.
4:45	35	Serum profiles in ewe lambs fed commercial feed with accidentally elevated copper and treated with

calcium sulfate. N. H. Wells*, D. M. Hallford, J. A. Hernandez, J. L. Bollinger, M. K. Petersen, and U. McElyea, New Mexico State University, Las Cruces.

RUMINANT & NON-RUMINANT NUTRITION

POSTERS

Thursday

Authors present: 3:30 p.m. - 5:30 p.m.

Room: Memorial Union II (Second Floor)

Abstract Number

- 36 Influence of oral natural interferon-alpha (IFN- α) on performance and rectal temperature of newly received beef steers. N. K. Chirase* and L. W. Greene, Texas Agricultural Experiment Station, Amarillo, West Texas A&M University, Canyon.
- 37 Effect of Bovipro™ on performance and serum metabolite concentrations of beef steers. N. K. Chirase*¹, L. W. Greene¹, F. T. McCollum², B. W. Auvermann², and N. A. Cole³, ¹Texas Agricultural Experiment Station, Amarillo, ²West Texas A&M University, Canyon, ³Texas Agricultural Extension Service, ³USDA/ARS, Bushland, TX.
- 38 Evaluation of barley characteristics that are associated with digestible energy. B.J. Sanford, C.W. Hunt*, J.G. Andrae, and G.T. Pritchard, University of Idaho, Moscow.
- 39 Short and long term gas production in selected California feedstuffs. G. Getachew* and P.H. Robinson, University of California, Davis.
- 40 Nutritive value and storage characteristics of Pima cottonseed. P.H. Robinson*, G. Getachew, and E.J. DePeters, Department of Animal Science, University of California, Davis.
- 41 The effect of an accelerated feeding program on dairy beef steers: production, carcass characteristics and economic returns. D. R. ZoBell* and R. D. Wiedmeier, Utah State University, Logan.
- 42 Influence of flake thickness of roasted barley on *in situ* ruminal rate and extent of digestion of dry matter, protein, fiber, and starch in cattle. S. J. Sorensen and D. D. Hinman*, University of Idaho, Caldwell.
- 43 Effect of inoculants on whole-crop barley silage fermentation and dry matter degradability in the rumen. A. N. Hristov*¹, T. A. McAllister², and S. Graham³, ¹University of Idaho, Moscow, ²Agriculture and Agri-Food Canada, Lethbridge, Alberta, ³Chr. Hansen Ltd., Mississauga, Ontario.
- 44 Effect of processing and ensiling on microbial attachment and degradability in the rumen of corn silage kernels. A. N. Hristov*¹, T. A. McAllister², K. Claypool², and D. ZoBell³, ¹University of Idaho, Moscow, ²Agriculture and Agri-Food Canada, Lethbridge, Alberta, ³Utah State University, Logan.
- 45 Effects of dietary vitamin E on performance and health of newly received beef steers. J. D. Rivera*¹, G. C. Duff¹, M. L. Galyean², and D. A. Walker¹, ¹Clayton Livestock Research Center, New Mexico State University, Clayton, ²Texas Tech University, Lubbock.
- 46 Effect of protein level on the activity of trypsin and chymotrypsin, and the apparent ileal amino acid digestibility in pigs fed grain sorghum-soybean meal diets. N. Bautista¹, M. Cervantes*², M. Cuca¹, A. Pro¹, C. Becerril¹, and S. Rodríguez², ¹Colegio de Postgraduados, Montecillos, Edo. México, ²ICA, Universidad Autónoma de Baja California, Mexicali.
- 47 Effects of calcium soaps of fatty acids and bovine tallow on milk yield and composition in Native x Nubian goats. J. L. Espinoza*, A. Monroy, J. A. Armenta, and R. Ortega, Universidad Autónoma de Baja California Sur, La Paz, Mexico.
- 49 Effect of dietary protein level and the addition of a fungal protease on the performance of growing pigs. M. Cervantes*¹, J. González¹, M. Cuca², and N. Torrentera, ¹ICA, Universidad Autónoma de Baja California, Mexicali, ²Colegio de Postgraduados, Montecillos, Edo. México.
- 50 Performance of finishing pigs fed wheat-based diets containing low levels of inorganic phosphorus. M. Cervantes*¹, A. Araiza¹, S. Espinoza¹, and M. Cuca², ¹ICA, Universidad Autónoma de Baja California, Mexicali, ²Colegio de Postgraduados, Montecillos, Edo. México.
- 51 Prediction of barley feed quality from laboratory analyses. L.M.M. Surber*¹, J.G.P. Bowman¹, T. K. Blake¹, D.

- D. Hinman², D. L. Boss¹, and T. C. Blackhurst¹, ¹Montana State University, Bozeman, ²University of Idaho, Caldwell.
- 52 Interaction of maceration and fibrolytic enzyme supplementation on digestion of rice straw in Holstein cows. M. A. Lopez-Soto^{*1}, A. Plascencia¹, and R. A. Zinn², ¹Universidad Autonoma, Baja California, Mexico, ²University of California, Davis.
- 53 Metabolizable amino acid requirement of feedlot calves. M. N. Machado^{*}, M. F. Montano, and R. A. Zinn, University of California, Davis.
- 54 Comparative feeding value of elephant grass in growing diets for feedlot cattle. E. G. Alvarez^{*1}, M. F. Montano¹, and R. A. Zinn², ¹Universidad Autonoma, Baja California, Mexico, ²University of California, Davis.
- 55 Effect of degree of corn processing on visceral organ mass and chemical composition of gastrointestinal tract fill of beef heifers. M. S. Brown^{*}, C. R. Krehbiel, L. A. Balstad, R. Lopez-Ordaz, and G. D. Pulsipher, New Mexico State University, Las Cruces.
- 56 Influence of tempering on the steaming requirements of flaked corn for feedlot cattle. R. A. Ware, J. Salinas^{*}, and R. A. Zinn, University of California, Davis.
- 57 Comparative feeding value of corn seed byproduct pellets in growing-finishing diets for feedlot cattle. R. A. Ware, H. Perez, F. Sanchez^{*}, B. R. Tonroy, and R. A. Zinn, University of California, Davis.
- 58 Influence of maceration on the feeding value of rice straw in growing-finishing diets for feedlot cattle. N. Torrentera^{*}, E. G. Alvarez, and R. A. Zinn, University of California, Davis.
- 59 Health and growth-performance merits of feeding shipping-stressed calves on a chopped forage blend prior to feeding a 70% concentrate receiving diet. S. A. Rodriguez^{*} and R. A. Zinn, University of California, Davis.
- 60 The interaction of flake density and tempering on the comparative feeding value of steam-flaked corn for feedlot cattle. R. A. Zinn, E. G. Alvarez, M. F. Montano, S. A. Rodriguez, and R. A. Ware^{*}, University of California, Davis.
- 61 Efficacy of feeding a probiotic to yearling replacement beef heifers in a wintering backgrounding program. J.R. Jaeger^{*} and T. DelCurto, Eastern Oregon Agricultural Research Center, Oregon State University, Union.
- 62 Use of microtracers as a reliable and inexpensive tool for rapid assessment of microingredient distribution in diets for feedlot cattle: molasses- and forage-level effects. J. F. Calderon^{*1}, J. Melendrez¹, M. Machado², M. Ambrozio², A. Pereira², and R. A. Zinn², ¹Universidad Autonoma, Baja California, Mexico, ²University of California, Davis.
- 63 A comparison of bite-count derived botanical composition of diet and clipping vs. rumen evacuation as techniques to estimate diet quality with grazing beef cattle. D. Damiran^{*1}, S. Findhold², T. DelCurto¹, and B.K. Johnson², ¹Eastern Oregon Agricultural Research Center, Oregon State University, Union, ²Oregon Department of Fish and Wildlife, La Grande.
- 64 Interaction of dietary calcium and fat on digestive function in cattle fed high-forage diets. H. L. Castro¹, J. F. Sanchez¹, M. S. Vasquez^{*1}, E. G. Alvarez², and R. A. Zinn, ¹Universidad Juarez, Durango, Mexico, ²University of California, Davis.
- 65 Influence of dietary forage level on growth performance and digestive function in cattle fed steam-flaked corn-based growing-finishing diets. R. A. Zinn, E. G. Alvarez^{*}, W. Chai, M. F. Montano, J. E. Ramirez, and J. Salinas, University of California, Davis.
- 66 Influence of day-to-day fluctuations in feed intake on growth-performance and digestive function of feedlot cattle. M. F. Montano, E. G. Alvarez, A. Pereira^{*}, and R. A. Zinn, University of California, Davis.
- 67 Influence of level of supplementation of the feeding value of cane molasses in growing-finishing diets for feedlot cattle. M. F. Montano¹, K. Preciado^{*1}, and R. A. Zinn², ¹Universidad Autonoma, Baja California, Mexico, ²University of California, Davis.
- 68 Influence of close-up starting programs on performance of feedlot steers during the early receiving period. M. Machado^{*} and R. A. Zinn, University of California, Davis.
- 69 Comparative digestion of steam flaked corn, barley, wheat and oats in finishing diets for feedlot cattle. S. A. Rodriguez^{*}, M. F. Montano, and R. A. Zinn, University of California, Davis.
- 70 Replacement value of radish hay for alfalfa hay in diets of newly-weaned beef calves. J. Gould^{*}, E. J. Scholljegerdes, B. W. Hess, D. W. Koch, J. W. Flake, and L. J. Held, University of Wyoming, Laramie.
- 71 Fatty acids profiles in the adipose tissue of underfed goats. M. Gómez-Pastén^{*1}, O. Mora¹, H. R. Vera -Avila², R. M. Meléndez-Soto¹, and A. Shimada¹, ¹FES- Cuautitlán-UNAM, México, ²CNIFyMA-INIFAP, México.

Influence of variation in supplement inclusion rate and laidlomycin propionate on growth performance of feedlot cattle. R. A. Zinn¹, A. Plascencia^{*2}, M. F. Montano², and A. Pereira¹, ¹University of California, Davis, ²Universidad Autonoma, Baja California, Mexicali, Mexico.

AWARDS

BARBECUE DINNER

Thursday, 6:30 p.m. - 9:00 p.m.
Putah Creek Lodge

Friday, June 23, 2000

BUSINESS MEETING

Friday, 8:00 a.m. – 8:55 a.m.
Rm 1100 Social Sciences Bldg

RUMINANT & NON-RUMINANT NUTRITION

Chair: Dr. Peter Robinson, University of California, Davis

Friday, 9:00 a.m. - 12:00 p.m.
Room: 1100 Social Sciences

Time	Abstract No.	
9:00	73	Integration of early weaning and sexed semen into a single-calf heifer system to increase the value of non-replacement heifers. B.A. Ereth*, J.C. Whittier, P.D. Burns, D.N. Schutz, D.W. Couch, and G.E. Seidel, Jr, Colorado State University, Fort Collins.
9:15	74	Seasonal mineral status of beef cattle on twenty-two ranches across western Colorado evaluated using liver and serum concentrations. B. Ereth, J. Whittier*, B. Toombs, R. Baird-LeValley, C. Mucklow, and M. King, Colorado State University, Fort Collins.
9:30	75	Effect of hay source and level on tissue trace mineral concentrations in growing steers. E. E. Grings* ¹ and W. W. Poland ² , ¹ USDA-ARS, Miles City, MT, ² Dickinson Research Extension Center, North Dakota State University, Dickinson.
9:45	76	Effects of a slow-release urea product on performance and carcass characteristics of feedlot cattle. G. C. Duff* ¹ , D. A. Walker ¹ , K. J. Malcolm-Callis ¹ , M. W. Wiseman ¹ , J. D. Rivera ¹ , and M. L. Galyean ² , ¹ Clayton Livestock Research Center, New Mexico State University, Clayton, ² Texas Tech University, Lubbock.
10:00	77	Influence of betaine on pasture, finishing and carcass performance, and backfat and marbling deposition in steers. B.J. Bock* ¹ , J.R. Brethour ² , K.R. Harmony ² , and S.R. Goodall ³ , ¹ Fort Hays State University, Hays, KS, ² Agricultural Research Center, Kansas State University, Hays, ³ Gladwin A. Read Co., Elgin, IL.
10:15		BREAK
10:45	78	The effect of feeding pressed sugar beet pulp in beef cattle feedlot-finishing diets. J.L. Park*, I.G. Rush, C.T. Milton, and B.A. Weichenthal, University of Nebraska, Lincoln.
11:00	79	Effects of Profi peas, <i>Pisum arvense</i> , on growth performance and carcass characteristics of feedlot cattle. W.R. Flatt* and T.L. Stanton, Colorado State University, Fort Collins.

- 11:15 80 Development of a low-cost, easy-to-assemble, and durable ruminal cannula for cattle. E. G. Alvarez*¹ and R. A. Zinn², ¹Universidad Autonoma, Baja California, Mexicali, Mexico, ²University of California, Davis.
- 11:30 81 Effects of fructooligosaccharides on fecal characteristics, digestibility of nutrients, and concentration of fecal odor components in dogs. H. S. Hussein*¹ and G. D. Sunvold², ¹University of Nevada, Reno, ²The Iams Company, Lewisburg, OH.
- 11:45 82 Effects of fructooligosaccharides on fecal characteristics, digestibility of nutrients, and concentration of fecal odor components in cats. H. S. Hussein*¹ and G. D. Sunvold², ¹University of Nevada, Reno, ²The Iams Company, Lewisburg, OH.

PASTURES/FORAGES, ENVIRONMENT/LIVESTOCK MGT

Chair: Dr. Tim DelCurto, Oregon State University, Union

Friday, 9:00 a.m. - 12:00 p.m.

Room: 1130 Hart Hall

- | Time | Abstract No. | |
|-------|--------------|--|
| 9:00 | 83 | Conservative and moderate stocking effects on Chihuahuan desert forage production. J. L. Holechek*, M. Thomas, D. Galt, and F. Molinar, New Mexico State University, Las Cruces. |
| 9:15 | 84 | Conservative and moderate stocking effects on cow-herd performance in the Chihuahuan Desert. M. G. Thomas*, C. C. Bailey, and J. L. Holechek, New Mexico State University, Las Cruces. |
| 9:30 | 85 | <i>In-vitro digestibility</i> of grazed mixed native range forage using inoculum from alternative sources. N. Butler* ¹ , G.A. Younglove ¹ , J.W. Waggoner ² , and R.H. Hart ³ , ¹ Chadron State College, Chadron, NE, ² University of Wyoming, Laramie, ³ ARS-USDA, High Plains Grassland Research Station, Cheyenne, WY. |
| 9:45 | 86 | Effects of season of calving and weaning age on cow and calf production through weaning. E. E. Grings, R. E. Short*, and R. K. Heitschmidt, Ft. Keogh LARRL, USDA-ARS, Miles City, MT. |
| 10:00 | 87 | The influence of season on distribution patterns relative to water and resource use by cattle grazing mixed forested rangelands. T. DelCurto* ¹ , B.K. Johnson ² , M. Vavra ¹ , P.K. Coe ² , and A.A. Ager ³ , ¹ Eastern Oregon Agricultural Research Center, Oregon State University, Union, ² Oregon Department of Fish and Wildlife, La Grande, ³ USDA Forest Service, Pacific Northwest Research Station, La Grande, OR. |
| 10:15 | | BREAK |
| 10:45 | 88 | Influence of a grazing system, season of use, and aspect on the nutritional quality of forages, and subsequent performance and distribution of beef cattle grazing forested rangelands. K. Walburger* ¹ , T. DelCurto ¹ , M. Vavra ¹ , L. Bryant ² , and J.G. Kie ² , ¹ Eastern Oregon Agricultural Research Center, Oregon State University, Union, ² USDA Forest Service, Pacific Northwest Research Station, La Grande, OR. |
| 11:00 | 89 | Critical control points affecting profitability in beef cow production: using SPA data. T. Baird and N. Dalsted*, Colorado State University, Fort Collins. |
| 11:15 | 90 | Manure production characteristics from lactating Holsteins. D. Meyer, V. Erikson*, E. Tooman, and T. James, University of California, Davis. |
| 11:30 | 91 | Evaluation of the melengesterol acetate/prostaglandin (MGA/PGF) and MGA/Select Synch estrous synchronization protocols in beef heifers. R. N. Funston* ¹ , R. P. Ansotegui ¹ , B. D. Thompson ² , J. J. Lipsey ³ , M. D. Ropp ³ , and T. W. Geary ⁴ , ¹ Montana State University, Bozeman, ² Miles City Veterinary Clinic, Miles City, MT, ³ American Simmental Assoc., Bozeman, ⁴ USDA-ARS, Miles City. |
| 11:45 | 118 | Evaluation of supplemental high oil corn for heifers grazing summer pasture. L. Brokaw*, B. W. Hess, A. D. Schleicher, E. J. Scholljegerdes, L. M. Yun, J. D. Heeg, and J. Bratka, University of Wyoming, Laramie. |

PHYSIOLOGY

Chair: Dr. Jack Whittier, Colorado State University, Fort Collins

Friday, 9:00 a.m. - 11:30 a.m.
Room: 1150 Hart Hall

Time	Abstract No.	
9:00	92	Effects of fishmeal supplementation on first service pregnancy rates in primiparous lactating beef cows. T. R. Bonnette*, D. B. Abbey, J. C. Whittier, and P.D. Burns, Colorado State University, Fort Collins.
9:15	93	Evaluation of fixed-time AI with GnRH on pregnancy rate of beef heifers synchronized with the MGA/PGF _{2a} protocol. B.W.P. Sasongko* ¹ , J.C. Whittier ¹ , P.D. Burns ¹ , T.W. Geary ² , and R.G. Mortimer ¹ , ¹ Colorado State University, Fort Collins, ² Fort Keogh Livestock and Range Research Station, Miles City, MT.
9:30	94	Reproductive, hormonal, and milk characteristics of ewes treated with propylthiouracil and melatonin during late gestation. J. L. Bollinger, D. M. Hallford, J. A. Hernandez, and K. L. Shirley, New Mexico State University, Las Cruces.
9:45	95	Flow cytometric identification of subclinical mastitis in ewes. M. McFarland*, D. W. Holcombe, D. Redelman, D. L. Garner, J. R. Allen, M. E. Surian, and D.J. King, University of Nevada, Reno.
10:00	96	Effects of the polyamine putrescine on serum progesterone and steady state levels of mRNA encoding steroid enzymes in the bovine corpus luteum. D. J. Denniston*, K. K. Kane, C. N. Roybal, M. L. Vogt, and D. E. Hawkins, New Mexico State University, Las Cruces.
10:15		BREAK
10:45	97	Dose-response of rumen and plasma glucose and lactate to intraruminally administered wheat flour in sheep. V. Kuncharapu*, N. S. Sundar, and M.L. Bruss, University of California, Davis.
11:00	98	Oral treatment of aromatase inhibitor (Letrozole): Effects on hormone and sperm production in the stallion. T.A. Stein*, J.F. Roser, B.A. Ball, and A.J. Conley, University of California, Davis.
11:15	48	Effect of hand-fed versus self-fed fat supplementation on performance of developing beef heifers. L. Brokaw* ¹ , B. W. Hess ¹ , and S. Bartle ² , ¹ University of Wyoming, Laramie, ² MoorMan's Inc., Quincy, IL.

BREEDING/GENETICS, ENVIRONMENT/LIVESTOCK MGT, EXTENSION, GROWTH/DEVELOPMENT, MEAT SCI., PASTURES/FORAGES, PHYSIOLOGY, TEACHING

POSTERS

Friday
Authors present: 9:00 a.m. - 11:00 a.m.
Room: Memorial Union II (Second Floor)

Abstract Number	
99	Linoleic acid supplementation improves fertility in oMt1a-oGH transgenic mice. A. Thomas*, J. D. Murray, and A. M. Oberbauer, University of California, Davis.
100	Genetic parameter estimates for mature weight, weaning weight and post weaning gain in Red Angus cattle. J. L. Evans* ¹ , B. L. Golden ¹ , R. M. Bourdon ¹ , and R. L. Hough ² , ¹ Colorado State University, Fort Collins, ² Red Angus Association of America, Denton, TX.
101	Feedlot performance and hepatic trace mineral status of beef heifers previously consuming dietary copper antagonists. J.D. Bailey ¹ , R.P. Ansotegui* ¹ , J.A. Paterson ¹ , and C.K. Swenson ² , ¹ Montana State University, Bozeman, ² Zinpro Corporation.

- 102 Effects of feeding soybean oil pre-breeding as a supplement to flush mature Suffolk ewes on body weight change, conception rate, and lamb birth weight. M. W. Salisbury, T. T. Ross*, L. L. Melton, and S. Langley, New Mexico State University, Las Cruces.
- 103 Effects of snakeweed toxicity and supplementation on gonadotropin-releasing hormone (GnRH), feed and weight change, and liver function. D. J. Padilla, J. Smith, T. T. Ross, M. W. Salisbury, J. R. Strickland, and L. L. Melton, New Mexico State University, Las Cruces.
- 104 Serum thyroid profiles in lambs fed swainsonine. J. A. Hernandez*, M. L. Vogt, J. R. Strickland, J. B. Taylor, and D. M. Hallford, New Mexico State University, Las Cruces.
- 105 Effect of ionophore supplementation on selected serum constituents of sheep consuming locoweed. K. M. Whittet¹, H. B. Encinias², J. R. Strickland¹, and J. B. Taylor¹, ¹New Mexico State University, Las Cruces, ²North Dakota State University, Fargo.
- 106 Effects of hexane and ether fractions of snakeweed (*Gutierrezia spp*) on selected serum constituents of male Sprague-Dawley rats. D. S. Al-Ajmi, J. R. Strickland*, T. T. Ross, D. J. Padilla, and R. L. Ashley, New Mexico State University, Las Cruces.
- 107 Influence of shade and time of feeding on feedlot performance of crossbred steers during periods of high ambient temperature. W. Chai, N. Torrentera*, and R. A. Zinn, University of California, Davis.
- 108 Montana ranch production practices: 1999 survey. M.C. King*, J.A. Paterson, R.N. Funston, L.P. Anderson, and MT Coop. Ext. Agents, Montana State University, Bozeman.
- 109 Development of a multi-institutional, web-based, graduate animal breeding course. A. D. Herring*¹, M. G. Thomas², and R. M. Enns³, ¹Dept. Animal Science & Food Tech., Texas Tech University, ²Dept. Animal & Range Science, New Mexico State University, ³Dept. Animal Sciences, University of Arizona.
- 110 An animal behavior modifier (ABM™), tail stimulation, affects performance and serum metabolite concentrations of beef steers. N. K. Chirase* and L. W. Greene, Texas Agricultural Experiment Station, Amarillo, West Texas A&M University, Canyon.
- 111 The effects of phytohemagglutinin and pokeweed mitogen on bovine oocyte maturation *in vitro*. S. Wang¹, K.E. Panter², J.N. Stellflug³, R.C. Evans¹, and T.D. Bunch*, ¹ADVS Department, Utah State University, Logan, ²USDA-ARS, Poisonous Research Laboratory, Logan, ³USDA-ARS, U.S. Sheep Experiment Station, Dubois, ID.
- 112 Effects of transforming growth factor-b1 (TGF-b1) on isolated growth plate chondrocytes. J.E. Haut and A.M. Oberbauer*, University of California, Davis.
- 113 Effect of chromium picolinate on growth and carcass traits of growing-finishing pigs in commercial conditions. J. L. Espinoza*¹, R. Ortega¹, R. Barroso¹, J. A. Guevara¹, R. Gonzalez¹, A. Palacios¹, and O. Ruiz², ¹Universidad Autonoma de Baja California Sur, La Paz, Mexico, ²Universidad Autonoma de Chihuahua, Chihuahua, Mexico.
- 114 Survival of *Listeria monocytogenes* B4 in soil. C. L. Melendrez, R. G. Espinosa, T. May, and J. D. Thomas*, New Mexico State University, Las Cruces.
- 115 Carcass characteristics and shear force values of Dorper, Suffolk, and Western White-Face sired wethers harvested at similar fat depth. W.J. Means, B.W. Hess*, K.A. Staab, S.R. Pohlman, M.M. Schwoppe, and J.E. Nel, University of Wyoming, Laramie.
- 116 Effects of timing and frequency of grazing on quality and yield of stockpiled forages in western Oregon. N. A. Suverly*, T. DelCurto, S. Paxton, M. R. Keller, and D. W. Weber, Oregon State University, Corvallis.
- 117 Influence of grass-legume pastures on forage availability and growth performance of Holstein heifers. R. Lopez*¹, C. R. Krehbiel², K. Duncan¹, E. Hanson¹, M. G. Thomas¹, M. Looper¹, E. Castellanos¹, G. Donart¹, R. Flynn¹, and C. Barnes¹, ¹New Mexico State University, Las Cruces, ²Oklahoma State University, Stillwater.
- 119 Influence of supplemental protein degradability on energy utilization and methane emission by beef cows on dormant, cool-season forages. M.D. Palmer* and K.C. Olson, Utah State University, Logan.
- 120 Influence of type of supplemental carbohydrate on ruminal responses and methane output from ruminants consuming low-quality forage. R.J. Lira, A.A. Davis*, and K.C. Olson, Utah State University, Logan.
- 121 Influence of magnesium supplementation on performance of cattle grazing ryegrass pasture. H. Castro¹, M. S. Vasquez*¹, F. Sanchez¹, R. Rosales¹, C. Casas¹, E. G. Alvarez², and R. A. Zinn², ¹Universidad Juarez, Durango, Mexico, ²University of California, Davis.

- 122 A potential simple and inexpensive method for estimating crude protein and forage intake of grazing cattle. S. L. Kronberg* and A.V. Grove, South Dakota State University, Brookings.
- 123 Interaction of forage level and fibrolytic enzymes on digestive function in cattle. M. Murillo*¹, H. L. Castro¹, J. F. Sanchez¹, M. S. Vasquez¹, J. Cruz¹, E. G. Alvarez², and R. A. Zinn², ¹Universidad Juarez, Durango, Mexico, ²University of California, Davis.
- 124 Suckling beef calf performance response to creep feeding with a soft, concentrated separator byproduct creep block. C.A. Stonecipher*, B.R. Bowman, C.E. Foley, and K.C. Olson, Utah State University, Logan.
- 125 Comparative feeding value of high-pressure flaked sudangrass in growing diets for cattle. M. Ambrozio*, E. G. Alvarez, and R. A. Zinn, University of California, Davis.
- 126 In vitro digestibility of soybean hulls varying in their soluble and insoluble fiber by using fecal inoculum from horses. H. S. Hussein, H. Han, and J. P. Tanner*, University of Nevada, Reno.
- 127 The effects of bovine follicular fluids supplemented to maturation medium on subsequent embryo development *in vitro*. S. Wang*¹, Y. Liu¹, K.E. Panter², J.N. Stellflug³, R.C. Evans¹, and T.D. Bunch¹, ¹Utah State University, Logan, ²USDA-ARS Poisonous Research Laboratory, Logan, ³USDA-ARS Sheep Experiment Station, Dubois, ID.
- 128 Effects of fat intake on hormone secretion and lipid metabolites in cycling Pelibuey ewes. J. L. Espinoza*¹, S. Soto-Simental², J. A. Ramirez³, A. Palacios¹, and R. Ortega¹, ¹Universidad Autonoma de Baja California Sur, La Paz, Mexico, ²Universidad Autonoma del Estado de Hidalgo, Pachuca, Mexico, ³Universidad Autonoma de Chihuahua, Chihuahua, Mexico.
- 129 Effect of fishmeal supplementation on bovine endometrial concentrations of omega-3 fatty acids. P.D. Burns, D.B. Abbey*, T.R. Bonnette, M.A. Harris, and J.C. Whittier, Colorado State University, Fort Collins.
- 130 Cellular mechanisms by which oxytocin mediates uterine prostaglandin (PG) F_{2a} synthesis: Does G_i proteins and extracellular signal-regulated protein kinase (ERK) play a role. J.O.B. Mendes, Jr.*¹, P.D. Burns, T.R. Bonnette, R.S. Yemm, S.E. Nelson, and C.M. Clay, Colorado State University, Fort Collins.
- 131 Estrogen concentrations in milk and plasma in relation to estrus and ovulation in dairy cows. H. Lopez*¹, T.D. Bunch¹, K.E. Panter¹, and M.P. Shipka², ¹Utah State University, Logan, ²University of Alaska, Fairbanks.
- 132 Predicting growth performance from pituitary responsiveness to growth hormone releasing hormone in bulls selected for semi-arid environments. M. G. Thomas¹, R. M. Enns*², H.M. Zhang², C. C. Rasor¹, D. M. Hallford¹, and J. D. Thomas¹, ¹New Mexico State University, Las Cruces, ²University of Arizona, Tucson.
- 133 Influence of individual rams on ewe prolificacy. A. L. Carr*, W. C. Russell, R. H. Stobart, F. S. Hruby, P. Bulgin, and G.E. Moss, University of Wyoming, Laramie.
- 134 A comparison of the effects of equine chorionic gonadotropin (eCG) and equine luteinizing hormone (eLH) on cultured adult equine Leydig cells. M.F. Hess* and J.F. Roser, University of California, Davis.