

**NATIONAL AGRICULTURAL LIBRARY ARCHIVED FILE**

Archived files are provided for reference purposes only. The file was current when produced but is no longer maintained and may now be outdated. Content may not appear in its original format. For additional information, see <http://pubs.nal.usda.gov>.

**Training Material for Animal Facility Personnel**

**Provided by the Animal Welfare Information Center**

**United States Department of Agriculture  
National Agricultural Library**

**January 1989 - January 1994**

*United States Department of Agriculture  
National Agricultural Library  
10301 Baltimore Blvd.  
Beltsville, Maryland 20705-2351*

**QB 94-17**

Updated by QB 95-08

Quick Bibliography Series Bibliographies in the Quick Bibliography Series of the National Agricultural Library, are intended primarily for current awareness, and as the title of the series implies, are not indepth exhaustive bibliographies on any given subject. However, the citations are a substantial resource for recent investigations on a given topic. They also serve the purpose of bringing the literature of agriculture to the interested user who, in many cases, could not access it by any other means. The bibliographies are derived from computerized on-line searches of the AGRICOLA data base. Timeliness of topic and evidence of extensive interest are the selection criteria.

The author/searcher determines the purpose, length, and search strategy of the Quick Bibliography. Information regarding these is available upon request from the author/searcher.

Copies of this bibliography may be made or used for distribution without prior approval. The inclusion or omission of a particular publication or citation may not be construed as endorsement or disapproval.

To request a copy of a bibliography in this series, send the series title, series number and self-addressed gummed label to:

U.S. Department of Agriculture National Agricultural Library Public Services Division, Room 111 Beltsville, Maryland 20705

Document Delivery information:

Read Bullet 16 on ALF for information on Document Delivery services. Read Bullet 15 for "Electronic Mail Access For Interlibrary Loan (ILL) Requests." If the text of this Quick Bibliography file is copied and/or

distributed, please include in all copies, the information provided in these bulletins. Training Material for Animal Facility Personnel January 1989 - January 1994

Quick Bibliography Series: QB 94-17  
Updates QB 91-07

219 citations in English from AGRICOLA

Tim Allen  
Animal Welfare Information Center

March 1994 National Agricultural Library Cataloging Record:

Allen, Tim  
Training material for animal facility personnel.  
(Quick bibliography series ; 94-17)  
1. Animals--Handling--Bibliography. I. Title.  
aZ5071.N3 no.94-17

The United States Department of Agriculture (USDA) prohibits discrimination in its programs on the basis of race, color, national origin, sex, religion, age, disability, political beliefs, and marital or familial status. (Not all prohibited bases apply to all programs). Persons with disabilities who require alternative means for communication of program information (braille, large print, audiotape, etc.) should contact the USDA Office of Communications at (202) 720-5881 (voice) or (202) 720-7808 (TDD).

To file a complaint, write the Secretary of Agriculture, U.S. Department of Agriculture, Washington, D.C. 20250, or call (202) 720-7327 (voice) or (202) 720-1127 (TDD). USDA is an equal employment opportunity employer.

## AGRICOLA

Citations in this bibliography were entered in the AGRICOLA database between January 1979 and the present.

### SAMPLE CITATIONS

Citations in this bibliography are from the National Agricultural Library's AGRICOLA database. An explanation of sample journal article, book, and audiovisual citations appears below.

#### JOURNAL ARTICLE:

Citation #	NAL Call No.
Article title.	
Author. Place of publication: Publisher. Journal Title.	
Date. Volume (Issue). Pages. (NAL Call Number).	

#### Example:

1	NAL Call No.: DNAL 389.8.SCH6
Morrison, S.B. Denver, Colo.: American School Food Service Association. School foodservice journal. Sept 1987. v. 41 (8). p.48-50. ill.	

#### BOOK:

Citation #	NAL Call Number
Title.	
Author. Place of publication: Publisher, date. Information on pagination, indices, or bibliographies.	

#### Example:

1 NAL Call No.: DNAL RM218.K36 1987  
Exploring careers in dietetics and nutrition.  
Kane, June Kozak. New York: Rosen Pub. Group, 1987.  
Includes index. xii, 133 p.: ill.; 22 cm. Bibliography:  
p. 126.

AUDIOVISUAL:

Citation # NAL Call Number  
Title.  
Author. Place of publication: Publisher, date.  
Supplemental information such as funding. Media format  
(i.e., videocassette): Description (sound, color, size).

Example:

1 NAL Call No.: DNAL FNCTX364.A425 F&N AV  
All aboard the nutri-train.  
Mayo, Cynthia. Richmond, Va.: Richmond Public Schools,  
1981. NET funded. Activity packet prepared by Cynthia  
Mayo. 1 videocassette (30 min.): sd., col.; 3/4 in. +  
activity packet. Training Material for Animal Facility Personnel  
January 1989 - January 1994

SEARCH STRATEGY

Set	Items	Description
1	108962	train? or educat? or handbook? or guide? or manual? or instruct? or primer? or seminar? or symposium
2	91789	laborator? or research or technician? or handl? or caretaker? or personnel or zookeeper? or keeper? or technologist? or scientist? or investigator?
3	14265	s1 and s2
4	1670	s3 and animal?
5	1539	s4 not SF=FNC
6	1331	s5 and SH=L?
7	396	s6 and PY=1989:1994

Training Material for Animal Facility Personnel

1 NAL Call. No.: QL55.A1L33  
1991 Lab Animal Buyers' Guide.  
New York, N.Y. : Nature Publishing Company; 1990 Nov.  
Lab animal v. 19 (8): p. 7-87; 1990 Nov.

Language: English

Descriptors: Laboratory animals; Buyers' guides

2 NAL Call. No.: 410 B77  
Acoustic structure and receiver response in domestic dogs, Canis familiaris.  
McConnell, P.B.  
London : Academic Press; 1990 May.  
Animal behaviour v. 39 (pt.5): p. 897-904; 1990 May. Includes references.

Language: English

Descriptors: Dogs; Animal behavior; Sounds; Acoustic properties; Physical

activity

Abstract: The hypothesis that short, rapidly repeated rising notes increase motor activity levels in canids, and that longer, continuous descending notes decrease activity was tested. Young laboratory-raised domestic dogs were trained in a repeated measures study to (1) come to the trainer and to (2) sit and stay for 2 s to two different acoustic stimuli: four short notes with a rising fundamental frequency and one long note with a descending fundamental frequency. While one long note was not more effective at eliciting a sit/stay response, four short notes were more effective at eliciting a come response and increasing motor activity levels than one longer continuous note. Thus, acoustic stimuli are not equipotent in eliciting responses that require changes in motor activity levels and could be used by signal senders to influence the behaviour of the signal receiver. The acoustic structures in the study are compared with vocalizations of mammals and birds that elicit approach, and/or increase motor activity levels.

3 NAL Call. No.: HV4915.A35  
Administration, education, and the Animal Care Committee [conference proceedings].  
Public Responsibility in Medicine and Research (Association), Tufts University, School of Veterinary Medicine  
Boston, Mass. : PRIM&R, [1989]; 1989.  
150, 5 p. ; 28 cm. Cover title. Held at the Boston Park Plaza Hotel on March 9-10, 1989.

Language: English

Descriptors: Animal welfare; Laboratory animals; Animal experimentation

4 NAL Call. No.: SF600.C82  
Agent-host interactions and pathogenesis.  
Kimberlin, R.H.  
Dordrecht : Kluwer Academic Publishers; 1991.  
Current topics in veterinary medicine and animal science v. 55: p. 137-147; 1991. In the series analytic: Sub-acute spongiform encephalopathies / edited by R. Bradley, M. Savey, and B. Marchant. Proceedings of a Seminar in the CEC Agricultural Research Programme, November 12-14, 1990, Brussels. Includes references.

Language: English

Descriptors: Ruminants; Spongiform encephalopathy; Laboratory mammals; Disease transmission

5 NAL Call. No.: HV4712.A4  
Alternatives to dissection.  
National Association for Humane and Environmental Education (U.S.)  
East Haddam, CT : National Association for Humane and Environmental Education, c1990; 1990.  
1 portfolio : ill. ; 31 cm. Cover title. Includes bibliographical references.

Language: English

Descriptors: Humane education; Dissection; Animal welfare

6 NAL Call. No.: 41.8 AM3  
Alternatives to the use of animals in household product and cosmetic testing.  
Bruner, L.H.  
Schaumburg, Ill. : The Association; 1992 Mar01.

Journal of the American Veterinary Medical Association v. 200 (5): p. 669-673; 1992 Mar01. Paper presented at the symposium "Animal welfare and alternatives to animals--current knowledge and research needs", July 31, 1991, Seattle, Washington. Includes references.

Language: English

Descriptors: Animal testing alternatives; Testing; Cosmetics; Non-food products

7 NAL Call. No.: 41.8 AM3  
Alternatives to the use of conventional research animals in neoplasia research.

Ladiges, W.C.

Schaumburg, Ill. : The Association; 1992 Mar01.

Journal of the American Veterinary Medical Association v. 200 (5): p. 674-676; 1992 Mar01. Paper presented at the symposium "Animal welfare and alternatives to animals--current knowledge and research needs", July 31, 1991, Seattle, Washington. Includes references.

Language: English

Descriptors: Animal testing alternatives; Medical research; Neoplasms; Animal models; Disease models

8 NAL Call. No.: Videocassette no.976  
American College of Toxicology composite.

American College of Toxicology, Meeting\_1990 :\_Orlando, Fla.), Production Plus, Inc Symposium: Animal Welfare Compliance for Study Directors 1990 : Orlando, Fla. Closter, N.J. : Production Plus, Inc., [1990?]; 1990.

2 videocassettes (207 min., 29 sec.) : sd., col. ; 3/4 in. VHS. Proceedings of Symposium: Animal Welfare Compliance for Study Directors, Orlando, Fla., 1990.

Language: English

Descriptors: Animal welfare; Laboratory animals

Abstract: This program was specifically designed to provide information for study directors and also principal investigators to be in full compliance with USDA animal welfare regulations but is also of value for those involved in animal care. Specific areas required for training under the Act are included in addition to information on the necessity for animal research.

9 NAL Call. No.: QL55.I5  
The American veterinarians' role and education in laboratory animal science.

Stark, D.M.

Sussex : The Institute; 1989 Dec.

Animal technology : journal of the Institute of Animal Technology v. 40 (3): p. 199-201; 1989 Dec.

Language: English

Descriptors: Laboratory animals; Veterinarians; Training; Zoology; Animal husbandry; Committees

10 NAL Call. No.: QL813.C38R67  
Anatomy of the cat text and dissection guide.

Rosenzweig, Lionel J.

Dubuque, IA : W.C. Brown, c1990; 1990.

xii, 347 p. : ill. ; 28 cm. Includes bibliographical references.

Language: English

Descriptors: Cats; Anatomy; Laboratory manuals; Dissection; Laboratory manuals

11 NAL Call. No.: QL812.K47 1989

Anatomy of the vertebrates a laboratory guide.

Martin, Donn D.; Kent, George C.\_1914-; Cleveland, Arthur G.

Dubuque, Iowa : W.C. Brown, c1989; 1989.

xiii, 88 p. : ill. ; 28 cm. Rev. ed. of: Anatomy of the vertebrates / George C. Kent. 3rd ed. 1978.

Language: English

Descriptors: Anatomy, Comparative; Laboratory manuals; Vertebrates; Anatomy; Laboratory manuals

12 NAL Call. No.: Q1.S37

Animal advocates crusade for the day when animals are freed from lab cages.

Jackson, C.

Philadelphia, Pa. : Institute for Scientific Information :.; 1990 Sep03.

The scientist v. 4 (17): p. 11, 13; 1990 Sep03.

Language: English

Descriptors: U.S.A.; Animal welfare; Laboratory animals

13 NAL Call. No.: HV4913.A54

Animal care and use programs regulatory compliance and education in an age of

fiscal constraint.. Educational material for: Animal care and use programs

Regulatory compliance and education in an age of fiscal restraint

Public Responsibility in Medicine and Research (Association), Tufts

University, School of Medicine, Tufts University, School of Veterinary

Medicine

Boston, Mass.: PRIM&R, 1991; 1991.

408 p. : ill. ; 28 cm. Cover title. March 21-22, 1991, Boston,

Massachusetts. Includes bibliographical references.

Language: English

Descriptors: Animal welfare; Laboratory animals; Animal experimentation; Animals, laboratory

14 NAL Call. No.: QL55.A1L33

Animal care and use training for temporary research employees.

Tomasovic, S. P.; Gray, K.N.; Mastromarino, A.J.; Adsit, K.I.

New York, N.Y. : Nature Publishing Company; 1989 May.

Lab animal v. 18 (4): p. 27-28, 30, 32; 1989 May. Includes references.

Language: English

Descriptors: Laboratory animals; Animal experiments; Animal welfare; Medical research; Training; Personnel

15 NAL Call. No.: SF406.2.A55 1991

Animal diet reference guide.

PMI Feeds, Inc

St. Louis, MO : PMI Feeds, Inc., [1991?]; 1991.

1 v. (various pagings) : ill. ; 30 cm. Lab Diet, the Richmond Standard.

Language: English

Descriptors: Laboratory animals

16

NAL Call. No.: SF406.2.A55 1992

Animal diet reference guide., [Rev.].

PMI Feeds, Inc

St. Louis, MO : PMI Feeds, Inc., [1992?]; 1992.

1 v. (various pagings) : ill. ; 30 cm. Lab Diet, the Richmond Standard.

Language: English

Descriptors: Laboratory animals

17

NAL Call. No.: SF756.39.A54 1990

Animal ethics committees the role of the veterinarian.

Rose, Margaret; Large, Amanda

N.S.W., Australia : Australian Veterinary Association, NSW Division, [1990]; 1990.

v, 96 p. ; 25 cm. April 1990. Cover title. Proceedings of seminar on Animal Ethics Committees, the role of the veterinarian, held 2-3 June, 1989, AVA House, Atarmon, NSW. Includes bibliographical references (p. 88-95).

Language: English

Descriptors: Veterinarians; Veterinary medicine; Animal welfare; Animal Welfare; Animals, Laboratory

18

NAL Call. No.: QH75.A1B57

Animal germplasm information systems.

Powell, R.L.; Norman, H.D.

Boston : Kluwer Academic Publishers; 1989.

Biotic diversity and germplasm preservation, global imperatives / Lloyd Knutson and Allan K. Stoner, editors. p. 427-443; 1989. (Beltsville symposia in agricultural research ; 13). Paper presented at a Symposium May 9-11, 1988, Beltsville Agricultural Research Center, Beltsville, Maryland.

Literature review. Includes references.

Language: English

Descriptors: Livestock; Breeds; Gene banks; Genetic resources; Germplasm; Information systems; Preservation

19

NAL Call. No.: 41.8 AM3

Animal research and veterinary medical research funding: a vision of the future.

Wagner, W.C.

Schaumburg, Ill. : The Association; 1992 May15.

Journal of the American Veterinary Medical Association v. 200 (10): p. 1474-1476; 1992 May15. Includes references.

Language: English

Descriptors: Animal experiments; Research support; Veterinary medicine; Veterinary schools

20

NAL Call. No.: SF407.P7T49 1991

Animal research: our obligation to educate., 1st ed.;

King, F.A.

Washington, DC : American Psychological Association ;; 1991.

Through the looking glass: issues of psychological well-being in captive

nonhuman primates / edited by Melinda A. Novak and Andrew J. Petto. p. 212-220; 1991. Includes references.

Language: English

Descriptors: Animal experiments; Education; Public opinion; Animal welfare

21 NAL Call. No.: HV4764.A5  
The Animal rights handbook everyday ways to save animal lives.. Everyday ways to save animal lives  
Fraser, Laura  
Venice, Calif. : Living Planet Press ; Emeryville, Calif. : Distributed by Publishers Group West, c1990; 1990.  
vi, 113 p. : ill. ; 22 cm. Includes bibliographical references.

Language: English; English

Descriptors: Animal rights; Animal welfare; Animal welfare; Animal rights

22 NAL Call. No.: QL55.I5  
Animal technology: the American aspect: educating the public.  
Darby, T.E.  
Sussex : The Institute; 1989 Dec.  
Animal technology : journal of the Institute of Animal Technology v. 40 (3): p. 211-215; 1989 Dec.

Language: English

Descriptors: U.S.A.; Laboratory animals; Animal welfare; Organizations; Public relations; Animal experiments

23 NAL Call. No.: QL55.I5  
Animal technology: the American aspect: the AALAS animal technician certification program.  
Heidbrink, G.A.  
Sussex : The Institute; 1989 Dec.  
Animal technology : journal of the Institute of Animal Technology v. 40 (3): p. 183-192. ill., maps; 1989 Dec. Includes references.

Language: English

Descriptors: U.S.A.; Laboratory animals; Technicians; Certification; Technical training; Educational programs

24 NAL Call. No.: Videocassette no.972  
The Animal Welfare Act philosophy and intent.  
Ewald, Bruce H.  
American College of Toxicology, Meeting\_1990 :\_Orlando, Fla.),Production Plus, Inc Symposium: Animal Welfare Compliance for Study Directors 1990 : Orlando, Fla. Closter, N.J. : Production Plus, Inc., [1990?]; 1990.  
1 videocassette (14 min., 40 sec.) : sd., col. ; 1/2 in. VHS. Videotape of a presentation at Symposium: Animal Welfare Compliance for Study Directors; presented at the Eleventh Annual Meeting of the American College of Toxicology, Orlando, Fla., Oct. 1990.

Language: English

Descriptors: Animal welfare

Abstract: The history and intent of the Animal Welfare Act and the participatory development of regulations is presented. The specific



responsibilities of the IACUC and the study director and principal investigator are outlined. The physiology of the USDA to refine skills and develop appropriate attitudes through education is described.

25 NAL Call. No.: SF601.J62

Animal welfare and societal concerns: an interdisciplinary curriculum.  
Glickman, N.W.; Glickman, L.T.; Torrence, M.E.; Beck, A.M.  
Blacksburg, Va. : The Association of American Veterinary Medical Colleges;  
1991.  
Journal of veterinary medical education v. 18 (2): p. 60-63; 1991. Includes  
references.

Language: English

Descriptors: U.S.A.; Animal welfare; Ethics; Veterinary education; College  
curriculum

26 NAL Call. No.: SF604.P82 no.144

Animal welfare in New Zealand proceedings from a seminar organised for the  
State Veterinarians Branch, New Zealand Veterinary Association, Rotorua, June  
1992.  
Petersen, Gunner V.  
Massey University, New Zealand Veterinary Association, State Veterinarians  
Branch, New Zealand Veterinary Association, Foundation for Continuing  
Education  
Palmerston North, N.Z. : Veterinary Continuing Education, Massey University,  
[1992]; 1992.  
110 p. : ill. ; 29 cm. (Publication (Massey University. Veterinary Continuing  
Education) ; no. 144.). Includes bibliographical references.

Language: English; English

Descriptors: Animal Welfare

27 NAL Call. No.: aHV4701.A95 no.1

Animal-related computer simulation programs for use in education and  
research.. Animal related computer simulation programs for use in education  
and research  
Engler, Kevin  
National Agricultural Library (U.S.), Animal Welfare Information Center (U.S.)  
Beltsville, Md. : National Agricultural Library, [1989]; 1989; A 17.27:1.  
ii, 52 p. ; 28 cm. (AWIC series ;). Animal Welfare Information Center.  
December 1989.

Language: English

Descriptors: Humane education; Animal models in research

28 NAL Call. No.: Videocassette no.561

Aseptic surgery of rodents Laboratory Animal Training Association.  
Laboratory Animal Training Association  
Raleigh, N.C.? : Laboratory Animal Training Association, c1989; 1989.  
1 videocassette (ca. 30 min.) : sd., col. ; 1/2 in. + 1 script (13 leaves).

Language: English

Descriptors: Veterinary surgery; Rodents as laboratory animals; Surgery,  
Aseptic and antiseptic; Animal welfare

Assessment of pain in animals.

Bateson, P.

London : Academic Press; 1991 Nov.

Animal behaviour v. 42 (pt.5): p. 827-839; 1991 Nov. Includes references.

Language: English

Descriptors: Animal welfare; Pain; Assessment

Abstract: Judgements about pain and suffering in animals are required by the law of many countries and by many professional guidelines. Nevertheless, such assessments raise many problems, even in humans. Furthermore, an appeal to continuities between humans and other animals is clouded when, as is still the case, both the evolution and the function of a subjective sense of pain are obscure. Despite these difficulties, the criteria that lead to the judgement that a human is in pain can be generalized with substantial measure of agreement to other animals. This generalization is done on the basis of uncovering comparable mechanisms and comparable behaviour; then the whole cluster of features found in the animal is used to make the judgement. The less similar the animal to a human and the less complex it is, the more difficult is the assessment. The fuzziness of the boundary, between those animals that are judged to feel pain and those that are not does not invalidate the process of assessment. However, the extent to which an animal is given the benefit of the doubt clearly depends on the empathy a person feels for it as well as the type of ethical concerns that motivate the person.

30

NAL Call. No.: SF170.D66 1991

Behaviour, handling and training of equines for appropriate work.

Kiley-Worthington, M.

Edinburgh : Centre for Tropical Veterinary Medicine; 1991.

Donkeys, mules & horses in tropical agricultural development : proceedings of a Colloquium organ by the Edinburgh School of Agric & the Cent for Trop Vet Med of the Univ of Edinburgh & held in Edinburgh, Scotland, 3rd-6th Sept 1990. p. 203-210; 1991. Includes references.

Language: English

Descriptors: Draft animals; Animal behavior; Training of animals

31

NAL Call. No.: HV4704.B5

Bio-ethics 89 a report of the proceedings of an international symposium on the control of the use of animals in scientific research.

Moore, James N.; Morris, Debra Deem; White, N. A.; Weir, Amy

North America Livestock, Inc

Equine Colic Research Symposium 4th : 1991 : University of Georgia.

Athens, Ga. : The Center, [1991]; 1991.

185 p. ; 23 cm. Cover title. Conference held on July 6-7, 1989, Ottawa.

Includes bibliographical references.

Language: English

Descriptors: Animal welfare; Laboratory animals; BioetP STN, EXT, USDA; SINCE 12/76); Horses; Colic

32

NAL Call. No.: HV4704.B5

Bio-ethics 89 a report of the proceedings of an international symposium on the control of the use of animals in scientific research.

Animal Welfare Foundation of Canada

Cobourg, Ont. : Animal Welfare Foundation of Canada, [1989?]; 1989.

185 p. ; 23 cm. Cover title. Conference held on July 6-7, 1989, Ottawa.

Includes bibliographical references.

Language: English

Descriptors: Animal welfare; Laboratory animals; Bioethics

33 NAL Call. No.: QH324.9.B5B53 1990  
Biotelemetry applications for captive animal care and research.

Asa, Cheryl S.

American Association of Zoological Parks and Aquariums

Wheeling, WV : American Association of Zoological Parks & Aquariums, c1991;  
1991.

x, 59 p. : ill. ; 23 cm. (American Association of Zoological Parks & Aquariums  
Symposium ; no. 1). Symposium was conducted on September 24, 1990, at the  
AAZPA annual conference in Indianapolis, Indiana. Includes bibliographies and  
index.

Language: English

Descriptors: Biotelemetry; Zoo animals

34 NAL Call. No.: QP251.A1T5  
Bovine spermatozoa in vitro: a review of storage, fertility estimation and  
manipulation.

Coulter, G.H.

Stoneham, Mass. : Butterworth-Heinemann; 1992 Aug.

Theriogenology v. 38 (2): p. 197-207; 1992 Aug. Paper presented at the  
research symposium on "Reproduction in Farm Animals: Science, Application and  
Models," August 13, 1992, Ithaca, New York. Includes a list of his  
publications. Literature review. Includes references.

Language: English

Descriptors: Cattle; Spermatozoa; Semen characters; Semen preservation; Male  
fertility; Ai bulls; In vitro; Literature reviews

Abstract: In vitro storage of bovine spermatozoa virtually indefinitely has  
provided the opportunity to distribute conveniently and widely germ plasm from  
superior sires and benefit the productivity of cattle around the world.  
Techniques developed in our laboratories are well on their way to being able  
to predict accurately the fertility of young, prospective sires without the  
inconvenience and expense of large field trials. Manipulation of spermatozoa  
provides opportunities for the predetermination of sex of resulting offspring,  
the introduction of foreign DNA into oocytes, and the formation of transgenic  
individuals. Many other possibilities are limited only by the ingenuity of  
those conducting research in this exciting field.

35 NAL Call. No.: Videocassette no.1289

Brookfield Zoo keeper orientation Chicago Zoological Society ; director,  
George B. Rabb ; executive producer, Kittie Henderson ; produced by Gail  
Mikenas, Howard Greenblatt ; written by Gail Mikenas.. Keeper orientation  
Chicago Zoological Society (Ill.), Brookfield Zoo (Ill.)

Chicago, Ill. : Brookfield Zoo, c1990; 1990.

1 videocassette (22 min.) : sd., col. ; 1/2 in. Title on cassette label:  
Keeper orientation.

Language: English

Descriptors: Zoo keepers; Zoo animals

Abstract: Presents specific instructions on what to do as a keeper in the  
Brookfield Zoo such as maintenance of buildings, animal cleaning and feeding,  
giving medication, being aware of changes in the animals' behavior, and night  
keeper duties.

36

NAL Call. No.: SF601.C24

The Canadian Council on Animal Care--its guidelines and policy directives: the veterinarian's responsibility.

Rowell, H.C.

Ottawa : Canadian Veterinary Medical Association; 1991 Jul.

Canadian journal of veterinary research; Revue canadienne de recherche veterinaire v. 55 (3): p. 205; 1991 Jul. Includes references.

Language: English

Descriptors: Laboratory animals; Animal experiments; Animal welfare; Veterinary profession; Animal models; Pain

37

NAL Call. No.: SF407.I58F79 1991

Captive invertebrates a guide to their biology and husbandry., Original ed..

Frye, Fredric L.

Malabar, Fla. : Krieger Pub. Co., 1992; 1992.

xx, 135 p. : ill. (some col.) ; 29 cm. Includes bibliographical references and index.

Language: English

Descriptors: Invertebrates as laboratory animals; Invertebrates as pets; Captive wild animals

38

NAL Call. No.: SF996.4.C3

Care and handling of Australian native animals emergency care and captive management.

Hand, Suzanne

Royal Zoological Society of New South Wales

Chipping Norton, NSW : Surrey Beatty, in association with Royal Zoological Society of New South Wales, 1990; 1990.

x, 210 p., [12] leaves of plates : ill. (some col.) ; 25 cm. "Published June 1990"--T.p. verso. "This volume grew from a symposium held by the Royal Zoological Society of New South Wales in September 1986 at the University of New South Wales"--P. iii. Includes bibliographical references and index.

Language: English; English

Descriptors: Vertebrates; Captive wild animals; Wildlife rescue; Wildlife management

39

NAL Call. No.: QL55.I5

Care and welfare of pre-weaning beagle puppies in a commercial breeding colony.

Goodfellow, K.G.

Sussex : The Institute; 1992 Apr.

Animal technology : journal of the Institute of Animal Technology v. 43 (1): p. 49-55; 1992 Apr. Includes references.

Language: English

Descriptors: Puppies; Laboratory rearing; Animal welfare

Abstract: Developments leading to improved puppy care and welfare are constantly being sought in the breeding colony. New ideas about environmental control, pen design, feeding regimes, husbandry and staff training have been introduced and evaluated. The success of each change cannot easily be proved as improvements in puppy health depend upon so many factors. However as a result of a complete care and welfare programme there have been fewer health

problems and lower pre-weaning loss, in our colony.

40 NAL Call. No.: Videocassette no.971  
Carnivores basic needs, handling and care.  
Morgan, Ronald L.  
American College of Toxicology, Meeting\_1990 :\_Orlando, Fla.),Production Plus,  
Inc  
Symposium: Animal Welfare Compliance for Study Directors 1990 : Orlando, Fla.  
Closter, N.J. : Production Plus, Inc., [1990?]; 1990.  
1 videocassette (31 min., 37 sec.) : sd., col. ; 1/2 in. VHS. Videotape of a  
presentation at Symposium: Animal Welfare Compliance for Study Directors ;  
presented at the Eleventh Annual Meeting of the American College of  
Toxicology, Orlando, Fla., Oct. 1990.

Language: English

Descriptors: Laboratory animals; Animal welfare; Dogs as laboratory animals;  
Cats as laboratory animals; Ferrets as laboratory animals; Minks as laboratory  
animals

Abstract: The basic needs of dogs and cats including air, food, water,  
environmental controls and social interaction are presented. Available  
guidelines, regulations, resource information and training manuals are  
presented. Methods of disease prevention, identification, housing and exercise  
are discussed. The basic care and handling of farrets and mink is also  
covered.

41 NAL Call. No.: NBUSF961 C87 1990  
Cattle embryo transfer procedure an instructional manual for the rancher,  
dairyman, A.I. technician, animal scientist, and veterinarian.  
Curtis, John L.  
U.S.A. : John L. Curtis, 1990,c1989; 1990.  
iv, 130 p. : ill.; 23 cm. Cover title. Bibliography: p. 129-130.

Language: English

Descriptors: Cattle

42 NAL Call. No.: SF961.C87  
Cattle embryo transfer procedure an instructional manual for the rancher,  
dairyman, artificial insemination technician, animal scientist, and  
veterinarian.  
Curtis, John L.  
S an Diego : Academic Press, c1991; 1991.  
ix, 131 p. : ill. ; 23 cm. Includes bibliographical references (p. 130-131).

Language: English

Descriptors: Cattle

43 NAL Call. No.: 41.8 AM3  
Chlamydial infections--past, present, future.  
Schachter, J.  
Schaumburg, Ill. : The Association; 1989 Dec01.  
Journal of the American Veterinary Medical Association v. 195 (11): p.  
1501-1506; 1989 Dec01. Paper presented at the "Symposium on Avian  
Chlamydiosis," 1988, Portland, Oregon. Literature review. Includes  
references.

Language: English

Descriptors: Domestic animals; Poultry; Chlamydia; Zoonoses; History; Animal research

44

NAL Call. No.: 410.9 P94

Chronic catheterization of the inferior vena cava in Yucatan miniature swine. Smith, D.M.; Lieberman, R.P.; Stribley, J.A.; Sharp, J.G. Cordova, Tenn. : American Association for Laboratory Animal Science; 1992 Dec. Laboratory animal science v. 42 (6): p. 602-606; 1992 Dec. Includes references.

Language: English

Descriptors: Miniature pigs; Catheterization

Abstract: Long-term venous access for leukapheresis, repeated blood sampling, and administration of drugs and fluids can be accomplished nonsurgically in Yucatan miniature swine. The catheter is placed under fluoroscopic guidance into the inferior vena cava using a needle and guidewire. This procedure has the advantage that it avoids a surgical incision, allows high flow rates, exits conveniently on the lower back, and can be replaced easily in the event of mechanical failure or thrombosis. Actuarial analysis of the duration of patency disclosed that of 41 catheters placed in 30 animals, the probability of function at 28, 42, and 54 days was 75%, 50%, and 25%, respectively. Eleven nonfunctioning catheters were replaced and nine of these continued to function until the completion of the experiment. No catheters were removed due to infection. Chronic catheterization of the inferior vena cava is a convenient method for long-term venous access in swine.

45

NAL Call. No.: 49 J82

Clinical assessment of selenium status of livestock. Stowe, H.D.; Herdt, T.H. Champaign, Ill. : American Society of Animal Science; 1992 Dec. Journal of animal science v. 70 (12): p. 3928-3933; 1992 Dec. Presented in part at a symposium entitled "Importance and Consequences of Selenium Supplementation in Livestock Production," Laramie, WY. Includes references.

Language: English

Descriptors: Racehorses; Pigs; Dairy cows; Selenium; Blood serum; Laboratory methods; Accuracy; Blood analysis; Species differences; Normal values; Selenosis; Feed supplements; Feed mixing; Errors; Hay

Abstract: Assessment of the selenium status of livestock is an important aspect of production medicine, but variations in reported values between laboratories and between methods may be > 30%. Reliable interpretations require considerable experience with an assay and an extensive database from field and research case samples of a variety of species. The Michigan State University Animal Health Diagnostic Laboratory (MSU-AHDL) has offered Se analyses by acid-digestion and fluorometric detection since 1982. This laboratory expects serum Se values (nanograms per milliliter) of livestock to increase gradually with age from starting ranges for neonates of 50 to 80 for calves and sheep and 70 to 90 for foals and pigs. Expected or "normal" values for the adults are in the ranges of 70 to 100 for cattle, 120 to 150 for sheep, 130 to 160 for horses, and 180 to 220 for swine. Normal liver Se concentrations are considered to range between 1.2 and 2.0 micrograms/g on a dry weight basis, regardless of the species or age. Based on samples submitted to MSU-AHDL between September 1990 and August 1991, contemporary feeding practices in the Michigan area resulted in mean serum Se values (nanograms per milliliter) of 75 +/- 19 for adult Holsteins, 170 +/- 27 for adult swine (mixed breeds), and 137 +/- 30 for adult race horses. Within that period of time, two field cases of Se toxicity were diagnosed. One involved feeder pigs with a recorded high serum Se value of 1,525 ng/ml due to a commercial premix manufacturing error. The other involved mature horses with a recorded high

serum Se of 928 ng/ml due to consumption of hays with a natural Se content of 20 ppm.

46 NAL Call. No.: Videocassette no.1039  
Commensal rodents biology & behavior.  
National Pest Control Association  
Dunn Loring, Va. : NPCA, c1990; 1990.  
1 videocassette (15 min.) : sd., col. ; 1/2 in. + 1 manual (17 leaves). (NPCA rodent control series ; 1; NPCA rodent control training programs). VHS.

Language: English

Descriptors: Rattus norvegicus; Mice

Abstract: This National Pest Control Association Rodent Control Training Program (one of six videos) examines the biology and behavior of three commensal rodents, the Norway rat (sewer rat), the roof rat (wharf rat) and the house mouse. The purpose of this video training program is to increase the pest control service technician's knowledge of the habits of these pests, thereby enabling them to design effective control programs. The accompanying manual includes practical training tips, program presentation recommendations, a pretest and a post test (with answers), suggested reference materials, and a commensal rodent pictorial identification key.

47 NAL Call. No.: SF996.5.I54 1991a  
Companion guide to Infectious diseases of mice and rats.  
Institute of Laboratory Animal Resources (U.S.), Committee on Infectious Diseases of Mice and Rats  
Washington, D.C. : National Academy Press, 1991; 1991.  
x, 95 p. ; 23 cm. Includes bibliographical references and index.

Language: English

Descriptors: Mice; Rats; Laboratory animals; Mice as laboratory animals; Rats as laboratory animals

48 NAL Call. No.: 447.8 AM3  
A comparison of interactive videodisc instruction with live animal laboratories.  
Fawver, A.L.; Branch, C.E.; Trentham, L.; Robertson, B.T.; Beckett, S.D.  
Bethesda, Md. : American Physiological Society; 1990 Dec.  
American journal of physiology v. 259 (6,pt.3): p. S11-S14; 1990 Dec.  
Includes references.

Language: English

Descriptors: Animal physiology; Laboratory animals; Videodiscs; Computer assisted instruction; Teaching methods

Abstract: This study compared interactive videodisc-simulated laboratories with two types of traditional labs: a traditional general cardiovascular physiology participation lab and a traditional fibrillation/positive pressure ventilation demonstration lab. The two laboratory sections (a total of 85 first-year veterinary medical students) were divided into 12 lab groups of 3-4 students per lab section. These groups were randomly assigned to either a traditional live animal laboratory or an interactive videodisc-simulated laboratory to compare the effectiveness and efficiency of these methods in teaching physiology. A 22-item, multiple-choice/short answer test was given to all students after the laboratories. In both the participation and the demonstration laboratories, there were no significant differences between group test scores of the interactive videodisc groups and the live animal laboratory groups, but there were differences in time spent by both students

and instructors. It was concluded that the interactive videodisc-simulated lab was as effective as the traditional live-animal labs and was more time efficient than the traditional participation lab.

49 NAL Call. No.: QL55.A1L33  
A comprehensive health science center educational program for animal care and use.  
White, G.L.; Perry, M.A.; Kosanke, S.D.; Randolph, M.M.; Niekraz, M.A.  
New York, N.Y. : Nature Publishing Company; 1991 Jul.  
Lab animal v. 20 (7): p. 47-49; 1991 Jul. Includes references.

Language: English

Descriptors: Laboratory animals; Educational programs; Animal husbandry

50 NAL Call. No.: Z7994.L3A5  
Contributions of physicochemical properties to the evaluation of ocular irritation.  
Regnier, J.F.; Imbert, C.  
Nottingham : Fund for the Replacement of Animals in Medical Experiments; 1992 Jul.  
Alternatives to laboratory animals : ATLA v. 20 (3): p. 457-465; 1992 Jul.  
Paper presented at the third meeting of the Societe de Pharmacologie Cellulaire on "Alternatives to ocular irritation," October 18, 1991, Paris.  
Includes references.

Language: English

Descriptors: Animal testing alternatives; Ph

Abstract: International guidelines for the evaluation of ocular irritation advise that all the available information, structural and physicochemical, should be taken into account in order to minimise the testing of substances under conditions that are likely to produce severe reactions in laboratory animals. In order to determine whether the pH and the acidic/alkaline reserve would be suitable parameters for the prediction of ocular irritation, we have measured, under standard conditions, the pH and the acidic/alkaline reserve of 166 chemicals (90 non-irritant, 22 irritant, and 54 severely irritant for the eye, according to the EEC classification and labelling system). The combination of these parameters permitted the correct identification of 74% of the severely irritant chemicals and 97% of the non-severely irritant (non-irritant or irritant) chemicals. The predictive value for a severely irritant potential was 93%, and 88% for non-severely irritant chemicals. This physicochemical approach, used as a first line screen for ocular irritation, is very simple and inexpensive.

51 NAL Call. No.: 47.8 Am33P  
Control of Salmonella and Campylobacter in poultry production. A summary of work at Russell Research Center.  
Bailey, J.S.  
Champaign, IL : Poultry Science Association, 1921-; 1993 Jun.  
Poultry science v. 72 (6): p. 1169-1173; 1993 Jun. From the symposium "Microbial Safety of Poultry Products", August 4, 1992. Includes references.

Language: English

Descriptors: Broilers; Chicks; Biological competition; Salmonella; Campylobacter jejuni; Microbial contamination; Commensals; Eggs; Hatcheries; Lipopolysaccharides; Food safety

Abstract: The primary mission of the USDA, Agricultural Research Service, Poultry Microbiological Safety Research Unit is to develop technology



preventing commensal intestinal colonization of chickens by human bacterial enteropathogens, including Salmonella and Campylobacter. The different mechanisms of colonization and the wide variety of sources of these pathogens combined with the different factors that affect host susceptibility to colonization indicate that a multifaceted research approach will be required to control Salmonella and Campylobacter during poultry production. The working hypothesis is that only by delivering chickens free of Salmonella or Campylobacter to the processing plant can significant reductions in the number and levels of contamination of chickens leaving the plant with these pathogens be achieved. As the means are developed to substantially reduce or eliminate the intestinal colonization of chickens by these pathogens, the pathogen-free chickens can be delivered to the processing plant, thereby eliminating or at least reducing the prevalence and levels of Salmonella on processed broilers.

52 NAL Call. No.: QH75.A1B57

Cryopreservation of animal germplasm resources.

Pursel, V.G.; Johnson, L.A.

Boston : Kluwer Academic Publishers; 1989.

Biotic diversity and germplasm preservation, global imperatives / Lloyd Knutson and Allan K. Stoner, editors. p. 337-353; 1989. (Beltsville symposia in agricultural research ; 13). Paper presented at a Symposium May 9-11, 1988, Beltsville Agricultural Research Center, Beltsville, Maryland.

Literature review. Includes references.

Language: English

Descriptors: Domestic animals; Genetic resources; Germplasm; Cryoprotectants; Embryos (animal); Freezing; Semen preservation; Spermatozoa

53 NAL Call. No.: Videocassette no.1129

Cuidado y uso humanitario de animales de laboratorio para tecnicos [prepared for the U.S. Department of Agriculture, National Agriculture Library by the Laboratory Animal Training Association] [Humane care and use of laboratory animals for technicians].. Animales de laboratorio Humane care an use of laboratory animals fo r technicians

Laboratory Animal Training Association

Raleigh, N.C.? : Laboratory Animal Training Association, [1991?]; 1991.

1 videocassette (36 min.) : sd., col. ; 1/2 in. + 1 Spanish language script + 1 English language script. Title on cassette spine: Animales de laboratorio.

Language: Spanish; English

Descriptors: Laboratory animal technicians; Animal welfare; Laboratory animals

54 NAL Call. No.: SF601.J62

Curriculum change related to live animal use: a four-year surgical curriculum.

White, K.K.; Wheaton, L.G.; Greene, S.A.

Blacksburg, Va. : The Association of American Veterinary Medical Colleges; 1992.

Journal of veterinary medical education v. 19 (1): p. 6-10; 1992. Includes references.

Language: English

Descriptors: Washington; Veterinary education; Surgery; College curriculum; Laboratory animals; Educational reform; Educational objectives; Teaching methods; Animal welfare; Animal testing alternatives

55 NAL Call. No.: QL55.I5

Delivering the goods.

Porter, R.I.

Sussex : The Institute; 1990 Dec.

Animal technology : journal of the Institute of Animal Technology v. 41 (3):  
p. 211-216; 1990 Dec.

Language: English

Descriptors: Great Britain; Technicians; Education; Training

56 NAL Call. No.: QL55.A1L33

Design of a course to introduce research personnel to the care and use of  
laboratory animals.

Faulkner, D.R.

New York : Nature Publishing Company; 1989 Jan.

Lab animal v. 18 (1): p. 21-22, 24-25; 1989 Jan. Includes references.

Language: English

Descriptors: Laboratory animals; Laboratory rearing; Education; Research;  
Personnel; Training; Curriculum

57 NAL Call. No.: QL55.A1L33

Developing a questionnaire to select animal technicians.

Talmadge, S.A.; Grunberg, N.E.; Cisar, C.F.

New York, N.Y. : Nature Publishing Company; 1989 May.

Lab animal v. 18 (4): p. 21-26; 1989 May. Includes references.

Language: English

Descriptors: Laboratory animals; Technicians; Training; Education; Careers;  
Questionnaires

58 NAL Call. No.: aHV4762.A3A64

The development of guidelines for the care and use of agricultural animals  
used in agricultural research and teaching.

Stricklin, W.R.

Beltsville, Md. : Animal Welfare Information Center, National Agricultural  
Library, [1989?]; 1989 Sep.

Animal care and use in behavioral research : regulations, issues, and  
applications : based on an invited paper session presented at the 1988 meeting  
of the Animal Behavior Society / Janis Wiley Driscoll, editor. p. 44-51; 1989  
Sep. Includes references.

Language: English

Descriptors: Livestock; Poultry; Animal welfare; Animal husbandry; Animal  
research; Teaching; Guidelines; Guides

59 NAL Call. No.: SF911.V43

Development of parenchymal abdominal organ models for use in teaching  
veterinary soft tissue surgery.

Greenfield, C.L.; Johnson, A.L.; Arends, M.W.; Wroblewski, A.J.

Hagerstown, Md. : J.B. Lippincott Company; 1993 Sep.

Veterinary surgery v. 22 (5): p. 357-362; 1993 Sep. Includes references.

Language: English

Descriptors: Animal models; Veterinary education; Surgery

60 NAL Call. No.: aHV4701.A952

Development of personnel training--experiences at Purdue University.

Fitzgerald, A.L.; Maikel, R.P.  
Beltsville, Md. : National Agricultural Library, AWIC; 1992 Jan.  
Animal Welfare Information Center newsletter v. 3 (1): p. 2-3; 1992 Jan.

Language: English

Descriptors: Indiana; Technicians; Training courses; Laboratory animals;  
Animal experiments; Universities

61 NAL Call. No.: RM145.B65 1990  
Drug dosage in laboratory animals a handbook., 3rd ed. rev. and enl..  
Borchard, Ronald E.; Barnes, Charles D.,\_1935-; Eltherington, L. G.; Barnes,  
Charles D.,  
Caldwell, N.J. : Telford Press, c1990; 1990.  
xxix, 692 p. : 29 cm. Rev. ed. of: Drug dosage in laboratory animals / by  
C.D. Barnes and L.G. Eltherington. 2nd rev. and enl. ed. [c1973]. Includes  
bibliographical references (p. 519-674).

Language: English

Descriptors: Drugs; Laboratory animals; Pharmacology, Experimental

62 NAL Call. No.: SF604.E3  
Education and training in the care and use of laboratory animals a guide for  
developing institutional programs.  
Institute of Laboratory Animal Resources (U.S.), Committee on Educational  
Programs in Laboratory Animal Science  
Washington, D.C. : National Academy Press, 1991; 1991.  
xi, 139 p. ; 28 cm. Includes bibliographical references.

Language: English

Descriptors: Laboratory animals; Animal welfare

63 NAL Call. No.: aHV4701.A952  
Education, computer software and animal welfare.  
Peterson, N.S.  
Beltsville, Md. : National Agricultural Library, AWIC; 1991 Apr.  
Animal Welfare Information Center newsletter v. 2 (2): p. 3, 7; 1991 Apr.  
Includes references.

Language: English

Descriptors: Animal welfare; Animal testing alternatives; Computer software;  
Educational technology

64 NAL Call. No.: QA76.8.I2594D49  
The effect of drugs on the release of and response to neurotransmitters in the  
enteric nervous system [sic] a computer simulation.. Guinea-pig ileum  
Dewhurst, David; Meehan, Anthony  
Air Chief Marshal the Lord Dowding Fund for Humane Research  
Harrogate, England : Sheffield BioScience Programs, [1989?]; 1989.  
1 computer disk ; 5 1/4 in. + 1 user's manual. Title from title screen.  
Title on disk and user's manual: Guinea-pig ileum.

Language: N/A

Descriptors: Guinea pigs as laboratory animals; Ileum; Neuropharmacology;  
Computer simulation; Animal welfare

Effects of genetic strain and light management on the reproductive performance of turkeys.

Havenstein, G.B.; Nestor, K.E.; Bacon, W.L.; Renner, P.A.

Champaign, Ill. : Poultry Science Association; 1992 Oct.

Poultry science v. 71 (10): p. 1590-1594; 1992 Oct. Includes references.

Language: English

Descriptors: Turkeys; Strain differences; Laying performance; Light regime; Lighting; Energy consumption; Costs

Abstract: The laying performance of six genetic strains of turkeys, which have been bred and maintained at the Ohio Agricultural Research and Development Center, Wooster, OH, was compared under three laying house lighting regimens over a period of 3 yr. Light Treatment 1 (L1) consisted of 14 h of continuous light (L) and 10 h of dark (D; 14L:10D) throughout the laying period. Treatment 2 (L2) consisted of 14 h of intermittent light (IL, 15 min L and 45 min D/h) followed by 10 h of continuous dark. The IL treatment was started following a period (6 wk) in which the hens were trained to use the trapnests. Thus, during the first 6 wk of their laying period, L2 hens were also provided 14L:10D. Treatment 3 (L3) hens were provided the same program as L1 for the first 14 wk of the laying period. They were then moved to a continuous period of 19L:5D for the remainder of the laying period. All eggs produced were recorded through 180 days after the first egg was laid. Traits studied included: the number of days to first egg after light stimulation; the number of eggs produced through 84, 120, and 180 days after the first egg was laid; the average clutch length; the maximum clutch length; the total days lost to broodiness; the rate of lay; and the effective length of the laying period. Highly significant differences ( $P < .01$ ) were observed among the strains used for all traits measured. Light treatments showed no significant effects on any trait measured. Thus, from the present studies, the delayed IL program provides an economically attractive management program for environmentally controlled turkey breeder houses. Savings of 75% of the light energy used during approximately 6 mo of the lay period were realized. Economically, the L3 program would be disadvantageous, because electrical usage was increased 35% after the period of daylength increase with no apparent increase in productivity.

Effects of social interaction on well-being: development aspects.

Mason, W.A.

Cordova, Tenn. : American Association for Laboratory Animal Science; 1991 Aug.

Laboratory animal science v. 41 (4): p. 323-328; 1991 Aug. Includes references.

Language: English

Descriptors: Primates; Animal welfare; Social interaction; Social development

Abstract: The scientific need for nonhuman primates that are born and raised in captivity seems certain to increase and with it, the concern for managing the social development of individual animals so as to maximize their utility throughout a potentially long career. This practical objective is not only compatible with a concern for psychological well-being, but presupposes similar aims and criteria. For both concerns the most reliable guidelines are derived from basic research. The data available indicate that primate social development is directional, proceeding from extreme dependence on care-givers initially (subserved by mother-directed behaviors) toward relative autonomy and adult competence (dominated by other-directed behaviors). Individuals are not passive recipients at any point in this process, rather they are active participants in their development, engaged with their surroundings and responding selectively to what the environment affords. From this standpoint, developmental effects are the outcome of transactions with the environment.

They are emergent phenomena, neither wholly independent of environmental influences, nor completely determined by them. It follows that the long, range utility and well-being of captive animals will be served well if they are able to select those with whom they will interact and modes of interaction that are appropriate to their level of development and current motivational state. This can generally be accomplished by permitting individuals to develop, at least through weaning, in the company of their biologic mothers within an approximation of a species-normal social group. When such latitude is impossible, the social environment should be arranged with the individuals' developmental levels as a primary concern.

67

NAL Call. No.: SF600.C82

Embryo transfer, semen, scrapie, and B.S.E.

Wrathall, A.E.; Brown, K.F.D.

Dordrecht : Kluwer Academic Publishers; 1991.

Current topics in veterinary medicine and animal science v. 55: p. 243-253; 1991. In the series analytic: Sub-acute spongiform encephalopathies / edited by R. Bradley, M. Savey, and B. Marchant. Proceedings of a Seminar in the CEC Agricultural Research Programme, November 12-14, 1990, Brussels. Includes references.

Language: English

Descriptors: Sheep; Scrapie; Vertical transmission; Embryo transfer; Bovine spongiform encephalopathy

68

NAL Call. No.: SF510.5.M55 1992

The emu farmer's handbook.

Minnaar, Phillip; Minnaar, Maria

Groveton, Tex. (Star Rt. 2, Box 8B, Groveton 75845) : Induna Co., c1992; 1992. vii, 178 p. : ill. (some col.) ; 28 cm. Includes bibliographical references (p. 178).

Language: English

Descriptors: Emu farming

69

NAL Call. No.: aQL55.B36

Essentials for animal research a primer for research personnel.

Bennett, B. T.; Brown, M. J.; Schofield, J. C.

National Agricultural Library (U.S.), University of Illinois at Chicago

Beltsville, Md. : U.S. Dept. of Agriculture, National Agricultural Library :

University of Illinois at Chicago, [1990]; 1990.

vi, 126 p. : ill. ; 28 cm. "Produced as a joint effort of the National Agricultural Library, USDA, and the University of Illinois at Chicago and supported by cooperative agreement number 58-32U4-7-070"--P. vi. April 1990. Includes bibliographical references.

Language: English

Descriptors: Animal experimentation; Laboratory animals; Animal welfare

70

NAL Call. No.: QL55.E84 1992

Ethics in research on animal behaviour readings from Animal behaviour..

Guidelines for the use of animals in research

Dawkins, Marian Stamp; Gosling, Morris

Association for the Study of Animal Behaviour, Animal Behavior Society

London, England : Academic Press for the Association for the Study of Animal

Behaviour and the Animal Behavior Society, [1992?]; 1992.

64 p. : ill. ; 25 cm. Includes "Guidelines for the use of animals in research," revised 1991 version. Includes bibliographical references.

Language: English

Descriptors: Animal experimentation; Laboratory animals

71 NAL Call. No.: QL55.A1L33  
Evaluation of the effectiveness of an animal care and use training program.  
Adsit, K.I.; Tomasovic, S.P.; Mastromarino, A.J.; Gray, K.N.  
New York, N.Y. : Nature Publishing Company; 1990 May.  
Lab animal v. 19 (4): p. 50, 52-54; 1990 May. Includes references.

Language: English

Descriptors: Laboratory animals; Program evaluation; Training

72 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]; 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.

73 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]; 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.

74 NAL Call. No.: SF959.C6E682 1991  
Fourth Equine Colic Research Symposium September 23-25, 1991, Center for Continuing Education, The University of Georgia : [symposium abstracts].  
Moore, James N.; Morris, Debra Deem; White, N. A.; Weir, Amy  
North America Livestock, Inc  
Equine Colic Research Symposium 4th : 1991 : University of Georgia.  
Athens, Ga. : The Center, [1991]; 1991.  
57 p. ; 28 cm. "Sponsors, North America Livestock Incorporated ... [et al.]"--P. [2] of cover.

Language: English

Descriptors: Horses; Colic

75 NAL Call. No.: SF910.P34A55 1992  
The future of control of pain in animals used in teaching and research.  
Rowell, H.C.  
New York : Churchill Livingstone; 1992.  
Animal pain / edited by Charles E. Short, Alan Van Poznak. p. 525-537; 1992.  
Includes references.

Language: English

Descriptors: Animal experiments; Laboratory animals; Pain; Research; Teaching;  
Education; Legislation; Animal welfare

76 NAL Call. No.: SF407.R38G46  
Genetic monitoring of inbred strains of rats a manual on colony management,  
basic monitoring techniques, and genetic variants of the laboratory rat.  
Hedrich, Hans J.; Adams, M.  
International Council for Laboratory Animal Science  
Stuttgart ; New York : Gustav Fischer Verlag, 1990; 1990.  
xii, 539 p. : ill. ; 25 cm. Includes bibliographical references and index.

Language: English

Descriptors: Rats as laboratory animals; Rats; Inbreeding

77 NAL Call. No.: 330.9 N21NE  
Greater care recommended for animals used in precollege classes.  
Washington, D.C. : National Academy of Sciences, National Research Council;  
1989 May.  
News report v. 39 (5): p. 16-17; 1989 May.

Language: English

Descriptors: Animal experiments; Animal welfare; Secondary education; Science  
education; Guidelines

78 NAL Call. No.: SF406.G8 1990  
Guia para el cuidado y uso de animales de laboratorio.. Guide for the care  
and use of laboratory animals, Revisada en 1985..  
Institute of Laboratory Animal Resources (U.S.), Committee on Care and Use of  
Laboratory Animals  
Bethesda, Md. : U.S. Dept. of Health and Human Services, Public Health  
Service, National Institutes of Health, [1990?]; 1990; HE 20.3008:An  
5/985/Spanish.  
ix, 83 p. ; 23 cm. (NIH publication ; no. 90-23S). Translation of: Guide for  
the care and use of laboratory animals. Shipping list no.: 90-716-P.  
"Publicacion no. 86-23 de los Institutos Nacionales de Salud"--P. [4] of  
cover. Includes bibliographical references (p. 59-73).

Language: Spanish; Spanish

Descriptors: Laboratory animals

79 NAL Call. No.: HV4701.J6  
A guide to resources.  
Baltimore, Md. : The Center; 1990.  
The Johns Hopkins Center for Alternatives to Animal Testing : [newsletter] v.  
8 (2): p. 1-3; 1990.

Language: English

Descriptors: Animal welfare; Information centers

80

NAL Call. No.: SF762.S74 1992

A guided tour of veterinary anatomy domestic ungulates and laboratory mammals.  
Smallwood, James E.  
Philadelphia : W.B. Saunders, c1992; 1992.  
vii, 390 p. : ill. ; 27 cm. Includes bibliographical references and index.

Language: English

Descriptors: Veterinary dissection; Veterinary anatomy; Laboratory animals

81

NAL Call. No.: 410.9 P94

Guidelines for developing and managing an environmental enrichment program for nonhuman primates.  
Bloomsith, M.A.; Brent, L.Y.; Schapiro, S.J.  
Cordova, Tenn. : American Association for Laboratory Animal Science; 1991 Aug.  
Laboratory animal science v. 41 (4): p. 372-377; 1991 Aug. Includes references.

Language: English

Descriptors: Primates; Environment; Enrichment; Guidelines; Animal welfare; Record keeping; Costs; Plan implementation and evaluation

Abstract: Before implementing an environmental enrichment program for nonhuman primates, several issues should be considered. The assignment of enrichment tasks can be made to caretakers, a dedicated "enrichment technician," volunteers, students or individuals with training in behavioral science. Determining the enrichment techniques to be used must take into account personnel time available; the species, age, sex, and individual histories of the nonhuman primates; and experimental protocols for which animals are being maintained. Identifying the most beneficial way to use the available personnel time must be tailored for each institution. To meet federal regulations, records must be kept of the environmental enhancements available to each nonhuman primate. Good record-keeping will allow appropriate evaluation of the program. This evaluation should involve the animals' responses to the enrichment opportunity, cost and durability of enrichment items, human and nonhuman safety considerations, and personnel required. The well-being of captive nonhuman primates will be most improved if well-informed decisions are made in developing and managing environmental enrichment programs.

82

NAL Call. No.: QL55.A1L3

Guidelines for the care of laboratory animals in transit.  
London : Royal Society of Medicine Services; 1993 Apr.  
Laboratory animals v. 27 (2): p. 93-107; 1993 Apr. Includes references.

Language: English

Descriptors: Laboratory animals; Transport of animals

83

NAL Call. No.: HV4708.G85

Guidelines for the recognition and assessment of pain in animals.  
Association of Veterinary Teachers and Research Workers  
Potters Bar, Herts. : Universities Federation for Animal Welfare, c1989; 1989.  
24 p. ; 21 cm. Bibliography: p. [3] of cover.

Language: English

Descriptors: Animal experimentation; Animal welfare



84 NAL Call. No.: SF407.F39P6  
Guidelines for the use of the ferret as a model for pediatric endotracheal intubation training.  
Powell, Douglas A.; Gonzalez, Carlos  
Bethesda, Md. : Dept. of Laboratory Animal Medicine, Uniformed Services University of the Health Sciences?, 1989?; 1989.  
13, [1] leaves : ill. ; 28 cm. Cover title. Includes bibliographical references (leaf 12).

Language: English

Descriptors: Ferrets as laboratory animals; Animal models in research; Trachea; Intubation; Pediatrics; Study and teaching; Animal welfare

85 NAL Call. No.: HV4704.G8  
Guidelines for the well-being of rodents in research from a conference held by the Scientists Center for Animal Welfare in Research Triangle Park, North Carolina on December 8, 1989, with additional material provided by the authors.  
Guttman, Helene N.  
Scientists Center for Animal Welfare (Washington, D.C.)  
Bethesda, MD : Scientists Center for Animal Welfare, 1990; 1990.  
vi, 105 p. : ill. ; 28 cm. October 1990. Includes bibliographical references.

Language: English

Descriptors: Rodents as laboratory animals; Congresses; Animal welfare; Congresses

86 NAL Call. No.: HV4943.G7H25 1991  
Handbook for the animal licence holder guidance for those seeking authority under the animals (scientific procedures) Act 1986., 2nd ed. rev..  
Bunyan, J.  
Institute of Biology  
London : Institute of Biology, 1991; 1991.  
iv, 62 p. ; 24 cm. Includes bibliographical references (p. 53-57).

Language: English

Descriptors: Laboratory animals

87 NAL Call. No.: Q180.57.H36  
Handbook of facilities planning.. Facilities planning  
Ruys, Theodorus,  
New York : Van Nostrand Reinhold, c1990-c1991; 1990-1991.  
2 v. : ill. ; 26 cm. Includes bibliographical references and index.

Language: English

Descriptors: Physical laboratories; Laboratory animals

88 NAL Call. No.: HV4733.H36 1993  
Handbook of live animal transport (with quarterly supplements)., 1993 ed..  
Anderson, Dale L.  
Silesia Companies, Inc  
Fort Washington, Md. : Silesia Companies, Inc., 1993-; 1993-9999.  
1 v. (loose-leaf) : ill. ; 30 cm. ANIAMPLE CITATIONS

Citations in thi

proceedures [sic], animal health regulations, transporting animals by land, sea & air, exporting animals.

Language: English

Descriptors: Animals; Animal welfare

89 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; 1991.

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

Language: English

Descriptors: Animal welfare; Animals

90 NAL Call. No.: 275.29 M58B

Handling hogs.

Grandin, T.; Ernst, K.; Ernst, D.; McGlone, J.

East Lansing, Mich. : The Service; 1989 Apr.

Extension bulletin E - Cooperative Extension Service, Michigan State

University (2183): 4 p. ill; 1989 Apr. In Subseries: Pork Industry Handbook.

Management. Includes references.

Language: English

Descriptors: Pigs; Handling

91 NAL Call. No.: HV4761.A5

Harming animals as part of biology education.

Orlans, F.B.

Washington, D.C. : The Institute; 1992.

The Animal Welfare Institute quarterly v. 41 (3): p. 9; 1992.

Language: English

Descriptors: Laboratory animals; Science education

92 NAL Call. No.: QH1.A43

Hi-tech alternatives to dissection.

Strauss, R.T.; Kinzie, M.B.

Reston, Va. : National Association of Biology Teachers; 1991 Mar.

The American biology teacher v. 53 (3): p. 154-158; 1991 Mar. Includes

references.

Language: English

Descriptors: Animal testing alternatives; Science education; Videodiscs;  
Teaching materials

93 NAL Call. No.: S544.3.N3C66

Horse behavior: handling the new foal.

Cirelli, A. Jr

Reno, Nev. : The College; 1991.

Fact sheet - College of Agriculture, University of Nevada-Reno, Nevada

Cooperative Extension (91-07): 2 p.; 1991. Includes references.

Language: English

Descriptors: Foals; Imprinting; Training of animals

94 NAL Call. No.: HV4725.U5L4 1990  
Humane education in the public schools., 4th ed.  
Leavitt, E.S.; Beary, B.  
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. 244-253; 1990.

Language: English

Descriptors: U.S.A.; Public schools; Animal welfare; Law; Legislation;  
Education; Animal experiments

95 NAL Call. No.: RC606.I45  
Immunodeficient rodents a guide to their immunobiology, husbandry, and use.  
Institute of Laboratory Animal Resources (U.S.), Committee on Immunologically  
Compromised Rodents  
Washington, D.C. : National Academy Press, 1989; 1989.  
x, 246 p. : ill. ; 24 cm. Includes index. Bibliography: p. 165-211.

Language: English

Descriptors: Immunological deficiency syndromes; Animal models; Rodents;  
Immunology; Rodents as laboratory animals

96 NAL Call. No.: aHV4762.A3A64  
The impact of federal regulations on science and education in small colleges.  
Demarest, J.  
Beltsville, Md. : Animal Welfare Information Center, National Agricultural  
Library, [1989?]; 1989 Sep.  
Animal care and use in behavioral research : regulations, issues, and  
applications : based on an invited paper session presented at the 1988 meeting  
of the Animal Behavior Society / Janis Wiley Driscoll, editor. p. 30-36; 1989  
Sep. Includes references.

Language: English

Descriptors: U.S.A.; Laboratory animals; Animal research; Animal welfare;  
Regulations; Colleges; Surveys; Science education

97 NAL Call. No.: 44.8 J822  
Implications of dairy herd size for farm material transport, plant nutrient  
management, and water quality.  
Lanyon, L.E.  
Champaign, Ill. : American Dairy Science Association; 1992 Jan.  
Journal of dairy science v. 75 (1): p. 334-344; 1992 Jan. Paper presented at  
the symposium "Nutritional Factors Affecting Animal Water and Waste Quality",  
August 27, 1990. Literature review. Includes references.

Language: English

Descriptors: Dairy cows; Livestock numbers; Dairy farms; Fertilizers; Soil  
analysis; Farm management; Runoff water; Water quality; Literature reviews

Abstract: Farm material transport to, from, and within dairy farms can create  
zones of plant nutrient depiction and accumulation that range in scale from  
local to international. The introduction, adoption, and use of fertilizers  
have resulted in substantial movement of plant nutrients to dairy farms.  
Fertilizers contributed to enhanced crop growth and frequently the correction

of sod nutrient deficiencies. They also represented an opportunity to replace plant nutrients exported from a farm in crops so that it was possible for some farms to specialize in the production of crops. These exported crops often became imports for other farms that specialized in livestock. However, the nutrient-holding capacity of sod on any farm is limited, so the potential for additions to the stock of nutrients, especially of P and K, on a farm can be expected to decrease with time. After a period of net nutrient additions on a dairy farm, the quantity of nutrients that can be accommodated is controlled by the productivity of the animals, the management of the animal handling facilities, and the off-farm purchases of feeds and other materials for the animals. Field and biophysical-economic simulation studies have demonstrated that interactions between alternative management strategies and societal perspectives about water quality and the biological and economic performance of dairy farms may sometimes lead to unexpected outcomes.

98 NAL Call. No.: Z7994.L3A5

Improved housing of mice, rats and guinea-pigs: a contribution to the refinement of animal experiments.

Scharmann, W.

Nottingham : Fund for the Replacement of Animals in Medical Experiments; 1991 Feb.

Alternatives to laboratory animals : ATLA v. 19 (1): p. 108-114; 1991 Feb.

Paper presented at the fifth meeting of the Italian Group for the Application of Tissue Cultures in Toxicology, May 31-June 1, 1990, Milan, Italy.

Includes references.

Language: English

Descriptors: Laboratory animals; Cages; Animal welfare

Abstract: The keeping of experimental animals requires housing systems appropriate to the needs and behaviour of each species, as demanded by various supranational and national guidelines. It is questionable whether conventional housing systems for rodents such as mice, rats and guinea-pigs meet this demand. It is suggested that the housing of laboratory rodents should be improved by the use of larger and more appropriate cage types, as well as by reducing the monotony of conventional housing systems.

99 NAL Call. No.: SF996.5.I54 1991

Infectious diseases of mice and rats.

Institute of Laboratory Animal Resources (U.S.), Committee on Infectious Diseases of Mice and Rats

Washington, D.C. : National Academy Press, 1991; 1991.

xi, 397 p. ; 24 cm. "An expansion of the newly revised second edition of the Companion guide to infectious diseases of mice and rats"--P. vii. Includes bibliographical references (p. 277-385) and index.

Language: English

Descriptors: Mice; Rats; Laboratory animals; Mice as laboratory animals; Rats as laboratory animals

100 NAL Call. No.: HV4764.I58 1992

Institutional Animal Care and Use Committee guidebook.

National Institutes of Health (U.S.)

Bethesda, Md. : U.S. Dept. of Health and Human Services, Public Health Service, National Institutes of Health ; [Washington, D.C. : Supt. of Docs, U.S. G.P.O., distributor, 1992-]; 1992-9999; HE 20.3008:An 5/5.

1 v. (loose-leaf) ; 28 cm. (NIH publication ; no. 92-3415). Includes bibliographical references.

Language: English; English

Descriptors: Laboratory animals; Animal experimentation; Animal welfare

101 NAL Call. No.: 44.8 J822  
Integrated strategies and methodologies for the genetic improvement of animals.  
McLaren, D.G.; Fernando, R.L.; Lewin, H.A.; Schook, L.B.  
Champaign, Ill. : American Dairy Science Association; 1990 Sep.  
Journal of dairy science v. 73 (9): p. 2647-2656; 1990 Sep. Paper presented at a symposium on "The role of animal breeding in an age of molecular and zygotic manipulation. Includes references.

Language: English

Descriptors: Cattle; Sheep; Pigs; Genetic improvement; Quantitative genetics; Molecular genetics; Organization of research; University research; Major genes; Quantitative traits; Gene mapping; Transgenics; Genetic markers; Research support

102 NAL Call. No.: HV4708.S73  
Introducing animal welfare into the education system.  
Milburn, C.  
Wallingford, Oxon, UK : CAB International; 1989.  
The status of animals : ethics, education and welfare / edited by David Paterson and Mary Palmer. p. 73-78; 1989.

Language: English

Descriptors: Animal welfare; Education; Attitudes

103 NAL Call. No.: QH75.A1B57  
Invertebrate germplasm cryopreservation: potential, problems, and prospects.  
Leopold, R.A.; Rojas, R.R.  
Boston : Kluwer Academic Publishers; 1989.  
Biotic diversity and germplasm preservation, global imperatives / Lloyd Knutson and Allan K. Stoner, editors. p. 355-377. ill; 1989. (Beltsville symposia in agricultural research ; 13). Paper presented at a Symposium May 9-11, 1988, Beltsville Agricultural Research Center, Beltsville, Maryland. Literature review. Includes references.

Language: English

Descriptors: Insects; Invertebrates; Cold shock; Cold storage; Cold tolerance; Cryoprotectants; Genetic resources; Germplasm

104 NAL Call. No.: QL364.2.A27 1990  
Invertebrate learning a laboratory manual and source book.  
Abramson, Charles I.  
Washington, D.C. : American Psychological Association, c1990; 1990.  
viii, 100 p. : ill. ; 28 cm. Includes bibliographical references (p. 93-100).

Language: English

Descriptors: Invertebrates; Learning in animals

105 NAL Call. No.: QL55.A1L33  
Lab Animal 1992 Buyers' Guide.  
New York, N.Y. : Nature Publishing Company; 1991 Dec.  
Lab animal v. 20 (10): p. 7-96; 1991 Dec.

Language: English

Descriptors: Laboratory animals; Buyers' guides

106

NAL Call. No.: SF406.L33 1993

Lab animal care and use handbook.

University of Tennessee, Memphis, Dept. of Comparative Medicine

Memphis, Tenn. : The Dept., [1993?]; 1993.

1 v. (loose-leaf) ; 30 cm. Includes index.

Language: English

Descriptors: Laboratory animals

107

NAL Call. No.: QL813.L3M3 1990

Laboratory anatomy of the rabbit., 3rd ed..

McLaughlin, Charles Albert,; Chiasson, Robert B.

Dubuque, Iowa : Wm. C. Brown, c1990; 1990.

ix, 112 p. : ill. (some col.) ; 28 cm. (Laboratory anatomy series). Includes bibliographical references and index.

Language: English

Descriptors: Rabbits; Anatomy; Laboratory manuals; Dissection; Mammals;  
Anatomy; Laboratory manuals

108

NAL Call. No.: QL55.I5

The Laboratory Animal Breeders Association Accreditation Scheme (L.A.B.A.A.S.)  
its history, current organisation and future trends.

Smith, M.W.

Sussex : The Institute; 1992 Apr.

Animal technology : journal of the Institute of Animal Technology v. 43 (1):  
p. 19-27; 1992 Apr.

Language: English

Descriptors: Uk; Laboratory animals; Breeders' associations

Abstract: In 1982 the Medical Research Council decided to close the Laboratory Animal Centre (LAC) originally based at the MRC laboratories in Carshalton. This effectively brought to an end the originally LAC sponsored scheme for the voluntary accreditation of laboratory animal breeders. With the co-operation of the MRC a new scheme, which most Home Office registered breeders have now joined (LABAAS) was organised through a scientific working party under the auspices of the Laboratory Animal Breeders Association. Since 1982 additions and alterations have been made to the format of the manual, which sets out the working structure of the scheme. This paper outlines the current structure of LABAAS and indicates how constructive advice and criticism is helping to shape the future direction of the scheme.

109

NAL Call. No.: QL55.A1L33

Laboratory animal science in Italy: legislation, education, and training programs.

Guaitani, A.

New York, N.Y. : Nature Publishing Company; 1992 Sep.

Lab animal v. 21 (8): p. 39-40, 42, 44; 1992 Sep. Includes references.

Language: English

Descriptors: Italy; Animal experiments; Legislation; Educational programs

110 NAL Call. No.: QL55.L342  
Laboratory animal welfare research rodents : proceedings of a symposium organized by Universities Federation for Animal Welfare, held at the Royal Holloway and Bedford New College, University of London, Egham, Surrey, 22nd April 1988.  
Universities Federation for Animal Welfare  
Potters Bar, Hertfordshire, England : Universities Federation for Animal Welfare, c1989; 1989.  
72 p. : ill. ; 21 cm. Includes bibliographies.

Language: English

Descriptors: Laboratory animals

111 NAL Call. No.: QL737.P9L3  
Laboratory animal welfare research primates : proceedings of a symposium. Universities Federation for Animal Welfare  
Potters Bar, Hertfordshire, England : Universities Federation for Animal Welfare, c1989; 1989.  
55 p. : ill. ; 21 cm. Includes bibliographical references.

Language: English

Descriptors: Primates as laboratory animals; Animal welfare; Medical

112 NAL Call. No.: QL55.A1L3  
Laboratory animals: buyers' guide 1993.  
London : Royal Society of Medicine Services; 1993.  
Laboratory animals. 88 p.; 1993.

Language: English

Descriptors: Laboratory animals; Buyers' guides; Laboratory equipment

113 NAL Call. No.: Videocassette no.974  
Laboratory animals toxicology and the public.  
Gad, Shayne C.  
American College of Toxicology, Meeting\_1990 :\_Orlando, Fla.), Production Plus, Inc  
Symposium: Animal Welfare Compliance for Study Directors 1990 : Orlando, Fla. Closter, N.J. : Production Plus, Inc., [1990?]; 1990.  
1 videocassette (46 min.) : sd., col. ; 1/2 in. VHS. Videotape of a presentation at Symposium: Animal Welfare Compliance for Study Directors; presented at the Eleventh Annual Meeting of the American College of Toxicology, Orlando, Fla., Oct. 1990.

Language: English

Descriptors: Animal models in research; Laboratory animals; Commercial products

Abstract: The factual information regarding numbers of animals used, repetitive testing, source of animals and predictability of animal testing are presented to assist scientists who must respond to criticism of animal testing. A history of toxicology testing and a review of public opinion on animal research and testing is provided.

114 NAL Call. No.: QL368.A22D44 1993  
Laboratory manual for classification and morphology of rumen ciliate protozoa. Dehority, Burk A.

Boca Raton, FL : CRC Press, 1993; 1993.  
vii, 120 p. : ill. ; 26 cm. Includes bibliographical references (p. )..

Language: English

Descriptors: Ciliata; Rumen

115 NAL Call. No.: 472 N42

The laboratory rat's guide to Europe.  
MacKenzie, D.  
London, Eng. : New Science Publications; 1992 May16.  
New scientist v. 134 (1821): p. 29-31; 1992 May16.

Language: English

Descriptors: Europe; Animal experiments; Regulations; Animal welfare; European communities; Animal testing alternatives

116 NAL Call. No.: QL55.A1L3

LASA recommendations on education and training for licence holders under the UK Animals (Scientific Procedures) Act 1986--FELASA Categories B and C. Report of a committee accepted by LASA Council June 1992.  
O'Donoghue, P.N.; Bunyan, J.; Buckwell, A.C.; Gregory, J.A.; Griffiths, P.H.M.; Howard, B.R.; Jones, H.; Millican, K.G.; Wilson, M.S.; Brouwer, G.  
London : Royal Society of Medicine Services; 1993 Jul.  
Laboratory animals v. 27 (3): p. 189-205; 1993 Jul.

Language: English

Descriptors: Uk; Laboratory animals; Animal welfare; Guidelines

117 NAL Call. No.: QL751.P4

Lessons from animal trainers: the effect of acoustic structure on an animal's response.  
McConnell, P.B.  
New York, N.Y. : Plenum Press; 1991.  
Perspectives in ethology v. 9: p. 165-187; 1991. In the series analytic: Human understanding and animal awareness / edited by P.P.G. Bateson and P.H. Klopfer. Includes references.

Language: English

Descriptors: Training of animals; Acoustics; Animal behavior

Abstract: The central question posed by this chapter is whether some physical properties of sound have consistent, species-independent effects on the response of an animal receiver. Research on professional animal trainers showed that trainers, of many linguistic and geographic backgrounds, used short, rapidly repeated broadband notes to stimulate motor activity and longer, continuous narrow-band notes to inhibit activity. Controlled tests on laboratory-raised domestic pups supported the hypothesis that short, rapidly repeated notes stimulate motor activity in domestic dogs (*Canis familiaris*). These studies are discussed in relation to the use of the same acoustic structures by nonhuman animals, and the hypothesis that some sounds are particularly effective in influencing the internal state and subsequent behavior of the mammals and birds who hear them.

118 NAL Call. No.: 1 AG84PRO

Licensing and registration under the animal welfare act: guidelines for dealers, exhibitors, transporters, and researchers.  
Washington, D.C. : The Department; 1992 Apr.



Program aid PA - U.S. Department of Agriculture v.): 20 p.; 1992 Apr.

Language: English

Descriptors: U.S.A.; Animal welfare; Law; Licenses; Usda; Regulation; Laboratory animals; Zoo animals

119

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 cm<sup>2</sup>. 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.

120

NAL Call. No.: SF469.L52B87

Llamas an introduction to care, training, and handling.

Burt, Sandi,

Loveland, CO : Alpine Publications, c1991; 1991.

xiii, 190 p. : ill. ; 23 cm. Includes bibliographical references (p. 181-184) and index.

Language: English

Descriptors: Llamas as pets

121

NAL Call. No.: 49 J82

Management considerations in heifer development and puberty.

Patterson, D.J.; Perry, R.C.; Kiracofe, G.H.; Bellows, R.A.; Staigmiller, R.B.; Corah, L.R.

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

Journal of animal science v. 70 (12): p. 4018-4035; 1992 Dec. Presented at a symposium entitled "Management Considerations in Heifer Development and

Puberty," Laramie, WY. Literature review. Includes references.

Language: English

Descriptors: Heifers; Beef cows; Puberty; Age; Reproductive performance; Weaning weight; Crossbreds; Nutritional state; Progestogens; Literature reviews

Abstract: Management of replacement beef heifers should focus on factors that enhance physiological processes that promote puberty. Age at puberty is important as a production trait when heifers are bred to calve as 2-yr-olds and in systems that impose restricted breeding periods. Calving by 24 mo of age is necessary to obtain maximum lifetime productivity. Because the reproductive system is the last major organ system to mature, factors that influence puberty are critical. The influence of environment on the sequence of events leading to puberty in the heifer is dictated largely by the nutritional status of the animal and related effects on growth rate and development. Management strategies have been designed to ensure that heifers reach a prebreeding target weight that supports optimum reproductive performance, and consequences of inadequate or excessive development have been evaluated. Those strategies are based on evidence linking postweaning nutritional development with key reproductive events that include age at puberty and first breeding, conception, pregnancy loss, incidence and severity of dystocia, and postpartum interval to estrus. Management alternatives that ultimately affect lifetime productivity and reproductive performance of heifers begin at birth and include decisions that involve growth-promoting implants, creep-feeding, breed type and(or) species, birth date and weaning weight, social interaction, sire selection, and exogenous hormonal treatments to synchronize or induce estrus. Basic and applied future research efforts should converge to match in a realistic manner the production potential of the animal with available resources. Strategies that incorporate consideration of nutrition, genetics, and emerging management techniques will need to be tested to enable producers to make decisions that result in profit. This review evaluates the current status of knowledge relating to management of the replacement beef heifer and serves to stimulate research need

122

NAL Call. No.: 47.8 AM33P

Measuring preferences and the strength of preferences.

Duncan, I.J.H.

Champaign, Ill. : Poultry Science Association; 1992 Apr.

Poultry science v. 71 (4): p. 658-663; 1992 Apr. Paper contributed to the Symposium on Quantifying the Behavior of Poultry. Literature review.

Includes references.

Language: English

Descriptors: Poultry; Animal behavior; Testing; Animal welfare; Duration; Training of animals; Literature reviews

Abstract: In this review, it is argued that welfare concerns what animals feel. Preference tests give a good first indication of how animals feel and are therefore extremely valuable in animal welfare studies. Methods of overcoming the shortcomings of preference tests are discussed. In order that the results from preference tests be interpreted properly, they should be followed up with appropriate tests to measure the strength of preference. Examples of research in this area that have focused on poultry are given.

123

NAL Call. No.: QL55.A1I43

A medical ethics primer.

Robb, J.W.

Washington, D.C. : Institute of Laboratory Animal Resources, National Research Council; 1989.

I.L.A.R. news v. 31 (4): p. 21-29; 1989. Includes references.

Language: English

Descriptors: Bioethics

124 NAL Call. No.: SF781.C365 1993  
Microbial diseases a veterinarian's guide to laboratory diagnosis., 1st ed..  
Carter, G. R.; Chengappa, M. M.  
Ames, Iowa : Iowa State University Press, c1993; 1993.  
xiv, 304 p. ; 22 cm. Includes index.

Language: English; English

Descriptors: Communicable diseases in animals; Veterinary clinical pathology

125 NAL Call. No.: QP251.A1T5  
Micromanipulation of mammalian embryos: principles, progress and future possibilities.  
Yang, X.Z.; Anderson, G.B.  
Stoneham, Mass. : Butterworth-Heinemann; 1992 Aug.  
Theriogenology v. 38 (2): p. 315-335; 1992 Aug. Paper presented at the research symposium on "Reproduction in Farm Animals: Science, Application and Models," August 13, 1992, Ithaca, New York. Includes a list of his publications. Literature review. Includes references.

Language: English

Descriptors: Mammals; Embryos; Surgery; Fertilization; Cloning; Embryonic development; Embryo culture; Literature reviews

Abstract: Numerous advances in development of techniques for manipulating mammalian embryos outside the maternal environment have been made over the past decade. Some techniques were developed primarily for use in research; others were developed in response to problems of practical livestock production but have proven useful in research as well. Embryo micromanipulation procedures are used often in conjunction with embryo transfer, and interest in these procedures was stimulated by growth of the embryo transfer industry. Included in this review are discussions of procedures for manipulation of gametes and embryos, including sperm injection into oocytes, pronuclear and nuclear transfer, embryo biopsy and splitting, experimental chimera production and isolation of embryonic stem cells.

126 NAL Call. No.: 47.8 AM33P  
A microscopist's view of poultry reproductive tracts and gametes.  
Bakst, M.R.  
Champaign, Ill. : Poultry Science Association; 1993 May.  
Poultry science v. 72 (5): p. 940-943; 1993 May. Paper presented at the symposium "Current Advances in Reproduction", August 3, 1992 at the 81st Annual Meeting of the Poultry Science Association. Includes references.

Language: English

Descriptors: Chickens; Semen; Ova; Microscopy; Spermatozoa; Oviducts; Fluorescent dyes; Histochemistry; Interference

Abstract: The investigator using light or electron microscopy to elucidate the histology and ultrastructure of the reproductive organs and gametes of chickens and turkeys is confronted with unique problems. This paper addresses these as well as other more general concerns regarding specimen preparation and laboratory safety. The use of differential interference contrast microscopy coupled with fluorescence microscopy as a means to study the fate of sperm in the oviduct is introduced.

127

NAL Call. No.: 410 B77

Modification of fear in domestic chicks, *Gallus gallus domesticus*, via regular handling and early environmental enrichment.

Jones, R.B.; Waddington, D.

London : Academic Press; 1992 Jun.

Animal behaviour v. 43 (pt.6): p. 1021-1033; 1992 Jun. Includes references.

Language: English

Descriptors: Chicks; Fearfulness; Behavior modification; Handling; Environment; Enrichment; Animal welfare

Abstract: Although its adaptive properties are recognized, fear can harm the welfare and performance of intensively housed poultry. Its alleviation in individually caged domestic chicks via the independent or integrated application of regular handling and environmental enrichment regimes was investigated. The test situations incorporated varying degrees of exposure to novel, inanimate stimuli and of human involvement. Enrichment reduced freezing and avoidance of a novel object introduced into the home cage, accelerated emergence from a sheltered area into an exposed unfamiliar one and increased vocalization, ambulation and pecking in an open field or novel environment. It also reduced the chicks' avoidance of a nearby, visible experimenter and attenuated their tonic immobility reaction to manual restraint. Such wide-ranging effects suggest that environmental enrichment may have modified general, non-specific fearfulness. Regular handling also attenuated the chicks' tonic immobility responses and their avoidance of the experimenter but it exerted few other detectable effects and there was no demonstrable effect of handling in the presence of enrichment. These findings are consistent with the suggestion that repeated gentle handling may exert its strongest influence by facilitating habituation to human beings rather than by, reducing underlying fearfulness. The implications of reduced fearfulness and other potential benefits of handling and enrichment procedures are discussed.

128

NAL Call. No.: SF600.C82

Molecular biology and transgenetics of prions causing CNS degeneration in humans and animals.

Prusiner, S.B.

Dordrecht : Kluwer Academic Publishers; 1991.

Current topics in veterinary medicine and animal science v. 55: p. 59-82;

1991. In the series analytic: Sub-acute spongiform encephalopathies / edited by R. Bradley, M. Savey, and B. Marchant. Proceedings of a Seminar in the CEC Agricultural Research Programme, November 12-14, 1990, Brussels. Literature review. Includes references.

Language: English

Descriptors: Animals; Man; Genes; Disease transmission; Prions; Literature reviews

129

NAL Call. No.: QL55.A1L3

Murine cage density: cage ammonia levels during the reproductive performance of an inbred strain and two outbred stocks of monogamous breeding pairs of mice.

Eveleigh, J.R.

London : Royal Society of Medicine Services; 1993 Apr.

Laboratory animals v. 27 (2): p. 156-160; 1993 Apr. Includes references.

Language: English

Descriptors: Mice; Cage density

Abstract: The Laboratory Animal Breeders Association guidelines recommend a

minimum floor area of 300 cm<sup>2</sup> for a monogamous pair of inbred/outbred mice or a trio of inbreds. The mean level of ammonia produced during lactation from BALB/c, TO and CD-1 breeding pairs housed in M2 cages with a floor area of 300 cm<sup>2</sup> on Day 4 after cleaning was 30 ppm, 87 ppm and 92 ppm, respectively. All 3 strains of mice, particularly the outbred strains, were subjected to high levels of ammonia as compared with human long-term health and safety occupational exposure limits (25 ppm). However, there is a gradient of ammonia within an M2 breeding cage from the nest (19 ppm), to the food hopper, 77 ppm. By housing CD-1 pairs of mice in RM2 cages which have more than double the floor area of M2 cages (676 cm<sup>2</sup>), the mean level of ammonia during lactation on Day 4 after cleaning was reduced to 26 ppm. The reproductive performance on inbred/outbred strains of mice has to be equated with cage size (floor area) to maintain acceptable levels of ammonia. It is suggested that the recommended minimum floor areas for breeding mice be reviewed.

130 NAL Call. No.: QA76.8.I2594M8  
Muscle physiology experiments on skeletal muscle a computer simulation..  
Muscle physiology  
Brown, Guy  
Leeds, UK? : Sheffield Bioscience Programs, 1989; 1989.  
1 computer disk ; 5 1/4 in. + user's guide. Title from title screen. Title on disk and user's guide: Muscle physiology.

Language: N/A

Descriptors: Muscles; Physiological aspects; Computer simulation;  
Musculoskeletal system; Frogs as laboratory animals; Animal testing alternatives

131 NAL Call. No.: QH1.A43  
NABT's policy on the responsible use of animals in biology classrooms: a clarification.  
Reston, Va. : National Association of Biology Teachers; 1991 Feb.  
The American biology teacher v. 53 (2): p. 71; 1991 Feb. Includes references.

Language: English

Descriptors: Animal experiments; Science education; Professional associations; Policy

132 NAL Call. No.: QA76.8.I2594D48  
Nerve physiology experiments on the frog sciatic nerve a computer simulation..  
Nerve physiology  
Dewhurst, David; Johnstone, Sally; Meehan, Anthony  
Leeds, UK? : Sheffield Bioscience Programs, 1989; 1989.  
1 computer disk ; 5 1/4 in. + user's guide. Title from title screen. Title on disk and user's guide: Nerve physiology.

Language: N/A

Descriptors: Nerves; Physiological aspects; Computer simulation; Frogs as laboratory animals; Sciatic nerve; Computer simulation; Animal testing alternatives

133 NAL Call. No.: Videocassette no.973  
Non-human primates basic needs, handling and care.  
Southers, Jan  
American College of Toxicology, Meeting\_1990 : \_Orlando, Fla.), Production Plus, Inc  
Symposium: Animal Welfare Compliance for Study Directors 1990 : Orlando, Fla. Closter, N.J. : Production Plus, Inc., [1990?]; 1990.

1 videocassette (34 min., 43 sec.) : sd., col. ; 1/2 in. VHS. Videotape of a presentation at Symposium: Animal Welfare Compliance for Study Directors; presented at the Eleventh Annual Meeting of the American College of Toxicology, Orlando, Fla., Oct. 1990.

Language: English

Descriptors: Laboratory animals; Primates as laboratory animals; Primates; Animal welfare

Abstract: The physical facilities, environment, caging, sanitization, watering, feeding vermin control, identification of non-human primates. Emphasis is given to preventive medicine, and safety programs required for use with non-human primates.

134 NAL Call. No.: 500 N484

Occupational health guidelines for control of Q fever in sheep research.

Harrison, R.J.; Vugia, D.J.; Ascher, M.S.

New York, N.Y. : The Academy; 1990.

Annals of the New York Academy of Sciences v. 590: p. 283-290; 1990. In the series analytic: Rickettsiology: current issues and perspectives / edited by K.B. Hechemy, D. Paretsky, D.H. Walker, and L.P. Mallavia. Includes references.

Language: English

Descriptors: California; Sheep; Coxiella burnetii; Disease vectors; Health protection; Q fever; Research workers; Zoonoses

135 NAL Call. No.: SF600.C82

Oral transmission studies of BSE to mice.

Barlow, R.M.; Middleton, D.J.

Dordrecht : Kluwer Academic Publishers; 1991.

Current topics in veterinary medicine and animal science v. 55: p. 33-39; 1991. In the series analytic: Sub-acute spongiform encephalopathies / edited by R. Bradley, M. Savey, and B. Marchant. Proceedings of a Seminar in the CEC Agricultural Research Programme, November 12-14, 1990, Brussels. Includes references.

Language: English

Descriptors: Mice; Bovine spongiform encephalopathy; Genetic resistance; Disease transmission

136 NAL Call. No.: aHV4762.A3A64

Oversight of the care and use of animals in animal behavior research in the United States.

Stephens, M.L.

Beltsville, Md. : Animal Welfare Information Center, National Agricultural Library, [1989?]; 1989 Sep.

Animal care and use in behavioral research : regulations, issues, and applications : based on an invited paper session presented at the 1988 meeting of the Animal Behavior Society / Janis Wiley Driscoll, editor. p. 2-8; 1989 Sep. Includes references.

Language: English

Descriptors: U.S.A.; Laboratory animals; Animal welfare; Animal husbandry; Animal behavior; Animal research; Law; Guidelines

137 NAL Call. No.: QL55.A1L33

Partnership in training--a winning combination.

Maltby, C.J.

New York, N.Y. : Nature Publishing Company; 1989 Jul.

Lab animal v. 18 (5): p. 38-39, 41; 1989 Jul. Includes references.

Language: English

Descriptors: Missouri; Laboratory animals; Research institutes; Animal research; Training; Educational programs

138

NAL Call. No.: 60.18 J82

Plant toxins and palatability to herbivores.

Molyneux, R.J.; Ralphs, M.H.

Denver, Colo. : Society for Range Management; 1992 Jan.

Journal of range management v. 45 (1): p. 13-18; 1992 Jan. Paper presented at the "Symposium on Ingestion of Poisonous Plants by Livestock," February 15, 1990, Reno, Nevada. Includes references.

Language: English

Descriptors: Livestock; Poisoning; Poisonous weeds; Senecio; Astragalus; Oxytropis; Plant composition; Phytotoxins; Toxicity; Weed palatability; Pyrrolizidine alkaloids

Abstract: A complex relationship exists between the presence of toxins in a plant species and the palatability of that plant. The nature of the toxin and its concentration within the plant can generally be precisely defined, given a reasonable amount of research commitment, but the measurement of palatability, especially in livestock, is much more difficult to achieve. We hypothesize that analysis of possible roles of toxins in plants, their metabolic activity in animals, and physical and temporal distribution within the plant can be used to examine whether or not such compounds may significantly increase or reduce palatability to mammalian herbivores. Thus, if the toxin is effective in preventing predation of the plant or plant part by insect herbivores, or if it provides the plant with a competitive advantage versus other species, but does not produce adverse effects upon large mammals until significant quantities of biomass are consumed, then the toxin-palatability relationship is not significant. This concept is illustrated by examination of the toxicity produced in livestock by consumption of alkaloid-containing groundsel (Senecio) and locoweed (Astragalus and Oxytropis) species. The prevention of predation by localization of the toxin, mobilization to the site of attack, or production at a particular stage of growth provides opportunities for the application of management techniques designed to reduce exposure of livestock to natural plant toxicants.

139

NAL Call. No.: QL55.A1L3

Population density and growth rate in laboratory mice.

Peters, A.; Festing, M.

London : Royal Society of Medicine Services; 1990 Jul.

Laboratory animals v. 24 (3): p. 273-279; 1990 Jul. Includes references.

Language: English

Descriptors: Mice; Cage density; Growth rate

Abstract: Home Office guidelines recommend an area of 60 cm<sup>2</sup> per mouse for growing mice up to 30 g. However, the overall growth rate, and final adrenal weight of weanling BALB/c and MF1 strain mice was not affected by being housed at a density of down to 27 cm<sup>2</sup> per mouse, though there was some evidence of strain differences in ability to tolerate such dense housing. The presence of cage accessories had no effect on growth rate of BALB/c and female mice, but reduced growth of MF1 and male mice, though the effect was small. It is concluded that present Home Office guidelines make a generous provision for

the space requirements of growing laboratory mice, and that the use of cage accessories of varying design may be worth exploring in more detail.

140 NAL Call. No.: SF493.M54 1992  
Poultry breeders directory a resource guide for backyard poultry keepers and pure breed fanciers., 2nd ed..  
Miller, Megg  
Euroa, Vic. : Night Owl Publishers, c1992; 1992.  
72 p. : ill. ; 21 cm.

Language: English

Descriptors: Poultry

141 NAL Call. No.: 47.8 AM33P  
Poultry science training--what industry needs.  
Snetsinger, D.C.  
Champaign, Ill. : Poultry Science Association; 1992 Aug.  
Poultry science v. 71 (8): p. 1308-1312; 1992 Aug.

Language: English

Descriptors: Agricultural education; Agribusiness; Poultry farming;  
Agriculturalresearch; Problem solving; College curriculum; Graduate study

Abstract: The growth and maturation of the poultry industry has shifted some of the skills and competencies required of its employees. Additional training in problem solving and increased emphasis on human resources and management skills will be required in both graduate and undergraduate programs in poultry science. Exposure to contemporary issues and the processes whereby these are addressed will be valuable. Industry needs well-trained scientists for research and technical support in many disciplines but favored are individuals who have demonstrated inquisitiveness about and knowledge of how their discipline interacts with other facets of food animal production, and business management skills. To be most effective in future positions, graduates need greater awareness of the effects of global economies and the international technology base on the domestic poultry industry. Industry and academia must find new forums for the exchange of needs and must cooperate in training in order to develop the new leaders and managers who will sustain the dynamic growth of the poultry industry well into the twenty-first century.

142 NAL Call. No.: QL55.A1I43  
Principles and guidelines for the use of animals in precollege education.  
Washington, D.C. : Institute of Laboratory Animal Resources, National Research Council; 1989.  
I.L.A.R. news v. 31 (3): p. A1-A3; 1989.

Language: English

Descriptors: Laboratory animals; Animal welfare; Guidelines; Teaching materials; Primary education

143 NAL Call. No.: QL55.A1I43  
Principles and guidelines for the use of animals in precollege education.  
Washington, D.C. : Institute of Laboratory Animal Resources, National Research Council; 1989.  
I.L.A.R. news v. 31 (3): p. A1-A3; 1989.

Language: English

Descriptors: Laboratory animals; Animal welfare; Guidelines; Teaching



materials; Primary education

144 NAL Call. No.: 410.9 P94  
Procedure for training corral-living rhesus monkeys for fecal and blood sample collection.  
Phillippi-Falkenstein, K.; Clarke, M.R.  
Cordova, Tenn. : American Association for Laboratory Animal Science; 1992 Feb.  
Laboratory animal science v. 42 (1): p. 83-85; 1992 Feb. Includes references.

Language: English

Descriptors: Macaca mulatta; Training of animals; Blood specimen collection; Feces collection

145 NAL Call. No.: Slide no.384  
Rabbits bacterial and mycotic diseases.. Rabbits; bacterial and mycotic diseases  
McPherson, Charles W.  
University of Washington, Health Sciences Center for Educational Resources  
Seattle, WA : Produced and distributed by University of Washington, Health Sciences Center for Educational Resources, 1990; 1990.  
60 slides : col. + 1 sound cassette (19 min.) + 1 guide. (Laboratory animal medicine and science. Series 2 ; V-9005). Publication date on guide: 1991.  
Sound accompaniment compatible for manual and automatic operation.

Language: English

Descriptors: Rabbits; Rabbits as laboratory animals

Abstract: Covers clinical signs of rabbit pasteurellosis, enterotoxemia, mucoid enteropathy, treponematosis, mastitis, Tyzzer's Disease, and superficial mycoses.

146 NAL Call. No.: Slide no.382  
Rabbits biology.. Rabbits; biology  
Linn, Jeffrey M.  
University of Washington, Health Sciences Center for Educational Resources  
Seattle, WA : Produced and distributed by University of Washington, Health Sciences Center for Educational Resources, 1990; 1990.  
36 slides : col. + 1 sound cassette (12 min.) + 1 guide. (Laboratory animal medicine and science. Series 2 ; V-9003). Publication date on guide: 1991.  
Sound accompaniment compatible for manual and automatic operation.

Language: English

Descriptors: Rabbits; Rabbits as laboratory animals

Abstract: Includes taxonomy, unique anatomical features, breeds of laboratory rabbits, normal vital signs and hematological values, injection sites, hair growth, gestation, and determining sex.

147 NAL Call. No.: Slide no.381  
Rabbits care and management in a laboratory setting.. Rabbits, care and management in a laboratory setting  
Harwell, James F.; Pucak, George  
University of Washington, Health Sciences Center for Educational Resources  
Seattle, WA : Produced and distributed by University of Washington, Health Sciences Center for Educational Resources, 1990; 1990.  
47 slides : col. + 1 sound cassette (20 min.) + 1 guide. (Laboratory animal medicine and science. Series 2 ; V-9002). Publication date on guide: 1991.  
Sound accompaniment compatible for manual and automatic operation.

Language: English

Descriptors: Rabbits as laboratory animals; Laboratory animals; Animal welfare

Abstract: Covers importance of the environment, writing procedures for care and management to comply with the Animal Welfare Act and the Guide for the Care and Use of Laboratory Animals.

148 NAL Call. No.: Slide no.379

Rabbits introduction to use in research.. Rabbits, introduction to use in research

Van Hoosier, G. L.; DiGiacomo, R. F.

University of Washington, Health Sciences Center for Educational Resources  
Seattle, WA : produced and distributed by University of Washington, Health Sciences Center for Educational Resources, 1990; 1990.

46 slides : col. + 1 sound cassette (19 min.) + 1 guide. (Laboratory animal medicine and science. Series 2 ; V-9001). Publication date on guide: 1991. Sound accompaniment compatible for automatic and manual operation.

Language: English

Descriptors: Rabbits as laboratory animals; Animal welfare

Abstract: Presents laws and guidelines, historical use in research and testing, development of alternatives, attributes as research animals, recognition of pain and disease, and signs and significance of common diseases.

149 NAL Call. No.: Slide no.383

Rabbits noninfectious diseases.. Rabbits, noninfectious diseases

McPherson, Charles W.

University of Washington, Health Sciences Center for Educational Resources  
Seattle, WA : Produced and distributed by University of Washington, Health Sciences Center for Educational Resources, 1990; 1990.

51 slides : col. + 1 sound cassette (18 min.) + 1 guide. (Laboratory animal medicine and science. Series 2 ; V-9004). Publication date on guide: 1991. Sound accompaniment compatible for manual and automatic operation.

Language: English

Descriptors: Laboratory animals; Rabbits as laboratory animals

Abstract: Covers clinical signs of neoplasias, buphthalmia, splay leg, mandibular prognathism, pododermatitis, vertebral dislocation/fracture, gastric trichobezoars, moist dermatitis and nutritional deficiencies.

150 NAL Call. No.: Slide no.380

Rabbits parasitic, protozoal, and viral diseases.. Rabbits, parasitic, protozoal, and viral diseases

Harkness, John E.

University of Washington, Health Sciences Center for Educational Resources  
Seattle, WA : produced and distributed by University of Washington, Health Sciences Center for Educational Resources, 1990; 1990.

35 slides : col. + 1 sound cassette (12 min.) + 1 guide. (Laboratory animal medicine and science. Series 2 ; V-9006). Publication date on guide: 1991. Sound accompaniment compatible for manual and automatic operation.

Language: English

Descriptors: Rabbits as laboratory animals; Rabbits

Abstract: Covers viral, protozoal, and parasitic diseases common to rabbits, clinical and pathologic signs, and diagnostic, treatment, and prevention measures.

151 NAL Call. No.: 49 J82  
Recent progress on analytical techniques for mycotoxins in feedstuffs.  
Chu, F.S.  
Champaign, Ill. : American Society of Animal Science; 1992 Dec.  
Journal of animal science v. 70 (12): p. 3950-3963; 1992 Dec. Paper presented at a symposium entitled "Current Perspectives on Mycotoxins in Animal Feeds," Laramie, WY. Literature review. Includes references.

Language: English

Descriptors: Feeds; Aflatoxins; Screening; Quality controls; Hplc; Immunochemistry; Mycotoxins; Elisa; Laboratory methods; Analytical methods; Literature reviews

Abstract: Analysis of mycotoxins in feedstuffs is a difficult task because only trace amounts of the toxins are present in the sample. However, rapid progress in the area of mycotoxin analysis has been made during the last few years. Simplified sample cleanup protocols and new chromatographic methods, especially HPLC, have been developed. New, more sensitive and versatile instruments such as high-resolution mass spectrometry (MS) and gas chromatography/tandem MS/MS are coming to the market. After 15 yr of laboratory research, immunoassay techniques have gained more acceptance as analytical tools for mycotoxins. Several immunoassay kits for mycotoxins are currently available. The development of these new techniques and their application for monitoring various mycotoxins in foods and feeds are described in this review.

152 NAL Call. No.: SF196.U5A8  
Recent research suggests new approaches to alleviate summer heat-stress infertility in dairy cows.  
Monty, D.E. Jr  
Tucson, Ariz. : The Service; 1989 May.  
Arizona dairy newsletter - University of Arizona, Cooperative Extension Service. p. 1-4; 1989 May. Literature review. Includes references.

Language: English

Descriptors: Dairy cows; Lactating females; Heat stress; Conception rate; Veterinary education

153 NAL Call. No.: SF600.C82  
Recently described scrapie-like encephalopathies of animals: case definitions.  
Wells, G.A.H.; McGill, I.S.  
Dordrecht : Kluwer Academic Publishers; 1991.  
Current topics in veterinary medicine and animal science v. 55: p. 11-24; 1991. In the series analytic: Sub-acute spongiform encephalopathies / edited by R. Bradley, M. Savey, and B. Marchant. Proceedings of a Seminar in the CEC Agricultural Research Programme, November 12-14, 1990, Brussels. Literature review. Includes references.

Language: English

Descriptors: Cattle; Domestic animals; Bovine spongiform encephalopathy; Foodborne diseases; Histopathology; Diagnosis; Literature reviews

154 NAL Call. No.: Videocassette no.968  
Recognition and alleviation of pain and distress Michael D. Kastello.

Kastello, Michael D.  
American College of Toxicology, Meeting\_1990 :\_Orlando, Fla.),Production Plus,  
Inc  
Symposium: Animal Welfare Compliance for Study Directors 1990 : Orlando, Fla.  
Closter, N.J. : Production Plus, Inc., [1990?]; 1990.  
1 videocassette (22 min., 30 sec.) : sd., col. ; 1/2 in. VHS. Videotape of a  
presentation at Symposium: Animal Welfare Compliance for Study Directors;  
presented at the Eleventh Annual Meeting of the American College of  
Toxicology, Orlando, Fla., Oct. 1990.

Language: English

Descriptors: Animal welfare; Euthanasia; Analgesics

Abstract: Relevant definitions and mechanisms for determining and alleviating  
pain are discussed. The responsibilities and interaction of the study  
director, attending veterinarian and the animal care and use committee are  
outlined. Methods to determine the appropriate endpoint of studies are  
proposed.

155 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

156 NAL Call. No.: aHV4701.A952  
Reductions in animal use in veterinary medical education.  
Loew, F.M.  
Beltsville, Md. : National Agricultural Library, AWIC; 1991 Apr.  
Animal Welfare Information Center newsletter v. 2 (2): p. 4; 1991 Apr.  
Includes references.

Language: English

Descriptors: Animal testing alternatives; Veterinary science; Science  
education

157 NAL Call. No.: QP251.A1T5  
Regulation of estrous cycles in dairy cattle: a review.  
Larson, L.L.; Ball, P.J.H.  
Stoneham, Mass. : Butterworth-Heinemann; 1992 Aug.  
Theriogenology v. 38 (2): p. 255-267; 1992 Aug. Paper presented at the  
research symposium on "Reproduction in Farm Animals: Science, Application and  
Models," August 13, 1992, Ithaca, New York. Includes a list of his  
publications. Literature review. Includes references.

Language: English

Descriptors: Dairy cows; Synchronization; Estrus; Ovulation; Prostaglandins;  
Corpus luteum; Progesterone; Heifers; Artificial insemination; Luteolysis;  
Literature reviews

Abstract: Artificial insemination has allowed rapid genetic progress in dairy  
cattle through the use of semen from genetically superior sires. Detection of  
estrus and proper timing of insemination remain as major problems limiting  
reproductive efficiency in dairy herds. Numerous programs for regulating  
estrous cycles have been examined in this review. While several programs

appear promising, results remain variable and the need for accurate detection of estrus has not been eliminated. Nulliparous heifers seem to respond more consistently than lactating cows. Further research is required to develop a successful program that will consistently produce a precise synchrony of estrus and ovulation with normal fertility and be cost effective.

158 NAL Call. No.: aHV4764.U53 1992  
Regulatory enforcement and animal care policy manual.  
United States. Animal and Plant Health Inspection Service. Regulatory  
Enforcement and Animal Care  
Hyattsville, Md.? : U.S. Dept. of Agriculture, Animal and Plant Health  
Inspection Service, Regulatory Enforcement and Animal Care, [; 1992; A  
101.8:An 5/2.  
1 v. (various pagings) : ill., map ; [1992]. Cover title. Shipping list no.:  
92-0382-P. May 1992.

Language: English

Descriptors: Animal welfare

159 NAL Call. No.: 41.8 AM3  
Research and development to enhance laboratory animal welfare.  
Whitney, R.A.  
Schaumburg, Ill. : The Association; 1992 Mar01.  
Journal of the American Veterinary Medical Association v. 200 (5): p. 663-666;  
1992 Mar01. Paper presented at the symposium "Animal welfare and alternatives  
to animals--current knowledge and research needs", July 31, 1991, Seattle,  
Washington. Includes references.

Language: English

Descriptors: Laboratory animals; Animal welfare; Medical research

160 NAL Call. No.: SF5.B74  
Research and extension in livestock development.  
Schiere, J.B.  
Midlothian, Scotland : The Society; 1993.  
BSAP occasional publication : an occasional publication of the British Society  
of Animal Production (16): p. 135-144; 1993. In the series analytic: Animal  
production in developing countries / edited by M. Gill et al. Proceedings of a  
Symposium, September 1991, Wye. Includes references.

Language: English

Descriptors: Animal husbandry; Extension; Diffusion of information; Applied  
research

161 NAL Call. No.: 49 J82  
Research applications of ultrasonic imaging in reproductive biology.  
Griffin, P.G.; Ginther, O.J.  
Champaign, Ill. : American Society of Animal Science; 1992 Mar.  
Journal of animal science v. 70 (3): p. 953-972; 1992 Mar. Paper presented at  
a symposium titled "Application of Ultrasound in Animal Science Research",  
Ames, Iowa. Literature review. Includes references.

Language: English

Descriptors: Mares; Cows; Ultrasonography; Ovaries; Uterus; Graafian  
follicles; Imagery; Corpus luteum; Conceptus; Embryo mortality; Research;  
Literature reviews

Abstract: In the short time that transrectal ultrasonic imaging of the reproductive tract has been used as a research tool, many discoveries have resulted, some of which would otherwise have escaped detection for many years. Ultrasonography provides a wide array of morphologic information without invading or disturbing the tissues. Examinations can be done repeatedly over many days, or a dynamic event (e.g., ovulation) can be monitored in its entirety by continuous observation (e.g., 30 min). Inclusion of ultrasonic examinations in experimental protocols affords the opportunity to associate changing morphology with hormonal and other functional changes. If experimental testing is expected to involve changing morphology, ultrasonic imaging should be considered. End points can be measured or ranked and therefore data can be statistically analyzed for conventional hypothesis testing. The research potential of this technology and its adaptability for computer-assisted assessment go far beyond simplistic determination of ovulation, luteal formation, and pregnancy diagnosis. It is the authors' opinion that ultrasonic imaging is a revolutionary advance in reproductive research that is destined to rival the impact of other technologic breakthroughs, including radioimmunoassay.

162

NAL Call. No.: 41.8 AM3

Research training for veterinarians and graduate education in veterinary medical colleges.

Cornelius, C.E.; Biery, D.N.; Easterday, B.C.; McGuire, T.C. Jr; Pedersen, N.C.; Phemister, R.D.; Pritchard, W.R.

Schaumburg, Ill. : The Association; 1993 May01.

Journal of the American Veterinary Medical Association v. 202 (9): p. 1368-1372; 1993 May01. Includes references.

Language: English

Descriptors: U.S.A.; Veterinary education; Animal experiments; Veterinarians; Graduate study; Veterinary schools

163

NAL Call. No.: Videocassette no.736

The responsible care and use of the canine in research University of Wisconsin, Research Animal Resources Center.. Responsible use and care of the canine in research

Thorsen, Peter

University of Wisconsin--Madison, Research Animal Resources Center

Madison, Wis. : The Center, c1989; 1989.

1 videocassette (30 min.) : sd., col. ; 1/2 in. VHS. A training and instructional video by Peter Thorsen. Title on container: Responsible use and care of the canine in research.

Language: English

Descriptors: Dogs as laboratory animals; Animal welfare; Laboratory animals; Animal immobilization

164

NAL Call. No.: SF600.C82

Review of scrapie-like diseases to 1986.

Kimberlin, R.H.

Dordrecht : Kluwer Academic Publishers; 1991.

Current topics in veterinary medicine and animal science v. 55: p. 1-9; 1991.

In the series analytic: Sub-acute spongiform encephalopathies / edited by R.

Bradley, M. Savey, and B. Marchant. Proceedings of a Seminar in the CEC

Agricultural Research Programme, November 12-14, 1990, Brussels. Includes references.

Language: English

Descriptors: Domestic animals; Bovine spongiform encephalopathy; Scrapie;

Alleles; Disease transmission; Meat and bone meal; Species differences

165 NAL Call. No.: Videocassette no.967  
Rodents basic needs, handling and care.  
Hamm, Thomas E.  
American College of Toxicology, Meeting\_1990 :\_Orlando, Fla.),Production Plus,  
Inc  
Symposium: Animal Welfare Compliance for Study Directors 1990 : Orlando, Fla.  
Closter, N.J. : Production Plus, Inc., [1990?]; 1990.  
1 videocassette (18 min., 21 sec.) : sd., col. ; 1/2 in. VHS. Videotape of a  
presentation at Symposium: Animal Welfare Compliance for Study Directors;  
presented at the Eleventh Annual Meeting of the American College of  
Toxicology, Orlando, Fla., Oct. 1990.

Language: English

Descriptors: Rodents as laboratory animals; Animal welfare

Abstract: Training video for research personnel which includes a discussion  
of animal shipping, identification, viral disease monitoring, confinement  
caging, water, bedding and environment for rodents. Guidelines for determining  
when euthanasia is appropriate are provided.

166 NAL Call. No.: QP251.A1T5  
The role of nutrients, peptide growth factors and co-culture cells in  
development of preimplantation embryos in vitro.  
Kane, M.T.; Carney, E.W.; Ellington, J.E.  
Stoneham, Mass. : Butterworth-Heinemann; 1992 Aug.  
Theriogenology v. 38 (2): p. 297-313; 1992 Aug. Paper presented at the  
research symposium on "Reproduction in Farm Animals: Science, Application and  
Models," August 13, 1992, Ithaca, New York. Includes a list of his  
publications. Literature review. Includes references.

Language: English

Descriptors: Mammals; Embryo culture; In vitro; Culture media; Nutrients;  
Growth factors; Literature reviews

Abstract: Our knowledge of the control of preimplantation embryo development  
and growth is deficient in many aspects as is evidenced by the great  
difficulty there is in growing embryos of many species in vitro while  
maintaining viability. This review discusses recent findings on the roles of  
nutrients, peptide growth factors and co-culture cells in embryo growth and  
development in vitro.

167 NAL Call. No.: Videocassette no.749  
Safe use of pesticides and disinfectants in the poultry industry produced by  
Office of Pesticide Information and Coordination, Integrated Pest Management  
Education and Publications, UC Statewide IPM Project, University of  
California, Davis ; videotaped and edited by Visual Media, Division of  
Agriculture and Natural Resources, UC, Davis.  
University of California, Davis, Visual Media, University of California,  
Davis, Office of Pesticide Information and Coordination  
Davis, CA : Visual Media, [1989?]; 1989.  
1 videocassette (25 min.) : sd., col. ; 1/2 in. VHS.

Language: English

Descriptors: Poultry; Housing; Disinfection; Safety measures; Disinfection and  
disinfectants; Safety measures; Pesticides; Safety measures; Veterinary  
disinfection; Safety measures

Abstract: This videocassette, designed to provide general training for poultry workers, discusses the safe use of pesticides in and around poultry houses and processing plants. It focuses on disinfectants. The program explains the significance of labels and signal words; the three ways pesticides enter the body, through inhalation, ingestion, and absorption; how to use and maintain protective clothing and equipment, properly apply pesticides, properly dispose of containers, handle pesticide spills, recognize pesticide poisoning symptoms, handle medical emergencies, and avoid overexposure of applicators by periodic blood analysis for cholinesterase level. Preventing bird poisoning and avoiding illegal pesticide residues are addressed. Formaldehyde and herbicides are covered. Insecticides, miticides, insect baits and sprays, and rodenticides are mentioned as pesticides used in the poultry industry.

168 NAL Cimal handling and sa  
Sampling, evaluation and utilization of animal genetic resources.

Gregory, K.E.; Dickerson, G.E.

Boston : Kluwer Academic Publishers; 1989.

Biotic diversity and germplasm preservation, global imperatives / Lloyd Knutson and Allan K. Stoner, editors. p. 185-264; 1989. (Beltsville symposia in agricultural research ; 13). Paper presented at a Symposium May 9-11, 1988, Beltsville Agricultural Research Center, Beltsville, Maryland.

Literature review. Includes references.

Language: English

Descriptors: U.S.A.; Domestic animals; Genetic resources; Genetic variation; Germplasm; Resource management; Resource utilization

169 NAL Call. No.: 47.8 AM33P

Sampling methods in behavior research.

Lehner, P.N.

Champaign, Ill. : Poultry Science Association; 1992 Apr.

Poultry science v. 71 (4): p. 643-649; 1992 Apr. Paper contributed to the Symposium on Quantifying the Behavior of Poultry. Includes references.

Language: English

Descriptors: Animal behavior; Activity sampling; Representative sampling; Measurement; Data analysis

Abstract: Animals perform a continuous stream of behavior throughout their lives. Because their behavior is not random, appropriate sampling methods can be used to obtain data that accurately reflect the actual behavior and are valid for answering research questions. Answering questions related to several variables assists in narrowing the choices of sampling methods. First, a determination must be made of what behaviors to measure. If the behaviors are few and easily measured, then All Occurrences Sampling is the method of choice because it generates accurate frequency and duration data through continuous recording. Sequence and Sociometric Matrix Sampling are specialized types of All Occurrences Sampling that are restricted to sampling intra- or interindividual sequences and social interactions (e.g., agonistic), respectively. Second, if who (e.g., specific individual, sex, or genotype) performs the behavior is a major component of the research question, then should be given to Focal Animal (Pair, Group) Sampling. Third, if when or where the behavior is performed is of interest (e.g., activity budget), then Instantaneous or Scan Sampling can often be effective. Ad libitum Sampling does not produce valid data for analyses, but it is useful when formulating and fine-tuning research questions. One-Zero Sampling is not recommended except when the research question relates to the presence or absence of behaviors only. Other factors to consider in selecting a sampling method are duration of the behavior (event or state), desired scale of measurement (nominal, ordinal, interval, or ratio), and logistics (e.g., time, and



equipment and facilities available).

170

NAL Call. No.: QL55.A1L3

The scope for improving the design of laboratory animal experiments.

Festing, M.F.W.

London : Royal Society of Medicine Services; 1992 Oct.

Laboratory animals v. 26 (4): p. 256-267; 1992 Oct. Includes references.

Language: English

Descriptors: Laboratory animals; Animal experiments; Experimental design

Abstract: The factors which need to be taken into account in designing a 'good' experiment are reviewed. Such an experiment should be unbiased, have high precision, a wide range of applicability, it should be simple, and there should be a means of quantifying uncertainty (Cox 1958). The relative precision due to the use of randomized block designs was found to range from 96% to 543% in 5 experiments involving 30 variables. However, a survey of 78 papers published in two toxicology journals showed that such designs were hardly used. Similarly, designs in which more than one factor was varied simultaneously ('factorial designs') were only used in 9% of studies, though interactions between variables such as dose and strain of animal may be common, so that single factor experiments could be misleading. The consequences of increased within-group variability due to infection and genetic segregation were quantified using data published by Gartner (1990). Both substantially reduced precision, but toxicologists continue to use non-isogenic laboratory animals, leading to experiments with a lower level of precision than is necessary. It is concluded that there is scope for improving the design of animal experiments, which could lead to a reduction in animal use. People using animals should be required to take formal training courses which include sessions on experimental design in order to minimize animal use and to increase experimental efficiency.

171

NAL Call. No.: Videocassette no.970

Searching the literature for alternatives Judith Roff.

Roff, Judith

American College of Toxicology, Meeting\_1990 :\_Orlando, Fla.),Production Plus, Inc

Symposium: Animal Welfare Compliance for Study Directors 1990 : Orlando, Fla. Closter, N.J. : Production Plus, Inc., [1990?]; 1990.

1 videocassete (26 min.) : sd., col. ; 1/2 in. VHS. Videotape of a presentation at Symposium: Animal Welfare Compliance for Study Directors; presented at the Eleventh Annual Meeting of the American College of Toxicology, Orlando, Fla., Oct. 1990.

Language: English

Descriptors: Animal welfare; Animal models in research

Abstract: Information which scientists can utilize to determine availability of alternatives to the use of animals in testing or research is provided. There is a detailed description of the information services and products available from major organizations, information centers and scientific databases involved in the alternatives field. In addition, pointers are given on how to effectively define and locate alternative methods.

172

NAL Call. No.: QP251.A1T5

Sexual behavior of farm animals.

Katz, L.S.; McDonald, T.J.

Stoneham, Mass. : Butterworth-Heinemann; 1992 Aug.

Theriogenology v. 38 (2): p. 239-253; 1992 Aug. Paper presented at the research symposium on "Reproduction in Farm Animals: Science, Application and

Models," August 13, 1992, Ithaca, New York. Includes a list of his publications. Literature review. Includes references.

Language: English

Descriptors: Cattle; Sheep; Goats; Sexual behavior; Estrus; Teasing; Sex hormones; Sex differentiation; Literature reviews

Abstract: The field of sexual behavior of domestic farm animals is discussed with emphasis on studies of cattle, sheep and goats. Descriptions are provided of behaviors related to the attractivity, proceptivity and receptivity of females, as well as environmental and physiological factors influencing both male and female sexual behavior. The organizational and activational actions of steroid hormones on behavior are also reviewed.

173

NAL Call. No.: SF379.M37

The shedhand's manual.

Martel, Rosalind

Queensland? : R. Martel?, c1989 (Moorooka, Qld. : Merino Lithographics); 1989. vi, 93 p. : ill. ; 21 cm. (Woolclassing today ; book 1). Includes a shedhand's logbook/reference.

Language: English

Descriptors: Sheep-shearing; Australia; Wool; Australia; Handling; Study and teaching; Wool baling; Study and teaching; Shearing sheds; Australia; Sheep shearers (Persons); Australia

174

NAL Call. No.: SF981.S58

Small animal behavior a short course for veterinarians.

Selcer, Elizabeth Shull; Shell, Linda

Virginia-Maryland Regional College of Veterinary Medicine

S.l. s.n., 1989?; 1989.

8, 3 leaves : ill. ; 28 cm. Cover title. "A seminar for veterinarians and veterinary technicians, November 30, 1989"--leaf following t.p. Contents: Small animal behavior disorders / Elizabeth Shull Selcer--Neurological disorders presenting as behavioral problems / Linda Shell.

Language: English

Descriptors: Pet medicine; Congresses; Animal behavior; Congresses

175

NAL Call. No.: QL750.E74

Social play and physical training: when "not enough" may be plenty.

Bekoff, M.

Berlin, W. Ger. : Paul Parey; 1989 Jan.

Ethology v. 80 (1/4): p. 330-333; 1989 Jan. Includes references.

Language: English

Descriptors: Rats; Rodents; Social behavior; Play; Training (animal)

176

NAL Call. No.: SF600.C82 v.53

Social stress in domestic animals a seminar in the Community Programme for the Coordination of Agricultural Research, held in Brussels, Belgium, 26-27 May 1988.

Zayan, Rene; Dantzer, Robert

Commission of the European Communities, Coordination of Agricultural Research Dordrecht ; Boston : Kluwer Academic Publishers, c1990; 1990.

xvii, 313 p. : ill. ; 25 cm. (Current topics in veterinary medicine and animal science ; v. 53). For the Commission of the European Communities. Includes

bibliographical references.

Language: English

Descriptors: Domestic animals; Psychology; Congresses; Social behavior in animals; Congresses; Crowding stress in animals; Congresses

177 NAL Call. No.: Videocassette no.969  
Sources of information on animal research legislation and animal welfare Robin C. Guy.  
Guy, Robin C.  
American College of Toxicology, Meeting\_1990 :\_Orlando, Fla.), Production Plus, Inc  
Symposium: Animal Welfare Compliance for Study Directions 1990 : Orlando, Fla. Closter, N.J. : Production Plus, Inc., [1990?]; 1990.  
1 videocassette (14 min., 18 sec.) : sd., col. ; 1/2 in. VHS. Videotape of a presentation at Symposium: Animal Welfare Compliance for Study Directors; presented at the Eleventh Annual Meeting of the American College of Toxicology, Orlando, Fla., Oct. 1990.

Language: English

Descriptors: Animal welfare

Abstract: The sources of information for animal welfare legislation, educational materials, databases, alternatives and animal research advocacy are described and addresses provided. Includes information on organizations such as AALAS, AAALAC, AWIC, ILAR, SCAW, CAAT, FRAME, NABR, FBR, iiFAR and others.

178 NAL Call. No.: R747.R62R62  
Staff handbook.  
Rockefeller University. Laboratory Animal Research Center  
New York, N.Y.? : Rockefeller University?, 1989?; 1989.  
1 v. (various pagings) : ill. ; 28 cm. Cover title.

Language: English

Descriptors: Animal experimentation; Handbooks, manuals, etc

179 NAL Call. No.: 41.8 AM3  
Standards for animal research: justification and assessment of alternatives.  
Dresser, R.  
Schaumburg, Ill. : The Association; 1992 Mar01.  
Journal of the American Veterinary Medical Association v. 200 (5): p. 667-669; 1992 Mar01. Paper presented at the symposium "Animal welfare and alternatives to animals--current knowledge and research needs", July 31, 1991, Seattle, Washington. Includes references.

Language: English

Descriptors: Laboratory animals; Animal experiments; Animal testing alternatives; Standards; Animal welfare

180 NAL Call. No.: HV4708.S73  
The Status of animals ethics, education and welfare.  
Paterson, David; Palmer, Mary  
Humane Education Foundation  
Wallingford, Oxon, UK : Published on behalf of the Humane Education Foundation by CAB International, 1989; 1989.  
xi, 257 p. ; 23 cm. Proceedings of a symposium held at Nottingham University

in the summer of 1988. Includes bibliographical references and index.

Language: English

Descriptors: Animals, Treatment of

181 NAL Call. No.: 49 J82  
Supplemental folic acid: a requirement for optimizing swine reproduction.  
Lindemann, M.D.  
Champaign, Ill. : American Society of Animal Science; 1993 Jan.  
Journal of animal science v. 71 (1): p. 239-246; 1993 Jan. Paper presented at  
symposium titled "High Levels of Supplemental Vitamins on Reproduction of  
Swine", Ames, Iowa. Includes references.

Language: English

Descriptors: Pigs; Folic acid; Sow reproduction; Pregnancy; Litter size; Feed  
additives

Abstract: The administration of supplemental folic acid to female reproducing  
swine (either via injection or dietary supplementation) is a fairly recent  
research phenomenon. The majority of publications have occurred during the  
past 5 yr; few publications on this topic appeared before 1983. Although folic  
acid supplementation is a young research area compared to that involving many  
other vitamins, the reported results are quite consistent. There seem to be no  
major benefits to lactational supplementation; although supplementation in  
lactation is effective in elevating sow serum folate, milk folate, and nursing  
pig serum folate, it has not produced changes in sow BW, litter size weaned,  
or pig gain. Supplementation during gestation has yielded a consistent  
benefit: a positive response in total pigs born in all studies. The response  
in gestation of increased litter size seems to be a result of improved embryo  
or fetal survival rather than increased ovulation, although the mechanism  
whereby survival rate is improved is yet to be understood. Clearly,  
supplemental folic acid is required to maximize sow prolificacy.

182 NAL Call. No.: aHV4762.A3A64  
Surveillance of animal care and use in Canada.  
Michener, G.R.  
Beltsville, Md. : Animal Welfare Information Center, National Agricultural  
Library, [1989?]; 1989 Sep.  
Animal care and use in behavioral research : regulations, issues, and  
applications : based on an invited paper session presented at the 1988 meeting  
of the Animal Behavior Society / Janis Wiley Driscoll, editor. p. 9-14; 1989  
Sep. Includes references.

Language: English

Descriptors: Canada; Laboratory animals; Animal welfare; Private  
organizations; Guidelines; Animal husbandry

183 NAL Call. No.: SF601.J62  
Survey of the surgical curricula of veterinary colleges.  
Hartmann, E.P.  
Blacksburg, Va. : The Association of American Veterinary Medical Colleges;  
1990.  
Journal of veterinary medical education v. 17 (1): p. 8-10; 1990. Includes  
references.

Language: English

Descriptors: U.S.A.; Veterinary education; Surgery; College curriculum;  
Surveys; Laboratory animals; Teaching methods; Animal testing alternatives;

Animal welfare

184 NAL Call. No.: SF601.J62  
Survival vs. terminal animal laboratories to teach small animal surgery.  
Bauer, M.S.; Glickman, N.; Salisbury, S.K.; Toombs, J.P.; Prostredny, J.M.  
Blacksburg, Va. : The Association of American Veterinary Medical Colleges;  
1992.  
Journal of veterinary medical education v. 19 (2): p. 54-58; 1992. Includes  
references.

Language: English

Descriptors: Dogs; Cats; Surgery; Teaching methods; Animal experiments;  
Cadavers; Euthanasia; Survival; Veterinary education; College students;  
Attitudes; Beliefs; Learning experiences; Academic achievement; Animal welfare

185 NAL Call. No.: RB125.S79 1992  
Swine as models in biomedical research., 1st ed..  
Swindle, M. Michael; Moody, Donald C.; Phillips, Lucy D.  
Charles River International Symposium on Laboratory Animals 7th : 1989 :  
Danvers, Mass.  
Ames : Iowa State University Press, 1992; 1992.  
xv, 312 p. : ill. ; 24 cm. "Proceedings of the Seventh Charles River  
International Symposium which took place in Danvers, Massachusetts, September  
18-20, 1989"--Pref. Includes bibliographical references and index.

Language: English

Descriptors: Swine as laboratory animals

186 NAL Call. No.: Videocassette no.1593  
Swine handling and transportation Livestock Conservation Institute ; producer,  
Temple Grandin ; production services, Bernetta Communications, Inc..  
Livestock handling guide Livestock trucking guide Handling pigs  
Grandin, Temple  
Bernetta Communications, Livestock Conservation Institute  
Madison, Wis. : The Institute, [c1989?]; 1989.  
1 videocassette (21 min.) : sd., col. ; 1/2 in. + 3 guides. Guides are  
entitled: Livestock handling guide, Livestock trucking guide, and Handling  
pigs.

Language: English

Descriptors: Swine

Abstract: Describes basic principles of pig behavior including vision, flight  
zone, reaction to noise, and following behavior. Shows various handling and  
transportation practices that reduce bruises, decrease injuries, and increase  
efficiency.

187 NAL Call. No.: QL55.I5  
The symbiosis of legislation and of voluntary control--the Canadian  
experience.  
Rowell, H.C.  
Sussex : The Institute; 1991 Apr.  
Animal technology : journal of the Institute of Animal Technology v. 42 (1):  
p. 1-10; 1991 Apr. Includes references.

Language: English

Descriptors: Canada; Animal experiments; Laboratory animals; Teaching;

Training; Testing; Legislation; Regulations; Animal welfare

188 NAL Call. No.: RA1199.4.A54C4  
Target animal safety guidelines for new animal drugs.  
Center for Veterinary Medicine (U.S.). Office of New Animal Drug Evaluation  
Rockville, Md. : The Office, [1989]; 1989.  
66 p. ; 28 cm. Cover title. June 1989.

Language: English

Descriptors: Toxicology; United States; Animal models; Toxicity testing;  
United States; In vivo; Animal experimentation; Law and legislation;  
United States; Veterinary drugs; United States

189 NAL Call. No.: HV4708.S73  
Teaching of animal welfare to veterinary students.  
Stewart, M.F.  
Wallingford, Oxon, UK : CAB International; 1989.  
The status of animals : ethics, education and welfare / edited by David  
Paterson and Mary Palmer. p. 200-206; 1989. Includes references.

Language: English

Descriptors: Veterinary education; Animal welfare

190 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.

191 NAL Call. No.: QL55.I5  
Technicians and the use of animals for teaching purposes.  
Close, B.S.  
Sussex : The Institute; 1990 Dec.  
Animal technology : journal of the Institute of Animal Technology v. 41 (3):  
p. 223-228; 1990 Dec. Includes references.

Language: English

Descriptors: Technicians; European communities; Education; Animals; Animal  
welfare

192

NAL Call. No.: QH324.B39 1989

Techniques and materials in biology care and use of living animals, plants and microorganisms., 2nd ed..

Behringer, Marjorie P.,

Malabar, Fla. : R.E. Krieger Pub., 1989; 1989.

viii, 628 p. : ill. ; 24 cm. New section four / S.N. Postlethwair, R.E.

Kuhrkopf, J.E.J. Habowsky. Includes bibliographical references and index.

Language: English

Descriptors: Biology; Technique; Biology; Laboratory manuals; Laboratory animals

193

NAL Call. No.: 410.9 P94

A ten-track treadmill for running training of dogs.

Arokoski, J.; Kiviranta, I.; Laakkonen, J.; Tiihonen, A.; Sopanen, E.; Ikonen, J.; Nevalainen, T.; Haapanen, K.; Tammi, M.; Helminen, H.J.

Cordova, Tenn. : American Association for Laboratory Animal Science; 1991 Jun.

Laboratory animal science v. 41 (3): p. 246-250; 1991 Jun. Includes references.

Language: English

Descriptors: Dogs; Running; Training of animals; Apparatus

Abstract: A large treadmill was constructed to allow simultaneous running and training of 10 dogs. During a period of 1 year, 10 beagles ran up to 40 km/day at a speed of 5.5 to 6.8 km/h and with an uphill inclination of 15 degrees. By the end of training, the daily running sessions lasted 7 hours. The design of the treadmill and experience of the treadmill training is given. The apparatus was reliable and convenient to use.

194

NAL Call. No.: QL55.I5

Training adult male rhesus monkeys to actively cooperate during in-homecage venipuncture.

Reinhardt, V.

Sussex : The Institute; 1991 Apr.

Animal technology : journal of the Institute of Animal Technology v. 42 (1): p. 11-17; 1991 Apr. Includes references.

Language: English

Descriptors: Macaca mulatta; Blood sampling; Training of animals

Abstract: A training technique is described for ensuring the active cooperation of adult male rhesus monkeys (*Macaca mulatta*) during in-homecage venipuncture. Five single-housed and 10 pair-housed males (average age 8 years) were the subjects of the study. On average, 13 training sessions (range 2-26) were necessary to get a male to voluntarily present a leg in a specially designed opening of the door and to display no resistance during venipuncture. Total time spent with a male until he presented a leg ranged from 16 to 74 minutes, with an average of 40 minutes. Neither the trainer nor the animals received any injuries during the training. Once trained, all males cooperated during in-homecage venipuncture not only with the trainer but also with the attending caretakers. One to two minutes were required to draw a blood sample. It was concluded that training adult male rhesus monkeys to actively cooperate during in-homecage venipuncture increases the scientific value of research by reducing undue distress reactions associated with immobilization. Since the animals cooperate rather than resist, in-homecage venipuncture also minimizes the risk of injury.

195

NAL Call. No.: QL55.A1L33

Training by microchip in the animal facility.  
Miller, L.  
New York, N.Y. : Nature Publishing Company; 1992 Feb.  
Lab animal v. 21 (2): p. 37-41; 1992 Feb.

Language: English

Descriptors: Technicians; Training; Computer techniques

196 NAL Call. No.: Videocassette no.1315  
Training corral-living rhesus monkeys for fecal and blood sample collection  
Jeff Falkenstein Productions ; M.R. Clarke ... [et al.].  
Clarke, M. R.  
Delta Regional Primate Research Center, Jeff Falkenstein Productions  
Covington, LA : Falkenstein Productions : Delta Regional Primate Research  
Center, 1990; 1990.  
1 videocassette (27 min.) : sd., col. ; 1/2 in. + 1 article reprint (3 p.)..

Language: English

Descriptors: Blood; Feces; Rhesus monkey; Animal welfare; Laboratory animals;  
Primates

Abstract: This videotape shows the acclimation techniques to reduce stress for corral-living rhesus monkeys (*Macaca mulatta*) when collecting fecal and blood samples. The monkeys are given food rewards in return for defecation in single holding cages. They also are trained to extend their leg through a modified squeeze cage for unanesthetized bleeding from the saphenous vein. Once the acclimation is completed, the animals are shown to be relaxed during the procedure. One adult female continued to nurse her neonate infant through the venipuncture. This behavior modification is intended to reduce stress and increase safety for the animals and the technicians. This tape also provides a look at the corral facility at the Delta Regional Primate Research Center at Tulane University.

197 NAL Call. No.: QL55.I5  
Training in laboratory animal medicine and science: the Canadian situation.  
McLaughlin, S.  
Sussex : The Institute; 1990 Dec.  
Animal technology : journal of the Institute of Animal Technology v. 41 (3):  
p. 181-190; 1990 Dec. Includes references.

Language: English

Descriptors: Canada; Technical training; Veterinary education; Technicians;  
Veterinarians; Research workers; Laboratory animals

Abstract: Education of technicians, investigators and laboratory animal veterinarians is a matter of increasing concern in Canada. Three basic training models exist for technicians: full-time college programs, in-house courses and a cooperative venture involving a community college (St. Lawrence, Kingston) and participating laboratory animal facilities coast-to-coast across Canada. CALAS/ACTAL maintains a technician registry. Training of investigators is all done currently in-house. In some universities, this training is mandatory. The CCAC syllabus provides guidelines for such training courses. Currently there is not a registry for investigators. There are limited opportunities in Canada for postdoctoral training in laboratory animal medicine for veterinarians. The situation is under review by CALAM which is conducting a needs assessment. Canadian laboratory animal veterinarians seeking recognition for specialised training must do so currently by writing to the Board examination of the American College of Laboratory Animal Medicine (ACLAM).



198 NAL Call. No.: aZ5071.N3  
Training materials for animal facility--personnel January 1979 - August 1990.  
Clingerman, K.J.  
Beltsville, Md. : The Library; 1990 Oct.  
Quick bibliography series - U.S. Department of Agriculture, National  
Agricultural Library (U.S.). (91-07): 18 p.; 1990 Oct. Bibliography.

Language: English

Descriptors: Animal husbandry; Farm workers

199 NAL Call. No.: SF914.A53 1990  
Training of animal care and use personnel: principles and program  
implementation.  
Anderson, L.C.; Brown, M.J.  
Columbia, Md. : American College of Laboratory Animal Medicine, 1990? :.;  
1990.  
Anesthesia and analgesia in laboratory animals : proceedings -- 1990 Forum,  
American College of Laboratory Animal Medicine, Columbia Inn, Columbia,  
Maryland, May 3-6, 1990. p. 113-115; 1990.

Language: English

Descriptors: Training; Technicians; Animal husbandry

200 NAL Call. No.: QL55.I5  
The training of cynomolgus monkeys and how the human/animal relationship  
improves with environmental and mental enrichment.  
Heath, M.  
Sussex : The Institute; 1989 Apr.  
Animal technology : journal of the Institute of Animal Technology v. 40 (1):  
p. 11-22. ill; 1989 Apr. Includes references.

Language: English

Descriptors: Monkeys; Training (animal); Attachment behavior; Environment;  
Social behavior; Cages

201 NAL Call. No.: Q320.B56 no.16  
Transgenic animals proceedings of the Symposium on Transgenic Technology in  
Medicine and Agriculture.  
First, Neal L.; Haseltine, Florence  
Center for Population Research (National Institute of Child Health and Human  
Development)  
Symposium on Transgenic Technology in Medicine and Agriculture 198 8 :  
National Institutes of Health.  
Boston : Butterworth-Heinemann, c1991; 1991.  
xxv, 358 p. : ill. ; 25 cm. (Biotechnology ; 16). Includes bibliographical  
references and index.

Language: English

Descriptors: Transgenic animals; Gene expression; Medicine; Domestic animals

202 NAL Call. No.: QP251.A1T5  
Transgenic farm animals--a critical analysis.  
Wall, R.J.; Seidel, G.E. Jr  
Stoneham, Mass. : Butterworth-Heinemann; 1992 Aug.  
Theriogenology v. 38 (2): p. 337-357; 1992 Aug. Paper presented at the  
research symposium on "Reproduction in Farm Animals: Science, Application and

Models," August 13, 1992, Ithaca, New York. Includes a list of his publications. Literature review. Includes references.

Language: English

Descriptors: Livestock; Transgenics; Genetic engineering; Dna; Species differences; Research projects; Mice; Literature reviews

Abstract: The notion of directly introducing new genes or otherwise manipulating the genotype of an animal is conceptually straightforward and appealing from the standpoints of both speed and precision with which phenotypic changes can be made. Thus, it is little wonder that the imagination of many animal scientists has been captivated by the success others have achieved in introducing foreign genes into mice. Transgenic mice not only exhibit unique phenotypes, but they also pass those traits on to their progeny. However, before transgenic farm animals become a common component of the livestock industry, a number of formidable obstacles must be overcome. In this review we attempt to identify the critical issues that should be considered by both those currently working in the field and those scientists considering the feasibility of initiating a transgenic livestock project. The inefficiency of producing transgenic animals has been well documented. This does not constrain investigators using laboratory animal models, but it has a major impact of applying transgenic technology to farm animals. The molecular mechanisms of transgene integration have not been elucidated, and as a consequence it is difficult to design strategies to improve the efficiency of the process. In addition to the problems associated with integration of new genes, there are inefficiencies associated with collecting and culturing fertilized eggs as well as embryo transfer in farm animals. Transgenic farm animal studies are major logistical undertakings. Even in the face of these practical hindrances, some may be pressured by administrators to embrace this new technology. As powerful as the transgenic animal model system is, currently there are limits to the kinds of agricultural questions that can be addressed. Some uses are so appealing, however, that several commercial organizations have explored this technology. Within the next decade or two, it is likely that many of the technical hurdles will be overc

203

NAL Call. No.: QL55.A1L33

A transitional model for microvascular training: rodent carcasses.

Cooney, T.E.

New York, N.Y. : Nature Publishing Company; 1992 Jun.

Lab animal v. 21 (6): p. 40-41; 1992 Jun. Includes references.

Language: English

Descriptors: Rodents; Carcasses; Technical training

204

NAL Call. No.: QL55.I5

Transport-cage training of caged rhesus macaques.

Reinhardt, V.

Sussex : The Institute; 1992 Apr.

Animal technology : journal of the Institute of Animal Technology v. 43 (1):

p. 57-61; 1992 Apr. Includes references.

Language: English

Descriptors: Macaca mulatta; Transport of animals; Training of animals

Abstract: Caged rhesus macaques (*Macaca mulatta*) were trained to voluntarily enter a transport cage in an attempt to avoid undue distress reactions jeopardizing the validity of research data collected from such subjects. The training program required no extra technical equipment such as cage-squeeze-backs. Patience, gentleness, firmness and a good understanding of the animals were qualities of the animal care personnel ensuring the monkeys'

willingness to cooperate. Of 341 trained adult rhesus macaques tested in the course of a routine weighing procedure, 87.4% (298/341) entered the transport cage promptly. Of the animals that were uncooperative, the majority entered the transport cage after encouragement (18/43) or after being prodded with a stick for no longer than 30 seconds (23/43). Only 2 subjects (0.6% of 341) stubbornly refused to leave their home cage and had to be chemically immobilized before they could be removed. Neither cage location (165 animals in lower-row cages, 176 animals in upper-row cages), sex (237 females, 104 males) or housing condition (67 single-housed animals, 274 pair-housed animals) had a noticeable impact on the animals' cooperativeness during the catching procedure. It was concluded that the time investment in the initial training quickly paid off in predictably swift catching of caged subjects that were not unduly distressed when entering the transport cage.

205 NAL Call. No.: A00110

UC-Davis bends rules on animal surgery.  
Campos, A.  
San Francisco, Calif. : The Chronical Publishing Co; 1991 Jun23.  
San Francisco chronicle. p. B5; 1991 Jun23.

Language: English

Descriptors: California; Animal experiments; Animal welfare; Veterinary education

206 NAL Call. No.: SF407.M37B68

The UFAW handbook on the care and management of cephalopods in the laboratory.. Care and management of cephalopods in the laboratory Care & managem ent of cephalopods in the laboratory  
Boyle, P. R.  
Universities Federation for Animal Welfare  
Potters Bar, Herts. [England] : Universities Federation for AnimalWelfare, c1991; 1991.  
63 p. : ill. ; 25 cm. Includes bibliographical references (p. 53-58).

Language: English

Descriptors: Marine invertebrates as laboratory animals; Cephalopoda

207 NAL Call. No.: QL55.A1I43

UKCCCR guidelines for the welfare of animals in experimental neoplasia.  
Washington, D.C. : Institute of Laboratory Animal Resources, National Research Council; 1989.  
I.L.A.R. news v. 31 (3): p. 16-21; 1989. Includes references.

Language: English

Descriptors: Uk; Laboratory animals; Animal welfare; Neoplasms; Guidelines

208 NAL Call. No.: 410.9 P94

Ultrasound-guided blood sampling of rabbit fetuses.  
Moise, K.J. Jr; Hesketh, D.E.; Belfort, M.M.; Saade, G.; Veyver, I.B. van den; Hudson, K.M.; Rodkey, L.S.  
Cordova, Tenn. : American Association for Laboratory Animal Science; 1992 Aug.  
Laboratory animal science v. 42 (4): p. 398-401; 1992 Aug. Includes references.

Language: English

Descriptors: Rabbits; Fetus; Blood sampling

Abstract: A rabbit animal model for hemolytic disease of the newborn has been previously described. However, evaluating the effects of this disease was limited to histologic and hematologic examinations of liveborn kitlings. To assess the feasibility of in utero blood sampling, we performed ultrasound-guided cardiac sampling of 50 fetuses in 16 New Zealand White does on days 26 and 27 of gestation. The overall rate of successful sampling was 80%. The procedure-related mortality declined to 35% by the third phase of the study. The mean (+/- SD) hematocrit (%) and reticulocyte values (100 RBCs) on day 26 were 26.3 +/- 3.3 and 35.6 +/- 5.1, respectively; values on day 27 were 31.3 +/- 4.9 and 27.5 +/- 7.6. The results of this study suggest that hematologic data can be obtained from rabbit fetuses in the majority of cases with only moderate fetal loss.

209

NAL Call. No.: QP251.A1T5

Ultrasound-guided cannulation of the caudal vena cava in the bovine for selective sampling of ovarian effluent.

Norman, S.T.; Fields, M.J.

Stoneham, Mass. : Butterworth-Heinemann; 1993 Mar.

Theriogenology v. 39 (3): p. 691-701; 1993 Mar. Includes references.

Language: English

Descriptors: Cows; Ultrasonography; Cannulation; Sampling

Abstract: The accuracy of real-time, B-mode ultrasonography was assessed in the visualization and placement of the cannula tip, cranial to the entrance of the ovarian veins as they enter the caudal vena cava of the bovine. A cannula containing a wire guide was introduced into the coccygeal vein via a 14-gauge needle, and was then directed cranially into the caudal vena cava. Once the caudal vena cava was successfully cannulated (7 of 14 cows), ultrasonography allowed for the visualization of the cannula in 7 out of 7 cows. The tip of the cannula was successfully placed cranial to the entrance of the ovarian effluent into the vena cava in 6 of these 7 animals using ultrasound guidance. This was confirmed using progesterone or prostaglandin F2 alpha radioimmunoassay (RIA). The primary limitation to this technique was the initial catheterization of the coccygeal vein which was not achieved in 7 of 14 cows attempted in this study. Successful cannulation was limited to large framed Holstein cows that had at least one calf. Results from this study indicate that real-time, B-mode, ultrasonography is an effective tool for the visualization and accurate placement of the cannula tip within the caudal vena cava. This finding could have implications for research in ovarian hormonal physiology in the cyclic, postpartum or anestrous cow.

210

NAL Call. No.: HV4959.N45U83 1990

The Use and welfare of experimental animals proceedings of the symposium held at the Royal Society of New Zealand, May 1989.

Royal Society of New Zealand

Wellington, N.Z. : The Society, c1990; 1990.

85 p. : 1 ill. ; 30 cm. (Miscellaneous series (Royal Society of New Zealand) ; 22.). Includes bibliographical references.

Language: English

Descriptors: Animal experimentation; Laboratory animals

211

NAL Call. No.: SF406.U84

The Use of animals at Cornell University a policies and procedures manual.

Cornell University, Center for Research Animal Resources

Ithaca, N.Y.? : Cornell University, [1990?]-; 1990-9999.

1 v. (loose-leaf) : ill. ; 30 cm. "Center for Research Animal Resources is responsible for developing this manual, updating and supplementing it as necessary, ... "--P. [5]. Includes bibliographical references and index.

Language: English

Descriptors: Laboratory animals; Animal experimentation; Animal welfare;  
Animal models in research

212 NAL Call. No.: 448.9 AM37  
Use of animals in medical education.  
Chicago, Ill. : The Association; 1991 Aug14.  
JAMA : Journal of the American Medical Association v. 266 (6): p. 836-837;  
1991 Aug14. Includes references.

Language: English

Descriptors: Animal experiments; Medical education; Animal models; Animal  
testing alternatives; Policy; Ethics

213 NAL Call. No.: QL55.A1L3  
Use of cage space by guineapigs.  
White, W.J.; Balk, M.W.; Lang, C.M.  
London : Royal Society of Medicine Services; 1989 Jul.  
Laboratory animals v. 23 (3): p. 208-214; 1989 Jul. Includes references.

Language: English

Descriptors: Guinea pigs; Cage size; Group size; Clustering; Animal welfare;  
Space requirements; Spatial distribution; Diurnal activity; Nocturnal activity

Abstract: Cage space requirements for laboratory animals have been established by Government Regulation and Recommendations. In order to test the adequacy of these space allocations, the use of cage floor area by breeding groups of guineapigs was studied. A computer-coupled video tracking system capable of imaging in low light intensity as well as total darkness was used to determine the average per cent occupancy by guineapigs in all portions of a cage over 12-h light and dark cycles. Simultaneous time synchronized slow motion video recordings permitted an analysis of activity to be coordinated with cage use data. Results of the study revealed that breeding groups of guineapigs utilize the periphery of the cage almost to the total exclusion of the centre of the cage. Approximately 75-85% of an occupancy in both the day and evening hours occurred in 47% of the cage floor area located along the periphery. Analysis of video recordings revealed that the animals remained active throughout the day and night with no prolonged period of quiescence that could be associated with sleep. Results of this study suggest that while guidelines for housing guineapigs based on area allocation per animal can be formulated and are easy to administer, they cannot be supported by the behavioural characteristics of these animals or careful quantitation of their pattern of cage space utilization.

214 NAL Call. No.: SF601.J62  
Use of the laboratory rabbit in the small animal student surgery laboratory.  
Boothe, H.W.; Hartsfield, S.M.  
Blacksburg, Va. : The Association of American Veterinary Medical Colleges;  
1990.  
Journal of veterinary medical education v. 17 (1): p. 16-18; 1990. Includes references.

Language: English

Descriptors: Veterinary education; Surgery; Rabbits; Anesthesia; Surgical  
operations; Learning experiences; Animal anatomy; Animal testing alternatives

215 NAL Call. No.: SF601.V523  
A user's guide to veterinary surgical pathology laboratories or, why do I still get a diagnosis of chronic dermatitis even when I take a perfect biopsy?.  
Dunstan, R.W.  
Philadelphia, Pa. : W.B. Saunders Company; 1990 Nov.  
The Veterinary clinics of North America : Small animal practice v. 20 (6): p. 1397-1417; 1990 Nov. In the series analytic: Advances in Clinical dermatology / edited by D.J. DeBoer. Includes references.

Language: English

Descriptors: Small animal practice; Dogs; Dermatology; Pathology; Skin; Biopsy; Laboratory methods; Skin diseases; Diagnosis; Tissues; Animal tissues; Histopathology; Fixation; History

216 NAL Call. No.: HV4928.U84 1992  
Using animals in intramural research guidelines for investigators.  
NIH Animal Care and Use Committee, NIH Training Center (U.S.)  
Bethesda, Md. : NIH Animal Care and Use Committee : NIH Training Center, [1992]; 1992; HE 20.3008:AN 5/3/992.  
1 v. (various pagings) : ill. ; 28 cm. Cover title. Shipping list no.: 92-0682-P. Includes bibliographical references.

Language: English; English

Descriptors: Laboratory animals; Animal experimentation; Animal welfare

217 NAL Call. No.: aHV4701.A952  
Using training to enhance animal care and welfare.  
Laule, G.  
Beltsville, Md. : National Agricultural Library, AWIC; 1993 Jan.  
Animal Welfare Information Center newsletter v. 4 (1): p. 2, 8-9; 1993 Jan.  
Includes references.

Language: English

Descriptors: Animal welfare; Training of animals; Animal behavior

218 NAL Call. No.: SF1.F64 no.81  
Veterinary diagnostic bacteriology a manual of laboratory procedures for selected diseases of livestock.  
Alton, G. G.  
Food and Agriculture Organization of the United Nations  
Rome : Food and Agriculture Organization of the United Nations, 1990; 1990. ix, 200 p. ; 21 cm. (FAO animal production and health paper ; 81). Includes bibliographical references.

Language: English

Descriptors: Veterinary medicine; Veterinary clinical pathology; Livestock

219 NAL Call. No.: 41.8 AM3  
The welfare of excess animals: status and needs.  
Thornton, G.W.  
Schaumburg, Ill. : The Association; 1992 Mar01.  
Journal of the American Veterinary Medical Association v. 200 (5): p. 660-662; 1992 Mar01. Paper presented at the symposium "Animal welfare and alternatives to animals--current knowledge and research needs", July 31, 1991, Seattle, Washington. Includes references.

Language: English

## Author Index

- Abramson, Charles I. 104
- Adams, M. 76
- Adsit, K.I. 14, 71
- Agricultural Training Board 89
- Air Chief Marshal the Lord Dowding Fund for Humane Research 64
- Alton, G. G. 218
- American Association of Zoological Parks and Aquariums 33
- American College of Toxicology, Meeting 1990 : Orlando, Fla.), Production Plus, Inc. 8, 24, 40, 113, 133, 154, 165, 171, 177
- Anderson, Dale L. 88
- Anderson, G.B. 125
- Anderson, L.C. 199
- Animal Welfare Foundation of Canada 32
- Arends, M.W. 59
- Arokoski, J. 193
- Asa, Cheryl S. 33
- Ascher, M.S. 134
- Association for the Study of Animal Behaviour, Animal Behavior Society 70
- Association of Veterinary Teachers and Research Workers 83
- Bacon, W.L. 65
- Bailey, J.S. 51
- Bakst, M.R. 126
- Balk, M.W. 213
- Ball, P.J.H. 157
- Barlow, R.M. 135
- Barnes, Charles D., 61
- Bateson, P. 29
- Bauer, M.S. 184
- Beary, B. 94
- Beck, A.M. 25
- Beckett, S.D. 48
- Behringer, Marjorie P., 192
- Bekoff, M. 175
- Belfort, M.M. 208
- Bellows, R.A. 121
- Bennett, B. T. 69
- Bernetta Communications, Livestock Conservation Institute 186
- Biery, D.N. 162
- Bloomsith, M.A. 81
- Boothe, H.W. 214
- Borchard, Ronald E. 61
- Boyle, P. R. 206
- Branch, C.E. 48
- Brent, L.Y. 81
- Brouwer, G. 116
- Brown, Guy 130
- Brown, K.F.D. 67
- Brown, M. J. 69
- Brown, M.J. 199

- Bruner, L.H. 6
- Buckwell, A.C. 116
- Bunyan, J. 86, 116
- Burt, Sandi, 120
- Campos, A. 205
- Carney, E.W. 166
- Carter, G. R. 124
- Center for Population Research (National Institute of Child Health and Human Development) 201
- Center for Veterinary Medicine (U.S.). Office of New Animal Drug Evaluation 188
- Chengappa, M. M. 124
- Chiasson, Robert B. 107
- Chicago Zoological Society, Brookfield Zoo (Ill.) 35
- Chu, F.S. 151
- Cirelli, A. Jr 93
- Cisar, C.F. 57
- Clarke, M. R. 196
- Clarke, M.R. 144
- Cleveland, Arthur G. 11
- Clingerman, K.J. 198
- Close, B.S. 191
- Commission of the European Communities, Coordination of Agricultural Research 176
- Cooney, T.E. 203
- Corah, L.R. 121
- Cornelius, C.E. 162
- Cornell University, Center for Research Animal Resources 211
- Coulter, G.H. 34
- Curtis, John L. 41, 42
- Curtis, Stanley 72, 73
- Dantzer, Robert 176
- Darby, T.E. 22
- Dawkins, Marian Stamp 70
- Dehority, Burk A. 114
- Delta Regional Primate Research Center 196
- Demarest, J. 96
- Dewhurst, David 64, 132
- Dickerson, G.E. 168
- DiGiacomo, R. F. 148
- Dresser, R. 179
- Duncan, I.J.H. 122
- Dunstan, R.W. 215
- Easterday, B.C. 162
- Ellington, J.E. 166
- Eltherington, L. G. 61
- Engler, Kevin 27
- Ernst, D. 90
- Ernst, K. 90
- Eveleigh, J.R. 129
- Ewald, Bruce H. 24
- Faulkner, D.R. 56
- Fawver, A.L. 48
- Fernando, R.L. 101
- Festing, M. 139
- Festing, M.F.W. 170
- Fields, M.J. 209



- First, Neal L. 201
- Fitzgerald, A.L. 60
- Food and Agriculture Organization of the United Nations 218
- Fraser, Laura 21
- Frye, Fredric L. 37
- Gad, Shayne C. 113
- Ginther, O.J. 161
- Glickman, L.T. 25
- Glickman, N. 184
- Glickman, N.W. 25
- Gonzalez, Carlos 84
- Goodfellow, K.G. 39
- Gosling, Morris 70
- Grandin, T. 90, 190
- Grandin, Temple 155, 186
- Gray, K.N. 14, 71
- Greene, S.A. 54
- Greenfield, C.L. 59
- Gregory, J.A. 116
- Gregory, K.E. 168
- Griffin, P.G. 161
- Griffiths, P.H.M. 116
- Grunberg, N.E. 57
- Guitani, A. 109
- Guttman, Helene N. 85
- Guy, Robin C. 177
- Haapanen, K. 193
- Hamm, Thomas E. 165
- Hammond, K. 119
- Hand, Suzanne 38
- Harkness, John E. 150
- Harrison, R.J. 134
- Hartmann, E.P. 183
- Hartsfield, S.M. 214
- Harwell, James F. 147
- Haseltine, Florence 201
- Havenstein, G.B. 65
- Heath, M. 200
- Hedrich, Hans J. 76
- Heidbrink, G.A. 23
- Helminen, H.J. 193
- Herdt, T.H. 45
- Hesketh, D.E. 208
- Howard, B.R. 116
- Hudson, K.M. 208
- Humane Education Foundation 180
- Humane Slaughter Association 89
- Ikonen, J. 193
- Imbert, C. 50
- Institute of Biology 86
- Institute of Laboratory Animal Resources (U.S.), Committee on Care and Use of Laboratory Animals 78
- Institute of Laboratory Animal Resources (U.S.), Committee on Educational Programs in Laboratory Animal Science 62

- Institute of Laboratory Animal Resources (U.S.), Committee on Immunologically Compromised Rodents 95
- Institute of Laboratory Animal Resources (U.S.), Committee on Infectious Diseases of Mice and Rats 47, 99
- International Council for Laboratory Animal Science 76
- Jackson, C. 12
- Johnson, A.L. 59
- Johnson, L.A. 52
- Johnstone, Sally 132
- Jones, H. 116
- Jones, R.B. 127
- Kane, M.T. 166
- Castello, Michael D. 154
- Katz, L.S. 172
- Kent, George C. 11
- Kiley-Worthington, M. 30
- Kimberlin, R.H. 4, 164
- King, F.A. 20
- Kinzie, M.B. 92
- Kiracofe, G.H. 121
- Kiviranta, I. 193
- Kosanke, S.D. 49
- Laakkonen, J. 193
- Laboratory Animal Training Association 28, 53
- Ladiges, W.C. 7
- Lang, C.M. 213
- Lanyon, L.E. 97
- Large, Amanda 17
- Larson, L.L. 157
- Laule, G. 217
- Leavitt, E.S. 94
- Lehner, P.N. 169
- Leopold, R.A. 103
- Lewin, H.A. 101
- Lieberman, R.P. 44
- Lindemann, M.D. 181
- Linn, Jeffrey M. 146
- Loew, F.M. 156
- MacKenzie, D. 115
- Maikel, R.P. 60
- Maltby, C.J. 137
- Martel, Rosalind 173
- Martin, Donn D. 11
- Mason, W.A. 66
- Massey University, New Zealand Veterinary Association, State Veterinarians Branch, Foundation for Continuing Education 26
- Mastromarino, A.J. 14, 71
- McConnell, P.B. 2, 117
- McDonald, C.A. 119
- McDonald, T.J. 172
- McGill, I.S. 153
- McGlone, J. 90
- McGuire, T.C. Jr 162
- McLaren, D.G. 101

- McLaughlin, Charles Albert, 107
- McLaughlin, S. 197
- McPherson, Charles W. 145, 149
- Meehan, Anthony 64, 132
- Michener, G.R. 182
- Middleton, D.J. 135
- Milburn, C. 102
- Miller, L. 195
- Miller, Megg 140
- Millican, K.G. 116
- Minnaar, Maria 68
- Minnaar, Phillip 68
- Moise, K.J. Jr 208
- Molyneux, R.J. 138
- Monty, D.E. Jr 152
- Moody, Donald C. 185
- Moore, James N. 31, 74
- Morgan, Ronald L. 40
- Morris, Debra Deem 31, 74
- National Agricultural Library (U.S.), Animal Welfare Information Center 27
- National Agricultural Library (U.S.), University of Illinois at Chicago 69
- National Association for Humane and Environmental Education (U.S.) 5
- National Institutes of Health (U.S.) 100
- National Pest Control Association 46
- Nestor, K.E. 65
- Nevalainen, T. 193
- Niekraz, M.A. 49
- NIH Animal Care and Use Committee, NIH Training Center (U.S.) 216
- Norman, H.D. 18
- Norman, S.T. 209
- North America Livestock, Inc. 31, 74
- O'Donoghue, P.N. 116
- Orlans, F.B. 91
- Palmer, Mary 180
- Paterson, David 180
- Patterson, D.J. 121
- Pedersen, N.C. 162
- Perry, M.A. 49
- Perry, R.C. 121
- Peters, A. 139
- Petersen, Gunner V. 26
- Peterson, N.S. 63
- Phemister, R.D. 162
- Phillippi-Falkenstein, K. 144
- Phillips, Lucy D. 185
- PMI Feeds, Inc 15, 16
- Porter, R.I. 55
- Powell, Douglas A. 84
- Powell, R.L. 18
- Pritchard, W.R. 162
- Prostredny, J.M. 184
- Prusiner, S.B. 128
- Public Responsibility in Medicine and Research (Association), Tufts University, School of Medicine, School of Veterinary Medicine 3, 13

- Pucak, George 147
- Pursel, V.G. 52
- Ralphs, M.H. 138
- Randolph, M.M. 49
- Regnier, J.F. 50
- Reinhardt, V. 194, 204
- Renner, P.A. 65
- Robb, J.W. 123
- Robertson, B.T. 48
- Robinson, D.L. 119
- Rockefeller University. Laboratory Animal Research Center 178
- Rodkey, L.S. 208
- Roff, Judith 171
- Rojas, R.R. 103
- Rose, Margaret 17
- Rosenzweig, Lionel J. 10
- Rowsell, H.C. 36, 75, 187
- Royal Society of New Zealand 210
- Royal Zoological Society of New South Wales 38
- Ruys, Theodorus, 87
- Saade, G. 208
- Salisbury, S.K. 184
- Schachter, J. 43
- Schapiro, S.J. 81
- Scharmann, W. 98
- Schiere, J.B. 160
- Schofield, J. C. 69
- Schook, L.B. 101
- Scientists Center for Animal Welfare (Washington, D.C.) 85
- Seidel, G.E. Jr 202
- Selcer, Elizabeth Shull 174
- Sharp, J.G. 44
- Shell, Linda 174
- Silesia Companies, Inc 88
- Smallwood, James E. 80
- Smith, D.M. 44
- Smith, M.W. 108
- Snetsinger, D.C. 141
- Sopenan, E. 193
- Southers, Jan 133
- Staigmiller, R.B. 121
- Stark, D.M. 9
- Stephens, M.L. 136
- Stewart, M.F. 189
- Stowe, H.D. 45
- Strauss, R.T. 92
- Stribley, J.A. 44
- Stricklin, W.R. 58
- Swindle, M. Michael 185
- Talmadge, S.A. 57
- Tammi, M. 193
- Thornton, G.W. 219
- Thorsen, Peter 163
- Tiihonen, A. 193

- Tomasovic, S. P. 14
- Tomasovic, S.P. 71
- Toombs, J.P. 184
- Torrence, M.E. 25
- Trentham, L. 48
- Turner, J.W. 119
- United States, Agricultural Research Service, National Program Staff 72, 73
- United States, Animal and Plant Health Inspection Service, Regulatory Enforcement and Animal Care 158
- Universities Federation for Animal Welfare 110, 111, 206
- University of California, Davis, Visual Media, Office of Pesticide Information and Coordination 167
- University of Tennessee, Memphis, Dept. of Comparative Medicine 106
- University of Washington, Health Sciences Center for Educational Resources 145, 146, 147, 148, 149, 150
- University of Wisconsin, Madison, Research Animal Resources Center 163
- Van Hoosier, G. L. 148
- Veyver, I.B. van den 208
- Virginia-Maryland Regional College of Veterinary Medicine 174
- Vugia, D.J. 134
- Waddington, D. 127
- Wagner, W.C. 19
- Wall, R.J. 202
- Weir, Amy 31, 74
- Wells, G.A.H. 153
- Wheaton, L.G. 54
- White, G.L. 49
- White, K.K. 54
- White, N. A. 31, 74
- White, W.J. 213
- Whitney, R.A. 159
- Wilson, M.S. 116
- Wrathall, A.E. 67
- Wroblewski, A.J. 59
- Yang, X.Z. 125
- Zayan, Rene 176

## **Subject Index**

- Academic achievement 184
- Accuracy 45, 119
- Acoustic properties 2
- Acoustics 117
- Activity sampling 169
- Aflatoxins 151
- Age 121
- Agribusiness 141
- Agricultural education 141
- Agricultural research 141
- Ai bulls 34
- Alleles 164
- Analgesics 154
- Analytical methods 151
- Anatomy 10, 11, 107, 107
- Anatomy, Comparative 11
- Anesthesia 214
- Animal anatomy 214

- Animal behavior 2, 30, 117, 122, 136, 169, 174, 190, 217
- Animal experimentation 3, 13, 69, 70, 83, 100, 178, 188, 210, 211, 216
- Animal experiments 14, 19, 20, 22, 36, 60, 75, 77, 94, 109, 115, 131, 162, 170, 179, 184, 187, 205, 212
- Animal housing 190
- Animal husbandry 9, 49, 58, 136, 160, 182, 198, 199
- Animal immobilization 163
- Animal models 7, 36, 59, 95, 188, 212
- Animal models in research 27, 84, 113, 171, 211
- Animal physiology 48
- Animal research 43, 58, 96, 136, 137
- Animal rights 21, 21
- Animal testing alternatives 6, 7, 50, 54, 63, 92, 115, 130, 132, 156, 179, 183, 212, 214
- Animal tissues 215
- Animal welfare 3, 5, 8, 12, 13, 14, 17, 20, 21, 21, 22, 24, 25, 26, 28, 29, 31, 32, 36, 39, 40, 53, 54, 58, 62, 63, 64, 66, 69, 72, 73, 75, 77, 79, 81, 83, 84, 85, 88, 89, 94, 96, 98, 100, 102, 111, 115, 116, 118, 122, 127, 133, 136, 142, 143, 147, 148, 154, 155, 158, 159, 163, 165, 171, 177, 179, 182, 183, 184, 187, 189, 191, 196, 205, 207, 211, 213, 216, 217, 219
- Animals 88, 89, 128, 191
- Animals, laboratory 13, 17
- Animals, Treatment of 180
- Apparatus 193
- Applied research 160
- Artificial insemination 157
- Assessment 29
- Astragalus 138
- Attachment behavior 200
- Attitudes 102, 184
- Australia 173, 173, 173, 173
- Beef cattle 119
- Beef cows 121
- Behavior modification 127
- Beliefs 184
- Bioethics 32, 123
- BioetP 31
- Biological competition 51
- Biology 192, 192
- Biopsy 215
- Biotelemetry 33
- Blood 196
- Blood analysis 45
- Blood sampling 194, 208
- Blood serum 45
- Blood specimen collection 144
- Body fat 119
- Bovine spongiform encephalopathy 67, 135, 153, 164
- Breeders' associations 108
- Breeds 18
- Broilers 51
- Buyers' guides 1, 105, 112
- Cadavers 184
- Cage density 129, 139
- Cage size 213
- Cages 98, 200
- California 134, 205

- Campylobacter jejuni 51
- Canada 182, 187, 197
- Cannulation 209
- Captive wild animals 37, 38
- Carcass composition 119
- Carcasses 203
- Careers 57
- Catheterization 44
- Cats 10, 184
- Cats as laboratory animals 40
- Cattle 34, 41, 42, 101, 153, 172
- Cephalopoda 206
- Certification 23
- Chickens 126
- Chicks 51, 127
- Chlamydia 43
- Ciliata 114
- Cloning 125
- Clustering 213
- Cold shock 103
- Cold storage 103
- Cold tolerance 103
- Colic 31, 74
- College curriculum 25, 54, 141, 183
- College students 184
- Colleges 96
- Commensals 51
- Commercial products 113
- Committees 9
- Communicable diseases in animals 124
- Computer assisted instruction 48
- Computer simulation 64, 130, 132, 132
- Computer software 63
- Computer techniques 195
- Conception rate 152
- Conceptus 161
- Congresses 85, 85, 174, 174, 176, 176, 176
- Corpus luteum 157, 161
- Cosmetics 6
- Costs 65, 81
- Cows 161, 209
- Coxiella burnetii 134
- Crossbreds 121
- Crowding stress in animals 176
- Cryoprotectants 52, 103
- Culture media 166
- Curriculum 56
- Dairy cows 45, 97, 152, 157
- Dairy farms 97
- Data analysis 169
- Dermatology 215
- Design 190
- Diagnosis 153, 215
- Diffusion of information 160

- Disease models 7
- Disease transmission 4, 128, 135, 164
- Disease vectors 134
- Disinfection 167
- Disinfection and disinfectants 167
- Dissection 5, 10, 107
- Diurnal activity 213
- Dna 202
- Dogs 2, 184, 193, 215
- Dogs as laboratory animals 40, 163
- Domestic animals 43, 52, 153, 164, 168, 176, 201
- Draft animals 30
- Drugs 61
- Duration 122
- Education 20, 55, 56, 57, 75, 94, 102, 191
- Educational objectives 54
- Educational programs 23, 49, 109, 137
- Educational reform 54
- Educational technology 63
- Eggs 51
- Elisa 151
- Embryo culture 125, 166
- Embryo mortality 161
- Embryo transfer 67
- Embryonic development 125
- Embryos 125
- Embryos (animal) 52
- Emu farming 68
- Energy consumption 65
- Enrichment 81, 127
- Environment 81, 127, 200
- Errors 45, 119
- Estrus 157, 172
- Ethics 25, 212
- Europe 115
- European communities 115, 191
- Euthanasia 154, 184
- Experimental design 170
- Extension 160
- Farm management 97
- Farm workers 198
- Fat thickness 119
- Fearfulness 127
- Feces 196
- Feces collection 144
- Feed additives 181
- Feed mixing 45
- Feed supplements 45
- Feeds 151
- Ferrets as laboratory animals 40,84
- Fertilization 125
- Fertilizers 97
- Fetus 208
- Fixation 215



- Fluorescent dyes 126
- Foals 93
- Folic acid 181
- Food safety 51
- Foodborne diseases 153
- Freezing 52
- Frogs as laboratory animals 130, 132
- Gene banks 18
- Gene expression 201
- Gene mapping 101
- Genes 128
- Genetic engineering 202
- Genetic improvement 101
- Genetic markers 101
- Genetic resistance 135
- Genetic resources 18, 52, 103, 168
- Genetic variation 168
- Germplasm 18, 52, 103, 168
- Goats 172
- Graafian follicles 161
- Graduate study 141, 162
- Great Britain 55
- Group size 213
- Growth rate 139
- Growth factors 166
- Guidelines 58, 77, 81, 116, 136, 142, 143, 182, 207
- Guides 58
- Guinea pigs 213
- Guinea pigs as laboratory animals 64
- Handbooks, manuals, etc 178
- Handling 90, 127, 173, 190
- Hatcheries 51
- Hay 45
- Health protection 134
- Heat stress 152
- Heifers 121, 157
- Histochemistry 126
- Histopathology 153, 215
- History 43, 215
- Horses 31, 74
- Housing 167
- Hplc 151
- Humane education 5, 27
- Ileum 64
- Imagery 161
- Immunochemistry 151
- Immunological deficiency syndromes 95
- Immunology 95
- Imprinting 93
- In tubation 84
- In vitro 34, 166
- In vivo 188
- Inbreeding 76
- Indiana 60

- Information centers 79
- Information systems 18
- Insects 103
- Interference 126
- Invertebrates 103, 104
- Invertebrates as laboratory animals 37
- Invertebrates as pets 37
- Italy 109
- Laboratory animal technicians 53
- Laboratory animals 1, 3, 8, 9, 12, 13, 14, 15, 16, 22, 23, 31, 32, 36, 40, 47, 48, 49, 53, 54, 56, 57, 60, 61, 62, 69, 70, 71, 75, 78, 80, 82, 86, 87, 91, 96, 98, 99, 100, 105, 106, 108, 110, 112, 113, 116, 118, 133, 136, 137, 142, 143, 147, 149, 159, 163, 170, 179, 182, 183, 187, 192, 196, 197, 207, 210, 211, 216
- Laboratory equipment 112
- Laboratory mammals 4
- Laboratory manuals 10, 10, 11, 11, 107, 107, 192
- Laboratory methods 45, 151, 215
- Laboratory rearing 39, 56
- Lactating females 152
- Law 94, 118, 136
- Law and legislation 188
- Laying performance 65
- Learning experiences 184, 214
- Learning in animals 104
- Legislation 75, 94, 109, 187
- Licenses 118
- Light regime 65
- Lighting 65
- Lipopolysaccharides 51
- Literature reviews 34, 97, 121, 122, 125, 128, 151, 153, 157, 161, 166, 172, 202
- Litter size 181
- Livestock 18, 58, 72, 73, 138, 155, 190, 202, 218
- Livestock numbers 97
- Llamas as pets 120
- Longissimus dorsi 119
- Luteolysis 157
- Macaca mulatta 144, 194, 204
- Major genes 101
- Male fertility 34
- Mammals 107, 125, 166
- Man 128
- Mares 161
- Marine invertebrates as laboratory animals 206
- Measurement 169
- Meat and bone meal 164
- Medical 111
- Medical education 212
- Medical research 7, 14, 159
- Medicine 201
- Mice 46, 47, 99, 129, 135, 139, 202
- Mice as laboratory animals 47, 99
- Microbial contamination 51
- Microscopy 126
- Miniature pigs 44
- Minks as laboratory animals 40

- Missouri 137
- Molecular genetics 101
- Monkeys 200
- Muscles 130
- Musculoskeletal system 130
- Mycotoxins 151
- Neoplasms 7, 207
- Nerves 132
- Neuropharmacology 64
- Nocturnal activity 213
- Non-food products 6
- Normal values 45
- Nutrients 166
- Nutritional state 121
- Organization of research 101
- Organizations 22
- Ova 126
- Ovaries 161
- Overpopulation 219
- Oviducts 126
- Ovulation 157
- Oxytropis 138
- Pain 29, 36, 75
- Pathology 215
- Pediatrics 84
- Personnel 14, 56
- Pesticides 167
- Pet medicine 174
- Pets 219
- Ph 50
- Pharmacology, Experimental 61
- Physical activity 2
- Physical laboratories 87
- Physiological aspects 130, 132
- Phytotoxins 138
- Pigs 45, 90, 101, 181
- Plan implementation and evaluation 81
- Plant composition 138
- Play 175
- Poisoning 138
- Poisonous weeds 138
- Policy 131, 212
- Poultry 43, 58, 122, 140, 167
- Poultry farming 141
- Pregnancy 181
- Preservation 18
- Primary education 142, 143
- Primates 66, 81, 133, 196
- Primates as laboratory animals 111, 133
- Prions 128
- Private organizations 182
- Problem solving 141
- Professional associations 131
- Progesterone 157

- Progestogens 121
- Program evaluation 71
- Prostaglandins 157
- Psychology 176
- Puberty 121
- Public opinion 20
- Public relations 22
- Public schools 94
- Puppies 39
- Pyrrolizidine alkaloids 138
- Q fever 134
- Quality controls 151
- Quantitative genetics 101
- Quantitative traits 101
- Questionnaires 57
- Rabbits 107, 145, 146, 150, 208, 214
- Rabbits as laboratory animals 145, 146, 147, 148, 149, 150
- Racehorses 45
- Rats 47, 76, 99, 175
- Rats as laboratory animals 76
- Rats as laboratory animals 47, 99
- Rattus norvegicus 46
- Record keeping 81
- Regulation 118
- Regulations 96, 115, 187
- Representative sampling 169
- Reproductive performance 121
- Research 56, 75, 161
- Research institutes 137
- Research projects 202
- Research support 19, 101
- Research workers 134, 197
- Resource management 168
- Resource utilization 168
- Rhesus monkey 196
- Ribs 119
- Rodents 95, 175, 203
- Rodents as laboratory animals 28, 85, 95, 165
- Rumen 114
- Ruminants 4
- Rump 119
- Running 193
- Runoff water 97
- Safety measures 167, 167, 167, 167
- Salmonella 51
- Sampling 209
- Sciatic nerve 132
- Science education 77, 91, 92, 96, 131, 156
- Scrapie 67, 164
- Screening 151
- Secondary education 77
- Selenium 45
- Selenosis 45
- Semen 126

- Semen characters 34
- Semen preservation 34, 52
- Senecio 138
- Senses 190
- Sex differentiation 172
- Sex hormones 172
- Sexual behavior 172
- Shearing sheds 173
- Sheep 67, 101, 134, 172
- Sheep shearers (Persons) 173
- Sheep-shearing 173
- Skin 215
- Skin diseases 215
- Slaughter 190
- Slaughtering and slaughter-houses 155
- Small animal practice 215
- Social behavior 175, 200
- Social behavior in animals 176
- Social development 66
- Social interaction 66
- Soil analysis 97
- Sounds 2
- Sow reproduction 181
- Space requirements 213
- Spatial distribution 213
- Species differences 45, 164, 202
- Spermatozoa 34, 52, 126
- Spongiform encephalopathy 4
- Standards 179
- Strain differences 65
- Stray animals 219
- Stress factors 190
- Study and teaching 84, 173, 173
- Surgery 54, 59, 125, 183, 184, 214
- Surgery, Aseptic and antiseptic 28
- Surgical operations 214
- Surveys 96, 183
- Survival 184
- Swine 186
- Swine as laboratory animals 185
- Synchronization 157
- Teaching 58, 75, 187
- Teaching materials 92, 142, 143
- Teaching methods 48, 54, 183, 184
- Teasing 172
- Technical training 23, 197, 203
- Technicians 23, 55, 57, 60, 191, 195, 197, 199
- Technique 192
- Testing 6, 122, 187
- Tissues 215
- Toxicity 138
- Toxicity testing 188
- Toxicology 188
- Trachea 84

- Training 9, 14, 55, 56, 57, 71, 137, 187, 195, 199
- Training (animal) 175, 200
- Training courses 60, 119
- Training of animals 30, 93, 117, 122, 144, 193, 194, 204, 217
- Transgenic animals 201
- Transgenics 101, 202
- Transport of animals 82, 204
- Turkeys 65
- U.S.A. 12, 22, 23, 25, 94, 96, 118, 136, 162, 168, 183
- Uk 108, 116, 207
- Ultrasonic fat meters 119
- Ultrasonography 119, 161, 209
- United States 188, 188, 188
- Universities 60
- University research 101
- Usda 118
- Uterus 161
- Vertebrates 11, 38
- Vertical transmission 67
- Veterinarians 9, 17, 162, 197
- Veterinary anatomy 80
- Veterinary clinical pathology 124, 218
- Veterinary disinfection 167
- Veterinary dissection 80
- Veterinary drugs 188
- Veterinary education 25, 54, 59, 152, 162, 183, 184, 189, 197, 205, 214
- Veterinary medicine 17, 19, 218
- Veterinary profession 36
- Veterinary schools 19, 162
- Veterinary science 156
- Veterinary surgery 28
- Videodiscs 48, 92
- Washington 54
- Water quality 97
- Weaning weight 121
- Weed palatability 138
- Wildlife management 38
- Wildlife rescue 38
- Wool 173
- Wool baling 173
- Zoo animals 33, 35, 118
- Zoo keepers 35
- Zoology 9
- Zoonoses 43, 134

**Animal Welfare Information Center  
United States Department of Agriculture  
National Agricultural Library**

*USDA Cooperative Agreement No. 58-0520-5-076 - July, 1995*

\_\_\_\_\_