



Housing, Husbandry, and Welfare of Beef Cattle

[Animal Welfare Information Center](#)
United States Department of Agriculture
National Agricultural Library

ISSN: 1052-5378

Quick Bibliography Series, QB 95-16
January 1985 - March 1995

389 citations from AGRICOLA
March 1995

Compiled By:

D'Anna J.B. Jensen

[Animal Welfare Information Center](#), Information Centers Branch
National Agricultural Library, Agricultural Research Service, U. S. Department of Agriculture
10301 Baltimore Ave., Beltsville, Maryland 20705-2351



Go to:

[About the Quick Bibliography Series](#)
[Document Delivery Information](#)
[National Agricultural Library Cataloging Record](#)
[Search Strategy](#)
[Author Index](#)
[Subject Index](#)

National Agricultural Library Cataloging Record:

Jensen, D'Anna J.B.
Housing, husbandry, and welfare of beef cattle.
(Quick bibliography series ; 95-16)
1. Beef cattle--Bibliography. I. Title.
aZ5071.N3 no.95-16

Search Strategy

Set	Description
S1	(BEEF OR FEEDER(W)CATTLE OR STOCK?(W)CATTLE OR LIVESTOCK) AND (BOVINE OR BOS OR COW?? OR BULL?? OR STEER?? OR HEIFER? OR CALF OR CALVE?? OR CATTLE OR HERD?? OR PRODUCTION)
S2	S1 AND SH=(L100 OR L300 OR N100)
S3	S2 AND (HOUS? OR FACILIT? OR STRUCT? OR PEN?? OR STALL?? OR CONFIN? OR STANCHION?? OR FREE(W)STALL?? OR PARLOR?? OR FEEDLOT??)
S4	S1 AND STRESS?

S5 S4 NOT SH=L500
 S6 S1 AND (WELFARE OR WELL(W)BEING OR HUMANE OR HANDL? OR
 CARE)
 S7 (S3+S5+S6)
 S8 S7 AND PY=1985:1995
 S9 RD (unique items)

1 NAL Call. No.: 107.6 H682
 Development of experimental methods for air environment in
 livestock buildings. I. Filtration method for measuring
 bacterial aerosol concentration Hoshiba, S.; Tanaka, T.;
 Dohkoshi, J.
 Sapporo : Hokkaido Daigaku Nogaku-bu; 1985.
 Hokkaido Daigaku Nogaku-bu hobun kiyo; Memoirs of the Faculty
 of Agriculture, Hokkaido University v. 14 (4): p. 370-375.
 ill; 1985. Includes references.

Language: Japanese

Descriptors: Barns; Air spora; Bacteria; Filtration

2 NAL Call. No.: 290.9 Am32P
 1990's technology for 1970's poultry and livestock buildings.
 Tucker, T.A.; Latz, G.I. II
 St. Joseph, Mich. : American Society of Agricultural
 Engineers; 1991. Paper / (913020): 11 p.; 1991. Paper
 presented at the "1991 International Summer Meeting sponsored
 by the American Society of Agricultural Engineers," June
 23-26, 1991, Albuquerque, New Mexico.

Language: English

Descriptors: Animal housing; Poultry housing; Environment;
 Lighting; Water; Feeding; Egg collectors

3 NAL Call. No.: SF51.F69
 Agricide the hidden crisis that affects us all.
 Fox, Michael W.,
 New York : Schocken Books; 1986.
 xv, 194 p. [10] p. of plates : ill. ; 21 cm. Includes index.
 Bibliography: p. 185-189.

Language: English

Descriptors: Livestock; United States; Animal industry; United
 States; Livestock factories; United States; Animals, Treatment
 of; United States; Agriculture; United States; Agricultural
 industries; United States; Agricultural ecology; United
 States; Agricultural pollution; United States; Food industry
 and trade; United States; Diet; United States; Animal welfare

4 NAL Call. No.: SF601.B6
 Agricultural engineering.
 Schwarm, M.A.
 Santa Barbara, Calif. : Veterinary Practice Publishing
 Company; 1992 Nov. Agri-Practice v. 13 (10): p. 25-27; 1992
 Nov.

Language: English

Descriptors: Kansas; Beef cattle; Farm buildings;
 Shelterbelts; Animal housing; Fencing

5 NAL Call. No.: 101 M144
 Agricultural structures in the future.

Barrington, S.
Anne de Bellevue, Quebec : Macdonald Ext. Serv., Faculty of
Agric, Macdonald Campus of McGill Univ; 1986 Nov.
Macdonald journal v. 47 (4): p. 35; 1986 Nov.

Language: English

Descriptors: Livestock; Livestock housing; Environment; Stress

6 NAL Call. No.: Videocassette no.1131
Animal agriculture myths & facts.. Animal agriculture, myths
and facts Animal agriculture, myths & facts
Animal Industry Foundation
Arlington, Va. The Foundation,; 1990.
1 videocassette (18 min.) : sd., col. ; 1/2 in. + 1 pamphlet.

Language: English

Descriptors: Animal industry; Farmers; Livestock; Animal
welfare

Abstract: Features farmers showing cow/calf and feedlot
cattle production, as well as turkey, hog, veal and egg
production.

7 NAL Call. No.: TD224.I6W37
Animal agriculture's effect on water quality: pastures and
feedlots. Sutton, A.L.
West Lafayette, Ind. : School of Agriculture; 1990 Jul.
Water quality (7): 3 p.; 1990 Jul. Includes references.

Language: English

Descriptors: Indiana; Animal wastes; Water quality; Livestock
farming; Feedlots; Water pollution; Agricultural law

8 NAL Call. No.: SF207.B4
Animal behavior and welfare--the challenge to intensive
production. Williams, C.M.
Bryan, Tex. : Lang Printing; 1988.
Beef cattle science handbook v. 22: p. 61-64; 1988.

Language: English

Descriptors: Intensive livestock farming; Animal behavior;
Animal welfare; Public relations; Code of practice

9 NAL Call. No.: TP368.I7
Animal behaviour and environment in the dark-cutting condition
in beef--a review.
Tarrant, P.V.
Dublin : An Foras Taluntais; 1989.
Irish journal of food science and technology v. 13 (1): p.
1-21; 1989. Includes references.

Language: English

Descriptors: Beef cattle; Animal behavior; Environment;
Slaughter; Muscle tissue; Ph; Glycogen; Food quality

Abstract: Dark cutting or high-pH meat is a persistent
quality defect found in all meat species. Caused by a lack of
normal acidification of meat during rigor development, dark-
cutting is a direct consequence of low muscle glycogen at
slaughter. Glycogen breakdown in muscle may be rapidly
triggered by increased circulating adrenaline or by strenuous

muscular activity. In addition, glycogen is slowly depleted during starvation. Any behaviour and environmental circumstances that trigger one or more of these glycogen breakdown mechanisms will cause dark-cutting if the stress is allowed to persist for sufficient time. Mounting activity is the behaviour most closely associated with muscle glycogen depletion and dark-cutting in beef. This behaviour is stimulated by social regrouping, as in mixed penning of young bulls, and also by oestrus in groups of females. Lairage modifications aimed at reducing mounting activity during the preslaughter period have been successful. Short-haul road transport is not associated with dark-cutting in beef but there is evidence that some lambs may be affected, even by relatively short journeys. Long-haul road transport resulted in small increases in beef final pH and these may be reversed by resting and feeding before slaughter. Fasting did not cause dark-cutting in beef or lamb; however, it lowered muscle glycogen reserves, thus rendering an animal more susceptible to dark-cutting from additional sources of stress. Fasting also inhibited muscle glycogen resynthesis during recovery after stress. There is a good theoretical basis, although little experimental evidence, to link cold exposure with dark-cutting meat. The use of beta-agonists as growth promoters may increase the incidence of dark-cutting meat unless a sufficient withdrawal period before slaughter is observed. Rates of glycogen resynthesis are slower in ruminants than in monogastrics, probably due to the lower availability of glucose in ruminants. Although drug interventions were unsuccessful

10 NAL Call. No.: SF55.C2A5
Animal care livestock and poultry on today's farm.
Kolkman, John
Edmonton, Alberta : Christian Farmers, Federation of Alberta,;
1987. 23 p. : ill. ; 28 cm. Cover title.

Language: English

Descriptors: Livestock; Poultry

11 NAL Call. No.: SF601.V535
Animal handling.
Grandin, T.
Philadelphia, Pa. : W.B. Saunders Company; 1987 Jul.
The Veterinary clinic of North America : food animal practice
v. 3 (2): p. 323-338. ill; 1987 Jul. In the series analytic:
Farm animal behavior / edited by E.O. Price. Literature
review. Includes references.

Language: English

Descriptors: Livestock; Handling; Stress; Movements;
Facilities; Animal behavior

12 NAL Call. No.: 41.8 V6456
Animal housing as perceived by the animal.
Webster, A.J.F.
London : Wright; 1989.
The Veterinary annual (29): p. 1-8; 1989. Includes
references.

Language: English

Descriptors: Livestock; Animal housing; Perception; Animal
welfare; Litter; Animal diseases; Hygiene; Stress;
Psychological needs

13 NAL Call. No.: S494.5.E547
Animal housing: solar application.
DeShazer, J.A.; Bodman, G.R.
Amsterdam : Elsevier; 1991.
Energy in world agriculture v. 4: p. 233-253; 1991. In the
series analytic: Energy in World Agriculture / edited by B.F.
Parker. Includes references.

Language: English

Descriptors: Animal housing; Solar heating; Solar energy;
Heating systems; Livestock; Ventilation; Solar collectors

14 NAL Call. No.: SF191.F5
Animal performance and carcass characteristics of beef steers
finished without backgrounding versus backgrounding prior to
finishing.
Bertrand, J.E.; Johnson, D.D.
Gainesville, Fla. : The Service; 1988.
Florida beef cattle research report - Florida Cooperative
Extension Service, University of Florida. p. 144-150; 1988.

Language: English

Descriptors: Florida; Brahman; Crossbreds; Steers; Nutrition;
Pasture management; Feedlots; Winter; Carcass quality;
Dressing percentage

15 NAL Call. No.: 100 S082S
Animal stress research tied to 'making a living'.
Thomson, J.; Parsons, J.; Males, J.
Brookings, S.D. : The Station; 1992.
South Dakota farm & home research - South Dakota, Agricultural
Experiment Station v. 43 (3): p. 5-7; 1992.

Language: English

Descriptors: South Dakota; Livestock farming; Stress factors;
Environmental factors; Animal diseases; Disease control;
Agricultural research

16 NAL Call. No.: S1.A375
Animal welfare.
Elliot, J.I.
Ottawa : Agrican Publishers, Inc; 1986.
Agrologist v. 15 (2): p. 10-11. ill; 1986.

Language: English

Descriptors: Canada; Animal welfare; Intensive livestock
farming; Animal husbandry; Livestock sector; Philosophy

17 NAL Call. No.: 41.8 N483
Animal welfare considerations--pastoral animals.
Kilgour, R.
Wellington : New Zealand Veterinary Association; 1985 Apr. New
Zealand veterinary journal v. 33 (4): p. 54-57; 1985 Apr.
Literature review. Includes 34 references.

Language: English

Descriptors: New Zealand; Animal welfare; Pastoralism;
Livestock farming

18 NAL Call. No.: 50.9 R24

Animal welfare--how to respond.

Conklin, D.H.; Kauffman, R.G.; Calkins, C.R.

Chicago, Ill. : National Live Stock and Meat Board; 1990.

Proceedings - Annual Reciprocal Meat Conference of the

American Meat Science Association (43rd): p. 21-30; 1990.

Meeting held on June 10-13, 1990, Mississippi State, MS.

Includes discussion, p. 22-30.

Language: English

Descriptors: Animal welfare; Beef production; Veal calves

19 NAL Call. No.: 58.8 AG83

Animal-tending controls fine tune environmental conditions.

St. Joseph, Mich. : American Society of Agricultural

Engineers; 1988 Nov. Agricultural engineering v. 69 (7): p.

6-9. ill; 1988 Nov.

Language: English

Descriptors: Environmental control; Equipment; Livestock;

Animal housing; Ventilation; Temperature; Humidity;

Evaporative cooling

20 NAL Call. No.: 281.8 C16

The application of multivariate stochastic dominance criteria
to agricultural economic problems.

Jeffrey, S.R.; Eidman, V.R.

Ottawa : Canadian Agricultural Economics and Farm Management

Society; 1991 Jul.

Canadian journal of agricultural economics; Revue Canadienne

d'economie rurale v. 39 (2): p. 193-209; 1991 Jul. Includes

references.

Language: English

Descriptors: Minnesota; Dairy farming; Structural change;

Risk; Multivariate analysis; Stochastic processes; Livestock

numbers; Crop mixtures; Land use; Simulation models

21 NAL Call. No.: SF601.V535

Arthropod-induced stress in livestock.

Campbell, J.B.

Philadelphia, Pa. : W.B. Saunders Company; 1988 Nov.

The Veterinary clinic of North America : food animal practice

v. 4 (3): p. 551-555; 1988 Nov. In the series analytic:

Stress and disease in cattle / edited by J.L. Howard.

Includes references.

Language: English

Descriptors: Sheep; Cattle; Stress; Arthropod pests; Diptera

22 NAL Call. No.: SF191.K4

Artificial inseminationfor the beef herd.

Nichols, C.; Absher, C.; Miksch, D.; Heersche, G.; Gay, N.

Lexington, Ky., The Service; 1986 Sep.

ASC - University of Kentucky, Cooperative Extension Service

v.): 5 p. ill; 1986 Sep.

Language: English

Descriptors: Beef cattle; Artificial insemination; Estrus;

Synchronization; Semen; Handling; Costs; Returns

23 NAL Call. No.: SF55.A785L9
ASEAN Food Handling Project by D.J. Lyons.. Handling of
livestock and livestock products in ASEAN 1978 to 1989
Lyons, D. J.
Kuala Lumpur : ASEAN Food Handling Bureau,; 1990.
vi, 48 p. : ill. ; 25 cm. "A review of the activities and
achievements of the livestock components of the ASEAN Food
Handling Project of the ASEAN-Australia Economic Co-operation
Program"--P. i.

Language: English

Descriptors: Livestock projects; Livestock; Animal products

24 NAL Call. No.: HV4708.A874 1990
ASPCA update veal calf facts.. Veal calf facts
American Society for the Prevention of Cruelty to Animals New
York, N.Y. : American Society for the Prevention of Cruelty to
Animals, [1990?]; 1990.
1 sheet : ill. ; 28 cm. Caption title.

Language: English

Descriptors: Animal welfare; Veal industry

25 NAL Call. No.: HV4704.A77
Assessing pain by studuing posture, activity and function.
Loeffler, K.
Brussels : Directorate-General for Agriculture, Coordination
of Agricultural Res; 1986.
Assessing pain in farm animals : proceedings of a workshop
held in Roslin, Scotland, 25 and 26 October 1984 / edited by
I.J.H. Duncan, V. Molony. p. 49-57; 1986. (EUR ; 9742 EN).
Includes references.

Language: English

Descriptors: Livestock; Pain; Assessment; Locomotion; Posture;
Animal behavior; Scales; Animal welfare

26 NAL Call. No.: 41.8 V641
An assessment of carbon dioxide stunning in pigs.
Gregory, N.G.; Moss, B.W.; Leeson, R.H.
London : British Veterinary Association; 1987 Nov28.
The Veterinary record v. 121 (22): p. 517-518; 1987 Nov28.
Includes references.

Language: English

Descriptors: Pigs; Abattoirs; Carbon dioxide; Stunning;
Vocalization; Anesthesia; Reflexes; Carcass quality; Animal
welfare; Stress

27 NAL Call. No.: HV4704.A77
Assessment of pain in animals : epistemological comments.
Zayan, R.
Brussels : Directorate-General for Agriculture, Coordination
of Agricultural Res; 1986.
Assessing pain in farm animals : proceedings of a workshop
held in Roslin, Scotland, 25 and 26 October 1984 / edited by
I.J.H. Duncan, V. Molony. p. 1-15; 1986. (EUR ; 9742 EN).
Includes references.

Language: English

Descriptors: Livestock; Pain; Assessment; Animal welfare;
Consciousness

28 NAL Call. No.: HV4704.A54 1987b
The assessment of welfare in diseased farm animals.
Jackson, P.G.G.
London : The Foundation, [1987?]; 1987.
The proceedings of the BVA Animal Welfare Foundations' [sic]
fifth symposium : entitled Animal disease--a welfare problem?
: held on 18 November 1987 / edited by T.E. Gibson ; assistant
editor, D.A. Paterson. p. 42-47; 1987. Includes references.

Language: English

Descriptors: Animal welfare; Livestock; Animal diseases;
Veterinarians; Animal housing; Pain; Disease control

29 NAL Call. No.: 100 C12CAG
At present, livestock production more favorable in Imperial
Valley. Guerrero, J.N.; Peterson, N.; Calderon, J.; Plasencia,
A.; Gonzalez, R.A. Oakland, Calif. : Division of Agriculture
and Natural Resources, University of California; 1991 Sep.
California agriculture v. 45 (5): p. 18-21; 1991 Sep.

Language: English

Descriptors: California; Cattle husbandry; Production costs;
Feedlots; Comparisons; Costs; Dairies

30 NAL Call. No.: HV4701.A34
The attainment of humane housing for farm livestock.
Wood-Gush, D.G.M.
Boston : Martinus Nijhoff Publishers; 1985.
Advances in animal welfare science. p. 47-55. ill; 1985.
Includes references.

Language: English

Descriptors: Animal husbandry; Animal welfare; Animal housing;
Livestock

31 NAL Call. No.: 58.8 J82
Automatic chemical applicators for cattle.
McPhee, J.E.; Hirst, D.J.
London : Academic Press; 1992 Jul.
Journal of agricultural engineering research v. 52 (3): p.
215-227; 1992 Jul. Includes references.

Language: English

Descriptors: Australia; Cattle; Chemical treatment; Parasites;
Control methods

Abstract: Mustering and other cattle management operations
are a significant cost for beef producers on extensive
properties in northern Australia. As a result, a range of
cattle handling equipment has been developed which uses animal
behaviour patterns to simplify some tasks. Two "animal-
powered" devices were developed to automatically apply
parasite control chemicals to cattle as they passed through
one-directional spear gates. Both applicators were based on
wheel-driven pumps, and dispensed chemicals in proportion to
the length of contact between the device and the animal's
body. Application rates were within 10% of existing
recommendations for animals in the most common weight range of
250-500 kg. The applicators were simple to install and remove,

allowing easy transfer between sites.

32 NAL Call. No.: S544.3.K4K42
Beef cattle corrals and handling facilities.
Burris, R.; Absher, C.; McNeill, S.; Turner, L.
Lexington : The Service; 1986 Apr.
ID - University of Kentucky, Cooperative Extension Service
v.): 7 p. ill; 1986 Apr.

Language: English

Descriptors: Beef cattle; Chutes; Layout and planning

33 NAL Call. No.: SF207.B39
Beef cattle handling facilities.
Saskatchewan, Family Farm Improvement Branch
Regina, Canada : Saskatchewan Agriculture, Family Farm
Improvement Branch, [1985?]; 1985.
9 p. : ill. ; 28 cm. Cover title.

Language: English

Descriptors: Beef cattle; Handling; Equipment and supplies

34 NAL Call. No.: SF13.M3A5
Beef cattle handling facilities.
Thrift, F.A.
College Park, Md. : Cooperative Extension Service, University
of Maryland; 1992 Nov.
Animal agriculture update newsletter / v. 7 (6): p. 5; 1992
Nov.

Language: English

Descriptors: Beef cattle; Handling machinery

35 NAL Call. No.: aZ5071.N3
Beef cattle housing and facilities--January 1979 - August
1990. Swanson, J.C.
Beltsville, Md. : The Library; 1990 Nov.
Quick bibliography series - U.S. Department of Agriculture,
National Agricultural Library (U.S.). (91-20): 12 p.; 1990
Nov. Bibliography.

Language: English

Descriptors: Beef cattle; Cattle housing; Cattle manure;
Slatted floors

36 NAL Call. No.: 290.9 AM32P
Beef cattle housing in Quebec climate.
Marquis, A.; Godbout, S.
St. Joseph, Mich. : The Society; 1989.
Paper - American Society of Agricultural Engineers (89-4027):
10 p.; 1989. Paper presented at the 1989 International Summer
Meeting sponsored by the American Agricultural Engineers and
the Canadian Society of Agricultural Engineering, June 25-28,
1989, Quebec, Canada. Includes references.

Language: English

Descriptors: Quebec; Beef cattle; Animal housing; Farm
buildings

37 NAL Call. No.: FICHE S-72
Beef cattle performance on slotted floors: manger space
allotment. Morrison, S.R.; Zinn, R.A.
St. Joseph, Mich. : The Society; 1985.
American Society of Agricultural Engineers (Microfiche
collection) (fiche no. 85-4522): 6 p. ill; 1985. Paper
presented at the 1985 Winter Meeting of the American Society
of Agricultural Engineers. Available for purchase from: The
American Society of Agricultural Engineers, Order Dept., 2950
Niles Road, St. Joseph, Michigan 49085. Telephone the Order
Dept. at (616) 429-0300 for information and prices.

Language: English

Descriptors: Beef cattle; Cattle housing; Housing density;
Slatted floors; Performance testing; Mangers; Space
requirements

38 NAL Call. No.: 100 M69MI
Beef cattle study mimics real world of producers.
Broadway, R.
Mississippi State, Miss. : The Station; 1992 Feb.
MAFES research highlights - Mississippi Agricultural and
Forestry Experiment Station v. 55 (2): p. 5; 1992 Feb.

Language: English

Descriptors: Mississippi; Beef cattle; Breeding programs;
Feedlots; Liveweight gain

39 NAL Call. No.: aS21.R44A7
Beef facilities and management at MARC.
Hays, W.G.; Ross, G.S.
Clay Center, Neb. : U.S. Department of Agriculture,
Agricultural Research Service; 1993 May.
ARS / (71): p. 1-2; 1993 May. In the series analytic: Beef
research progress report no. 4.

Language: English

Descriptors: Beef cattle; Agricultural research; Management

40 NAL Call. No.: SF206.B4 1987
Beef housing and equipment handbook., 4th ed..
Midwest Plan Service
Ames, Iowa : Midwest Plan Service, 1987; 1987.
1 v. (various pagings) : ill. ; 28 cm. Cover title. MWPS-6.
Includes index. Bibliography: p. 13.1..

Language: English

Descriptors: Beef cattle; Housing; Handbooks, manuals, etc;
Beef cattle; Equipment and supplies; Handbooks, manuals, etc

41 NAL Call. No.: HD1775.A2A5
Beef industry faces complex issues.
Powell, B.
Auburn, Ala. : The Service; 1992.
Alabama agribusiness - Auburn University, Alabama Cooperative
Extension Service v. 30 (4): p. 1-3; 1992.

Language: English

Descriptors: U.S.A.; Beef production; Food industry;
Environmental protection; Animal welfare; Food safety;
Consumer attitudes

42 NAL Call. No.: aHD9433.U52D83
 Beefpacking and processing plants computer-assisted cost analysis. Duewer, Lawrence A.; Nelson, K. E.
 United States, Dept. of Agriculture, Commodity Economics Division Washington, DC : U.S. Dept. of Agriculture, Economic Research Service, Commodity Economics Division ; Rockville, MD : ERS-NASS [distributor,; 1991. v, 71 p. : ill. ; 28 cm. (ERS staff report ; no. AGES 9115.). Cover title. April 19 91. Includes bibliographical references (p. 28).

Language: English

Descriptors: Beef industry; Packing-houses; Slaughtering and slaughter-houses; Food processing plants

43 NAL Call. No.: QL750.A6
 Behavior of cattle in pens exposed to +/-500 kV DC transmission lines. Ganskopp, D.; Raleigh, R.; Schott, M.; Bracken, T.D.
 Amsterdam : Elsevier Science Publishers, B.V.; 1991 Apr. Applied animal behaviour science v. 30 (1/2): p. 1-16; 1991 Apr. Includes references.

Language: English

Descriptors: Beef cattle; Animal behavior; Power lines; Exposure; Electric current; Stray voltage; Noise

44 NAL Call. No.: 49 J82
 Behavioral and physiological effects of freeze or hot-iron branding on crossbred cattle.
 Lay, D.C. Jr; Friend, T.H.; Randel, R.D.; Bowers, C.L.; Grissom, K.K.; Jenkins, O.C.
 Champaign, Ill. : American Society of Animal Science; 1992 Feb. Journal of animal science v. 70 (2): p. 330-336; 1992 Feb. Includes references.

Language: English

Descriptors: Beef cattle; Branding; Freezing; Blood plasma; Epinephrine; Heart rate; Norepinephrine; Hydrocortisone; Stress; Skin temperature; Pain; Animal welfare

Abstract: Twenty-seven crossbred calves (1/2 Simmental, 1/4 Hereford, 1/4 Brahman) averaging 257 +/- 11 d of age were either hot-iron-branded (H), freeze-branded (F), or sham-branded (S). Calves were blocked for temperament, weight, and sex and were randomly assigned to day and order in which treatments were applied. To reduce stress from handling at treatment time, each calf was herded through the squeeze chute daily for 5 d before the experiment. Jugular cannulas were inserted in each calf 1 d before application of treatment. Blood samples and heart rate measures were obtained at -5, -3, 0, .5, 1, 3, 5, 10, 15, and 20 min after application of the treatments. Mean concentrations of plasma epinephrine (EPI) were higher for H calves at time .5 min than for either S or F calves (P = .10). To account for individual differences, prebranding heart rates and hormone concentrations were subtracted from subsequent samples and were also used to calculate a proportion for each subsequent sample. Analyses of subtracted values found that EPI concentrations were greater for H calves than for either S or F calves (P = .007) at .5 min postbranding. No other differences were found for the subtracted analyses. Analyses of proportion data also revealed that H calves had greater EPI than did either S or F calves (P = .027) at .5 min postbranding. Only three animals vocalized

during branding, one H calf and two F calves. Despite the 5-d acclimation period, handling and restraint elevated plasma cortisol concentrations and heart rate. Because restraint elevated physiological indicators of stress, possible treatment differences may have been masked. The greater epinephrine response experienced by H calves indicates a higher momentary pain sensation than that experienced by either S or F calves.

45 NAL Call. No.: 100 OK4 (3)
Behavioral patterns of feedlot steers.
Hicks, R.B.; Owens, F.N.; Gill, D.R.
Stillwater, Okla. : The Station; 1989 Jun.
Miscellaneous publication - Agricultural Experiment Station,
Oklahoma State University (127): p. 94-105; 1989 Jun.
Includes references.

Language: English

Descriptors: Beef cattle; Steers; Crossbreds; Feeding
behavior; Liveweight gains; Diurnal variation

46 NAL Call. No.: 23 AU792
The behaviour and bruising of cattle during transport at
different space allowances.
Eldridge, G.A.; Winfield, C.G.
Melbourne : Commonwealth Scientific and Industrial Research
Organization; 1988.
Australian journal of experimental agriculture v. 28 (6): p.
695-698; 1988. Includes references.

Language: English

Descriptors: Australia; Beef cattle; Transport of animals;
Animal behavior; Bruising; Distance travelled; Abattoirs;
Handling; Spacing; Space requirements; Carcass quality

47 NAL Call. No.: HD1773.A3N6
A bioeconomic analysis of bovine respiratory disease complex.
Nyamusika, N.; Sreen, T.H.; Rae, O.; Moss, C.
Manhattan, Kan. : Department of Agricultural Economics, Kansas
State University; 1994 Jan.
Review of agricultural economics v. 16 (1): p. 39-53; 1994
Jan. Includes references.

Language: English

Descriptors: U.S.A.; Cabt; Beef cattle; Calf production;
Bovine respiratory syncytial virus; Disease control;
Vaccination; Returns; Economic analysis; Mathematical models;
Mortality; Liveweight gain; Agricultural regions; Probability

Abstract: Bovine Respiratory Disease Complex (BRDC) is an
important disease affecting both beef and dairy cattle
produced in confinement operations. A bioeconomic model of
BRDC is developed for a typical Midwestern feedlot. Using
vaccine efficacy rates found in the veterinary science
literature, significant returns to vaccination are estimated.

48 NAL Call. No.: 49 J82
A bioeconomic model for comparing beef cattle genotypes at
their optimal economic slaughter end point.
Amer, P.R.; Kemp, R.A.; Buchanan-Smith, J.G.; Fox, G.C.;
Smith, C. Champaign, Ill. : American Society of Animal
Science; 1994 Jan. Journal of animal science v. 72 (1): p.
38-50; 1994 Jan. Includes references.

Language: English

Descriptors: Beef cattle; Genotypes; Feedlots; Optimization; Econometric models; Slaughter

Abstract: A bioeconomic model of a feedlot was developed for the comparison of beef cattle genotypes under specified management and marketing conditions. The optimization behavior of commercial feedlot managers is incorporated into the model using optimum economic rotation theory. The days spent in the feedlot (rotation) by a group of animals are derived using this theory so as to maximize an objective function. Differences among breeds in the present value of profits from a single rotation, expressed per animal, represent the expected price premium paid for a feeder animal of a particular breed. Feed requirements and growth rates for a genotype are predicted over time for a specified diet from estimated mature size. Estimates of carcass fatness over time as a function of the energy content of the diet and estimates of dressing percentage over time are used for each genotype. A base model is described that incorporates biological parameters estimated for 11 breeds from a major breed comparison experiment and uses prices of inputs and outputs for Ontario feedlots. Sensitivity of the model to these biological and economic assumptions is shown. When breeds are compared at constant days fed, weight, or fat depth slaughter points, rankings are inconsistent, relative to those when each breed is slaughtered at its optimal economic point. The model can be used to establish appropriate slaughter end points for comparing beef cattle breeds and crosses and to evaluate breeding objectives for feedlot traits in genetic improvement programs.

49 NAL Call. No.: Videocassette no.199
Biotechnology briefing Technology Transfer and Assessment Staff ; David Berkowitz [and] Daniel Jones.. Technology Transfer and Assessment Staff seminars on Biotechnology Jones, Daniel; Cross, H. Russell; Bolt, Douglas J.; Wall, Robert; Hansen, J.; Barbeito, Manuel
United States, Food Safety and Inspection Service, Technology Transfer and Assessment Staff
Washington : D.C.? : USDA, The Staff,; 1987.
6 videocassettes (VHS) (317 min.) : sd., col. ; 1/2 in. + 1 brief sheet. "Tuesday, March 17, 1987, Room 4434, South Building"--Brief sheet. Brief sheet title. Title on container: Technology Transfer and Assessment Staff seminars on biotechnology.

Language: English

Descriptors: Biotechnology; Congresses; Genetic engineering; Congresses; Animals; Inspection; United States; Animal welfare

50 NAL Call. No.: 49 J82
Blood and serum components and organ weights in steers, bulls and zeranol-implanted bulls.
Doornenbal, H.; Tong, A.K.W.; Newman, J.A.; Murray, N.L.; Mears, G.J. Champaign, Ill. : American Society of Animal Science; 1987 Feb. Journal of animal science v. 64 (2): p. 489-496; 1987 Feb. Includes references.

Language: English

Descriptors: Bulls; Steers; Zeranol; Blood composition; Organs; Castration; Growth; Carcass quality; Stress

51 NAL Call. No.: 41.8 S08
 Blood biochemical parameters and meat pH of feedlot cattle
 slaughtered on arrival or after overnight rest at an abattoir.
 Grosskopf, J.F.W.; Meltzer, D.G.A.; Van Den Heever, L.W.;
 Collett, F.A.; Van Rensburg, J.J.; Mulders, M.S.; Lombard,
 M.S.
 Pretoria : The Association; 1988 Sep.
 Journal of the South African Veterinary Association v. 59 (3):
 p. 149-152; 1988 Sep. Includes references.

Language: English

Descriptors: Cattle; Feedlots; Slaughter; Blood chemistry; Ph;
 Beef; Abattoirs; Rest; Summer; Winter; Brahman; Stress

52 NAL Call. No.: 100 N27M
 Calving and stress hormones of calves.
 Rainforth, L.; Knott, M.; Clemens, E.
 Lincoln, Neb. : The Station; 1990 Oct.
 MP - University of Nebraska, Agricultural Experiment Station
 (56): p. 13-15; 1990 Oct. In the series analytic: 1991 Beef
 Cattle Report.

Language: English

Descriptors: Dystocia; Heifers; Calves; Dams (mothers);
 Calving; Stress; Maternal effects; Epinephrine; Transfer;
 Fetus; Blood plasma; Catecholamines; Gastrin

53 NAL Call. No.: 49 J82
 Carcass traits and the occurrence of dark cutters in pregnant
 and nonpregnant feedlot heifers.
 Kreikemeier, K.K.; Unruh, J.A.
 Champaign, Ill. : American Society of Animal Science; 1993
 Jul. Journal of animal science v. 71 (7): p. 1699-1703; 1993
 Jul. Includes references.

Language: English

Descriptors: Kansas; Cabt; Beef cows; Bred heifers; Heifers;
 Pregnancy; Dark cutting meat; Carcass composition; Carcass
 quality

Abstract: The objective of this study was to determine
 whether the occurrence of dark cutters and selected carcass
 traits differ between pregnant and nonpregnant feedlot
 heifers. Feedlot heifers (n = 8,292) were identified at
 slaughter as being either nonpregnant, pregnant with a
 moderate-sized fetus (midgestation), or pregnant with a large
 fetus (late gestation). This was based on visual appraisal of
 a gravid uterus at the evisceration table. After chilling (24
 to 72 h), carcass data were collected. Cattle originated from
 23 different commercial feedyards located within a 350-km
 radius of a commercial slaughter facility located in southwest
 Kansas. Across slaughter lots, the incidence of pregnancy
 varied from 0 to 25% with an overall mean of 4.74%. Carcass
 traits of heifers with moderate or large fetuses did not
 differ ($P > .15$). Compared with carcasses from nonpregnant
 heifers, carcasses from pregnant heifers were 4.5 kg lighter
 ($P < .01$), had .11 cm more fat thickness ($P < .01$), and
 exceeded the number of carcasses that graded Choice or Prime
 by 6% ($P < .01$). Carcasses from pregnant heifers had higher
 maturity scores ($P < .01$) and there was no incidence of dark
 cutters ($P < .01$) compared with a 1.7% incidence of dark
 cutters in carcasses from nonpregnant heifers. Any economical
 advantage in the pregnant heifers due to their higher
 percentage of Choice carcasses and lower incidence of dark
 cutters may be offset by their increased carcass fat thickness

and lower dressing percentage.

54 NAL Call. No.: HV4701.A34
Cardiac arrest stunning of livestock and poultry.
Grandin, T.
Boston : Martinus Nijhoff Publishers; 1985.
Advances in animal welfare science. p. 1-30; 1985. Literature
review. Includes references.

Language: English

Descriptors: Livestock; Poultry; Heart diseases; Pain; Animal
welfare; Stunning; Immobilization

55 NAL Call. No.: SF196.U5C3
The Care and handling of beef animals in the United States
today a position paper.
American National CattleWomen
Englewood, CO : American National CattleWomen, [1988?]; 1988.
21 leaves ; 29 cm. Bibliography: leaves 19-20.

Language: English

Descriptors: Beef cattle; United States; Animals, Treatment
of; United States

56 NAL Call. No.: 275.29 M58B
Cattle behavior during handling & corral design for beef cow
herds. Grandin, T.
East Lansing, Mich. : The Service; 1991 Dec.
Extension bulletin E - Cooperative Extension Service, Michigan
State University (2996): 10 p.; 1991 Dec.

Language: English

Descriptors: Beef cows; Fencing; Animal behavior; Vision

57 NAL Call. No.: Videocassette no.422
Cattle handling and transportation produced for the USDA
Office of Transportation by the Livestock Conservation
Institute.. Livestock handling guide Livestock trucking guide
Grandin, Temple; Hoke, Karl E.
United States, Dept. of Agriculture, Office of Transportation,
Livestock Conservation Institute
Amarillo, Tex. : The Institute; 1988.
1 videocassette (18 min.) : sd., col. ; 1/2 in. + 2 booklets.
(Livestock handling & transportation). VHS format. Booklets
are entitled Livestock handling guide and Livestock trucking
guide.

Language: English

Descriptors: Cattle; Handling; Cattle; Transportation; Cattle;
Behavior; Animal welfare

58 NAL Call. No.: 23 AU783
Cattle handling at abattoirs. I. The effects of rest and
resting conditions before slaughter and of electrical
stimulation of carcasses on carcass weight and muscle
properties.
Wythes, J.R.; Shorthose, W.R.; Powell, V.H.
Melbourne : Commonwealth Scientific and Industrial Research
Organization; 1988.
Australian journal of agricultural research v. 39 (1): p.
87-95; 1988. Includes references.

Language: English

Descriptors: Queensland; Cattle; Abattoirs; Handling; Bruising; Stress; Rest; Slaughter; Carcasses; Carcass weight; Muscles; Electrical treatment; Stimulation; Carcass quality; Physico-chemical properties

59 NAL Call. No.: 23 AU783

Cattle handling at abattoirs. II. The effects of rest in transit and duration of the resting period before slaughter on carcass weight, bruising and muscle properties.

Wythes, J.R.; Arthur, R.J.; Dodt, R.M.; Shorthose, W.R.

Melbourne : Commonwealth Scientific and Industrial Research Organization; 1988.

Australian journal of agricultural research v. 39 (1): p. 97-107; 1988. Includes references.

Language: English

Descriptors: Queensland; Cattle; Abattoirs; Handling; Transport of animals; Bruising; Stress; Rest; Slaughter; Carcasses; Carcass weight; Muscles; Carcass quality; Physico-chemical properties

60 NAL Call. No.: 23 AU783

Cattle handling at abattoirs. III. The effects of feeding, and of different feeds, during the resting period before slaughter on liveweight, carcasses and muscle properties.

Wythes, J.R.; Round, P.J.; Johnston, G.N.; Smith, P.C.

Melbourne : Commonwealth Scientific and Industrial Research Organization; 1989.

Australian journal of agricultural research v. 40 (5): p. 1099-1109; 1989. Includes references.

Language: English

Descriptors: Queensland; Beef cattle; Brahman; Hereford; Shorthorn; Feeding; Alfalfa hay; Rice straw; Liveweight; Abattoirs; Carcass weight; Dressing percentage; Meat quality; Muscle tissue

61 NAL Call. No.: 23 AU792

Cattle temperaments in extensive beef herds in northern Queensland. 1. Factors affecting temperament.

Fordyce, G.; Dodt, R.M.; Wythes, J.R.

Melbourne : Commonwealth Scientific and Industrial Research Organization; 1988.

Australian journal of experimental agriculture v. 28 (6): p. 683-687; 1988. Includes references.

Language: English

Descriptors: Queensland; Beef cattle; Shorthorn; Brahman; Herds; Temperament; Animal behavior; Age; Growth rate; Pregnancy; Handling; Cattle husbandry; Management

62 NAL Call. No.: 23 AU792

Cattle temperaments in extensive beef herds in northern Queensland. 2. Effect of temperament on carcass and meat quality.

Fordyce, G.; Wythes, J.R.; Shorthose, W.R.; Underwood, D.W.;

Shepherd, R.K. Melbourne : Commonwealth Scientific and Industrial Research Organization; 1988.

Australian journal of experimental agriculture v. 28 (6): p. 689-693; 1988. Includes references.

Language: English

Descriptors: Queensland; Beef cattle; Steers; Cows;
Temperament; Herds; Carcass quality; Meat quality; Stress; Ph;
Flavors; Tenderness; Water holding capacity; Keeping quality

63 NAL Call. No.: 290.9 AM32P
Characterizing livestock stress "by the numbers".
Hahn, G.L.; Chen, Y.R.; Nienaber, J.A.; Eigenberg, R.A.
St. Joseph, Mich. : The Society; 1990.
Paper - American Society of Agricultural Engineers (90-4508):
13 p.; 1990. Paper presented at the "1990 International Winter
Meeting sponsored by the American Society of Agricultural
Engineers," December 18-21, 1990, Chicago Illinois. Includes
references.

Language: English

Descriptors: Feed intake; Thermoregulation; Fractionation;
Cattle

64 NAL Call. No.: aS21.R44A7
Characterizing stress in feeder cattle.
Hahn, G.L.; Nienaber, J.A.
Clay Center, Neb. : U.S. Department of Agriculture,
Agricultural Research Service; 1993 May.
ARS / (71): p. 146-148; 1993 May. In the series analytic:
Beef research progress report no. 4.

Language: English

Descriptors: Cattle; Feedlots; Heat stress; Body temperature;
Environmental temperature; Feed intake; Methodology

65 NAL Call. No.: 60.18 J82
Chemically mediated interactions between woody plants and
browsing mammals. Bryant, J.P.; Reichardt, P.B.; Clausen, T.P.
Denver, Colo. : Society for Range Management; 1992 Jan.
Journal of range management v. 45 (1): p. 18-24; 1992 Jan.
Paper presented at the "Symposium on Ingestion of Poisonous
Plants by Livestock," February 15, 1990, Reno, Nevada.
Includes references.

Language: English

Descriptors: Mammals; Herbivores; Plant composition; Secondary
metabolites; Woody plants; Browsing; Forage; Defense
mechanisms; Tannins; Environmental factors; Digestion;
Browsing damage; Regrowth

Abstract: A diverse array of secondary metabolites deters
feeding by mammals on woody plants. However, not all secondary
metabolites are equally deterrent and the potencies of these
substances as antifeedants is related to their structures.
Although the physiological reason underlying deterrence by
secondary metabolites is not well understood, the available
evidence indicates that toxicity is more important than
digestion inhibition. Resource limitation influences the
production of secondary metabolites by woody plants. Species
that are adapted to unproductive habitats are more chemically
defended than species that are adapted to productive habitats.
Resource limitation also affects the phenotypic expression of
chemical defense with nutrient stress favoring increased
production of carbon-based secondary metabolites and reduced
production of nitrogen-containing secondary metabolites. Light
stress has the opposite effects on the production of these

substances. Herbivory by mammals also affects the chemical defenses of woody plants. In some cases browsing results in increased defense and in others decreased defense. Three circumstances under which browsing by mammals can change the chemical defenses of woody plants are discussed.

66 NAL Call. No.: SF207.M25
Choosing a beef bull hill farming 86 Bala, Gwynedd, June 4-5
1986. Mathewson, G. K.
Great Britain, Agricultural Development and Advisory Service
Aberystwyth? : ADAS; 1986.
10 p. ; 21 cm. Cover title. Bibliography: p. 10.

Language: English

Descriptors: Beef cattle; Bulls; Animal welfare

67 NAL Call. No.: SF85.4.A9G72 1985
Codes of conduct for grazing animal welfare: the graziers'
view. Peart, W.J.
Indooroopilly, QLD : Australian Veterinary Association
(Queensland Division); 1985.
Grazing Animal Welfare Symposium : proceedings of a symposium
held at the Bardon Professional Development Centre, Brisbane,
on April 26th and 27th, 1985 / [editors: Brian L. Moore and
Peter J. Chenoweth]. p. 170-173; 1985.

Language: English

Descriptors: Australia; Livestock; Animal production; Animal
husbandry; Grazing; Drought; Ethics; Animal welfare

68 NAL Call. No.: 101 AL1A
Cold weather calving: metabolic heat production and
thermostability. Young, B.A.; Okamoto, M.; Robinson, J.B.;
Christopherson, R.J. Edmonton : The Faculty; 1986.
Agriculture & forestry bulletin - Alberta University. Faculty
of Extension (special issue): p. 11-13; 1986. Paper presented
at the 65th Annual Feeders' Day Report, July, 1986, University
of Alberta, Canada.

Language: English

Descriptors: Calves; Beef cattle; Cold stress; Losses; Heat
production; Metabolism; Heat stability; Newborn animals

69 NAL Call. No.: 275.29 S085C
Cold weather care of calves.
Brookings, S.D. : The Service; 1987 Dec.
South Dakota D.H.I.A. news - South Dakota State University,
Cooperative Extension Service. p. 3; 1987 Dec.

Language: English

Descriptors: South Dakota; Calves; Cold stress; Livestock
housing; Weaning

70 NAL Call. No.: SF601.B6
Comparison of ceftiofur with various antibiotic-
sulfadimethoxine combinations for the treatment of
undifferentiated bovine respiratory disease. Hansen, D.E.;
Campbell, C.B.; Boyle, J.M.; Stefanides, N.; Whitsett, D.;
Williams, G.
Santa Barbara, Calif. : Veterinary Practice Publishing
Company; 1993 Mar. Agri-Practice v. 14 (3): p. 13-17; 1993

Mar. Includes references.

Language: English

Descriptors: Oregon; Beef cattle; Respiratory diseases;
Antibiotics; Sulfadimethoxine; Feedlots

71 NAL Call. No.: 290.9 AM32P
Comparison of fresh air inlets in small livestock rooms.
Turnbull, J.E.; Kains, F.I.; Wolynetz, M.S.
St. Joseph, Mich. : The Society; 1989.
Paper - American Society of Agricultural Engineers (89-4522):
24 p.; 1989. Paper presented at the 1989 International Winter
Meeting, December 12-15, 1989, New Orleans, Louisiana.
Includes references.

Language: English

Descriptors: Ventilation; Animal housing; Pigs

72 NAL Call. No.: SF207.B442
Comparison of intensive and conventional grazing management of
two forage species. II. Postweaning feedlot performance of
steers.
Fisher, J.C.; Bolze, R.P.; Loerch, S.C.
Wooster, Ohio : The Ohio State University, Ohio Agricultural
Research and Development Center; 1990 Mar.
Ohio beef cattle research & industry report (90-2): p.
124-131; 1990 Mar. Includes references.

Language: English

Descriptors: Ohio; Beef cattle; Feedlots; Fattening
performance; Postweaning interval; Compensatory growth;
Grazing; Liveweight; Dry matter; Creep feeding

73 NAL Call. No.: 49 AN55
A comparison of the early behaviour of intensively and
extensively reared calves.
Kerr, S.G.C.; Wood-Gush, D.G.M.
Neston, South Wirral, England : British Society of Animal
Production; 1987 Oct.
Animal production v. 45 (pt.2): p. 181-190; 1987 Oct.
Includes references.

Language: English

Descriptors: Calves; Animal behavior; Intensive livestock
farming; Extensive livestock farming; Calf housing; Animal
welfare

74 NAL Call. No.: FICHE S-72
A computer program for designing livestock ventilation
systems. House, H.K.; Huffman, H.E.
St. Joseph, Mich. : The Society; 1987.
American Society of Agricultural Engineers (Microfiche
collection) (fiche no. 87-4039): 13 p.; 1987. Paper presented
at the 1987 Summer Meeting of the American Society of
Agricultural Engineers. Available for purchase from: The
American Society of Agricultural Engineers, Order Dept., 2950
Niles Road, St. Joseph, Michigan 49085. Telephone the Order
Dept. at (616) 429-0300 for information and prices. Includes
references.

Language: English

Descriptors: Computer applications; Animal housing;
Ventilation; Systems; Design; Heating systems

75 NAL Call. No.: HD1.A3
Computer simulation of monitoring herd productivity under
extensive conditions: sampling error of herd size and offtake
rate. Baptist, R.
Essex : Elsevier Applied Science Publishers; 1987.
Agricultural systems v. 24 (3): p. 199-210; 1987. Includes
references.

Language: English

Descriptors: Livestock; Extensive livestock farming;
Pastoralism; Herds; Herd structure; Productivity; Computer
simulation; Animal husbandry; Culling; Herd size

76 NAL Call. No.: SF1.F64 no.97
Construction and operation of medium-sized abattoirs in
developing countries. Veall, Frederick
Food and Agriculture Organization of the United Nations
Rome : Food and Agriculture Organization of the United
Nations; 1992. xiii, 199 p. : ill. ; 30 cm. (FAO animal
production and health paper ; 97).

Language: English

Descriptors: Slaughtering and slaughter-houses; Livestock

77 NAL Call. No.: 100 N465R no.587
Consumer acceptance of beef from animals fed various levels of
feed concentrate in feedlot diets.
New Mexico State University, Agricultural Experiment Station
Las Cruces, N.M. : New Mexico State University, Agricultural
Experiment Station; 1986.
28 p. ; 28 cm. (Western regional publication ; 7 Research
report ; 587). Caption title. Bibliography: p. 17.

Language: English

Descriptors: Beef cattle; Feeding and feeds; Food preferences;
Consumers' preferences

78 NAL Call. No.: HV4701.A34
Contribution to a concept of behavioral abnormality in farm
animals under confinement.
Luescher, U.A.; Hurnik, J.F.
Boston : Martinus Nijhoff Publishers; 1986-1987.
Advances in animal welfare science. p. 67-76; 1986-1987.
Includes references.

Language: English

Descriptors: Livestock; Abnormal behavior; Livestock housing;
Housing density; Phylogeny; Ontogeny

79 NAL Call. No.: aHD9001.N275
Controversy over livestock growth hormones continues.
Blayney, D.P.; Fallert, R.F.; Shagam, S.D.
Washington, D.C. : Commodity Economics Division, Economic
Research Service, USDA; 1991 Oct.
FoodReview v. 14 (4): p. 6-9; 1991 Oct. Includes references.

Language: English

Descriptors: Livestock; Somatotropin; Food and nutrition controversies; Food safety; Food biotechnology; Farm structure; Surpluses; Animal welfare

Abstract: At the forefront of biotechnology in animal agriculture is the experimental use of somatotropin, growth hormones that occur naturally in animals. The safety, positive and negative implication surrounding the controversy over the use of bovine somatotropin use for milk production are discussed.

80 NAL Call. No.: SF207.B67 1993
Corrals for handling beef cattle.
Borg, Robert
Edmonton : Publishing Branch, Alberta Agriculture, Food and Rural Development,; 1993.
91 p. : ill. ; 28 cm. "Agdex 420/723-1"--Cover. Includes bibliographical references (p. 91).

Language: English

Descriptors: Beef cattle; Cattle pens

81 NAL Call. No.: aHD1401.J68
Cost, supply, and farm structure: a pedagogical note.
Teigen, L.D.
Washington, D.C : U.S. Dept. of Agriculture, Economic Research Service : [Supt. of Docs., U.S. G.P.O., distributor], 1987-; 1993.
Journal of agricultural economics research v. 45 (1): p. 27-32; 1993. Includes references.

Language: English

Descriptors: U.S.A.; Cabt; Dairy farms; Production costs; Production functions; Marginal analysis; Structural change; Economic dualism; Livestock numbers

Abstract: Starting with an individual firm and its quadratic production function, this paper derives all related functions: marginal and average cost, supply, profit, and input demand. Since derivatives in other functions correspond to parameters of the quadratic, the results generalize. Explicit aggregation from firm to market shows that properly specified aggregate functions depend on firm numbers. To illustrate the results, marginal and average cost functions for several dairy farms are drawn to scale, noting that large farms get more output per cow than small farms. Juxtaposing the cost curves with trends in dairy farms by size shows the link between firm-level profit and structural change.

82 NAL Call. No.: 1 Ag84Te no.1704
Costs of retail beef-handling systems a modeling approach.
Dewer, Lawrence A.
United States, Dept. of Agriculture, Economic Research Service
Washington, D.C. : U.S. Dept. of Agriculture, Economic Research Service : [Supt. of Docs., U.S. G.P.O., distributor],; 1985.
v, 55 p. ; 28 cm.. (Technical bulletin / United States. Dept. of Agriculture ; no. 1704). Cover title. Distributed to depository libraries in microfiche. "June 1985"--P. i.
Bibliography: p. 29.

Language: English

Descriptors: Beef cattle; Data processing; Beef packers; Data processing

83 NAL Call. No.: S544.3.K4K42
Creep grazing for beef calves.
Rice, H.B.; Absher, C.; Turner, L.
Lexington : The Service; 1987 Apr.
ID - University of Kentucky, Cooperative Extension Service
(76): 4 p. ill., maps; 1987 Apr.

Language: English

Descriptors: Kentucky; Calves; Beef cattle; Creep grazing;
Fences; Stocking rate; Gates

84 NAL Call. No.: SF75.2.C84 1988
El Cuidado de los animales [Care of livestock]., 1. ed..
Mexico, D.F. : Arbol editorial; 1988.
192, [1] p. : ill. ; 21 cm.

Language: Spanish

Descriptors: Livestock

85 NAL Call. No.: KF27.A366 1988
Dairy Production Termination Enforcement Act of 1988 hearing
before the Subcommittee on Livestock, Dairy, and Poultry of
the Committee on Agriculture, House of Representatives, One
Hundredth Congress, second session, on H.R. 3870, March 2,
1988.
United States. Congress. House. Committee on Agriculture.
Subcommittee on Livestock, Dairy, and Poultry
Washington, [D.C.] : U.S. G.P.O. : For sale by the Supt. of
Docs., Congressional Sales Office, U.S. G.P.O.; 1988; Y 4.Ag
8/1:100-59. iii, 41 p. : forms ; 24 cm. Distributed to some
depository libraries in microfiche. Serial no. 100-59.

Language: English; English

Descriptors: Dairying; Economic aspects; United States; Milk
production; Government policy; United States; Dairy laws;
United States

86 NAL Call. No.: HV4701.A34
The definition, current knowledge and implementation of
welfare for farm animals--a personal view.
Kilgour, R.
Boston : Martinus Nijhoff Publishers; 1985.
Advances in animal welfare science. p. 31-46; 1985. Includes
references.

Language: English

Descriptors: Livestock; Poultry; Animal welfare;
Implementation of research; Guidelines

87 NAL Call. No.: Videocassette no.844
Dehorning beef cattle produced by Ron Davis and Fred Nelson.
Davis, Ron; Nelson, Fred
Vocational Education Productions, Da-Nel Productions
California? : Da-Nel Productions ; [San Luis Obispo, Calif.?]
: Vocational Education Productions; 1985.
1 videocassette (25 min.) : sd., col. ; 1/2 in. VHS.

Language: English

Descriptors: Dehorning; Animal welfare

88 NAL Call. No.: FICHE S-72
Design and contruction effects on cattle waterer energy use.
Anderson, V.L.; Johnson, D.
St. Joseph, Mich. : The Society; 1987.
American Society of Agricultural Engineers (Microfiche
collection) (fiche no. 87-4081): 17 p. ill; 1987. Paper
presented at the 1987 Summer Meeting of the American Society
of Agricultural Engineers. Available for purchase from: The
American Society of Agricultural Engineers, Order Dept., 2950
Niles Road, St. Joseph, Michigan 49085. Telephone the Order
Dept. at (616) 429-0300 for information and prices. Includes
references.

Language: English

Descriptors: Livestock housing; Drinkers; Design; Performance
testing; Electrical energy; Energy consumption

89 NAL Call. No.: SF779.5.A1B6
The design of feeding barriers and managers and its effect on
incidence of injuries and feed wastage.
Cermak, J.
Stillwater, Okla. : American Association of Bovine
Practitioners; 1988 Nov. The Bovine practitioner (23): p.
74-75; 1988 Nov. Includes references.

Language: English

Descriptors: Heifers; Dairy cows; Beef bulls; Managers; Animal
feeding; Barriers; Design; Injuries; Incidence; Feeds; Wastage

90 NAL Call. No.: S671.M47 no.73/85
The Design of livestock buildings for natural ventilation the
theoretical basis and a rational design method.
Down, M. J.
University of Melbourne, Dept. of Civil and Agricultural
Engineering Parkville, Vic., Australia : University of
Melbourne, Department of Civil and Agricultural Engineering,;
1985.
ix, 112 p. : ill. ; 29 cm. (Agricultural engineering report,
no. 73/85). RR/AGR/03/85. September 1985. Bibliography: p.
111-112.

Language: English

Descriptors: Livestock; Housing; Ventilation

91 NAL Call. No.: SF85.A1R32
Does Sahelian pastoral development include range management?.
Greenwood, G.B.
Denver, Colo. : Society for Range Management; 1986 Dec.
Rangelands v. 8 (6): p. 259-264. ill; 1986 Dec. Includes
references.

Language: English

Descriptors: Sahel; Livestock; Pastoralism; Development; Range
management; Animal production; Technology transfers;
Production structure; Pastoral society; Land capability

92 NAL Call. No.: 49 J82
Dose-response effects of recombinant bovine somatotropin
implants on feedlot performance in steers.
Dalke, B.S.; Roeder, R.A.; Kasser, T.R.; Veenhuizen, J.J.;

Hunt, C.W.; Hinman, D.D.; Schelling, G.T.
Champaign, Ill. : American Society of Animal Science; 1992
Jul. Journal of animal science v. 70 (7): p. 2130-2137; 1992
Jul. Includes references.

Language: English

Descriptors: Beef cattle; Steers; Somatotropin; Dosage
effects; Insulin-like growth factor; Growth; Performance;
Carcass composition; Blood serum

Abstract: One hundred twenty crossbred beef steers averaging 377 kg were used in a 2 X 4 factorial experiment to determine the dose-response effects of recombinant bovine somatotropin (rbST) implants on growth performance and carcass characteristics. The implant dosages were 0 (sham), 40, 80, or 160 mg/wk administered s.c. in the tailhead region on a weekly basis throughout the experiment. The steers were fed a high-concentrate diet, which contained either a degradable (DP; soybean meal) or an escape (EP; corn gluten and blood meal) protein source. No dietary protein effect or dietary protein X rbST level interactions were detected. Recombinant bST decreased both DMI ($P < .10$) and feed/gain ($P < .05$) in a linear dose-dependent manner. Dosage of rbST did not significantly affect ($P > .10$) ADG or final weight of the steers. Recombinant bST decreased backfat depth ($P < .10$), marbling score ($P < .05$), and quality grade ($P < .10$) and increased yield grade ($P < .10$) in a linear dose-dependent manner. Soft tissue composition of the 9-10-11th rib section was altered ($P < .01$) by rbST administration in a linear dose-dependent manner. The percentage of protein in the rib section was increased by 9.4% and fat was decreased by 11.8% at the 160 mg/wk rbST level compared with the sham-implanted steers. Recombinant bST did not affect ($P > .10$) dressing percentage, hot carcass weight, kidney, pelvic, and heart fat, or longissimus muscle area. Serum insulin-like growth factor I (IGF-I) concentrations in the steers exhibited a linear response to dosage of rbST ($P < .01$). These data indicate that rbST is an efficacious method of improving feedlot performance and partitioning nutrient deposition in feedlot steers.

93 NAL Call. No.: 58.8 J82
Double rail restrainer conveyor for livestock handling.
Grandin, T.
London : Academic Press; 1988 Dec.
Journal of agricultural engineering research v. 41 (4): p.
327-338. ill; 1988 Dec. Includes references.

Language: English

Descriptors: Sheep; Calves; Livestock; Handling; Slaughtering
equipment; Conveyors; Restraint of animals; Stunning;
Automatic control; Agricultural engineering

94 NAL Call. No.: 290.9 Am32P
Double rail restrainer for handling beef cattle.
Grandin, T.
St. Joseph, Mich. : American Society of Agricultural
Engineers; 1991. Paper / (915004): 15 p.; 1991. Paper
presented at the "1991 International Summer Meeting sponsored
by the American Society of Agricultural Engineers," June
23-26, 1991, Albuquerque, New Mexico. Includes references.

Language: English

Descriptors: Beef cattle; Slaughter; Restraint of animals

95 NAL Call. No.: 280.8 J822

Dynamic animal economics.

Rosen, S.

Ames, Iowa : American Agricultural Economics Association; 1987

Aug. American journal of agricultural economics v. 69 (3): p.

547-557; 1987 Aug. Includes references.

Language: English

Descriptors: Cattle husbandry; Herd structure; Livestock number; Supply response; Inventories; Pigs; Cobweb models

96 NAL Call. No.: HD1.A3

An economic and environmental assessment of alternative forage-resource production systems: a goal-programming approach.

Fiske, W.A.; D'Souza, G.E.; Fletcher, J.J.; Phipps, T.T.;

Bryan, W.B.; Prigg, E.C.

Oxford : Elsevier Applied Science; 1994.

Agricultural systems v. 45 (3): p. 259-270; 1994. Includes references.

Language: English

Descriptors: West Virginia; Cabt; Beef cattle; Calf production; Profitability; Risk; Environmental impact; Algorithms; Production structure; Decision making

97 NAL Call. No.: 49 J82

Economic evaluation of heterosis and culling policies for lifetime productivity in Hereford, Angus, Shorthorn, and crossbred cows. Nunez-Dominguez, R.; Dickerson, G.E.; Cundiff, L.V.; Gregory, K.E.; Koch, R.M. Champaign, Ill. : American Society of Animal Science; 1992 Aug. Journal of animal science v. 70 (8): p. 2328-2337; 1992 Aug. Includes references.

Language: English

Descriptors: Beef cows; Heterosis; Culling; Herd structure; Economic evaluation; Heifers; Crossbreds; Breed differences; Costs; Female fertility

Abstract: Experimental lifetime performance data obtained from 156 straightbred Hereford, Angus, and Shorthorn and 172 first-cross heifers were used to estimate heterosis for economic efficiency in a 100-cow herd at age equilibrium under three culling policies and at terminal ages from 6 to 12 yr. All nonpregnant heifers and cows > 9 yr of age were culled. The culling policy for removal of nonpregnant cows from second parity through 9 yr of age were 1) no culling, 2) after two consecutive years (actual), and 3) all (imposed). Efficiency was calculated as input cost per unit of output value. A 10-yr average was used for costs of replacement heifers, cow units, and the ratio of calf-cull cow prices (PR), plus higher and lower PR. Input included costs for both cow units and purchased replacements. Output value included both weaned calves and cull cows. Optimum terminal age was mainly a function of PR: 9 yr for average and high PR, but 6 through 9 yr when PR was low, regardless of culling policy or breed groups. Efficiency differences among culling policies were small for high or average PR, but more culling for infertility was beneficial when PR was low. Estimated reductions in unit costs of output value under any culling policy or terminal age were approximately 6% from crossbred cows plus another 6% from crossbred calves, or a total of 12% from specific three-breed crossing of these British breeds. Cost reductions would be somewhat less for rotation crossbreeding but greater for mating smaller crossbred cows with sires of superior growth-

carcass breeds.

98 NAL Call. No.: 100 C71S (3)
The economics of fed beef production in Colorado.
Madsen, A.G.; Gee, C.K.
Fort Collins : The Station; 1986 Jan.
Technical bulletin - Colorado State University Experiment
Station (86-2): 32 p.; 1986 Jan. Includes statistical data.

Language: English

Descriptors: Colorado; Beef production; Cattle fattening;
Feedlots; Facilities; Equipment; Economic analysis

99 NAL Call. No.: 41.8 C163
The effect of age and method of castration on plasma cortisol
in beef calves. King, B.D.; Cohen, R.D.H.; Guenther, C.L.;
Janzen, E.D.
Ottawa : Agricultural Institute of Canada; 1991 Jun.
Canadian journal of animal science v. 71 (2): p. 257-263; 1991
Jun. Includes references.

Language: English

Descriptors: Calves; Beef cattle; Castration; Age differences;
Hydrocortisone; Blood plasma; Stress; Liveweight gain

100 NAL Call. No.: 49 J82
Effect of an implant of trenbolone acetate and estradiol on
growth, feed efficiency, and carcass composition of Holstein
and beef steers. Perry, T.C.; Fox, D.G.; Beermann, D.H.
Champaign, Ill. : American Society of Animal Science; 1991
Dec. Journal of animal science v. 69 (12): p. 4696-4702; 1991
Dec. Includes references.

Language: English

Descriptors: Steers; Trenbolone; Estradiol; Liveweight gain;
Feed conversion; Breed differences; Carcass composition;
Sensory evaluation

Abstract: The effects of an implant of 140 mg of trenbolone acetate and 28 mg of estradiol (TBA + E2) on performance and carcass composition were evaluated with 72 individually fed steers. Holstein (n = 24), Angus (n = 24), and Angus X Simmental (n = 24) steer calves were allocated by breed and implant treatment to either an individual feeding pen (n = 36) or an electronic feeding door in a group pen (three pens with 12 animals per pen). Intake and refusal of the 85% concentrate diet were recorded daily. Animals were slaughtered when ultrasonic attenuation values of the longissimus muscle at the 12th rib reached .55, which is correlated with low Choice marbling. At slaughter, complete carcass measurements were taken and the right side of each carcass was separated into boneless wholesale cuts. Implanting with TBA + E2 improved (P < .01) daily gain and feed efficiency. Daily gain was increased 17, 26, and 21% in Holstein, Angus, and crossbred steers, respectively. The implant increased overall daily protein and fat accretion 23%. Carcass conformation and dressing percentage were not affected (P > .05) by TBA + E2 treatment. Implantation with TBA + E2 had little effect on yield of wholesale boneless cuts when expressed as a percentage of carcass weight but increased absolute weight as a small degree of marbling by 6 to 40 kg.

101 NAL Call. No.: 472 N21

Effect of animal husbandry on herbivore-carrying capacity at a regional scale. Oosterheld, M.; Sala, O.E.; McNaughton, S.J. London : Macmillan Magazines Ltd; 1992 Mar19. Nature v. 356 (6366): p. 234-236; 1992 Mar19. Includes references.

Language: English

Descriptors: South America; Range management; Cattle; Sheep; Animal husbandry; Grazing effects

Abstract: All significant properties of the herbivore trophic level, including biomass, consumption and productivity, are significantly correlated with primary productivity across a broad range of terrestrial ecosystems. Here we show that livestock biomass in South American agricultural ecosystems across a 25-fold gradient of primary productivity exhibited a relationship with a slope essentially identical to unmanaged ecosystems, but with a substantially greater y-intercept. Therefore the biomass of herbivores supported per unit of primary productivity is about an order of magnitude greater in agricultural than in natural ecosystems, for a given level of primary production. We also present evidence of an increase in livestock body size with primary productivity, a pattern previously characterized in natural ecosystems. To our knowledge this is the first quantitative documentation at a regional scale of the impact of animal husbandry practices, such as herding, stock selection and veterinary care, on the biomass and size-structure of livestock herds compared with native herbivores.

102 NAL Call. No.: SF191.F5
Effect of backgrounding regime on animal performance and carcass characteristics of beef steers finished for various periods in the feedlot. Prichard, D.L.; Bertrand, J.E.; Johnson, D.D. Gainesville, Fla. : The Service; 1988. Florida beef cattle research report - Florida Cooperative Extension Service, University of Florida. p. 177-183; 1988.

Language: English

Descriptors: Florida; Brahman; Steers; Autumn; Pasture management; Feedlots; Hay; Concentrates; Secale cereale; Lolium perenne; Trifolium; Carcass quality; Performance

103 NAL Call. No.: 99.8 F7623
The effect of cattle grazing on ponderosa pine regeneration. Kingery, J.L.; Graham, R.T. Ottawa : Canadian Institute of Forestry; 1991 Jun. The Forestry chronicle v. 67 (3): p. 245-248; 1991 Jun. Paper presented at the First Conference on Agroforestry in North America, August 1989, Guelph, Ontario. Includes references.

Language: English

Descriptors: Idaho; Pinus ponderosa; Agroforestry; Silvopastoral systems; Cattle; Grazing effects; Forest plantations; Seedlings; Browsing damage; National forests

Abstract: During the summer and fall of 1982, a study was established on the Nez Perce National Forest in central Idaho to assess the effects of cattle grazing on the performance of a new ponderosa pine (*Pinus ponderosa* Laws.) plantation. Three study sites were located in a Douglas-fir/ninebark (*Pseudotsuga menziesii*/Physocarpus malvaceus) habitat type. Results after six years showed that livestock use can influence tree seedling establishment. Mortality and damage to

tree seedlings from cattle resulted primarily from trampling rather than from browsing. Five and one-half percent of the seedlings were damaged by cattle, of which 3.6% died. Browsing by deer and elk caused the most growth loss. Overall damage was greatest from non-animal causes. Seedling quality at the time of planting, handling of the seedling, and droughty conditions during the first two years of the study contributed to this type of damage. Overall performance of the tree seedlings were relatively poor. Total mortality to tree seedlings resulting from all sources of damage was 43.6% for the grazed treatment and 25.3% for the non-grazed treatment.

104 NAL Call. No.: SF191.F5
Effect of diet on animal performance, fat composition of subcutaneous adipose and liver tissue of beef cattle. Hidiroglou, N.; McDowell, L.R.; Johnson, D.D. Gainesville, Fla. : The Service; 1988. Florida beef cattle research report - Florida Cooperative Extension Service, University of Florida. p. 118-128; 1988. Includes statistical data.

Language: English

Descriptors: Florida; Brahman; Crossbreds; Steers; Feedlots; Performance; Carcass quality; Subcutaneous fat; Unsaturated fatty acids; Liver; Lipids; Oleic acid

105 NAL Call. No.: 49 J82
The effect of fasting, transit plus fasting, and administration of adrenocorticotrophic hormone on the source and amount of weight loss by feeder steers of different ages. Phillips, W.A.; Juniewicz, P.E.; VonTungeln, D.L. Champaign, Ill. : American Society of Animal Science; 1991 Jun. Journal of animal science v. 69 (6): p. 2342-2348; 1991 Jun. Includes references.

Language: English

Descriptors: Beef cattle; Steers; Weight losses; Fasting; Transport; Corticotropin; Excretion; Stress; Age differences

Abstract: Two trials (winter and summer) were conducted to determine effects of fasting and transportation and adrenocorticotrophic hormone (ACTED) administration on the amount and source of weight lost by feeder steers. Sixteen steers, in each of two experiments, were adapted to metabolism status for 10 d, were fed medium-quality hay at 2.1% of BW for 3 d, and then were subjected to either fasting alone or fasting plus transit for 48 h. In Exp. 1 steers were randomly assigned to treatments. In Exp. 2 steers were blocked by age (OLD or YOUNG) and assigned to treatments. Fecal and urinary excretions accounted for 65 and 38% of the total weight lost in Exp. 1 and 2, respectively. Fasting plus transit did not consistently increase the amount of weight lost compared with fasting alone but increased ($P < .01$) plasma glucose concentrations. Injection of ACTH before either fasting alone or fasting plus transit increased ($P < .05$) the amount of weight lost as feces. Steers in the OLD group lost more weight during transit and fasting but regained the lost weight faster ($P < .01$) during the recovery period than did steers in the YOUNG group. Injecting YOUNG steers with ACTH before fasting alone or fasting plus transit increased plasma fibrinogen ($P < .10$) and serum glucose ($P < .05$) concentrations more than ACTH injections in OLD steers. Although fasting and transit elicit mobilization of body nutrients and resulted in a loss of BW, these effects were quickly reversed during the post-stress period.

106 NAL Call. No.: 49 J82
Effect of genotype on basal and ACTH stimulated cortisol response in beef steers during weaning and transit stress. Zavy, M.T.; Phillips, W.A.; Juniewicz, P.E.; VonTungeln, D.L. Champaign, Ill. : American Society of Animal Science; 1988. Journal of animal science v. 66 (suppl.1): p. 234-235; 1988. Paper presented at the 80th Annual Meeting of the American Society of Animal Science, held July 19-22, 1988, New Brunswick, New Jersey. Includes abstract.

Language: English

Descriptors: Beef cattle; Stress; Weaning; Genotypes; Cortisol

107 NAL Call. No.: 100 OK4 (3)
Effect of heat stress on early embryonic development and survival in the beef cow. Biggers, B.G.; Buchanan, D.S.; Wettemann, R.P.; Zavy, M.T.; Geisert, R.D. Stillwater : The Station; 1986 May. Miscellaneous publication - Agricultural Experiment Station, Oklahoma State University (118): p. 303-307; 1986 May.

Language: English

Descriptors: Beef cows; Heat stress; Embryonic development; Survival

108 NAL Call. No.: 49 J82
Effect of heat stress on early embryonic development in the beef cow. Biggers, B.G.; Geisert, R.D.; Wetteman, R.P.; Buchanan, D.S. Champaign, Ill. : American Society of Animal Science; 1987 May. Journal of animal science v. 64 (5): p. 1512-1518; 1987 May. Includes references.

Language: English

Descriptors: Beef cows; Embryonic development; Heat stress; Embryo mortality; Pregnancy

109 NAL Call. No.: 49 J82
Effect of implant sequence and dose on feedlot cattle performance. Mader, T.L. Champaign, Ill. : American Society of Animal Science; 1994 Feb. Journal of animal science v. 72 (2): p. 277-282; 1994 Feb. Includes references.

Language: English

Descriptors: Beef cattle; Steers; Zeranol; Performance; Controlled release; Dosage effects; Feed conversion; Estradiol; Progesterone; Trenbolone; Postweaning interval; Body weight; Liveweight gain; Feed intake; Dressing percentage; Body fat; Carcass quality; Carcass yield

Abstract: Studies were conducted to evaluate the effects of delayed implanting or the use of a low-dose implant followed by a higher-dose implant in feedlot cattle. In the first study, 150 steers were allotted to 15 pens (three pens/treatment) and assigned to a nonimplant treatment (control), a single zeranol (36 mg) implant (R), or a double zeranol implant (DR) administered at the start of a 140-d finishing period, or a single zeranol implant administered at the start of an 80-d growing period, followed by a single (RR) or double (RDR) zeranol implant administered at the start of the finishing period. Steers managed under the DR, RR, and RDR implant schemes had greater ($P < .10$) finishing period gains

and intakes than the control steer group. However, only DR and RDR steer groups had improved ($P < .10$) finishing period feed conversions compared with control steers. In combined growing and finishing periods, the RDR steer group displayed the lowest ($P = .12$) feed:gain ratio. In a second trial, conducted concurrently to the zeranol trial, steers that did not receive an initial implant containing 20 mg of estradiol benzoate plus 200 mg of progesterone (S) but were subsequently implanted twice, once at the start of the finishing period and again 80 d later, had a lower ($P < .11$) finishing period feed:gain ratio (6.08 vs 6.51) than steers implanted all three times. In a third trial, implanting steers with one-half S vs S, at the start of a 92-d growing period, resulted in improved ($P < .05$) gain (1.63 vs 1.54 kg/d) and feed: gain ratio (5.86 vs 6.27) in the subsequent finishing period, in which both groups received S, but not over the entire feeding period. Compared with using S alone, as a finishing phase implant, no differences were found in performance or carcass quality from using S in combination with trenbolone acetate. Delayed implanting or using a low-dose implant during an initial feeding period provides performance enhancement in subsequent feeding periods; however, benefits are not great enough to consistently show significant performance benefits over the entire growing and finishing period.

110 NAL Call. No.: 41.8 AM3A
Effect of initial restraint, weaning, and transport stress on baseline and ACTH-stimulated cortisol responses in beef calves of different genotypes. Zavy, M.T.; Juniewicz, P.E.; Phillips, W.A.; VonTungeln, D.L. Schaumburg, Ill. : American Veterinary Medical Association; 1992 Apr. American journal of veterinary research v. 53 (4): p. 551-557; 1992 Apr. Includes references.

Language: English

Descriptors: Calves; Beef cattle; Zebu; Stress; Restraint of animals; Weaning; Transport of animals; Hydrocortisone; Blood plasma; Corticotropin; Breed differences

Abstract: The productivity and well-being of animals can be substantially affected by stress. This is particularly true in the case of beef calves that are subjected to a multitude of stressors over a short period during the first year of life. Perhaps the most often studied stress-responsive variable has been blood corticosteroid concentrations. Factors such as age, gender, genetics, and degree of prior experience, can influence how an animal perceives and responds to a given stressor. Few studies have tried to control these variables, and accordingly, many conflicting results have been published regarding the impact of various stressors on cortisol response. We measured baseline plasma cortisol concentration over a 44-day study in *Bos indicus* and *Bos taurus* calves. Plasma cortisol values in *Bos indicus* calves were higher (32.60 ± 0.66 ng/ml) than values in calves of *Bos taurus* (25.81 ± 0.76) breeding. A precipitous decrease in cortisol concentration was observed 7 days after transport stress in all calves. Baseline cortisol concentration did not provide any indication of the intensity of the various stressors. However, significant differences were readily observed after ACTH administration. On the basis of cortisol secretion, stresses of transport and weaning were similar and were the most stressful to calves, regardless of genotype.

111 NAL Call. No.: 49.9 AU72
Effect of level of handling on meat quality of cattle of two breed types. McIntyre, B.L.; Ryan, W.J.
Sydney : Pergamon Press; 1986.
Proceedings of the Australian Society of Animal Production v.

16: p. 267-270; 1986. Includes references.

Language: English

Descriptors: Beef cattle; Aberdeen-angus; Shorthorn; Handling; Stress; Electrical treatment; Meat quality; Ph; Tenderness

112 NAL Call. No.: 100 OK4 (3)

The effect of mass medication on health and performance of newly arrived stocker cattle.

Gill, D.R.; Smith, R.A.; Hicks, R.B.; Ball, R.L.

Stillwater : The Station; 1986 May.

Miscellaneous publication - Agricultural Experiment Station, Oklahoma State University (118): p. 260-268; 1986 May.

Includes references.

Language: English

Descriptors: Calves; Drug therapy; Stress; Morbidity

113 NAL Call. No.: TX373.M4

Effect of mixing male sex types of cattle on their meat quality and stress-related parameters.

Mohan Raj, A.B.; Moss, B.W.; Rice, D.A.; Kilpatrick, D.J.;

McCaughey, W.J.; McLauchlan, W.

Essex : Elsevier Applied Science Publishers; 1992.

Meat science v. 32 (4): p. 367-386; 1992. Includes references.

Language: English

Descriptors: Meat quality; Male animals

114 NAL Call. No.: QP251.A1T5

The effect of postweaning level of dietary energy on sex drive and semen quality of young beef bulls.

Mwansa, P.B.; Makarechian, M.

Stoneham, Mass. : Butterworth-Heinemann; 1991 Jun.

Theriogenology v. 35 (6): p. 1169-1178; 1991 Jun. Includes references.

Language: English

Descriptors: Beef bulls; Beef breeds; Semen characters; Ejaculate volume; Scrotum; Size; Spermatozoa; Motility; Sexual behavior; Mating behavior; Libido; Bull feeding; Energy content; Digestible energy

Abstract: Two postweaning feeding trials were conducted on 112 bull calves from a beef synthetic breed group to examine the effects of postweaning level of dietary energy and change in the level of energy on sex drive and semen quality of young bulls in 1988 and 1989. Within each year, the test period was 168 d, which was divided in two periods of 77 d and separated by a 14-d adjustment period. Within each year the bulls were randomly assigned to eight pens. The pen population was balanced with respect to age and weight of bulls. Bulls in four of the pens were fed a high concentrate diet while those in the remaining four pens were fed a low concentrate diet consisting of one half of the high diet plus hay ad libitum in the first period. After the adjustment period, the diets of four pens of bulls were reversed from high to low or from low to high resulting in high-high, high-low, low-high and low-low dietary treatments. The year was a significant ($P < 0.05$) source of variation for all the components of libido score except for number of services achieved. The effect of energy on components of libido and libido score was not significant

($P>0.05$). Bulls on high-high had significantly larger scrotal circumference but exhibited poorer semen characteristics than their contemporaries on high-low, low-high and low-low diets. Even though feeding of high energy diet throughout the feedlot test period showed a positive effect on scrotal circumference, its effect on semen quality was negative. It was found that feeding a low energy diet in either half of the feedlot test period may prevent the detrimental effects of prolonged high energy feeding on semen characteristics of young beef bulls.

115 NAL Call. No.: 49 J82
Effect of pre- and postweaning zeranol implant on steer calf performance. Mader, T.L.; Clanton, D.C.; Ward, J.K.; Pankaskie, D.E.; Deutscher, G.H. Champaign, Ill. : American Society of Animal Science; 1985 Sep. Journal of animal science v. 61 (3): p. 546-551; 1985 Sep. Includes references.

Language: English

Descriptors: Steers; Zeranol; Implantation; Postweaning interval; Preweaning period; Stress; Carcass quality

116 NAL Call. No.: 41.8 V641
Effect of preslaughter experience on behaviour, plasma cortisol and muscle pH in farmed red deer. Smith, R.F.; Dobson, H. London : The Association; 1990 Feb17. The Veterinary record : journal of the British Veterinary Association v. 126 (7): p. 155-158; 1990 Feb17. Includes references.

Language: English

Descriptors: Cervus elaphus; Slaughter; Stress; Animal behavior; Cortisol; Blood plasma; Muscles; Ph; Venison

117 NAL Call. No.: 41.8 V643
Effect of pre-slaughter handling on the behaviour and blood composition of beef cattle. Cockram, M.S.; Corley, K.T.T. London : Bailliere Tindall; 1991 Sep. British veterinary journal v. 147 (5): p. 444-454; 1991 Sep. Includes references.

Language: English

Descriptors: Beef cattle; Slaughter; Handling; Blood composition; Animal behavior; Abattoirs

Abstract: The pre-slaughter handling, behaviour and blood composition of beef cattle at slaughter was studied in a commercial slaughterhouse. The main problems identified were the routine use of driving instruments and delays caused by stoppages in the slaughter line. The plasma concentration of cortisol at the time of slaughter was positively correlated with the time spent standing still and with the time spent in the pre-stun pen. The plasma activity of creatine kinase was positively correlated with the time spent in the race, but no correlations between creatine kinase and physical activity in the race were found. The plasma concentration of glucose was positively correlated with the time spent trotting and the number of times that struggling occurred. The proportions of cattle struggling, vocalizing and defaecating were greatest when they were confined in the race and pre-stun pen. Cattle kept overnight in the lairage had a greater concentration of free fatty acids at the time of slaughter than those slaughtered on the day of arrival. There were no other

significant differences in either the blood composition or the handling and behaviour of cattle kept overnight in the lairage, compared with those slaughtered on the day of arrival. Some of the handling problems observed were caused by incorrect design of the handling facilities. There should be some means of removing cattle from a race if delays are encountered and some means of handling the cattle in the race other than by using an electrical goad. The optimal dimensions of races and passageways to prevent crowding and turning around should be assessed at the design stage. Non-slip floors are essential.

118 NAL Call. No.: SF601.B6
The effect of previous experiences on livestock behavior during handling. Grandin, T.
Santa Barbara, Calif. : Veterinary Practice Publishing Company; 1993 Apr. Agri-Practice v. 14 (4): p. 15-20; 1993 Apr. Includes references.

Language: English

Descriptors: Colorado; Cattle; Sheep; Animal behavior; Veterinary medicine; Handling; Chutes; Hydraulic equipment; Restraint of animals

119 NAL Call. No.: 49 J82
Effect of soybean hull:soy lecithin-soapstock mixture on ruminal digestion and performance of growing beef calves and lactating dairy cattle. Shain, D.H.; Sindt, M.H.; Grant, R.J.; Klopfenstein, T.J.; Stock, R.A. Champaign, Ill. : American Society of Animal Science; 1993 May. Journal of animal science v. 71 (5): p. 1266-1275; 1993 May. Includes references.

Language: English

Descriptors: Dairy cows; Calves; Soybean husks; Soybean soapstock; Lectins; Rumen digestion; Crude protein; Protein digestion; Maize; Diet; Nutrient content; Feed intake; Milk yield; Milk composition; Volatile fatty acids; Energy balance; Body condition

Abstract: Four experiments were conducted to evaluate the effect of a soybean hull, soy lecithin, and soapstock mixture on ruminal fiber and protein digestion, growth efficiency of beef calves, and lactational performance of dairy cattle. An initial mixing experiment determined that a 4:1 ratio (DM basis) of soy lecithin:soapstock could be added to soybean hulls at 15% (wt/wt, DM basis); this mixture had acceptable mixing and handling characteristics. Dietary addition of a mixture of 85% soybean hulls, 12% soy lecithin, and 3% soapstock (DM basis; SLS) to provide 0, 3, 5, or 7% supplemental fat resulted in a linear ($P < .01$) decrease in in situ rate of ruminal NDF digestion with no effect on rate of CP digestion. Daily gain, DMI, and feed efficiency (kilograms of gain/kilogram of DMI) of growing beef calves were not affected ($P > .10$) as graded levels of SLS replaced corn grain. However, as graded levels of SLS replaced soybean hulls, daily gain and feed efficiency increased linearly ($P < .01$). Based on the results of these trials, Holstein dairy cattle were fed four isonitrogenous and isoenergetic diets that contained either high levels of nonfiber carbohydrates (43%) and no added fat, 1% ruminally inert fat, a 6% level of SLS, or a 12% SLS level (all on DM basis). Efficiency of 4% fat-corrected milk production (kilograms of milk/kilogram of DMI) was greatest for cows fed SLS at 6% of dietary DM. The SLS mixture was an excellent source of fiber and vegetable fat, comparable in feeding value to corn grain, for inclusion in the diets of beef calves and dairy cows.

120 NAL Call. No.: SF207.S68
Effect of straw and newspaper bedding on cold season feedlot performance in two housing systems.
Birkelo, C.P.; Lounsbery, J.
Brookings, SD : Animal and Range Sciences Dept., Agricultural Experiment Station, Cooperative Extension Service, South Dakota State University, [1986?-; 1992 Aug.
South Dakota beef report (92-11): p. 42-45; 1992 Aug.

Language: English

Descriptors: South Dakota; Cabt; Beef cattle; Feedlots;
Litter; Straw; Newspapers; Cold tolerance; Liveweight gain;
Animal housing

121 NAL Call. No.: SF601.B6
The effect of stressors like rumen overload and induced abortion on BRD in feedlot cattle.
Edwards, A.J.
Santa Barbara, Calif. : Veterinary Practice Publishing Company; 1989 Mar. Agri-Practice v. 10 (2): p. 10-11, 14-15; 1989 Mar. Includes references.

Language: English

Descriptors: Nebraska; Kansas; Beef cattle; Feedlots; Stress;
Rumen; Abortion; Respiratory diseases; Viruses; Pasteurella haemolytica; Pasteurella multocida

122 NAL Call. No.: 41.8 C163
The effect of the stress of weaning and transport on white blood cell patterns and fibrinogen concentration of beef calves of different genotypes. Phillips, W.A.; Juniewicz, P.E.; Zavy, M.T.; Von Tungeln, D.L. Ottawa : Agricultural Institute of Canada; 1989 Jun.
Canadian journal of animal science v. 69 (2): p. 333-340; 1989 Jun. Includes references.

Language: English

Descriptors: Calves; Beef cattle; Zebu cattle; Genotypes;
Stress; Weaning; Transport of animals; Leukocytes; Fibrinogen

123 NAL Call. No.: aS21.A8U5/ARS
Effect of winter nutrition level and bahia and perennial peanut pasture on performance of growing cattle.
Kunkle, W.E.; Palmer, A.Z.; Spreen, T.H.; Hammond, A.C.; Butts, W.T. Jr; Williams, M.J.; Baker, F.S. Jr
Washington, D.C. : The Service; 1989.
Reprints - U.S. Department of Agriculture, Agricultural Research Service [114]: p. A/19-A/27; 1989.

Language: English

Descriptors: Florida; Cattle; Animal nutrition; Feedlots;
Grazing; Paspalum notatum; Arachis glabrata; Liveweight gains;
Carcass quality; Winter

124 NAL Call. No.: SF601.B6
The effect of zeranol and trenbolone acetate and estradiol and trenbolone acetate on carcass and performance parameters of finishing steers. 1. Thornsberry, R.M.
Santa Barbara, Calif. : Veterinary Practice Publishing Company; 1993 May. Agri-Practice v. 14 (5): p. 29-32; 1993

May.

Language: English

Descriptors: Missouri; Beef cattle; Zeranol; Estradiol;
Trenbolone; Implantation; Feedlots; Carcass quality; Fattening
performance

125 NAL Call. No.: 49 J82
Effects of 84-, 112- and 140-day postweaning feedlot
performance tests for beef bulls.
Brown, A.H. Jr; Chewning, J.J.; Johnson, Z.B.; Loe, W.C.;
Brown, C.J. Champaign, Ill. : American Society of Animal
Science; 1991 Feb. Journal of animal science v. 69 (2): p.
451-461; 1991 Feb. Includes references.

Language: English

Descriptors: Beef bulls; Size; Carcass weight; Growth rate;
Liveweight gain; Growth curve; Performance testing; Breeders'
associations; Cooperative services; Duration; Breed
differences; Objectives; Analysis of variance

Abstract: Changes in performance traits in beef cattle over
the last 30 yr necessitate the reevaluation of central testing
procedures to ensure that they are cost effective and
appropriate for current test objectives. The objective of this
study was to evaluate the potential for reducing the length of
evaluation from 140 d to either 112 or 84 d. Data evaluated
were postweaning feedlot performance test records (collected
from 1977 to 1986) on 1,830 individually fed bulls. Bulls
representing 13 breeds (n > 25 per breed) were evaluated in
the University of Arkansas Cooperative Bull Tests at
Fayetteville, Hope, and Monticello, Arkansas. Models were fit
for ADG, daily feed intake (FI) and feed conversion (FCONV)
from d 1 to d 140 (ADG1-140, FI1-140 and FCONV1-140,
respectively) and from d 1 to d 112 (ADG1-112, FI1-112 and
FCONV1-112, respectively). Models fit for ADG1-140, FI1-140,
and FCONV1-140 using information up to d 112 had R² of .90,
.99, .88, and .94, respectively, and using information up to d
84 had R² of .82, .94, and .80, respectively. Spearman rank
correlation coefficients (all P < .0001) were .93 for ADG1-140
and ADG1-112, .93 for ADG1-112 and ADG1-84, .99 for FI1-140
and FI1-112, .91 for FCONV1-140 and FCONV1-112, and .90 for
FCONV1-112 and FCONV1-84. These coefficients indicate that
bulls ranked similarly for performance traits at 84, 112, and
140 d. If the primary objective of central station testing is
to evaluate ADG during the linear phase of growth, and if
testing procedures are those currently recommended by the Beef
Improvement Federation, then feeding bulls beyond 112 d has no
advantage because the information upon which selection
decisions are made is similar at both 112 and 140 d.

126 NAL Call. No.: TX373.M4
The effects of castration, preslaughter stress and zeranol
implants on beef. 1. The texture of loin steaks from bovine
males.
Jeremiah, L.E.; Newman, J.A.; Tong, A.K.W.; Gibson, L.L.
Essex : Elsevier Applied Science Publishers; 1988.
Meat science v. 22 (2): p. 83-101; 1988. Includes references.

Language: English

Descriptors: Bovidae; Male animals; Castration; Zeranol;
Transport; Stress; Steaks; Texture

127 NAL Call. No.: TX373.M4

The effects of castration, preslaughter stress and zeranol implants on beef. 2. Cooking properties and flavor of loin steaks from bovine males. Jeremiah, L.E.; Newman, J.A.; Tong, A.K.W.; Gibson, L.L.
Essex : Elsevier Applied Science Publishers; 1988.
Meat science v. 22 (2): p. 103-121; 1988. Includes references.

Language: English

Descriptors: Bovidae; Male animals; Castration; Zeranol; Transport; Stress; Steaks; Cooking; Flavors

128 NAL Call. No.: SF207.B442
Effects of dietary energy source and creep feeding on calf performance after feedlot arrival.
Loerch, S.C.; Fluharty, F.L.
Wooster, Ohio : The Ohio State University, Ohio Agricultural Research and Development Center; 1992 Mar.
Ohio beef cattle research & industry report (92-1): p. 53-56; 1992 Mar.

Language: English

Descriptors: Ohio; Beef cattle; Calves; Feedlots; Creep feeding; Fattening performance; Growth; Silage; Postweaning interval

129 NAL Call. No.: KF27.S638 1988d
Effects of drought on agribusiness and rural economy hearing before the Subcommittee on Energy and Agriculture of the Committee on Small Business, House of Representatives, One Hundredth Congress, second session, Washington, DC, July 13, 1988.
United States. Congress. House. Committee on Small Business. Subcommittee on Energy and Agriculture
Washington [D.C.] : U.S. G.P.O. : For sale by the Supt. of Docs., Congressional Sales Office, U.S. G.P.O.; 1988; Y 4.Sm 1:100-55. iii, 93 p. : ill., 1 map ; 24 cm. Distributed to some depository libraries in microfiche. Serial no. 100-55.

Language: English; English

Descriptors: Droughts; Economic aspects; United States; Livestock; United States; Effect of drought on; Plants, Effect of drought on; United States

130 NAL Call. No.: SF207.B442
Effects of energy level and protein source on performance and rumen function of newly arrived feedlot steers.
Fluharty, F.L.; Loerch, S.C.
Wooster, Ohio : The Ohio State University, Ohio Agricultural Research and Development Center; 1990 Mar.
Ohio beef cattle research & industry report (90-2): p. 109-123; 1990 Mar. Includes references.

Language: English

Descriptors: Ohio; Beef cattle; Feedlots; Protein sources; Rumen digestion; Fattening performance; Growth; Energy; Soybeans; Maize; Blood meal; Silage

131 NAL Call. No.: 49.9 AU72
The effects of fasting and cold stress on dark-cutting and bruising in cattle. Warner, R.D.; Eldridge, G.A.; Barnett, J.L.; Halpin, C.G.; Cahill, D.J. Sydney : Pergamon Press;

1986.

Proceedings of the Australian Society of Animal Production v. 16: p. 383-386; 1986. Includes references.

Language: English

Descriptors: Beef cattle; Fasting; Cold stress; Meat quality; Bruising; Ph; Color

132 NAL Call. No.: SF207.B442

Effects of fat level, protein level and protein source on performance of newly arrived feedlot steers.

Fluharty, F.L.; Loerch, S.C.

Wooster, Ohio : The Ohio State University, Ohio Agricultural Research and Development Center; 1991 Mar.

Ohio beef cattle research & industry report (91-2): p. 1-11; 1991 Mar. Includes references.

Language: English

Descriptors: Ohio; Beef cattle; Feedlots; Protein sources; Protein uptake; Fat absorption; Blood meal; Soybeans; Urea; Fattening performance; Growth

133 NAL Call. No.: SF191.F5

Effects of feedlot environment, implants and vitamin A on the performance of crossbred steers fed during the summer.

Baker, F.S. Jr; Kunkle, W.E.; Palmer, A.Z.; Wakeman, D.L.

Gainesville, Fla. : The Service; 1988.

Florida beef cattle research report - Florida Cooperative Extension Service, University of Florida. p. 129-137; 1988. Includes statistical data.

Language: English

Descriptors: Florida; Steers; Cattle fattening; Cattle feedlot soils; Concrete; Shading; Pens; Implantation; Weight gain; Feed conversion efficiency; Carcass quality; Summer; Dressing percentage

134 NAL Call. No.: SF207.B442

Effects of FermWay on feedlot cattle performance.

Loerch, S.C.

Wooster, Ohio : The Ohio State University, Ohio Agricultural Research and Development Center; 1991 Mar.

Ohio beef cattle research & industry report (91-2): p. 12-17; 1991 Mar.

Language: English

Descriptors: Ohio; Beef cattle; Feedlots; Biofermal; Fattening performance; Growth; Silage; Maize

135 NAL Call. No.: TP368.I7

The effects of handling, transport, slaughter and chilling on meat quality and yield in pigs--a review.

Tarrant, P.V.

Dublin : Teagasc; 1989.

Irish journal of food science and technology v. 13 (2): p. 79-107; 1989. Literature review. Includes references.

Language: English

Descriptors: Ireland; Pigs; Handling; Transport; Slaughter; Chilling; Meat yield; Food quality

136 NAL Call. No.: QL750.A6
The effects of long-term individual vs. group housing on the sexual behavior of beef bulls.
Price, E.O.; Wallach, S.J.R.; Silver, G.V.
Amsterdam : Elsevier Science Publishers, B.V.; 1990 Oct.
Applied animal behaviour science v. 27 (4): p. 277-285; 1990 Oct. Includes references.

Language: English

Descriptors: Beef bulls; Cattle housing; Groups; Sexual behavior; Reproductive performance

137 NAL Call. No.: SF601.B6
Effects of lonophore management programs on performance of feedlot cattle. Malcolm, K.J.; Branine, M.E.; Galyean, M.L.
Santa Barbara, Calif. : Veterinary Practice Publishing Company; 1992 Jul. Agri-Practice v. 13 (7): p. 7-8, 12-14, 16; 1992 Jul. Includes references.

Language: English

Descriptors: New Mexico; Beef cattle; Ionophores; Feedlots; Fattening performance; Rotation

138 NAL Call. No.: 49 J82
Effects of nutrient deficiencies and excesses on reproductive efficiency of livestock.
Dunn, T.G.; Moss, G.E.
Champaign, Ill. : American Society of Animal Science; 1992 May. Journal of animal science v. 70 (5): p. 1580-1593; 1992 May. Literature review. Includes references.

Language: English

Descriptors: Cattle; Sheep; Grazing; Retinol; Protein intake; Nutrition; Estrous cycle; Reproductive efficiency; Lh; Plane of nutrition; GnRH; Literature reviews

Abstract: Successful reproduction is dependent on a host of macro- and micronutrients and ceases well before an animal expires from deficiency of a particular nutrient. This review focuses on the functional roles phosphorus, vitamin A and beta-carotene, protein, and energy play in reproductive processes. Although it is not known whether deficiencies of these nutrients limit reproduction through common or discrete mechanisms, appropriate quantities of these nutrients are required for optimal reproduction. Mechanisms through which nutritional status is perceived by the hypothalamic-pituitary-gonadal axis remain unclear but seem to impinge on hypothalamic regions that selectively regulate production and release of pituitary trophic hormones. Body condition, or degree of fatness, seems to be the most reliable indicator of well-being of an animal, and when coupled with changes in BW, provides a useful method to assess reproductive potential.

139 NAL Call. No.: 49 J82
Effects of placing cattle on feed at two-month intervals and housing on feedlot performance and carcass grades.
Pusillo, G.M.; Hoffman, M.P.; Self, H.L.
Champaign, Ill. : American Society of Animal Science; 1991 Feb. Journal of animal science v. 69 (2): p. 443-450; 1991 Feb. Includes references.

Language: English

Descriptors: Beef cattle; Feedlots; Cattle housing; Seasonal variation; Feed intake; Liveweight gain; Feed conversion efficiency; Carcass yield; Carcass quality

Abstract: A 5-yr study was conducted involving the placement of yearling steers on feed at 2-mo intervals under three different housing systems. A total of 3,571 steers (180 pens) initially average 318 kg was used. Evaluations were made for DM intake ADG, feed efficiency (FE), carcass quality (QG), and yield grades (YG). Cattle were assigned to either an open lot with overhead shelter (S), an open lot without overhead shelter (NS), or an open-front confinement building (C). Each treatment consisted of two lots of 20 steers each per interval per trial. Corn grain provided 85% of the energy; the remainder was supplied by corn silage and protein supplement. Cattle were fed 140 to 180 d to achieve an average slaughter weight of 500 kg. The main effects of year (Y), month (M), and housing (H) affected DM intake, ADG, FE, and final live weight ($P < .01$). The interactions for Y X M, M X H and Y X M X H affected ADG ($P < .05$). Month and H affected hot carcass weight ($P < .01$). Year affected YG, and year and month affected QG ($P < .01$). Month effects on DM intake and ADG indicated that cattle started in May had the highest intake and ADG ($P < .05$) and that cattle started in November had the lowest ($P < .05$) DMI and ADG. Month effects on FE indicated that cattle were most efficient when placed on feed during March, May, and July (5.82, 5.72, and 5.66 kg DM/kg gain; $P < .05$). Housing effects indicated that S cattle had the highest DM intake, ADG, and FE (7.79, 1.29, and 6.15 kg; $P < .05$) and that C had the lowest DM intake and ADG (6.97 and 1.09 kg; $P < .05$). Body composition, as determined by YG and QG, was relatively unaffected by the season or housing. These results indicate that starting time on feed and housing system significantly influenced cattle feedlot performance without influencing body composition.

140 NAL Call. No.: 49 J82
Effects of preconditioning on performance of beef calves before and after entering the feedlot.
Peterson, E.B.; Strohbehn, D.R.; Ladd, G.W.; Willham, R.L.
Champaign, Ill. : American Society of Animal Science; 1989
Jul. Journal of animal science v. 67 (7): p. 1678-1686; 1989
Jul. Includes references.

Language: English

Descriptors: Beef cattle; Calves; Creep feeding; Castration; Polling; Vaccination

141 NAL Call. No.: 49 J82
Effects of preconditioning on pre- and post-shipment performance of feeder calves.
Pritchard, R.H.; Mendez, J.K.
Champaign, Ill. : American Society of Animal Science; 1990
Jan. Journal of animal science v. 68 (1): p. 28-34; 1990 Jan.
This record corrects ID No. 90013323 which was incorrectly entered as issue 19. Includes references.

Language: English

Descriptors: Calves; Beef cattle; Adaptation; Conditioning; Transport of animals; Feedlots; Weight losses; Fattening performance; Beef production

142 NAL Call. No.: SF207.B442
Effects of protein level and protein source on performance of newly arrived feedlot steers.

Fluharty, F.L.; Loerch, S.C.

Wooster, Ohio : The Ohio State University, Ohio Agricultural Research and Development Center; 1992 Mar.

Ohio beef cattle research & industry report (92-1): p. 57-73; 1992 Mar. Includes references.

Language: English

Descriptors: Ohio; Beef cattle; Calves; Feedlots; Protein sources; Fattening performance; Growth; Nutrient requirements; Crude protein; Soybeans; Blood meal; Postweaning interval; Urea

143 NAL Call. No.: 49 J82

Effects of recombinant bovine somatotropin and dietary energy intake on growth, secretion of luteinizing hormone, follicular development, and onset of puberty in beef heifers.

Hall, J.B.; Schillo, K.K.; Fitzgerald, B.P.; Bradley, N.W. Champaign, Ill. : American Society of Animal Science; 1994 Mar. Journal of animal science v. 72 (3): p. 709-717; 1994 Mar. Includes references.

Language: English

Descriptors: Heifers; Somatotropin; Energy intake; Lh; Hormone secretion; Age; Puberty; Follicles; Body weight; Liveweight gain; Height; Blood plasma; Insulin; Blood sugar; Urea

Abstract: The effects of dietary energy and recombinant bovine somatotropin (bST) on pattern of LH release, follicular development, and onset of puberty were studied in 40 Angus heifers. At 7 mo of age, heifers were assigned to a 2 X 2 factorial experiment; the main effects were dietary energy (high [HDE]: 14.15 Mcal of ME/d or moderate [MDE]: 10.84 Mcal of ME/d) and somatotropin (bST; 350 mg every 2 wk or vehicle). Beginning at 9 mo of age, heifers were observed twice daily for estrous activity. From 10.5 to 12 mo of age, five heifers from each treatment group were selected for weekly ultrasound examination of ovarian structures and biweekly sequential blood sampling to determine concentrations of LH. Somatotropin treatment altered intermediary metabolism in a manner consistent with enhanced accretion of lean tissue and decreased deposition of fat. The HDE heifers were younger ($P < .001$) at puberty than the MDE heifers, but BW at puberty was not different among treatment groups. Age and body weight at puberty were not affected by bST. Frequency of LH pulses increased within the 10.5 to 12 mo of age sampling window in HDE-treated heifers but not in MDE heifers (dietary energy X month of age; $P < .02$). Secretion of LH was unaffected by bST. Ovaries of bST-treated heifers tended ($P < .09$) to have fewer follicles > 5 mm in diameter than those of vehicle-treated heifers. We conclude that chronic treatment with bST did not alter age at puberty or pattern of LH release in heifers and that even modest differences in energy intake influence the timing of the prepubertal increase in pulsatile LH release.

144 NAL Call. No.: SF207.B442

Effects of restricting intake of high energy diets on the performance of feedlot cattle.

Loerch, S.C.

Wooster, Ohio : The Ohio State University, Ohio Agricultural Research and Development Center; 1990 Mar.

Ohio beef cattle research & industry report (90-2): p. 98-108; 1990 Mar. Includes references.

Language: English

Descriptors: Ohio; Beef cattle; Feedlots; Concentrates;

Monensin; Feed supplements; Protein sources; Fattening performance; Growth

145 NAL Call. No.: SF207.B442
Effects of roughage level and timing of roughage inclusion on performance of feedlot cattle.
Loerch, S.C.; Fluharty, F.L.
Wooster, Ohio : The Ohio State University, Ohio Agricultural Research and Development Center; 1992 Mar.
Ohio beef cattle research & industry report (92-1): p. 36-44; 1992 Mar. Includes references.

Language: English

Descriptors: Beef cattle; Feedlots; Roughage; Fattening performance; Maize; Silage

146 NAL Call. No.: 41.8 Am3A
Effects of shipping, handling, adrenocorticotrophic hormone, and epinephrine on alpha-tocopherol content of bovine blood.
Sconberg, S.; Nockels, C.F.; Bennett, B.W.; Bruynickx, W.; Blancquaert, A.M.B.; Craig, A.M.
Schaumburg, Ill. : American Veterinary Medical Association; 1993 Aug. American journal of veterinary research v. 54 (8): p. 1287-1293; 1993 Aug. Includes references.

Language: English

Descriptors: Beef cattle; Alpha-tocopherol; Stress; Transport of animals; Handling; Corticotropin; Epinephrine; Blood plasma; Erythrocytes; Neutrophils; Creatine kinase; Enzyme activity; Blood sampling

Abstract: In 2 studies, plasma, erythrocyte, and neutrophil alpha-tocopherol concentrations were monitored in beef cattle after shipping, handling, and sample collection. On the basis of alpha-tocopherol results, an additional 2 studies were designed to measure the effects of administration of adrenocorticotrophic hormone (ACTH) and epinephrine on the alpha-tocopherol concentration in the aforementioned blood constituents and on creatine kinase (CK) activity in Holstein calves. In the first of these studies, 15 beef cattle that had recently arrived at the feedlot consumed feed supplemented daily with 1,000 IU of dl-alpha-tocopheryl acetate. Values for initial blood samples indicated that CK activity was high. Although plasma alpha-tocopherol concentration indicated that vitamin supplementation was adequate, RBC and neutrophil alpha-tocopherol values were generally nondetectable. After 4 weeks of supplementation, plasma alpha-tocopherol concentration increased ($P < 0.05$), and neutrophil and RBC alpha-tocopherol values became measurable in most of the cattle. In the second study, 6 beef heifers had decreased ($P < 0.05$) plasma, RBC, and neutrophil alpha-tocopherol values after multiple periods of handling and blood sample collection. In the third and fourth studies, 10 tamed Holstein heifer calves, 5 of which were administered ACTH and epinephrine to simulate stress effects on blood alpha-tocopherol concentrations and CK activity. In study 3, the vitamin E-adequate heifers had increased blood CK ($P < 0.001$) activity and cortisol ($P < 0.01$) concentration, and decreased ($P < 0.05$) neutrophil alpha-tocopherol concentration after hormone injections. In study 4, when vitamin E-deficient calves received the aforementioned hormones, CK activity increased ($P < 0.05$) and RBC alpha-tocopherol concentration decreased ($P < 0.05$), whereas plasma and neutrophil values did not change. These results indicate that shipping and handling, or the stress paradigm of ACTH and epinephrine injections, may reduce the alpha-tocopherol content of plasma, RBC, and

neutrophils while increasing plasma CK activity, which indicates membrane destruction.

147 NAL Call. No.: SF779.5.A1B6
Effects of slatted flooring on claw shape in intensively housed fattening beef cattle.
Murphy, P.A.; Hannan, J.
Stillwater, Okla. : American Association of Bovine Practitioners; 1987 Nov. The Bovine practitioner (22): p. 133-135. ill; 1987 Nov. Includes references.

Language: English

Descriptors: Beef cattle; Cattle fattening; Slatted floors; Intensive livestock farming; Cattle housing; Hoof and claw diseases; Lameness; Abrasion

148 NAL Call. No.: SB599.J69
Effects of stable flies (Diptera: Muscidae) and heat stress on weight gain and feed conversion of feeder cattle.
Campbell, J.B.; Catangui, M.A.; Thomas, G.D.; Boxler, D.J.; Davis, R. Clemson, SC : South Carolina Entomological Society, c1984-; 1993 Jul. Journal of agricultural entomology v. 10 (3): p. 155-161; 1993 Jul. Includes references.

Language: English

Descriptors: Cattle; Stomoxys calcitrans; Heat stress; Weight gain; Feed conversion

149 NAL Call. No.: 421 J822
Effects of stable flies (Diptera: Muscidae) and heat stress on weight gain and feed efficiency of feeder cattle.
Wieman, G.A.; Campbell, J.B.; Deshazer, J.A.; Berry, I.L. Lanham, Md. : Entomological Society of America; 1992 Oct. Journal of economic entomology v. 85 (5): p. 1835-1842; 1992 Oct. Includes references.

Language: English

Descriptors: Nebraska; Cattle breeds; Crossbreds; Stomoxys calcitrans; Adverse effects; Bites; Crowding; Heat stress; Liveweight gain; Pens; Screens

Abstract: Cattle respond to the feeding of stable flies, *Stomoxys calcitrans* (L.), by bunching to protect their front legs. This bunching can increase heat stress which indirectly accounts for much of the reduction in cattle weight gains. We used fly-screened, self-contained feedlot pens which allowed regulation of fly populations feeding on cattle. The indirect fly effects (bunching and heat stress) accounted for 71.5% of the reduced weight gain. The direct effect of the biting flies and energy loss involved in fighting flies accounted for 28.5% of the reduced weight gain.

150 NAL Call. No.: 389.79 M76
Effects of stress and organic probiotics on the performance of weaned beef calves.
Ansotegui, R.; Clark, C.; Wiley, S.; Gray, D.
Bozeman, Mont. : Animal and Range Science Dept. and Montana Cooperative Extension Service, Montana State University, Bozeman, in cooperation with the Montana Feed Association,; 1992.
Proceedings of the ... Montana Livestock Nutrition Conference (45): p. 10.1-10.4.; 1992. Meeting held January 30-31, 1992, Bozeman, Montana. Includes references.

Language: English

Descriptors: Montana; Cabt; Calves; Liveweight gain; Rumen bacteria; Stress; Cost benefit analysis; Transport

151 NAL Call. No.: SF961.A5
The effects of stress on the immunology of the stocker calf.
Von Tungeln, D.L.
Stillwater, Okla. : The Association; 1985, reprinted 1986.
Proceedings ... annual convention - American Association of
Bovine Practitioners 1986). (18th): p. 109-112; 1985,
reprinted 1986. Includes 18 references.

Language: English

Descriptors: Beef cattle; Calves; Stress; Immunology;
Environment; Transport; Hematology; Metabolism; Cortisol;
Glucocorticoids

152 NAL Call. No.: 49 J82
Effects of synthetic hormone implants, singularly or in
combinations, on performance, carcass traits, and longissimus
muscle palatability of Holstein steers.
Apple, J.K.; Dikeman, M.E.; Simms, D.D.; Kuhl, G.
Champaign, Ill. : American Society of Animal Science; 1991
Nov. Journal of animal science v. 69 (11): p. 4437-4448; 1991
Nov. Includes references.

Language: English

Descriptors: Steers; Synthetic hormones; Feed conversion;
Performance; Controlled release; Feed intake; Carcass yield;
Muscles; Skinning; Beef; Shear strength; Tenderness; Sensory
evaluation

Abstract: Seventy-two Holstein steers averaging 182 kg were assigned randomly to one of six treatment groups: 1) nonimplanted controls (C); 2) implanted with 36 mg of zeranol (Z); 3) implanted with 20 mg of estradiol benzoate and 200 mg of progesterone (EP); 4) implanted with 140 mg of trenbolone acetate (TBA); 5) implanted with 140 mg of trenbolone acetate plus 20 mg of estradiol benzoate and 200 mg of progesterone (TBA + EP); and 6) implanted with 140 mg of trenbolone acetate plus 36 mg of zeranol (TBA + Z). Each treatment group consisted of three replications of four animals per pen, which were implanted on d 0, 56, 112, and 168. Masculinity and muscling scores were assigned at 24 h preslaughter. Hide removal difficulty was scored by a plant supervisor. Quality and yield grade data were obtained at 24 h postmortem. Longissimus muscle (LM) steaks were removed and cooked for Warner-Bratzler shear (WBS) determinations and sensory panel (SP) evaluations. Over the entire feeding period (249 d), TBA + EP steers had higher ($P < .05$) ADG than TBA + Z, TBA, and C steers. All treatments had higher ($P < .05$) ADG than C, with the exception of TBA. The only feed efficiency differences were those following the 168-d implant time, when TBA steers were more ($P < .05$) efficient than TBA + Z or C steers. The TBA + EP and TBA + Z steers were more ($P < .05$) masculine and their hides were more ($P < .05$) difficult to remove than those of EP and C steers. Carcass weights of TBA + EP steers were heavier ($P < .05$) than those of TBA or C steers. The TBA + EP steers had larger ($P < .05$) LM areas than Z, TBA, and C steers. Also, TBA + EP steers tended ($P = .07$) to have lower numerical yield grades than EP, Z, or C steers. Even though mean marbling scores and quality grades were similar ($P > .05$) among treatment groups, only 50% of TBA + EP carcasses graded low Choice or higher, compared with 100, 75, 82, 90, and 83%

for C, TBA, Z, EP, and TBA + Z carcasses, respectively. The only meat palatability

153 NAL Call. No.: 41.8 C163
The effects of the stress of weaning and transit on performance and metabolic profile of beef calves of different genotypes.
Phillips, W.A.; Juniewicz, P.E.; Zavy, M.T.; Von Tungeln, D.L.
Ottawa : Agricultural Institute of Canada; 1987 Dec.
Canadian journal of animal science v. 67 (4): p. 991-999; 1987 Dec. Includes references.

Language: English

Descriptors: Beef cattle; Calves; Genotypes; Weaning; Stress; Transport of animals; Body weight; Metabolism

154 NAL Call. No.: 100 OK4 (3)
Effects of Tilmicosin or Ceftiofur on health and performance of shipping stressed stocker cattle.
Smith, R.A.; Van Koeveering, M.T.; Gill, D.R.; Ball, R.L.
Stillwater, Okla. : The Station; 1991 Jun.
Miscellaneous publication - Agricultural Experiment Station, Oklahoma State University (134): p. 152-155; 1991 Jun.
Includes references.

Language: English

Descriptors: Cattle; Transport; Respiratory diseases; Drug effects

155 NAL Call. No.: 41.8 C163
Effects of transport and electrolyte supplementation on ion concentrations, carcass yield and quality in bulls.
Schaefer, A.L.; Jones, S.D.M.; Tong, A.K.W.; Young, B.A.
Ottawa : Agricultural Institute of Canada; 1990 Mar.
Canadian journal of animal science v. 70 (1): p. 107-119; 1990 Mar. Includes references.

Language: English

Descriptors: Beef bulls; Electrolytes retention; Electrolytes; Ions; Supplementary feeding; Transport of animals; Stress; Beef quality; Carcass yield

156 NAL Call. No.: QL750.A6
The effects of twinning and maternal experience on maternal-filial social relationships in confined beef cattle.
Price, E.O.; Smith, V.M.; Thos, J.; Anderson, G.B.
Amsterdam : Elsevier Science Publishers B.V.; 1986 May.
Applied animal behaviour science v. 15 (2): p. 137-146; 1986 May. Includes references.

Language: English

Descriptors: Beef cattle; Hereford; Calves; Dams (mothers); Maternal behavior; Twins; Attachment behavior; Milk production

157 NAL Call. No.: 49 J82
The effects of two shipping treatments on the carcass characteristics of bulls implanted with zeranol and unimplanted steers.
Jones, S.D.M.; Newman, J.A.; Tong, A.K.W.; Martin, A.H.; Robertson, W.M.
Champaign, Ill. : American Society of Animal Science; 1986 Jun. Journal of animal science v. 62 (6): p.

1602-1608; 1986 Jun. Includes references.

Language: English

Descriptors: Bulls; Steers; Zeranol; Implantation; Carcass composition; Transport of animals; Stress; Carcass quality

158 NAL Call. No.: 49 J82

Effects of zeranol implantation and late castration on sexual, agonistic and handling behavior in male feedlot cattle.

Baker, A.M.; Gonyou, H.W.

Champaign, Ill. : American Society of Animal Science; 1986

May. Journal of animal science v. 62 (5): p. 1224-1232; 1986

May. Includes references.

Language: English

Descriptors: Beef bulls; Zeranol; Implantation; Castration; Agonistic behavior; Sexual behavior

159 NAL Call. No.: 18 D4825T Nr.241 1986

Effektive Bewirtschaftung von Ställen und Anlagen der Milch- und Rinderproduktion unter besonderer Beachtung der Nutzung der Mikroelektronik und verbesserter Verfahren der Produktionskontrolle Vorträge einer wissenschaftlichen Tagung, veranstaltet vom Institut für Rinderproduktion Iden-Rohrbeck aus Anlass des 65. Geburtstages seines Direktors Professor Dr. sc. Hans Kleiber, vom 18. bis 20. September 1985 in Iden [Effective management of barns and milk and cattle production installations with particular attention to the use of microelectronics and improved production control methods]., 1. Aufl..

Kleiber, Hans,

Institut für Rinderproduktion Iden-Rohrbeck (Akademie der Landwirtschaftswissenschaften der DDR)

Berlin : Die Akademie; 1986.

144 p. : ill. ; 21 cm. (Tagungsbericht / Akademie der Landwirtschaftswissenschaften der Deutschen Demokratischen Republik ; Nr. 241). Cover title. Summaries in English, German, and Russian. Includes bibliographies.

Language: German

Descriptors: Kleiber, Hans 1920-; Cattle; Congresses; Cattle; Housing; Environmental engineering; Congresses; Dairying; Technological innovations; Congresses; Beef industry; Technological innovations; Congresses

160 NAL Call. No.: S494.5.E547

Electricity used in farmstead operations.

McFate, K.L.

Amsterdam : Elsevier; 1989.

Energy in world agriculture v. 3: p. 121-142; 1989. In the series analytic: Energy in World Agriculture / edited by K.L. McFate. Includes references.

Language: English

Descriptors: Farming; Electricity; Electrical energy; Electric heaters; Milking; Dairy equipment; Ventilation; Fans; Fodder crops; Handling; Heating; Cooling; Dairy farming; Beef cattle; Pig farming; Poultry farming; Brood care; Grain drying; Vegetables; Storage

161 NAL Call. No.: SF601.V535

Environmental factors and calving management practices that

affect neonatal mortality in the beef calf.

Townsend, H.G.G.

Philadelphia, Pa. : W.B. Saunders Company; 1994 Mar.

The Veterinary clinics of North America. Food animal practice

v. 10 (1): p. 119-126; 1994 Mar. In the series analytic:

Perinatal mortality in beef herds / edited by T.R. Kasari and S.E. Wikse. Includes references.

Language: English

Descriptors: Calves; Beef cattle; Newborn animals; Perinatal mortality; Etiology; Environmental factors; Cattle husbandry; Calving season; Timing; Herd structure; Cattle housing; Prevention; Disease control

162 NAL Call. No.: 58.9 IN7

The environmental requirements of livestock.

Bruce, J.M.

Silsoe : Institution of Agricultural Engineers; 1987.

The Agricultural engineer v. 42 (4): p. 137-140; 1987.

Includes references.

Language: English

Descriptors: Livestock housing; Environmental factors; Space requirements; Animal welfare

163 NAL Call. No.: 49 J82

Estimation of the water requirement for beef production in the United States. Beckett, J.L.; Oltjen, J.W.

Champaign, Ill. : American Society of Animal Science; 1993

Apr. Journal of animal science v. 71 (4): p. 818-826; 1993

Apr. Includes references.

Language: English

Descriptors: U.S.A.; Beef cattle; Beef production; Water use; Irrigated pastures; Water policy; Water intake; Feeds; Water requirements

Abstract: A static model of developed water use for U.S. cattle production was constructed on a spreadsheet. Water use included that consumed directly by various classes of animals, water applied for irrigation of crops that are consumed by the cattle, water applied to irrigated pasture, and water used to process animals at marketing. Government statistics were consulted for numbers of cattle and crop production. The most recent statistics available for numbers of cattle and crops in individual states were used. On January 1, 1992, a total of 33.8 million beef cows and 5.7 million replacement heifers were in U.S. breeding herds, 12 million animals were on feed, and approximately 28 million animals were fed annually. Thus, the U.S. beef cattle herd produced 6.9 billion kg of boneless beef. Beef cattle directly consumed 760 billion L of water per year. Feedlot cattle were fed various grain and roughage sources corresponding to the regions in which they were fed. Feeds produced in a state were preferentially used by cattle in that state with that state's efficiency; any additional feedstuffs required used water at the national efficiency. Irrigation of crop feedstuffs for beef cattle required 12,991 billion L of water. Irrigated pasture for beef cattle production required an additional 11,243 billion L of water. Carcass processing required 79 billion L of water. The model estimates 3,682 L of developed water per kilogram of boneless meat for beef cattle production in the United States. The model was most sensitive to the dressing percentage and percentage of boneless yield in carcasses of feedlot cattle (62 and 66.7, respectively). A 10% change in either of these

parameters resulted in a corresponding 8.6% change in the water required for beef production. A 10% increase in the number of animals on feed resulted in a decrease in the amount of water per kilogram of boneless beef by 5.2%. Changes in irrigated pasture management would also be an effective means of decreasing the w

164 NAL Call. No.: 49 J82

Estrous behavior in confined beef cows.

Hurnik, J.F.; King, G.J.

Champaign, Ill. : American Society of Animal Science; 1987

Aug. Journal of animal science v. 65 (2): p. 431-438; 1987

Aug. Includes references.

Language: English

Descriptors: Beef cows; Estrous behavior; Estrus;

Progesterone; Blood

165 NAL Call. No.: 41.8 Am3

Euthanasia and slaughter of livestock.

Grandin, T.

Schaumburg, Ill. : The Association; 1994 May01.

Journal of the American Veterinary Medical Association v. 209

(9): p. 1354-1360; 1994 May01. Includes references.

Language: English

Descriptors: Livestock; Euthanasia; Slaughter; Methodology;
Animal welfare; Slaughtering equipment; Electrical treatment;
Efficacy; Carbon dioxide; Stress; Animal behavior; Blood;
Restraint of animals

166 NAL Call. No.: SF601.C66

Evaluating beef cattle operations for stress-management

procedures. Nash, D.; Pollreisz, J.P.

Lawrenceville, N.J. : Veterinary Learning Systems Company;

1988 Aug. The Compendium on continuing education for the

practicing veterinarian v. 10 (8): p. 971-972, 974-976; 1988

Aug. Includes references.

Language: English

Descriptors: Beef cattle; Stress; Management; Environment;

Transport; Nutrition programs; Beef production

167 NAL Call. No.: 49 J82

Evaluation of mating systems involving five breeds for
integrated beef production systems. III. Integrated system.

Lamb, M.A.; Tess, M.W.; Robison, O.W.

Champaign, Ill. : American Society of Animal Science; 1992

Mar. Journal of animal science v. 70 (3): p. 714-722; 1992

Mar. Includes references.

Language: English

Descriptors: Beef cattle; Crossbreeding; Mating systems; Breed
differences; Computer simulation; Efficiency; Slaughter
weight; Carcass weight; Lean; Productivity

Abstract: Angus (A), Charolais (C), Hereford (H), Limousin
(L), and Simmental (S) breeds were included in deterministic
computer models simulating integrated cow-calf-feedlot
production systems. Three mating systems were used:
purebreeding and two-and three-breed rotational crossbreeding.
Breed information was taken from the literature. Herd sizes

were unrestricted; however, 100 heifers were saved as replacements. Cows were removed for reproductive failure, age (> 10.5 yr), or death. Calves produced in the cow-calf segment were fed in a custom feedlot to four slaughter end points: 440 d, 457 d, 288-kg carcass weight, and low Choice. All animals were fed to requirements. Cull cows were slaughtered after weaning. Biological and economic efficiencies improved with crossbreeding; however, rankings of breed combinations depended on how efficiencies were measured (weight, lean, or value basis). Among purebreds, reproductive performance had a large influence on breed rankings at age and weight end points, whereas feedlot performance was important at the low Choice end point. Crossbred combinations involving British (A or H) and Continental (C or S) breeds were more efficient than other crossbred combinations at all end points. However, choosing specific breed combinations for integrated systems depends on slaughter end points, market end points (weight vs lean), and measures of efficiency (weight, lean, or value basis).

168 NAL Call. No.: TD886.O3

Experience in the use of biofilters.

Geelen, M.A. van

London : Elsevier Applied Science Publishers; 1986.

Odour prevention and control of organic sludge and livestock farming / edited by V.C. Nielsen, J.H. Voorburg, and P.

L'Hermite. p. 238-240. ill; 1986. Paper presented at the

"Seminar on Odour Prevention and Control of Organic Sludge and Livestock Farming," Apr. 15-19, 1985, Silsoe, England.

Language: English

Descriptors: Netherlands; Animal manures; Animal wastes; Calf housing; Pig housing; Filters; Odor abatement; Waste disposal

169 NAL Call. No.: SF91.M427

Facilities for handling, sheltering and trailing livestock.

McBratney, Brad; Karsky, Richard

Equipment Development Center (Missoula, Mont.)

Vegetative Rehabilitation and Equipment Workshop.

Missoula, Mont. : The Center,; 1987.

iv, 52 p. : ill. ; 28 cm. Includes index. September 1987.

5E42D31--Range Structural Equipment, Range Structural

Equipment Handbook. Sponsored by Vegetative Rehabilitation

and Equipment Workshop. Bibliography: p. 52.

Language: English

Descriptors: Livestock; Housing; Stables; Range management

170 NAL Call. No.: 275.29 AL13P

Factors to consider before establishing an Alaskan livestock enterprise. Krieg, K.

Fairbanks? :b The Service,; 1993 May.

Publication / v.): 4 p.; 1993 May. In subseries: Alaska livestock series.

Language: English

Descriptors: Alaska; Cabt; Animal husbandry; Livestock enterprises; Feasibility; Land clearance; Livestock feeding; Animal breeding; Animal housing; Farm equipment; Carcass disposal

171 NAL Call. No.: SF105.F3 1987

Factory farming the experiment that failed : a compilation of

articles and photographs., 1st ed..
Carson, Rachel,
Animal Welfare Institute
Washington, DC : Animal Welfare Institute,; 1987.
86 p. : ill. ; 28 cm. Cover illustration by David Luck Smith.

Language: English

Descriptors: Livestock; Breeding; Livestock factories;
Animals, Treatment of; Animal welfare

172 NAL Call. No.: Videocassette no.906
Farm animal behavior research seminar.
Curtis, Stanley
United States, Agricultural Research Service, National Program
Staff Washington, D.C.? : National Program Staff, ARS, USDA,;
1990. 1 videocassette (100 min., 20 sec.) : sd., col. ; 1/2
in. VHS. June 8, 1990.

Language: English

Descriptors: Animal welfare; Livestock

Abstract: Discusses types of research being done on farm
animal behavior to discover indicators of animal stress
contentment, psychological make-up and the effects of
environment on animal behavior. The various behaviors observed
and the related situations are also discussed.

173 NAL Call. No.: SF61.S2
Farm animal welfare cattle, pigs and poultry.
Sainsbury, David,
London : Collins,; 1986.
x, 175 p. : ill. ; 24 cm. Includes index. Bibliography: p.
[171].

Language: English

Descriptors: Livestock

174 NAL Call. No.: aZ5076.A1U54 no.84
Farm animal welfare, January 1979-April 1989.
Bebee, Charles N.; Swanson, Janice C.
National Agricultural Library (U.S.)
Beltsville, Md. : U.S. Dept. of Agriculture, National
Agricultural Library,; 1989.
301 p. ; 28 cm. (Bibliographies and literature of agriculture
; no. 84). September 1989.

Language: English

Descriptors: Domestic animals; United States; Bibliography;
Livestock; United States; Bibliography

175 NAL Call. No.: HV4711.H3
Farm animal welfare, what, if any, progress? the Hume Memorial
Lecture, 26th November 1987, at The Royal Society of Medicine,
London.
Harrison, Ruth
Potters Bar, Herts. : UFAW,; 1988.
24 p. ; 19 cm. (Hume memorial lecture ; 6). Bibliography: p.
23-24.

Language: English

Descriptors: Livestock; Great Britain; Animals, Treatment of;

Great Britain

176 NAL Call. No.: HV4708.F38 1985
Farm animals [factory farming].. Factory farming
Humane Society of the United States
Washington, DC : Humane Society of the United States,; 1985. 1
folded sheet : ill. ; 36 x 22 cm. folded to 22 x 9 cm.

Language: English

Descriptors: Animal welfare; Livestock factories

177 NAL Call. No.: HV4758.F375 1991
Farm animals it pays to be humane.
Carruthers, S. P.
University of Reading, Centre for Agricultural Strategy, Farm
Animal Care Trust
Reading : Centre For Agricultural Strategy, University of
Reading,; 1991. 128 p. : ill. ; 22 cm. (CAS paper ; 22).
Papers presented at a conference organised by the Centre for
Agricultural Strategy, sponsored by the Farm Animal Care Trust
and held at the Royal Society, London SW1 on the 12th of
September, 1991. April 1991. Includes bibliographical
references.

Language: English

Descriptors: Animal welfare; Livestock

178 NAL Call. No.: Videocassette no.1359
Farm animals with care produced for Glaxo Group Research in
association with the Institute of Animal Technology [by]
Datascope Communications. Datascope Communications, Glaxo
Group Research Limited, Institute of Animal Technology
England? : Datascope,; 1991.
2 videocassettes (65 min.) : sd., col. ; 1/2 in.

Language: English

Descriptors: Livestock; Animal health; Animal welfare

Abstract: Illustrates regimes for housing and care for sheep,
goats, pigs, cattle, and poultry as well as providing breeding
information and demonstrating some routine health care
procedures and blood sampling techniques.

179 NAL Call. No.: 100 L935
Feasibility of specialized for-hire cattle handling crews.
Schupp, A.; Riechers, R.
Baton Rouge, La. : The Station; 1987 Sep.
D.A.E. research report - Department of Agricultural Economics
and Agribusiness, Louisiana State University, Louisiana
Agricultural Experiment Station (676): 24 p. maps; 1987 Sep.
Includes statistical data. Includes references.

Language: English

Descriptors: Louisiana; Dairy cattle; Beef cattle; Veterinary
services; Feasibility studies; Hired labor; Fees; Cost benefit
analysis; Operating costs

180 NAL Call. No.: aS21.R44A7
Feedlot and carcass characteristics of heifers: Effect of
ovariectomy and ovariectomy with ovarian autograft.
Klindt, J.M.; Crouse, J.D.

Clay Center, Neb. : U.S. Department of Agriculture, Agricultural Research Service; 1993 May.
ARS / (71): p. 108-111; 1993 May. In the series analytic: Beef research progress report no. 4. Includes references.

Language: English

Descriptors: Heifers; Ovariectomized females; Ovariectomy; Ovaries; Autografts; Progesterone; Liveweight gain; Feed conversion efficiency; Estrous cycle; Feeding; Feedlots; Carcass quality

181 NAL Call. No.: S544.3.V8V52
Feedlot and stocker health and management practices.
Whittier, W.D.; Eller, A.L.
Blacksburg, Va. : Extension Division, Virginia Polytechnic Institute and State University; 1991.
Publication - Virginia Cooperative Extension Service
(400-006): 7 p.; 1991. In subseries: Beef.

Language: English

Descriptors: Feedlots; Beef cattle; Mortality; Animal health; Respiratory diseases; Parasites; Parasitism; Nutrient requirements; Digestive disorders; Therapy; Medical treatment

182 NAL Call. No.: 49 J82
Feedlot performance, carcass characteristics, hormones, metabolites in steers actively immunized against growth hormone-releasing factor. Harvey, R.W.; Armstrong, J.D.; Heimer, E.P.; Campbell, R.M. Champaign, Ill. : American Society of Animal Science; 1993 Nov. Journal of animal science v. 71 (11): p. 2853-2859; 1993 Nov. Includes references.

Language: English

Descriptors: Steers; Immunization; Somatoliberin; Beef cattle; Growth; Carcass composition; Breed differences; Fat percentage; Fattening performance; Charolais; Blood serum; Urea; Insulin; Fatty acids

Abstract: Large-framed Simmental and Charolais steers were actively immunized against growth hormone-releasing factor (GRF) to evaluate the effect on growth, carcass characteristics (especially intramuscular fat deposition), and concentrations of somatotropin (ST) and IGF-I. Primary immunizations of 1.5 mg of GRF-(1-29)-Gly-Gly-Cys- NH₂ conjugated to 1.5 mg of human serum albumin (GRFi, n = 12) or 1.5 mg of human serum albumin (HSAi, n = 12) were given at approximately 10 mo of age. Booster immunizations of .5 mg of the appropriate antigen were given at d 49 and 125. Weights of steers administered GRFi were less (P < .05) than those given HSAi at 126 d (34.6 kg) or at 262 d (48.2 kg) after treatment. Carcass weights were 28.2 kg less (P < .01) for GRFi than for HSAi steers. Dry matter intake was not affected by immunization treatment, whereas feed efficiency was reduced in GRFi steers. Marbling scores were higher (P < .05) for HSAi than for GRFi steers but similar percentages (83.3) of both treatments graded Low Choice or higher. Rib sections of GRFi steers contained more fat (31.2 vs 25.0%) and less lean (63.3 vs 68.4%) than those of HSAi steers (P < .05). A breed X treatment interaction was observed for percentage of fat within the trimmed longissimus muscle (P < .05); percentage of fat was similar for Charolais and Simmental steers when immunized against HSAi but was higher for Simmental than for Charolais when immunized against GRFi. Reduced serum ST, IGF-I, insulin, and plasma glucose concentrations and higher urea nitrogen values were observed in GRFi compared with HSAi

steers.

183 NAL Call. No.: S671.A22
Feedlot runoff control.
Lorimor, J. \u Iowa State University
Ames, Iowa : Cooperative Extension Service, Iowa State
University; 1994 Jan. AE / (30771): 2 p.; 1994 Jan.

Language: English

Descriptors: Iowa; Cabt; Beef cattle; Feedlot wastes; Runoff
water; Cattle manure; Cattle farming; Demonstration farms

184 NAL Call. No.: S671.A22
Feedlot runoff control--demonstration site: beef lot--
location: Ringgold County.
Lorimor, J.
Ames, Iowa : Cooperative Extension Service, Iowa State U
niversity; 1994 Jan. AE / (3077m): 2 p.; 1994 Jan.

Language: English

Descriptors: Iowa; Cabt; Beef cattle; Feedlots; Feedlot
effluent; Waste disposal

185 NAL Call. No.: 100 M69MI
Feedlot study considers steers from "conception to
consumption.". Broadway, R.
Mississippi State, Miss. : The Station; 1992 Feb.
MAFES research highlights - Mississippi Agricultural and
Forestry Experiment Station v. 55 (2): p. 4-5; 1992 Feb.

Language: English

Descriptors: Mississippi; Beef cattle; Breeding programs;
Feedlots

186 NAL Call. No.: SF203.F458 1993
Feedlotting notes a collection of farm notes., 2nd ed..
Clarke, Ross
Queensland, Dept. of Primary Industries
Brisbane : Dept. of Primary Industries, Queensland,; 1993. iv,
96 p. : ill. ; 30 cm. (Queensland Department of Primary
Industries information series, QI93010). "Agdex 420/17"--T.p.
verso.

Language: English

Descriptors: Beef cattle; Feedlots

187 NAL Call. No.: 275.29 M58B
Fencing for beef cattle.
Burdette, L.A.; Geuns, K.R.
East Lansing, Mich. : The Service; 1987 Mar.
Extension bulletin E - Cooperative Extension Service, Michigan
State University (1570): 4 p. ill; 1987 Mar. Subseries:
Michigan beef production.

Language: English

Descriptors: Beef cattle; Fences; Fence posts; Construction;
Costs

188 NAL Call. No.: SF91.A97

Fly control in confined livestock and poultry production.
Axtell, Richard C.
CIBAGEIGY Corporation, Agricultural Division
Greensboro, N.C. : CIBA-GEIGY Corp., Agricultural Division,;
1986. 59 p. : ill. (some col.) ; 28 cm. (Technical monograph /
Ciba-Geigy). Bibliography: p. 55-59.

Language: English

Descriptors: Livestock; Poultry; Flies; Animal housing

189 NAL Call. No.: SF5.F66 1993
Food animal well-being, 1993--conference proceedings and
deliberations. Purdue University, Office of Agricultural
Research Programs Food Animal Well-Being Conference and
Workshop 1993 : Indianapolis, Ind. West Lafayette, Ind. :
Purdue University, Office of Agricultural Research Programs,;
1993.
139 p. : ill. ; 23 cm. Papers from the Food Animal Well-Being
Conference and Workshop held in Indianapolis, IN, Apr. 13-15,
1993. Includes bibliographical references.

Language: English

Descriptors: Livestock; Animal welfare

190 NAL Call. No.: QL750.A6
Forage intake responses to winter cold exposure of free-
ranging beef cows. Beverlin, S.K.; Havstad, K.M.; Ayers, E.L.;
Petersen, M.K. Amsterdam : Elsevier Science Publishers, B.V. ;
1989 May.
Applied animal behaviour science v. 23 (1/2): p. 75-85; 1989
May. Includes references.

Language: English

Descriptors: Beef cows; Foraging; Feed intake; Winter; Cold;
Free range husbandry; Stress; Grazing behavior

191 NAL Call. No.: 49 J82
Function of the hypothalamic-pituitary-adrenal axis and the
sympathetic nervous system in models of acute stress in
domestic farm animals. Minton, J.E.
Champaign, Ill. : American Society of Animal Science; 1994
Jul. Journal of animal science v. 72 (7): p. 1891-1898; 1994
Jul. Includes references.

Language: English

Descriptors: Livestock; Stress; Animal models; Sympathetic
nervous system; Adrenal glands; Animal welfare; Pituitary;
Immune response; Corticoliberin; Vasopressin; Blood serum;
Corticotropin; Hydrocortisone; Lymphocyte transformation;
Hypothalamus; Literature reviews

Abstract: In response to stressors, the central nervous
system of livestock (and other mammalian species) evokes
physiological responses that ultimately result in activation
of the hypothalamopituitary-adrenocortical (HPA) axis and the
sympatho-adrenal axis. The responses of these major systems
are presumed to have adaptive and homeostatic value during
periods of stress. The major hormone regulating the synthesis
and secretion of adrenal glucocorticoids is ACTH. In sheep,
cattle, and pigs, both corticotropin-releasing hormone (CRH)
and vasopressin (VP) participate in the regulation of
secretion of ACTH, and the two peptides seem to interact to
enhance that secretion. In cattle and pigs, CRH is the more

potent peptide, whereas VP is the more potent in sheep. In addition to its better-known role in regulating pituitary function, CRH also may participate as a neurotransmitter acting centrally to enhance sympathetic activation of the adrenal medulla. Many experimental models of stress have been evaluated that reliably activate the HPA axis and the sympatho-adrenal medullary axis, and some of these model systems also reduce functions of cells of the immune system. Recent data support an important role of stressor-activation of the sympathetics rather than increased glucocorticoids per se in modulating some measures of immune function in response to stress. Thus, current dogma of glucocorticoids as the primary mediator of stressor-associated alteration in immune function of domestic livestock may require reevaluation.

192 NAL Call. No.: 49.9 Ut72R no.B-327
 Het gebruik van de classificatie op Nederlandse rundveeslachterijen nu en in de toekomst een bespreking = The use of classification at Dutch slaughter-houses for cattle at present and in the future : a discussion.. Use of classification at Dutch slaughter-houses for cattle at present and in the future : a discussion
 Schneijdenberg, T. C. H. G. P.
 Zeist : Instituut voor Veeteeltkundig Onderzoek "Schoonoord", ; 1989. 28 p. ; 30 cm. (Rapport / Instituut voor Veeteeltkundig Onderzoek "Schoonoord" ; B-327). English summary. Januari 1989. Bibliography: p. 26-27.

Language: Dutch

193 NAL Call. No.: Videocassette no.266
 A genetic engineering approach to the design of non-nitrite curing agents J. Norman Hansen.. Biotechnology, approach to non-nitrite cures Hansen, J. Norman
 United States, Food Safety and Inspection Service, Technology Transfer and Assessment Staff
 Washington : D.C. : U.S. Dept. of Agriculture, Food Safety and Inspection Service, Technology Transfer and Assessment Staff, ; 1986. 1 videocassette (VHS) (ca. 53 min.) : sd., col. ; 1/2 in. Title from separate information sheet. Spine title: A genetic engineering approach to the design of nitrite curing agents. Label title: Biotechnology, approach to non-nitrite cures / J. Hansen.

Language: English

Descriptors: Meat; Curing; Animal genetic engineering;
 Nitrites; Animal welfare

194 NAL Call. No.: 49 J82
 Genetic parameter estimates for postweaning traits of beef cattle in a stressful environment.
 DeNise, S.K.; Torabi, M.
 Champaign, Ill. : American Society of Animal Science; 1989
 Oct. Journal of animal science v. 67 (10): p. 2619-2626; 1989
 Oct. Includes references.

Language: English

Descriptors: Beef cattle; Growth; Stress; Postweaning interval; Traits; Genetic covariance

195 NAL Call. No.: 49 J82
 Genetic parameter estimates for preweaning traits of beef cattle in a stressful environment.
 DeNise, S.K.; Torabi, M.; Ray, D.E.; Rice, R.

Champaign, Ill. : American Society of Animal Science; 1988
Aug. Journal of animal science v. 66 (8): p. 1899-1906; 1988
Aug. Includes references.

Language: English

Descriptors: Beef cattle; Preweaning period; Growth; Stress;
Heritability; Genetic correlation

196 NAL Call. No.: 23 AU783
Genetic parameters for tropical beef cattle in northern
Australia: a review. Davis, G.P.
Melbourne : Commonwealth Scientific and Industrial Research
Organization; 1993.
Australian journal of agricultural research v. 44 (2): p.
179-198; 1993. Literature review. Includes references.

Language: English

Descriptors: Australia; Cattle; Zebu; Beef cattle; Genetic
parameters; Heritability; Liveweight; Reproduction;
Resistance; Stress; Environmental factors; Literature reviews;
Tropics

197 NAL Call. No.: SF55.A78A7
Genotype (breed) and environment interaction with particular
reference to cattle in the tropics--review.
Vercoe, J.E.; Frisch, J.E.
Suweon, Korea : Asian-Australasian Association of Animal
Production Societies; 1992 Sep.
Asian-Australasian journal of animal sciences v. 5 (3): p.
401-409; 1992 Sep. Includes references.

Language: English

Descriptors: Beef cattle; Breed differences; Crossbreds;
Genotype environment interaction; Animal nutrition; Stress
factors

198 NAL Call. No.: SF85.4.A9G72 1985
Grazing Animal Welfare Symposium proceedings of a symposium
held at the Bardon Professional Development Centre, Brisbane,
on April 26th and 27th, 1985.. Grazing animal welfare
Moore, Brian L.; Chenoweth, Peter J.
Australian Veterinary Association, Queensland Division
Grazing Animal Welfare Symposium 1985 : Brisbane, Qld.
Indooroopilly, QLD, [Australia] : Australian Veterinary
Association (Queensland Division); 1985.
vii, 185, 40 p. : ill. ; 24 cm. Cover title: Grazing animal
welfare. Includes bibliographical references.

Language: English

Descriptors: Cattle; Congresses; Sheep; Congresses; Livestock;
Congresses; Grazing; Congresses

199 NAL Call. No.: QL750.A6
Grazing behavior of free-ranging beef cows in initial and
prolonged exposure to fluctuating thermal environments.
Prescott, M.L.; Havstad, K.M.; Olson-Rutz, K.M.; Ayers, E.L.;
Petersen, M.K. Amsterdam ; New York : Elsevier, 1984-; 1994
Feb.
Applied animal behaviour science v. 39 (2): p. 103-113; 1994
Feb. Includes references.

Language: English

Descriptors: Montana; Cabt; Beef cows; Grazing behavior;
Thermoregulation; Cold stress; Environmental temperature; Feed
intake; Grazing time; Autumn; Winter; Seasonal variation;
Acclimatization

200 NAL Call. No.: 49 J82

Growth research: challenges and opportunities.

Convey, E.M.

Champaign, Ill. : American Society of Animal Science; 1987.

Journal of animal science v. 65 (suppl.2): p. 128-139; 1987.

In the series analytic: Current concepts of animal growth III

/ edited by R.A. Merkel. Proceedings of the Biennial

Symposium, July 28-29, 1986, Manhattan, Kansas. Includes

references.

Language: English

Descriptors: Meat animals; Growth; Fat percentage; Leanness;
Food safety; Regulations; Growth promoters; Male animals;
Aggressive behavior; Sexual behavior; Meat production

Abstract: Challenges and near-term opportunities for growth research are examined in light of the needs and concerns for those who will ultimately accept, utilize and pay for new technology for growth promotion. The challenge from the livestock producer is for new ways to improve feed utilization. That from the consumer is to reduce fat and cholesterol content of meat without substantially changing taste, texture or price. Challenges arising from various segments of society include the need to ensure product safety and animal welfare, particularly with respect to recombinant DNA technology. The animal science community is challenged to contribute to development of regulatory policy regarding application of new technology to animal growth. Additionally, government decisions can challenge the long-term research planning process. The use of beta-adrenergic agonists, peptide hormones and growth factors and development of ways to manage gonadally intact males are suggested as near-term opportunities for growth research.

201 NAL Call. No.: SF75.3.I4M3 1987

Hand book of animal husbandry.. Handbook of animal husbandry,

1st ed.. Mahanta, Kanak Chandra, 1926-

Guwahati [India] : Omsons Publications : Distributed by

Western Book Dept.; 1987.

xviii, 612 p. : ill., maps, plans ; 22 cm. Spine title:

Handbook of animals husbandry.

Language: English

Descriptors: Livestock; India; Livestock; Breeding; Animal
housing; India; Animal culture; India

202 NAL Call. No.: SF89.H85 1991

Handling and loading of livestock.

Humane Slaughter Association (1986-); Agricultural Training

Board Potters Bar, Herts. : Humane Slaughter Association,;

1991. 35 p. : ill. ; 15 x 21 cm.

Language: English

Descriptors: Animal welfare; Animals

203 NAL Call. No.: Videocassette no.1334

Handling livestock naturally Livestock Marketing Association ;

produced for Livestock Marketing Association by AgriBase, Inc.
; producer, Mike Sweet ; director, Rustin Hamilton.
AgriBase, Inc, Livestock Marketing Association
Kansas City, Mo.? : AgriBase,; 1989.
1 videocassette (15 min.) : sd., col. ; 1/2 in.

Language: English

Descriptors: Livestock; Animal welfare

Abstract: Discusses viewing the world through the animal's eyes when handling then on the farm, for transport and at markets. Covers how to transport with gentleness, understanding of the animal's field of vision, point of balance, flight zone, and blind spot, how to feed and water animals at markets, how to move animals without hitting, yelling, or electric shock, how to deal with medical problems, and caring of facilities to reduce injuries.

204 NAL Call. No.: QL750.A6
The handling of cattle pre-slaughter and its effects on carcass and meat quality.
Warriss, P.D.
Amsterdam : Elsevier Science Publishers, B.V.; 1990 Nov.
Applied animal behaviour science v. 28 (1/2): p. 171-186; 1990 Nov. In the special issue: Transport and pre-slaughter handling / edited by Graham Perry. Includes references.

Language: English

Descriptors: Cattle; Slaughter; Handling; Carcasses; Beef quality; Transport of animals; Bruises; Marketing; Dark cutting meat; Animal welfare

205 NAL Call. No.: 49 J82
Heat production of cattle acclimated to cold, thermoneutrality and heat when exposed to thermoneutrality and heat stress.
Robinson, J.B.; Ames, D.R.; Milliken, G.A.
Champaign, Ill. : American Society of Animal Science; 1986 May. Journal of animal science v. 62 (5): p. 1434-1440; 1986 May. Includes references.

Language: English

Descriptors: Beef cattle; Heat production; Acclimatization; Thermal neutrality; Environmental temperature; Cold; Heat stress; Respiration rate; Body temperature

206 NAL Call. No.: S544.3.N3C66
Heat stress in beef cattle.
Torell, D.; Krysl, L.J.
Reno, Nev. : The College; 1990.
Fact sheet - College of Agriculture, University of Nevada-Reno, Nevada Cooperative Extension (90-08): 3 p.; 1990. Includes references.

Language: English

Descriptors: Heat stress; Beef cattle

207 NAL Call. No.: 49 J82
Heritabilities of predicted performance measures in beef bull tests and their relationships with feedlot efficiency measures.
McWhir, J.; Wilton, J.W.
Champaign, Ill. : American Society of Animal Science; 1987

May. Journal of animal science v. 64 (5): p. 1323-1331; 1987
May. Includes references.

Language: English

Descriptors: Beef bulls; Performance testing; Heritability;
Growth rate; Body weight; Conversion efficiency; Feedlots

208 NAL Call. No.: Videocassette no.199
Hitting the targets the production of lean beef.
Cross, H. Russell
United States, Food Safety and Inspection Service, Technology
Transfer and Assessment Staff
Washington, D.C. : U.S. Dept. of Agriculture, Food Safety and
Inspection Service, Technology Transfer and Assessment Staff,
[1986?]; 1986. 1 videocassette (VHS) (ca. 53 min.) : sd., col.
; 1/2 in. "October 1986" --Separate information sheet.

Language: English

Descriptors: Beef cattle; Beef; Food; Biotechnology; Animal
welfare

209 NAL Call. No.: SF91.I5 1988
Horizontal forces on livestock pen walls.
Bailey, W.A.
St. Joseph, Mich. : American Society of Agricultural
Engineers; 1988. Livestock environment III : proceedings of
the Third International Livestock Environment Symposium, April
25-27, 1988, Constellation Hotel, Toronto, Ontario, Canada. p.
149-154. ill; 1988. (ASAE publication ; 1-88). Includes
references.

Language: English

Descriptors: U.S.A.; Livestock transporters; Trailers;
Transport of animals; Handling; Loading; Horizontal
resistance; Cattle crushes

210 NAL Call. No.: aZ5071.N3
Housing, husbandry, and welfare of beef cattle: January 1980-
November 1992. Berry, D.
Beltsville, Md. : The Library; 1992 Dec.
Quick bibliography series - U.S. Department of Agriculture,
National Agricultural Library (U.S.). (93-07): 55 p.; 1992
Dec. Bibliography.

Language: English

Descriptors: Beef cattle; Animal husbandry; Animal housing;
Animal welfare; Bibliographies

211 NAL Call. No.: S671.D44 v.6
Housing of animals construction and equipment of animal
houses.. Huisvesting van dieren
Maton, A.; Daelemans, J.; Lambrecht, J.
Amsterdam ; New York : Elsevier ; New York, N.Y. :
Distributors for the U.S. and Canada, Elsevier Science,; 1985.
xii, 458 p. : ill. ; 25 cm.. (Developments in agricultural
engineering ; 6). Translation of: De huisvesting van dieren.
Includes bibliographies.

Language: English

Descriptors: Livestock; Housing

212 NAL Call. No.: S1.N32
How to corral handling stress: innovative facilities and techniques make working stock a breeze.
Kidd, R.
Emmaus, Pa. : Rodale Institute; 1994 Sep.
The New farm v. 16 (6): p. 5-9; 1994 Sep.

Language: English

Descriptors: Livestock; Animal husbandry; Handling

213 NAL Call. No.: 58.8 J82
Human subjective response to lorry vibration: implications for farm animal transport.
Randall, J.M.
London : Academic Press; 1992 Aug.
Journal of agricultural engineering research v. 52 (4): p. 295-307; 1992 Aug. Includes references.

Language: English

Descriptors: Trucks; Drivers; Operator comfort; Vibration; Transport of animals; Animal welfare

Abstract: Lorry drivers are exposed to a wide range of mechanical vibrations and random motions. The seat and sometimes the cab suspensions are designed to reduce vibration exposure. Nevertheless drivers are often subjected to considerable discomfort occurring within minutes of starting a journey. The frequencies and axes of vibration which occur at a driver's seat are often close to those of maximum discomfort for the human. On a livestock transporter, the interfaces between the animals and the vehicle are not designed to reduce vibration and it is possible that animals are subjected to a higher vibration magnitude than the driver. However, nothing is known of the discomfort or welfare levels experienced by livestock (e.g. cattle, sheep, pigs and poultry) during transport as the result of vibration and motion. This paper draws analogues with subjective evaluations of human comfort and poses a number of questions which must be addressed by research in order to quantify vibration dose, animal welfare response relationships. The primary requirement is to determine to what extent frequency dependent response weightings for the most important axes of vibration are necessary for each animal species and to determine how they should be defined. This would enable a comparison to be made between the experiences of humans and animals.

214 NAL Call. No.: 10 OU8
Humane slaughter.
Gregory, N.G.
Oxon : C.A.B. International; 1991 Jun.
Outlook on agriculture v. 20 (2): p. 95-101; 1991 Jun.
Includes references.

Language: English

Descriptors: Europe; Livestock; Stunning; Symptoms; Safety at work; Animal welfare; Consciousness; Regulations

215 NAL Call. No.: HV4725.U5L4 1990
Humane slaughter laws., 4th ed.
Leavitt, E.S.; Halverson, D.
Washington, D.C. : Animal Welfare Institute; 1990.
Animals and their legal rights : a survey of American laws from 1641 to 1990 / with chapters by the Animal and Plant

Health Inspection Service of the United States Department of Agriculture ... [et al.]... p. 52-65; 1990.

Language: English

Descriptors: U.S.A.; Livestock; Slaughter; Animal welfare; Law; History

216 NAL Call. No.: HV4731.H8 1986
Humane slaughter of animals for food proceedings of a symposium organized by Universities Federation for Animal Welfare in association with Humane Slaughter Association, held at the meeting rooms, Zoological Society of London, Regent's Park, 18th September 1986.
Universities Federation for Animal Welfare, Humane Slaughter Association Potters Bar, Hertfordshire, England : UFAW; 1987. iii, 59 p. : ill. ; 21 cm. Includes bibliographies.

Language: English

Descriptors: Slaughtering and slaughter-houses; Great Britain; Animals, Treatment of; Livestock; Stunning

217 NAL Call. No.: 49 J82
Immunomodulation: a means of disease prevention in stressed livestock. Blecha, F.
Champaign, Ill. : American Society of Animal Science; 1988
Aug. Journal of animal science v. 66 (8): p. 2084-2090; 1988
Aug. Includes references.

Language: English

Descriptors: Pigs; Cattle; Immune response; Immunity; Stress; Levamisole; Thiabendazole

218 NAL Call. No.: S494.5.B563N33
Impact of animal growth promotants on the meat industry.
Hayenga, M.L. \u Iowa State University; Buhr, B.L.
Ithaca, N.Y. : National Agricultural Biotechnology Council; 1989. NABC report / (1): p. 194-196; 1989. In the series analytic: Biotechnology and sustainable agriculture : Policy alternatives / edited by J.F. McDonald. Paper presented at the first annual National Agricultural Biotechnology Council meeting, May 22-24, 1989.

Language: English

Descriptors: Somatotropin; Pigs; Growth promoters; Utilization; Meat and livestock industry; Economic impact; Agricultural structure

219 NAL Call. No.: TX373.M4
Impact of animal husbandry and slaughter technologies on microbial contamination of meat: monitoring and control.
Huis in't Veld, J.H.J.; Mulder, R.W.A.W.; Snijders, J.M.A.
Essex : Elsevier Applied Science Publishers; 1994.
Meat science v. 36 (1/2): p. 123-154; 1994. Includes references.

Language: English

Descriptors: Meat; Slaughter; Microbial contamination; Animal husbandry

Abstract: The microbial flora transferred to carcasses during slaughter is a reflection of the care taken on the slaughter

floor and of the types and numbers of microorganisms acquired by the animal on the farm or during the period of transportation to the slaughter house. These microorganisms may include those able to cause illness in the consumer, or microorganisms responsible for spoilage of the product. Considerable progress has been made in reducing contamination at slaughter and thereby extending the shelf-life of meat. In contrast, international statistics still clearly show that meat and meat products are responsible for a major proportion of all foodborne infections. This latter aspect is not determined by the overall number of microorganisms present but by the bacterial composition of the animal's gut flora at slaughter. Preventive quality assurance along the whole productions and processing line is therefore the only effective means of controlling the microbiological safety and quality of meat. This includes, hazard analysis techniques to identify critical control points and procedures for monitoring the microbiological status of both animals and carcasses since most of the critical points cannot be totally controlled. At early stages in the production line, colonisation of meat animals with pathogens should be prevented. Subsequently, good slaughter practices will ensure carcasses of good overall microbiological quality. This paper deals with microbiological monitoring systems that can be used at different stages of production and processing to control the microbiological quality of poultry and pig meat.

220 NAL Call. No.: KF27.A366 1988d
Impact of drought conditions on livestock and dairy producers hearing before the Subcommittee on Livestock, Dairy, and Poultry of the Committee on Agriculture, House of Representatives, One Hundredth Congress, second session, June 24, 1988; Bismarck, ND.
United States. Congress. House. Committee on Agriculture. Subcommittee on Livestock, Dairy, and Poultry
Washington [D.C.] : U.S. G.P.O. : For sale by the Supt. of Docs., Congressional Sales Office, U.S. G.P.O.,; 1988; Y 4.Ag 8/1:100-93. iii, 89 p. ; 24. Distributed to some depository library in microfiche. Serial no. 100-93.

Language: English; English

Descriptors: Droughts; United States; Livestock; United States; Effect of drought on; Dairy products; United States

221 NAL Call. No.: KF27.B542 1988a
Impact of the drought on prices and production hearing before the Subcommittee on Economic Stabilization of the Committee on Banking, Finance, and Urban Affairs, House of Representatives, One-hundredth Congress, second session, July 6, 1988.
United States. Congress. House. Committee on Banking, Finance, and Urban Affairs. Subcommittee on Economic Stabilization
Washington [D.C.] : U.S. G.P.O. : For sale by the Supt. of Docs., Congressional Sales Office, U.S. G.P.O.,; 1988; Y 4.B 22/1:100-75. iii, 55 p. : ill., maps ; 24 cm. Distributed to some depository libraries in microfiche. Serial no. 100-75.

Language: English; English

Descriptors: Droughts; United States; Agriculture; Economic aspects; United States; Plants, Effect of drought on; United States; Livestock; United States; Effect of drought on; Agricultural prices; United States

222 NAL Call. No.: RC620.A1N8
Implanting trenbolone acetate and estradiol in finishing beef steers. Eversole, D.E.; Fontenot, J.P.; Kirk, D.J.

Stoneham, Mass. : Butterworth; 1989 May.
Nutrition reports international v. 39 (5): p. 995-1002; 1989
May. Includes references.

Language: English

Descriptors: Beef cattle; Steers; Trenbolone; Estradiol;
Weight gain; Carcass composition; Feed conversion efficiency

Abstract: The effect of implanting trenbolone acetate and estradiol 17 beta on feedlot performance and carcass characteristics of finishing steers was studied. A lactose- or cholesterol-based pellet containing 140 mg trenbolone acetate and 28 mg estradiol was implanted in yearling steers fed a high-roughage diet consisting of corn silage and supplement for 140 d. There was a 20% increase ($P < 0.05$) in rate of gain from the use of the implant in either base. A second implant with a lactose base given at the mid-point of the feeding period improved daily gain by an additional 7.5%. Dry matter intake was similar among control cattle and those receiving the different implants. Feed efficiency was improved ($P < 0.05$) by the lactose-base and the cholesterol-based implants. Use of the two lactose-based implants resulted in 23% improvements in feed efficiency, compared to the control cattle. Hot carcass weights were heavier ($P < 0.05$) for implanted cattle but carcass quality grades were lower ($P < 0.05$). Ribeye area was increased ($P < 0.05$) by the cholesterol-base and the two lactose-based pellets. These data indicate that combined androgenic-estrogenic anabolic implants enhanced feedlot performance and tended to increase edible lean and reduce fat in the carcass.

223 NAL Call. No.: 49 J82
Implications of genetic changes in body composition on beef production systems.
Bennett, G.L. \u Roman L. Hruska U.S. Meat Animal Research Center, USDA, ARS, Clay Center, NE; Williams, C.B.
Champaign, Ill. : American Society of Animal Science; 1994
Oct. Journal of animal science v. 72 (10): p. 2756-2763; 1994
Oct. Includes references.

Language: English

Descriptors: Beef cattle; Body composition; Beef production; Beef quality; Crossbreeding; Cattle fattening; Carcass weight; Carcass yield; Genotypes; Differential pricing; Slaughter weight; Feedlots; Calves; Marginal returns

Abstract: Changing the body composition of beef has implications for the entire beef production system. The dynamic nature of an animal's body composition and the production system itself make predictions of the implications of genetic change in body composition difficult. The cow-calf, stocker, and feeder segments of the production system will be affected differently. Leaner cattle tend to be slaughtered at heavier weights. Heavier weights effectively reduce composition differences of slaughter beef to less than the genetic differences. The effects of four pricing scenarios on slaughter weight and composition were evaluated for two leaner genotypes, one with no change in marbling and one with reduced marbling. A genetic difference of 1.0 yield grade at the same carcass weight resulted in slaughter beef that differed by .4 to 1.0 yield grade because of increased slaughter weights. Separate analyses suggested the stocker segment of beef production will be least affected by changes in body composition. Genotypes that are best fitted to slaughter requirements will have the most flexibility in types of stocker systems that can be used. The cow-calf segment of beef production has several options to adapt to leaner cattle.

Management to reduce nutritional stress on leaner cows may be required by some producers. Increased selection for reproductive traits in cow genotypes may be needed. An alternative to selection for reproduction is terminal crossing to partially disassociate the slaughter animal's genotype from the cow's genotype.

224 NAL Call. No.: 58.9 IN7

Improvements in animal welfare.

Randall, J.M.

Silsoe : Institution of Agricultural Engineers; 1986.

The Agricultural engineer v. 41 (3): p. 84-90. ill; 1986.

Paper presented at the convention on "Pressures for Change Generate Engineering Opportunities," May 13, 1986. Includes references.

Language: English

Descriptors: Animal welfare; Animal husbandry; Livestock housing; Animal production; Abattoirs

225 NAL Call. No.: SF207.S68

In vitro analysis of drought stressed, chopped sunflower heads as a a protein supplement for cattle grazing corn crop residues.

Thomson, D.U.; Pritchard, R.H.

Brookings, SD : Animal and Range Sciences Dept., Agricultural

Experiment Station, Cooperative Extension Service, South

Dakota State Unviersity, [1986?-; 1992 Aug.

South Dakota beef report (92-3): p. 5-8; 1992 Aug.

Language: English

Descriptors: South Dakota; Cabt; Sunflowers; Maize silage; Protein supplements; Soybeans; Soybean oilmeal; Urea; Fermentation; Beef cattle; Grazing; Dry matter

226 NAL Call. No.: 41.8 AU72

Induction of heat stress in beef cattle by feeding the ergots of *Claviceps purpurea*.

Ross, A.D.; Bryden, W.L.; Bakau, W.; Burgess, L.W.

Brunswick, Victoria : Australian Veterinary Association; 1989

Aug. Australian veterinary journal v. 66 (8): p. 247-249; 1989

Aug. Includes references.

Language: English

Descriptors: Beef cattle; Animal feeding; Ergot; Barley; Feed grains; Contamination; *Claviceps purpurea*; Ingestion toxicity

227 NAL Call. No.: 49 J82

Induction of tall fescue toxicosis in heat-stressed cattle and its alleviation with thiamin.

Dougherty, C.T.; Lauriault, L.M.; Bradley, N.W.; Gay, N.;

Cornelius, P.L. Champaign, Ill. : American Society of Animal

Science; 1991 Mar. Journal of animal science v. 69 (3): p.

1008-1018; 1991 Mar. Includes references.

Language: English

Descriptors: Beef cattle; *Festuca arundinacea*; *Acremonium coenophialum*; Heat stress; Poisoning; Thiamin; Grazing behavior; Grazing time; Alkaloids; Feed intake

Abstract: Livestock grazing endophyte (*Acremonium coenophialum*)-infected tall fescue (*Festuca arundinacea*

Schreb. cv. Kentucky 31) at high ambient temperatures may suffer from fescue toxicosis. Adult Angus cows (*Bos taurus*) were fed 0 to 1 kg/d of 70% infected tall fescue seed containing about 4.4 g of loline alkaloids in factorial combination with thiamin at 0 or 1 g/d. Cows assigned to the zero level of tall fescue seed received a supplement of equivalent energy and protein. Ingestive behavior was measured at 1330 to 1430 EDT during two 4-d periods in two consecutive weeks in August on alfalfa (*Medicago sativa* L.) pastures using a tethered grazing system. Alfalfa intake per measured grazing session of cows given tall fescue seed declined linearly ($P < .01$) as air temperatures during grazing increased above 25 degrees C, largely because of shorter grazing meals. Thiamin increased alfalfa intake per measured grazing session by extending grazing time. Alkaloids in ingested endophyte-infected tall fescue induce thiamin deficiencies in cattle that result in symptoms of tall fescue toxicosis.

228 NAL Call. No.: S671.A33
An industry view of engineering research needs for livestock.
Blackshaw, J.K.
Victoria : Agricultural Engineering Society; 1990.
Agricultural engineering Australia v. 19 (1): p. 14-15; 1990.

Language: English

Descriptors: Australia; Livestock; Handling; Agricultural engineering; Research; Sheep; Shearing; Pig housing; Transport; Ultrasonic devices

229 NAL Call. No.: QL750.A6
Influence of breed and rearing management on cattle reactions during human handling.
Boivin, X.; Le Neindre, P.; Garel, J.P.; Chupin, J.M.
Amsterdam ; New York : Elsevier, 1984-; 1994 Feb.
Applied animal behaviour science v. 39 (2): p. 115-122; 1994 Feb. Includes references.

Language: English

Descriptors: Calves; Salers; Beef breeds; Breed differences; Cattle husbandry; Man; Handling; Aggressive behavior; Traditional farming; Interactions

230 NAL Call. No.: QP251.A1T5
Influence of naloxone and yohimbine administration on pulsatile LH secretion in luteal phase beef cows.
Schoenemann, H.M.; Richards, M.W.; Sangiah, S.; Wettemann, R.P. Stoneham, Mass. : Butterworth Publishers; 1990 Feb.
Theriogenology v. 33 (2): p. 509-518; 1990 Feb. Includes references.

Language: English

Descriptors: Beef cows; Lh; Hormone secretion; Estrous cycle; Neurotransmitters; Antagonists; Stress

231 NAL Call. No.: SF1.S6
Influence of pen area and trough space on feedlot performance of beef cattle. Van Niekerk, B.D.H.; Jacobs, G.A.
Pretoria : South African Society of Animal Production; 1985 Dec. South African journal of animal science; Suid-Afrikaanse tydskrif vir veekunde v. 15 (4): p. 164-166; 1985 Dec. Includes references.

Language: English

Descriptors: Beef cattle; Feedlots; Feed troughs; Pens;
Fattening performance

232 NAL Call. No.: QP251.A1T5
Influence of prepartum exposure of beef heifers to winter weather on concentrations of plasma energy-yielding substrates, serum hormones and birth weight of calves. Andreoli, K.M.; Minton, J.E.; Spire, M.F.; Schalles, R.R. Stoneham, Mass. : Butterworth Publishers; 1988 Mar. Theriogenology v. 29 (3): p. 631-642; 1988 Mar. Includes references.

Language: English

Descriptors: Beef cows; Heifers; Prepartum period; Winter; Cold stress; Glucose; Cortisol; Nonesterified fatty acids; Estradiol; Calves; Birth weight

233 NAL Call. No.: 49 AN55
The influence of pre-slaughter transport and lairage on meat quality in pigs of two genotypes. Warriss, P.D.; Brown, S.N.; Bevis, E.A.; Kestin, S.C. S.l. : Durrant; 1990 Feb. Animal production v. 50 (pt.1): p. 165-172; 1990 Feb. Includes references.

Language: English

Descriptors: Pigs; Genotypes; Meat lines; Large white; Landrace; Transport of animals; Meat quality; Stress; Slaughter

234 NAL Call. No.: RC620.A1N8
Influence of roughage source on wintering beef heifer performance. Bagley, C.P.; Morrison, D.G.; Feazel, J.I.; Mooso, G.D. Stoneham, Mass. : Butterworth; 1989 Mar. Nutrition reports international v. 39 (3): p. 575-585; 1989 Mar. Includes references.

Language: English

Descriptors: Beef cattle; Heifers; Roughage; Sources; Performance

Abstract: Three roughage sources (bermudagrass hay, cottonseed hulls and soybean straw) were evaluated using weanling beef heifers for preference, voluntary intake and performance during wintering trials. In trial 1, when given access to all three roughage sources, heifers preferred (P less than .05) bermudagrass hay (7.3 kg/d) to either cottonseed hulls (.2 kg/d) or soybean straw (.1 kg/d). In trial 2, voluntary intakes of the roughage sources fed individually and unsupplemented were higher for bermudagrass hay (P less than .05) than cottonseed hulls, which was greater (P less than .05) than soybean straw. During the winter performance trial (trial 3), heifers consuming the bermudagrass hay diet had heavier (P less than .01) final weights (255 vs 235 kg) and higher (P less than .01) daily gains (.36 vs .15 kg) than heifers fed other roughage-based diets. Cottonseed hull diets produced heifers with higher daily gains and final weights (P less than .01) compared with soybean straw diets. Corn added to the diets of either cottonseed hulls or soybean straw increased (P less than .05) heifer gains and final weights. Performance of heifers on all diets, except soybean straw, was acceptable. Heifers receiving

soybean straw without supplemental corn grain had weight losses during the winter phase, while those fed soybean straw plus supplemental corn gained only .11 kg/d. Daily dietary costs were similar only when cottonseed hulls could be purchased and handled in bulk rather than sacked.

235 NAL Call. No.: QL750.A6
The influence of social factors on allogrooming in cows.
Sato, S.; Tarumizu, K.; Hatae, K.
Amsterdam ; New York : Elsevier, 1984-; 1993 Dec.
Applied animal behaviour science v. 38 (3/4): p. 235-244; 1993 Dec. Includes references.

Language: English

Descriptors: Dairy cows; Beef cows; Grooming; Kinship; Social structure; Spatial distribution; Social interaction; Altruism

236 NAL Call. No.: SF810.V4
Influence of transport stress on trichostrongylid infection in feedlot beef cattle.
Genchi, C.; Traldi, G.; Locatelli, A.
Amsterdam : Elsevier Science Publishers B.V.; 1986 Aug.
Veterinary parasitology v. 21 (3): p. 211-215; 1986 Aug.
Includes references.

Language: English

Descriptors: Beef cattle; Transport; Stress; Feedlots; Trichostrongylidae; Blood chemistry; Pepsinogen

237 NAL Call. No.: HV4890.A3A9
Intensive livestock production report.
Australia. Parliament. Senate. Select Committee on Animal Welfare Canberra : Australian Govt. Pub. Service,; 1990.
xxviii, 320 p. ; 25 cm. At head of title: Parliament of the Commonwealth of Australia. June 1990. Includes bibliographical references.

Language: English

Descriptors: Animal welfare; Livestock

238 NAL Call. No.: 286.8 N47M
Interstate differences in the cost of complying with feedlot environmental regulations: an initial investigation.
Ridley, E.J.H.; Morison, J.B.; Griffith, G.R.
Arimdale : Australian Agricultural Economics Society, Inc; 1994 Apr. Review of marketing and agricultural economics v. 62 (1): p. 79-88; 1994 Apr. Includes references.

Language: English

Descriptors: Australia; Cabt; Beef cattle; Environmental policy; Regulations; Operating costs; Economic impact; Commercial farming; Farm comparisons

239 NAL Call. No.: Videocassette no.265
Introduction of foreign genes into livestock Robert Wall.
Wall, Robert
United States, Food Safety and Inspection Service, Technology Transfer and Assessment Staff
Washington : D.C. : U.S. Dept. of Agriculture, Food Safety and Inspection Service, Technology Transfer and Assessment Staff,; 1986. 1 videocassette (VHS) (ca. 53 min.) : sd., col. ; 1/2

in.

Language: English

Descriptors: Animal genetic engineering; United States;
Livestock; United States; Genetic engineering; Animal
genetics; Research; Animal welfare

240 NAL Call. No.: SF206.R8

Ionizatsiia vozdukha v zhivotnovodcheskikh pomeshcheniakh
[Ionization of air in livestock housing].
Rudakov, V. V.; Aleksandrova, S. K.
Leningrad : Agropromizdat,; 1987.
62 p. : ill. ; 20 cm. (Novoe v sel'skom khoziaistve).

Language: Russian

Descriptors: Livestock; Soviet Union; Housing; Air, Ionized

241 NAL Call. No.: S544.3.K2K3

Kansas beef industry: facts and figures.
Dhuyvetter, K.C.; Kuhl, G.L.; Eck, T.P.
Manhattan, Kan. : The Service; 1992 Nov.
MF - Cooperative Extension Service, Kansas State University,
Manhattan (1057): 20 p.; 1992 Nov.

Language: English

Descriptors: Kansas; Cattle; Beef cows; Feedlots; Beef
production; Statistics; Marketing; Crop production

242 NAL Call. No.: S544.3.K2K3

Kansas feedlot industry--facts and figures.
Dhuyvetter, K.C.; Laudert, S.B.
Manhattan, Kan. : The Service; 1991 Oct.
MF - Cooperative Extension Service, Kansas State University,
Manhattan (1017): 14 p.; 1991 Oct. Includes statistical data.

Language: English

Descriptors: Kansas; Cattle; Feedlots; Beef production;
Slaughter; Productivity; Statistical data; Marketing

243 NAL Call. No.: SF91.I568 1987

Latest developments in livestock housing Seminar of the 2nd
Technical Section of the C.I.G.R..
International Commission of Agricultural Engineering. 2nd
Technical Section. Seminar (1987 : University of Illinois at
Urbana-Champaign); American Society of Agricultural Engineers
St. Joseph, Mich.? : The Society,; 1987.
vii, 417 p. : ill. ; 23 cm. (Reports / International
Commission of Agricultural Engineering). Includes
bibliographies.

Language: English

Descriptors: Livestock; Housing; Congresses

244 NAL Call. No.: 100 OK4 (3)

Lead steers as a management tool for stressed stocker cattle.
Hays, V.S.; Johnson, B.D.; Gill, D.R.; Lusby, K.S.; Owens,
F.N.; Smith, R.A.; Ball, R.L.
Stillwater, Okla. : The Station; 1988 Jun.
Miscellaneous publication - Agricultural Experiment Station,
Oklahoma State University (125): p. 99-104; 1988 Jun.

Includes references.

Language: English

Descriptors: Calves; Steers; Bulls; Pens; Stress; Animal health

245 NAL Call. No.: SF207.S68

Limiting intake of finishing diets by restricting access time to feed and the interaction with monensin.

Birkelo, C.P.; Lounsbery, J.

Brookings, SD : Animal and Range Sciences Dept., Agricultural Experiment Station, Cooperative Extension Service, South Dakota State University, [1986?-; 1992 Aug.

South Dakota beef report (92-10): p. 38-41; 1992 Aug.

Language: English

Descriptors: South Dakota; Cabt; Beef cattle; Monensin; Restricted feeding; Liveweight gain; Feedlots; Feeding frequency

246 NAL Call. No.: 49 J82

Live animal measurement of carcass traits by ultrasound: assessment and accuracy of sonographers.

Robinson, D.L.; McDonald, C.A.; Hammond, K.; Turner, J.W.

Champaign, Ill. : American Society of Animal Science; 1992

Jun. Journal of animal science v. 70 (6): p. 1667-1676; 1992

Jun. Includes references.

Language: English

Descriptors: Beef cattle; Ultrasonic fat meters; Ultrasonography; Training courses; Fat thickness; Longissimus dorsi; Body fat; Ribs; Rump; Accuracy; Errors; Carcass composition

Abstract: The establishment and evaluation of an assessment system to accredit sonographers for measuring the carcass traits of subcutaneous fat depths and longissimus muscle area (LMA) on potential breeding animals by real-time ultrasound is described. Repeatability of operators, variation between the animal's left and right sides, and variations in technique were assessed from measurements and repeat measurements of 30 cattle by up to eight operators at three testing sessions. Accuracy of carcass data was determined by repeatability of measurements, variability between measurers, between left and right sides of the carcass, and variation due to handling and dressing procedures. Correlations with carcass data averaged .92 for rump fat, .90 for rib fat, and .87 for LMA. Residual SD averaged .81 mm, .88 mm, and 5.1 cm². A very experienced sonographer can measure LMA only marginally less accurately than it can be measured on the carcass. In Session 3, the SE between repeat fat measurements for accredited sonographers averaged .43 mm, indicating that fat depths can be measured more accurately, but when comparing measurements from different operators, adjustments may be required for differences in technique, otherwise overall accuracy will be about the same, approximately 1 mm. Scanned rump fat measurements were consistently approximately 20% higher than on the chilled, hanging carcass 24 h after slaughter; after applying the standard correction factor of 1.17, LMA measurements were similar. Scan and carcass rib fat measurements were similar for animals with less than or equal to 10 mm of fat cover, above which carcass measurements tended to be higher.

247 NAL Call. No.: S544.3.N7A45
Livestock bedding: new market for old news?.
Richard, T.
Batavia, N.Y. : Agricultural Div. of Coop Extension, Four
Western Plain Counties, N.Y. State; 1989 Nov.
Ag impact v. 16 (11): p. 8-10; 1989 Nov.

Language: English

Descriptors: New York; Bedding; Animal housing; Newspapers;
Recycling

248 NAL Call. No.: 275.29 M36B
Livestock enterprises for the part-time farm.
Perry, J.G.; Barao, S.M.
College Park, Md. : The Service; 1991-1992.
Bulletin - Cooperative Extension Service, University of
Maryland (349): 10 p.; 1991-1992. Includes references.

Language: English

Descriptors: Livestock enterprises; Part time farming;
Species; Livestock; Feeding; Animal housing; Reproduction;
Animal health; Flocks; Livestock products; Marketing

249 NAL Call. No.: SF91.I5 1988
Livestock environment III proceedings of the Third
International Livestock Environment Symposium, April 25-27,
1988, Constellation Hotel, Toronto, Ontario, Canada..
Livestock environment 3 Livestock environment three American
Society of Agricultural Engineers
International Livestock Environment Symposium 3rd : 1988 :
Toronto, Ont. St. Joseph, Mich., USA : American Society of
Agricultural Engineers,; 1988. viii, 470 p. ; 23 cm. (ASAE
publication ; 88-1.). Includes bibliographies.

Language: English

Descriptors: Livestock; Housing; Congresses; Livestock;
Ecology; Congresses; Veterinary physiology; Congresses;
Veterinary hygiene; Congresses

250 NAL Call. No.: SF91.I5 1988
Livestock environment in perspective: a look ahead.
Hahn, G.L.
St. Joseph, Mich. : American Society of Agricultural
Engineers; 1988. Livestock environment III : proceedings of
the Third International Livestock Environment Symposium, April
25-27, 1988, Constellation Hotel, Toronto, Ontario, Canada. p.
469-470; 1988. (ASAE publication ; 1-88).

Language: English

Descriptors: Livestock enterprises; Environmental control;
Quality product; Automation; Decision making; Research policy;
Livestock housing

251 NAL Call. No.: 49 J82
Livestock handling and transport video.
Hoke, K.E.; Grandin, T.
Champaign, Ill. : American Society of Animal Science; 1988.
Journal of animal science v. 66 (suppl.1): p. 516; 1988.
Paper presented at the 80th Annual Meeting of the American
Society of Animal Science, held July 19-22, 1988, New
Brunswick, New Jersey. Includes abstract.

Language: English

Descriptors: Livestock; Handling; Transport of animals;
Videotapes

252 NAL Call. No.: SF91.S3 1988
Livestock health and housing., 3rd ed..
Sainsbury, David.; Sainsbury, Peter,
London ; Philadelphia : Bailliere Tindall.; 1988.
xi, 319 p. : ill. ; 23 cm. Includes bibliographies and index.

Language: English

Descriptors: Livestock; Housing; Veterinary hygiene

253 NAL Call. No.: SF601.T7
Livestock production in central Mali: ownership, management
and productivity of poultry in the traditional sector.
Kuit, H.G.; Traore, A.; Wilson, R.T.
Edinburgh : Scottish Academic Press; 1986 Nov.
Tropical animal health and production v. 18 (4): p. 222-231;
1986 Nov. Includes references.

Language: English

Descriptors: Mali; Poultry farming; Egg production; Flocks;
Types; Poultry housing; Farm management; Mortality

254 NAL Call. No.: HD1.A3
Livestock productivity assessment and herd growth models.
Upton, M.
Essex : Elsevier Applied Science Publishers; 1989.
Agricultural systems v. 29 (2): p. 149-164; 1989. Includes
references.

Language: English

Descriptors: Herd size; Prediction; Herd structure; Growth
models; Productivity; Reproductive performance; Mortality;
Milk yield

255 NAL Call. No.: HD1.A3
Livestock productivity assessment and modelling.
Upton, M.
Essex : Elsevier Applied Science Publishers; 1993.
Agricultural systems v. 43 (4): p. 459-472; 1993. Includes
references.

Language: English

Descriptors: Livestock numbers; Herd structure; Productivity;
Growth models; Assessment; Outturn; Case studies;
Reproduction; Mortality; Yields; Mathematical models

256 NAL Call. No.: SF428.6.S56
Livestock protection dogs selection, care, and training.
Sims, David E.; Dawydiak, Orysia,
Ft. Payne, AL : OTR Publications.; 1990.
128 p. : ill. ; 23 cm. Includes bibliographical references
and index.

Language: English

Descriptors: Livestock protection dogs

257 NAL Call. No.: SF85.4.A9G72 1985
Losses and diseases induced by transport.
Shaw, F.D.
Indooroopilly, QLD : Australian Veterinary Association
(Queensland Division); 1985.
Grazing Animal Welfare Symposium : proceedings of a symposium
held at the Bardon Professional Development Centre, Brisbane,
on April 26th and 27th, 1985 / [editors: Brian L. Moore and
Peter J. Chenoweth]. p. 145-154; 1985. Includes references.

Language: English

Descriptors: Cattle; Losses; Mortality; Transport; Tetany;
Liveweight; Carcass weight; Bruising; Stress; Beef quality

258 NAL Call. No.: 49 J82
Major biological consequences of aflatoxicosis in animal
production. Pier, A.C.
Champaign, Ill. : American Society of Animal Science; 1992
Dec. Journal of animal science v. 70 (12): p. 3964-3967; 1992
Dec. Paper presented at a symposium entitled "Current
Perspectives on Mycotoxins in Animal Feeds," Laramie, WY.
Includes references.

Language: English

Descriptors: Livestock; Aflatoxins; Feeds; Contamination;
Aflatoxicosis; Species differences; Age differences;
Susceptibility; Economic impact

Abstract: Aflatoxins, a family of closely related,
biologically active mycotoxins, have been known as a prominent
cause of animal disease for 30 yr. The toxins occur naturally
on several key animal feeds, including corn, cottonseed, and
peanuts. Occurrence of aflatoxin on some field crops tends to
spike in years when drought and insect damage facilitate
invasion by the causative organisms, *Aspergillus flavus* and *A.*
parasiticus, which abound in the crop's environment. Acute
aflatoxicosis causes a distinct overt clinical disease marked
by hepatitis, icterus, hemorrhage, and death. More chronic
aflatoxin poisoning produces very protean signs that may not
be clinically obvious; reduced rate of gain in young animals
is a sensitive clinical register of chronic aflatoxicosis. The
immune system is also sensitive to aflatoxin, and suppression
of cell-mediated immune responsiveness, reduced phagocytosis,
and depressed complement and interferon production are
produced. Acquired immunity from vaccination programs may be
substantially suppressed in some disease models. In such cases
the signs of disease observed are those of the infectious
process rather than those of the aflatoxin that predisposed
the animal to infection. Mixtures of aflatoxin with other
mycotoxins can result in greatly augmented biological
responses in terms of rate of gain, lethality, and immune
reactivity. Because of its great biological activity, its
widespread potential presence in areas where critical feed
crops are grown, and its propensity to spike in problem years,
aflatoxin promises to be a continuing problem in animal
production.

259 NAL Call. No.: SF61.M35 1988
Management and welfare of farm animals., 3rd ed..
Universities Federation for Animal Welfare
London : Bailliere Tindall; 1988.
x, 260 p. : ill. ; 25 cm. The WFAW handbook. Includes
bibliographies and index.

Language: English

Descriptors: Livestock

260 NAL Call. No.: 275.9 N213
Management of a student-run livestock facility.
Wilson, M.E.; Conway, G.
Urbana, Ill. : The Association; 1986 Sep.
NACTA journal - National Association of Colleges and Teachers
of Agriculture v. 30 (3): p. 29; 1986 Sep.

Language: English

Descriptors: Livestock farming; Agricultural education;
College students

261 NAL Call. No.: 49 J82
Management of yearling bulls in a feedlot.
MacNeil, M.D.; Gregory, K.E.; Ford, J.J.
Champaign, Ill. : American Society of Animal Science; 1989
Apr. Journal of animal science v. 67 (4): p. 858-864; 1989
Apr. Includes references.

Language: English

Descriptors: Bulls; Cattle husbandry; Dry lot feeding;
Feedlots; Beef production; Group size

262 NAL Call. No.: SF140.L58K58 1991
Massentierhaltung aktuelle Fragen, sachliche Antworten [Mass
animal rearing]., 1. Aufl..
Kleinschmidt, Nina; Eimler, Wolf-Michael
Gottingen : Echo,; 1991.
96 p. : ill. ; 18 cm. Includes bibliographical references (p.
93-94).

Language: German

Descriptors: Livestock factories; Animal welfare

263 NAL Call. No.: 49 J82
Maternal breed of sire effects on postweaning performance of
heifer and steer progeny: postweaning growth and carcass
characteristics.
Urlick, J.J.; Reynolds, W.L.; Knapp, B.W.
Champaign, Ill. : American Society of Animal Science; 1991
Nov. Journal of animal science v. 69 (11): p. 4377-4387; 1991
Nov. Includes references.

Language: English

Descriptors: Beef cattle; Liveweight gain; Carcass
composition; Breed differences; Sires; Crossbred progeny;
Growth; Heifers; Steers

Abstract: Heifer and steer progeny of 2-yr-old first-cross
(F1) heifers and 3- to 6-yr-old F1 cows, from Hereford dams
and five sire breeds, were evaluated for postweaning feedlot
growth and carcass composition. Breeds of sire of dam were
Angus (A), Red Poll (RP), Tarentaise (T), Simmental (Sm), and
Pinzgauer (P). Calves from 2-yr-old heifers were sired by
Shorthorn, and calves from 3- to 6-yr-old dams were sired by
Charolais. Breed of sire of dam was significant ($P < .05$ to P
 $< .01$) for total gain and final weight for female progeny from
2-yr-old dams. At all weights, Sm, P, and T ranked above A and
RP. Progeny of A, P, Sm, and T F1 2-yr-old dams were not
significantly different but were higher ($P < .05$) than RP

heifers in total feedlot gain. Breed of sire of dam was significant ($P < .05$) for carcass weight and longissimus muscle area; T ranked highest and RP lowest. Breed was not significant for any growth traits of steer progeny of 2-yr-old dams. Breed was significant for marbling score; A ranked highest and exceeded ($P < .01$) both RP and Sm steers. Breed was significant ($P < .05$) for most growth traits in the heifer progeny of the 3- to 6-yr-old dams bred to Charolais sires. Heifer calves of the Sm group were heavier ($P < .05$) than all other groups for most weights and total gain. For total gain, P and T were intermediate and A and RP lowest. For heifer carcass traits from 3- to 6-yr-old dams, breed was significant ($P < .05$ to $P < .01$) for carcass weight, longissimus muscle area, percentage of cutability, and estimated kidney, heart, and pelvic fat. Heifers from Sm-sired dams were heavier ($P < .05$) than those from all other groups but ranked second to heifers from P for percentage of cutability. Marbling scores of RP heifer carcasses ranked highest of all groups. Breed was not significant ($P > .05$) for any of the weights or gains in steer progeny of 3- to 6-yr-old dams; however, the Sm and P groups ranked above A and RP for all feedlot test weights. Breed was significant

264 NAL Call. No.: QP145.I52 1984
Metabolic responses to cold.
Sasaki, Y.; Weekes, T.E.C.
Englewood Cliffs, N.J. : Prentice-Hall; 1986.
Control of digestion and metabolism in ruminants : proceedings of the Sixth International Symposium on Ruminant Physiology, held at Banff, Canada, Sept 10-14, 1984 / edited by L.P. Milligan, W.L. Grovum, and A. Dobson. p. 326-343; 1986.
Literature review. Includes references.

Language: English

Descriptors: Livestock; Ruminants; Cold stress; Endocrinology; Heat production; Metabolism; Rumen digestion

265 NAL Call. No.: 290.9 AM32T
A method of evaluating solar heat storage in livestock buildings. Sokhansanj, S.; Barber, E.M.
St. Joseph, Mich. : The Society; 1986 May.
Transactions of the ASAE - American Society of Agricultural Engineers v. 29 (3): p. 816-818. ill; 1986 May. Includes references.

Language: English

Descriptors: Livestock housing; Solar heating; Evaluation; Ventilation

266 NAL Call. No.: SF91.I8
Mikroklimat zhivotnovodcheskikh ferm i kompleksov
[Microclimate of animal farms and complexes].. Mikroklimat ferm i kompleksov
IUrkov, V. M.
Moskva : Rossel'khozizdat,; 1985.
222 p. : ill. ; 21 cm. Spine title: Mikroklimat ferm i kompleksov. Bibliography: p. 221.

Language: Russian

Descriptors: Animal housing; Soviet Union; Climate; Microclimatology; Soviet Union; Livestock; Soviet Union; Housing

267 NAL Call. No.: S544.3.N9C46
Minimum facilities for beef cattle production.
Hirning, H.J.
 Fargo, N.D. : The University; 1990 Jan.
NDSU Extension Service [publication] - North Dakota State
University (AE-986): 16 p.; 1990 Jan.

Language: English

Descriptors: North Dakota; Beef cattle; Farm structure;
Construction; Windbreaks; Straw cobs; Barns; Fencing;
Feedlots; Water troughs; Feed dispensers

268 NAL Call. No.: HD1775.M5M5 no.92-5
Minnesota's livestock industries past, present and future
structural change. Olson, Kent D.; Grande, Jorunn; Bjornstad,
Even; Allen, Kristen University of Minnesota, Dept. of
Agricultural and Applied Economics St. Paul, Minn. : Dept. of
Agricultural and Applied Economics, University of Minnesota,
College of Agriculture; 1992.
xiv, 70 p. : ill. ; 28 cm. (Economic report (Saint Paul,
Minn.) ; ER92-5.). June, 1992. Includes bibliographical
references (p. 69-70).

Language: English

Descriptors: Animal industry; Agricultural productivity;
Livestock

269 NAL Call. No.: 58.8 J82
A model of the bioclimatic value of shelter to beef cattle.
Higgins, K.P.; Dodd, V.A.
London : Academic Press; 1989 Mar.
Journal of agricultural engineering research v. 42 (3): p.
149-164. maps; 1989 Mar. Includes references.

Language: English

Descriptors: Scotland; Beef cattle; Shelter; Bioclimate;
Thermodynamics; Mathematical models; Energy intake; Liveweight
gains; Meteorological factors; Computer simulation; Winter;
Performance

270 NAL Call. No.: HM206.A1H8
Modeling Rendille household herd composition.
Roth, E.A.
New York, N.Y. : Plenum Press; 1990 Dec.
Human ecology v. 18 (4): p. 441-455; 1990 Dec. In the special
issue: Empirical approaches to household organization.
Includes references.

Language: English

Descriptors: Kenya; Camels; Cattle; Livestock numbers; Herd
structure; Households; Decision making; Pastoralism;
Traditions; Cultural change

271 NAL Call. No.: SF91.I568 1987
Natural convection efficiency in modeling houses and its
effectiveness in animal production.
Takezono, T.; Murakami, R.; Sase, S.
St. Joseph, Mich.? : The Society; 1987.
Latest developments in livestock housing : Seminar of the 2nd
Technical Section of the C.I.G.R. / Univ of Illinois, Urbana-
Champaign, Illinois, USA, June 22-26, 1987 ; hosted by
American Society of Agricultural Engineers. p. 171-178. ill;

1987. (Reports / International Commission of Agricultural Engineering). Includes references.

Language: English

Descriptors: Japan; Livestock housing; Poultry housing; Convection; Natural ventilation; Design calculations; Models

272 NAL Call. No.: 100 OK4

Naxcel for stressed stocker cattle.

Johnson, B.D.; Gill, D.R.; Smith, R.A.; Ball, R.L.

Stillwater, Okla. : The Station; 1990 Jun.

Annual report - Oklahoma Agricultural Experiment Station

(129): p. 217-220; 1990 Jun.

Language: English

Descriptors: Cattle; Transport of animals; Stress response; Respiratory diseases; Cephalosporins; Treatment; Liveweight gain; Mortality; Morbidity; Disease control

273 NAL Call. No.: HV4877.A43E96

The need for change in the exploitation of domesticated livestock. Topps, J.H.

Aberdeen [Scotland] : Aberdeen University African Studies

Group; 1988. The Exploitation of animals in Africa :

proceedings of a colloquium at the University of Aberdeen,

March 1987 / edited by Jeffrey C. Stone. p. 53-63; 1988.

Includes references.

Language: English

Descriptors: Africa; Domestic animals; Domestication; Resource exploitation; Animal production; Production structure; Structural change

274 NAL Call. No.: 44.8 J824

New advances in humane slaughter of meat animals.

Childers, A.B.

Ames, Iowa : International Association of Milk, Food, and

Environmental Sanitarians; 1987 Aug.

Journal of food protection v. 50 (8): p. 709-710; 1987 Aug.

Includes references.

Language: English

Descriptors: Meat animals; Stunning; Animal welfare; Heart; Electrical treatment; Meat quality; Blood

275 NAL Call. No.: SF207.B442

New concepts of bovine viral diarrhea virus disease and control. Shulaw, W.P.; Brock, K.V.; Hoblet, K.H.

Wooster, Ohio : The Ohio State University, Ohio Agricultural Research and Development Center; 1991 Mar.

Ohio beef cattle research & industry report (91-2): p. 89-93; 1991 Mar. Includes references.

Language: English

Descriptors: Ohio; Beef cattle; Bovine diarrhea virus; Disease prevention; Disease control; Vaccination; Feedlots; Diagnosis; Puerperium; Congenital infection

276 NAL Call. No.: SF191.G4

New teaching, research facilities sought for UGA livestock

programs. Macon, Ga. : Georgia Cattlemen's Association; 1989 Sep.
Georgia cattleman v. 17 (9): p. 31. maps; 1989 Sep.

Language: English

Descriptors: Georgia; Livestock; Instruction; Schools; Buildings; University research

277 NAL Call. No.: 421 J828
New version of LSTSIM for computer simulation of *Amblyomma americanum* (Acari: Ixodidae) population dynamics.
Mount, G.A.; Haile, D.G.; Barnard, D.R.; Daniels, E.
Lanham, Md. : The Entomological Society of America; 1993 Sep.
Journal of medical entomology v. 30 (5): p. 843-857; 1993 Sep.
Includes references.

Language: English

Descriptors: Oklahoma; Cabt; Kentucky; Cabt; Tennessee; Cabt; *Amblyomma Americanum*; Population dynamics; Simulation models; Computer simulation

Abstract: A previous version of Lone Star Tick Simulation Model (LSTSIM) for a wildlife ecosystem was revised and expanded to include a beef cattle forage area and improved handling of tick-host- habitat interactions. Relationships between environmental and biological variables were also refined in the new version. General validity of the revised model was established by comparing simulated and observed host-seeking populations of *Amblyomma americanum* (L.) at five geographic locations, three in Oklahoma and two in Kentucky-Tennessee. Additional validity was indicated from comparisons of simulated and observed seasonality of lone star ticks at one location in Kentucky. The model produced acceptable values for initial population growth rate, generation time, and 15-yr population density when historical weather files for 14 locations in the United States were used. The model of *A. americanum* population dynamics was used to study the relationship between tick density and density of white-tailed deer, *Odocoileus virginianus* (Zimmerman), and cattle. The revised model can be used for additional simulation studies on effects of tick control technologies and integrated management strategies.

278 NAL Call. No.: 57.8 C734
Newsprint gets farmer and livestock okay.
Temple, G.
Emmaus, Pa. : J.G. Press; 1990 Sep.
BioCycle v. 31 (9): p. 60-63. ill; 1990 Sep. Includes references.

Language: English

Descriptors: Newspapers; Livestock; Litter; Farming; Animal housing

279 NAL Call. No.: 49 J82
Nulliparous versus primiparous crossbred females for beef.
Bailey, C.M.; Reid, C.R.; Ringkob, T.P.; Koh, Y.O.; Foote, W.D. Champaign, Ill. : American Society of Animal Science; 1991 Apr. Journal of animal science v. 69 (4): p. 1403-1408; 1991 Apr. Includes references.

Language: English

Descriptors: Beef cows; Heifers; Crossbreds; Breed

differences; Fattening performance; Carcass composition;
Carcass quality; Beef; Tenderness; Shear strength

Abstract: Feedlot and carcass traits of nulliparous and primiparous females representing eight breed types, including *Bos taurus* and *Bos indicus* X *Bos taurus* crosses, were evaluated. Nulliparous females (heifers) were in the feedlot for 4 mo; primiparous females (heiferettes) were fed for 2 1/3 mo after their calves were weaned at 6 mo of age. Heifers averaged higher ($P < .01$) in dressing percentage, percentage of kidney fat, carcass grade ($P < .10$), and color of lean ($P < .05$) compared with heiferettes. Heiferettes exceeded the nulliparous group in feedlot ADG ($P < .01$), fat thickness ($P < .05$), and percentage of steak, roast, and bone ($P < .01$). Parity effects on carcass weight, longissimus area, marbling, pH, and shear force value were not statistically significant. Dam breed types differed in several traits, including marbling ($P < .05$) and percentage of steak ($P < .10$), roast ($P < .01$), and bone ($P < .01$). Dam breed X parity interactions were nonsignificant. Results show that beef derived from heiferettes is competitive with heifer beef.

280 NAL Call. No.: 41.8 AU72
Objective measures of welfare in farming environments.
Blackshaw, J.K.
Brunswick, Victoria : Australian Veterinary Association; 1986
Nov. Australian veterinary journal v. 63 (11): p. 361-364;
1986 Nov. Includes references.

Language: English

Descriptors: Livestock; Animal welfare; Animal health; Animal behavior; Physiology; Animal production; Animal husbandry

281 NAL Call. No.: 60.18 J82
Observations on white-tailed deer and habitat response to livestock grazing in south Texas.
Cohen, W.E.; Drawe, D.L.; Bryant, F.C.; Bradley, L.C.
Denver : American Society for Range Management, 1948-; 1989
Sep. Journal of range management v. 42 (5): p. 361-365; 1989
Sep. Includes references.

Language: English

Descriptors: Texas; Cabt; *Odocoileus Virginianus*; Rotational grazing

Abstract: Since short duration grazing (SDG) was introduced to Texas, concern for white-tailed deer (*Odocoileus virginianus*) has magnified because they are a species of major economic importance to ranchers. The objective of this study was to observe the effects of SDG and continuous yearlong grazing (CG) on home ranges and movement indices of female deer, and on forage availability. The study was conducted on the Rob and Bessie Welder Wildlife Refuge, near Sinton, Texas. The study area included a 10-pasture SDG cell and a CG pasture, each stocked at 2.8 ha/auy. Cattle grazed each SDG paddock 2 to 8 days; paddocks were rested 32 to 47 days. A total of 3,961 radio-fixes from 11 does was collected over an 11-month study period in 1983. Monthly and annual home ranges of does were similar ($P > 0.05$) between SDG (207 ha) and CG (229 ha). However, white-tailed deer traveled 35% more ($P < 0.05$) between fixes in SDG (449 m) than in CG (332 m) from May to August, a time of greatest physiological and nutritional stress for female deer in south Texas. Also, does avoided ($P < 0.05$) cattle during 2 cycles of the SDG rotation. The primary trend observed was for the deer under SDG to avoid cattle concentrations by alternating between preferred habitats

rather than a predictable paddock-to-paddock movement. In general, there were few differences in total grass and forb cover between SDG and CG. However, several forage species important to deer were less frequent ($P < 0.05$) under SDG than CG.

282 NAL Call. No.: Videocassette no.791
Our side of the fence produced by National Cattlemen's Association. National Cattlemen's Association (U.S.) Englewood, CO. : National Cattlemen's Association,; 1989. 1 videocassette (9 min.) : sd., col. ; 1/2 in. + 1 guide. VHS. Funded by Beef Promotion & Research Board. "3/89"--Slip cover.

Language: English

Descriptors: Animal welfare; Beef cattle industry; Livestock

283 NAL Call. No.: SF601.T7
An outbreak of haemorrhagic septicaemia (septicaemic pasteurellosis) in cattle in Zimbabwe. Lane, E.P.; Kock, N.D.; Hill, F.W.G.; Mohan, K. Midlothian, Scotland : University of Edinburgh; 1992 May. Tropical animal health and production v. 24 (2): p. 97-102; 1992 May. Includes references.

Language: English

Descriptors: Zimbabwe; Beef cattle; Pasteurella multocida; Pasteurellosis; Outbreaks; Stress factors; Morbidity; Mortality; Postmortem examinations

284 NAL Call. No.: 49 J82
Output/input differences among nonpregnant, lactating Bos indicus-Bos taurus and Bos taurus-Bos taurus F1 cross cows. Green, R.D.; Cundiff, L.V.; Dickerson, G.E.; Jenkins, T.G. Champaign, Ill. : American Society of Animal Science; 1991 Aug. Journal of animal science v. 69 (8): p. 3156-3166; 1991 Aug. Includes references.

Language: English

Descriptors: Beef cows; Zebu breeds; Crossbred progeny; Crossbreeding; Energy intake; Body weight; Milk production; Feed conversion efficiency; Growth

Abstract: Nonpregnant F1 crossbred cows, progeny of either Hereford (H) or Angus (A) dams and sired by Brahman (Bm), Sahiwal (Sw), Pinzgauer (Pz), H or A sires, were fed to maintain initial weight while rearing Charolais (C)-sired progeny for a period of 126 d in drylot commencing at about 48 d postpartum. Cow-calf pairs were assigned to equalize cow age, calf sex, and breed of cow's dam among three replicate pens of approximately 12 pairs each. Cows and calves were weighed every 2 wk and feed intake was adjusted to minimize change in cow weight. Metabolizable energy (ME) consumption for zero cow weight change was estimated by regression. Milk production was estimated by weigh-suckle, weigh at 58, 85, 125, and 170 d of lactation. Calf gain (GAIN, kg) relative to cow weight (CWT 1, kg) was higher ($P < .01$) for calves from Bm-X (139.5/585) and Sw-X (132.2/534) than for calves from Pz-X (127.2/552) and HA-X (116.9/547) cows. Estimated mean daily production of milk was 7.40, 7.15, 7.28, and 6.37 kg for the Bm-X, Sw-X, Pz-X, and HA-X, respectively. Total cow ME intake (TME cow) for breed groups ranked ($P < .05$) with cow size and milk production, and calf creep-feed intake (FME calf) was inversely related to estimated milk intake. Proportion of

total feed ME (TME cow+calf) consumed by calves was higher ($P < .05$) for HA-X cows (18%) than for the others (14%). Total efficiency of calf gain in weight (GAIN/TME cow+calf) was 11 % greater ($P < .05$) for crossbred cows of Bos indicus X Bos taurus Bm-X, Sw-X) than for Bos taurus X Bos taurus (Pz-X, HA-X) cows (35 vs 32 g/Mcal) in the 126-d lactation period.

285 NAL Call. No.: 290.9 AM32P
Particle size distribution of cattle feedlot dust emissions.
Sweeten, J.M.; Parnell, C.B.
St. Joseph, Mich. : The Society; 1989.
Paper - American Society of Agricultural Engineers (89-4076):
21 p.; 1989. Paper presented at the 1989 International Summer
Meeting, June 25-28, 1989, Quebec, PQ, Canada. Includes
references.

Language: English

Descriptors: Feedlots; Dust; Emission; Beef cattle; Particle
size distribution

286 NAL Call. No.: QP251.A1T5
Patterns of development of gonads, sex-drive and hormonal
responses in tropical beef bulls.
Perry, V.E.A.; Chenoweth, P.J.; Post, T.B.; Munro, R.K.
Stoneham, Mass. : Butterworth Publishers; 1991 Feb.
Theriogenology v. 35 (2): p. 473-486; 1991 Feb. Includes
references.

Language: English

Descriptors: Beef bulls; Zebu; Testes; Libido; Hormone
secretion; Sexual development; Genetic differences; Lh; GnRH;
Testosterone

Abstract: The development of different traits was studied in tropical beef bulls of seven genotypes (Brahman, Africander, British and combinations of these) from approximately 500 to 910 d of age. Bulls were raised under pasture conditions without supplementation. At each examination, approximately 2 mo apart, bulls were weighed, palpated (including scrotal and testicular measurement), electroejaculated, and subjected to two libido tests with estrus-induced females. At alternate examinations, plasma luteinizing hormone (LH) was measured at 30 and 150 min post gonadotrophin releasing hormone (GnRH) injection (LH - 30 and LH - 150) and testosterone (T) was measured at 150 min (T - 150). In general, nutritional and environmental stressors appeared to impede bull reproductive development. Scrotal circumference increased nonlinearly, apparently influenced by puberty and average daily gain (ADG). Libido increased overall, albeit nonlinearly also. No apparent marked differences in development of either trait could be attributed to genotype differences, although Brahman bulls tended to display lower sexual interest. The LH-30 level was relatively high (>14 ng/ml) at 500 and 640 d of age, but then dropped markedly at 760 d followed by a slight recovery. The LH-150 level followed a similar pattern, although d was very low at 500 d of age. The T-150 level showed a reverse pattern, being lower initially and higher in the latter part of the study. No apparent genotype differences occurred. Possible contributory influences on these patterns, including the onset of puberty and sexual maturity, season and nutrition, are discussed herein.

287 NAL Call. No.: FICHE S-72
Pen sizes aboard livestock transport ships.
Hoke, K.E.

St. Joseph, Mich. : The Society; 1987.
American Society of Agricultural Engineers (Microfiche collection) (fiche no. 87-6070): 10 p.; 1987. Paper presented at the 1987 Summer Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. Includes references.

Language: English

Descriptors: Virginia; Venezuela; Cattle; Transport; Pens;
Size; Exports

288 NAL Call. No.: SF197.P47 1990
Penternakan secara fidlot [Feedlot system for beef cattles].
Yusof Hamali Ahmad; Omar, Mohamed Ariff, 1949-; Wan Zahari
Mohamed Kuala Lumpur : Dewan Bahasa dan Pustaka, Kementerian
Pendidikan Malaysia, 1990.
xi, 102 p. : ill. ; 21 cm. Includes bibliographical
references (p. 95-96) and index.

Language: Malay

Descriptors: Beef cattle; Beef cattle

289 NAL Call. No.: SF91.I5 1988
Performance and behavior responses of beef cattle to stable
flies in warm environments.
Wieman, G.A.; DeShazer, J.A.; Campbell, J.B.
St. Joseph, Mich. : American Society of Agricultural
Engineers; 1988. Livestock environment III : proceedings of
the Third International Livestock Environment Symposium, April
25-27, 1988, Constellation Hotel, Toronto, Ontario, Canada. p.
315-321; 1988. (ASAE publication ; 1-88). Includes
references.

Language: English

Descriptors: Nebraska; Beef cattle; Stomoxys calcitrans; Pens;
Bunching; Animal behavior; Weight gain; Feed intake; Heat
stress

290 NAL Call. No.: 49 J82
Performance and health of weanling bulls after butorphanol and
xylazine administration at castration.
Faulkner, D.B.; Eurell, T.; Tranquilli, W.J.; Ott, R.S.; Ohl,
M.W.; Cmarik, G.F.; Zinn, G.
Champaign, Ill. : American Society of Animal Science; 1992
Oct. Journal of animal science v. 70 (10): p. 2970-2974; 1992
Oct. Includes references.

Language: English

Descriptors: Calves; Steers; Castration; Analgesics;
Liveweight gain; Feed intake; Feed conversion; Blood serum;
Hydrocortisone; Haptoglobins

Abstract: A total of 268 crossbred, 6- to 9-mo-old, bull
calves (214 +/- 19 kg) were used in two separate 27-d
experiments to assess the effects of butorphanol and xylazine
administration (BXA) on the subsequent performance and health
of beef calves. In each experiment, calves were randomly
allotted to four treatment groups: 1) castration with BXA, 2)
castration without BXA, 3) no castration with BXA, and 4) no
castration without BXA. There were two replicates within each

experiment. The intravenous administration of .07 mg/kg of butorphanol and .02 mg/kg of xylazine occurred 90 s before tail hold and castration procedures. Calves were placed in a squeeze chute and manually restrained by tail elevation. In Exp. 2, the cattle also were scored for chute activity (on a 1 to 5 scale with 5 being the most active). Cattle were weighed at the beginning and end of the experiment, feed intake was recorded daily, and cattle were monitored daily for respiratory disease. There were no castration X BXA interactions ($P > .51$). Castration reduced ($P < .01$) daily gain and gain/feed and tended ($P = .13$) to reduce feed intake. The administration of BXA had no effect ($P > .05$) on gain or gain/feed but did tend ($P = .13$) to reduce feed intake. No differences ($P > .45$) were observed in morbidity or mortality due to either BXA or castration. Castration and BXA increased ($P < .01$) blood cortisol levels on d 3, whereas control animals had reduced cortisol levels. Castration increased ($P < .05$) haptoglobin levels on d 3, but BXA had no effect ($P > .05$) on serum haptoglobin concentrations on d 3. Chute activity was reduced ($P < .05$) by castration and BXA. In this study, animal performance was reduced by castration. The administration of BXA did not alter stress indicators or improve performance of castrated bull calves. Serum haptoglobin may be a more specific indicator of the inflammatory process in cattle, whereas serum cortisol may be an indicator of the whole-body stress response.

291 NAL Call. No.: SF91.I5 1988
Performance of alternative veal housing systems.
Rynk, R.F.
St. Joseph, Mich. : American Society of Agricultural Engineers; 1988. Livestock environment III : proceedings of the Third International Livestock Environment Symposium, April 25-27, 1988, Constellation Hotel, Toronto, Ontario, Canada. p. 409-416; 1988. (ASAE publication ; 1-88). Literature review. Includes references.

Language: English

Descriptors: Calf housing; Loose housing; Beef production; Cattle husbandry

292 NAL Call. No.: 26 T754
The performance of cattle stall-fed for beef in Malawi.
Nkhonjera, L.; Agyemang, K.; Butterworth, M.
Guildford : Butterworth Scientific; 1987 Apr.
Tropical agriculture v. 64 (2): p. 105-110; 1987 Apr.
Includes references.

Language: English

Descriptors: Malawi; Beef cattle; Cattle fattening; Stalls; Weight gain; Performance testing; Crop residues; Small farms

293 NAL Call. No.: 290.9 AM32P
Performance of heat exchangers on three types of Quebecois livestock buildings.
Lord, D.; Dutil, C.; Chagnon, R.
St. Joseph, Mich. : The Society; 1989.
Paper - American Society of Agricultural Engineers (89-4066): 8 p.; 1989. Paper presented at the 1989 International Summer Meeting, June 25-28, 1989, Quebec, PQ, Canada.

Language: English

Descriptors: Quebec; Animal housing; Heat exchangers; Ventilation; Pigs; Broilers; Calves

294 NAL Call. No.: 421 J822
Physiological and nutritional response of beef steers to
combined infestations of horn fly and stable fly (Diptera:
Muscidae).
Schwinghammer, K.A.; Knapp, F.W.; Boling, J.A.
College Park, Md. : Entomological Society of America; 1987
Feb. Journal of economic entomology v. 80 (1): p. 120-125;
1987 Feb. Includes references.

Language: English

Descriptors: Beef cattle; Steers; Haematobia irritans;
Stomoxys calcitrans; Stress; Animal nutrition; Respiration
rate; Digestibility; Body temperature; Blood chemistry; Heart
rate; Cortisol; Nitrogen retention

295 NAL Call. No.: FICHE S-72
Planning fencing systems for intensive grazing management.
Turner, L.W.; Absher, C.W.; Evans, J.K.; McNeill, S.G.
St. Joseph, Mich. : The Society; 1987.
American Society of Agricultural Engineers (Microfiche
collection) (fiche no. 87-4084): 19 p. ill; 1987. Paper
presented at the 1987 Summer Meeting of the American Society
of Agricultural Engineers. Available for purchase from: The
American Society of Agricultural Engineers, Order Dept., 2950
Niles Road, St. Joseph, Michigan 49085. Telephone the Order
Dept. at (616) 429-0300 for information and prices. Includes
references.

Language: English

Descriptors: Fencing; Systems; Planning; Controlled grazing;
Beef cattle

296 NAL Call. No.: SF207.B442
Plastic pot scrubbers replace roughage for cattle fed all
concentrate diets. Loerch, S.C.
Wooster, Ohio : The Ohio State University, Ohio Agricultural
Research and Development Center; 1990 Mar.
Ohio beef cattle research & industry report (90-2): p. 91-97;
1990 Mar. Includes references.

Language: English

Descriptors: Ohio; Beef cattle; Plastic nets; Concentrates;
Feedlots; Roughage; Liveweight gain; Fattening performance

297 NAL Call. No.: HT401.J68
A political economy perspective on the expansion of New
Zealand livestock farming, 1960-1984. I. Agricultural policy.
Le Heron, R.
Elmsford, N.Y. : Pergamon Press; 1989.
Journal of rural studies v. 5 (1): p. 17-32; 1989. Includes
references.

Language: English

Descriptors: New Zealand; Livestock farming; Agricultural
policy; Politics; History; Structural change; Capitalism;
Regulations; Pastoralism; Support measures; Investments

298 NAL Call. No.: SF601.V535
Polyether ionophores--effect on rumen function in feedlot
cattle. Corah, L.R.

Philadelphia, Pa. : W.B. Saunders Company; 1991 Mar.
The Veterinary clinics of North America : food animal practice
v. 7 (1): p. 127-132; 1991 Mar. In the series analytic: Beef
cattle nutrition / edited by J. Maas. Includes references.

Language: English

Descriptors: Beef cattle; Ionophores; Rumen metabolism;
Feedlots; Fattening performance; Monensin; Lasalocid; Nitrogen
metabolism; Mineral metabolism; Mode of action

299 NAL Call. No.: 100 K41PR
Potassium in feedlot diets containing lasalocid.
Gay, N.; Boling, J.A.; Dawson, K.A.; Dew, R.
Lexington, Ky. : The Station; 1985 Nov.
Progress report - Kentucky Agricultural Experiment Station
(291): p. 14-15; 1985 Nov. Documents available from
Agriculture Library, Agricultural Science Center - North,
University of Kentucky, Lexington, KY 40546-0091. In the
series analytic: 1985 beef cattle research report. Includes
statistical data.

Language: English

Descriptors: Steers; Cattle fattening; Lasalocid; Potassium

300 NAL Call. No.: SF61.P73 1991
Practical animal handling.
Anderson, R. S._1931-; Edney, A. T. B.
Oxford ; New York : Pergamon Press,; 1991.
xii, 198 p. : ill. ; 25 cm. Includes bibliographical
references and index.

Language: English

Descriptors: Livestock

301 NAL Call. No.: SF87.B55
Pre- and post-weaning growth of different breeds of beef
cattle in the tropics.
Vercoe, J.E.; Frisch, J.E.
Amsterdam : Elsevier; 1987.
Bioclimatology and the adaptation of livestock / edited by
H.D. Johnson. p. 59-63; 1987. (World animal science. B,
Disciplinary approach ; 5). Includes references.

Language: English

Descriptors: Beef cattle; Beef breeds; Tropics; Postweaning
interval; Preweaning period; Growth; Environment; Stress;
Adaptation

302 NAL Call. No.: SF191.2.I68
Preparations for receiving and processing stocker cattle.
Richey, E.J.
Morillton, Ark. : Winrock International; 1985.
Emerging technology and management for ruminants : 1985
livestock seminars, International Stockmen's School / edited
by Frank H. Baker and Mason E. Miller. p. 223-227; 1985.

Language: English

Descriptors: Beef cattle; Feedlots; Animal feeding; Vaccines;
Drugs; Equipment; Supplies

303 NAL Call. No.: SF601.C66
Preparing Holstein beef calves for the feedyard.
Smith, R.A.; Lynch, J.W.
Trenton, N.J. : Veterinary Learning Systems Company, Inc; 1991
Nov. The Compendium on continuing education for the practicing
veterinarian v. 13 (11): p. 1739-1744; 1991 Nov. Includes
references.

Language: English

Descriptors: Calves; Beef production; Holstein-friesian;
Animal health; Cattle husbandry; Feedlots; Feed rations;
Cattle fattening

304 NAL Call. No.: HD9415.S5 1986
Prime cut livestock raising and meatpacking in the United
States, 1607-1983., 1st ed.
Skaggs, Jimmy M.,
College Station : Texas A&M University Press,; 1986.
xiii, 263 p., [8] p. of plates : ill. ; 24 cm. Includes
index. Bibliography: p. [219]-245.

Language: English

Descriptors: Meat industry and trade; United States; History;
Cattle trade; United States; History; Stockyards; United
States; History; Packing-houses; United States; History

305 NAL Call. No.: 49 J82
Problems and possibilities into the next decade involving beef
cattle breeding research in the Southern Region: experiment
station herds. Franke, D.E.
Champaign, Ill. : American Society of Animal Science; 1991
Oct. Journal of animal science v. 69 (10): p. 4229-4233; 1991
Oct. Includes references.

Language: English

Descriptors: Southern states of U.S.A.; Beef cattle; Animal
breeding; Government research; Research support; Organization
of research; Genetics

Abstract: Opinions on expected support of animal breeding and
genetics research into the next decade were requested from
heads of Departments of Animal Science and directors of
agricultural experiment stations in the Southern Region and
from directors of agricultural experiment stations outside the
Southern Region. A majority of administrators in all three
groups expect a reduction in assignment of state appropriated
funds for beef cattle breeding research compared with total
support available. Cattle numbers and land areas assigned to
breeding and genetics research may be more limited in the
future. Directors of agricultural experiment stations expect
animal breeding scientists to work more closely with
scientists in biotechnology and to become more involved in
multidisciplinary research to reduce the costs associated with
maintaining large herds of cattle. Departments of Animal
Science do not expect to reduce significantly the number of
animal breeding positions, but they may reassign some that
come open to balance departmental opportunities. Animal
breeding scientists will be needed to educate graduate
students, teach classes, and handle research responsibilities
as in the past.

306 NAL Call. No.: SF5.W6 1988
Proceedings.
Suomen kotielainjalostusyhdistys, World Association of Animal

Production World Conference on Animal Production 6th : 1988 : Helsinki. S.l. : Finnish Animal Breeding Association,; 1988. 810 p. : Ill., maps ; 24 cm. On cover: WAAP-Helsinki, June 27-July 1, 1988. Includes bibliographies and index.

Language: English

Descriptors: Livestock; Congresses; Animal welfare

307 NAL Call. No.: HV4704.A54 1986
The proceedings of the Animal Welfare Foundation's Third Symposium entitled The welfare of animals in transit, held on 19 November 1986.. Welfare of animals in transit
Gibson, T. E.
Animal Welfare Foundation. Symposium 1986 : London, England?) London : BVA Animal Welfare Foundation, [1986?]; 1986. 115 p. : ill. ; 30 cm. (Symposia series (American Welfare Foundation) ; 1.). Includes bibliographies.

Language: English

Descriptors: Animal welfare; Animals, Treatment of; Congresses; Livestock; Transportation; Congresses; Animals; Transportation; Congresses

308 NAL Call. No.: HV4704.C65 1989
Proceedings of the conference on Agriculture & Animal Rights. New York (State), Legislature, Legislative Commission on Dairy Industry Development, New York Farm Bureau
Conference on Agriculture & Animal Rights 1989 : Albany, N.Y. Albany, N.Y. ? : The Commission?, 1989?; 1989. v, 54 p. ; 28 cm. Hearing room "A", Legislative Office Building, Albany, New York, July 27, 1989.

Language: English

Descriptors: Animal welfare; Congresses; Agriculture; Congresses; Livestock; Congresses

309 NAL Call. No.: SF715.S4 1985
Proceedings of the Seminar on Primary Animal Health Care in Africa Blantyre, Republic of Malawi, 25-28 September 1985. Centre technique de cooperation agricole et rurale
Seminar on Primary Animal Health Care in Africa 1985 : Blantyre, Malawi. Ede, The Netherlands : Technical Centre for Agricultural and Rural Cooperation, [1985?]; 1985. 122 p. : ill. ; 29 cm.

Language: English

Descriptors: Veterinary medicine; Africa; Congresses; Livestock; Africa; Congresses

310 NAL Call. No.: 275.29 M58B
Processing and starting new cattle on feed.
Ritchie, H.D.; Rust, S.; Gibson, C.D.; Wardynski, F.
East Lansing, Mich. : The Service; 1992 Jan.
Extension bulletin E - Cooperative Extension Service, Michigan State University (1569,rev): 4 p.; 1992 Jan. In subseries: Michigan Beef Production. Includes references.

Language: English

Descriptors: Beef cattle; Feedlots; Animal health; Vaccination; Inspection; Livestock feeding; Feed rations

311 NAL Call. No.: FICHE S-72
Production and environmental simulations in livestock housing.
Diesch, M.A.; Froehlich, D.P.
St. Joseph, Mich. : The Society; 1987.
American Society of Agricultural Engineers (Microfiche
collection) (fiche no. 87-4514): 18 p.; 1987. Paper presented
at the 1987 Winter Meeting of the American Society of
Agricultural Engineers. Available for purchase from: The
American Society of Agricultural Engineers, Order Dept., 2950
Niles Road, St. Joseph, Michigan 49085. Telephone the Order
Dept. at (616) 429-0300 for information and prices. Includes
references.

Language: English

Descriptors: Simulation models; Livestock housing;
Environmental factors; Prediction; Environmental control;
Production; Geographical distribution; Climate

312 NAL Call. No.: 49 J82
Productivity and profitability of twin births in beef cattle.
De Rose, E.P.; Wilton, J.W.
Champaign, Ill. : American Society of Animal Science; 1991
Aug. Journal of animal science v. 69 (8): p. 3085-3093; 1991
Aug. Includes references.

Language: English

Descriptors: Beef cattle; Twins; Female fertility; Growth;
Carcass composition; Economic impact; Profitability; Feed
intake; Milk yield; Weaning weight; Mathematical models;
Profits

Abstract: Data from 1,277 single and 85 twin calvings,
occurring in both spring and fall from 1980 through 1987, were
used to examine the productivity and profitability associated
with twin births in beef cattle. Pregnancies in pure and
crossbred cattle resulted from both AI and embryo transfer.
Cows and calves were confinement-housed. Cows were
individually fed to specification. Calves were given ad
libitum access to creep feed and those born in 1986 and 1987
were fed to slaughter. The influence of birth number on
gestation length, total calf birth and weaning weights,
lactation yield, and cow feed intake during both the dry and
lactating periods was examined. Twin-bearing cows had their
gestation length shortened by 6.4 d (2%); yielded 25.5 (59)
and 186.0 kg (73%) more weight of calf at birth and weaning,
respectively; had lactation yield and lactation feed intake
increased by 25 and 20%, respectively; and had precalving
(dry) period feed intake no different from their single-
bearing counterparts ($P = .12$). Postweaning growth was not
different for single and twin calves ($P = .50$); twin gain,
relative to initial size, was higher. Feedlot feed intake of
twins was 85% of that for singletons ($P = .20$). Twins were 90%
of singleton live weight at slaughter and yielded 93% of
singleton hot carcass weight ($P = .12$). Twins were slightly
older and significantly leaner at slaughter. Returns less feed
costs showed twin births to be associated with increased
profit for cow-calf programs. Returns less feed and overhead
costs were higher for twin calves than for singles in the
feedlot.

313 NAL Call. No.: 58.8 J82
Propeller fan induction motors for ventilating livestock
buildings. 1. Mathematical prediction of performance.
Randall, J.M.; Elsayed, A.M.
London : Academic Press; 1988 Oct.

Journal of agricultural engineering research v. 41 (2): p. 99-111. ill; 1988 Oct. Includes references.

Language: English

Descriptors: Livestock housing; Ventilation; Fans; Propellers; Induction; Environmental control; Evaluation; Agricultural engineering

314 NAL Call. No.: 58.8 J82
Propeller fan induction motors for ventilating livestock buildings. 2. Performance characteristics.
Randall, J.M.; Elsayed, A.M.
London : Academic Press; 1988 Oct.
Journal of agricultural engineering research v. 41 (2): p. 113-127; 1988 Oct. Includes references.

Language: English

Descriptors: Livestock housing; Ventilation; Fans; Motors; Propellers; Efficiency; Torque

315 NAL Call. No.: 58.8 J82
Propeller fan induction motors for ventilating livestock buildings. 3. Speed control characteristics.
Randall, J.M.; Elsayed, A.M.
London : Academic Press; 1988 Oct.
Journal of agricultural engineering research v. 41 (2): p. 129-137; 1988 Oct. Includes references.

Language: English

Descriptors: Livestock housing; Ventilation; Fans; Motors; Propellers; Rotational speed; Controls; Evaluation; Agricultural engineering

316 NAL Call. No.: S544.3.N3C66
Proper implanting procedures for growth promoters in beef cattle. Torell, R.C.; Krysl, L.J.
Reno, Nev. : The College; 1992.
Fact sheet - College of Agriculture, University of Nevada-Reno, Nevada Cooperative Extension (92-36): 4 p.; 1992.
Includes references.

Language: English

Descriptors: Beef cattle; Implantation; Growth promoters; Feedlots; Abscesses; Sanitation; Absorption; Growth rate

317 NAL Call. No.: 290.9 Am32P
Proper wiring for livestock & poultry structures: video & written resources. Hiatt, R.; McFate, K.
St. Joseph, Mich. : American Society of Agricultural Engineers; 1992. Paper / (92-3562): 7 p.; 1992. Paper presented at the "1992 International Winter Meeting sponsored by the American Society of Agricultural Engineers," December 15-18, 1992, Nashville, Tennessee.

Language: English

Descriptors: Poultry housing; Electricity; Wire; Standards

318 NAL Call. No.: 442.8 J8222
Prostaglandin secretion by endometrium of pregnant and cyclic cattle at Day 17 after oestrus in response to in-vitro heat

stress.

Putney, D.J.; Gross, T.S.; Thatcher, W.W.

Colchester : The Journal; 1988 Nov.

Journal of reproduction and fertility v. 84 (2): p. 475-483;

1988 Nov. Includes references.

Language: English

Descriptors: Beef cows; Aberdeen-angus; Endometrium; Estrus;
Prostaglandins; Secretion; Heat stress; Infertility; Oxytocin;
Pregnancy

319

NAL Call. No.: 275.29 W27P

Protecting groundwater: managing livestock on small acreage.

Schmidt, J.L.; Wolfley, B.F.

Pullman, Wash. : The Service; 1992 Oct.

Extension bulletin - Washington State University, Cooperative

Extension Service (1713): 6 p.; 1992 Oct.

Language: English

Descriptors: Washington; Groundwater; Water pollution; Farm
management; Practice; Feedlot wastes; Fencing; Grazing; Soil
test values; Weed control; Pastures

320

NAL Call. No.: 275.29 W27PN

Protective shelters for beef calves on range.

Olson, D.P.; Riesenberger, L.E.

Corvallis, Or. : The Service; 1985 Jan.

PNW - Pacific Northwest Extension Publication - Oregon State

University, Extension Service Jan 1985 (264): 4 p. ill; 1985

Jan.

Language: English

Descriptors: Beef cattle; Calves; Shelter; Range pastures

321

NAL Call. No.: 49 J82

Protein sources for finishing calves as affected by management

system. Sindt, M.H.; Stock, R.A.; Klopfenstein, T.J.;

Vieselmeier, B.A. Champaign, Ill. : American Society of Animal

Science; 1993 Mar. Journal of animal science v. 71 (3): p.

740-752; 1993 Mar. Includes references.

Language: English

Descriptors: Calves; Calf feeding; Feedlots; Dietary protein;
Cattle fattening; Grazing; Maize; Crop residues; Protein
supplements; Fattening performance; Urea; Essential amino
acids; Feed intake; Feed conversion; Blood meal; Soybean
oilmeal; Feather meal; Compensatory growth

Abstract: Two beef production systems were evaluated in
conjunction with an evaluation of escape protein sources for
finishing calves. Two hundred forty crossbred steers and 80
crossbred heifer calves (BW = 267 +/- 2 kg) were split into
two groups: 1) control, finished (207 d) after a 3-wk feedlot
adjustment period and 2) grazing cornstalks for 74 d after a
3-wk feedlot adjustment period, then finished (164 d).
Finishing treatments were sources and proportions of
supplemental CP: 1) urea 100%; 2) soybean meal (SBM) 100%; 3)
blood meal (BM) 50%, urea 50%; 4) feather meal (FTH) 50%, urea
50%; 5) SBM 50%, FTH 25%, urea 25%; 6) SBM 25%, FTH 38%, urea
37%; 7) FTH 25%, BM 25%, urea 50%, and 8) FTH 38%, BM 13%,
urea 50%. Treatments 1 to 8 were fed in dry-rolled corn (DRC)-
based diets. Treatments 9 and 10 were supplement Treatments 1
and 7 fed in diets based on high-moisture corn. Calves

finished after a 74-d period of grazing cornstalks consumed more feed ($P < .01$) and gained faster ($P < .01$) but were less efficient ($P < .05$) than calves finished directly after weaning. Although not statistically different, calves finished after grazing cornstalks and supplemented with natural protein in the feedlot were 7% more efficient than calves supplemented with urea alone. Efficiency of calves finished directly after weaning was similar for calves supplemented with natural protein or urea alone. Supplementing SBM/ FTH/urea or BM/FTH/urea improved feed efficiency compared with supplementing FTH/urea alone. These data suggest that allowing calves to graze cornstalks before finishing is a possible management option, but this system may require more metabolizable protein in the finishing diet to maximize feed efficiency if the calves are expressing compensatory growth.

322 NAL Call. No.: 49 J82
 Quantitative- and molecular-genetic effects on animal well-being: adaptive mechanisms.
 Newman, S.
 Champaign, Ill. : American Society of Animal Science; 1994
 Jun. Journal of animal science v. 72 (6): p. 1641-1653; 1994
 Jun. Includes references.

Language: English

Descriptors: Livestock; Animal welfare; Performance;
 Domestication; Traits; Animal behavior; Intensive livestock farming; Selection criteria; Literature reviews

Abstract: Domestic farm animals play an important role in meeting some basic needs of humankind, especially food and clothing. The aspects of genetic improvement programs in livestock production pertinent to animal welfare and animal well-being are reviewed. A link is made between the evolutionary processes of adaptation and domestication and animal well-being. Animal behavior is a component of all these. Thus, the genetics of behavior may provide clues to the well-being of farm animal populations, and it will also be of relevance to public opinion issues of animal welfare. Many expressions of behavior by domestic livestock may be influenced by those processes that change gene as well as genotypic frequencies such as inbreeding, drift, and artificial selection. The environment in which the individual lives will also play a role, along with the interaction between genotype and environment. Selection for or against such behaviors as aggressiveness, docility, response to stress, and certain sexual behaviors in some livestock species has often been successful. This points to the existence of additive genetic variation for behavior, and scope for the inclusion of behavioral traits into selection programs, if these measures are shown to be related to welfare. Negative relationships between behaviors associated with well-being and traits of economic importance have been reported in most livestock species. However, estimates of genetic parameters, especially genetic correlations between objective measures of well-being and production traits, are scarce. There have been no comprehensive studies of the welfare of transgenic animals reported in the scientific literature. Increased use of biotechnology in animal agriculture, coupled with greater public scrutiny of livestock industries, may precipitate decisions concerning the interface of behavior and genetics that need to be addressed before scientists can conduct appropriate experimental evaluations.

323 NAL Call. No.: Videocassette no.801
 A Question of respect a production of the American Society for the Prevention of Cruelty to Animals.

American Society for the Prevention of Cruelty to Animals,
Varied Directions, Inc
New York, N.Y. : ASPCA ; Camden, Me. : [Distributed by] Varied
Directions Inc., [1988?]; 1988.
1 videocassette (12 min.) : sd., col. ; 1/2 in. VHS.

Language: English

Descriptors: Animal welfare; Laboratory animals; Animal
experimentation; Livestock

324 NAL Call. No.: S544.3.0505
Ranchers' guide to custom cattle feeding.
Gill, D.; Barnes, K.; Lusby, K.
Stillwater, Okla. : The Service; 1992 Apr.
OSU extension facts - Cooperative Extension Service, Oklahoma
State University (3022): 6 p.; 1992 Apr.

Language: English

Descriptors: Oklahoma; Beef cattle; Feedlots; Prices; Cost
benefit analysis

325 NAL Call. No.: 41.8 Am3
Realities of contemporary livestock production.
Bevier, G.W.; Lautner, B.
Schaumburg, Ill. : The Association; 1994 Jan01.
Journal of the American Veterinary Medical Association v. 204
(3): p. 369-371; 1994 Jan01. Paper presented at the 1993 AVMA
Animal Welfare Forum, "The Veterinarian's Role in Farm Animal
Welfare," Rosemont, Ill. Includes references.

Language: English

Descriptors: U.S.A.; Cabt; Livestock; Meat production;
Agribusiness; Pigmeat; Consumption per caput; World

326 NAL Call. No.: QL1.D48
The recent status of deer farming in New Zealand.
Pearse, A.J.
Amsterdam, Elsevier North-Holland; 1993.
Developments in animal and veterinary sciences (26): p.
401-413; 1993. In the series analytic: Deer of China--biology
and management / edited by N. Ohtaishi and H. I. Sheng.
Meeting held on Nov. 21-23, 1992, Shanghai, China. Includes
references.

Language: English

Descriptors: New Zealand; Cabt; Cervus elaphus; Cervus elaphus
canadensis; Fallow deer; Cervidae; Deer farming; Velvet;
Venison; Meat and livestock industry; Meat production; Animal
production; Animal health; Animal welfare

327 NAL Call. No.: 49 J82
Recombinant bovine somatotropin improves growth performance in
finishing beef steers.
Moseley, W.M.; Paulissen, J.B.; Goodwin, M.C.; Alaniz, G.R.;
Claflin, W.H. Champaign, Ill. : American Society of Animal
Science; 1992 Feb. Journal of animal science v. 70 (2): p.
412-425; 1992 Feb. Includes references.

Language: English

Descriptors: Beef cattle; Steers; Somatotropin; Dosage
effects; Liveweight gain; Feed conversion; Carcass

composition; Carcass yield; Blood serum; Insulin-like growth factor; Abomasum; Lesions

Abstract: The objectives of this study were to determine the efficacy of various doses of rbST on ADG and feed efficiency (FE) and to describe carcass composition changes in finishing beef steers. In Exp. 1, 96 crossbred beef steers (393 kg) received daily i.m. injections of buffer or 33, 100, or 300 microgram/kg of BW of rbst (0ST, 33ST, 100ST, 300ST). In Exp. 2, 200 crossbred beef steers (417 kg) received daily i.m. injections of buffer or 8.25, 16.5, 33, or 66 microgram/kg of BW of rbST (0ST, 8.25ST, 16.5ST, 33ST, 66ST). Treatments were administered until steer BW per pen averaged 540 kg in Exp. 1 and 560 kg in Exp. 2. An 86% concentrate:14% roughage diet was fed once daily (CP: 16.5% in Exp. 1, 20.2% in Exp. 2). In Exp. 1, growth performance of steers receiving rbst was dose-dependent; ADG changed linearly ($P = .01$), DMI decreased linearly ($P = .03$), and FE changed quadratically ($P < .03$). The 33ST steers responded with improved ADG and FE, 100ST with improved FE, and 300ST with lower ADG and poorer FE, compared with 0ST. In Exp. 2, the ADG response was quadratic ($P = .01$), DMI decreased linearly ($P = .003$), and FE improved quadratically ($P = .004$) with increasing dose of rbst. Steers receiving 16.5ST and 33ST responded with improved ADG and FE, whereas steers receiving 8.25ST and 66ST responded with improved FE but not ADG relative to 0ST steers. In Exp. 1 and 2, rbST administration altered carcass composition by increasing carcass protein and decreasing carcass fat. Our results indicate that a daily dose between 16.5 and 33 microgram/kg of BW was required to optimize both ADG and FE in finishing beef steers; however, the dose response for changes in carcass chemical composition had not attained a plateau even at 300 microgram/kg of BW.

328 NAL Call. No.: TS1960.G73 1991
Recommended animal handling guidelines for meat packers.
Grandin, Temple
Washington, DC : American Meat Institute, [1991?]; 1991.
21 p. : ill. ; 28 cm. Cover title.

Language: English

Descriptors: Slaughtering and slaughter-houses; Livestock;
Animal welfare

329 NAL Call. No.: 7 C16Pu no.1870/E
Recommended code of practice for the care and handling of farm animals beef cattle.. Beef cattle
Hurnik, J. F.
Ottawa, Ont. : Available from Communications Branch,
Agriculture Canada,; 1991.
46 p. : ill. ; 23 cm. (Publication (Canada. Agriculture
Canada) ; 1870.).

Language: English

Descriptors: Beef cattle; Beef cattle

330 NAL Call. No.: S671.A66
Reflective roof coatings for heat stress relief in livestock and poultry housing.
Bucklin, R.A.; Bottcher, R.W.; Van Wicklen, G.L.; Czarick, M.
St. Joseph, MI : American Society of Agricultural Engineers,
1985-; 1993 Jan. Applied engineering in agriculture v. 9 (1):
p. 123-129; 1993 Jan. Includes references.

Language: English

Descriptors: Georgia; Cabt; Poultry housing; Roofs;
Reflection; Heat stress; Ventilation; Cost benefit analysis

Abstract: A reflective roof coating was demonstrated to reduce temperatures by 2 to 3 degrees C (3.6 to 5.4 degrees F) in totally enclosed poultry housing with no ventilation. However, similar results did not occur in studies of well-ventilated poultry and dairy housing. Reductions in roof temperatures of well-ventilated housing did occur, but similar reductions were not found in interior dry bulb or black globe temperatures at animal level and no production benefits resulted. Reflective coatings can reduce the temperature of galvanized steel roofing material and the temperatures of enclosed attics. However, these coatings add expense to structures and their effectiveness drops rapidly with time as they weather and accumulate dirt. They are most beneficial for poorly ventilated structures. For well-ventilated structures, they do not offer great benefits. The addition of reflective coatings will seldom be economically justified for well-ventilated livestock and poultry structures.

331 NAL Call. No.: 99.8 F7632
Regulating competition on conifer plantations with prescribed cattle grazing. Karl, M.G.; Doescher, P.S.
Bethesda, Md. : Society of American Foresters; 1993 Aug.
Forest science v. 39 (3): p. 405-418; 1993 Aug. Includes references.

Language: English

Descriptors: Oregon; Forest plantations; Pseudotsuga menziesii; Pinus ponderosa; Grazing effects; Vegetation management; Cattle; Water stress; Dactylis glomerata; Roots; Growth; Soil water; Plant competition

Abstract: On conifer plantations, competitive understory vegetation often retards growth and establishment of tree seedlings. Livestock grazing exemplifies a method of controlling the understory vegetation and increasing the availability of site resources to tree seedlings. We hypothesized that prescribed cattle grazing ameliorates water stress of young tree seedlings by reducing root growth of competing understory species. On a Douglas-fir (*Pseudotsuga menziesii* [Mirb.] Franco) and ponderosa pine (*Pinus ponderosa* Dougl.) plantation in southwest Oregon planted in 1986, seedling water stress was evaluated with the pressure chamber technique and supplemented with gravimetric sod water determinations in 1986-1989. Root growth of orchardgrass (*Dactylis glomerata* L.), the major understory competing species, was quantified in 1988 and 1989 with the root periscope/mini-rhizotron technique. Seedling water stress levels during spring and summer were similar in a cattle-grazed vs. ungrazed area in 1986 through 1988, but in summer 1989, water stress was reduced significantly in the grazed area. Soil water content was higher in the grazed area in 1989, especially at the 10-20 cm soil depth. End of season (July) orchardgrass root growth was reduced 18% and 15% with grazing in 1988 and 1989, respectively. We conclude that repeated cattle grazing of orchardgrass reduced transpirational surface area and root growth sufficiently to increase soil water availability to seedlings. Thus, prescribed cattle grazing on conifer plantations can enhance seedling physiological status by acting as a regulator of above- and belowground competition.

332 NAL Call. No.: QP251.A1T5
Regulation of heat shock-induced alterations in the release of

prostaglandins by the uterine endometrium of cows.
Malayer, J.R.; Hansen, P.J.; Gross, T.S.; Thatcher, W.W.
Stoneham, Mass. : Butterworth Publishers; 1990 Aug.
Theriogenology v. 34 (2): p. 219-230; 1990 Aug. Includes
references.

Language: English

Descriptors: Beef cows; Endometrium; Explants; Heat shock;
Stress response; Prostaglandins; Hormone secretion;
Oxidoreductases; Peroxidase; Enzyme activity; Regulation;
Proteins; Phospholipids; Inhibitors

333 NAL Call. No.: HD9421.5.F3
Report on the welfare of livestock at markets.
Farm Animal Welfare Council (Great Britain)
London : H.M.S.O.; 1986.
iv, 71 p. ; 25 cm. (Reference book (Great Britain. Ministry of
Agriculture, Fisheries and Food) ; 265.).

Language: English

Descriptors: Livestock; Great Britain; Marketing; Congresses;
Animals, Treatment of; Great Britain; Congresses

334 NAL Call. No.: TS1966.G7R46
Report on the welfare of livestock when slaughtered by
religious methods. Farm Animal Welfare Council (Great Britain)
London : H.M.S.O.; 1985.
49 p. : ill. ; 25 cm. (Reference book (Great Britain. Ministry of
Agriculture, Fisheries and Food) ; 262.). Bibliography: p.
47-49.

Language: English; English

Descriptors: Slaughtering and slaughterhouses; Great Britain;
Shehitah; Muslims; Dietary laws; Sikhs; Dietary laws; Food;
Religious aspects

335 NAL Call. No.: 49 J82
Reproductive criteria of beef bulls during and after exposure
to increased ambient temperature.
Meyerhoeffer, D.C.; Wettemann, R.P.; Coleman, S.W.; Wells,
M.E. Champaign, Ill. : American Society of Animal Science;
1985 Feb. Journal of animal science v. 60 (2): p. 352-357.
ill; 1985 Feb. Includes references.

Language: English

Descriptors: Beef bulls; Reproduction; Heat stress; Semen
characters; Environmental temperature

336 NAL Call. No.: SF1.S6
The reproductive responses of two breeds of beef cows and the
performance of their progeny in two contrasting environments.
van Niekerk, A.; Lishman, A.W.; Lesch, S.F.
Pretoria : Bureau for Scientific Publications; 1986 Dec.
South African journal of animal science; Suid-Afrikaanse
tydskrif vir veekunde v. 16 (4): p. 209-214; 1986 Dec.
Includes references.

Language: English

Descriptors: South Africa; Beef cows; Afrikander; Simmental;
Progeny; Calving rate; Feed conversion; Cold stress;
Environment

337 NAL Call. No.: HD9000.5.E17
Research and facilities for a viable reindeer industry.
Karmum, D.
Boulder, Colo. : Westview Press; 1985.
East-West agricultural trade / edited by James R. Jones. p.
151-153; 1985. (Westview special studies in international
economics and business).

Language: English

Descriptors: Alaska; Rangifer tarandus; Livestock enterprises;
Research policy; Viability; Meat and livestock industry

338 NAL Call. No.: 100 OK4 (3)
Respiratory syncytial virus vaccine for stressed stocker
cattle. Johnson, B.D.; Hays, V.S.; Gill, D.R.; Smith, R.A.;
Owens, F.N.; Ball, R.L. Stillwater, Okla. : The Station; 1988
Jun.
Miscellaneous publication - Agricultural Experiment Station,
Oklahoma State University (125): p. 105-110; 1988 Jun.
Includes references.

Language: English

Descriptors: Cattle diseases; Respiratory diseases; Viral
diseases; Spumavirinae; Live vaccines

339 NAL Call. No.: 49 J82
Response to reimplanting beef steers with estradiol benzoate
and progesterone: performance, implant absorption pattern, and
thyroxine status. Rumsey, T.S.; Hammond, A.C.; McMurtry, J.P.
Champaign, Ill. : American Society of Animal Science; 1992
Apr. Journal of animal science v. 70 (4): p. 995-1001; 1992
Apr. Includes references.

Language: English

Descriptors: Steers; Hereford; Estradiol; Progesterone;
Implantation; Controlled release; Body protein; Body weight;
Feed conversion; Body composition; Carcass quality; Thyroid
hormones; Deiodination; Enzyme activity; Organs; Blood plasma

Abstract: This study determined the influence of the
estrogenic ear implant Synovex-S on feedlot performance,
tissue deposition, and thyroid status of growing-finishing
beef steers implanted either once or reimplanted. The pattern
of implant absorption was also determined. Two 112-d feeding
trials were used with 48 Hereford steers per trial, Each trial
was a randomized block design with eight groups (lots) of six
steers each assigned to four treatments (two lots/treatment).
Treatments were 1) no implant or control, 2) implanted on d 0
and reimplanted at 60 d on trial, 3) implanted at 30 d on
trial, and 4) implanted on d 0 only. These implant treatments
resulted in withdrawal periods before slaughter of
approximately 60, 90 and 120 d for Treatments 2, 3, and 4,
respectively. All steers were given ad libitum access to water
and a 60% concentrate diet. Group intakes were determined
daily, BW weekly, estimated body composition every 28 d,
plasma thyroid hormone concentrations at 112 d and at
slaughter, and carcass measurements and liver tissue
deiodinase at slaughter. Approximately 25% of the original
implant dose remained in the ear 60 d after implanting and
this residual amount was absorbed linearly at the rate of
approximately .15% of the original dose per day. Implant
treatments increased ($P < .05$) DMI, BW gain, feed conversion,
and empty body gains for water and protein. Carcass

measurements suggested a nonsignificant trend ($P > .10$) for leaner carcasses for implanted steers. An immediate shift toward greater protein and less fat deposition occurred within 28 d after initial implanting (Treatment 3). The ratio of plasma thyroxine to triiodothyronine was slightly higher and liver deiodinase slightly lower in implanted steers. There were no differences between the steers implanted once and those reimplanted at 60 d. These data are interpreted to show no benefit to reimplanting beef steers at 60 d with Synovex-S.

340 NAL Call. No.: 49 J82
 Responses of bovine lymphocytes to heat shock as modified by breed and antioxidant status.
 Kamwanja, L.A.; Chase, C.C. Jr; Gutierrez, J.A.; Guerriero, V. Jr; Olson, T.A.; Hammond, A.C.; Hansen, P.J.
 Champaign, Ill. : American Society of Animal Science; 1994
 Feb. Journal of animal science v. 72 (2): p. 438-444; 1994
 Feb. Includes references.

Language: English

Descriptors: Beef cattle; Lymphocytes; Breed differences; Brahman; Cattle breeds; Heat shock; Heat shock proteins; Heat stress; Lymphocyte transformation; Glutathione; Antioxidants; Inhibitors

Abstract: We tested whether resistance of lymphocytes to heat stress is modified by breed, intracellular glutathione content, and extracellular antioxidants. In the first experiment, lymphocytes from Angus (*Bos taurus*, non-heat-tolerant), Brahman (*B. indicus*, heat-tolerant), and Senepol (*B. taurus*, heat-tolerant) heifers (12 heifers per breed) were cultured at 45 degrees C for 3 h to evaluate thermal killing, at 42 degrees C for 12 h in a 60-h phytohemagglutinin-induced proliferation test, and at 42 degrees C for 1 h to measure induction of heat shock protein 70 (HSP70). Killing at 45 degrees C was affected by breed X temperature ($P < .01$); the decrease in viability caused by a temperature of 45 degrees C was greater for Angus than for Brahman or Senepol. For phytohemagglutinin-stimulated lymphocytes, heating to 42 degrees C reduced [3H]thymidine incorporation equally for all breeds. Viability at the end of culture was affected ($P < .001$) by a breed X temperature interaction because the decrease in viability caused by culture at 42 degrees C was greatest for lymphocytes from Angus heifers. Heat shock for 1 h at 42 degrees C caused a two- to threefold increase in intracellular concentrations of HSP70, but there was no interaction of temperature with breed. In another experiment (with lymphocytes harvested from three Holstein cows), buthionine sulfoximine, a glutathione synthesis inhibitor, inhibited ($P < .01$) proliferation of phytohemagglutinin-stimulated lymphocytes at 38.5 and 42 degrees C. Addition of the antioxidants glutathione or thioredoxin to culture did not reduce the effects of heating to 42 degrees C on proliferation. In summary, lymphocyte resistance to heat shock differed between breeds. There was no evidence that this effect is caused by differential HSP70 synthesis. Although intracellular antioxidant status affected lymphocyte proliferation, exogenous glutathione or thioredoxin did not overcome the effects of heat shock.

341 NAL Call. No.: 41.8 R3224
 A review of the Alberta certified preconditioned feeder program -- 1980-1987. Schipper, C.; Church, T.; Harris, B.
 Ottawa : Canadian Veterinary Medical Association; 1989 Sep.
 The Canadian veterinary journal v. 30 (9): p. 736-741; 1989
 Sep. Includes references.

Language: English

Descriptors: Alberta; Beef cattle; Calves; Growth; Liveweight gain; Prices; Performance; Mortality; Feedlots; Calf feeding; Conditioning

342 NAL Call. No.: 58.8 J82

A review of the control of odour nuisance from livestock buildings. 1. Influence of the techniques for managing waste within the building. O'Neill, D.H.; Phillips, V.R.
London : Academic Press; 1991 Sep.
Journal of agricultural engineering research v. 50 (1): p. 1-10; 1991 Sep. Includes references.

Language: English

Descriptors: Animal housing; Odor emission; Odor abatement; Wastes; Management; Techniques; Floor type; Waste treatment; Litter; Anaerobic conditions; Prevention; Ammonia; Emission

Abstract: Malodorous emissions from livestock buildings are caused by waste products, particularly manure. The published information on how waste management practices influence odour production and emission has been reviewed, but the shortage of objective odour measurements makes it difficult to give practical recommendations with confidence. Some recommendations for research are, however, proposed. The main factors in livestock management have been analysed; these are waste removal, waste decomposition, design of the floor of the building, treatments that may be applied to the waste within the building (e.g. changing its pH) and the use of bedding materials. The interactions between most of these factors confound the analysis, but the evidence indicates that the main options for reducing odour production, odour emission or odour nuisance are frequent waste removal from buildings, or the prevention of anaerobic conditions developing in the waste. Reduction of the moisture content of the waste has been reported to reduce odour production. This may work by inhibiting the development of anaerobic conditions and it may explain why the use of bedding has been found to reduce odour. However, adequate odour measurement data on using different bedding materials and on other waste management practices must be gathered before any firm conclusions can be drawn. The relevance of information on emissions of ammonia from livestock buildings is briefly considered. Although ammonia concentrations in air do not show a good correlation with odour strength, nevertheless any step taken to reduce the ammonia emissions from a livestock building ought also to reduce the odour emissions and vice versa.

343 NAL Call. No.: S397.M57 no.87/19

Road transport of livestock code of practice for the welfare of animals. Harris, D. G.
Perth? : Dept. of Agriculture, Western Australia,; 1987.
24 p. : ill. ; 25 cm. (Miscellaneous publication (Western Australia. Dept. of Agriculture) ; no. 87/19.). "December 1987.

Language: English

344 NAL Call. No.: SF961.A5

The role of interleukin 2 in the immune response of incoming feeder cattle. Blecha, F.
Stillwater, Okla. : The Association; 1985, reprinted 1986.
Proceedings ... annual convention - American Association of Bovine Practitioners 1986). (18th): p. 113-115; 1985, reprinted 1986. Includes 36 references.

Language: English

Descriptors: Beef cattle; Immune response; Stress; Cattle diseases; Glucocorticoids; Disease resistance

345 NAL Call. No.: S27.A3

Scale model tests help optimize wind protection and water improvements for livestock.

Jairell, R.L.; Schmidt, R.A.

Bozeman, Mont. : Montana State University, Cooperative Extension Service; 1986.

Great Plains Agriculture [i.e. Agricultural] Council publication (117): p. 159-161. ill; 1986. Paper presented at the "International Symposium on Windbreak Technology," June 23-27, 1986, Lincoln, Nebraska. Includes references.

Language: English

Descriptors: Livestock; Barriers; Snow cover; Three dimensional models; Wind protection

346 NAL Call. No.: 41.8 C163

The scientific assessment of the impact of housing on animal welfare: a critical review.

Rushen, J.; De Passille, A.M.B.

Ottawa : Agricultural Institute of Canada; 1992 Dec.

Canadian journal of animal science v. 72 (4): p. 721-743; 1992 Dec. Includes references.

Language: English

Descriptors: Livestock; Animal welfare; Animal production; Animal housing; Animal husbandry; Abnormal behavior; Stress

347 NAL Call. No.: 49 J82

Screening of depigmenting compounds for the development of an alternate method of branding beef cattle.

Schwartzkopf, K.S.; Stookey, J.M.; Hull, P.R.; Clark, E.G.

Champaign, Ill. : American Society of Animal Science; 1994

Jun. Journal of animal science v. 72 (6): p. 1393-1398; 1994 Jun. Includes references.

Language: English

Descriptors: Saskatchewan; Cabt; Beef cattle; Branding; Pigmentation; Hair follicles; Skin; Animal welfare; Hair; Injection; Carriers; Transdermal application; Chemicals; Hydroquinone; Pyrocatechol

Abstract: The impetus to find alternative methods to stressful routine management procedures has increased in recent years in the hope of improving animal welfare. The potential of using depigmenting compounds to create a permanent visible mark was evaluated in two beef heifers. Eight compounds (hydroquinone [H], 4-ethoxyphenol [4-EP], 4-methylcatechol [4-MC], 4-tert-butylcatechol [4-t-BC], 4-methoxyphenol [4-MP], monobenzene [M], hydroquinone bis (2-hydroxyethyl) ether (HHEE), and catechol [C]) were injected intradermally at concentrations of 10 and 20%. These compounds were screened in four different carriers (ethanol, glycerol, propylene glycol, and liposome cream) to test their effectiveness in producing depigmented hair. Transdermal dermal patches containing 5, 7, and 10% liposome preparations of 4-MC and 4-MP produced depigmentation, but this depigmentation was not as visible as when the same preparations were injected. Histological examination of

biopsies and observations of the injected sites were compared to sites that were only injected with the carrier solution. Compounds H, 4-EP, 4-MC, 4-t-BC, 4-MP, and M produced visible depigmentation lasting up to 3 mo. The duration of the effect seemed dependent on the hair cycle length and stage of cycle at time of application. None of the depigmenting compounds tested produced a permanent depigmenting effect.

348 NAL Call. No.: 290.9 AM32P
Selection criteria for livestock ventilation control systems.
Bayne, G.; Barber, E.; Jorgenson, M.
St. Joseph, Mich. : The Society; 1989.
Paper - American Society of Agricultural Engineers (89-4024):
19 p.; 1989. Paper presented at the 1989 International Summer
Meeting sponsored by the American Agricultural Engineers and
the Canadian Society of Agricultural Engineering, June 25-28,
1989, Quebec, Canada. Includes references.

Language: English

Descriptors: Livestock; Animal housing; Ventilation; Fans;
Controllers; Selection criteria

349 NAL Call. No.: S539.5.J68
Selection of forage technologies for beef cow-calf
enterprises. White, W.A.B.; Batte, M.T.; Forster, D.L.
Madison, Wis. : American Society of Agronomy; 1989 Jul.
Journal of production agriculture v. 2 (3): p. 228-234; 1989
Jul. Includes references.

Language: English

Descriptors: Ohio; Cows; Calves; Beef herds; Livestock
feeding; Harvesting; Forage; Storage; Dry matter; Losses; Herd
size; Costs; Returns; Decision making; Mathematical models;
Winter

350 NAL Call. No.: Videocassette no.1537
Separating fact from myth the veal industry challenge.
Beef Industry Council (U.S.), Veal Committee, American Veal
Association Chicago : The Committee; 1990.
1 videocassette (11 min.) : sd., col. ; 1/2 in.

Language: English

Descriptors: Veal industry; Animal welfare

Abstract: Describes the veal industry's viewpoint on the
issues of animal welfare and food safety.

351 NAL Call. No.: 41.8 AU72
Serum cortisol and "stress" in cattle.
Herd, R.M.
Brunswick, Victoria : Australian Veterinary Association; 1989
Oct. Australian veterinary journal v. 66 (10): p. 341-342;
1989 Oct. Includes references.

Language: English

Descriptors: Beef cows; Cortisol; Blood serum; Stress;
Restraint of animals

352 NAL Call. No.: aS21.A8U5/ARS
Shelters and environmental modification.
Hahn, G.L.

Washington, D.C. : The Service; 1986.
Reprints - U.S. Department of Agriculture, Agricultural
Research Service [470]: 13 p.; 1986. Indexed from reprint:
Limiting the Effects of Stress on Cattle / edited by G.P.
Moberg, 1986. (W-135 Western Regional Research Pub. No. 9). p.
47-59. Includes references.

Language: English

Descriptors: Livestock; Performance; Environmental factors;
Stress; Shelters; Environmental temperature; Dairy cows; Dairy
performance

353 NAL Call. No.: 275.29 AL13P
Shrink.
Krieg, K.
Fairbanks, Alaska : The Service; 1988 May.
Publication - University of Alaska, Cooperative Extension
Service (A-00744): 2 p. ill; 1988 May. In subseries: Alaska
Livestock. Includes references.

Language: English

Descriptors: Livestock; Weight losses; Transport of animals;
Stress

354 NAL Call. No.: SF55.A78A7
Social relationship and spatial distribution in a small herd
of Japanese black cattle in a dry-lot.
Nakanishi, Y.; Mutoh, Y.; Umetsu, R.
Suweon, Korea : Asian-Australasian Association of Animal
Production Societies; 1992 Mar.
Asian-Australasian journal of animal sciences v. 5 (1): p.
183-188; 1992 Mar. Includes references.

Language: English

Descriptors: Beef cattle; Feedlots; Animal behavior

355 NAL Call. No.: 41.8 C163
Social stress and dominance among group members after mixing
beef cows. Mench, J.A.; Swanson, J.C.; Stricklin, W.R.
Ottawa : Agricultural Institute of Canada; 1990 Jun.
Canadian journal of animal science v. 70 (2): p. 345-354; 1990
Jun. Includes references.

Language: English

Descriptors: Beef cows; Stress; Social behavior; Agonistic
behavior; Dominance; Cortisol; Blood glucose; Leukocyte count;
Mixing

356 NAL Call. No.: 10 OU8
A socio-economic perspective on animal welfare.
McInerney, J.
Oxon : C.A.B. International; 1991.
Outlook on agriculture v. 20 (1): p. 51-56; 1991. Includes
references.

Language: English

Descriptors: Animal welfare; Animal production; Food prices;
Law; Livestock; Socioeconomic status

357 NAL Call. No.: 41.8 M69

Solving livestock handling problems.

Grandin, T. \u Colorado State University, Fort Collins, CO
Lenexa, Kan. : Veterinary Medicine Publishing Co; 1994 Oct.
Veterinary medicine v. 89 (10): p. 989-990, 992-993, 996, 998;
1994 Oct. Includes references.

Language: English

Descriptors: Livestock; Handling; Temperament; Animal
husbandry; Chutes; Animal housing; Layout; Stockmen; Training

358 NAL Call. No.: 41.8 V641
Some husbandry factors affecting mortality and morbidity on a
calf-rearing unit.
Peters, A.R.
London : British Veterinary Association; 1986 Oct04.
The Veterinary record v. 119 (14): p. 355-357; 1986 Oct04.
Includes references.

Language: English

Descriptors: Calves; Mortality; Morbidity; Animal husbandry;
Pens; Cattle housing; Breeds; Pneumonia; Diarrhea; Intensive
livestock farming

359 NAL Call. No.: 100 L939
Soybeans as crude protein supplements for beef finished on
silages. Coombs, D.F.; Loyacano, A.F.; Kreider, J.L.
Baton Rouge, La. : The Station; 1992.
Louisiana agriculture - Louisiana Agricultural Experiment
Station v. 35 (5): p. 3-4; 1992.

Language: English

Descriptors: Louisiana; Soybeans; Protein supplements; Crude
protein; Silage; Cattle fattening; Steers; Carcass
composition; Carcass yield; Feedlots

360 NAL Call. No.: QL750.A6
Special address.
Harrison, R.
Amsterdam : Elsevier Science Publishers, B.V.; 1988 Jul.
Applied animal behaviour science v. 20 (1/2): p. 21-27; 1988
Jul. Paper presented at the "Symposium on Animal Bio-ethics
and Applied Ethology," August 1987, Montreal, Canada.
Includes references.

Language: English

Descriptors: Livestock farming; Meat production; Intensive
livestock farming; Animal welfare; Ecology; Bioethics;
Guidelines

361 NAL Call. No.: FICHE S-72
Sprinkling water and fans to reduce heat stress of beef
cattle. Garner, J.C.; Bucklin, R.A.; Kunkle, W.E.
St. Joseph, Mich. : The Society; 1986.
American Society of Agricultural Engineers (Microfiche
collection) (fiche no. 86-4021): 21 p.; 1986. Paper presented
at the 1986 Summer Meeting of the American Society of
Agricultural Engineers. Available for purchase from: The
American Society of Agricultural Engineers, Order Dept., 2950
Niles Road, St. Joseph, Michigan 49085. Telephone the Order
Dept. at (616) 429-0300 for information and prices. Includes
references.

Language: English

Descriptors: Beef cattle; Heat stress; Control methods; Water; Spraying; Evaporative cooling; Fans

362 NAL Call. No.: 100 N465R no.646
Stress and the free-ranging animal proceedings of a symposium.
Anderson, Dean M.,_1947-; Havstad, Kris M.,_1952-; Hinds,
Frank C. Western Regional Coordinating Committee on
Utilization of Range Forage for Rangeland and Domestic
Ruminant Production, New Mexico State University, Agricultural
Experiment Station
Las Cruces, N.M. : New Mexico State University, Agricultural
Experiment Station,; 1990.
vii, 40 p. : ill. ; 28 cm. (Research report (New Mexico State
University. Agricultural Experiment Station) ; 646.). June
1990. Includes bibliographical references.

Language: English

Descriptors: Livestock; Stress (Physiology)

363 NAL Call. No.: SF601.B6
Stress-induced hematological changes in feedlot cattle.
Bennett, B.W.; Kerschen, R.P.; Nockels, C.F.
Santa Barbara, Calif. : Veterinary Practice Publishing
Company; 1989 Jan. Agri-Practice v. 10 (1): p. 16, 18-19,
22-23, 25-28; 1989 Jan. Includes statistical data. Includes
references.

Language: English

Descriptors: Beef cattle; Feedlots; Stress; Types; Blood
chemistry; Cortisol; Blood picture

364 NAL Call. No.: SB197.B7
Suckler beef production: practical opportunities now and in
the future. Broadbent, P.J.
Hurley, Berkshire : The Society; 1988.
Occasional symposium - British Grassland Society (22): p.
161-175; 1988. Paper presented at the "Conference organised
jointly with the British Society of Animal Production,"
November 3-5, 1987, Peebles, Scotland. Literature review.
Includes references.

Language: English

Descriptors: Sucklings; Beef production; Beef cows; Heifers;
Weaning weight; Calving season; Genotypes; Housing; Calves

365 NAL Call. No.: SF85.4.A9G72 1985
Surgical and other animal husbandry procedures.
Armstrong, J.R.
Indooroopilly, QLD : Australian Veterinary Association
(Queensland Division); 1985.
Grazing Animal Welfare Symposium : proceedings of a symposium
held at the Bardon Professional Development Centre, Brisbane,
on April 26th and 27th, 1985 / [editors: Brian L. Moore and
Peter J. Chenoweth]. p. 21-30; 1985. Includes references.

Language: English

Descriptors: Queensland; Beef cattle; Branding; Castration;
Polling; Weaning; Stress; Pain; Anesthetics; Parasites;
Disease control; Animal welfare

366 NAL Call. No.: 100 OK4
Syntabac for stressed stocker cattle.
Johnson, B.D.; Gill, D.R.; Smith, R.A.; Ball, R.L.
Stillwater, Okla. : The Station; 1990 Jun.
Annual report - Oklahoma Agricultural Experiment Station
(129): p. 221-226; 1990 Jun. Includes references.

Language: English

Descriptors: Cattle; Transport of animals; Stress response;
Intestinal microorganisms; Probiotics; Treatment; Liveweight
gain; Feed intake; Feed conversion efficiency; Morbidity;
Mortality; Disease control

367 NAL Call. No.: 49 J82
Synthesis of heat stress proteins in lymphocytes from
livestock. Guerriero, V. Jr; Raynes, D.A.
Champaign, Ill. : American Society of Animal Science; 1990
Sep. Journal of animal science v. 68 (9): p. 2779-2783. ill;
1990 Sep. Includes references.

Language: English

Descriptors: Cattle; Horses; Sheep; Fowls; Lymphocytes; Heat
stress; Protein synthesis; Animal proteins; Species
differences

368 NAL Call. No.: SF774.J68
Systemic salmonellosis in mature beef cows.
Morter, R.L.; Armstrong, C.H.; Amstutz, H.E.; Thacker, H.L.
Lawrence, Kan. : AAVLD; 1989 Jan.
Journal of veterinary diagnostic investigation v. 1 (1): p.
22-24; 1989 Jan. Includes references.

Language: English

Descriptors: Beef cows; Salmonella typhimurium; Stress;
Abortion; Salmonellosis; Histopathology

369 NAL Call. No.: S539.5.J68
Systems of growing cattle on stargrass pastures or sugarcane
bagasse in peninsular Florida.
Horton, G.M.J. \u Sultan Qaboos Univ., Muscat, Sultanate of
Oman; Pitman, W.D.; Hodges, E.M.
Madison, WI : American Society of Agronomy, c1987-; 1994 Oct.
Journal of production agriculture v. 7 (4): p. 471-476; 1994
Oct. Includes references.

Language: English

Descriptors: Florida; Cabt; Beef cattle; Beef production;
Cattle feeding; Cynodon nlemfuensis; Grazing; Feedlots; Feed
supplements; Sugarcane bagasse; Comparisons; Liveweight gain;
Performance; Carcass quality

370 NAL Call. No.: 49 J82
Teaching principles of behavior and equipment design for
handling livestock. Grandin, T.
Champaign, Ill. : American Society of Animal Science; 1993
Apr. Journal of animal science v. 71 (4): p. 1065-1070; 1993
Apr. Includes references.

Language: English

Descriptors: Animal behavior; Senses; Livestock; Handling;

Stress factors; Animal housing; Design; Slaughter

Abstract: A course is described in which students are taught principles of livestock behavior and how an understanding of behavior can facilitate handling. Some of the principles that are covered in the course are livestock senses, flight zone, herd behavior during handling, and methods to reduce stress during handling. To teach problem solving and original thinking, the students design three different types of handling facilities. Design of restraint equipment and humane slaughter procedures are also covered. Both existing systems and ideas for future systems are discussed. Students are provided with information from both scientific studies and practical experience.

371 NAL Call. No.: HV4708.K37 1992
Tiere als Ware gequalt, getotet, vermarktet [Animals as commodities]., Originalausg..
Karremann, Manfred,; Schnelting, Karl B.; Apel, Wolfgang;
Schmidt, Wolf-Rudiger,_1936-; Rosenfeld, Reiner
Frankfurt am Main : Fischer Taschenbuch,; 1992.
146 p. : col. ill. ; 19 cm. (Fischer Alternativ). "In
Zusammenarbeit mit dem ZDF"--Cover.

Language: German

Descriptors: Animal welfare; Livestock factories

372 NAL Call. No.: 57.8 C734
To bed with old paper.
Emmaus, Pa. : J.G. Press; 1990 Sep.
BioCycle v. 31 (9): p. 63-64. ill; 1990 Sep.

Language: English

Descriptors: Animal housing; Livestock; Newspapers; Litter

373 NAL Call. No.: Videocassette no.264
Transgenic farm animals Douglas Bolt.
Bolt, Douglas
United States, Food Safety and Inspection Service, Technology
Transfer and Assessment Staff
Fort Worth, Tex. : U.S. Dept. of Agriculture, Food Safety and
Inspection Service, Technology Transfer and Assessment Staff,
[1986?]; 1986. 1 videocassette (VHS) (ca. 53 min.) : sd., col.
; 1/2 in. Presented in Fort Worth, Texas.

Language: English

Descriptors: Livestock; United States; Genetic engineering;
Animal genetic engineering; United States; Animal genetics;
Research; Animal welfare

374 NAL Call. No.: QH442.G393
Transgenic transgressions?..
Jennings, V.
Cambridge, Mass. : Council for Responsible Genetics; 1994 Jan.
Genewatch : a bulletin of the Committee for Responsible
Genetics v. 9 (3/4): 4-5; 1994 Jan.

Language: English

Descriptors: Domestic animals; Livestock; Transgenic animals;
Laboratory mammals; Disease models; Animal welfare; Genetic
engineering; Animal production; Ethics

375 NAL Call. No.: aZ5071.N3
Transport and handling of livestock--January 1981-July 1992.
Berry, D.J.
Beltsville, Md. : The Library; 1992 Aug.
Quick bibliography series - U.S. Department of Agriculture,
National Agricultural Library (U.S.). (92-57): 40 p.; 1992
Aug. Updates QB 91-143. Bibliography.

Language: English

Descriptors: Livestock; Transport of animals; Bibliographies

376 NAL Call. No.: SF600.C82
The transport of deer.
Fletcher, T.J.
Dordrecht : Kluwer Academic Publishers; 1988.
Current topics in veterinary medicine and animal science v.
48: p. 181-190; 1988. In the series analytic: The management
and health of farmed deer / edited by H.W. Reid. Includes
references.

Language: English

Descriptors: Deer; Transport of animals; Animal welfare;
Stress; Air transport; Road transport; Livestock transporters;
Disease resistance

377 NAL Call. No.: QL750.A6
Transportation of cattle by road.
Tarrant, P.V.
Amsterdam : Elsevier Science Publishers, B.V.; 1990 Nov.
Applied animal behaviour science v. 28 (1/2): p. 153-170; 1990
Nov. In the special issue: Transport and pre-slaughter
handling / edited by Graham Perry. Literature review.
Includes references.

Language: English

Descriptors: Cattle; Transport of animals; Road transport;
Stress; Animal welfare; Space requirements; Carcass quality;
Dark cutting meat; Weight losses; Mortality; Pasteurellosis

378 NAL Call. No.: 49 J82
Trenbolone acetate/estradiol combinations in feedlot steers:
dose-response and implant carrier effects.
Bartle, S.J.; Preston, R.L.; Brown, R.E.; Grant, R.J.
Champaign, Ill. : American Society of Animal Science; 1992
May. Journal of animal science v. 70 (5): p. 1326-1332; 1992
May. Includes references.

Language: English

Descriptors: Beef cattle; Steers; Trenbolone; Estradiol;
Dosage effects; Liveweight gain; Feed conversion; Carriers;
Feed intake; Dry matter; Controlled release; Carcass
composition

Abstract: Two experiments were conducted at three locations
to determine the correct dosage and carrier for trenbolone
acetate (TBA) and estradiol (E2) implants in feedlot steers.
In the dose-response experiment, 1,296 steers were allotted to
six implant treatments (48 pens per location): control, 140 mg
of TBA (140/0), 30 mg of E2 (0/30), 20 mg of TBA + 4 mg of
E2(20/4), 80 mg of TBA + 16 mg of E2(80/16), and 140 mg of TBA
+ 28 mg of E2 (140/28). In the carrier experiment, 575 steers
were allotted to five implant treatments (25 pens per

location): control, 140 mg of TBA + 28 mg of E2 in lactose (140/28-LA), 140 mg of TBA + 28 mg of E2 in cholesterol (140/28-CH), 140 mg of TBA + 20 mg of E2 in LA (140/20-LA), and 200 mg of progesterone + 20 mg of E2 benzoate (SS, reimplanted). In both experiments steers were fed a finishing diet for 140 to 168 d. In the dose-response experiment, response to TBA alone (140/0) did not differ from control ($P > .2$). Estradiol alone (0/30) improved ADG by 7% ($P < .01$) and tended to improve feed efficiency over control (3%, $P = .17$). The highest dosage (140/28) improved ADG by 18% ($P < .001$) and feed efficiency by 10% ($P < .001$) over control and 10% ($P < .001$) and 7% ($P < .01$) over E2 alone, respectively. In the carrier experiment, all implant treatments increased steer performance over control ($P < .01$); no differences in response were observed ($P > .2$) between LA and CH carriers or between 28 and 20 mg of E2 in combination with 140 mg of TBA. Implant treatments, in general, decreased ($P < .05$) carcass fatness and quality grade; little difference was noted in carcass characteristics between E2 alone and treatments containing TBA. Combinations of TBA/E2 were more effective enhancers of steer performance under U.S. conditions than was either E2 or TBA alone (Exp. 1), and combinations were similar to SS-reimplanted (Exp. 2).

379 NAL Call. No.: FICHE S-72
 Trouble-shooting livestock environment control and equipment problems. Korthals, R.L.; Christianson, L.L.; Muehling, A.J.; Curtis, S.E.; Bane, D.P.; Hall, W.F.
 St. Joseph, Mich. : The Society; 1987.
 American Society of Agricultural Engineers (Microfiche collection) (fiche no. 87-4037): 27 p. ill; 1987. Paper presented at the 1987 Summer Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. Includes references.

Language: English

Descriptors: Pig housing; Environmental assessment; Ventilation; Waste disposal; Animal health

380 NAL Call. No.: TK4018.R86
 Understanding and dealing with stray voltage in livestock facilities. Gustafson, R.J.
 New York, N.Y. : Institute of Electrical and Electronics Engineers; 1985. Papers presented at the ... annual conference - Rural Electric Power Conference (29th): p. C2/1-C2/19. ill; 1985. Includes references.

Language: English

Descriptors: Livestock housing; Electricity; Losses; Shock; Dairy cows; Disorders; Prevention

381 NAL Call. No.: S671.A66
 Variable-dimension livestock restraining cage.
 Larsen, W.E.; Short, R.E.
 St. Joseph, MI : American Society of Agricultural Engineers, 1985-; 1993 Nov. Applied engineering in agriculture v. 9 (6): p. 549-552; 1993 Nov. Includes references.

Language: English

Descriptors: Livestock; Restraint of animals; Cages; Design; Cage size

Abstract: Handling livestock can be a hazardous and frustrating operation especially when access to the animal is required for procedures such as pregnancy testing of cattle or other reproductive examinations. A handling facility that gently restrains the animal in an adjustable dimension cage can contribute to a smooth operation and increased safety for the operator as well as the animal. A system was designed to mechanically adjust the width of the cage and the position of the front restraint so the cage precisely fits the animal and positions the animal against the leg bar at the rear of the cage. The width and position can be changed over the entire span of each motion control device and can be adjusted for each animal after the animal is in place. The system has been tested at the Fort Keogh Livestock and Range Research Laboratory. Cattle are handled easily with a minimum of stress and the controls are easy to operate.

382 NAL Call. No.: MnSUThesis stp mank
Velocity and temperature distributions in a 1/5 scale model
livestock facility.
Mankell, Kurt Owen
1993; 1993.
v, 100 leaves : ill. ; 29 cm. Includes bibliographical
references (leaves 95-97).

Language: English

383 NAL Call. No.: TH7651.S68K6
Ventiliatsiia zhivotnovodcheskikh pomeshchenii [Ventilation
of animal housing].
Korotkov, E. N.
Moskva : Agropromizdat, ; 1987.
108, [2] p. : ill. ; 20 cm. Bibliography: p. [110].

Language: Russian

Descriptors: Farm buildings; Soviet Union; Heating and
ventilation; Livestock; Soviet Union; Housing

384 NAL Call. No.: 41.8 Am3
The veterinarian's role in farm animal welfare: directions in
production and practice.
Crook, A.D.; Heider, L.E.
Schaumburg, Ill. : The Association; 1994 Jan01.
Journal of the American Veterinary Medical Association v. 204
(3): p. 388-395; 1994 Jan01. Paper presented at the 1993 AVMA
Animal Welfare Forum, "The Veterinarian's Role in Farm Animal
Welfare," Rosemont, Ill. Includes references.

Language: English

Descriptors: Livestock; Animal welfare; Veterinarians;
Veterinary practice; Animal production

385 NAL Call. No.: SF85.A1R32
Viewpoint: wildlife and animal rights.
Howard, W.E.
Denver, Colo. : Society for Range Management; 1993 Feb.
Rangelands v. 15 (1): p. 21-22; 1993 Feb. Includes
references.

Language: English

Descriptors: U.S.A.; Animal welfare; Wildlife management;
Livestock; Public opinion; Environmental impact; Economic

impact; Vertebrate pests; Pest control

386 NAL Call. No.: HV4701.A45
A visit to a slaughterhouse.
Gifford, D.
Westport, Conn. : Animal Rights Network; 1987 Jun.
The Animals' agenda v. 7 (5): p. 35-36. ill; 1987 Jun.

Language: English

Descriptors: U.S.A.; Livestock; Abattoirs; Animal welfare;
Slaughter

387 NAL Call. No.: aS21.A8U5/ARS
Weather and climate impacts on beef cattle.
Hahn, G.L.
Washington, D.C. : The Service; 1985.
Reprints - U.S. Department of Agriculture, Agricultural
Research Service [463]: 5 p.; 1985. Indexed from reprint:
Beef Research Program: Progress Report, no. 2 / Roman L.
Hruska U.S. Meat Animal Research Center, 1985, p. 85-89.

Language: English

Descriptors: Beef cattle; Environmental temperature; Climatic
factors; Responses; Liveweight gain; Mortality; Cattle
housing; Shelters

388 NAL Call. No.: S544.3.N3C66
Winter stress conditions in beef cattle.
Krysl, L.J.; Torell, R.C.
Reno, Nev. : College of Agriculture, University of Nevada-
Reno, Nevada Cooperative Extension; 1988.
Fact sheet - College of Agriculture, University of Nevada-
Reno, Nevada Cooperative Extension (88-13): 4 p. ill; 1988.
Includes references.

Language: English

Descriptors: Beef cattle; Winter; Cold tolerance; Stress;
Shelter; Nutrition programs; Windbreaks; Layout and planning

389 NAL Call. No.: 275.29 G29B
Working facilities for small beef herds.
Silcox, R.; Brown, D.; Kay, F.
Athens, Ga. : The Service; 1989 Aug.
Bulletin - Cooperative Extension Service, University of
Georgia, College of Agriculture (1016): 16 p. ill; 1989 Aug.

Language: English

Descriptors: Pens; Animal husbandry; Beef cattle

Go to: [Author Index](#) | [Subject Index](#) | [Top of Document](#)

Author Index

Absher, C. 21, 31, 82
Absher, C.W. 295
AgriBase, Inc, Livestock Marketing Association 203
Agricultural Training Board 202
Agyemang, K. 292
Alaniz, G.R. 327

Aleksandrova, S. K. 240
Allen, Kristen 268
Amer, P.R. 47
American National CattleWomen 54
American Society for the Prevention of Cruelty to Animals 23
American Society for the Prevention of Cruelty to Animals,
Varied Directions, Inc 323
American Society of Agricultural Engineers 243, 249
Ames, D.R. 205
Amstutz, H.E. 368
Anderson, Dean M.,_1947- 362
Anderson, G.B. 156
Anderson, R. S._1931- 300
Anderson, V.L. 87
Andreoli, K.M. 232
Animal Industry Foundation 5
Animal Welfare Foundation. Symposium 1986 : London, England?)
307
Animal Welfare Institute 171
Ansotegui, R. 150
Apel, Wolfgang 371
Apple, J.K. 152
Armstrong, C.H. 368
Armstrong, J.D. 182
Armstrong, J.R. 365
Arthur, R.J. 58
Australia. Parliament. Senate. Select Committee on Animal
Welfare 237
Australian Veterinary Association, Queensland Division 198
Axtell, Richard C. 188
Ayers, E.L. 190, 199
Bagley, C.P. 234
Bailey, C.M. 279
Bailey, W.A. 209
Bakau, W. 226
Baker, A.M. 158
Baker, F.S. Jr 123, 133
Ball, R.L. 112, 154, 244, 272, 338, 366
Bane, D.P. 379
Baptist, R. 74
Barao, S.M. 248
Barbeito, Manuel 48
Barber, E. 348
Barber, E.M. 265
Barnard, D.R. 277
Barnes, K. 324
Barnett, J.L. 131
Barrington, S. 4
Bartle, S.J. 378
Batte, M.T. 349
Bayne, G. 348
Beebe, Charles N. 174
Beckett, J.L. 163
Beef Industry Council (U.S.), Veal Committee, American Veal
Association 350
Beermann, D.H. 100
Bennett, B.W. 146, 363
Bennett, G.L. \u Roman L. Hruska U.S. Meat Animal Research
Center, USDA, ARS, Clay Center, NE 223
Berry, D. 210
Berry, D.J. 375
Berry, I.L. 149
Bertrand, J.E. 13, 102
Beverlin, S.K. 190
Bevier, G.W. 325
Bevis, E.A. 233
Biggers, B.G. 107, 108
Birkelo, C.P. 120, 245
Bjornstad, Even 268
Blackshaw, J.K. 228, 280

Blancquaert, A.M.B. 146
Blayney, D.P. 78
Blecha, F. 217, 344
Bodman, G.R. 12
Boivin, X. 229
Boling, J.A. 294, 299
Bolt, Douglas 373
Bolt, Douglas J. 48
Bolze, R.P. 71
Borg, Robert 79
Bottcher, R.W. 330
Bowers, C.L. 43
Boxler, D.J. 148
Boyle, J.M. 69
Bracken, T.D. 42
Bradley, L.C. 281
Bradley, N.W. 143, 227
Branine, M.E. 137
Broadbent, P.J. 364
Broadway, R. 37, 185
Brock, K.V. 275
Brown, A.H. Jr 125
Brown, C.J. 125
Brown, D. 389
Brown, R.E. 378
Brown, S.N. 233
Bruce, J.M. 162
Bruynickx, W. 146
Bryan, W.B. 96
Bryant, F.C. 281
Bryant, J.P. 64
Bryden, W.L. 226
Buchanan, D.S. 107, 108
Buchanan-Smith, J.G. 47
Bucklin, R.A. 330, 361
Buhr, B.L. 218
Burdette, L.A. 187
Burgess, L.W. 226
Burris, R. 31
Butterworth, M. 292
Butts, W.T. Jr 123
Cahill, D.J. 131
Calderon, J. 28
Calkins, C.R. 17
Campbell, C.B. 69
Campbell, J.B. 20, 148, 149, 289
Campbell, R.M. 182
Carruthers, S. P. 177
Carson, Rachel, 171
Catangui, M.A. 148
Centre technique de cooperation agricole et rurale 309
Cermak, J. 88
Chagnon, R. 293
Chase, C.C. Jr 340
Chen, Y.R. 62
Chenoweth, P.J. 286
Chenoweth, Peter J. 198
Chewning, J.J. 125
Childers, A.B. 274
Christianson, L.L. 379
Christopherson, R.J. 67
Chupin, J.M. 229
Church, T. 341
CIBAGEIGY Corporation, Agricultural Division 188
Claflin, W.H. 327
Clanton, D.C. 115
Clark, C. 150
Clark, E.G. 347
Clarke, Ross 186
Clausen, T.P. 64

Clemens, E. 51
Cmarik, G.F. 290
Cockram, M.S. 117
Cohen, R.D.H. 99
Cohen, W.E. 281
Coleman, S.W. 335
Collett, F.A. 50
Conklin, D.H. 17
Convey, E.M. 200
Conway, G. 260
Coombs, D.F. 359
Corah, L.R. 298
Corley, K.T.T. 117
Cornelius, P.L. 227
Craig, A.M. 146
Crook, A.D. 384
Cross, H. Russell 48, 208
Crouse, J.D. 180
Cundiff, L.V. 97, 284
Curtis, S.E. 379
Curtis, Stanley 172
Czarick, M. 330
D'Souza, G.E. 96
Daelemans, J. 211
Dalke, B.S. 92
Daniels, E. 277
Datascope Communications, Glaxo Group Research Limited,
Institute of Animal
Technology 178
Davis, G.P. 196
Davis, R. 148
Davis, Ron 86
Dawson, K.A. 299
Dawydiak, Orysia, 256
De Passille, A.M.B. 346
De Rose, E.P. 312
DeNise, S.K. 194, 195
DeShazer, J.A. 12
Deshazer, J.A. 149
DeShazer, J.A. 289
Deutscher, G.H. 115
Dew, R. 299
Dhuyvetter, K.C. 241, 242
Dickerson, G.E. 97, 284
Diesch, M.A. 311
Dikeman, M.E. 152
Dobson, H. 116
Dodd, V.A. 269
Dodt, R.M. 58, 60
Doescher, P.S. 331
Dohkoshi, J. 90
Doornenbal, H. 49
Dougherty, C.T. 227
Down, M. J. 89
Drawe, D.L. 281
Dewer, Lawrence A. 41, 81
Dunn, T.G. 138
Dutil, C. 293
Eck, T.P. 241
Edney, A. T. B. 300
Edwards, A.J. 121
Eidman, V.R. 19
Eigenberg, R.A. 62
Eimler, Wolf-Michael 262
Eldridge, G.A. 45, 131
Eller, A.L. 181
Elliot, J.I. 15
Elsayed, A.M. 313, 314, 315
Equipment Development Center (Missoula, Mont.) 169
Eurell, T. 290

Evans, J.K. 295
Eversole, D.E. 222
Fallert, R.F. 78
Farm Animal Welfare Council (Great Britain) 333, 334
Faulkner, D.B. 290
Feazel, J.I. 234
Fisher, J.C. 71
Fiske, W.A. 96
Fitzgerald, B.P. 143
Fletcher, J.J. 96
Fletcher, T.J. 376
Fluharty, F.L. 128, 130, 132, 142, 145
Fontenot, J.P. 222
Food and Agriculture Organization of the United Nations 75
Foote, W.D. 279
Ford, J.J. 261
Fordyce, G. 60, 61
Forster, D.L. 349
Fox, D.G. 100
Fox, G.C. 47
Fox, Michael W., 2
Franke, D.E. 305
Friend, T.H. 43
Frisch, J.E. 197, 301
Froehlich, D.P. 311
Galyean, M.L. 137
Ganskopp, D. 42
Garel, J.P. 229
Garner, J.C. 361
Gay, N. 21, 227, 299
Gee, C.K. 98
Geelen, M.A. van 168
Geisert, R.D. 107, 108
Genchi, C. 236
Geuns, K.R. 187
Gibson, C.D. 310
Gibson, L.L. 126, 127
Gibson, T. E. 307
Gifford, D. 386
Gill, D. 324
Gill, D.R. 44, 112, 154, 244, 272, 338, 366
Godbout, S. 35
Gonyou, H.W. 158
Gonzalez, R.A. 28
Goodwin, M.C. 327
Graham, R.T. 103
Grande, Jorunn 268
Grandin, T. 10, 53, 55, 93, 94, 118, 165, 251, 370
Grandin, T. \u Colorado State University, Fort Collins, CO 357
Grandin, Temple 56, 328
Grant, R.J. 119, 378
Gray, D. 150
Great Britain, Agricultural Development and Advisory Service 65
Green, R.D. 284
Greenwood, G.B. 91
Gregory, K.E. 97, 261
Gregory, N.G. 25, 214
Griffith, G.R. 238
Grissom, K.K. 43
Gross, T.S. 318, 332
Grosskopf, J.F.W. 50
Guenther, C.L. 99
Guerrero, J.N. 28
Guerriero, V. Jr 340, 367
Gustafson, R.J. 380
Gutierrez, J.A. 340
Hahn, G.L. 62, 63, 250, 352, 387
Haile, D.G. 277
Hall, J.B. 143

Hall, W.F. 379
Halpin, C.G. 131
Halverson, D. 215
Hammond, A.C. 123, 339, 340
Hammond, K. 246
Hannan, J. 147
Hansen, D.E. 69
Hansen, J. 48
Hansen, J. Norman 193
Hansen, P.J. 332, 340
Harris, B. 341
Harris, D. G. 343
Harrison, R. 360
Harrison, Ruth 175
Harvey, R.W. 182
Hatae, K. 235
Havstad, K.M. 190, 199
Havstad, Kris M., 1952- 362
Hayenga, M.L. \u Iowa State University 218
Hays, V.S. 244, 338
Hays, W.G. 38
Heersche, G. 21
Heider, L.E. 384
Heimer, E.P. 182
Herd, R.M. 351
Hiatt, R. 317
Hicks, R.B. 44, 112
Hidiroglou, N. 104
Higgins, K.P. 269
Hill, F.W.G. 283
Hinds, Frank C. 362
Hinman, D.D. 92
Hirning, H.J. 267
Hirst, D.J. 30
Hoblet, K.H. 275
Hodges, E.M. 369
Hoffman, M.P. 139
Hoke, K.E. 251, 287
Hoke, Karl E. 56
Horton, G.M.J. \u Sultan Qaboos Univ., Muscat, Sultanate of Oman 369
Hoshiba, S. 90
House, H.K. 73
Howard, W.E. 385
Huffman, H.E. 73
Huis in't Veld, J.H.J. 219
Hull, P.R. 347
Humane Slaughter Association (1986-) 202
Humane Society of the United States 176
Hunt, C.W. 92
Hurnik, J. F. 329
Hurnik, J.F. 77, 164
Institut fur Rinderproduktion Iden-Rohrbeck (Akademie der Landwirtschaftswissenschaften der DDR) 159
International Commission of Agricultural Engineering. 2nd Technical Section.
Seminar (1987 : University of Illinois at Urbana-Champaign) 243
Iurkov, V. M. 266
Jackson, P.G.G. 27
Jacobs, G.A. 231
Jairell, R.L. 345
Janzen, E.D. 99
Jeffrey, S.R. 19
Jenkins, O.C. 43
Jenkins, T.G. 284
Jennings, V. 374
Jeremiah, L.E. 126, 127
Johnson, B.D. 244, 272, 338, 366
Johnson, D. 87

Johnson, D.D. 13, 102, 104
Johnson, Z.B. 125
Johnston, G.N. 59
Jones, Daniel 48
Jones, S.D.M. 155, 157
Jorgenson, M. 348
Juniewicz, P.E. 105, 106, 110, 122, 153
Kains, F.I. 70
Kamwanja, L.A. 340
Karl, M.G. 331
Karmum, D. 337
Karremann, Manfred, 371
Karsky, Richard 169
Kasser, T.R. 92
Kauffman, R.G. 17
Kay, F. 389
Kemp, R.A. 47
Kerr, S.G.C. 72
Kerschen, R.P. 363
Kestin, S.C. 233
Kidd, R. 212
Kilgour, R. 16, 85
Kilpatrick, D.J. 113
King, B.D. 99
King, G.J. 164
Kingery, J.L. 103
Kirk, D.J. 222
Kleiber, Hans, 159
Kleinschmidt, Nina 262
Klindt, J.M. 180
Klopfenstein, T.J. 119, 321
Knapp, B.W. 263
Knapp, F.W. 294
Knott, M. 51
Koch, R.M. 97
Kock, N.D. 283
Koh, Y.O. 279
Kolkman, John 9
Korotkov, E. N. 383
Korthals, R.L. 379
Kreider, J.L. 359
Kreikemeier, K.K. 52
Krieg, K. 170, 353
Krysl, L.J. 206, 316, 388
Kuhl, G. 152
Kuhl, G.L. 241
Kuit, H.G. 253
Kunkle, W.E. 123, 133, 361
Ladd, G.W. 140
Lamb, M.A. 167
Lambrecht, J. 211
Lane, E.P. 283
Larsen, W.E. 381
Latz, G.I. II 1
Laudert, S.B. 242
Lauriault, L.M. 227
Lautner, B. 325
Lay, D.C. Jr 43
Le Heron, R. 297
Le Neindre, P. 229
Leavitt, E.S. 215
Leeson, R.H. 25
Lesch, S.F. 336
Lishman, A.W. 336
Locatelli, A. 236
Loe, W.C. 125
Loeffler, K. 24
Loerch, S.C. 71, 128, 130, 132, 134, 142, 144, 145, 296
Lombard, M.S. 50
Lord, D. 293

Lorimor, J. 184
Lorimor, J. \u Iowa State University 183
Lounsbery, J. 120, 245
Loyacano, A.F. 359
Luescher, U.A. 77
Lusby, K. 324
Lusby, K.S. 244
Lynch, J.W. 303
Lyons, D. J. 22
MacNeil, M.D. 261
Mader, T.L. 109, 115
Madsen, A.G. 98
Mahanta, Kanak Chandra, 1926- 201
Makarechian, M. 114
Malayer, J.R. 332
Malcolm, K.J. 137
Males, J. 14
Mankell, Kurt Owen 382
Marquis, A. 35
Martin, A.H. 157
Mathewson, G. K. 65
Maton, A. 211
McBratney, Brad 169
McCaughey, W.J. 113
McDonald, C.A. 246
McDowell, L.R. 104
McFate, K. 317
McFate, K.L. 160
McInerney, J. 356
McIntyre, B.L. 111
McLauchlan, W. 113
McMurtry, J.P. 339
McNaughton, S.J. 101
McNeill, S. 31
McNeill, S.G. 295
McPhee, J.E. 30
McWhir, J. 207
Mears, G.J. 49
Meltzer, D.G.A. 50
Mench, J.A. 355
Mendez, J.K. 141
Meyerhoeffer, D.C. 335
Midwest Plan Service 39
Miksch, D. 21
Milliken, G.A. 205
Minton, J.E. 191, 232
Mohan Raj, A.B. 113
Mohan, K. 283
Moore, Brian L. 198
Mooso, G.D. 234
Morison, J.B. 238
Morrison, D.G. 234
Morrison, S.R. 36
Morter, R.L. 368
Moseley, W.M. 327
Moss, B.W. 25, 113
Moss, C. 46
Moss, G.E. 138
Mount, G.A. 277
Muehling, A.J. 379
Mulder, R.W.A.W. 219
Mulders, M.S. 50
Munro, R.K. 286
Murakami, R. 271
Murphy, P.A. 147
Murray, N.L. 49
Mutoh, Y. 354
Mwansa, P.B. 114
Nakanishi, Y. 354
Nash, D. 166

National Agricultural Library (U.S.) 174
National Cattlemen's Association (U.S.) 282
Nelson, Fred 86
Nelson, K. E. 41
New Mexico State University, Agricultural Experiment Station
76
New York (State), Legislature, Legislative Commission on Dairy
Industry
Development, New York Farm Bureau 308
Newman, J.A. 49, 126, 127, 157
Newman, S. 322
Nichols, C. 21
Nienaber, J.A. 62, 63
Nkhonjera, L. 292
Nockels, C.F. 146, 363
Nunez-Dominguez, R. 97
Nyamusika, N. 46
O'Neill, D.H. 342
Oesterheld, M. 101
Ohl, M.W. 290
Okamoto, M. 67
Olson, D.P. 320
Olson, Kent D. 268
Olson, T.A. 340
Olson-Rutz, K.M. 199
Oltjen, J.W. 163
Omar, Mohamed Ariff, 1949- 288
Ott, R.S. 290
Owens, F.N. 44, 244, 338
Palmer, A.Z. 123, 133
Pankaskie, D.E. 115
Parnell, C.B. 285
Parsons, J. 14
Paulissen, J.B. 327
Pearse, A.J. 326
Peart, W.J. 66
Perry, J.G. 248
Perry, T.C. 100
Perry, V.E.A. 286
Peters, A.R. 358
Petersen, M.K. 190, 199
Peterson, E.B. 140
Peterson, N. 28
Phillips, V.R. 342
Phillips, W.A. 105, 106, 110, 122, 153
Phipps, T.T. 96
Pier, A.C. 258
Pitman, W.D. 369
Plasencia, A. 28
Pollreisz, J.P. 166
Post, T.B. 286
Powell, B. 40
Powell, V.H. 57
Prescott, M.L. 199
Preston, R.L. 378
Price, E.O. 136, 156
Prichard, D.L. 102
Prigg, E.C. 96
Pritchard, R.H. 141, 225
Purdue University, Office of Agricultural Research Programs
189
Pusillo, G.M. 139
Putney, D.J. 318
Queensland, Dept. of Primary Industries 186
Rae, O. 46
Rainforth, L. 51
Raleigh, R. 42
Randall, J.M. 213, 224, 313, 314, 315
Randel, R.D. 43
Ray, D.E. 195

Raynes, D.A. 367
Reichardt, P.B. 64
Reid, C.R. 279
Reynolds, W.L. 263
Rice, D.A. 113
Rice, H.B. 82
Rice, R. 195
Richard, T. 247
Richards, M.W. 230
Richey, E.J. 302
Ridley, E.J.H. 238
Riechers, R. 179
Riesenberg, L.E. 320
Ringkob, T.P. 279
Ritchie, H.D. 310
Robertson, W.M. 157
Robinson, D.L. 246
Robinson, J.B. 67, 205
Robison, O.W. 167
Roeder, R.A. 92
Rosen, S. 95
Rosenfeld, Reiner 371
Ross, A.D. 226
Ross, G.S. 38
Roth, E.A. 270
Round, P.J. 59
Rudakov, V. V. 240
Rumsey, T.S. 339
Rushen, J. 346
Rust, S. 310
Ryan, W.J. 111
Rynk, R.F. 291
Sainsbury, David, 173, 252
Sainsbury, Peter, 252
Sala, O.E. 101
Sangiah, S. 230
Sasaki, Y. 264
Sase, S. 271
Saskatchewan, Family Farm Improvement Branch 32
Sato, S. 235
Schaefer, A.L. 155
Schalles, R.R. 232
Schelling, G.T. 92
Schillo, K.K. 143
Schipper, C. 341
Schmidt, J.L. 319
Schmidt, R.A. 345
Schmidt, Wolf-Rudiger, 1936- 371
Schneijdenberg, T. C. H. G. P. 192
Schnelting, Karl B. 371
Schoenemann, H.M. 230
Schott, M. 42
Schupp, A. 179
Schwarm, M.A. 3
Schwartzkopf, K.S. 347
Schwinghammer, K.A. 294
Sconberg, S. 146
Self, H.L. 139
Shagam, S.D. 78
Shain, D.H. 119
Shaw, F.D. 257
Shepherd, R.K. 61
Short, R.E. 381
Shorthose, W.R. 57, 58, 61
Shulaw, W.P. 275
Silcox, R. 389
Silver, G.V. 136
Simms, D.D. 152
Sims, David E., 256
Sindt, M.H. 119, 321

Skaggs, Jimmy M., 304
 Smith, C. 47
 Smith, P.C. 59
 Smith, R.A. 112, 154, 244, 272, 303, 338, 366
 Smith, R.F. 116
 Smith, V.M. 156
 Snijders, J.M.A. 219
 Sokhansanj, S. 265
 Spire, M.F. 232
 Spreen, T.H. 46, 123
 Stefanides, N. 69
 Stock, R.A. 119, 321
 Stookey, J.M. 347
 Stricklin, W.R. 355
 Strohbehn, D.R. 140
 Suomen kotieläinjalostusyhdistys, World Association of Animal
 Production 306
 Sutton, A.L. 6
 Swanson, J.C. 34, 355
 Swanson, Janice C. 174
 Sweeten, J.M. 285
 Takezono, T. 271
 Tanaka, T. 90
 Tarrant, P.V. 8, 135, 377
 Tarumizu, K. 235
 Teigen, L.D. 80
 Temple, G. 278
 Tess, M.W. 167
 Thacker, H.L. 368
 Thatcher, W.W. 318, 332
 Thomas, G.D. 148
 Thomson, D.U. 225
 Thomson, J. 14
 Thornsberry, R.M. 124
 Thos, J. 156
 Thrift, F.A. 33
 Tong, A.K.W. 49, 126, 127, 155, 157
 Topps, J.H. 273
 Torabi, M. 194, 195
 Torell, D. 206
 Torell, R.C. 316, 388
 Townsend, H.G.G. 161
 Traldi, G. 236
 Tranquilli, W.J. 290
 Traore, A. 253
 Tucker, T.A. 1
 Turnbull, J.E. 70
 Turner, J.W. 246
 Turner, L. 31, 82
 Turner, L.W. 295
 Umetsu, R. 354
 Underwood, D.W. 61
 United States, Agricultural Research Service, National Program
 Staff 172
 United States, Dept. of Agriculture, Commodity Economics
 Division 41
 United States, Dept. of Agriculture, Economic Research Service
 81
 United States, Dept. of Agriculture, Office of Transportation,
 Livestock
 Conservation Institute 56
 United States, Food Safety and Inspection Service, Technology
 Transfer and
 Assessment Staff 48, 193, 208, 239, 373
 United States. Congress. House. Committee on Agriculture.
 Subcommittee on
 Livestock, Dairy, and Poultry 84, 220
 United States. Congress. House. Committee on Banking, Finance,
 and Urban
 Affairs. Subcommittee on Economic Stabilization 221

United States. Congress. House. Committee on Small Business.
Subcommittee on
Energy and Agriculture 129
Universities Federation for Animal Welfare 259
Universities Federation for Animal Welfare, Humane Slaughter
Association 216
University of Melbourne, Dept. of Civil and Agricultural
Engineering 89
University of Minnesota, Dept. of Agricultural and Applied
Economics 268
University of Reading, Centre for Agricultural Strategy, Farm
Animal Care
Trust 177
Unruh, J.A. 52
Upton, M. 254, 255
Urick, J.J. 263
Van Den Heever, L.W. 50
Van Koevering, M.T. 154
van Niekerk, A. 336
Van Niekerk, B.D.H. 231
Van Rensburg, J.J. 50
Van Wicklen, G.L. 330
Veall, Frederick 75
Veenhuizen, J.J. 92
Vercoe, J.E. 197, 301
Vieselmeyer, B.A. 321
Vocational Education Productions, Da-Nel Productions 86
Von Tungeln, D.L. 122, 151, 153
VonTungeln, D.L. 105, 106, 110
Wakeman, D.L. 133
Wall, Robert 48, 239
Wallach, S.J.R. 136
Wan Zahari Mohamed 288
Ward, J.K. 115
Wardynski, F. 310
Warner, R.D. 131
Warriss, P.D. 204, 233
Webster, A.J.F. 11
Weekes, T.E.C. 264
Wells, M.E. 335
Western Regional Coordinating Committee on Utilization of
Range Forage for
Rangeland and Domestic Ruminant Production, New Mexico State
University, Agricultural Experiment Station 362
Wetteman, R.P. 108
Wettemann, R.P. 107, 230, 335
White, W.A.B. 349
Whitsett, D. 69
Whittier, W.D. 181
Wieman, G.A. 149, 289
Wiley, S. 150
Willham, R.L. 140
Williams, C.B. 223
Williams, C.M. 7
Williams, G. 69
Williams, M.J. 123
Wilson, M.E. 260
Wilson, R.T. 253
Wilton, J.W. 207, 312
Winfield, C.G. 45
Wolfley, B.F. 319
Wolynetz, M.S. 70
Wood-Gush, D.G.M. 29, 72
Wythes, J.R. 57, 58, 59, 60, 61
Young, B.A. 67, 155
Yusof Hamali Ahmad 288
Zavy, M.T. 106, 107, 110, 122, 153
Zayan, R. 26
Zinn, G. 290
Zinn, R.A. 36

Go to: [Author Index](#) | [Subject Index](#) | [Top of Document](#)

Subject Index

Abattoirs 25, 45, 50, 57, 58, 59, 117, 224, 386
Aberdeen-angus 111, 318
Abnormal behavior 77, 346
Abomasum 327
Abortion 121, 368
Abrasion 147
Abscesses 316
Absorption 316
Acclimatization 199, 205
Accuracy 246
Acremonium coenophialum 227
Adaptation 141, 301
Adrenal glands 191
Adverse effects 149
Aflatoxicosis 258
Aflatoxins 258
Africa 273, 309, 309
Afrikander 336
Age 60, 143
Age differences 99, 105, 258
Aggressive behavior 200, 229
Agonistic behavior 158, 355
Agribusiness 325
Agricultural ecology 2
Agricultural education 260
Agricultural engineering 93, 228, 313, 315
Agricultural industries 2
Agricultural law 6
Agricultural policy 297
Agricultural pollution 2
Agricultural prices 221
Agricultural productivity 268
Agricultural regions 46
Agricultural research 14, 38
Agricultural structure 218
Agriculture 2, 221, 308
Agroforestry 103
Air spora 90
Air transport 376
Air, Ionized 240
Alaska 170, 337
Alberta 341
Alfalfa hay 59
Algorithms 96
Alkaloids 227
Alpha-tocopherol 146
Altruism 235
Amblyomma Americanum 277
Ammonia 342
Anaerobic conditions 342
Analgesics 290
Analysis of variance 125
Anesthesia 25
Anesthetics 365
Animal behavior 7, 8, 10, 24, 42, 45, 55, 60, 72, 116, 117, 118, 165, 280, 289, 322, 354, 370
Animal breeding 170, 305
Animal culture 201
Animal diseases 11, 14, 27
Animal experimentation 323
Animal feeding 88, 226, 302
Animal genetic engineering 193, 239, 373
Animal genetics 239, 373

Animal health 178, 181, 244, 248, 280, 303, 310, 326, 379
Animal housing 1, 3, 11, 12, 18, 27, 29, 35, 70, 73, 120, 170, 188, 201, 210, 247, 248, 266, 278, 293, 342, 346, 348, 357, 370, 372
Animal husbandry 15, 29, 66, 74, 101, 170, 210, 212, 219, 224, 280, 346, 357, 358, 389
Animal industry 2, 5, 268
Animal manures 168
Animal models 191
Animal nutrition 123, 197, 294
Animal production 66, 91, 224, 273, 280, 326, 346, 356, 374, 384
Animal products 22
Animal proteins 367
Animal wastes 6, 168
Animal welfare 2, 5, 7, 11, 15, 16, 17, 23, 24, 25, 26, 27, 29, 40, 43, 48, 53, 56, 65, 66, 72, 78, 85, 86, 162, 165, 171, 172, 176, 177, 178, 189, 191, 193, 202, 203, 204, 208, 210, 213, 214, 215, 224, 237, 239, 262, 274, 280, 282, 306, 307, 308, 322, 323, 326, 328, 346, 347, 350, 356, 360, 365, 371, 373, 374, 376, 377, 384, 385, 386
Animals 48, 202, 307
Animals, Treatment of 2, 54, 171, 175, 216, 307, 333
Antagonists 230
Antibiotics 69
Antioxidants 340
Arachis glabrata 123
Arthropod pests 20
Artificial insemination 21
Assessment 24, 26, 255
Attachment behavior 156
Australia 30, 45, 66, 196, 228, 238
Autografts 180
Automatic control 93
Automation 250
Autumn 102, 199
Bacteria 90
Barley 226
Barns 90, 267
Barriers 88, 345
Bedding 247
Beef 50, 152, 208, 279
Beef breeds 114, 229, 301
Beef bulls 88, 114, 125, 136, 155, 158, 207, 286, 335
Beef cattle 3, 8, 21, 31, 32, 33, 34, 35, 36, 37, 38, 39, 39, 42, 43, 44, 45, 46, 47, 54, 59, 60, 61, 65, 67, 69, 71, 76, 79, 81, 82, 92, 94, 96, 99, 105, 106, 109, 110, 111, 117, 120, 121, 122, 124, 128, 130, 131, 132, 134, 137, 139, 140, 141, 142, 144, 145, 146, 147, 151, 153, 156, 160, 161, 163, 166, 167, 179, 181, 182, 183, 184, 185, 186, 187, 194, 195, 196, 197, 205, 206, 208, 210, 222, 223, 225, 226, 227, 231, 234, 236, 238, 245, 246, 263, 267, 269, 275, 283, 285, 288, 288, 289, 292, 294, 295, 296, 298, 301, 302, 305, 310, 312, 316, 320, 324, 327, 329, 329, 340, 341, 344, 347, 354, 361, 363, 365, 369, 378, 387, 388, 389
Beef cattle industry 282
Beef cows 52, 55, 97, 107, 108, 164, 190, 199, 230, 232, 235, 241, 279, 284, 318, 332, 336, 351, 355, 364, 368
Beef herds 349
Beef industry 41, 159
Beef packers 81
Beef production 17, 40, 98, 141, 163, 166, 223, 241, 242, 261, 291, 303, 364, 369
Beef quality 155, 204, 223, 257
Behavior 56
Bibliographies 210, 375
Bibliography 174, 174
Bioclimate 269
Bioethics 360
Biofermal 134

Biotechnology 48, 208
Birth weight 232
Bites 149
Blood 164, 165, 274
Blood chemistry 50, 236, 294, 363
Blood composition 49, 117
Blood glucose 355
Blood meal 130, 132, 142, 321
Blood picture 363
Blood plasma 43, 51, 99, 110, 116, 143, 146, 339
Blood sampling 146
Blood serum 92, 182, 191, 290, 327, 351
Blood sugar 143
Body composition 223, 339
Body condition 119
Body fat 109, 246
Body protein 339
Body temperature 63, 205, 294
Body weight 109, 143, 153, 207, 284, 339
Bovidae 126, 127
Bovine diarrhea virus 275
Bovine respiratory syncytial virus 46
Brahman 13, 50, 59, 60, 102, 104, 340
Branding 43, 347, 365
Bred heifers 52
Breed differences 97, 100, 110, 125, 167, 182, 197, 229, 263, 279, 340
Breeders' associations 125
Breeding 171, 201
Breeding programs 37, 185
Breeds 358
Broilers 293
Brood care 160
Browsing 64
Browsing damage 64, 103
Bruises 204
Bruising 45, 57, 58, 131, 257
Buildings 276
Bull feeding 114
Bulls 49, 65, 157, 244, 261
Bunching 289
Cabt 46, 52, 80, 96, 120, 150, 170, 183, 184, 199, 225, 238, 245, 277, 277, 277, 281, 325, 326, 330, 347, 369
Cage size 381
Cages 381
Calf feeding 321, 341
Calf housing 72, 168, 291
Calf production 46, 96
California 28
Calves 51, 67, 68, 72, 82, 93, 99, 110, 112, 119, 122, 128, 140, 141, 142, 150, 151, 153, 156, 161, 223, 229, 232, 244, 290, 293, 303, 320, 321, 341, 349, 358, 364
Calving 51
Calving rate 336
Calving season 161, 364
Camels 270
Canada 15
Capitalism 297
Carbon dioxide 25, 165
Carcass composition 52, 92, 100, 157, 182, 222, 246, 263, 279, 312, 327, 359, 378
Carcass disposal 170
Carcass quality 13, 25, 45, 49, 52, 57, 58, 61, 102, 104, 109, 115, 123, 124, 133, 139, 157, 180, 279, 339, 369, 377
Carcass weight 57, 58, 59, 125, 167, 223, 257
Carcass yield 109, 139, 152, 155, 223, 327, 359
Carcasses 57, 58, 204
Carriers 347, 378
Case studies 255
Castration 49, 99, 126, 127, 140, 158, 290, 365

Catecholamines 51
Cattle 20, 30, 50, 56, 56, 56, 57, 58, 62, 63, 101, 103, 118,
123, 138, 148, 154, 159, 159, 196, 198, 204, 217, 241, 242,
257, 270, 272, 287, 331, 366, 367, 377
Cattle breeds 149, 340
Cattle crushes 209
Cattle diseases 338, 344
Cattle farming 183
Cattle fattening 98, 133, 147, 223, 292, 299, 303, 321, 359
Cattle feeding 369
Cattle feedlot soils 133
Cattle housing 34, 36, 136, 139, 147, 161, 358, 387
Cattle husbandry 28, 60, 95, 161, 229, 261, 291, 303
Cattle manure 34, 183
Cattle pens 79
Cattle trade 304
Cephalosporins 272
Cervidae 326
Cervus elaphus 116, 326
Cervus elaphus canadensis 326
Charolais 182
Chemical treatment 30
Chemicals 347
Chilling 135
Chutes 31, 118, 357
Claviceps purpurea 226
Climate 266, 311
Climatic factors 387
Cobweb models 95
Code of practice 7
Cold 190, 205
Cold stress 67, 68, 131, 199, 232, 264, 336
Cold tolerance 120, 388
College students 260
Color 131
Colorado 98, 118
Commercial farming 238
Comparisons 28, 369
Compensatory growth 71, 321
Computer applications 73
Computer simulation 74, 167, 269, 277
Concentrates 102, 144, 296
Concrete 133
Conditioning 141, 341
Congenital infection 275
Congresses 48, 48, 159, 159, 159, 159, 198, 198, 198, 198,
243, 249, 249, 249, 249, 306, 307, 307, 307, 308, 308, 308,
309, 309, 333, 333
Consciousness 26, 214
Construction 187, 267
Consumer attitudes 40
Consumers' preferences 76
Consumption per caput 325
Contamination 226, 258
Control methods 30, 361
Controlled grazing 295
Controlled release 109, 152, 339, 378
Controllers 348
Controls 315
Convection 271
Conversion efficiency 207
Conveyors 93
Cooking 127
Cooling 160
Cooperative services 125
Corticoliberin 191
Corticotropin 105, 110, 146, 191
Cortisol 106, 116, 151, 232, 294, 351, 355, 363
Cost benefit analysis 150, 179, 324, 330
Costs 21, 28, 97, 187, 349

Cows 61, 349
Creatine kinase 146
Creep feeding 71, 128, 140
Creep grazing 82
Crop mixtures 19
Crop production 241
Crop residues 292, 321
Crossbred progeny 263, 284
Crossbreds 13, 44, 97, 104, 149, 197, 279
Crossbreeding 167, 223, 284
Crowding 149
Crude protein 119, 142, 359
Culling 74, 97
Cultural change 270
Curing 193
Cynodon nlemfuensis 369
Dactylis glomerata 331
Dairies 28
Dairy cattle 179
Dairy cows 88, 119, 235, 352, 380
Dairy equipment 160
Dairy farming 19, 160
Dairy farms 80
Dairy laws 84
Dairy performance 352
Dairy products 220
Dairying 84, 159
Dams (mothers) 51, 156
Dark cutting meat 52, 204, 377
Data processing 81, 81
Decision making 96, 250, 270, 349
Deer 376
Deer farming 326
Defense mechanisms 64
Dehorning 86
Deiodination 339
Demonstration farms 183
Design 73, 87, 88, 370, 381
Design calculations 271
Development 91
Diagnosis 275
Diarrhea 358
Diet 2, 119
Dietary laws 334, 334
Dietary protein 321
Differential pricing 223
Digestibility 294
Digestible energy 114
Digestion 64
Digestive disorders 181
Diptera 20
Disease control 14, 27, 46, 161, 272, 275, 365, 366
Disease models 374
Disease prevention 275
Disease resistance 344, 376
Disorders 380
Distance travelled 45
Diurnal variation 44
Domestic animals 174, 273, 374
Domestication 273, 322
Dominance 355
Dosage effects 92, 109, 327, 378
Dressing percentage 13, 59, 109, 133
Drinkers 87
Drivers 213
Drought 66
Droughts 129, 220, 221
Drug effects 154
Drug therapy 112
Drugs 302

Dry lot feeding 261
Dry matter 71, 225, 349, 378
Duration 125
Dust 285
Dystocia 51
Ecology 249, 360
Econometric models 47
Economic analysis 46, 98
Economic aspects 84, 129, 221
Economic dualism 80
Economic evaluation 97
Economic impact 218, 238, 258, 312, 385
Effect of drought on 129, 220, 221
Efficacy 165
Efficiency 167, 314
Egg collectors 1
Egg production 253
Ejaculate volume 114
Electric current 42
Electric heaters 160
Electrical energy 87, 160
Electrical treatment 57, 111, 165, 274
Electricity 160, 317, 380
Electrolytes 155
Electrolytes retention 155
Embryo mortality 108
Embryonic development 107, 108
Emission 285, 342
Endocrinology 264
Endometrium 318, 332
Energy 130
Energy balance 119
Energy consumption 87
Energy content 114
Energy intake 143, 269, 284
Environment 1, 4, 8, 151, 166, 301, 336
Environmental assessment 379
Environmental control 18, 250, 311, 313
Environmental engineering 159
Environmental factors 14, 64, 161, 162, 196, 311, 352
Environmental impact 96, 385
Environmental policy 238
Environmental protection 40
Environmental temperature 63, 199, 205, 335, 352, 387
Enzyme activity 146, 332, 339
Epinephrine 43, 51, 146
Equipment 18, 98, 302
Equipment and supplies 32, 39
Ergot 226
Errors 246
Erythrocytes 146
Essential amino acids 321
Estradiol 100, 109, 124, 222, 232, 339, 378
Estrous behavior 164
Estrous cycle 138, 180, 230
Estrus 21, 164, 318
Ethics 66, 374
Etiology 161
Europe 214
Euthanasia 165
Evaluation 265, 313, 315
Evaporative cooling 18, 361
Excretion 105
Explants 332
Exports 287
Exposure 42
Extensive livestock farming 72, 74
Facilities 10, 98
Fallow deer 326
Fans 160, 313, 314, 315, 348, 361

Farm buildings 3, 35, 383
Farm comparisons 238
Farm equipment 170
Farm management 253, 319
Farm structure 78, 267
Farmers 5
Farming 160, 278
Fasting 105, 131
Fat absorption 132
Fat percentage 182, 200
Fat thickness 246
Fattening performance 71, 124, 128, 130, 132, 134, 137, 141, 142, 144, 145, 182, 231, 279, 296, 298, 321
Fatty acids 182
Feasibility 170
Feasibility studies 179
Feather meal 321
Feed conversion 100, 109, 148, 152, 290, 321, 327, 336, 339, 378
Feed conversion efficiency 133, 139, 180, 222, 284, 366
Feed dispensers 267
Feed grains 226
Feed intake 62, 63, 109, 119, 139, 152, 190, 199, 227, 289, 290, 312, 321, 366, 378
Feed rations 303, 310
Feed supplements 144, 369
Feed troughs 231
Feeding 1, 59, 180, 248
Feeding and feeds 76
Feeding behavior 44
Feeding frequency 245
Feedlot effluent 184
Feedlot wastes 183, 319
Feedlots 6, 13, 28, 37, 47, 50, 63, 69, 71, 98, 102, 104, 120, 121, 123, 124, 128, 130, 132, 134, 137, 139, 141, 142, 144, 145, 180, 181, 184, 185, 186, 207, 223, 231, 236, 241, 242, 245, 261, 267, 275, 285, 296, 298, 302, 303, 310, 316, 321, 324, 341, 354, 359, 363, 369
Feeds 88, 163, 258
Fees 179
Female fertility 97, 312
Fence posts 187
Fences 82, 187
Fencing 3, 55, 267, 295, 319
Fermentation 225
Festuca arundinacea 227
Fetus 51
Fibrinogen 122
Filters 168
Filtration 90
Flavors 61, 127
Flies 188
Flocks 248, 253
Floor type 342
Florida 13, 102, 104, 123, 133, 369
Fodder crops 160
Follicles 143
Food 208, 334
Food and nutrition controversies 78
Food biotechnology 78
Food industry 40
Food industry and trade 2
Food preferences 76
Food prices 356
Food processing plants 41
Food quality 8, 135
Food safety 40, 78, 200
Forage 64, 349
Foraging 190
Forest plantations 103, 331

Fowls 367
Fractionation 62
Free range husbandry 190
Freezing 43
Gastrin 51
Gates 82
Genetic correlation 195
Genetic covariance 194
Genetic differences 286
Genetic engineering 48, 239, 374
Genetic engineering 373
Genetic parameters 196
Genetics 305
Genotype environment interaction 197
Genotypes 47, 106, 122, 153, 223, 233, 364
Geographical distribution 311
Georgia 276, 330
Glucocorticoids 151, 344
Glucose 232
Glutathione 340
Glycogen 8
Gnrh 138, 286
Government policy 84
Government research 305
Grain drying 160
Grazing 66, 71, 123, 138, 198, 225, 319, 321, 369
Grazing behavior 190, 199, 227
Grazing effects 101, 103, 331
Grazing time 199, 227
Great Britain 175, 175, 216, 333, 333, 334
Grooming 235
Groundwater 319
Group size 261
Groups 136
Growth 49, 92, 128, 130, 132, 134, 142, 144, 182, 194, 195, 200, 263, 284, 301, 312, 331, 341
Growth curve 125
Growth models 254, 255
Growth promoters 200, 218, 316
Growth rate 60, 125, 207, 316
Guidelines 85, 360
Haematobia irritans 294
Hair 347
Hair follicles 347
Handbooks, manuals, etc 39, 39
Handling 10, 21, 32, 45, 56, 57, 58, 60, 93, 111, 117, 118, 135, 146, 160, 204, 209, 212, 228, 229, 251, 357, 370
Handling machinery 33
Haptoglobins 290
Harvesting 349
Hay 102
Heart 274
Heart diseases 53
Heart rate 43, 294
Heat exchangers 293
Heat production 67, 205, 264
Heat shock 332, 340
Heat shock proteins 340
Heat stability 67
Heat stress 63, 107, 108, 148, 149, 205, 206, 227, 289, 318, 330, 335, 340, 361, 367
Heating 160
Heating and ventilation 383
Heating systems 12, 73
Heifers 51, 52, 88, 97, 143, 180, 232, 234, 263, 279, 364
Height 143
Hematology 151
Herbivores 64
Herd size 74, 254, 349
Herd structure 74, 95, 97, 161, 254, 255, 270

Herds 60, 61, 74
Hereford 59, 156, 339
Heritability 195, 196, 207
Heterosis 97
Hired labor 179
Histopathology 368
History 215, 297, 304, 304, 304, 304
Holstein-friesian 303
Hoof and claw diseases 147
Horizontal resistance 209
Hormone secretion 143, 230, 286, 332
Horses 367
Households 270
Housing 39, 89, 159, 169, 211, 240, 243, 249, 252, 266, 364, 383
Housing density 36, 77
Humidity 18
Hydraulic equipment 118
Hydrocortisone 43, 99, 110, 191, 290
Hydroquinone 347
Hygiene 11
Hypothalamus 191
Idaho 103
Immobilization 53
Immune response 191, 217, 344
Immunity 217
Immunization 182
Immunology 151
Implantation 115, 124, 133, 157, 158, 316, 339
Implementation of research 85
Incidence 88
India 201, 201, 201
Indiana 6
Induction 313
Infertility 318
Ingestion toxicity 226
Inhibitors 332, 340
Injection 347
Injuries 88
Inspection 48, 310
Instruction 276
Insulin 143, 182
Insulin-like growth factor 92, 327
Intensive livestock farming 7, 15, 72, 147, 322, 358, 360
Interactions 229
Intestinal microorganisms 366
Inventories 95
Investments 297
Ionophores 137, 298
Ions 155
Iowa 183, 184
Ireland 135
Irrigated pastures 163
Japan 271
Kansas 3, 52, 121, 241, 242
Keeping quality 61
Kentucky 82, 277
Kenya 270
Kinship 235
Kleiber, Hans 1920- 159
Laboratory animals 323
Laboratory mammals 374
Lameness 147
Land capability 91
Land clearance 170
Land use 19
Landrace 233
Large white 233
Lasalocid 298, 299
Law 215, 356

Layout 357
Layout and planning 31, 388
Lean 167
Leanness 200
Lectins 119
Lesions 327
Leukocyte count 355
Leukocytes 122
Levamisole 217
Lh 138, 143, 230, 286
Libido 114, 286
Lighting 1
Lipids 104
Literature reviews 138, 191, 196, 322
Litter 11, 120, 278, 342, 372
Live vaccines 338
Liver 104
Livestock 2, 4, 5, 9, 10, 11, 12, 18, 22, 24, 26, 27, 29, 53,
66, 74, 75, 77, 78, 83, 85, 89, 91, 93, 129, 165, 169, 171,
172, 173, 174, 175, 177, 178, 188, 189, 191, 198, 201, 201,
203, 211, 212, 214, 215, 216, 220, 221, 228, 237, 239, 240,
243, 248, 249, 249, 251, 252, 258, 259, 264, 266, 268, 276,
278, 280, 282, 300, 306, 307, 308, 309, 322, 323, 325, 328,
333, 345, 346, 348, 352, 353, 356, 357, 362, 370, 372, 373,
374, 375, 381, 383, 384, 385, 386
Livestock enterprises 170, 248, 250, 337
Livestock factories 2, 171, 176, 262, 371
Livestock farming 6, 14, 16, 260, 297, 360
Livestock feeding 170, 310, 349
Livestock housing 4, 68, 77, 87, 162, 224, 250, 265, 271, 311,
313, 314, 315, 380
Livestock number 95
Livestock numbers 19, 80, 255, 270
Livestock products 248
Livestock projects 22
Livestock protection dogs 256
Livestock sector 15
Livestock transporters 209, 376
Liveweight 59, 71, 196, 257
Liveweight gain 37, 46, 99, 100, 109, 120, 125, 139, 143, 149,
150, 180, 245, 263, 272, 290, 296, 327, 341, 366, 369, 378,
387
Liveweight gains 44, 123, 269
Loading 209
Locomotion 24
Lolium perenne 102
Longissimus dorsi 246
Loose housing 291
Losses 67, 257, 349, 380
Louisiana 179, 359
Lymphocyte transformation 191, 340
Lymphocytes 340, 367
Maize 119, 130, 134, 145, 321
Maize silage 225
Malawi 292
Male animals 113, 126, 127, 200
Mali 253
Mammals 64
Man 229
Management 38, 60, 166, 342
Managers 88
Mangers 36
Marginal analysis 80
Marginal returns 223
Marketing 204, 241, 242, 248, 333
Maternal behavior 156
Maternal effects 51
Mathematical models 46, 255, 269, 312, 349
Mating behavior 114
Mating systems 167

Meat 193, 219
Meat and livestock industry 218, 326, 337
Meat animals 200, 274
Meat industry and trade 304
Meat lines 233
Meat production 200, 325, 326, 360
Meat quality 59, 61, 111, 113, 131, 233, 274
Meat yield 135
Medical treatment 181
Metabolism 67, 151, 153, 264
Meteorological factors 269
Methodology 63, 165
Microbial contamination 219
Microclimatology 266
Milk composition 119
Milk production 84, 156, 284
Milk yield 119, 254, 312
Milking 160
Mineral metabolism 298
Minnesota 19
Mississippi 37, 185
Missouri 124
Mixing 355
Mode of action 298
Models 271
Monensin 144, 245, 298
Montana 150, 199
Morbidity 112, 272, 283, 358, 366
Mortality 46, 181, 253, 254, 255, 257, 272, 283, 341, 358, 366, 377, 387
Motility 114
Motors 314, 315
Movements 10
Multivariate analysis 19
Muscle tissue 8, 59
Muscles 57, 58, 116, 152
Muslims 334
National forests 103
Natural ventilation 271
Nebraska 121, 149, 289
Netherlands 168
Neurotransmitters 230
Neutrophils 146
New Mexico 137
New York 247
New Zealand 16, 297, 326
Newborn animals 67, 161
Newspapers 120, 247, 278, 372
Nitrites 193
Nitrogen metabolism 298
Nitrogen retention 294
Noise 42
Nonesterified fatty acids 232
Norepinephrine 43
North Dakota 267
Nutrient content 119
Nutrient requirements 142, 181
Nutrition 13, 138
Nutrition programs 166, 388
Objectives 125
Odocoileus Virginianus 281
Odor abatement 168, 342
Odor emission 342
Ohio 71, 128, 130, 132, 134, 142, 144, 275, 296, 349
Oklahoma 277, 324
Oleic acid 104
Ontogeny 77
Operating costs 179, 238
Operator comfort 213
Optimization 47

Oregon 69, 331
Organization of research 305
Organs 49, 339
Outbreaks 283
Outturn 255
Ovariectomized females 180
Ovariectomy 180
Ovaries 180
Oxidoreductases 332
Oxytocin 318
Packing-houses 41, 304
Pain 24, 26, 27, 43, 53, 365
Parasites 30, 181, 365
Parasitism 181
Part time farming 248
Particle size distribution 285
Paspalum notatum 123
Pasteurella haemolytica 121
Pasteurella multocida 121, 283
Pasteurellosis 283, 377
Pastoral society 91
Pastoralism 16, 74, 91, 270, 297
Pasture management 13, 102
Pastures 319
Pens 133, 149, 231, 244, 287, 289, 358, 389
Pepsinogen 236
Perception 11
Performance 92, 102, 104, 109, 152, 234, 269, 322, 341, 352, 369
Performance testing 36, 87, 125, 207, 292
Perinatal mortality 161
Peroxidase 332
Pest control 385
Ph 8, 50, 61, 111, 116, 131
Philosophy 15
Phospholipids 332
Phylogeny 77
Physico-chemical properties 57, 58
Physiology 280
Pig farming 160
Pig housing 168, 228, 379
Pigmeat 325
Pigmentation 347
Pigs 25, 70, 95, 135, 217, 218, 233, 293
Pinus ponderosa 103, 331
Pituitary 191
Plane of nutrition 138
Planning 295
Plant competition 331
Plant composition 64
Plants, Effect of drought on 129, 221
Plastic nets 296
Pneumonia 358
Poisoning 227
Politics 297
Polling 140, 365
Population dynamics 277
Postmortem examinations 283
Posture 24
Postweaning interval 71, 109, 115, 128, 142, 194, 301
Potassium 299
Poultry 9, 53, 85, 188
Poultry farming 160, 253
Poultry housing 1, 253, 271, 317, 330
Power lines 42
Practice 319
Prediction 254, 311
Pregnancy 52, 60, 108, 318
Prepartum period 232
Prevention 161, 342, 380

Preweaning period 115, 195, 301
Prices 324, 341
Probability 46
Probiotics 366
Production 311
Production costs 28, 80
Production functions 80
Production structure 91, 96, 273
Productivity 74, 167, 242, 254, 255
Profitability 96, 312
Profits 312
Progeny 336
Progesterone 109, 164, 180, 339
Propellers 313, 314, 315
Prostaglandins 318, 332
Protein digestion 119
Protein intake 138
Protein sources 130, 132, 142, 144
Protein supplements 225, 321, 359
Protein synthesis 367
Protein uptake 132
Proteins 332
Pseudotsuga menziesii 331
Psychological needs 11
Puberty 143
Public opinion 385
Public relations 7
Puerperium 275
Pyrocatechol 347
Quality product 250
Quebec 35, 293
Queensland 57, 58, 59, 60, 61, 365
Range management 91, 101, 169
Range pastures 320
Rangifer tarandus 337
Recycling 247
Reflection 330
Reflexes 25
Regrowth 64
Regulation 332
Regulations 200, 214, 238, 297
Religious aspects 334
Reproduction 196, 248, 255, 335
Reproductive efficiency 138
Reproductive performance 136, 254
Research 228, 239, 373
Research policy 250, 337
Research support 305
Resistance 196
Resource exploitation 273
Respiration rate 205, 294
Respiratory diseases 69, 121, 154, 181, 272, 338
Responses 387
Rest 50, 57, 58
Restraint of animals 93, 94, 110, 118, 165, 351, 381
Restricted feeding 245
Retinol 138
Returns 21, 46, 349
Ribs 246
Rice straw 59
Risk 19, 96
Road transport 376, 377
Roofs 330
Roots 331
Rotation 137
Rotational grazing 281
Rotational speed 315
Roughage 145, 234, 296
Rumen 121
Rumen bacteria 150

Rumen digestion 119, 130, 264
Rumen metabolism 298
Ruminants 264
Rump 246
Runoff water 183
Safety at work 214
Sahel 91
Salers 229
Salmonella typhimurium 368
Salmonellosis 368
Sanitation 316
Saskatchewan 347
Scales 24
Schools 276
Scotland 269
Screens 149
Scrotum 114
Seasonal variation 139, 199
Secale cereale 102
Secondary metabolites 64
Secretion 318
Seedlings 103
Selection criteria 322, 348
Semen 21
Semen characters 114, 335
Senses 370
Sensory evaluation 100, 152
Sexual behavior 114, 136, 158, 200
Sexual development 286
Shading 133
Shear strength 152, 279
Shearing 228
Sheep 20, 93, 101, 118, 138, 198, 228, 367
Shehitah 334
Shelter 269, 320, 388
Shelterbelts 3
Shelters 352, 387
Shock 380
Shorthorn 59, 60, 111
Sikhs 334
Silage 128, 130, 134, 145, 359
Silvopastoral systems 103
Simmental 336
Simulation models 19, 277, 311
Sires 263
Size 114, 125, 287
Skin 347
Skin temperature 43
Skinning 152
Slatted floors 34, 36, 147
Slaughter 8, 47, 50, 57, 58, 94, 116, 117, 135, 165, 204, 215, 219, 233, 242, 370, 386
Slaughter weight 167, 223
Slaughtering and slaughter-houses 41, 75, 216, 328
Slaughtering and slaughterhouses 334
Slaughtering equipment 93, 165
Small farms 292
Snow cover 345
Social behavior 355
Social interaction 235
Social structure 235
Socioeconomic status 356
Soil test values 319
Soil water 331
Solar collectors 12
Solar energy 12
Solar heating 12, 265
Somatoliberin 182
Somatotropin 78, 92, 143, 218, 327
Sources 234

South Africa 336
South America 101
South Dakota 14, 68, 120, 225, 245
Southern states of U.S.A. 305
Soviet Union 240, 266, 266, 266, 383, 383
Soybean husks 119
Soybean oilmeal 225, 321
Soybean soapstock 119
Soybeans 130, 132, 142, 225, 359
Space requirements 36, 45, 162, 377
Spacing 45
Spatial distribution 235
Species 248
Species differences 258, 367
Spermatozoa 114
Spraying 361
Spumavirinae 338
Stables 169
Stalls 292
Standards 317
Statistical data 242
Statistics 241
Steaks 126, 127
Steers 13, 44, 49, 61, 92, 100, 102, 104, 105, 109, 115, 133, 152, 157, 182, 222, 244, 263, 290, 294, 299, 327, 339, 359, 378
Stimulation 57
Stochastic processes 19
Stocking rate 82
Stockmen 357
Stockyards 304
Stomoxys calcitrans 148, 149, 289, 294
Storage 160, 349
Straw 120
Straw cobs 267
Stray voltage 42
Stress 4, 10, 11, 20, 25, 43, 49, 50, 51, 57, 58, 61, 99, 105, 106, 110, 111, 112, 115, 116, 121, 122, 126, 127, 146, 150, 151, 153, 155, 157, 165, 166, 190, 191, 194, 195, 196, 217, 230, 233, 236, 244, 257, 294, 301, 344, 346, 351, 352, 353, 355, 363, 365, 368, 376, 377, 388
Stress (Physiology) 362
Stress factors 14, 197, 283, 370
Stress response 272, 332, 366
Structural change 19, 80, 273, 297
Stunning 25, 53, 93, 214, 216, 274
Subcutaneous fat 104
Sucklings 364
Sugarcane bagasse 369
Sulfadimethoxine 69
Summer 50, 133
Sunflowers 225
Supplementary feeding 155
Supplies 302
Supply response 95
Support measures 297
Surpluses 78
Survival 107
Susceptibility 258
Sympathetic nervous system 191
Symptoms 214
Synchronization 21
Synthetic hormones 152
Systems 73, 295
Tannins 64
Techniques 342
Technological innovations 159, 159
Technology transfers 91
Temperament 60, 61, 357
Temperature 18

Tenderness 61, 111, 152, 279
Tennessee 277
Testes 286
Testosterone 286
Tetany 257
Texas 281
Texture 126
Therapy 181
Thermal neutrality 205
Thermodynamics 269
Thermoregulation 62, 199
Thiabendazole 217
Thiamin 227
Three dimensional models 345
Thyroid hormones 339
Timing 161
Torque 314
Traditional farming 229
Traditions 270
Trailers 209
Training 357
Training courses 246
Traits 194, 322
Transdermal application 347
Transfer 51
Transgenic animals 374
Transport 105, 126, 127, 135, 150, 151, 154, 166, 228, 236, 257, 287
Transport of animals 45, 58, 110, 122, 141, 146, 153, 155, 157, 204, 209, 213, 233, 251, 272, 353, 366, 375, 376, 377
Transportation 56, 307, 307
Treatment 272, 366
Trenbolone 100, 109, 124, 222, 378
Trichostrongylidae 236
Trifolium 102
Tropics 196, 301
Trucks 213
Twins 156, 312
Types 253, 363
U.S.A. 40, 46, 80, 163, 209, 215, 325, 385, 386
Ultrasonic devices 228
Ultrasonic fat meters 246
Ultrasonography 246
United States 2, 2, 2, 2, 2, 2, 2, 2, 2, 48, 54, 54, 84, 84, 84, 129, 129, 129, 174, 174, 220, 220, 220, 221, 221, 221, 221, 221, 239, 239, 304, 304, 304, 304, 373, 373
University research 276
Unsaturated fatty acids 104
Urea 132, 142, 143, 182, 225, 321
Utilization 218
Vaccination 46, 140, 275, 310
Vaccines 302
Vasopressin 191
Veal calves 17
Veal industry 23, 350
Vegetables 160
Vegetation management 331
Velvet 326
Venezuela 287
Venison 116, 326
Ventilation 12, 18, 70, 73, 89, 160, 265, 293, 313, 314, 315, 330, 348, 379
Vertebrate pests 385
Veterinarians 27, 384
Veterinary hygiene 249, 252
Veterinary medicine 118, 309
Veterinary physiology 249
Veterinary practice 384
Veterinary services 179
Viability 337

Vibration 213
Videotapes 251
Viral diseases 338
Virginia 287
Viruses 121
Vision 55
Vocalization 25
Volatile fatty acids 119
Washington 319
Wastage 88
Waste disposal 168, 184, 379
Waste treatment 342
Wastes 342
Water 1, 361
Water holding capacity 61
Water intake 163
Water policy 163
Water pollution 6, 319
Water quality 6
Water requirements 163
Water stress 331
Water troughs 267
Water use 163
Weaning 68, 106, 110, 122, 153, 365
Weaning weight 312, 364
Weed control 319
Weight gain 133, 148, 222, 289, 292
Weight losses 105, 141, 353, 377
West Virginia 96
Wildlife management 385
Wind protection 345
Windbreaks 267, 388
Winter 13, 50, 123, 190, 199, 232, 269, 349, 388
Wire 317
Woody plants 64
World 325
Yields 255
Zebu 110, 196, 286
Zebu breeds 284
Zebu cattle 122
Zeranol 49, 109, 115, 124, 126, 127, 157, 158
Zimbabwe 283

Go to: [Author Index](#) | [Subject Index](#) | [Top of Document](#)

Return to:

[Animal Welfare Information Center](#)

[National Agricultural Library](#)



The Animal Welfare Information Center; awic@nal.usda.gov

<http://www.nal.usda.gov/awic/pubs/oldbib/qb9516.htm>, April 17, 1998