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Laboratory Animal Facilities and Management

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Search Strategy

Set	Description
S1	(LABORATORY OR EXPERIMENTAL)()ANIMAL??
S2	(BREEDING OR MANAGEMENT OR HOUSING OR CAGE? OR CAGING OR FACILIT?)
S3	S1 AND S2
S4	S3 AND PY=1985:1995
S5	RD (unique items)

1 NAL Call. No.: QL55.J55
Breeding and care for wild woodchucks (*Marmota monax*) by indoor and outdoor housing
Shiga, J.; Yamamoto, K.; Ito, M.; Koshimizu, K.
Tokyo : Keio University School of Medicine; 1989 Apr.
Jikken dobutsu; experimental animals v. 38 (2): p. 155-158. ill; 1989 Apr. Includes references.

Language: Japanese

Descriptors: Marmot; Animal husbandry; Animal housing; Breeding; Carcinoma; Neoplasms; Disease models; Domestication

2 NAL Call. No.: QL55.A1L33
1985 buyer's guide.
New York : Media Horizons; 1985 Oct.
Lab animal v. 13 (7): 93 p.; 1985 Oct.

Language: English

Descriptors: U.S.A.; Laboratory animals; Buyers' guides; Directories; Boxes; Cages; Equipment; Diets; Veterinary services

3 NAL Call. No.: 41.8 AM3
Abortion, stillbirth, neonatal death, and nutritional myodegeneration in a rabbit breeding colony.
Yamini, B.; Stein, S.
Schaumburg, Ill. : The Association; 1989 Feb15.
Journal of the American Veterinary Medical Association v. 194 (4): p. 561-562. ill; 1989 Feb15. Includes references.

Language: English

Descriptors: Rabbits; Abortion; Fetal death; Neonatal mortality; Nutritional muscular dystrophy; Symptoms; Vitamin e

4 NAL Call. No.: 410.9 P94
Acute restraint device for rhesus monkeys.
Robbins, D.O.; Zwick, H.; Leedy, M.; Stearns, G.
Joliet, Ill. : American Association for Laboratory Animal Science; 1986 Feb. Laboratory animal science v. 36 (1): p. 68-70. ill; 1986 Feb. Includes references.

Language: English

Descriptors: Rhesus monkeys; Restraint of animals; Immobilization; Cages; Design

5

NAL Call. No.: 410.9 P94

Adrenal and body temperature changes in rabbits exposed to varying effective temperatures.

Besch, E.L.; Brigmon, R.L.

Cordova, Tenn. : American Association for Laboratory Animal Science; 1991 Jan. Laboratory animal science v. 41 (1): p. 31-34; 1991 Jan. Includes references.

Language: English

Descriptors: Rabbits; Temperature; Body temperature; Adrenal glands; Stress; Corticosterone; Blood plasma

Abstract: Eight adult New Zealand White rabbits were exposed individually, in series, to each of 23 effective temperatures (teff) until body temperature (tb) increased 1.1 degree C or for a period of 2 hours. Body temperature was measured to the nearest 0.1 degree C using FM radio transmitters in the pre-test (baseline) condition and at 2 minute intervals during the test conditions where teff ranged between 21.7 and 34.7 degrees C. The frequency at which the rabbits displayed a 1.1 degree C rise in tb was related to the magnitude of the teff, with 100% of the rabbits manifesting this change at teff greater than 30.2 degrees C. At teff of 28.4 through 30.2 degrees C, some, but not all, of the rabbits showed a 1.1 degree C rise in tb whereas none displayed the 1.1 degree C rise in tb at teff below 28.4 degrees C. The mean time necessary for the 1.1 degree C rise in tb was negatively correlated ($P < 0.01$) to the magnitude of the teff. The significantly ($P < 0.01$) elevated plasma corticosterone in rabbits exhibiting 0.6 degrees C and 1.1 degree C rise in tb suggests that those animals were stressed physiologically by the experimental procedure. It is concluded that the conditions associated with increased tb induce physiological changes commonly associated with stressors and that the techniques reported herein should be useful in establishing upper environmental temperature limits for housing rabbits.

6

NAL Call. No.: QL55.I5

Advances in the management of primates kept for biomedical research. Sainsbury, A.W.; London; Mew, J.A.; Purton, P.; Eaton, B.D.; Cooper, J.E. Sussex : The Institute; 1990 Aug. Animal technology : journal of the Institute of Animal Technology v. 41 (2): p. 87-101. ill; 1990 Aug. Includes references.

Language: English

Descriptors: Marmosets; Macaca fascicularis; Laboratory rearing; Animal welfare; Cages; Diet; Restraint of animals; Identification; Medical research

Abstract: Changes in the management of colonies of Long-tailed macaques (*Macaca fascicularis*) and Common marmosets (*Callithrix jacchus*) kept at the Royal College of Surgeons Research Establishment are outlined. Over the course of a year the welfare of the macaques has been improved by a series of changes in their housing coupled with modifications in their diet. In addition a new system of chemically immobilizing the macaques has been advised. Advances in marmoset management have been less far reaching but a prototype of a new housing system is being built, a number of studies are in progress

aimed at enriching the environment and a change in diet has been carried out. These developments are discussed in the context of increasing concern over the need to house and manage primates under optimum conditions.

7 NAL Call. No.: Z7994.L3A5

Adverse effects in animals and their relevance to refining scientific procedures.

Morton, D.B.

Nottingham : Fund for the Replacement of Animals in Medical Experiments; 1990 Nov.

Alternatives to laboratory animals : ATLA v. 18: p. 29-39; 1990 Nov. Includes references.

Language: English

Descriptors: Laboratory animals; Animal welfare

Abstract: This paper highlights the areas in which refinement, with the specific aim of reducing laboratory animal pain, distress and anxiety, can be achieved. Good husbandry and housing which meet the animals' behavioural needs, careful and gentle handling, competence in carrying out scientific procedures, and alleviation of any unwanted side-effects, are all of paramount importance. Whilst "suffering" cannot easily be tightly defined, it is essential to recognise when an animal is suffering so that its alleviation can be instigated.

8 NAL Call. No.: QL55.A1L3

Allergy to laboratory mice and rats: a review of its prevention, management, and treatment.

Hunskar, S.; Fosse, R.T.

London : Royal Society of Medicine Services; 1993 Jul.

Laboratory animals v. 27 (3): p. 206-221; 1993 Jul. Includes references.

Language: English

Descriptors: Allergies; Laboratory animals

Abstract: Allergy to laboratory animals is reviewed from a management point of view. Personnel issues, medical therapy, legal aspects, animal house environments and work routines are discussed. Modern methods of medical treatments are presented but it is recommended that environmental control should be given priority over drugs. Several ventilation and building design systems are reviewed from an ALA viewpoint. New technology (including down-ventilated benches, ventilated cages) is reviewed and possible effectiveness analysed. These systems, though potentially of value, lack adequate testing under clinical conditions. We conclude that there are many clinically untested techniques that remain to be proven and whose efficacy has not been documented.

9 NAL Call. No.: 41.8 AM3

Alternatives to chronic restraint of nonhuman primates.

Morton, W.R.; Knitter, G.H.; Smith, P.M.; Susor, T.G.;

Schmitt, K. Schaumburg, Ill. : The Association; 1987 Nov15.

Journal of the American Veterinary Medical Association v. 191 (10): p. 1282-1286. ill; 1987 Nov15. Includes references.

Language: English

Descriptors: Primates; Restraint of animals; Cages

10 NAL Call. No.: 410.9 P94
Alternatives to continuous social housing.
Bayne, K.
Cordova, Tenn. : American Association for Laboratory Animal
Science; 1991 Aug. Laboratory animal science v. 41 (4): p.
355-359; 1991 Aug. Includes references.

Language: English

Descriptors: Primates; Animal housing; Environment; Enrichment

Abstract: Although social housing is desirable for social species of nonhuman primates, circumstances arise whereby social housing is precluded (for example, certain kinds of infectious disease or toxicologic research, when the health of the animal(s) would be compromised by social housing, and animals which respond behaviorally in an inappropriate manner to social housing). Nonsocial alternatives that provide increased environmental complexity to the home cage should then be considered. Nonsocial "environmental enrichment" schemes can be designed to enhance the expression of an individually housed nonhuman primate's locomotive/postural, manipulative, and foraging behaviors. In this way, nonsocial, but species-typical, behaviors can be promoted in the single cage housing condition.

11 NAL Call. No.: QL55.A1L3
Ambulatory electrocardiography (Holter monitoring) in caged monkeys. Vogel, A.P.; Jaax, G.P.; Tezak-Reid, T.M.; Baskin, S.I.; Bartholomew, J.L. London : Royal Society of Medicine Services; 1991 Jan.
Laboratory animals v. 25 (1): p. 16-20; 1991 Jan. Includes references.

Language: English

Descriptors: Macaca mulatta; Electrocardiography; Monitoring

Abstract: A swivel-tethering and jacket system was used in conjunction with vinyl patch electrodes and Holter recorders to obtain continuous ECG recordings in 12 rhesus monkeys on a long-term (12 day) study. Animals were custom-fitted with nylon mesh jackets that were connected to a swivel unit by a flexible, stainless steel tether. Lead wires from the chest electrodes passed through the tether to the electrical swivel apparatus located at the top of the cage. Wires from the upper part of the swivel were attached to a reel-to-reel Holter recorder. This technique was used to obtain 24-h continuous ECG recordings, which were later processed using a computer-assisted Holter analysis system.

12 NAL Call. No.: HV4701.A34
Animal boredom: is a scientific study of the subjective experiences of animals possible?.
Wemelsfelder, F.
Boston : Martinus Nijhoff Publishers; 1985, reprinted 1984.
Advances in animal welfare science (1985).: p. 115-154; 1985, reprinted 1984. Includes references.

Language: English

Descriptors: Livestock; Poultry; Laboratory animals; Animal behavior; Animal housing; Animal welfare; Stress; Boredom

13 NAL Call. No.: QH432.E9

Animal breeding practice.

Webb, A.J.

Oxford, UK : CAB; 1989.

Evolution and animal breeding : reviews on molecular and quantitative approaches in honour of Alan Robertson / edited by William G. Hill and Trudy F.C. Mackay. p. 195-202; 1989.

Language: English

Descriptors: Pigs; Animal breeding; Quantitative genetics; Selection; Genetic variation; Crossing; Population structure; Laboratory animals

14 NAL Call. No.: QL55.I5

Animal caging: is big necessarily better?.

Bantin, G.C.; Sanders, P.D.

Sussex : The Institute; 1989 Apr.

Animal technology : journal of the Institute of Animal Technology v. 40 (1): p. 45-54. ill; 1989 Apr. Literature review. Includes references.

Language: English

Descriptors: United Kingdom; Laboratory animals; Animal housing; Legislation; Animal welfare; Cage size

15 NAL Call. No.: QL55.A1L33

Animal census with off-the-shelf software.

Coons, D.; Haesemeyer, J.

New York : Media Horizons; 1986 Mar.

Lab animal v. 15 (2): p. 49-50; 1986 Mar.

Language: English

Descriptors: Laboratory animals; Facilities; Censuses; Computer applications

16 NAL Call. No.: QL55.A1L33

Animal cubicles: questions, answers, options, opinions.

Hessler, J.R.

New York, N.Y. : Nature Publishing Company; 1993 Apr.

Lab animal v. 22 (4): p. 21-22, 24-25, 28-36; 1993 Apr.

Includes references.

Language: English

Descriptors: Laboratory animals; Animal housing

17 NAL Call. No.: QL55.A1L33

Animal facilities: planning for flexibility.

Graves, R.G.

New York, N.Y. : Nature Publishing Company; 1990 Sep.

Lab animal v. 19 (6): p. 29-32, 37-40, 42, 44, 46, 48-50. ill;

1990 Sep.

Language: English

Descriptors: Animal housing; Laboratory animals

18 NAL Call. No.: QL55.A1L33

Animal facility portable sinks.

Kirk, K.

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

Lab animal v. 21 (2): p. 50-54; 1992 Feb.

Language: English

Descriptors: Laboratory equipment; Mobile equipment

19 NAL Call. No.: QL55.U5 1987

The animal house: design, equipment and environmental control., 6th ed. Clough, G.

London : Longman; 1987.

The UFAW handbook on the care and management of laboratory animals / edited by Trevor B. Poole; editorial assistant, Ruth Robinson. p. 108-143; 1987.

Language: English

Descriptors: Laboratory animals; Animal housing; Structural design; Laboratory equipment; Environmental control

20 NAL Call. No.: QL55.A1L3

Animal house stock control based on bar-coded cage labels.

Wootton, R.

Essex : Laboratory Animal Science Association; 1985 Oct.

Laboratory animals v. 19 (4): p. 359-367. ill; 1985 Oct.

Includes references.

Language: English

Descriptors: Laboratory animals; Information services; Inventories; Data collection; Computers; Records; Stocks; Animal husbandry

21 NAL Call. No.: QL55.U5 1987

Animal production and breeding methods., 6th ed.

Festing, M.F.W.

London : Longman; 1987.

The UFAW handbook on the care and management of laboratory animals / edited by Trevor B. Poole; editorial assistant, Ruth Robinson. p. 18-34; 1987.

Language: English

Descriptors: Laboratory animals; Animal production; Breeding methods; Animal breeding

22 NAL Call. No.: 470 SCI2

Animal regulations: so far, so good.

Holden, C.

Washington, D.C. : American Association for the Advancement of Science; 1987 Nov13.

Science v. 238 (4829): p. 880-882. ill; 1987 Nov13.

Language: English

Descriptors: U.S.A.; Laboratory animals; Regulations;
Facilities; Laboratories; Animal welfare; Standards; Usda

23 NAL Call. No.: KF27.A33277 1990f
Animal research facilities protection joint hearing before the Subcommittee on Department Operations, Research, and Foreign Agriculture and the Subcommittee on Livestock, Dairy, and Poultry of the Committee on Agriculture, House of Representatives, One Hundred First Congress, second session, February 28, 1990.
United States. Congress. House. Committee on Agriculture. Subcommittee on Department Operations, Research, and Foreign Agriculture; United States, Congress, House, Committee on Agriculture, Subcommittee on Livestock, Dairy, and Poultry Washington [D.C.] : U.S. G.P.O. : For sale by the Supt. of Docs., Congressional Sales Office, U.S. G.P.O.,; 1991; Y 4.Ag 8/1:101-52. iv, 176 p. : ill. ; 24 cm. Distributed to some depository libraries in microfiche. Serial no. 101-52.

Language: English

Descriptors: Criminal procedure; Laboratories; Animal welfare; Laboratory animals

24 NAL Call. No.: QL55.A1L33
"Animal research protocol management system".
DeWees, D.L.; Silverman, J.
New York, N.Y. : Nature Publishing Company; 1992 Oct.
Lab animal v. 21 (9): p. 54-56, 58, 60; 1992 Oct.

Language: English

Descriptors: Animal experiments; Computer software

25 NAL Call. No.: 410.9 P94
Animal research review in an industrial facility.
Knauff, D.R.
Joliet, Ill. : American Association for Laboratory Animal Science; 1987 Jan. Laboratory animal science v. 37 (special issue): p. 129-131; 1987 Jan. In the series analytic: Effective animal care and use committees / edited by F.B. Orland, R.C. Simmonds, W.J. Dodds. Includes references.

Language: English

Descriptors: Pennsylvania; Laboratory animals; Animal research; Animal welfare; Regulations; Industry; Animal experiments; Committees

26 NAL Call. No.: Videocassette no.738
Animal Resource Facility training program a training program in laboratory animal care & use.. Animal training videotape Manual for general information related to animal research Texas Tech University, Health Sciences Center Lubbock, Tex. : Texas Tech University, Health Sciences Center,; 1987. 1 videocassette (42 min.) : Db sd., col. ; 1/2 in. + 1 manual. VHS. Title on label: Animal training

videotape. Title on manual: A manual of general information related to animal research.

Language: English

Descriptors: Laboratory animals; Animal welfare; Law and legislation; United States; Animal experimentation

27 NAL Call. No.: HV4930.W45 1993

Animal use in Department of Defense research facilities an analysis of "Annual reports of research facility" filed with the U.S. Department of Agriculture, 1986-1991.

Weichbrod, Robert H.

c1993; 1993.

xii, 262 leaves : ill. ; 28 cm. Vita. Includes bibliographical references (leaves 247-253).

Language: English

Descriptors: Animal experimentation

28 NAL Call. No.: 410.9 P94

Ankylosis of hock joints in group caged male B6C3F1 mice. Rao, G.N.; Lindsey, J.R.

Cordova, Tenn. : American Association for Laboratory Animal Science; 1988 Aug. Laboratory animal science v. 38 (4): p. 417-421. ill; 1988 Aug. Includes references.

Language: English

Descriptors: Mice; Strains; Pathogen free animals; Males; Cages; Joints (animal); Ankylosis; Hocks

Abstract: Enlarged hock joints were observed during 1983 in B6C3F1 mice of chronic toxicity and carcinogenicity studies sponsored by the National Toxicology Program (NTP). Subsequently, approximately 9,500 B5C3F1 mice on 32 NTP chemical toxicity and carcinogenicity studies were evaluated for this condition by clinical examination. Group caged male B6C3F1 mice had thickening and reduced mobility of the hock joints at prevalences of 1.2% up to 6 months of age; 23% at 6 to 12 months of age; and 62% at 13 to 26 months of age. Group caged female B6C3F1 mice had a prevalence of 2% or less. Histologically, affected mice had periarticular exostoses on the bones of the hock joints, with formation of bony bridges around joints and deposition of new bone in joint spaces, resulting in partial or complete ankylosis. Individually caged male and female B6C3F1 mice were not affected. The cause of the ankylosis was not determined, but its occurrence in the NTP studies has been reduced by individual caging.

29 NAL Call. No.: QL55.A1I43

Annotated bibliography on uncommonly used laboratory animals: mammals. Fine, J.; Quimby, F.W.; Greenhouse, D.D.

Washington, D.C. : Institute of Laboratory Animal Resources, National Research Council; 1986.

I.L.A.R. news v. 29 (4): p. 3A-38A. ill; 1986. Literature review.

Language: English

Descriptors: Laboratory animals; Mammals; Classification;

Animal nutrition; Animal housing; Veterinary services

30

NAL Call. No.: QL785.A725

Anticipatory contrast as a measure of time horizons in the rat: some methodological determinants.

Lucas, G.A.; Gawley, D.J.; Timberlake, W.

Austin, Tex. : Psychonomic Society; 1988 Nov.

Animal learning & behavior v. 16 (4): p. 377-382; 1988 Nov.

Includes references.

Language: English

Descriptors: Rats; Feeding behavior; Time; Measurement; Food intake; Saccharin; Methodology

Abstract: In three experiments, the time horizon over which the rat evaluates alternative feeding sources was investigated. The time horizon was measured by the suppression of intake of one incentive (a 0.15% saccharin solution) when a preferred alternative incentive (a 32% sucrose solution) was available but delayed. In Experiment 1, we found a direct function between the amount of saccharin intake and the delay time before access to 32% sucrose. Compared with intake for a saccharin-only control, saccharin intake was suppressed before 4-min and 16-min sucrose delays, but not before a 32-min delay. Because previous work (Flaherty & Checke, 1982) had reported suppression before a delay of nearly 32 min, in the subsequent experiments we examined factors that might account for this difference. In Experiment 2, we found that saccharin intake was suppressed before a 32-min delay interval when saccharin and sucrose solutions were presented in a bright-novel test environment but not when the same solutions were presented in the home cage. In Experiment 3, we found that the time between testing and subsequent postsession feeding could also affect the suppression of saccharin intake. Saccharin intake was suppressed when access to 32% sucrose was delayed by 32 min and the test situation was followed by immediate postsession feeding, but not when postsession feeding was delayed by 90 min. These results thus extend estimates of the rat's time horizon to at least 32 min, but indicate that the effective time horizon can vary, depending on the test situation.

31

NAL Call. No.: QL55.F43 1987

The application of embryo transfer and cryopreservation to commercial laboratory animal breeding. Cryopreservation of mouse strains by a quick freezing method.

Dagnaes-Hansen, F.

Dordrecht : M. Nijhoff; 1988.

New developments in biosciences : their implications for laboratory animal science : proceedings of the Third Symposium, Amsterdam, The Netherlands, 1-5 June 1987 / edited by Anton C. Beyneen and Henk A. Solleveld. p. 375-378; 1988.

Includes references.

Language: English

Descriptors: Mice; Strains; Embryos (animal); Transfers; Freezing; Preservation

32

NAL Call. No.: 410.9 P94

The application of scid mouse technology to questions in

reproductive biology. Croy, B.A.

Cordova, Tenn. : American Association for Laboratory Animal Science; 1993 Apr. Laboratory animal science v. 43 (2): p. 123-126; 1993 Apr. Paper presented at a conference entitled "The Scid Mouse in Biomedical and Agricultural Research," August 5-7, 1992, Guelph, Canada. Includes references.

Language: English

Descriptors: Immune competence; Mice

Abstract: Mice expressing the scid gene have been used to study major questions in the field of reproductive immunology. Transfer of *Mus caroli* embryos to the uteri of pseudopregnant scid/scid mice disproved the hypothesis that antigen-specific immune rejection of fetuses was occurring in this model of midgestational pregnancy failure. The results of breeding studies of mice having the scid/scid.bg/bg genotype suggested that uterine lymphocytes have little or no role in promoting embryonic survival under pathogen-free conditions. Further, the results of in vitro studies using uterine lymphocytes from these immunodeficient mice suggested that the cytokines important for pregnancy success were not lymphocyte-derived. Xenogeneic engraftment of embryonic and uterine tissues into scid/scid and scid/scid.bg/bg mice is also successful and has the potential for facilitating studies of the fetomaternal interface in domestic animal species, such as cows and horses, as well as in humans.

33 NAL Call. No.: SF407.P7T49 1991

Applied primate ecology: evaluation of environmental changes intended to promote psychological well-being., 1st ed.; Erwin, J.M.

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. 180-188; 1991. Includes references.

Language: English

Descriptors: Primates; Animal welfare; Environmental factors; Social environment; Cages

34 NAL Call. No.: SF406.L2

Are we ready for the future? Possibilities for laboratory animal science. Dayan, A.D.

London : Royal Society of Medicine Services for Laboratory Animals; 1988. Laboratory Animal Science Association Silver Jubilee 1988 : collected papers to celebrate LASA's 25th anniversary / edited by J.H. Seamer. p. 36-42; 1988.

Language: English

Descriptors: Laboratory animals; Animal experiments; Facilities; Research; Animal testing alternatives

35 NAL Call. No.: 410.9 P94

Aspergillus rhinitis in Wistar (Crl:(WI)BR) rats.

Rehm, S.; Waalkes, M.P.; Ward, J.M.

Cordova, Tenn. : American Association for Laboratory Animal Science; 1988 Apr. Laboratory animal science v. 38 (2): p. 162-166. ill; 1988 Apr. Includes references.

Language: English

Descriptors: Rats; Strains; Aspergillus fumigatus; Rhinitis; Histopathology

Abstract: In two separate 24 month studies on the carcinogenic effect of single cadmium chloride injections in male Wistar (CR1:(WI)BR) rats, a total of 22% (129/597) of animals studied histologically were found to have chronic suppurative rhinitis caused by Aspergillus fumigatus. The diagnosis was based on characteristic conidial heads present in the sections, and positive methenamine-Grocott (GMS) staining of septate hyphae with dichotomous branching at angles of 45 degrees. Fungal hyphae balls, surrounded by a wall of neutrophilic granulocytes, were found in areas of the naso- and maxilloturbinates and occasionally caused complete blockage of the nasal passages. The underlying tissue showed an inflammatory response. In sections from 32 of the 129 cases (25% of the cases), epithelial necrosis and hemorrhage were indicative of fungal tissue invasion, but without dissemination to other organs. The infection rate was unaffected by the cadmium treatment or the location of rats in different cages. Positive antibody titers to Sendai and sialodacryoadenitis viruses suggested that transient inflammation of the upper respiratory tract rendered the mucosa susceptible to the fungal infection. The infection appeared to be sustained by growth around foreign bodies (hairs and plant material). Although focal squamous cell metaplasia of the respiratory epithelium with hyperplasia and hyperkeratosis occurred more frequently in rats with Aspergillus rhinitis, the incidence of tumors of the nasal cavities was not affected.

36 NAL Call. No.: QL55.A1L33
Assessing laboratory life for golden hamsters: social preference, caging selection, and human interaction. Arnold, C. New York, N.Y. : Nature Publishing Company; 1994 Feb. Lab animal v. 23 (2): p. 34-37; 1994 Feb. Includes references.

Language: English

Descriptors: Golden hamsters; Social behavior; Cages; Floors; Man; Interactions; Handling

37 NAL Call. No.: QL55.A1L3
Assessment of discomfort in gallstone-bearing mice: a practical example of the problems encountered in an attempt to recognize discomfort in laboratory animals. Beynen, A.C.; Baumans, V.; Bertens, A.P.M.G.; Havenaar, R.; Hesp, A.P.M.; Zutphen, L.F.M. van Essex : Laboratory Animal Science Association; 1987 Jan. Laboratory animals v. 21 (1): p. 35-42. ill; 1987 Jan. Includes references.

Language: English

Descriptors: Mice; Biliary calculi; Pain; Symptoms; Animal husbandry; Animal housing; Diets

Abstract: In order to obtain practical experience on the

recognition, assessment and evaluation of discomfort in laboratory animals, the degree of discomfort was studied in gallstone-free and gallstone-bearing mice. Out of nine parameters to which scores were assigned per individual mouse, only the response to palpation of the right hypochondrium was found to score significantly higher in gallstone-bearing mice. That is, the incidence of squeaking and the magnitude of muscular contractions were significantly higher in these animals compared with the gallstone-free mice. The stance of the gallstone-bearing mice also tended to be abnormal, although the difference between gallstone-free and gallstone-bearing animals did not reach statistical significance. Although this study does not prove unequivocally that the induction of gallstones per se causes discomfort or pain in mice, we tentatively conclude that it does. We feel that this should be taken into account in any projected work in which gallstone induction in animals may occur. There was considerable between-assessor variation in the assignment of scores to the variables used to assess discomfort, including the response to palpation. It is concluded that the selection of parameters and the experience and/or attitude of the assessor are critically important when the magnitude of discomfort, if any, is assessed in experimental animals.

38 NAL Call. No.: QL55.I5
Atherosclerosis in modified WHHL rabbits.
Richards, T.; Horlock, H.; Gallagher, P.
Sussex : The Institute of Animal Technology; 1986 Apr.
Animal technology : journal of the Institute of Animal
Technology v. 37 (1): p. 1-6; 1986 Apr. Includes references.

Language: English

Descriptors: Rabbit feeding; Diets; Atherosclerosis; Breeding programs; Hyperlipemia

39 NAL Call. No.: 410.9 P94
An attempt to eradicate Herpesvirus simiae from a rhesus monkey breeding colony.
Sauber, J.J.; Fanton, J.W.; Harvey, R.C.; Golden, J.G.
Cordova, Tenn. : American Association for Laboratory Animal Science; 1992 Oct. Laboratory animal science v. 42 (5): p. 458-462; 1992 Oct. Includes references.

Language: English

Descriptors: Macaca mulatta; Herpesviridae

40 NAL Call. No.: QL55.A1L33
The automated animal care facility.
Miller, L.
New York, N.Y. : Nature Publishing Company; 1990 Sep.
Lab animal v. 19 (6): p. 54-56; 1990 Sep.

Language: English

Descriptors: Laboratory animals; Animal housing; Automation

41 NAL Call. No.: QL55.A1L33
Automation of the animal care facility.
Clark, B.

New York, N.Y. : Nature Publishing Company; 1993 Oct.
Lab animal v. 22 (10): p. 27-32; 1993 Oct.

Language: English

Descriptors: Laboratory animals; Information processing

42 NAL Call. No.: QL55.I5

Avoiding undue cortisol responses to venipuncture in adult male rhesus macaques.

Reinhardt, V.; Cowley, D.; Eisele, S.; Scheffler, J.
Sussex : The Institute; 1991 Aug.

Animal technology : journal of the Institute of Animal
Technology v. 42 (2): p. 83-86; 1991 Aug. Includes
references.

Language: English

Descriptors: Macaca mulatta; Blood sampling; Stress;
Hydrocortisone; Cages

Abstract: Six single-caged adult male rhesus monkeys were venipunctured in their homecage and, on a different day, away from their cage in a restraint apparatus. The animals were habituated to both procedures and readily presented a leg for blood collection without being mechanically immobilized. The time required to draw a blood sample was less than 2 minutes for both procedures. Serum cortisol concentrations were equivalent in blood samples collected at 1200 h when the animals were in the restraint apparatus (average = 15.3 +/- 4.4 microgram dl) and when the animals were in their homecages (average = 15.7 +/- 2.4 microgram/dl; $p > 0.1$). Cortisol concentrations during a second venipuncture at 1215 h were significantly higher during blood collection in the restraint apparatus (average = 23.2 +/- 4.7 microgram/dl) than during blood collection in the homecage (average = 17.7 +/- 5.0 microgram/dl; $p < 0.05$). The magnitude of cortisol increase during the 15 minutes was significant (52%; $p < 0.025$) when the males were venipunctured in the restraint apparatus but not (13%; $p > 0.1$) when they were venipunctured in the homecage. It was concluded that venipuncture per se was not a physiologically distressing event for the males. It became distressing only when it was associated with a temporary removal from the homecage. In-homecage venipuncture is therefore recommended as an alternative to venipuncture in a restraint apparatus for those research protocols that require blood samples from undisturbed experimental monkeys.

43 NAL Call. No.: SF406.3.B4

Behavior and well-being of laboratory animals.

American Association for Laboratory Animal Science
Cordova, Tenn. : American Association for Laboratory Animal
Science, [1986?]; 1986.

15 p. ; 28 cm. (American Association for Laboratory Animal
Science monograph series ; 1). Presented at the 1986 Annual
Meeting in Chicago, Illinois.

Language: English

Descriptors: Laboratory animals; Housing; Congresses; Animal
behavior; Congresses; Animal welfare; Congresses

44 NAL Call. No.: 410.9 P94
Behavioral and physiologic effects of inapparent wound
infection in rats. Bradfield, J.F.; Schachtman, T.R.;
McLaughlin, R.M.; Steffen, E.K. Cordova, Tenn. : American
Association for Laboratory Animal Science; 1992 Dec.
Laboratory animal science v. 42 (6): p. 572-578; 1992 Dec.
Includes references.

Language: English

Descriptors: Rats; Wounds; Latent infections

Abstract: There is a common notion that rats are resistant to postoperative wound infection because many recover from surgery performed under nonsterile conditions. As a result, nonaseptic surgical techniques are used commonly in rat surgery. Our aim was to determine if these techniques cause wound infection and, if so, whether or not the infection, inapparent to casual observation, creates measurable changes in rat physiology and behavior. Rats subjected to craniotomies or laparotomies and inoculated with 10(8) Staphylococcus aureus or Pseudomonas aeruginosa or sterile saline were tested for open-field activity, freezing behavior, home-cage behavior score, and wheel-running activity. Physiologic indices included lactate dehydrogenase, blood glucose, plasma fibrinogen, complete blood counts, wound bacterial counts and histology scores, body temperature, and body weight. Although no clinical signs were detected by postoperative observation, rats inoculated with bacteria were significantly less active in the open field and the duration of freezing behavior was shorter. Plasma fibrinogen, serum glucose, total white blood cell counts, and wound histology scores were significantly altered in the bacteria-inoculated rats. These findings underscore the need for sterile techniques in rat surgery to avoid confounding experimental data.

45 NAL Call. No.: QL55.N48
Behavioral enrichment for primates: what are the options?.
Heath, S.J.
Bethesda, Md. : The Center; 1987.
Newsletter - Scientists Center for Animal Welfare v. 9 (1): p.
11-12. ill; 1987. Includes references.

Language: English

Descriptors: Primates; Institutions; Animal experiments;
Facilities; Animal behavior; Television

46 NAL Call. No.: QL55.F43 1987
Behaviour, housing and welfare of non-human primates.
Poole, T.B.
Dordrecht : M. Nijhoff; 1988.
New developments in biosciences : their implications for
laboratory animal science : proceedings of the Third
Symposium, Amsterdam, The Netherlands, 1-5 June 1987 / edited
by Anton C. Beyneen and Henk A. Solleveld. p. 231-237; 1988.
Includes references.

Language: English

Descriptors: Primates; Animal behavior; Animal welfare; Animal
housing; Cages; Laboratory rearing

47 NAL Call. No.: QL750.A6
The behaviour of group penned and individually caged
laboratory rabbits. Podberscek, A.L.; Blackshaw, J.K.;
Beattie, A.W.
Amsterdam : Elsevier Science Publishers, B.V.; 1991 Jan.
Applied animal behaviour science v. 28 (4): p. 353-363; 1991
Jan. Includes references.

Language: English

Descriptors: Rabbits; Group behavior; Pens; Cages; Animal
behavior

48 NAL Call. No.: 470 SCI2
Billion dollar price tag for new animal rules.
Holden, C.
Washington, D.C. : American Association for the Advancement of
Science; 1988 Nov04.
Science v. 242 (4879): p. 662-663; 1988 Nov04.

Language: English

Descriptors: U.S.A.; Dogs; Primates; Facilities; Costs;
Regulations; Law; Animal welfare; Exercise; Cages; Medical
research

49 NAL Call. No.: QH432.E9
The biochemical control of quantitative traits.
Bulfield, G.
Oxford, UK : CAB; 1989.
Evolution and animal breeding : reviews on molecular and
quantitative approaches in honour of Alan Robertson / edited
by William G. Hill and Trudy F.C. Mackay. p. 227-231; 1989.

Language: English

Descriptors: Animal breeding; Biochemistry; Molecular
genetics; Quantitative traits; Chickens; Mice

50 NAL Call. No.: QL55.I55 1983
Birth of a hemophilic dog colony.
Tinlin, S.J.; Brosseau, L.D.; Giles, A.R.; Greenwood, R.;
Greenwood, P.; Hoogendoorn, H.
Stuttgart, [W. Ger.] : G. Fisher Verlag; 1985.
The Contribution of laboratory animal science to the welfare
of man and animals--past, present and future : 8th Symposium
of ICLAS/CALAS, Vancouver, 1983 / editors: J. Archibald, J.
Pitchfield, H.C. Rowsell. p. 127-131. ill; 1985. Includes
references.

Language: English

Descriptors: Dogs; Management; Breeding programs; Facilities;
Hemophilia

51 NAL Call. No.: Videocassette no.558
Breaking barriers produced by People for the Ethical Treatment
of Animals. People for the Ethical Treatment of Animals
Washington, D.C. : PETA; 1986.
1 videocassette (16 min.) : sd., col. ; 1/2 in. VHS format.

A PETA video.

Language: English

Descriptors: Animals, Treatment of; Laboratory animals;
Housing; Animal experimentation; Animal welfare

52 NAL Call. No.: 410.9 P94

A breeding colony of cotton-top tamarins (*Saguinus oedipus*).

Snowdon, C.T.; Savage, A.; McConnell, P.B.

Joliet, Ill. : American Association for Laboratory Animal
Science; 1985 Oct. *Laboratory animal science* v. 35 (5): p.
477-480; 1985 Oct. Includes references.

Language: English

Descriptors: Marmoset; Animal breeding methods; Animal
housing; Handling; Callithricidae

53 NAL Call. No.: QL55.L28

Breeding, housing and care of laboratory animals.

Solleveld, H.A.; McAnulty, P.; Ford, J.; Peters, P.W.J.; Tesh,
J. Amsterdam : Elsevier Science Publishers; 1986.

*Laboratory animals : laboratory animal models for domestic
animal production / edited by E.J. Ruitenber and P.W.J.
Peters.* p. 1-46. ill; 1986. (*World animal science. C,
Production-system approach ; 2.*). Literature review.
Includes references.

Language: English

Descriptors: Laboratory animals; Animal housing; Animal
welfare; Animal breeding; Breeding programs; Germ free
husbandry; Nutritional state; Cage rearing; Zoonoses

54 NAL Call. No.: 410.9 P94

Breeding of the gad-mdx mouse: influence of genetically
induced denervation on dystrophic muscle fibers.

Suh, J.G.; Yamazaki, A.; Tomita, T.

Cordova, Tenn. : American Association for Laboratory Animal
Science; 1994 Feb. *Laboratory animal science* v. 44 (1): p.
42-46; 1994 Feb. Includes references.

Language: English

Descriptors: Mice; Mutants; Animal breeding; Genes; Muscle
fibers; Muscular dystrophy; Disease models; Animal proteins;
Creatine kinase; Enzyme activity; Spinal cord

55 NAL Call. No.: QL55.A1L3

Breeding of wild-caught rodent Cricetidae *Holochilus
brasiliensis* under laboratory conditions.

Mello, D.A.

London : Laboratory Animal Science Association; 1986 Jul.
Laboratory animals v. 20 (3): p. 195-196; 1986 Jul. Includes
references.

Language: English

Descriptors: Brazil; Rodents; Animal breeding methods; Animal
husbandry

56 NAL Call. No.: QL55.I5
The breeding of *Xenopus laevis* on a large scale in the laboratory. Davys, J.S.
Sussex : The Institute of Animal Technology; 1986 Dec.
Animal technology : journal of the Institute of Animal Technology v. 37 (3): p. 217-223. ill; 1986 Dec.

Language: English

Descriptors: Toads; Animal breeding; Animal housing; Laboratory rearing

57 NAL Call. No.: QL737.P9C56
Breeding primates in zoos.
King, N.E.; Mitchell, G.
New York : A.R. Liss, 1986-; 1986.
Comparative primate biology. v. 2, pt. B p. 219-261; 1986.
Volume 2, Part B: Behavior, cognition, and motivation / edited by G. Mitchell and J. Erwin. Literature review. Includes references.

Language: English

Descriptors: Primates; Animal breeding; Estrous cycle; Zoological gardens; Genera; Species

58 NAL Call. No.: RB125.C68 1985
Breeding program and population standards of the Gottingen miniature swine. Glodek, P.
New York : Plenum Press; 1986.
Swine in biomedical research / edited by M.E. Tumbleson. p. 23-37; 1986. Proceedings of a conference on Swine in Biomedical Research, June 17-20, 1985, Columbia, Missouri. Includes references.

Language: English

Descriptors: Boars; Sows; Animal breeding; Breeding programs; Pig breeds; Litter size

59 NAL Call. No.: 410.9 P94
A built-in perch for primate squeeze cages.
Watson, D.S.B.
Cordova, Tenn. : American Association for Laboratory Animal Science; 1991 Aug. Laboratory animal science v. 41 (4): p. 378-379; 1991 Aug. Includes references.

Language: English

Descriptors: Primates; Cages; Perches; Usage; Sex differences

60 NAL Call. No.: QL55.I5
Bytes in the animal house.
Fenn, C.; Howard, B.R.
Sussex : The Institute; 1990 Dec.
Animal technology : journal of the Institute of Animal Technology v. 41 (3): p. 203-209; 1990 Dec. Includes references.

Language: English

Descriptors: Laboratory rearing; Computer software; Record keeping

Abstract: The animal unit like any other production system, is subjected to external constraints. To avoid breeding animals surplus to requirements, to detect early changes in reproductive performance and to ensure financial equilibrium regular examination of many records is required. A computer programme has been developed to present, weekly, a series of performance figures which greatly assist the unit manager in achieving this surveillance. The programme is written for an inexpensive IBM compatible computer (Amstrad 1512). Basic is very widely understood and although slow, allows easy modification to suit changes in requirements or to interface with current recording practices. Animal technicians are urged to become more familiar with computers and to be prepared to use them as an aid to good husbandry.

61 NAL Call. No.: 410.9 P94
Cage design and configuration for an arboreal species of primate. Williams, L.E.; Abee, C.R.; Barnes, S.R.; Ricker, R.B.
Cordova, Tenn.: American Association for Laboratory Animal Science; 1988 Jun. Laboratory animal science v. 38 (3): p. 289-291; 1988 Jun. Includes references.

Language: English

Descriptors: Primates; Species; Squirrel monkeys; Cage size; Design; Animal housing; Building materials

Abstract: The squirrel monkey (genus *Saimiri*) is an arboreal primate from equatorial South America. This species forms large social groups that consist of multiple females and males of varying ages, from infant to adult. As the use of squirrel monkeys in research continues to grow, an understanding of optimal cage design and environment is essential. The University of South Alabama Primate Research Laboratory houses a breeding colony of 350 squirrel monkeys. Each group cage, measuring 4.5 x 2.5 x 1.5 meters, can contain up to 20 animals. A breeding group consists of one adult male, eight to ten females, and varying numbers of infant and juvenile animals. In order to determine the most suitable cage environment for the squirrel monkey, a series of studies were carried out to compare various perch materials and cage configurations. Squirrel monkeys preferred a poly-vinyl-chloride pipe perch (rigid) over rope perches (non-rigid). When provided with multiple levels of perches, all levels were used. Males tended to distribute their activities randomly at different levels. In a two tiered perch arrangement, females concentrated 67% of their social activity on the top tier. In a triple tier configuration, females concentrated 66% of their travel on the top tier. These results indicate that by creating a cage environment with multiple tiers of horizontal perches the effective cage space can be doubled or tripled. This provides an effective means of reducing population density without enlarging the dimensions of the cage or reducing social group size.

62 NAL Call. No.: 410.9 P94
Cage design and configuration for arboreal reptiles.

Mason, R.T.; Hoyt, R.F. Jr; Pannell, L.K.; Wellner, E.F.; Demeter, B. Cordova, Tenn. : American Association for Laboratory Animal Science; 1991 Jan. Laboratory animal science v. 41 (1): p. 84-86; 1991 Jan. Includes references.

Language: English

Descriptors: Reptiles; Cages; Design

63 NAL Call. No.: 448.8 J824
Cage design for the confinement of deer and goats infested with ectoparasites. Cooksey, L.M.; Davey, R.B. Lawrence, Kan. : American Society of Parasitologists; 1988 Oct. The Journal of parasitology v. 74 (5): p. 891-893. ill; 1988 Oct. Includes references.

Language: English

Descriptors: Goats; Odocoileus Virginianus; Cages; Design; Laboratory rearing; Ectoparasitoses; Boophilus annulatus

64 NAL Call. No.: QL55.A1L3
Cage design reduces emotionality in mice. Chamove, A.S. London : Royal Society of Medicine Services; 1989 Jul. Laboratory animals v. 23 (3): p. 215-219; 1989 Jul. Includes references.

Language: English

Descriptors: Mice; Cages; Layout; Animal behavior; Animal welfare; Adrenal glands; Weight; Activity; Stress

Abstract: To see if a more natural cage design would alter the reactivity of laboratory mice, 192 mice were reared in cages with (1) no dividers, (2) five vertical dividers, (3) nine vertical dividers, or (4) nine vertical dividers and one horizontal platform. The mice preferred the most complex cages, and on almost all measures they were less emotional when reared in the more complex cages. Results suggest that a more natural housing environment would lead to healthier animals.

65 NAL Call. No.: QL55.A1L33
Cage enrichment for female New Zealand white rabbits. Brooks, D.L.; Huls, W.; Leamon, C.; Thomson, J.; Parker, J.; Twomey, S. New York, N.Y. : Nature Publishing Company; 1993 May. Lab animal v. 22 (5): p. 30, 32-33, 36, 38; 1993 May. Includes references.

Language: English

Descriptors: Rabbits; Cages; Enrichment

66 NAL Call. No.: QL55.A1L3
A cage for the ferret. Scharmann, W.; Wolff, D. Essex : Laboratory Animal Science Association; 1987 Jan. Laboratory animals v. 21 (1): p. 43-47. ill; 1987 Jan. Includes references.

Language: English

Descriptors: Ferrets; Animal husbandry; Cages; Design; Handling

Abstract: A cage for ferrets is described that consists of a plastic box with a metal sliding-grill top and metal front lattice. It contains a new feeding system using dishes that can be removed without opening the cage. The cages are kept in mobile racks and are commercially available.

67 NAL Call. No.: Z7996.P85C353
Cages, corrals & consequences, housing of monkeys in the lab colony a bibliography, 1976-1986.. Cages, corrals and consequences, housing the monkeys in the lab colony
Caminiti, Benella
University of Washington, Primate Information Center
Seattle : Primate Information Center, Regional Primate Research Center, University of Washington,; 1986.
19 p. ; 28 cm. Cover title. "Supported in part by Grant No. RR-00166 from the National Institutes of Health."--Cover.
November 1986. Includes index.

Language: English

Descriptors: Primates; Housing; Bibliography; Laboratory animals; Housing; Bibliography; Animal welfare

68 NAL Call. No.: Slide no.237
Caging systems, bedding materials, & environmental considerations for laboratory rodents [Stanley P. Liebenberg and Lynn Dahm] ; developed by Northwest Committee for Training in Laboratory Animal Care in collaboration with H.S. Center for Educational Resources, University of Washington.
Liebenberg, Stanley P.; Dahm, Lynn
University of Washington, Northwest Committee for Training in Laboratory Animal Care, University of Washington, Health Sciences Center for Educational Resources
Seattle, WA : Distributed by H.S. Center for Educational Resources, SB-56, University of Washington,; 1985.
53 slides : col. + 1 sound cassette (22 min., 12 sec. : 1 7/8 ips., mono.) + guide. (Training series in laboratory animal care ; LAC-8302). Sound accompaniment compatible for manual and automatic operation.

Language: English

Descriptors: Laboratory animals; Housing; Laboratory animals; Ecology; Rodents as laboratory animals; Rodents; Housing; Animal welfare

69 NAL Call. No.: QL737.C22C36
Caging systems for dogs under the new standards of the animal welfare act. Britz, W.E. Jr
Bethesda, MD : Scientists Center for Animal Welfare; 1990 Jan. Canine research environment / edited by Joy A. Mench and Lee Krulisch. p. 48-52; 1990 Jan. Paper presented at a conference held by the Scientists Center for Animal Welfare, June 22, 1989, Bethesda, Md. Question and answer session p. 51-52.

Language: English

Descriptors: U.S.A.; Dogs; Cages; Animal welfare; Legislation

70 NAL Call. No.: QL55.A1L3
Calomys laucha (Rodentia, Cricetidae): growth and breeding in laboratory conditions.
Hodara, V.L.; Espinosa, M.B.; Merani, M.S.; Quintans, C.
London : Royal Society of Medicine Services; 1989 Oct.
Laboratory animals v. 23 (4): p. 340-344; 1989 Oct. Includes references.

Language: English

Descriptors: Calomys; Laboratory animals; Animal husbandry; Growth; Animal breeding; Reproductive efficiency

Abstract: The husbandry and breeding of Calomys laucha (Rodentia, Cricetidae) in captivity are described. Growth curves based on body weight and length showed statistical differences between sexes after 45 days, males being heavier than females. The overall reproductive efficiency was 53.4% but birth rate was depressed during winter. Gestation length was 21 +/- 1 days and females exhibited postpartum oestrus with a 3-7 day implantation delay (51%). Litter size was 5.3 +/- 1.1 (n = 34). Pup survival at weaning was 84.9%. Mean life span in laboratory conditions was 13.5 months and a cumulative mortality of 90% was reached at 27-28 months of age.

71 NAL Call. No.: QL55.U5 1987
The canary and other passerine cage birds., 6th ed.
Keymer, I.F.
London : Longman; 1987.
The UFAW handbook on the care and management of laboratory animals / edited by Trevor B. Poole; editorial assistant, Ruth Robinson. p. 687-700; 1987.

Language: English

Descriptors: Laboratory animals; Aviary birds; Canaries; Biology; Animal husbandry; Laboratory methods; Disease control

72 NAL Call. No.: QL737.P9C86
Captive breeding in a source country.
Else, J.G.
New York : Van Nostrand Reinhold; 1986.
Current perspectives in primate biology / edited by David M. Taub and Frederick A. King. p. 79-85; 1986. Includes references.

Language: English

Descriptors: Kenya; Cercopithecidae; Breeding programs; Research institutes

73 NAL Call. No.: QL737.P9P6713 1984
Captive breeding of callitrichids: a comparison of reproduction and propagation in different species.
Stevenson, M.F.
Cambridge [Cambridgeshire] : Cambridge University Press; 1986.
Primate ecology and conservation / edited by James G. Else, Phyllis C. Lee. p. 301-313; 1986. Paper presented at the

"Proceedings of the Tenth Congress of the International Primatological Society," July 1984, Nairobi, Kenya. Includes references.

Language: English

Descriptors: Callithricidae; Animal breeding; Reproduction; Endangered species; Laboratory animals

74 NAL Call. No.: QL55.I5
The captive management of a breeding colony of Ryuku mice (*Mus caroli*). Castle, J.P.; Marshall, P.E.
Sussex : The Institute; 1990 Dec.
Animal technology : journal of the Institute of Animal Technology v. 41 (3): p. 191-196; 1990 Dec. Includes references.

Language: English

Descriptors: South asia; Mus; Wild strains; Laboratory rearing

Abstract: Ryuku mice (*Mus caroli*) are a strain of wild mouse, which are indigenous throughout Southern Asia, including the Ryuku Islands from where their name originates. We were requested to set up and maintain a colony because they have different D.N.A. properties from the common laboratory mouse (*Mus musculus*). This enables a unique cell marking technique to be used, which in this instance is being applied to the study of tooth and gum development.

75 NAL Call. No.: QL55.I55 1983
Care and management of dogs with colostomies.
Rogers, D.W.; Tenney, J.B.; Perry, F.W.; Caldwell, F.L.
Stuttgart, [W. Ger.] : G. Fisher Verlag; 1985.
The Contribution of laboratory animal science to the welfare of man and animals--past, present and future : 8th Symposium of ICLAS/CALAS, Vancouver, 1983 / editors: J. Archibald, J. Pitchfield, H.C. Rowsell. p. 421-433. ill; 1985. Includes references.

Language: English

Descriptors: Dogs; Colostomy; Management; Animal welfare; Treatment

76 NAL Call. No.: QL55.I5
Care and management of new-born formula-fed cynomolgus monkeys for diarrhoea studies.
Yap, K.L.; Awang, A.
Sussex : The Institute; 1989 Apr.
Animal technology : journal of the Institute of Animal Technology v. 40 (1): p. 5-9; 1989 Apr. Includes references.

Language: English

Descriptors: Monkeys; Newborn animals; Laboratory rearing; Animal housing; Animal feeding; Feed formulation; Disease models; Diarrhea

Abstract: This paper describes various aspects in the care and management of new-born formula-fed cynomolgus monkeys used for diarrhoea studies. Emphasis was placed on maintaining a

healthy gastrointestinal tract. The procedures described in this report enabled infant monkeys to be reared in a healthy, diarrhoea-free state.

77 NAL Call. No.: SF406.C35 1992
The Care and use of amphibians, reptiles, and fish in research. Schaeffer, Dorcas O.; Kleinow, Kevin M.; Krulisch, Lee
Scientists Center for Animal Welfare, Louisiana State University (Baton Rouge, La.), School of Veterinary Medicine Bethesda, Md. (4805 St. Elmo Ave., Bethesda 20814) : Scientists Center for Animal Welfare,; 1992.
vii, 196 p. : ill. ; 28 cm. Proceedings from a SCAW/LSUSVM-sponsored conference ... held April 8-9, 1991 in New Orleans, Louisiana ... November 1992. Includes bibliographical references.

Language: English

Descriptors: Amphibians as laboratory animals; Reptiles as laboratory animals; Fish as laboratory animals

78 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.

79 NAL Call. No.: SF406.S64
The care, breeding and management of experimental animals for research in the tropics.
Smith, John B.,; Mangkoewidjojo, Soesanto
Canberra : International Development Program, of Australian Universities and College,; 1987.
ix, 257 p. : ill. ; 25 cm. Bibliography: p. [243]-257.

Language: English

Descriptors: Laboratory animals; Tropics; Laboratory animals; Tropics; Care and treatment; Laboratory animals; Breeding; Tropics; Animal welfare

80 NAL Call. No.: F591.J6
The care of captive animals: a historical perspective.

Brewer, N.R.

Manhattan, Kan. : The Journal; 1988 Jan.

Journal of the West v. 27 (1): p. 52-60. ill; 1988 Jan. In the series analytic: Veterinary medicine in the West / edited by O.H.V. Stalheim. Includes references.

Language: English

Descriptors: Laboratory animals; Capture of animals; Zoo animals; History; Facilities; Biographies; Veterinary practice

81 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 ferrets and mink is also covered.

82 NAL Call. No.: QL55.I5

Causes and preventive measures of pre-weaning deaths in a New Zealand White rabbit breeding colony.

Barry, M.P.

Sussex : The Institute; 1994 Aug.

Animal technology : journal of the Institute of Animal Technicians v. 45 (2): p. 111-117; 1994 Aug. Includes references.

Language: English

Descriptors: Rabbits; Neonatal mortality; Preweaning period; Etiology; Prevention; Laboratory rearing; Cages; Design

83 NAL Call. No.: 410.9 P94

The cellular and molecular pathogenesis of coronaviruses.

Compton, S.R.; Barthold, S.W.; Smith, A.L.

Cordova, Tenn. : American Association for Laboratory Animal Science; 1993 Feb. Laboratory animal science v. 43 (1): p. 15-28; 1993 Feb. Includes references.

Language: English

Descriptors: Coronavirus; Pathogenesis

Abstract: Coronaviruses cause a wide spectrum of diseases in humans and animals but generally fall into two classes, with respiratory or enteric tropisms. Mouse hepatitis virus (MHV) and rat coronaviruses are the virus most frequently encountered in the laboratory animal setting. This review focuses primarily on the cellular and molecular aspects of MHV pathogenesis. The high mutation and recombination rates of coronaviruses lead to a diverse, ever-changing population of MHV strains. The spike (S) protein is the most variable coronavirus protein and is responsible for binding to cell surface receptors, inducing cell fusion and humoral and cellular immunity. Differences within the S protein of different MHV strains have been linked to their variable tropisms. Since immunity to MHV is strain-specific, seropositive mice can be reinfected with different strains of MHV. Natural infections with MHV are acute, with persistence occurring at the population level, not within an individual mouse, unless it is immunocompromised. Age, genotype, immunologic status of the mouse, and MHV strain influence the type and severity of disease caused by MHV. Interference with research by MHV has been reported primarily in the fields of immunology and tumor biology and may be a reflection of MHV's capacity to grow in several types of immune cells. While many methods are available to diagnose coronavirus infection. serologic tests, primarily ELISA and IFA, are the most commonly used. MHV is best managed on a preventive basis. Elimination of MHV from a population requires cessation of breeding and halting the introduction of naive mice into the population.

84 NAL Call. No.: QL55.F43 1987
Centralisation--decentralisation: failure-success.

Hoof, J.A.P. van

Dordrecht : M. Nijhoff; 1988.

New developments in biosciences : their implications for laboratory animal science : proceedings of the Third Symposium, Amsterdam, The Netherlands, 1-5 June 1987 / edited by Anton C. Beyneen and Henk A. Solleveld. p. 75-80; 1988.

Language: English

Descriptors: Laboratory animals; Management; Technicians; Work organization; Values

85 NAL Call. No.: QL55.A1L33
Challenging conventional wisdom for housing monkeys.

Crockett, C.M.; Bowden, D.M.

New York, N.Y. : Nature Publishing Company; 1994 Feb.

Lab animal v. 23 (2): p. 29-33; 1994 Feb. Includes references.

Language: English

Descriptors: Monkeys; Animal housing; Animal welfare; Cage size; Social interaction; Environment; Enrichment

86 NAL Call. No.: 470 SCI2

Chimps and research.

King, F.A.

Washington, D.C. : American Association for the Advancement of

Science; 1988 Dec02.
Science v. 242 (4883): p. 1227; 1988 Dec02.

Language: English

Descriptors: U.S.A.; Chimpanzee; Medical research; Fetus;
Tissues; Endangered species; Regulations; Breeding programs

87 NAL Call. No.: 500 AM322A
Chimps in research--responding to a growing nationwide
shortage, federal agencies are developing a controversial plan
to manage chimpanzees. Fox, J.L.
Arlington, Va. : The Institute; 1985 Feb.
BioScience - American Institute of Biological Sciences v. 35
(2): p. 75-76; 1985 Feb.

Language: English

Descriptors: U.S.A.; Laboratory animals; Chimpanzee; Animal
husbandry; Animal breeding

88 NAL Call. No.: QL55.A1L33
Choices in facility computerization.
Hardesty, J.
New York, N.Y. : Nature Publishing Company; 1994 Jul.
Lab animal v. 23 (7): p. 33-36; 1994 Jul.

Language: English

Descriptors: Laboratory animals; Management; Computer
software; Computer hardware

89 NAL Call. No.: 410.9 P94
Chronic spinal cord-injured cats: surgical procedures and
management. Roy, R.R.; Hodgson, J.A.; Lauretz, S.D.; Pierotti,
D.J.; Gayek, R.J.; Edgerton, V.R.
Cordova, Tenn. : American Association for Laboratory Animal
Science; 1992 Aug. Laboratory animal science v. 42 (4): p.
335-343; 1992 Aug. Includes references.

Language: English

Descriptors: Cats; Animal models; Spine; Trauma

90 NAL Call. No.: QL55.A1L33
Clinical management of spontaneous diabetes mellitus in the BB
rat. Olson, G.A.; Toth, L.; Hinson, A.; Bursi, J.
New York, N.Y. : Nature Publishing Company; 1990 Mar.
Lab animal v. 19 (2): p. 31-34; 1990 Mar. Includes
references.

Language: English

Descriptors: Rats; Diabetes mellitus; Laboratory rearing; Drug
therapy; Medical treatment; Insulin

91 NAL Call. No.: QL737.P9H78
A closed colony of squirrel monkeys for laboratory studies.
Salzen, E.A.
Park Ridge, N.J. : Noyes Publications; 1989.

Housing, care and psychological well-being of captive and laboratory primates / edited by Evalyn F. Segal. p. 115-134. ill; 1989.

Language: English

Descriptors: Squirrel monkeys; Laboratory rearing; Animal housing; Cages; Handling; Exercise; Animal feeding; Animal breeding; Animal behavior

92 NAL Call. No.: QL55.I5
A closed ileal loop technique for microbiological testing in piglets. Thornbury, J.; Carolan, B.; Frogley, J.; Sibbons, P.; Hardy, S. Sussex : The Institute; 1990 Aug.
Animal technology : journal of the Institute of Animal Technology v. 41 (2): p. 71-80. ill; 1990 Aug. Includes references.

Language: English

Descriptors: Piglets; Ileum; Anastomosis; Enterotoxins; Testing; Animal models

Abstract: The complete technical procedure for the formation of closed ileal loops is described for enterotoxicity testing in the piglet. This procedure includes a primary end-to-end anastomosis of the remaining non-looped bowel to provide best physiological parameters as possible conditions of test and to facilitate longterm survival. Closed ileal loop formation with primary anastomosis of the remaining bowel to provide gut continuity is a feasible procedure for short and longterm enterotoxicity testing in the piglet.

93 NAL Call. No.: 410.9 P94
Clostridium difficile typhlitis associated with cecal mucosal hyperplasia in Syrian hamsters.
Ryden, E.B.; Lipman, N.S.; Taylor, N.S.; Rose, R.; Fox, J.G. Cordova, Tenn. : American Association for Laboratory Animal Science; 1991 Dec. Laboratory animal science v. 41 (6): p. 553-558; 1991 Dec. Includes references.

Language: English

Descriptors: Hamsters; Clostridium difficile; Bacterial toxins; Typhlitis; Mortality; Diarrhea; Cecum; Histopathology

Abstract: A sudden increase in mortality occurred in a closed breeding colony of Syrian hamsters (*Mesocricetus auratus*). The colony consisted of approximately 40 hamsters, 8 of which were affected. Four adult males died suddenly. One pregnant female and one weanling died after having been observed as depressed for 1 day and 2 weeks respectively. One weanling and one adult male were euthanized. All affected hamsters had signs of diarrhea. At necropsy, hemorrhagic fluid-filled ceca were noted in five of eight animals. *Clostridium difficile* cytotoxin B was present in high titers [10^3 to 10^8] in cecal contents of six of six animals tested, whereas *C. difficile* culture yielded positive results in only one of six animals. Histopathologically, findings consistent with *Clostridium*-induced typhlitis including necrosis, epithelial denudation, vascular congestion, and hemorrhage were present in six of six ceca evaluated. In addition, signs of a more chronic disease process included cecal mucosal hyperplasia in five of six

hamsters. A silver stain of cecal hyperplastic mucosa for intracellular organisms including Campylobacter-like organisms was negative in all affected hamsters. Antibiotics had not been administered to any hamster in this colony, nor had the affected animals been experimentally manipulated. Testing for antibiotic residues in the feed was negative, and *C. difficile* was not isolated from feed, water, or feces of unaffected hamsters. Thus *C. difficile*-induced typhlitis should be included in the differential diagnosis of deaths in hamsters which have no clinical histories of prior antibiotic administration or experimental manipulation. The diagnosis can be confirmed by the presence of *C. difficile* cytotoxin. The relationship of cecal mucosal hyperplasia and proliferation of toxigenic *C. difficile* requires further study.

94 NAL Call. No.: SF406.3.C58
Code of practice for the housing and care of animals used in scientific procedures.
London : H.M.S.O.; 1989.
v, 33 p. ; 30 cm. Presented pursuant to Act Eliz. II 1986 C.14 Section 21 (Animals (Scientific Procedures) Act 1986). Includes bibliographical references (p. 29-32).

Language: English

Descriptors: Laboratory animals; Housing; Law and legislation; Great Britain; Animal welfare; Law and legislation; Great Britain; Laboratory animals; Law and legislation; Great Britain

95 NAL Call. No.: 410.9 P94
Combined simian hemorrhagic fever and Ebola virus infection in cynomolgus monkeys.
Dalgard, D.W.; Hardy, R.J.; Pearson, S.L.; Pucak, G.J.; Quander, R.V.; Zack, P.M.; Peters, C.J.; Jahrling, P.B. Cordova, Tenn. : American Association for Laboratory Animal Science; 1992 Apr. Laboratory animal science v. 42 (2): p. 152-157; 1992 Apr. Includes references.

Language: English

Descriptors: Virginia; *Macaca fascicularis*; Ebola virus; Viruses; Mixed infections; Symptoms; Outbreaks; Public health; Case reports

Abstract: Simian hemorrhagic fever (SHF) virus and a new strain of Ebola virus were isolated concurrently in recently imported cynomolgus monkeys (*Macaca fascicularis*) being maintained in a quarantine facility. Ebola virus had never been isolated in the U.S. previously and was presumed to be highly pathogenic for humans. A chronology of events including measures taken to address the public health concerns is presented. The clinicopathologic features of the disease were abrupt anorexia, splenomegaly, marked elevations of lactate dehydrogenase, alanine aminotransferase, and aspartate aminotransferase, with less prominent elevations of blood urea nitrogen, creatinine, and other serum chemistry parameters. Histologically, fibrin deposition, hemorrhage, and necrosis of lymphoid cells and reticular mononuclear phagocytes were present in the spleens of SHF and of Ebola virus-infected animals. Intravascular fibrin thrombi and hemorrhage were also present in the renal medulla and multifocally in the gastrointestinal tract. Necrosis of lymphoid and epithelial

cells was occasionally noted in the gastrointestinal tract. The histopathologic findings considered specific for Ebola virus infection include hepatocellular necrosis, necrosis of the zona glomerulosa of the adrenal cortex, and interstitial pneumonia, all of which were generally associated with the presence of 1 to 4 micro intracytoplasmic amphophilic inclusion bodies. The disease spread within rooms despite discontinuation of a direct contact with animals, and droplet or aerosol transmission was suspected. Antibody to Ebola virus developed in animal handlers but no clinical disease was noted, suggesting a less virulent strain of virus. SHF is recognized as a fulminating fatal pathogen for monkeys and previous experimental Ebola infections in monkeys resulted in rapid death. The disease noted in this outbreak progressed slowly within a room and spread was measured in weeks rather than days. When an animal expressed clinical si

96 NAL Call. No.: RB125.C68 1985
Commercial pig pen modifications for housing miniature swine during chronic studies.

Semple, H.A.; Berzins, R.; Coutts, R.T.; Secord, D.C.; Tam, Y.K. New York : Plenum Press; 1986.

Swine in biomedical research / edited by M.E. Tumbleson. p. 153-157. ill; 1986. Proceedings of a conference on Swine in Biomedical Research, June 17-20, 1985, Columbia, Missouri. Includes references.

Language: English

Descriptors: Pigs; Pig housing; Modifications; Design

97 NAL Call. No.: SF601.C64
Common diseases and medical management of rodents and lagomorphs. Collins, B.R.

New York, N.Y. : Churchill Livingstone; 1988.

Contemporary issues in small animal practice v. 9: p. 261-316; 1988. In the series analytic: Exotic animals / edited by E.R. Jacobson and G.V. Kollias Jr. Literature review. Includes references.

Language: English

Descriptors: Rodents; Lagomorpha; Antibiotics; Anesthetics; Neoplasms; Parasitism; Metabolic diseases; Infectious diseases; Treatment

98 NAL Call. No.: QL55.I5
Comparison of feeding methods for behavioural experiments with rats. Davies, K.; Hynard-Naylor, V.

Sussex : The Institute of Animal Technology; 1986 Apr.

Animal technology : journal of the Institute of Animal Technology v. 37 (1): p. 45-49; 1986 Apr. Includes references.

Language: English

Descriptors: Rat feeding; Animal behavior; Animal housing; Age; Body weight; Starvation

99 NAL Call. No.: QL55.A1L3
Comparison of gavage, water bottle, and a high-moisture diet

bolus as dosing methods for quantitative D-xylose administration to B6D2F1 (*Mus musculus*) mice. Zimmer, J.P.; Lewis, S.M.; Moyer, J.L. London : Royal Society of Medicine Services; 1993 Apr. Laboratory animals v. 27 (2): p. 164-170; 1993 Apr. Includes references.

Language: English

Descriptors: Mice; Drug delivery systems

Abstract: Gavage, water bottle, and diet incorporation are 3 dosing methods used orally to administer test compounds to rodents. These 3 methods were compared in mice to determine which represented the most quantitative delivery system. For dietary incorporation, a high-moisture bolus form of NIH-31 rodent meal was developed using hydroxypropyl methylcellulose as an autoclave-stable binding agent. A high-moisture bolus was selected to increase the acceptability of the dosed diet and to promote quantitative consumption through reduced wastage. The test compound used was D-xylose, a pentose sugar that may be quantitatively detected, colorimetrically, in urine following oral dosing. Six male and 6 female B6D2F1 mice were placed in metabolism cages and dosed with a known quantity of D-xylose by each of the 3 methods. Urine was collected before and after each method of administration and analysed for total D-xylose; the per cent recovery was based upon the amount of D-xylose consumed. Quantitative consumption was apparently greatest for water bottle dosing with an average recovery of 56.0% of the original D-xylose dose. High-moisture bolus incorporation ranked second with 56.0% D-xylose recovery, and gavage was third with 41.0% D-xylose recover.

100 NAL Call. No.: 410.9 P94
A comparison of rodent caging systems based on microenvironmental parameters. Corning, B.F.; Lipman, N.S. Cordova, Tenn. : American Association for Laboratory Animal Science; 1991 Oct. Laboratory animal science v. 41 (5): p. 498-503; 1991 Oct. Includes references.

Language: English

Descriptors: Mice; Cages; Environmental temperature; Carbon dioxide; Relative humidity; Ammonia

Abstract: Four different mouse caging systems were evaluated for microenvironmental temperature, carbon dioxide, relative humidity (RH) and ammonia levels during a 7-day testing period. All caging systems evaluated had polycarbonate bases and consisted of either a molded polyester (MP) filter lid, one of two different polycarbonate filter lids, or no filter lid which served as a control. At 50% macroenvironmental RH (study I), all systems maintained an intracage temperature of 75.5 degrees F +/- 0.5 degrees. Both polycarbonate systems averaged > 2200 ppm of carbon dioxide more than the MP system and the controls. When compared with RH in the control cages, RH levels averaged over 20% and 5 to 8% RH greater in the polycarbonate filter lid systems and the MP system, respectively. There were no appreciable ammonia levels in either the MP or control systems. In the polycarbonate filter lid systems, ammonia levels were detectable on day 4 and were > 200 ppm by day 6. At 20% macroenvironmental RH (study II), there was a proportional 15 to 30% RH decrease from study I levels. Ammonia levels were undetectable in any system until

day 7 and averaged only 17 ppm in one of the polycarbonate systems. Minimal differences were observed in studies III, IV and V when pine shavings were used instead of hardwood chips, a CD-1 stock instead of a DBA/2J strain, and different grades of filter inserts in the polycarbonate systems, respectively.

101 NAL Call. No.: 41.8 AM3A
Comparison of several combinations for anesthesia in rabbits. Hobbs, B.A.; Rolhall, T.G.; Sprengel, T.L.; Anthony, K.L. Schaumburg, Ill. : American Veterinary Medical Association; 1991 May. American journal of veterinary research v. 52 (5): p. 669-674; 1991 May. Includes references.

Language: English

Descriptors: Rabbits; Anesthesia; Drug combinations; Injectable anesthetics; Heart rate; Respiration rate; Body temperature; Reflexes; Safety

Abstract: Few safe and effective anesthesia regimens have been described for use in rabbits, partially because of the susceptibility of this species to sometimes fatal respiratory depression. Although inhalant anesthetics are generally safer than injectable anesthetics, their use may be limited by lack of equipment or facilities. This study was conducted to compare effects of several injectable anesthetics in rabbits on response to noxious stimuli, heart rate, respiratory rate, and rectal temperature. Six injectable anesthetic combinations were administered to rabbits:

xylazine-ethyl-(1-methyl-propyl) malonyl-thio-urea salt (EMTU), ketamine-EMTU, xylazine-pentobarbital, xylazine-acepromazine-ketamine (XAK), ketamine-chloral hydrate, and ketamine-xylazine. All combinations induced a depression of respiratory rate. Although rectal temperature values were reduced to some degree in each group, the most profound hypothermia was induced by XAK. The combination that induced the longest duration of anesthesia was XAK. It was concluded that XAK was preferable for longer periods of anesthesia (60 to 120 minutes), although it induces severe hypothermia. For short periods of anesthesia, xylazine-pentobarbital, xylazine-EMTU, or ketamine-xylazine were deemed adequate; however, xylazine-EMTU induced the best survivability and consistency.

102 NAL Call. No.: S494.5.D3I5 1990
A computer-based hierarchical controlsystem for modern livestock buildings. Berckmans, D.; Vranken, E.; Goedseels, V. Gainesville, FL : Florida Cooperative Extension Service, University of Florida; 1990.
Proceedings of the 3rd International Conference on Computers in Agricultural Extension Programs / Fedro S. Zazueta, editor. ; January 31-February 1, 1990, Grosvenor Resort Hotel, Disney World Village, Lake Buena Vista, FL. p. 417-422. ill; 1990. Includes references.

Language: English

Descriptors: Animal housing; Climate; Computers

103 NAL Call. No.: QL55.I5
Computerisation of the animal house. Bancroft, L.S. Sussex : The Institute of Animal Technology; 1985 Nov.

Animal technology : journal of the Institute of Animal Technology v. 36 (2): p. 191-198; 1985 Nov. Includes references.

Language: English

Descriptors: United Kingdom; Laboratory animals; Animal housing; Microcomputers; Operational control; File management

104 NAL Call. No.: QL55.A1L3

Computerized ordering of experimental animals and test authorization. Maerki, U.; Walther, A.; Rossbach, W. London : Royal Society of Medicine Services; 1990 Jan. Laboratory animals v. 24 (1): p. 25-31; 1990 Jan. Includes references.

Language: English

Descriptors: Switzerland; Laboratory animals; Authority; Acquisition; Computer techniques; Computer software; Animal experiments

Abstract: The authorization procedure required by law in Switzerland and the internal set-up at Roche for acquiring experimental animals has made a computerized system for monitoring authorizations and animal deliveries essential. The INQUIRE software program, which can be run on the central computer, was used to set-up databases with information on all personnel who place orders and perform experiments (PERI), authorization matters (BEWI), orders (ORDR), deliveries (SPED), animal species (SPEC), animal strains (STRE), populations (POPU) and the management of various data (BARA). The authorizations database (BEWI) permits sequential searches on specific questions. The animals ordered in the ORDR database are constantly updated in BEWI, thus ensuring that the authorized animal quotas are not exceeded. Expiry of an authorization or an unregistered experimenter will come to light in the course of the plausibility study. Through ORDR the experimenter has a good overview of the animals that he has ordered or have been ordered for him, and he can select the most appropriate strain or population for his studies in STRE or POPU, which contain data on the genetic and physiological characteristics as well as the breeding and keeping of all sublines and stocks. Realization of the IFIS project has made it a simple matter to keep a check on the legal requirements pertaining to animal experimentation and to update the information and evaluate the entire stock of data at any time.

105 NAL Call. No.: QL55.A1L33

Computers in the animal facility. Lofgreen, P.E. Jr. New York : Media Horizons; 1987 Sep. Lab animal v. 16 (6): p. 59-63; 1987 Sep.

Language: English

Descriptors: Laboratory animals; Facilities; Computer applications; Computer software

106 NAL Call. No.: QL55.A1L3

Conditioning and breeding facilities for the cynomolgus monkey

(*Macaca fascicularis*) in the Philippines: a progress report on the SICONBREC project. Hobbs, K.R.; Welshman, M.D.; Nazareno, J.B.; Resuello, R.G. Essex : Laboratory Animal Science Association; 1987 Apr.

Laboratory animals v. 21 (2): p. 131-137; 1987 Apr. Includes references.

Language: English

Descriptors: Philippines; Animal husbandry; Macaca; Animal breeding; Projects; Facilities

107 NAL Call. No.: HV4761.A5

Conference report on the improved standards for Laboratory Animals Act. Washington, D.C. : The Institute; 1985-1986.

The Animal Welfare Institute quarterly v. 4, i.e. 34 (2): p. 8-9; 1985-1986.

Language: English

Descriptors: U.S.A.; Laboratory animals; Standards; Improvement; Legislation; Facilities; Animal welfare

108 NAL Call. No.: QL737.P9C865

Conflict, affiliation, mating, and the effects of spatial confinement in a captive group of squirrel monkeys (*Saimiri sciureus*).

Perloe, S.I.

New York : Van Nostrand Reinhold; 1986.

Current perspectives in primate social dynamics / edited by David M. Taub and Frederick A. King. p. 89-98; 1986. Includes references.

Language: English

Descriptors: Squirrel monkeys; Saimiri; Social interaction; Mating; Cage size

109 NAL Call. No.: 410.9 P94

Control of laboratory acquired hemorrhagic fever with renal syndrome (HFRS) in Japan.

Kawamata, J.; Yamanouchi, T.; Dohmae, K.; Miyamoto, H.;

Takahaski, M.; Yamanishi, K.; Kurata, T.; Lee, H.W.

Cordova, Tenn. : American Association for Laboratory Animal Science; 1987 Aug. Laboratory animal science v. 37 (4): p. 431-436; 1987 Aug. Includes references.

Language: English

Descriptors: Japan; Laboratory animals; Facilities; Viral diseases; Antibody titer; Disease control; Zoonoses

110 NAL Call. No.: 410.9 P94

Convulsions in senescence-accelerated mice (SAM-R/1/Eis).

Yamazaki, K.; Kumazawa, A.; Ito, K.; Kurihara, K.; Nakayama, M.; Wakabayashi, T.

Cordova, Tenn. : American Association for Laboratory Animal Science; 1992 Aug. Laboratory animal science v. 42 (4): p. 378-381; 1992 Aug. Includes references.

Language: English

Descriptors: Mice; Animal models; Convulsions; Aging

Abstract: Senescence-accelerated mice (SAM) are one of the animal models used for studying senescence, which consist of several substrains such as SAM-R/1, R/2, P/1, P/2. SAM-R/1/Eis maintained in Eisai Tsukuba Research Laboratories, Ibaraki, Japan, was originally introduced as a substrain of a normal control SAM-R/1 from Kyoto University, Japan. We have noted signs of convulsions in SAM-R/1/Eis mice during routine animal care, particularly while changing cages. We identified the clinical signs and determined the concentrations of glucose and immunoreactive insulin in plasma of SAM-R/1/Eis mice. There were no differences in the male:female ratios of mice showing prodrome only, grand mal, or no-signs. The ages at which prodrome and grand mal were first noted peaked between 20 and 25 weeks. Concentrations of glucose and immunoreactive insulin in plasma did not indicate the mice were in insulin hypoglycemia, which is one cause of convulsions. AKR strain mice, some of which originated with the SAM strain are known to become convulsive by repeated "throwing" stimulations. Conversely, in SAM-R/1/Eis, throwing stimuli are not needed to cause convulsive signs. Thus it is likely that in SAM-R/1/Eis mice the signs are triggered by repeating mild environmental changes, such as changing cages. The results of this study show that SAM-R/1/Eis is neither a normal control strain, nor an original SAM-R/1 strain. But it is possible that SAM-R/1/Eis is another useful animal model for studying spontaneous convulsion.

111

NAL Call. No.: 410.9 P94

Corneal dystrophy in Fisher 344 rats.

Losco, P.E.; Troup, C.M.

Cordova, Tenn. : American Association for Laboratory Animal Science; 1988 Dec. Laboratory animal science v. 38 (6): p. 702-710. ill; 1988 Dec. Includes references.

Language: English

Descriptors: Rats; Strains; Cornea; Eye diseases; Histopathology

Abstract: A spontaneous degenerative lesion of the cornea resembling calcific band keratopathy in man has been observed in 10-15% of the F-344 rats (aged 35-300 days) purchased from a private vendor's closed breeding colony. The lesion appears clinically as punctate to linear superficial corneal opacities located in the interpalpebral fissure of one or both eyes. Occasional roughening, bleb formation, or pitting of the corneal surface resembling superficial ulcers may be observed. The lesion occurs in both sexes. It is rarely associated with inflammation or irritation. Histologically, it consists of mineral deposits along the epithelial basement membrane and Bowman's space, some of which are large enough to disrupt or destroy portions of the basilar epithelium. Energy dispersive X-ray analysis of the deposits proved them to be composed of calcium and phosphorus. Electron microscopic examination revealed a variety of extracellular laminated and crystalline arrays similar to those seen in humans with band keratopathy. The etiology of the lesion is as yet undetermined. A genetic-associated susceptibility due to hypercalcemia may be involved.

112 NAL Call. No.: QL55.I55 1983
Cost effective practical gnotobiotics at the cage level.
Sedlacek, R.S.; Suit, H.D.; Rose, E.F.
Stuttgart, [W. Ger.] : G. Fisher Verlag; 1985.
The Contribution of laboratory animal science to the welfare
of man and animals--past, present and future : 8th Symposium
of ICLAS/CALAS, Vancouver, 1983 / editors: J. Archibald, J.
Pitchfield, H.C. Rowsell. p. 261-266. ill; 1985. Includes
references.

Language: English

Descriptors: Mice; Cages; Gnotobiotic animals; Microbial flora

113 NAL Call. No.: 410 B77
Courtship ultrasonic vocalizations and social status in mice.
D'Amato, F.R.
London : Academic Press; 1991 May.
Animal behaviour v. 41 (pt.5): p. 875-885; 1991 May. Includes
references.

Language: English

Descriptors: Mice; Vocalization; Mating behavior; Social
status; Reproductive performance; Inhibition; Urine;
Biological competition

Abstract: A series of experiments was conducted to
investigate whether the poorer sexual performance of
subordinate than dominant male mice, *Mus domesticus*, was
linked to lower sexual motivation. Ultrasonic calls uttered by
a male in the presence of a female were used as an index of
sexual interest. Males were housed in pairs for 5 days and
dominant/subordinate roles were assigned. Subordinates, when
tested in their home cage immediately after the removal of the
dominant male, uttered more ultrasounds than the latter. When
the dominant males was tested before the subordinate, there
was no difference in the number of ultrasounds uttered and the
subordinates' performance was consistently poorer. The fewer
calls recored when subordinate males were tested after the
dominant partner was not associated with less defence/escape
behaviour, nor could it be explained as habituation to female
odour, as a consequence of being tested after the dominant
partner. Within sexually experienced pairs, the urine of
dominant males in interacting with a female for 3 min reduced
the number of ultrasounds uttered by the subordinate in the
presence of a female. It is suggested that an inhibitory
factor in the dominant male's urine functions as an indirect
competitive mechanism when direct competition is prevented by
removing the dominant subject.

114 NAL Call. No.: 41.8 R3224
CRITTER: A database for managing research animals.
Lees, V.W.; Lukey, C.; Orr, R.
Ottawa : Canadian Veterinary Medical Association; 1993 Jan.
The Canadian veterinary journal v. 34 (1): p. 28-32; 1993 Jan.
Includes references.

Language: English

Descriptors: Laboratory animals; Management; Computer software

115

NAL Call. No.: 410.9 P94

A cross sectional survey for B virus antibody in a colony of group housed rhesus macaques.

Weigler, B.J.; Roberts, J.A.; Hird, D.W.; Lerche, N.W.; Hilliard, J.K. Cordova, Tenn. : American Association for Laboratory Animal Science; 1990 May. Laboratory animal science v. 40 (3): p. 257-261; 1990 May. Includes references.

Language: English

Descriptors: California; Macaca mulatta; Herpesviridae; Age differences; Disease prevalence; Serological surveys; Sex differences; Social dominance

Abstract: A systematic sampling technique was used in combination with a highly sensitive and specific ELISA to provide unbiased age-specific prevalence estimates of B virus antibody in rhesus monkeys housed in three different outdoor breeding corrals. Among 146 sampled monkeys, 97% of animals 2.5 years and older were seropositive, while only 22% of younger animals were seropositive. Neither gender nor social dominance ranking were predictive of B virus antibody status. The strong age association was not inconsistent with hypothesized venereal transmission of B virus. Improvements in the epidemiologic understanding of B virus are necessary to assist efforts to eradicate this agent from breeding colonies of rhesus monkeys.

116

NAL Call. No.: 410.9 P94

Cryptosporidiosis in ferrets.

Rehg, J.E.; Gigliotti, F.; Stokes, D.C. Cordova, Tenn. : American Association for Laboratory Animal Science; 1988 Apr. Laboratory animal science v. 38 (2): p. 155-158. ill; 1988 Apr. Includes references.

Language: English

Descriptors: Ferrets; Facilities; Cryptosporidium; Protozoal infections; Histopathology

Abstract: The diagnosis of cryptosporidiosis in two ferrets who died from unrelated causes prompted a survey to determine the prevalence and incidence of the infection in ferrets at our facility. The survey of the existing ferret population and all new arrivals indicated cryptosporidiosis occurred as a subclinical disease a high percentage of young ferrets: 40% of the ferret population and 38 to 100% of the new arrivals had cryptosporidial oocysts in their feces. The infection was found to persist for several weeks in both immunocompetent and immunosuppressed ferrets. The interspecies transmission of Cryptosporidium implies that infected ferrets should be considered a potential source of infection for the general population.

117

NAL Call. No.: QL55.I5

Cubicles--a rational approach to specialised laboratory animal housing. Kuntz, M.J.

Sussex : The Institute; 1989 Dec. Animal technology : journal of the Institute of Animal Technology v. 40 (3): p. 203-211; 1989 Dec. Includes references.

Language: English

Descriptors: Laboratory animals; Animal housing

118 NAL Call. No.: 410.9 P94
Cysticercus fasciolaris infection in a breeding colony of mice. Davis, J.A.; Donkaewbua, S.; Wagner, J.E.; White, R.G. Cordova, Tenn. : American Association for Laboratory Animal Science; 1989 May. Laboratory animal science v. 39 (3): p. 250-252. ill; 1989 May. Includes references.

Language: English

Descriptors: Mice; Cysticercus; Infection; Cysts; Disease transmission; Disease control

119 NAL Call. No.: Z7994.L3A5
Cytotoxic and enzyme-inducing effects of rodent diets and cage bedding materials: evaluation by a cell culture study. Torronen, R.; Pelkonen, K.; Karenlampi, S. Nottingham : Fund for the Replacement of Animals in Medical Experiments; 1990 Mar. Alternatives to laboratory animals : ATLA v. 17 (3): p. 182-187; 1990 Mar. Includes references.

Language: English

Descriptors: Laboratory animals; Feeds; Animal housing; Cytotoxicity; Aryl hydrocarbon hydroxylase; Cell culture

120 NAL Call. No.: 410.9 P94
Decontamination of rat embryos and transfer to specific pathogen-free recipients for the production of a breeding colony. Rouleau, A.M.J.; Kovacs, P.R.; Kunz, H.W.; Armstrong, D.T. Cordova, Tenn. : American Association for Laboratory Animal Science; 1993 Dec. Laboratory animal science v. 43 (6): p. 611-615; 1993 Dec. Includes references.

Language: English

Descriptors: Rats; Germfree state; Germfree animals; Decontamination; Embryos; Superovulation; Embryo transfer; Trypsin

Abstract: When animals are introduced to a specific pathogen-free (SPF) facility, care must be taken to avoid the possibility of disease transmission to the local colony. This study investigated the application of a combination of reproductive biotechnologies to establish a new disease-free colony of two rat strains, DarkAgouti(Da/Pit) and Wistar Furth(WF/Pit), from a stock known to be chronically infected with the following pathogens: Mycoplasma pulmonis, Kilham's rat virus, sialodacryoadenitis/coronavirus, and reovirus type 3. To eliminate the pathogens and optimize the use of animals, superovulation, embryo washing and trypsinization, and embryo transfer were used. Donors (DA/Pit and WF/Pit) were treated as follows: the mature females were synchronized by subcutaneous (s.c.) injection with 40 micrograms luteinizing hormone-releasing hormone agonist/animal on day 4. All immature and mature females were induced to superovulate by continuous s.c. infusion with a commercial porcine follicle-stimulating hormone (FSH) preparation (3.4 or 6.8 mg NIH-FSH-P1 units per

day, respectively), beginning on the morning of day-2. On the afternoon of day 0, the animals received 30 IU human chorionic gonadotropin injected intraperitoneally and mated. From a total of 213 ova flushed from the oviducts of 16 programmed donors, 195 transferrable two-cell embryos were recovered. Two outbred strains of SPF rats, Long-Evans (LE) and Wistar (W), were used as recipients. These mature females (LE and W) were synchronized by using luteinizing hormone-releasing hormone agonist as described and made pseudopregnant by cervical stimulation. Two-cell embryos (DA/Pit and WF/Pit) were washed and trypsinized, then transferred to the oviducts of the pseudopregnant recipients (LE and W). From a total of 195 embryos transferred, 57 pups were born (29.2% of embryos transferred.) All offspring tested negative for the viruses infecting the donors as long as they were kept under strict quarantine. The combination of those three techniques provides an efficient alternative to the traditional derivation by caesarean section.

121 NAL Call. No.: QP82.2.S8A55
Definition of laboratory animal environmental conditions.
Besch, E.L.
Bethesda, Md. : American Physiological Society; 1985.
Animal stress / editor, Gary P. Moberg. p. 297-315; 1985.
Paper presented at a symposium, July 1983, sponsored by the
College of Agriculture and Environmental Sciences at the
University of California, Davis. Includes 114 references.

Language: English

Descriptors: Laboratory animals; Animal welfare; Environmental factors; Housing temperature and humidity; Ventilation; Lighting; Adaptation

122 NAL Call. No.: QL750.A6
Description and validation of a preference test system to evaluate housing conditions for laboratory mice.
Blom, H.J.M.; Vorstenbosch, C.J.A.H.V. van; Baumans, V.; Hoogervorst, M.J.C.; Beynen, A.C.; Zutphen, L.F.M. van
Amsterdam : Elsevier Science Publishers, B.V.; 1992 Oct.
Applied animal behaviour science v. 35 (1): p. 67-82; 1992 Oct. Includes references.

Language: English

Descriptors: Mice; Animal housing

123 NAL Call. No.: QL55.A1L33
Design considerations for research animal facilities.
Cooper, E.C.
New York, N.Y. : Nature Publishing Company; 1989 Sep.
Lab animal v. 18 (6): p. 23-26. ill; 1989 Sep. Includes references.

Language: English

Descriptors: Laboratory animals; Animal housing

124 NAL Call. No.: 290.9 AM32P
Design of rooms for housing laboratory animals.
Witz, R.L.; Sauvageau, G.; Johnson, T.

St. Joseph, Mich. : The Society; 1989.
Paper - American Society of Agricultural Engineers (89-4532):
9 p.; 1989. Paper presented at the 1989 International Winter
Meeting, December 12-15, 1989, New Orleans, Louisiana.
Includes references.

Language: English

Descriptors: Animal housing; Laboratories; Design;
Environmental control

125 NAL Call. No.: QL55.A1L33
Developing effective social and environment enrichment
strategies for macaques in captive groups.
O'Neill, P.
New York : Media Horizons; 1988 May.
Lab animal v. 17 (4): p. 23-24, 27-28, 31-34, 36. ill; 1988
May. Literature review. Includes references.

Language: English

Descriptors: Macaca; Environment; Social emotional
development; Animal housing; Facilities; Rearing techniques;
Group behavior; Activity

126 NAL Call. No.: QL55.F43 1987
Developing housing facilities for rhesus monkeys: prevention
of abnormal behaviour.
Goosen, C.
Dordrecht : M. Nijhoff; 1988.
New developments in biosciences : their implications for
laboratory animal science : proceedings of the Third
Symposium, Amsterdam, The Netherlands, 1-5 June 1987 / edited
by Anton C. Beyneen and Henk A. Solleveld. p. 67-70; 1988.
Includes references.

Language: English

Descriptors: Rhesus monkeys; Animal housing; Cages;
Facilities; Animal behavior; Abnormal behavior; Behavior
change

127 NAL Call. No.: QL55.A1L3
Development of a semi-inbred line of Landrace pigs. I.
Breeding performance and immunogenetic characteristics.
Hradecky, J.; Hruban, V.; Hojny, J.; Pazdera, J.; Stanek, R.
Essex : Laboratory Animal Science Association; 1985 Oct.
Laboratory animals v. 19 (4): p. 279-283; 1985 Oct. Includes
references.

Language: English

Descriptors: Pigs; Landrace; Inbred lines; Immunogenetics;
Breeding efficiency

128 NAL Call. No.: QL55.A1I43
Development of fatty and corpulent rat strains.
Greenhouse, D.D.; Hansen, C.T.; Michaelis, O.E.
Washington, D.C. : Institute of Laboratory Animal Resources,
National Research Council; 1990.
I.L.A.R. news v. 32 (3): p. 2-4; 1990. Includes references.

Language: English

Descriptors: Rats; Mutations; Animal breeding; Nomenclature

129 NAL Call. No.: 410 IN84
The development of laboratory animal management and the state of the art in Kenya.
Suleman, M.A.
Oslo, Norway : The International Council for Laboratory Animal Science; 1990. ICLAS bulletin (66): p. 26-28; 1990.

Language: English

Descriptors: Kenya; Laboratory animals; Animal husbandry

130 NAL Call. No.: Z7994.L3A5
Development of potential alternatives to the draize eye test: the CTFA evaluation of alternatives program.
Gettings, S.D.; McEwen, G.N. Jr
Nottingham : Fund for the Replacement of Animals in Medical Experiments; 1990 Jun.
Alternatives to laboratory animals : ATLA v. 17 (4): p. 317-324; 1990 Jun. Includes references.

Language: English

Descriptors: Animal testing alternatives; Evaluation; Organizations

Abstract: The CTFA Evaluation of Alternatives Program is a multi-year effort organised by a scientific advisory committee (the CTFA Animal Welfare Task Force), and is designed to evaluate (in Phase I) approximately twenty-five potential alternative methods to the Draize eye irritancy test. Coordination, management of logistics, collection and statistical analysis of data, are being conducted by the Columbus Division of the Battelle Memorial Institute. The US Food and Drug Administration has been aware of the Program since its inception. The intention of the Program is to provide industry with information on the performance of a series of potential alternatives to the Draize test, so as to aid individual companies to identify those methods which seem best suited to their own particular testing needs. The participants are either CTFA member companies who are already using or developing alternative tests, or those independent investigators whose development work is being sponsored by CTFA members. The purpose of the Program is to determine the effectiveness and limitations of a variety of tests for a range of different product types. Specifically, the Program will evaluate the capacity of the tests under investigation to rank and discriminate between the ocular irritation potential of a range of prototype cosmetic and personal care products. The Program is designed as a multi-year effort with a different product type evaluated each year. In Phase I, ten different ethanol-based substances are being tested; oil/water emulsions will be evaluated in Phase II.

131 NAL Call. No.: QL55.I5
The development of rabbit, guinea pig and mouse cages.
Eveleigh, J.R.
Sussex : The Institute of Animal Technology; 1988 Aug.

Animal technology : journal of the Institute of Animal Technology v. 39 (2): p. 107-116. ill; 1988 Aug. Includes references.

Language: English

Descriptors: Guinea pigs; Rabbits; Mice; Cages; Design; Types; Floors

132 NAL Call. No.: 410.9 P94
Diagnosis of subclinical *Bacillus piliformis* infection in a barrier-maintained mouse production colony.
Gibson, S.V.; Waggle, K.S.; Wagner, J.E.; Ganaway, J.R.
Cordova, Tenn. : American Association for Laboratory Animal Science; 1987 Dec. *Laboratory animal science* v. 37 (6): p. 786-788. ill; 1987 Dec. Includes references.

Language: English

Descriptors: Mice; *Bacillus piliformis*; Histopathology; Facilities; Treatment; Gerbils

133 NAL Call. No.: 410.9 P94
Diagnostic exercise: subcutaneous nodules in rhesus monkeys.
Spencer, A.J.
Joliet, Ill. : American Association for Laboratory Animal Science; 1985 Feb. *Laboratory animal science* v. 35 (1): p. 79-80. ill; 1985 Feb. Includes references.

Language: English

Descriptors: Rhesus monkeys; Toxicity; Diagnosis; Facilities

134 NAL Call. No.: QL55.A1L3
Diet and breeding performance in cats.
Olovson, S.G.
London : Laboratory Animal Science Association; 1986 Jul. *Laboratory animals* v. 20 (3): p. 221-230. ill; 1986 Jul. Includes references.

Language: English

Descriptors: Cat; Animal breeding; Diets; Animal nutrition; Reproductive performance

135 NAL Call. No.: QL785.A725
Diet sampling by wild Norway rats offered several unfamiliar foods. Beck, M.; Hitchcock, C.L.; Galef, B.G. Jr
Austin, Tex. : Psychonomic Society; 1988 May. *Animal learning & behavior* v. 16 (2): p. 224-230; 1988 May. Includes references.

Language: English

Descriptors: *Rattus*; Rats; Diets; Sampling; Feeding; Behavior; Food preferences

Abstract: The present experiment was undertaken to examine directly the diet sampling behavior of wild Norway rats (*Rattus norvegicus*) faced with a choice among familiar and unfamiliar foods. First-generation, laboratory-reared wild

Norway rats ate from four food cups. Three of the food cups were in unfamiliar locations and contained unfamiliar foods. The remaining food cup was in a familiar location and contained a familiar food. Subjects in a control group were offered the familiar food in all four locations. We found (1) that subjects in experimental and control conditions took equal amounts of time to first visit food cups in unfamiliar locations, (2) that subjects in the experimental condition (those with access to unfamiliar foods) ate at unfamiliar locations at a slower rate than did subjects in the control condition (those with access only to familiar food), (3) that subjects in the experimental condition were no more likely than subjects in the control condition to eat at one unfamiliar location at a time, and (4) that following a bout of eating at an unfamiliar food cup, subjects in the experimental condition waited no longer than subjects in the control condition before eating from a different unfamiliar food cup. We interpreted these data as indicating that although wild Norway rats are hesitant to eat unfamiliar foods, once they begin to eat such foods, they do not sample among them so as to facilitate identification of any toxin present.

136 NAL Call. No.: QL55.I5
Differences in behaviour among adult male, female pairs of cotton-top tamarins (*Saguinu oedipus*) in different conditions of housing.
Box, H.O.; Rohrhuber, B.
Sussex : The Institute; 1993 Apr.
Animal technology : journal of the Institute of Animal Technology v. 44 (1): p. 19-30; 1993 Apr. Includes references.

Language: English

Descriptors: Callithricidae; Animal behavior; Animal housing

137 NAL Call. No.: 410.9 P94
Disarming canine teeth of nonhuman primates using the submucosal vital root retention technique.
Schofield, J.C.; Alves, M.E.A.F.; Hughes, K.W.; Bennett, B.T.
Cordova, Tenn. : American Association for Laboratory Animal Science; 1991 Apr. Laboratory animal science v. 41 (2): p. 128-133; 1991 Apr. Includes references.

Language: English

Descriptors: Primates; Teeth; Amputation; Postoperative complications

Abstract: Removing or reducing the size of canine teeth of baboons and macaques has become an accepted practice to minimize the potential for injury to laboratory animal care personnel. A submucosal vital root retention procedure was adapted from the technique of root banking human teeth. In this technique, the crown of a tooth is amputated below the level of the alveolar bone crest, and the exposed pulp covered by a mucoperiosteal gingival flap. Our aim was to disarm the canine teeth of baboons and macaques with a single surgical procedure that would preserve a vital tooth root buried in alveolar bone under normal mucosa. Our long-term objective was to develop a technique that would not require further clinical management during the life of the animal. This paper presents

the surgical techniques used.

138 NAL Call. No.: 410 B77
Djungarian hamster females conceive in the presence of multiple sibling males. Ferguson, B.; Dewsbury, D.A. London : Bailliere Tindall; 1987 Apr. Animal behaviour v. 35 (pt.2): p. 597-599; 1987 Apr. Includes references.

Language: English

Descriptors: Hamsters; Copulation; Animal breeding; Reproductive behavior

139 NAL Call. No.: 410.9 P94
DNA fingerprinting for genetic monitoring of inbred laboratory rats and mice. Russell, R.J.; Festing, M.F.W.; Deeny, A.A.; Peters, A.G. Cordova, Tenn. : American Association for Laboratory Animal Science; 1993 Oct. Laboratory animal science v. 43 (5): p. 460-465; 1993 Oct. Includes references.

Language: English

Descriptors: Rats; Mice; Dna fingerprinting

Abstract: DNA fingerprinting using a nonisotopically labeled minisatellite probe provided a valuable technique for genetic monitoring/quality control of laboratory rodents. Each of 12 inbred rat strains had a unique fingerprint pattern, and colonies separated for over 20 years had identical or nearly identical patterns. Strain LOU/Iap, which is known to have been genetically contaminated in the past, was clearly different from strain LOU/CN, supporting previous findings of studies using biochemical markers. Inbred strains of mice were also found to differ from each other. The F1 hybrid between C57BL/6 and CBA/Ca could not be distinguished from C57BL/6 by using DNA fingerprints, although they could be distinguished by using biochemical markers. Some congenic strains differed from their inbred partner. A suspected genetic contamination of MRL/Mp-lpr mice could not be detected in a sample of the breeding colony by using biochemical markers; however, DNA fingerprints from the suspect animals clearly demonstrated genetic segregation. DNA fingerprinting will be of particular value in investigating suspected problems as only a small sample of fresh, frozen, or ethanol-preserved tissue is needed. Thus, the actual suspect animals can be studied, rather than samples from a breeding colony from which contaminated animals may already have been eliminated.

140 NAL Call. No.: 410.9 P94
Duration of protection from reinfection following exposure to sialodacryoadenitis virus in wistar rats. Percy, D.H.; Bond, S.J.; Paturzo, F.X.; Bhatt, P.N. Cordova, Tenn. : American Association for Laboratory Animal Science; 1990 Mar. Laboratory animal science v. 40 (2): p. 144-149. ill; 1990 Mar. Includes references.

Language: English

Descriptors: Rats; Sialodacryoadenitis virus; Viral diseases; Disease resistance; Immunity; Reinfection; Disease transmission

Abstract: Wistar rats [CR1:(WI)BR] were inoculated intranasally with approximately 10(3) median mouse lethal infective doses of sialodacryoadenitis (SDA) virus. Animals were subsequently selected at random, removed to a separate isolation room, and reinfected with SDA virus at 3, 6, 9, 12 or 15 months. Pre- and postinoculation serum samples were collected from all animals during the course of the study and evaluated for antibody titers to SDA virus. All experimental, control and sentinel animals, following inoculation with SDA virus, were necropsied and examined for lesions consistent with SDA. Salivary gland lesions were minimal to absent in rats reinfected with SDA virus for up to 12 to 15 months after the initial exposure and minimal to moderate in the respiratory tract at 12 or 15 months. SDA-associated lesions were extensive in age matched control animals examined at each time period of reinfection with SDA virus. Thus, prior exposure to SDA virus did protect against the development of typical salivary gland lesions for up to 15 months. Recovered animals were evaluated for their ability to transmit the virus following reinfection. Rats reinfected at 6 or 9 months were infectious to their naive cage mates. The results indicate that reinfection with homologous rat coronavirus can occur as early as 6 months after the initial infection, and such rats can transmit the infection to contact controls.

141 NAL Call. No.: 410.9 P94
Effect of acclimation to caging on nephrotoxic response of rats to uranium. Damon, E.G.; Eidson, A.F.; Hobbs, C.H.; Hahn, F.F.
Joliet, Ill. : American Association for Laboratory Animal Science; 1986 Feb. Laboratory animal science v. 36 (1): p. 24-36. ill; 1986 Feb. Includes references.

Language: English

Descriptors: Rats; Acclimatization; Metabolism cage; Toxicity; Responses; Uranium; Kidneys

142 NAL Call. No.: QL55.A1L3
Effect of cage population density on plasma corticosterone and peripheral lymphocyte populations of laboratory mice. Peng, X.; Lang, C.M.; Drozdowicz, C.K.; Ohlsson-Wilhelm, B.M.
London : Royal Society of Medicine Services; 1989 Oct. Laboratory animals v. 23 (4): p. 302-306; 1989 Oct. Includes references.

Language: English

Descriptors: Mice; Cage density; Corticosterone; Blood plasma; Lymphocytes; Stress

Abstract: The effect of different population densities of mice per cage on plasma corticosterone, peripheral lymphocytes and specific lymphocyte subpopulations was investigated. The animals were housed in groups of 2, 4 or 8 mice per cage and the blood samples were taken from each animal of these groups on days one, 7 and 14. A significant elevation ($P < 0.05$) in plasma corticosterone concentration was observed in the group of 8 mice per cage on days one and 7 as compared with those of 2 or 4 mice per cage. The number of peripheral lymphocytes was significantly decreased in the groups of 2 ($P < 0.01$) and 8 ($P < 0.05$) mice per cage as compared with the group of 4 mice per

cage on day one. A significantly decreased number of lymphocytes ($P < 0.01$) in the group of 8 mice per cage continued to day 7. There were no significant differences in specific lymphocyte subpopulations observed among these groups. The results of this study suggest that a population density of 4 mice per cage induced minimal stress compared to that induced by the population densities of 2 or 8 mice per cage. Since stress is known to induce alteration in a variety of biological functions, the population density of mice per cage should be considered in the interpretation of research data.

143 NAL Call. No.: QL55.A1L33
The effect of cage size on the behavior of individually housed rhesus monkeys. Bayne, K.A.L.; McCully, C.
New York, N.Y. : Nature Publishing Company; 1989 Oct.
Lab animal v. 18 (7): p. 25-28; 1989 Oct. Includes references.

Language: English

Descriptors: Rhesus monkeys; Cage size; Animal behavior

144 NAL Call. No.: 470 C16D
The effect of captivity on reproduction and development in *Peromyscus maniculatus*.
Millar, J.S.; Threadgill, D.A.L.
Ottawa, Canada : National Research Council of Canada; 1987
Jul. Canadian journal of zoology v. 65 (7): p. 1713-1719; 1987
Jul. Includes references.

Language: English

Descriptors: *Peromyscus*; Breeding methods; Population pressure; Natural mating; Laboratory rearing; Litter size; Reproductive performance

145 NAL Call. No.: 41.8 AM3A
Effect of in-house transport on murine plasma corticosterone concentration and blood lymphocyte populations.
Drozdowicz, C.K.; Bowman, T.A.; Webb, M.L.; Lang, C.M.
Schaumburg, Ill. : American Veterinary Medical Association; 1990 Nov. American journal of veterinary research v. 51 (11): p. 1841-1846; 1990 Nov. Includes references.

Language: English

Descriptors: Mice; Transport of animals; Stress; Lymphocytes; Corticosterone; Blood plasma; Leukocyte count; Thymus gland; Immunosuppression

Abstract: The effect of in-house transport on plasma corticosterone concentration and blood lymphocyte populations of laboratory mice was investigated. Mice were transported within a research facility at 0900 hours in a pattern designed to simulate that commonly used by investigators prior to experimental manipulation. Plasma corticosterone concentration and WBC count were determined at 0.25, 2, 4, 8, 12, and 24 hours after transport. A significant (P less than 0.05) increase in plasma corticosterone concentration was seen in mice immediately after transport. The normal circadian rhythm of plasma corticosterone concentration was altered for the

subsequent 24-hour period. Corresponding significant (P less than 0.05) decreases in total WBC numbers, lymphocyte count, and thymus gland weight were observed. The decrease in total blood lymphocyte numbers at 4 hours was reflected in B- and T-lymphocyte populations. The subsequent acute increase in plasma corticosterone concentration was associated with alterations in the cellular components of the immune system. Results of the study indicated that routine in-house transport of laboratory mice should be considered a stressful stimulus.

146 NAL Call. No.: QL55.A1L33
Effect of temporary restricted social housing on later reproductive behavior in adolescent chimpanzees.
Fritz, J.; Howell, S.M.
New York, N.Y. : Nature Publishing Company; 1992 May.
Lab animal v. 21 (5): p. 21-25; 1992 May. Includes references.

Language: English

Descriptors: Chimpanzees; Animal housing; Sexual behavior

147 NAL Call. No.: 410.9 P94
The effect of transportation stress on splenic natural killer cell activity in C57BL/6J mice.
Aguila, H.N.; Pakes, S.P.; Lai, W.C.; Lu, Y.S.
Cordova, Tenn. : American Association for Laboratory Animal Science; 1988 Apr. Laboratory animal science v. 38 (2): p. 148-151; 1988 Apr. Includes references.

Language: English

Descriptors: Mice; Transport of animals; Air transport; Trucks; Stress; Spleen; Cell physiology; Corticosterone

Abstract: Splenic natural killer cell activity and plasma corticosterone levels were measured in air- and truck-transported C57BL/6J mice (*Mus musculus*) on days 0, 1, 3 and 5 post-arrival. These data are important in determining adequate stabilization periods for transported animals before studies involving natural killer cells are begun. Three control groups (phosphate buffered saline, polyinosinic-polycytidilic acid, and hydrocortisone injected mice) were stabilized in the animal facilities 3 weeks before the start of experiments. Natural killer activity in transported mice was reduced significantly (p less than 0.05) on day 0 and returned to normal levels by 24 hours. Plasma corticosterone levels were increased significantly (p less than 0.005) on day 0 and returned to control levels by day 1, correlating inversely with splenic natural killer activity. This study indicates that stress resulting from transportation causes a short-term decrease in the splenic natural killer cell activity of mice, and this decrease may be related to the increased plasma corticosterone levels induced by the stressful event. We conclude that mice should be stabilized at least 24 hours before experiments involving the natural killer cell system are begun.

148 NAL Call. No.: 410.9 P94
The effectiveness of a microisolator cage system and sentinel mice for controlling and detecting MHV and Sendai virus infections. Dillehay, D.L.; Lehner, N.D.M.; Huerkamp, M.J.

Cordova, Tenn. : American Association for Laboratory Animal Science; 1990 Jul. Laboratory animal science v. 40 (4): p. 367-370; 1990 Jul. Includes references.

Language: English

Descriptors: Mice; Murine paramyxovirus; Viral hepatitis; Cages; Isolation; Sentinel animals; Litter; Disease prevention; Detection

Abstract: Experiments were conducted to determine (a) whether BALB/c mice housed on soiled bedding can be used as sentinels for the detection of Sendai virus and MHV from infected mice housed in microisolators, and (b) whether the microisolator caging system protects mice against Sendai virus and MHV infections. Sentinel mice were housed in microisolator cages, exposed continuously to soiled bedding and bled at 21 and 42 days for serology. All sentinel mice were seropositive for MHV by 42 days; however, sentinel mice exposed to soiled bedding were seronegative for Sendai virus at 21 and 42 days. These results suggest that sentinels housed on soiled bedding may not detect all infectious murine viruses. This study also showed that the microisolator caging system provided an effective barrier against MHV infection at the cage level and suggests that the microisolators should protect mice against other infectious agents.

149 NAL Call. No.: 410.9 P94

The effects of a mass air displacement unit on the microenvironmental parameters within isolator cages.

Corning, B.F.; Lipman, N.S.

Cordova, Tenn. : American Association for Laboratory Animal Science; 1992 Feb. Laboratory animal science v. 42 (1): p. 91-93; 1992 Feb. Includes references.

Language: English

Descriptors: Mice; Cages; Air quality; Air flow; Microenvironments; Gases

150 NAL Call. No.: QL55.A1L33

Effects of ambient lighting on the eyes of rats.

Kupp, R.P. Jr; Pinto, C.A.; Rubin, L.F.; Griffin, H.E.

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

Lab animal v. 18 (5): p. 32-35, 37. ill; 1989 Jul. Includes references.

Language: English

Descriptors: Rats; Eyes (animal); Natural light; Facilities; Lighting; Retinas; Degeneration

151 NAL Call. No.: 410.9 P94

Effects of cage beddings on microsomal oxidative enzymes in rat liver. Weichbrod, R.H.; Cisar, C.F.; Miller, J.G.;

Simmonds, R.C.; Alvares, A.P.; Ueng, T.H.

Cordova, Tenn. : American Association for Laboratory Animal Science; 1988 Jun. Laboratory animal science v. 38 (3): p. 296-298; 1988 Jun. Includes references.

Language: English

Descriptors: Rats; Liver; Enzyme activity; Microsomes; Benzopyrene; Hydroxylases; Cages; Litter; Wood shavings; Wood chips; Pines; Cedrus; Maize cobs

Abstract: The purpose of the present studies was to evaluate the effects of some commercially available cage beddings on rat liver microsomal cytochrome P-450-dependent drug-metabolizing enzyme, ethylmorphine N-demethylase, and the carcinogen-metabolizing enzyme, benzo(a)pyrene hydroxylase. Sprague-Dawley rats were housed in cages containing cedar chip, corncob or heat-treated pinewood bedding for 3 weeks. Control rats were housed in cages on wire bottom floors containing no bedding material. Rats housed in cages containing cedar chip showed 18, 46 and 49% increases in liver cytochrome P-450 content, ethylmorphine N-demethylase and benzo(a)pyrene hydroxylase activities, respectively. The liver enzyme activities of rats housed in cages containing corncob bedding were similar to those obtained with control rats. In contrast, the pinewood-bedded rats showed a 21% decrease in ethylmorphine N-demethylase activity without affecting cytochrome P-450 content and benzo(a)pyrene hydroxylase activity. Hexobarbital-induced sleep times of the variously bedded rats were similar to those of control animals. These data suggest that the commercial bedding materials differ in their abilities to affect liver microsomal enzymes. Thus, interlaboratory variability in basal enzyme activities reported in the literature may be partly due to bedding materials used in the animal's cages.

152 NAL Call. No.: SF407.P7T49 1991
Effects of cage size and environmental enrichment on behavioral and physiological responses of rhesus macaques to the stress of daily events., 1st ed.;
Line, S.W.; Markowitz, H.; Morgan, K.N.; Strong, S.
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. 160-179; 1991. Includes references.

Language: English

Descriptors: Macaca mulatta; Environment; Enrichment; Cage size; Stress; Animal welfare; Animal husbandry

153 NAL Call. No.: 410.9 P94
The effects of cage size and pair housing on exercise of beagle dogs. Hughes, H.C.; Campbell, S.; Kenney, C.
Cordova, Tenn. : American Association for Laboratory Animal Science; 1989 Jul. Laboratory animal science v. 39 (4): p. 302-305; 1989 Jul. Includes references.

Language: English

Descriptors: U.S.A.; Dogs; Animal housing; Cage size; Cage density; Exercise; Animal welfare; Regulations

Abstract: One of the requirements of the 1985 amendments to the Animal Welfare Act is the establishment of an exercise program for dogs. Assumptions have been made by some that larger cages or the presence of a companion animal will motivate exercise. To examine how cage size, pair housing and human contact affect exercise, a study was conducted using a computerized video-data acquisition system that measured

distance traveled and time spent moving in 1 X 1 m, (single only) and 1 X 2 m (single and paired) and 1 X 1.5 m cage (paired only) cages. Male beagle dogs (n = 6) housed singly in the 1 m² cage traveled an average of 55m/hr spending only 8% (57 min) of the 12 h photo period in motion. When the cage size was doubled, the average distance traveled decreased to 13m/hr and the time spent moving increased to 11% (77 min/day). When dogs were pair housed in a regulation size cage, the average distance traveled decreased to 8.6 m/hr and they spent less than 6% of the day in exercising (42 min/12hrs.). The greatest amount of exercise was seen when dogs were housed as a pair in a cage less than recommended size (an average of 109 m/hr and 8.8 min/hr). Therefore, these data indicate that larger cages or pair housing in regulation size cages have little or no effect on the activity of purpose bred male beagle dogs. There was, however, a direct correlation between activity, time and distance, and the presence of humans in the animal room. When people were in the room, dog activity increased. When people were absent, dogs were less active.

154 NAL Call. No.: 410.9 P94
Effects of dichlorvos treatment on mouse reproduction.
Casebolt, D.B.; Leary, S.L.; Undeutsch, L.
Cordova, Tenn. : American Association for Laboratory Animal Science; 1990 Jan. Laboratory animal science v. 40 (1): p. 65-67; 1990 Jan. Includes references.

Language: English

Descriptors: Mice; Dichlorvos; Vapor; Reproductive efficiency; Cholinesterase; Litter size; Gestation period

Abstract: To test whether exposure to dichlorvos vapors for treatment of mouse ectoparasites resulted in temporary cessation of breeding, we exposed harem breeding groups of mice to varying concentrations of dichlorvos vapors and examined the effects of exposure on litter frequency and litter size. All exposure levels resulted in decreased plasma cholinesterase concentrations in treated mice for up to 10 days following the completion of exposure. Litter frequency and size were unaffected by dichlorvos exposure, and gestation times were not prolonged. Therefore, treatment with dichlorvos vapors during breeding did not affect reproduction in exposed mice.

155 NAL Call. No.: QL55.A1L3
The effects of group housing on the research use of the laboratory rabbit. Whary, M.; Peper, R.; Borkowski, G.; Lawrence, W.; Ferguson, F. London : Royal Society of Medicine Services; 1993 Oct.
Laboratory animals v. 27 (4): p. 330-341; 1993 Oct. Includes references.

Language: English

Descriptors: Rabbit housing; Groups

Abstract: This project evaluated the influence of group housing on common aspects of research use of female laboratory rabbits (*Oryctolagus cuniculus*). Eight rabbits housed individually in conventional cages were compared to a second group of 8 housed as a social group in a proportionately

larger enclosure. The group housing method provided increased opportunities for exercise, social contact, and a more novel environment. As a function of housing style, the 2 experimental groups were compared on humoral and delayed hypersensitivity response, feed intake, growth rate, and selected physiological parameters that are considered to reflect stress in most species. Single and group housed rabbits did not significantly differ in physiological and immunological measurements, indicating that the practical research performance (immune response, stress level, growth rates etc.) of these rabbits was not significantly affected by group housing compared with the more traditional single housing. Analysis of group social behaviour indicated that the rabbits preferred small social groups, had preferences for microenvironments within the enclosure, and exhibited behaviours that are not possible when housed singly. Group housing appeared to be a successful method for enriching the environment of female rabbits and aspects of it should be considered in the approach to housing rabbits used in research.

156 NAL Call. No.: QL55.L342
Effects of humidity on breeding success in laboratory mice.
Donnelly, H.
Potters Bar : Universities Federation for Animal Welfare;
1989. Laboratory animal welfare research : rodents : proc of a
symposium organized by Universities Federation for Animal
Welfare, held at the Royal Holloway and Bedford New College,
Univ of London, Egham, Surrey, 22nd April 1988. p. 17-24;
1989. Includes references.

Language: English

Descriptors: Mice; Relative humidity; Reproductive
performance; Litter size; Survival; Growth rate; Neonatal
mortality

157 NAL Call. No.: QL55.A1L3
The effects of intracage ventilation on microenvironmental
conditions in filter-top cages.
Lipman, N.S.; Corning, B.F.; Coiro, M.A. Sr
London : Royal Society of Medicine Services; 1992 Jul.
Laboratory animals v. 26 (3): p. 206-210; 1992 Jul. Includes
references.

Language: English

Descriptors: Mice; Cages; Ventilation; Microenvironments;
Carbon dioxide; Ammonia; Relative humidity

Abstract: Filter-top cages, while effective in reducing cross contamination by particulate material including microbes, can also cause accumulation of the waste gases carbon dioxide and ammonia as well as increased intracage relative humidity. A prototype system which provided each cage with 23 air changes per hour through a nozzle inserted in the filter lid was evaluated. The ventilated cageing system was effective in reducing intracage carbon dioxide, ammonia and relative humidity levels. Mean weekly carbon dioxide levels were 2900 ppm lower, ammonia levels 240 ppm lower and intracage relative humidity levels 8% lower in the ventilated cages than in unventilated controls.

158 NAL Call. No.: QL737.C22C36
Effects of primary enclosure size and human contact.
Hughes, H.C.; Campbell, S.
Bethesda, MD : Scientists Center for Animal Welfare; 1990 Jan.
Canine research environment / edited by Joy A. Mench and Lee
Krulisch. p. 66-75; 1990 Jan. Paper presented at a conference
held by the Scientists Center for Animal Welfare, June 22,
1989, Bethesda, Md. Question and answer session p. 74-75.
Includes references.

Language: English

Descriptors: Dogs; Laboratory animals; Animal housing;
Socialization; Animal welfare

159 NAL Call. No.: QL750.A6
The effects of repeated handling by familiar and unfamiliar
people on rabbits in individual cages and group pens.
Podberscek, A.L.; Blackshaw, J.K.; Beattie, A.W.
Amsterdam : Elsevier Science Publishers, B.V.; 1991 Jan.
Applied animal behaviour science v. 28 (4): p. 365-373; 1991
Jan. Includes references.

Language: English

Descriptors: Rabbits; Handling; Fearfulness; Cages; Pens

160 NAL Call. No.: 410.9 P94
The effects of single caging on chimpanzee behavior.
Brent, L.; Lee, D.R.; Eichberg, J.W.
Cordova, Tenn. : American Association for Laboratory Animal
Science; 1989. Laboratory animal science v. 39 (4): p.
345-346; 1989. Includes references.

Language: English

Descriptors: Chimpanzee; Cages; Animal behavior; Animal
welfare; Environment

161 NAL Call. No.: 410.9 P94
The effects of two novel objects on the behavior of singly
caged adult rhesus macaques.
Line, S.W.; Morgan, K.N.
Cordova, Tenn. : American Association for Laboratory Animal
Science; 1991 Aug. Laboratory animal science v. 41 (4): p.
365-369; 1991 Aug. Includes references.

Language: English

Descriptors: Macaca mulatta; Toys; Environment; Enrichment;
Behavior change; Animal behavior; Abnormal behavior; Animal
welfare

Abstract: Six female and six male adult rhesus macaques were
given sticks and nylon balls as an attempt at simple cage
enrichment. A latin square design was used to compare behavior
during separate 4-week periods with each object and during a
control period with no object. Frequency and duration of 15
different behaviors were recorded. Resting was the most common
activity which decreased slightly in duration when the stick
or nylon ball was present ($P < 0.02$). The mean duration of

stick use was longer than that of the nylon ball ($P < 0.01$). No other behaviors changed significantly, including the frequency of abnormal behaviors such as self-abuse, stereotypic acts, and bizarre postures. Generally, these objects were used infrequently and led to few changes in the behavior of singly-caged adult rhesus macaques. However, they did appear to stimulate activity for some individuals.

162 NAL Call. No.: 410.9 P94
The efficacy and safety of chlorpyrifos (Dursban) for control of *Myobia musculi* infestation in mice.
Pence, B.C.; Demick, D.S.; Richard, B.C.; Buddingh, F.
Cordova, Tenn. : American Association for Laboratory Animal Science; 1991 Apr. *Laboratory animal science* v. 41 (2): p. 139-142; 1991 Apr. Includes references.

Language: English

Descriptors: Mice; *Myobia musculi*; Mite control; Granules; Chlorpyrifos; Infestation; Toxicity; Controlled release

Abstract: Mite infestation in laboratory mice is a common, but troublesome problem in animal facilities. Recommended treatment regimens are frequently ineffective because of the short period of exposure to the control agent. In an effort to develop a time-release approach, we have investigated the use of Dursban granules applied in animal bedding. Initial toxicity studies indicated that this pesticide can be added to shoebox cage litter at levels three times that used for outdoor application (6 g per 27 by 48 cm shoebox cage) without producing clinical signs of toxicity. Metabolism studies demonstrated that although individual mice showed decreased brain acetylcholinesterase activity following treatment, liver cytosolic glutathione-S-transferase, liver microsomal aminopyrine N-demethylase, or aryl hydrocarbon hydroxylase were not induced after 1 week of exposure. Parasitological studies indicated elimination of mites and itching in an experimental infestation, as well as reduction of itching in severely symptomatic, naturally infested mice, following treatment with the granules. These studies demonstrate the nontoxic efficacy of Dursban in the control of *Myobia musculi*.

163 NAL Call. No.: QL55.I5
An efficient method for the intensive production of F1 (CBA/Ca X C57BL/6) hybrid mice.
Parnham, D.W.; Smith, L.C.
Sussex : The Institute; 1990 Apr01.
Animal technology : journal of the Institute of Animal Technology v. 41 (1): p. 43-47; 1990 Apr01.

Language: English

Descriptors: Mice; Progeny production; Crosses; Reproductive performance

Abstract: In response to a request for a regular supply of 25 four-week-old F1 (CBA/Ca X C57BL/6) female mice per week, a production system has been developed, involving the use of one standard 56-cage rack. The system has proved to be reliable, economic and easily managed. By careful selection of females, both mean litter size at birth and percentage survival to weaning showed a marked increase on that expected from either of the inbred lines.

164 NAL Call. No.: 410.9 P94
Elimination of mouse hepatitis virus from a breeding colony by temporary cessation of breeding.
Weir, E.C.; Bhatt, P.N.; Barthold, S.W.; Cameron, G.A.; Simack, P.A. Cordova, Tenn. : American Association for Laboratory Animal Science; 1987 Aug. Laboratory animal science v. 37 (4): p. 455-458. ill; 1987 Aug. Includes references.

Language: English

Descriptors: Mice; Viral hepatitis; Animal breeding; Disease control; Histopathology

165 NAL Call. No.: 410.9 P94
Elimination of sialodacryoadenitis virus from a rat production colony by using seropositive breeding animals.
Brammer, D.W.; Dysko, R.C.; Spilman, S.C.; Oskar, P.A. Cordova, Tenn. : American Association for Laboratory Animal Science; 1993 Dec. Laboratory animal science v. 43 (6): p. 633-634; 1993 Dec. Includes references.

Language: English

Descriptors: Rats; Sialodacryoadenitis virus; Disease control; Colonies; Screening

166 NAL Call. No.: QL55.A1L33
An employee appraisal model for supervisors and managers.
Cummings, J.F.
New York : Media Horizons; 1986 May.
Lab animal v. 15 (4): p. 19-23; 1986 May. Includes references.

Language: English

Descriptors: Laboratory animals; Facilities; Employment; Managers; Supervisors; Evaluation criteria; Models

167 NAL Call. No.: QL55.A1L33
An employee training program in research animal care and use.
Hammer, J.G.; Miller, B.; Ali, F.
New York : Media Horizons; 1987 Sep.
Lab animal v. 16 (6): p. 53-55, 57; 1987 Sep. Includes references.

Language: English

Descriptors: U.S.A.; Laboratory animals; Animal husbandry; Facilities; Employment; Training; Education; Animal research; Programs

168 NAL Call. No.: 410.9 P94
Enclosure design and reproductive success of baboons used for reproductive research in Kenya.
Else, J.G.; Tarara, R.; Suleman, M.A.; Eley, R.M.
Joliet, Ill. : American Association for Laboratory Animal Science; 1986 Apr. Laboratory animal science v. 36 (2): p. 168-172; 1986 Apr. Includes references.

Language: English

Descriptors: Kenya; Baboons; Reproductive behavior; Cage rearing; Design

169 NAL Call. No.: QL55.I5
An enriched commune housing system for laboratory rats--a preliminary view. Batchelor, G.R. \u Institute of Orthopaedics, Stanmore, Middlesex Sussex : The Institute; 1993 Dec.
Animal technology : journal of the Institute of Animal Technicians v. 44 (3): p. 201-214; 1993 Dec. Includes references.

Language: English

Descriptors: Rats; Cages; Enrichment; Animal welfare; Animal behavior

Abstract: Most current methods of housing laboratory rats allow very little enrichment to be accommodated (Figure 1). In addition, a floor space of 1600 cm² and a height of 20 cm surely does not permit normal social behaviour to occur (Figure 2). The view put forward here, therefore, is that current housing systems for rats are ethologically, physiologically and psychologically damaging, inappropriate and restrictive and should gradually be replaced. An enriched commune housing system with a view to commercial application, has been designed and constructed, albeit in a fairly crude form. A grant obtained from the RSPCA will enable video recording of social and individual behaviors to be analysed, including infra-red techniques during the hours of darkness. In addition, it is hoped that some form of activity index may be constructed to demonstrate the strong exploratory instincts that laboratory rats possess but are currently frustrated in their attempts to show. This work is in its infancy and the subject of this presentation is a preliminary, objective assessment of some of the background to some behavioural aspects of laboratory animal welfare, as well as focusing on the rat commune housing system itself.

170 NAL Call. No.: QL737.P9H78
Enriching the lives of captive primates: issues and problems. Novak, M.A.; Drewsen, K.H. Park Ridge, N.J. : Noyes Publications; 1989.
Housing, care and psychological well-being of captive and laboratory primates / edited by Evalyn F. Segal. p. 161-182. ill; 1989.

Language: English

Descriptors: Primates; Capture of animals; Animal welfare; Psychological factors; Environment; Cages; Social behavior

171 NAL Call. No.: QL55.N48
Enrichment techniques for confined primates. O'Neill, P. Bethesda, Md. : The Center; 1987.
Newsletter - Scientists Center for Animal Welfare v. 9 (4): p. 5, 7-8. ill; 1987. Includes references.

Language: English

Descriptors: Primates; Animal welfare; Animal housing

172 NAL Call. No.: 410.9 P94
Enterococcolitis associated with Escherichia coli and Campylobacter-like organisms in a hamster (Mesocricetus auratus) colony.
Dillehay, D.L.; Paul, K.S.; Boosinger, T.R.; Fox, J.G.
Cordova, Tenn. : American Association for Laboratory Animal Science; 1994 Feb. Laboratory animal science v. 44 (1): p. 12-16; 1994 Feb. Includes references.

Language: English

Descriptors: Hamsters; Enterocolitis; Cecum; Escherichia coli; Campylobacter; Histopathology; Colon; Small intestine; Pathogenesis

Abstract: Sporadic diarrhea and weight loss were observed in a breeding colony of Syrian hamsters during a 2-year period. Thirteen adult hamsters with diarrhea, anorexia, and weight loss were examined. Histologic lesions consisted of diffuse nonsuppurative enterococcolitis and multifocal epithelial proliferation in the cecum and colon. Goblet cell hyperplasia was extensive in the colonic mucosa of many hamsters. The hamsters in this colony had not been treated with antibiotics nor was Clostridium difficile isolated from any of the hamsters. In contrast to typical proliferative ileitis in hamsters, most hamsters involved in this outbreak were mature adults rather than weanlings, and lesions were predominantly inflammatory rather than proliferative and involved small intestine, cecum, and colon rather than ileum. The isolation of beta-hemolytic Escherichia coli and demonstration of Campylobacter-like organisms by transmission electron microscopy and Warthin-Starry staining suggest that these two agents were involved in the pathogenesis of this disease. Further studies, however, are needed to investigate the pathogenesis of this enteric syndrome in hamsters.

173 NAL Call. No.: QL55.I5
Environmental enrichment: a review.
Chamove, A.S.
Sussex : The Institute; 1989 Dec.
Animal technology : journal of the Institute of Animal Technology v. 40 (3): p. 155-178. ill; 1989 Dec. Literature review. Includes references.

Language: English

Descriptors: Primates; Environmental factors; Enrichment; Animal welfare; Animal behavior; Cage size; Space requirements; Cages

174 NAL Call. No.: QL55.A1L33
Environmental enrichment and exploration.
Mench, J.A.
New York, N.Y. : Nature Publishing Company; 1994 Feb.
Lab animal v. 23 (2): p. 38-41; 1994 Feb. Includes references.

Language: English

Descriptors: Laboratory animals; Environment; Enrichment;
Animal welfare; Animal behavior; Exploration; Animal housing

175 NAL Call. No.: QL55.A1L33
Environmental enrichment: behavioral responses of rhesus to
puzzle feeders. Bloom, K.R.; Cook, M.
New York, N.Y. : Nature Publishing Company; 1989 Jul.
Lab animal v. 18 (5): p. 25, 27, 29, 31. ill; 1989 Jul.
Includes references.

Language: English

Descriptors: Rhesus monkeys; Environment; Animal housing;
Cages; Equipment; Feed dispensers; Animal behavior

176 NAL Call. No.: Videocassette no.751
Environmental enrichment devices and procedures for captive
nonhuman primates Lyna M. Watson.
Watson, Lyna M.
New England Regional Primate Research Center
Cambridge, MA : Harvard Medical School, New England Regional
Primate Research Center,; 1989.
1 videocassette (30 min.) : sd., col.; 1/2 in. VHS format.

Language: English

Descriptors: Laboratory animals; Housing; Videorecordings;
Primates; Videorecordings; Macaca mulatta; Videorecordings;
Macaca fascicularis; Videorecordings; Callithrix jacchus;
Videorecordings; Saguinus oedipus; Videorecordings

Abstract: This videotape describes and demonstrates the
environmental enrichment devices and procedures used for
singly and group housed macaques and New World monkeys at the
New England Regional Primate Research Center.

177 NAL Call. No.: QL55.I5
Environmental enrichment for laboratory mice (*Mus musculus*).
Ward, G.E.; DeMille, D.
Sussex : The Institute; 1991 Dec.
Animal technology : journal of the Institute of Animal
Technology v. 42 (3): p. 149-156; 1991 Dec. Includes
references.

Language: English

Descriptors: Mice; Environment; Enrichment; Cages; Bottles;
Animal behavior

Abstract: The mouse, (*Mus musculus*), is commonly distributed
throughout all continents of the world and must be considered
as one of the most successfully adapted animal species on
earth. Thorburn, (1921) described the natural habits of this
animal species and commented upon its preferred occupation of
dwelling houses "even before they were completed". This same
author described the mouse as a good climber and also its
gnawing abilities used to enter cupboards and store rooms in
order to nest and rear its young. In addition and more
recently, other authors have considered that laboratory mouse
populations are tightly organised into territorially
restricted social units. DeFries and Mclearn, 1972, Lidicker,
1976), with evidence that mice adopt unambiguously territorial

behaviour in large enclosures which may be very stable, (Crowcroft, 1955). There is also evidence of aggressive behaviour toward migrant animals through these territories, (Reimer and Petras, 1967). It is within this framework that we must consider the standard laboratory mouse which, whilst being genetically manipulated during many generations to produce an animal model markedly different to its ancestors, nevertheless still retains most if not all of the characteristics of its wild forbears, such as curiosity, adaptability, intelligence and male aggression. With all of these inherent characteristics, it must be considered as doubtful whether the current bland and unenriched laboratory animal cage environment is either sufficient or able to fulfil the legitimate requirements of this species.

178 NAL Call. No.: QL55.N48
Environmental enrichment for laboratory primates.
Line, S.; Markowitz, H.
Bethesda, Md. : The Center; 1987.
Newsletter - Scientists Center for Animal Welfare v. 9 (2): p. 3, 5. ill; 1987.

Language: English

Descriptors: Primates; Animal experiments; Animal welfare; Environment; Facilities

179 NAL Call. No.: QL55.I5
Environmental enrichment for large scale marmoset units.
Heath, M.; Libretto, S.E.
Sussex : The Institute; 1993 Dec.
Animal technology : journal of the Institute of Animal Technicians v. 44 (3): p. 163-173; 1993 Dec. Includes references.

Language: English

Descriptors: Callithrix jacchus; Marmosets; Environment; Cages; Enrichment; Animal welfare

Abstract: The environment can be enriched for large numbers of marmosets, through every day routine procedures. Items such as fruit chains, pieces of hollow tubing, foraging boxes and wooden perches or platforms provide a more stimulating environment and promote innate behaviour that is otherwise restricted or suppressed in the laboratory cage. Cage furniture is not the total answer to environmental enrichment; capable staff, social grouping, variable feeding regimes, presentation of food, cage cleaning and animal handling are also important considerations. Animal technicians are encouraged to participate in such projects and to contribute their ideas into future plans. Having both the closest daily contact with, and dedication to, the marmosets, they are the best people to both implement and evaluate environmental change. Reactions of marmosets to environmental innovation are described, and shown to vary with social structure and experience.

180 NAL Call. No.: QL737.P9H78
Environmental enrichment for monkeys used in behavioral toxicology studies. Gilbert, S.G.; Wrenshall, E.
Park Ridge, N.J. : Noyes Publications; 1989.

Housing, care and psychological well-being of captive and laboratory primates / edited by Evalyn F. Segal. p. 244-254. ill; 1989.

Language: English

Descriptors: Monkeys; Environment; Cages; Exercise; Laboratories; Toxicology; Programs

181 NAL Call. No.: QL55.A1L33
Environmental enrichment in a large animal facility.
DeLuca, A.M.; Kranda, K.C.
New York, N.Y. : Nature Publishing Company; 1992 Jan.
Lab animal v. 21 (1): p. 38-44; 1992 Jan. Includes references.

Language: English

Descriptors: Laboratory animals; Environment; Enrichment; Animal behavior

182 NAL Call. No.: SF407.P7T49 1991
An environmental enrichment program for caged rhesus monkeys at the Wisconsin Regional Primate Research Center., 1st ed.; Reinhardt, V.
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. 149-159; 1991. Includes references.

Language: English

Descriptors: Wisconsin; Macaca mulatta; Environment; Enrichment; Research institutes; Animal welfare

183 NAL Call. No.: QL55.A1L3
Environmental ultrasound in laboratories and animal houses: a possible cause for concern in the welfare and use of laboratory animals. Sales, G.D.; Wilson, K.J.; Spencer, K.E.V.; Milligan, S.R. London : Royal Society of Medicine Services; 1988 Oct.
Laboratory animals v. 22 (4): p. 369-375; 1988 Oct. Includes references.

Language: English

Descriptors: Laboratory animals; Animal experiments; Animal welfare; Animal housing; Laboratories; Ultrasound; Environment

Abstract: Many laboratory animals are known to be sensitive to sounds (ultrasounds) beyond the nominal upper limit (20 kHz) of the human hearing range. Sources of sound in laboratories and animal houses were examined to determine the extent of ambient ultrasound. Of 39 sources monitored, 24 were found to emit ultrasonic sounds. Many of these (e.g. cage washers and hoses) also produced sound in the audible range. Running taps, squeaky chairs and rotating glass stoppers created particularly high sound pressure levels and contained frequencies to over 100 kHz. The oscilloscopes and visual display units investigated provided particular cause for concern as they emitted sounds that were entirely ultrasonic and therefore were apparently silent. Ambient ultrasound

therefore appears to be common in laboratories and animal houses. It is suggested that its effect on laboratory animals should be investigated and guidelines on acceptable levels be formulated.

184 NAL Call. No.: QL737.C22C36
Environmental variables and animal care.
Besch, E.L.
Bethesda, MD : Scientists Center for Animal Welfare; 1990 Jan.
Canine research environment / edited by Joy A. Mench and Lee Krulisch. p. 53-57; 1990 Jan. Paper presented at a conference held by the Scientists Center for Animal Welfare, June 22, 1989, Bethesda, Md. Question and answer session p. 51-52. Includes references.

Language: English

Descriptors: Dogs; Animal housing; Environment; Laboratory animals

185 NAL Call. No.: 47.8 Am33P
Environment-immune interactions.
Dietert, R.R.; Golemboski, K.A.; Austic, R.E.
Champaign, IL : Poultry Science Association, 1921-; 1994 Jul.
Poultry science v. 73 (7): p. 1062-1076; 1994 Jul. Paper presented at the symposium "Current Advances in Avian Immunology," July 1993, East Lansing, Michigan. Includes references.

Language: English

Descriptors: Chickens; Disease resistance; Immune competence; Genotype environment interaction; Stress factors; Antibody formation; Assays; Immunological deficiency; Nutrient deficiencies; Literature reviews

Abstract: The need for effective immune function for the maintenance of health has been clearly established in both agriculturally significant animal species and humans. Intensive agricultural practices present production species with numerous disease challenges during the rearing period. Environmental factors represent a ubiquitous, yet frequently manageable, category of immunomodulators that can influence immune performance and ultimately disease susceptibility or resistance. However, strategies for assessing overall immune potential have not been widely implemented for agricultural species. This is in contrast to the use of immune evaluation for human health considerations. Immune assessment relative to environmental-immune interactions can produce benefits in two areas. First, the efficiency of the production operation can be enhanced. Second, the welfare of the animals during the production cycle can be optimized. This paper presents an overview of environmental factors known to influence the immune function of poultry and the opportunities to manage environmental factors to benefit the health of the animals. In addition, the paper discusses the status of immunological assessment for humans and laboratory animals and proposes potential immune assessment panels that could serve as a tool to optimize the environmental management of poultry populations.

186 NAL Call. No.: QL55.F43 1987

Eradication of encephalitozoonosis in rabbit breeding colonies by carbon immunoassay.

Waller, T.

Dordrecht : M. Nijhoff; 1988.

New developments in biosciences : their implications for laboratory animal science : proceedings of the Third Symposium, Amsterdam, The Netherlands, 1-5 June 1987 / edited by Anton C. Beyneen and Henk A. Solleveld. p. 385-387; 1988. Includes references.

Language: English

Descriptors: Sweden; Rabbits; Animal breeding; Protozoal infections; Encephalitozoon cuniculi; Disease control; Carbon; Immunoassay

187 NAL Call. No.: QL55.I55 1983

Establishing colonies of specific pathogen free (SPF) guinea pigs and rabbits. Kruijt, B.C.

Stuttgart, [W. Ger.] : G. Fisher Verlag; 1985.

The Contribution of laboratory animal science to the welfare of man and animals--past, present and future : 8th Symposium of ICLAS/CALAS, Vancouver, 1983 / editors: J. Archibald, J. Pitchfield, H.C. Rowsell. p. 439-445. ill; 1985. Includes references.

Language: English

Descriptors: Guinea pigs; Rabbits; Specific pathogen free state; Animal breeding; Laboratory rearing

188 NAL Call. No.: QL55.I55 1983

Establishment and control of a parvovirus-free dog colony.

Chapman, L.L.; Quimby, F.W.; Gilmartin, J.E.; Chapman, M.J.; Allen, L.M. Stuttgart, [W. Ger.] : G. Fisher Verlag; 1985.

The Contribution of laboratory animal science to the welfare of man and animals--past, present and future : 8th Symposium of ICLAS/CALAS, Vancouver, 1983 / editors: J. Archibald, J. Pitchfield, H.C. Rowsell. p. 19-21; 1985. Includes references.

Language: English

Descriptors: Dogs; Pathogen free animals; Animal breeding; Canine parvovirus; Disease control

189 NAL Call. No.: 410.9 P94

Establishment of a Chinese hamster breeding colony.

Calland, C.J.; Wightman, S.R.; Neal, S.B.

Joliet, Ill. : American Association for Laboratory Animal Science; 1986 Apr. Laboratory animal science v. 36 (2): p. 183-185; 1986 Apr. Includes references.

Language: English

Descriptors: Chinese hamster; Animal breeding methods; Reproductive performance; Record keeping

190 NAL Call. No.: HV4701.A34

Ethics, welfare, and laboratory animal management.

Allan, D.J.; Blackshaw, J.K.

Boston : Martinus Nijhoff Publishers; 1986-1987.

Advances in animal welfare science. p. 1-8; 1986-1987.
Includes references.

Language: English

Descriptors: Animal experiments; Laboratory animals; Ethics;
Animal welfare; Animal testing alternatives; Laboratory
rearing

191 NAL Call. No.: QP1.A2 SUPPL.
Ethology in animal quarters.
Meyerson, B.J.
Stockholm : Blackwell Scientific Publications; 1986.
Acta physiologica Scandinavica v. 128 (554): p. 24-31; 1986.
Paper presented at the "Second CFN Symposium on the Ethics of
Animal Experimentation," August 12-14, 1985, Stockholm,
Sweden.

Language: English

Descriptors: Laboratory animals; Environment; Animal housing;
Ethics; Animal behavior

192 NAL Call. No.: HV4761.A5
European Parliament condemns crates, battery cages and sow
stalls but US guide condones them.
Washington, D.C. : The Institute; 1987.
The Animal Welfare Institute quarterly v. 36 (3): p. 16-17.
ill; 1987.

Language: English

Descriptors: Animal welfare; Livestock housing; Battery cages;
Crates; Parliament; Guidelines; Laboratory animals

193 NAL Call. No.: QL55.A1L3
Evaluation of a one-way airflow system in an animal room based
on counts of airborne dust particles and bacteria and
measurements of ammonia levels. Yamauchi, C.; Obara, T.;
Fukuyama, N.; Ueda, T.
London : Royal Society of Medicine Services; 1989 Jan.
Laboratory animals v. 23 (1): p. 7-15; 1989 Jan. Includes
references.

Language: English

Descriptors: Japan; Rats; Animal housing; Air flow; Ammonia;
Dust; Bacteria; Air microbiology; Personnel; Allergies

Abstract: Air cleanliness in the working area of an animal
room equipped with a conventional turbulent flow air
distribution systems was compared with that in a similar room
fitted with a one-way-flow air distribution system; in this,
the supply air flowed from the working area through the racks
of cages and was removed from the exhaust side. Before the
introduction of animals, the air in the working and exhaust
areas of both rooms was ascertained to be Class 100. With
animals in situ, however, whereas in the turbulent airflow
room both the work space and exhaust air reached about Class
10 000 (with particle counts, bacterial counts and ammonia
levels being almost the same) in the one-way-flow room, the
air in the work space only went up to about Class 1000. With

the addition of sliding doors or curtains in front of the rack in the one-way-flow room the work space air was maintained at Class 100 with almost no dust particles over 1 micromole in size, airborne bacteria or ammonia being detectable. A comparison of all factors measured showed that whereas in the turbulent flow room the contamination of the work space air was 91% of that of the exhaust air, in the one-way-flow room it was only 47%, with curtains added this was reduced to 7% and with sliding doors to only 2%. In the latter case, contamination levels increased markedly on both sides during and immediately after cage changing, but recovered to the pre-cage changing levels within 30 min in the personnel working area within 60 min on the exhaust side.

194 NAL Call. No.: aHV4762.A3A64

Evaluation of attempts to enrich the environment of single-caged non-human primates.

Line, S.W.; Markowitz, H.; Morgan, K.N.; Strong, S.
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. 103-117; 1989 Sep. Includes references.

Language: English

Descriptors: Primates; Environment; Enrichment; Animal welfare; Social interaction; Cage size; Toys; Foraging

195 NAL Call. No.: 410.9 P94

Evaluation of countermeasures for reduction of mouse airborne allergens. Sakaguchi, M.; Inouye, S.; Miyazawa, H.; Kamimura, H.; Yamazaki, S. Cordova, Tenn. : American Association for Laboratory Animal Science; 1990 Nov. Laboratory animal science v. 40 (6): p. 613-615; 1990 Nov. Includes references.

Language: English

Descriptors: Allergens; Mice; Sex differences; Air filters; Litter; Maize cobs; Prealbumin; Albumins; Air; Occupational hazards

Abstract: Three kinds of countermeasures for reduction of mouse airborne allergens were evaluated with use of an air sampler and immunochemical methods. Mouse cages and the sampler were placed inside a flexible-film isolator, and concentrations of mouse major allergens in the air were measured. The levels of the airborne allergens, prealbumin and albumin, generated by 10 males, were 3,050 and 492 pg/m³, respectively. Those by 10 females were lower, 317 and 270 pg/m³, respectively. When mouse cages were covered with a filter cap, the airborne allergens inside the isolator were decreased by 90%. When corncob was used as bedding in place of wood shavings, the airborne allergens were decreased by 57 and 77%, respectively. Therefore, for reduction of mouse airborne allergens, we recommend using female mice, covering the cages with filter caps, and using corncob bedding.

196 NAL Call. No.: 410.9 P94

An evaluation of intra-cage ventilation in three animal caging

systems. Keller, L.S.F.; White, W.J.; Snider, M.T.; Lang, C.M. Cordova, Tenn. : American Association for Laboratory Animal Science; 1989 May. Laboratory animal science v. 39 (3): p. 237-242. ill; 1989 May. Includes references.

Language: English

Descriptors: Laboratory animals; Cages; Ventilation; Gases; Pollutants; Animal health

Abstract: Although temperature and relative humidity have been quantitated and their effects on research data studied, few studies have measured the air turnover rates at cage level. We evaluated the air distribution and air turnover rates in unoccupied shoe-box mouse cages, filter-top covered cages and shoe-box mouse cages housed in flexible film isolator by using discontinuous gas chromatography/mass spectrometry and smoke. Results showed that air turnover was most rapid in the unoccupied shoe-box mouse cage and slowest in the filter-top covered cage. Placing mice in the filter-top covered cage did not significantly improve the air turnover rate. Although filter-top covered cages reduce cage-to-cage transmission of disease, the poor air flow observed within these cages could lead to a buildup of gaseous pollutants that may adversely affect the animal's health.

197 NAL Call. No.: QL55.A1L3
Evaluation of isolator caging systems for protection of mice against challenge with mouse hepatitis virus.
Lipman, N.S.; Corning, B.F.; Saifuddin, M.
London : Royal Society of Medicine Services; 1993 Apr.
Laboratory animals v. 27 (2): p. 134-140; 1993 Apr. Includes references.

Language: English

Descriptors: Mice; Cages; Viral hepatitis

Abstract: Two isolator caging systems were evaluated against challenge with MHV-Y, an enterotropic strain of mouse hepatitis virus. The systems were similar in that they both used an identical shoebox cage equipped with a polycarbonate filter top incorporating a Reemay filter. They differed in that one system supplied HEPA-filtered air through a grommet in the filter lid so that the cage was pressurized slightly. A rack holding 60 cages (30 front and back) was utilized. Thirty cages without filter tops housed one mouse each that had been infected orally with 19000 ID50 of MHV-Y and an uninfected cagemate. The remaining 30 cages, each housing 2 uninfected mice were divided into 3 groups of 10 cages. Group I cages (controls) had no Alter top; Group II cages were equipped with filter tops; and Group III were equipped with filter tops and intracage HEPA-filtered air. The cages housing uninfected mice were interspersed between, above, below and behind cages housing infected mice. The uninfected mice were maintained in contact with the MHV-Y infected mice for 8 weeks. Transmission of MHV-Y was determined serologically by indirect ELISA. All mice housed within the Group I cages (control) seroconverted to MHV, while only 4 mice (2 cages) seroconverted in Group II, and no mice seroconverted in Group III.

198 NAL Call. No.: QL55.I5
Evaluation of social enrichment for aged rhesus macaques.

Reinhardt, V.; Hurwitz, S.
Sussex : The Institute; 1993 Apr.
Animal technology : journal of the Institute of Animal
Technology v. 44 (1): p. 53-57; 1993 Apr. Includes
references.

Language: English

Descriptors: Macaca mulatta; Social environment

Abstract: The effect of a compatible companion on the behaviour and bodyweight of eight previously single-caged, 31-36 years old rhesus macaques was assessed 16 months after pair formation. The aged subjects preferred to stay, in close proximity with their companion even though this reduced their available cage space. They spent on average 21% of the time (3 one-hour observations in the morning, at noon and in the afternoon) interacting with the companion in noninjurious species-typical ways. Affiliative interactions, i.e., grooming and huddling, accounted for more than 99% of total interaction time. Sharing a cage with a compatible con-specific did not jeopardize the subjects' general health, as reflected in their body weight development. It was concluded that single-caged rhesus macaques readily adapt to living with a companion who provides them with a species-adequate environment for the expression of their inherent social disposition.

199 NAL Call. No.: QL55.I55 1983

Evaluation of the American kestrel (*Falco sparverius*) as a laboratory research animal.

Bird, D.M.

Stuttgart, [W. Ger.] : G. Fisher Verlag; 1985.

The Contribution of laboratory animal science to the welfare of man and animals--past, present and future : 8th Symposium of ICLAS/CALAS, Vancouver, 1983 / editors: J. Archibald, J. Pitchfield, H.C. Rowsell. p. 3-9. ill; 1985. Includes references.

Language: English

Descriptors: Falco; Chickens; Japanese quails; Ducks; Laboratory animals; Facilities; Artificial insemination; Semen characters

200 NAL Call. No.: QL55.A1L33

Evaluation of the long-term effectiveness of two environmental enrichment objects for singly caged rhesus macaques.

Reinhart, V.

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

Lab animal v. 18 (6): p. 31-33. ill; 1989 Sep. Includes references.

Language: English

Descriptors: Rhesus monkeys; Environment

201 NAL Call. No.: 410.9 P94

Evaluation of the preference to and behavioral effects of an enriched environment on male rhesus monkeys.

Bayne, K.A.L.; Hurst, J.K.; Dexter, S.L.

Cordova, Tenn. : American Association for Laboratory Animal Science; 1992 Feb. Laboratory animal science v. 42 (1): p.

38-45; 1992 Feb. Includes references.

Language: English

Descriptors: Macaca mulatta; Male animals; Environment; Enrichment; Perches; Toys; Animal behavior; Animal welfare

Abstract: Two environments were provided to laboratory rhesus monkeys to determine if the animals spent more time (for the purposes of this study, defined as the cage side preference) in an enriched cage side than an unenriched cage side. The side (right or left) of a double-wide cage in which the animal spent the most time (as determined by Chi square analysis) was initially determined during baseline observations. The "nonpreferred" side was then enriched during the experimental phase of the study. The enrichment consisted of a perch, a Tug-A-Toy suspended inside the cage, a Kong toy suspended on the outside of the cage, and a grooming board mounted on the outside of the cage. No statistically significant changes in use of the enrichments were detected over time. Fifty percent of the animals switched cage side preference to the enriched side during the study. All subjects showed reduced behavioral pathology during exposure to the enriched environment with a return of behavioral pathology when the enrichments were removed.

202 NAL Call. No.: SF481.2.F56
Evaporate cooling versus tunnel ventilation.
Jacobs, R.D.; Bucklin, R.A.; Harms, R.H.; Sloan, D.R.
Gainesville, Fla. : Florida Agricultural Extension Service;
1992. Proceedings of the ... Florida Poultry Institute (501):
p. 9; 1992. Meeting held Oct 13-14, 1992, Gainesville,
Florida.

Language: English

Descriptors: Florida; Poultry housing; Evaporative cooling; Artificial ventilation

203 NAL Call. No.: QL737.P9H78
Examining environmental enrichment.
Chamove, A.S.; Anderson, J.R.
Park Ridge, N.J. : Noyes Publications; 1989.
Housing, care and psychological well-being of captive and
laboratory primates / edited by Evalyn F. Segal. p. 183-202.
ill; 1989.

Language: English

Descriptors: Primates; Environment; Cage size; Design; Animal behavior; Stress

204 NAL Call. No.: QL55.I55 1983
Experience with mammoth isolators.
Nikkels, R.J.
Stuttgart, [W. Ger.] : G. Fisher Verlag; 1985.
The Contribution of laboratory animal science to the welfare
of man and animals--past, present and future : 8th Symposium
of ICLAS/CALAS, Vancouver, 1983 / editors: J. Archibald, J.
Pitchfield, H.C. Rowsell. p. 289-293. ill; 1985.

Language: English

Descriptors: Rodents; Isolation; Gnotobiotic animals;
Equipment; Facilities

205 NAL Call. No.: QL55.I5

The experimental animal unit (E.A.U.): structural modifications and improvements utilising sensible management practices.

Carvalho, A.; Sydney, Australia; Martinic, G.; Zafirou, N. Sussex : The Institute; 1992 Dec.

Animal technology : journal of the Institute of Animal Technology v. 43 (3): p. 197-217; 1992 Dec. Includes references.

Language: English

Descriptors: Laboratory animals; Animal housing; Animal husbandry

206 NAL Call. No.: 470 SCI2

Experts ponder simian well-being.

Holden, C.

Washington, D.C. : American Association for the Advancement of Science; 1988 Sep30.

Science v. 241 (4874): p. 1753-1755. ill; 1988 Sep30.

Language: English

Descriptors: U.S.A.; Primates; Animal welfare; Cages; Environment; Animal experiments; Usda

207 NAL Call. No.: QL55.A1L33

Facility design: choosing the right flooring.

Douglas, F.; Harris, H.J.

New York, N.Y. : Nature Publishing Company; 1993 May.

Lab animal v. 22 (5): p. 51-54, 56-57; 1993 May. Includes references.

Language: English

Descriptors: Laboratories; Floors

208 NAL Call. No.: QL55.A1L33

Facility management: efficient management of office files.

Holmes, D.D.

New York : Media Horizons; 1986 Apr.

Lab animal v. 15 (3): p. 39-40; 1986 Apr.

Language: English

Descriptors: Laboratory animals; Records; File management; Cages; Equipment

209 NAL Call. No.: HV4764.U54 1992

Farm Animal and Research Facilities Protection Act of 1992 report (to accompany H.R. 2407).

United States. Congress. House. Committee on Agriculture

Washington : D.C.? : U.S. G.P.O., 1992-; 1992-9999; Y

1.1/8:102-498/pt.1-. v. ; 24 cm. (Rept. / 102d Congress, 2d session, House of Representatives ; 102-498). Caption title.

Distributed to some depository libraries in microfiche.
Shipping list no.: 92-0399-P (pt. 1). "April 9, 1992"--Pt. 1.
Includes bibliographical references.

Language: English; English

Descriptors: Animal rights activists; Fines (Penalties);
Laboratory animals; Domestic animals; Laboratories

210 NAL Call. No.: 41.8 Av5
A feather-trap system for the removal of chicken feathers from
laboratory sewage.
Beard, C.W.; Hammond, J.; Whittemore, A.
Kennett Square, Pa. : American Association of Avian
Pathologists; 1992 Oct. Avian diseases v. 36 (4): p.
1028-1030; 1992 Oct.

Language: English

Descriptors: Chickens; Laboratory animals; Laboratory
equipment; Feathers; Removal; Sewage

Abstract: A simple feather-trap system is described for use
on the drain lines of buildings housing poultry for research
or other purposes where floors are frequently washed. The trap
uses disposable plastic-mesh bags that can efficiently remove
almost all feathers from the water, preventing sewer lines
from being blocked by compacted feathers. Critical
measurements and operational procedures are described.

211 NAL Call. No.: QL785.A725
Feeding ecology and laboratory predatory behavior toward live
and artificial moving prey in seven rodent species.
Timberlake, W.; Washburne, D.L.
Austin, Tex. : Psychonomic Society; 1989 Feb.
Animal learning & behavior v. 17 (1): p. 2-11; 1989 Feb.
Includes references.

Language: English

Descriptors: Rodents; Predation; Feeding behavior; Laboratory
rearing; Cannibalism

Abstract: The present research related the feeding ecology of
seven rodent species to the reactions of laboratory-reared and
prey-inexperienced members of each species both to live prey
and to an artificial moving stimulus predicting food pellets.
Feeding ecology was determined by the degree of carnivory,
based on reported stomach contents and observations of
feeding. Experiment 1 assessed predatory reactions to a live
cricket placed in each animal's home cage. Killing and latency
of eating the cricket were directly related to the degree of
reported carnivory on moderately fast-moving arthropods.
Experiment 2 examined behavior toward a rolling ball bearing
that predicted delivery of food. Average percentages of trials
with approach or contact of the bearing, and the conditional
probability of a mouth contact were all positively related to
the degree of reported carnivory and to cricket predation in
Experiment 1. In addition, the topography of ball bearing
contact for a species often resembled its topography of
cricket contact. We conclude that (1) rodent predatory
behavior can be studied in the laboratory using appropriate
artificial stimuli and prey-inexperienced subjects, and (2)

the predatory behavior of a species is based on underlying appetitive organization related to carnivory, including differential sensitivity to stimulus movement, motor preorganization, and susceptibility to conditioning. This appetitive organization appears to influence responding to both live and artificial prey.

212 NAL Call. No.: 410.9 P94
Field trial of a live streptomycin dependent *Pasteurella multocida* serotype A:12 vaccine in rabbits.
Deeb, B.J.; DiGiacomo, R.F.; Bernard, B.L.; Silbernagel, S.M.; Chengappa, M.M. Cordova, Tenn. : American Association for Laboratory Animal Science; 1989 May. *Laboratory animal science* v. 39 (3): p. 229-233; 1989 May. Includes references.

Language: English

Descriptors: Rabbits; Vaccination; Streptomycin; *Pasteurella multocida*; Serotypes; Live vaccines; Field experimentation

Abstract: A live, streptomycin dependent, *Pasteurella multocida* (SDPM) serotype A:12 vaccine was evaluated for preventing pasteurellosis in two commercial rabbitries. Rabbits were inoculated intranasally at 5 weeks old with either 0.25 ml of vaccine containing 10⁸ colony forming units/ml or 0.25 ml of diluent (control). A proportion of rabbits received a second intranasal inoculation 1 month later. Partial protection against *P. multocida* infection was observed 1 and 2 months after inoculation in rabbits given only one dose of vaccine. The incidence of clinical signs of pasteurellosis was similar in vaccinated and nonvaccinated market-age rabbits inoculated 4 to 6 weeks previously. In does maintained in the breeding colony, *P. multocida* infection and upper respiratory disease occurred more frequently in vaccinated than nonvaccinated rabbits. Humoral antibody responses (IgA, IgM, IgG) followed longitudinally were similar in vaccinated and nonvaccinated does. Hence, the SDPM vaccine was not efficacious in controlling *P. multocida* infection at these two rabbitries.

213 NAL Call. No.: 410.9 P94
A forced-air ventilation system for rodent cages.
Wu, D.; Joiner, G.N.; McFarland, A.R.
Joliet, Ill. : American Association for Laboratory Animal Science; 1985 Oct. *Laboratory animal science* v. 35 (5): p. 499-504. ill; 1985 Oct. Includes references.

Language: English

Descriptors: Rodents; Cages; Ventilation

214 NAL Call. No.: QL737.P9H78
Free-environment rooms as alternative housing for squirrel monkeys. King, J.E.; Norwood, V.R.
Park Ridge, N.J. : Noyes Publications; 1989.
Housing, care and psychological well-being of captive and laboratory primates / edited by Evalyn F. Segal. p. 102-114. ill; 1989.

Language: English

Descriptors: Squirrel monkeys; Animal housing; Cages;

Environment; Loose housing

215 NAL Call. No.: 410 IN84
The future of laboratory animal genetics.
Festing, M.F.W.
Oslo, Norway : The International Council for Laboratory Animal
Science; 1985. ICLAS bulletin (56): p. 18-22; 1985.

Language: English

Descriptors: Laboratory animals; Genetics; Animal breeding;
Techniques

216 NAL Call. No.: 410.9 P94
Gene targeting technology for creating transgenic models of
lymphopoiesis. Huang, M.T.F.
Cordova, Tenn. : American Association for Laboratory Animal
Science; 1993 Apr. Laboratory animal science v. 43 (2): p.
156-159; 1993 Apr. Paper presented at a conference entitled
"The Scid Mouse in Biomedical and Agricultural Research,"
August 5-7, 1992, Guelph, Canada. Includes references.

Language: English

Descriptors: Transgenic animals; Mice; Lymphocytes

Abstract: Naturally occurring immunodeficient mouse strains
express a variety of genetic defects in myeloid and/or
lymphoid cell development. These strains have served as
valuable animal models for studying immune cell
differentiation and mechanisms of transplant rejection. Some
of the most commonly used strains carry mutations at the nude,
scid, beige, and/or xid loci. Gene targeting technology can
now be used to directly modify endogenous alleles via
homologous recombination with exogenous DNA. By performing DNA
targeting in embryonic stem (ES) cells, germline transmission
of these modifications can be obtained by breeding chimeras
generated from cloned ES cells. This approach can be used to
target the inactivation, modification, or replacement of
specific genes and has been used to examine the role of
several alleles in hematopoiesis. This review describes the
use of this technology to generate mutations that influence
the development and function of T and B lymphocytes.

217 NAL Call. No.: 410.9 P94
Genetic diversity of laboratory gray short-tailed opossums
(*Monodelphis domestica*): effect of newly introduced wild-
caught animals. Van Oorschot, R.A.H.; Williams-Blangero, S.;
VandeBerg, J.L. Cordova, Tenn. : American Association for
Laboratory Animal Science; 1992 Jun. Laboratory animal science
v. 42 (3): p. 255-260; 1992 Jun. Includes references.

Language: English

Descriptors: Pernambuco; Paraiba; Opossums; *Monodelphis
domestica*; Genetic differences; Phenotypes; Temporal
variation; Genetic polymorphism; Gene frequency;
Heterozygosity

Abstract: The colony of gray, short-tailed opossums
(*Monodelphis domestica*) at the Southwest Foundation for
Biomedical Research, the primary supplier of this species for

research purposes, was founded with nine animals trapped in 1978 in the state of Pernambuco, Brazil. Since 1984, 14 newly acquired founders from the state of Paraiba, Brazil have contributed to the gene pool of the colony. The animals from Paraiba and their descendants are significantly larger than the founders from Pernambuco and their descendants. The two groups also differ significantly in several measurements of morphologic traits. The changes in proportional contribution of each founder to the colony, and changes in inbreeding coefficients during the colony's history, are evaluated. Using previously established markers and three newly identified markers (ACP2, APRT, and DIAL), we show that the Paraiba-derived animals differ significantly from the original founders in allele frequencies and heterozygosity. The genetic diversity of the colony has been substantially increased by acquisition of the new founders from Paraiba. The colony is highly polymorphic, with 22.2% of loci surveyed by protein electrophoresis being variable. We conclude that the genetic differences between populations and among projects within the colony should be considered in future colony management procedures and in selection of experimental subjects.

218 NAL Call. No.: TP1.J686
Genetic manipulation of laboratory and farm animals.
Bulfield, G.
London : Elsevier Applied Science Publishers; 1988.
Journal of chemical technology and biotechnology v. 43 (4): p. 265-272; 1988. Includes references.

Language: English

Descriptors: Livestock; Poultry; Laboratory animals; Genetic engineering; Hazards; Animal welfare; Animal breeding

219 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.
xii, 539 p. : ill. ; 25 cm. Includes bibliographical references and index.

Language: English

Descriptors: Rats as laboratory animals; Rats; Inbreeding

220 NAL Call. No.: DISS F1992302
Gesamtkorperfettgehalt und Fettzellgrosse bei weiblichen Mäusen des Stammes "Heiligenberg" in Abhängigkeit von Alter, Zuchtnutzung und Haltungsflächengrosse / vorgelegt von Peter Schmidt [Total body fat and fat cell size of female "Heiligenberg" mice and the relationship to age, breeding use and size of living space].
Schmidt, Peter
Hannover : [s.n.],; 1992.
74 p. : ill. ; 21 cm. Summary in English. Includes bibliographical references (p. 64-73).

Language: German

221 NAL Call. No.: 410.9 P94
Giardiasis in laboratory-housed squirrel monkeys: a retrospective study. Hamlen, H.J.; Lawrence, J.M. Cordova, Tenn. : American Association for Laboratory Animal Science; 1994 Jun. Laboratory animal science v. 44 (3): p. 235-239; 1994 Jun. Includes references.

Language: English

Descriptors: Saimiri sciureus; Giardiasis; Giardia; Incidence; Diarrhea; Symptoms

Abstract: Giardia infection was diagnosed in a 1.5-year-old, group-housed, female squirrel monkey with diarrhea. A retrospective study was undertaken to evaluate the incidence of Giardia in the 190-member colony. Records were analyzed to determine whether any one of the following conditions applied: the animal had clinical signs referable to the gastrointestinal system; a fecal examination for ova and parasites was performed; gastrointestinal parasitism was revealed by necropsy; or a culture of samples from the gastrointestinal tract was performed. Analysis revealed a total of 19 monkeys, 68% (13/19) of which had gastrointestinal clinical signs. Giardia cysts were recovered from 33% (4/12) of monkeys with gastrointestinal signs in which fecal examinations were done. The yearly incidence of diarrhea in the colony was low at 0.61%; however, 33% (2/6) of the monkeys with diarrhea were positive for Giardia. Six animals had blood in the feces or rectal prolapse, in the absence of diarrhea, and 30% (2/6) of these animals were positive for Giardia. Of six animals without gastrointestinal clinical signs, 50% (3/6) had giardiasis, which was listed as an incidental finding. In light of these findings, an additional 16 healthy animals were examined for Giardia. Giardia cysts were recovered from 50% (3/6) of males and 70% (7/10) of females from which samples were obtained. Additionally, clean water consumed by the animals was negative for Giardia cysts, and facility waste water was positive. To our knowledge, this is the first report of giardiasis in squirrel monkeys.

222 NAL Call. No.: QL55.I5
Good laboratory practice, 1976-1992, an overview. Dent, N.J. Sussex : The Institute; 1992 Apr. Animal technology : journal of the Institute of Animal Technology v. 43 (1): p. 7-9; 1992 Apr. Includes references.

Language: English

Descriptors: Laboratories; Regulations; European communities

Abstract: Whilst the concept and procedures of Good Laboratory Practice are certainly nothing new, certain changes have occurred in both responsibilities and attitudes to this "Good Practice" in the 16 years since its inception by the Food and Drug Administration (FDA) of the United States of America. It has certain implications for the animal technologist and benefits for the industry. It has not been seen as the bureaucratic straight-jacket that was initially envisaged, and in actual fact is now regarded as one of several "Good Practices" and part of a company's overall Total Quality Management (TQM) programme. The benefits that have clearly been seen following the implementation of Good Laboratory Practice (GLP) are: a greater professionalism, less

animal use, better science, a much more early thought process resulting in clear documentation and the ability to either review or to repeat studies of a similar nature at a considerable time in the future.

223 NAL Call. No.: 410.9 P94
Group housing: meeting the physical and social needs of the laboratory rabbit. Love, J.A.
Cordova, Tenn. : American Association for Laboratory Animal Science; 1994 Feb. Laboratory animal science v. 44 (1): p. 5-11; 1994 Feb. Includes references.

Language: English

Descriptors: Rabbits; Rabbit housing; Groups; Animal behavior; Animal welfare; Animal experiments; Costs; Space requirements

224 NAL Call. No.: QL55.I5
Group housing on floor pens and environmental enrichment in sandy lop rabbits. I.
Batchelor, G.R.
Sussex : The Institute; 1991 Aug.
Animal technology : journal of the Institute of Animal Technology v. 42 (2): p. 109-120; 1991 Aug. Includes references.

Language: English

Descriptors: Rabbits; Floor pens; Groups; Environment; Enrichment; Animal behavior; Growth rate

Abstract: During a twelve month period of observation, the behavioural repertoire of group housed rabbits was found to be greatly enhanced compared with that of singly caged rabbits. Increased space which allowed freedom of movement in all directions, together with environmental enrichment, significantly improved the quality of life. The group housed rabbits' ability to interact with their peers lead to varying amounts of aggression and the probable establishment of a hierarchical order. This may be disadvantageous for the lower ranking animals, although perhaps not as disadvantageous as life in solitary confinement.

225 NAL Call. No.: QL55.A1L33
Group-housing rabbits.
Love, J.A.; Hammond, K.
New York, N.Y. : Nature Publishing Company; 1991 Sep.
Lab animal v. 20 (8): p. 37-38, 40-43; 1991 Sep. Includes references.

Language: English

Descriptors: Rabbits; Pens; Animal behavior

226 NAL Call. No.: QL55.A1L33
The guide: a comparison of the 1985 and 1978 editions.
Knauff, D.R.
New York : Media Horizons; 1986 May.
Lab animal v. 15 (4): p. 45-47, 49, 51; 1986 May.

Language: English

Descriptors: Laboratory animals; Animal experiments; Animal housing; Surgery; Guides; Publications

227 NAL Call. No.: HV4890.T78J37 1986
Guidelines for housing and care of laboratory animals.
James Cook University of North Queensland. Experimentation
Ethics Review Committee
Townsville, Australia : Issued by the Committee,; 1986.
ii, 34, x p. : ill. ; 30 cm. Cover title. March 1986.
Includes bibliographical references (p. 33-34).

Language: English

Descriptors: Laboratory animals; Animal welfare

228 NAL Call. No.: 410.9 P94
Guidelines for prevention of herpesvirus simiae (B-virus)
infection in monkey handlers.
Kaplan, J.E.
Cordova, Tenn. : American Association for Laboratory Animal
Science; 1987 Dec. Laboratory animal science v. 37 (6): p.
709-712; 1987 Dec. Includes references.

Language: English

Descriptors: Monkeys; Herpetoviridae; Disease transmission;
Disease prevention; Facilities; Handling; Screening;
Guidelines

229 NAL Call. No.: 41.8 V641
Guidelines for veterinary surgeons employed in scientific
procedure establishments and breeding and supplying
establishments. London : British Veterinary Association; 1987
Jan03.
The Veterinary record v. 120 (1): p. 17-19; 1987 Jan03.

Language: English

Descriptors: United Kingdom; Veterinarians; Guidelines;
Animal experiments; Animal health; Animal welfare; Laboratory
animals

230 NAL Call. No.: SF406.G8
Guidelines on the care of laboratory animals and their use for
scientific purposes.
Royal Society (Great Britain), Universities Federation for
Animal Welfare London : The Society ; Potters Bar, Herts :
UFAW,; 1987-9999. v. ; 21 cm. Errata sheets inserted.
Bibliography: v. 1., p. 27-29.

Language: English

Descriptors: Laboratory animals; Standards; Animal housing;
Standards; Animal experimentation; Standards; Animal welfare

231 NAL Call. No.: Slide no.434
Guinea pigs care and management.. Guinea pigs : care and
management Ermeling, B. L.; Fish, R. E.
University of Washington, Health Sciences Center for

Educational Resources, American College of Laboratory Animal Medicine, National Agricultural Library (U.S.)
Seattle, WA : Produced and distributed by the Health Sciences Center for Educational Resources, University of Washington; 1992.

62 slides : col. + 1 sound cassette (25 min.) + 1 guide.
(Laboratory animal medicine and science. Series 2 ; V-9024).
Developed for the American College of Laboratory Animal Medicine. Sound accompaniment compatible for manual and automatic operation. Accompanying guide includes script. Portions of this project have been funded by a grant from the National Agricultural Library.

Language: English

Descriptors: Guinea pigs; Laboratory animals

Abstract: Covers environment, nutrition, housing, breeding, sanitation, identification, and disease recognition and prevention.

232 NAL Call. No.: Slide no.433
Guinea pigs noninfectious diseases.. Guinea pigs : noninfectious diseases Terril, Lizabeth A.; Clemons, Donna J.; Wagner, Joseph E. University of Washington, Health Sciences Center for Educational Resources, American College of Laboratory Animal Medicine, National Agricultural Library (U.S.)
Seattle, WA : Produced and distributed by the Health Sciences Center for Educational Resources, University of Washington; 1992.

47 slides : col. + 1 sound cassette (26 min.) + 1 guide.
(Laboratory animal medicine and science. Series 2 ; V-9026).
Developed for the American College of Laboratory Animal Medicine. Sound accompaniment compatible for manual and automatic operation. Accompanying guide includes script. Portions of this project have been funded by a grant from the National Agricultural Library.

Language: English

Descriptors: Guinea pigs; Laboratory animals

Abstract: Covers recognition, significance, cause, diagnosis, treatment and control of common nutritional, metabolic, management-related, neoplastic, and other noninfectious diseases.

233 NAL Call. No.: SF407.A45H3
Haltung und Vermehrung von Amphibien in Labor und Terrarium [Rearing and breeding amphibia in the laboratory and terrarium].
Herrmann, Hans-Joachim
Schleusingen : Naturhistorisches Museum; 1988.
64 p. : ill. (some col.) ; 24 cm. (Tagungsmaterial Amphibien).
Cover title. Includes bibliographical references.

Language: German

Descriptors: Amphibians as laboratory animals; Amphibians

234 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

235 NAL Call. No.: SF406.W64 1994
Handbook of laboratory animal management and welfare.
Wolfensohn, Sarah; Lloyd, Maggie
Oxford ; New York : Oxford University Press,; 1994.
xi, 304 p. : ill. ; 24 cm. Includes bibliographical
references (p. [281]-293) and index.

Language: English

Descriptors: Laboratory animals; Animal welfare; Animal
experimentation

236 NAL Call. No.: QL55.A1L33
Hazard reduction in animal research facilities.
Richmond, J.Y.
New York, N.Y. : Nature Publishing Company; 1991 Feb.
Lab animal v. 20 (2): p. 23-25, 28-29; 1991 Feb. Includes
references.

Language: English

Descriptors: Animal experiments; Occupational hazards;
Personnel

237 NAL Call. No.: 410.9 P94
Heritabilities of clinical chemical traits in chimpanzees.
Williams-Blangero, S.; Butler, T.; Brasky, K.; Murthy, K.K.
Cordova, Tenn. : American Association for Laboratory Animal
Science; 1994 Apr. Laboratory animal science v. 44 (2): p.
141-143; 1994 Apr. Includes references.

Language: English

Descriptors: Chimpanzees; Heritability; Blood chemistry;
Traits; Genetic effects; Genetic variation

Abstract: Clinical chemical measures are commonly used
biomarkers of health status in nonhuman primates and may also
serve as important covariates or outcome variables in
experimental protocols. There is a considerable range of
normal variation in most clinical chemical traits and the
determinants of this variation have been relatively unexplored
in nonhuman primates used as animal models in biomedical
research. This study assesses the evidence for genetic
determinants of normal variation in nine clinical chemical
traits (blood urea nitrogen, creatinine, potassium, sodium,
CO₂, glucose, albumin, globulin, and total cholesterol
concentrations) in an important animal model, the chimpanzee.
We found significant moderate heritabilities for potassium,
sodium, albumin, globulin, and total cholesterol. The results
provide information useful for addressing issues in both
genetic management and experimental research.

238 NAL Call. No.: RB125.C68 1985
Home-cage visual discrimination device for miniature swine.
Sobotka, T.J.; Brown, R.H.
New York : Plenum Press; 1986.
Swine in biomedical research / edited by M.E. Tumbleson. p.
89-94. ill; 1986. Proceedings of a conference on Swine in
Biomedical Research, June 17-20, 1985, Columbia, Missouri.
Includes references.

Language: English

Descriptors: Pigs; Stress; Discrimination; Cages; Animal
behavior

239 NAL Call. No.: QL55.F43 1987
The housing and handling of marmosets and tamarins infected
with AIDS and other retroviruses.
Francis, L.; Moore, R.T.; Raymond, R.T.; Baskerville, A.
Dordrecht : M. Nijhoff; 1988.
New developments in biosciences : their implications for
laboratory animal science : proceedings of the Third
Symposium, Amsterdam, The Netherlands, 1-5 June 1987 / edited
by Anton C. Beyneen and Henk A. Solleveld. p. 99-103. ill;
1988. Includes references.

Language: English

Descriptors: Marmoset; Animal housing; Handling; Immunological
diseases; Retroviridae

240 NAL Call. No.: QL55.I5
The housing and maintenance of wild caught Uromastyx
microlipes. Gardner, A.; Jones, P.; Harle, S.
Sussex : The Institute; 1993 Apr.
Animal technology : journal of the Institute of Animal
Technology v. 44 (1): p. 1-9; 1993 Apr. Includes references.

Language: English

Descriptors: Lizards; Laboratory rearing

Abstract: In this paper we have described the establishment
and maintenance of a colony of 25 Uromastyx microlipes. Given
good quality lizards, a nucleus of males and females will
eventually be put aside to hopefully allow us to have a first
captive breeding in the United Kingdom. The colony was
established in May 1992 with the intention of keeping the
lizards in good health for research purposes. To date 11
lizards have been successfully used. Furthermore, we hope to
improve our techniques of husbandry on this particular
species.

241 NAL Call. No.: SF407.F39B56
Housing and management.
Fox, J.G.
Philadelphia : Lea & Febiger; 1988.
Biology and diseases of the ferret / [edited by] James G. Fox.
p. 153-158. ill; 1988. Includes references.

Language: English

Descriptors: Ferrets; Animal housing; Cages; Environment;
Animal husbandry; Restraint of animals

242 NAL Call. No.: QL55.I5

The housing and management of nine adult bulls on a semen collection study. Ford, G.R.

Sussex : The Institute; 1993 Apr.

Animal technology : journal of the Institute of Animal Technology v. 44 (1): p. 31-38; 1993 Apr. Includes references.

Language: English

Descriptors: Bulls; Laboratory rearing

Abstract: This paper describes a four month study undertaken during 1990, the aim of which was to determine the effects of a test substance on semen quality and viability, in Hereford bulls. It describes the measures taken to prepare for the housing and management of such potentially dangerous animals, in knowledge of the fact that animals of this type had not previously been handled at HRC.

243 NAL Call. No.: QL55.F43 1987

Housing and welfare of laboratory rodents.

Clough, G.

Dordrecht : M. Nijhoff; 1988.

New developments in biosciences : their implications for laboratory animal science : proceedings of the Third Symposium, Amsterdam, The Netherlands, 1-5 June 1987 / edited by Anton C. Beyneen and Henk A. Solleveld. p. 239-244; 1988. Includes references.

Language: English

Descriptors: Rodents; Animal housing; Laboratory rearing;
Animal welfare; Ventilation; Relative humidity; Temperatures;
Sounds; Cages

244 NAL Call. No.: QL55.A1L3

Housing, breeding and selecting chickens of the Obese strain (OS) with spontaneous autoimmune thyroiditis.

Dietrich, H.M.

London : Royal Society of Medicine Services; 1989 Oct.

Laboratory animals v. 23 (4): p. 345-352. ill; 1989 Oct.

Includes references.

Language: English

Descriptors: Fowls; Thyroid diseases; Autoimmune diseases;
Hereditary diseases; Disease models; Chicken housing; Animal
breeding; Selection methods

Abstract: A management programme is described for a small colony of Obese strain (OS) chickens afflicted with spontaneous hereditary thyroiditis. Animals of this White Leghorn fine are used as an animal model for Hashimoto's thyroiditis of man to study possible mechanisms of autoimmunity in general and organ-specific autoimmune diseases in particular. Due to the severe mononuclear cell infiltration of the thyroid glands, OS chickens show symptoms of

hypothyroidism, including small body size, subcutaneous and abdominal fat deposits, long silky feathers, small combs and wattles, cold sensitivity, low fertility and poor hatchability. Successful breeding of this line, especially in a small population, can therefore be done only if rigid precautions are taken in aspects of animal care. The selection of breeding stock, the principal requirements for adequate housing and food, the artificial insemination procedure, and recommendations for collecting and incubating chicken eggs are reported in detail. Precautions necessary during the incubation of fertilized eggs, and fertility and hatchability are reported. During the hatching period several specific features must be considered. The important role of staff involved in a small chicken breeding unit is emphasized.

245 NAL Call. No.: QL737.P9H78
Housing, care and psychological well being of captive and laboratory primates. Segal, Evalyn F.
Park Ridge, N.J., U.S.A. : Noyes Publications,; 1989.
xxxii, 544 p. : ill. ; 25 cm. (Noyes series in animal behavior, ecology, conservation, and management). Includes index. Bibliography: p. 421-476.

Language: English

Descriptors: Primates as laboratory animals; Primates; Psychology; Primates; Housing; Animal welfare

246 NAL Call. No.: QL55.F43 1987
Housing conditions and experimental results.
Weihe, W.H.
Dordrecht : M. Nijhoff; 1988.
New developments in biosciences : their implications for laboratory animal science : proceedings of the Third Symposium, Amsterdam, The Netherlands, 1-5 June 1987 / edited by Anton C. Beyneen and Henk A. Solleveld. p. 245-254; 1988. Literature review. Includes references.

Language: English

Descriptors: Laboratory animals; Animal housing; Laboratory rearing; Animal experiments

247 NAL Call. No.: QL55.N48
Housing, handling, and nutrition of salamanders.
Jaeger, R.G.
Bethesda, Md. : Scientists Center for Animal Welfare; 1992.
SCAW newsletter v. 14 (3): p. 11-14; 1992. Includes references.

Language: English

Descriptors: Caudata; Animal housing; Animal husbandry; Animal nutrition; Life history

248 NAL Call. No.: aZ5071.N3
Housing, husbandry, and welfare of rodents: January 1979 - June 1993. Shull, C.L.
Beltsville, Md., National Agricultural Library; 1993 Jul.
Quick bibliography series - National Agricultural Library (93-52): 84 p.; 1993 Jul.

Language: English

Descriptors: Rodents; Animal welfare; Animal housing; Animal husbandry; Bibliographies

249 NAL Call. No.: QL55.I5
Housing, production and life-maintenance of the Non-Obese Diabetic (NOD) mouse.
Mansfield, K.J.; Beales, P.E.; Williams, A.J.K.; Lampeter, E.F.; Pozzilli, P. Sussex : The Institute; 1992 Apr.
Animal technology : journal of the Institute of Animal Technology v. 43 (1): p. 29-37; 1992 Apr. Includes references.

Language: English

Descriptors: Mice; Laboratory rearing; Strains

Abstract: In this paper we outline the history, maintenance, production and characteristics of a colony of Non-Obese Diabetic (NOD) mice which has been established at The Medical College of St. Bartholomew's Hospital, London. This strain of mice spontaneously develops a form of insulin dependent diabetes which closely resembles that found in humans. The problems of maintaining a colony in which this disease occurs are discussed.

250 NAL Call. No.: QL55.I5
Housing rabbits the unconventional way.
Heath, M.; Stott, E.
Sussex : The Institute; 1990 Apr01.
Animal technology : journal of the Institute of Animal Technology v. 41 (1): p. 13-25. ill; 1990 Apr01. Includes references.

Language: English

Descriptors: Rabbits; Rabbit housing; Floor pens; Animal welfare

251 NAL Call. No.: QL737.P9W44
How the proposed regulations might impact a research facility.
Butler, T.M.
Bethesda, MD Scientists Center for Animal Welfare; 1990 Jan.
Well-being of nonhuman primates in research / edited by Joy A. Mench and Lee Krulisch. p. 55-59. ill; 1990 Jan. Paper presented at a conference held by the Scientists Center for Animal Welfare, June 23, 1989, Bethesda, Md.

Language: English

Descriptors: Texas; Animal welfare; Laboratory animals; Legislation; Impact

252 NAL Call. No.: QL55.A1L33
How to briefly examine common laboratory animals.
Silverman, J.
New York : Media Horizons; 1988 May.
Lab animal v. 17 (4): p. 38-39; 1988 May.

Language: English

Descriptors: Dogs; Cat; Rabbits; Rats; Mice; Primates;
Facilities; Animal health; Veterinary services

253 NAL Call. No.: QL55.A1L33
How to increase employee participation in the lab animal
environment. Hayden, C.C.
New York : Media Horizons; 1987 Sep.
Lab animal v. 16 (6): p. 47, 49; 1987 Sep. Includes
references.

Language: English

Descriptors: Laboratory animals; Facilities; Participative
management

254 NAL Call. No.: QL55.I5
Husbandry, breeding and maintenance of a viable population of
cotton top tamarins (*Sanguinus oedipus oedipus*).
Scullion, F.T.
Sussex : The Institute of Animal Technology; 1987 Dec.
Animal technology : journal of the Institute of Animal
Technology v. 38 (3): p. 167-174; 1987 Dec. Includes
references.

Language: English

Descriptors: Callithricidae; Animal husbandry; Animal
breeding; Animal housing; Animal feeding; Handling; Animal
welfare; Disease prevention; Endangered species

Abstract: Members of the family Callithricidae are commonly
used as laboratory primates and some species have been vital
in certain areas of medical research. Constant erosion of the
South American tropical rain forests, caused by logging for
commercial and agricultural uses, has placed a number of
species in danger of extinction in their natural habitat.
Laboratory bred animals are helping to ease the pressure on
natural populations whilst increasing the knowledge about
particular species of tamarin as kept in the University of
Bristol colony.

255 NAL Call. No.: QL55.I5
Husbandry procedures and health problems associated with a
long-term mouse study.
Robbins, L. \u National Radiological Protection Board,
Chilton, Didcot; Ellender, M.
Sussex : The Institute; 1993 Dec.
Animal technology : journal of the Institute of Animal
Technicians v. 44 (3): p. 247-255; 1993 Dec. Includes
references.

Language: English

Descriptors: Mice; Animal husbandry; Long term experiments;
Plutonium; Americium; Uranium; Radionuclides; Toxicity;
Sarcoma; Leukemia

Abstract: In most breeding colonies mice are usually
sacrificed at approximately 8 months of age. In the majority
of experimental studies on the biokinetics of radionuclides,

mice are killed before they are 18 months of age. For this toxicity study comparing the effects of incorporated radionuclides it was important that the CBA/H strain mice were kept for their full lifespan of approximately three years. Treatment, age and strain related problems are reported here.

256 NAL Call. No.: QL55.U5 1987

Hygiene in the animal house., 6th ed.

Eaton, P.

London : Longman; 1987.

The UFAW handbook on the care and management of laboratory animals / edited by Trevor B. Poole; editorial assistant, Ruth Robinson. p. 144-158; 1987.

Language: English

Descriptors: Laboratory animals; Animal housing; Decontamination; Cleaning; Disinfection; Sterilizing; Barriers

257 NAL Call. No.: 410.9 P94

Hypoglycemia of squirrel monkey neonates: implications for infant survival. Brady, A.G.; Williams, L.E.; Abee, C.R. Cordova, Tenn. : American Association for Laboratory Animal Science; 1990 May. Laboratory animal science v. 40 (3): p. 262-265; 1990 May. Includes references.

Language: English

Descriptors: Saimiri; Hypoglycemia; Blood sugar; Normal values; Survival; Neonatal mortality; Age differences; Newborn animals; Hemoglobin

Abstract: Neonatal deaths are a serious problem in breeding colonies of squirrel monkeys. Seriously ill neonates in our colony are always hypoglycemic on presentation. To determine normal glucose values for squirrel monkey infants of various ages, serum glucose determinations were done at 1, 3, 7, 10, 14 days and 1 month of age using a standard laboratory test for serum glucose. Glucose concentration increased from a low of 49 +/- 3 mg/dl (Mean +/- SEM) at 1 day (n = 21) to 109 +/- 4 mg/dl at 1 month of age (n = 17). Glucose values for 1, 3 and 7 day-old infants were significantly lower than 1 month-old infants (P < .05) To provide a time-averaged indication of blood glucose, glycosylated hemoglobin (GHb) measurements were made at 1 day, 1 week, 2 weeks, 1 month, 2 months, 1 year of age and in adults (> 3 years of age). GHb values ranged from 2.6% +/- 0.1 for 1 day old infants (n = 13) to 4.0 +/- 0.2 for adults (n = 10) with a steady increase during the first 2 months of life. Animals 1 year of age and younger had significantly lower glycosylated hemoglobin than adults. These studies indicate that blood glucose concentration is significantly lower in squirrel monkey neonates than in older infants, juveniles and adults. Maternal rejection, trauma, and associated problems occur commonly in socially reared squirrel monkeys. The marginal hypoglycemic state of these infants places them at high risk for clinical hypoglycemia as a sequel to such perturbations.

258 NAL Call. No.: 410.9 P94

Identification, capture, and biotelemetry of socially living monkeys. Rasmussen, K.L.R.

Cordova, Tenn. : American Association for Laboratory Animal

Science; 1991 Aug. Laboratory animal science v. 41 (4): p. 350-354; 1991 Aug. Includes references.

Language: English

Descriptors: Monkeys; Animal housing; Groups; Identification; Capture of animals; Telemetry; Monitoring; Physiological functions

Abstract: Remote monitoring of physiologic function using socially living monkeys differs from that using individually housed animals in that access to subjects may be limited. Some logistic aspects of working with socially housed monkeys are reviewed, including identification of individuals and capturing subjects. Methods of remote sampling include hormonal assays of urine and fecal samples, measurement of physical indices as estimates of reproductive status, and the use of telemetry devices to record activity and biopotentials. Key factors in the selection of a telemetry system are discussed. In many cases, remote monitoring may permit assessment of physiologic function without the stress of handling or restraint.

259 NAL Call. No.: 410.9 P94
Immunogenetic aspects of a canine breeding colony.
Ladiges, W.C.; Deeg, H.J.; Raff, R.F.; Storb, R.
Joliet, Ill. : American Association for Laboratory Animal Science; 1985 Feb. Laboratory animal science v. 35 (1): p. 58-62. ill; 1985 Feb. Includes references.

Language: English

Descriptors: Dogs; Animal breeding; Immunogenetics; Phenotypes

260 NAL Call. No.: QL55.A1L33
The impact of the GLPs on lab animal research.
Soave, O.; Tufts, N.R.
New York : Media Horizons; 1986 Mar.
Lab animal v. 15 (2): p. 39, 41, 43, 45; 1986 Mar. Includes references.

Language: English

Descriptors: Laboratory animals; Regulations; Research policy; Facilities; Records

261 NAL Call. No.: QL55.I5
The importance of and difficulties encountered with diagnosis of disease in laboratory animals.
Whittaker, D.
Sussex : The Institute; 1989 Apr.
Animal technology : journal of the Institute of Animal Technology v. 40 (1): p. 23-29; 1989 Apr.

Language: English

Descriptors: Laboratory animals; Animal diseases; Diagnosis; Handling; Postmortem examinations

Abstract: Despite major advances in breeding and maintaining laboratory animals, disease problems continue to interfere with research projects. Many of these diseases are of a sub-

clinical nature and their effects are only observed at post-mortem or even only under histopathological evaluation. Other diseases are more dramatic in their effect to the extent that it may be necessary to terminate an experiment due to the morbidity, clinical effects or even mortality. Even veterinary diagnostic protocols, techniques and procedures are often missing from laboratory animal units. Thought should be given to establishing standard operating procedures for handling animals and post-mortem material suspected of being diseased.

262 NAL Call. No.: 410.9 P94
Improved cage design for single housing of social nonhuman primates. Bielitzki, J.; Susor, T.G.; Elias, K.; Bowden, D.M. Cordova, Tenn. : American Association for Laboratory Animal Science; 1990 Jul. Laboratory animal science v. 40 (4): p. 428-431; 1990 Jul. Includes references.

Language: English

Descriptors: Primates; Cages; Design; Animal welfare

263 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.

264 NAL Call. No.: QL55.H8
Improving the housing and care of laboratory pigeons and rats. Schmorrow, D.D.; Ulrich, R.E. Washington Grove, MD : Psychologists for the Ethical Treatment of Animals; 1991. Humane innovations and alternatives v. 5: p. 299-305; 1991. Includes references.

Language: English

Descriptors: Pigeons; Rats; Cages; Space requirements; Animal husbandry; Animal health; Animal welfare

265 NAL Call. No.: QL55.I5

Improving the micro environment of caged laboratory macaques.
Reinhardt, V.; Zweifel, D.; Pape, D.
Sussex : The Institute; 1992 Dec.
Animal technology : journal of the Institute of Animal
Technology v. 43 (3): p. 179-183; 1992 Dec. Includes
references.

Language: English

Descriptors: Macaca; Microenvironments; Cages

266 NAL Call. No.: 410.9 P94
Inapparent Streptococcus pneumoniae type 35 infections in
commercial rats and mice.
Fallon, M.T.; Reinhard, M.K.; Gray, B.M.; Davis, T.W.;
Lindsey, J.R. Cordova, Tenn. : American Association for
Laboratory Animal Science; 1988 Apr. Laboratory animal science
v. 38 (2): p. 129-132; 1988 Apr. Includes references.

Language: English

Descriptors: U.S.A.; Rats; Mice; Respiratory diseases;
Streptococcus pneumoniae; Symptoms; Isolation

Abstract: Streptococcus pneumoniae was isolated from
specific-pathogen-free rodents in two rooms at a commercial
breeding facility during vendor surveillance testing. In a
survey of 274 animals from the two rooms over a period of 7
months, capsular serotype 35 S. pneumoniae was isolated from
the upper respiratory tracts of 11% (9 of 82) of C57BL/6 mice
in room A and 14% (10 of 72) of F344 rats in room B, but not
from WKY rats, BALB/c mice or DBA/2 mice from room A. In both
C57BL/6 mice and F344 rats, older rodents had higher
colonization frequencies. Nasal lavage cultures gave the best
results in identifying colonized rodents. No clinical illness
or microscopic lesions were associated with pneumococcal
colonization in rats or mice, and no other evidence of
potential pathogen infection was found except for positive
serologic tests for mouse rotavirus in mice. This is the first
report of natural pneumococcal infection in mice, and the
first report of type 35 S. pneumoniae infection in rodents.
The findings support an earlier observation that pneumococcal
infections in rat colonies tend to be monotypic and suggest
that the same may be true in mice.

267 NAL Call. No.: QL55.A1L3
The incidence of Encephalitozoon cuniculi in a commercial
barrier-maintained rabbit breeding colony.
Greenstein, G.; Drozdowicz, C.K.; Garcia, F.G.; Lewis, L.L.
London : Royal Society of Medicine Services; 1991 Oct.
Laboratory animals v. 25 (4): p. 287-290; 1991 Oct. Includes
references.

Language: English

Descriptors: Rabbits; Encephalitozoon cuniculi; Incidence;
Serological surveys; Colonies

Abstract: Between 1982 and 1987 sera from 495 Zealand White
rabbits (*Oryctolagus cuniculus*) obtained from a single
commercial supplier were tested for the presence of antibodies
to Encephalitozoon cuniculi. A commercially available carbon
immunoassay test kit was used. Initially 32.9% of the rabbits

were seropositive with the number progressively decreasing to 2.3% by 1987. The reason for the significant decline in the incidence of infection was most likely due to a selection process for breeding stock instituted by the supplier based upon productivity, posture and weight of each animal.

268 NAL Call. No.: QL737.P9H78

An inexpensive, climate-controlled enclosure for gibbons utilizing appropriate technology.

Dahl, J.F.

Park Ridge, N.J. : Noyes Publications; 1989.

Housing, care and psychological well-being of captive and laboratory primates / edited by Evalyn F. Segal. p. 323-335.

ill; 1989.

Language: English

Descriptors: Pongidae; Climate control; Environmental control; Animal housing; Design; Facilities

269 NAL Call. No.: 410.9 P94

Inexpensive outdoor enclosure for Japanese macaques used in biobehavioral research.

Crowley, T.J.; Goebel, A.; Nesbitt, T.

Cordova, Tenn. : American Association for Laboratory Animal Science; 1989 Sep. Laboratory animal science v. 39 (5): p.

420-424. ill; 1989 Sep. Includes references.

Language: English

Descriptors: Macaca; Animal housing; Facilities; Animal research; Animal behavior

Abstract: For studies of alcohol self-administration in a monkey social group, we effectively and humanely enclosed nine Japanese macaques (*Macaca fuscata*) in an ellipse 32 X 40m, with a 1 m high chain-link fence surmounted by a 3 m curtain of electrically conductive nylon net. High-voltage brief-pulse charges prevent climbing on the net. Materials for this fence cost less than \$14.50 per running meter. Weeds and grass grew freely within the ellipse, and seven dead trees interconnected with ropes permitted climbing and swinging. An open, roofed gazebo provided sun and rain shelter, and its single wall blocked the prevailing wind. Mouth activated drinkometer spouts in the corral supplied solutions for voluntary alcohol self-administration. Automatic counters informed an observer of exact doses consumed by each subject. Another observer recorded the frequency of occurrence of various social behaviors. A small kennel run, roofed over with chain-link fencing, connected the corral with a paddock-like, partially heated building, to and from which the monkeys usually had free access. It contained three interconnected chain-link pens. A raceway opening from the pens incorporated a squeeze cage used for weighing animals, drawing blood samples, or administering medications. This unique facility promotes the psychological well-being of research primates, which is being mandated by federal law.

270 NAL Call. No.: 410.9 P94

Infection of rabbits with Sendai virus.

Machii, K.; Otsuka, Y.; Iwai, H.; Ueda, K.

Cordova, Tenn. : American Association for Laboratory Animal

Science; 1989. Laboratory animal science v. 39 (4): p. 334-337; 1989. Includes references.

Language: English

Descriptors: Japan; Rabbits; Murine paramyxovirus; Infectivity; Antibody titer; Disease transmission

Abstract: Rabbits were either inoculated with Sendai virus (SV), strain MN, or caged with virus-inoculated rabbits on the same day of the viral inoculation, and examined for viral shedding and detection of viral antigens in the respiratory tract, histopathologic changes, and serum antibodies. Infectious virus was recovered from nasal swabs at postinoculation day (PID) 3 and disappeared by PID 10. Viral antigens were detected by immunofluorescence in epithelial cells of the nasal cavities, but not of the trachea and lungs from PID 3 to PID 10, and antibodies were detected after PID 7. Rabbits had no clinical manifestations and only exhibited a moderate increase in goblet cells of the nasal epithelium. In the transmission study, virus was recovered from one of three uninoculated rabbits at postexposure day (PED) 10 and antibodies were detected at PED 15 in the same rabbit. These data suggest that, although viral multiplication was limited to the nasal epithelium, laboratory rabbits are susceptible to Sendai virus infection.

271 NAL Call. No.: 410.9 P94
Infection of SDAV-immune rats with SDAV and rat coronavirus. Weir, E.C.; Jacoby, R.O.; Paturzo, F.X.; Johnson, E.A. Cordova, Tenn. : American Association for Laboratory Animal Science; 1990 Jul. Laboratory animal science v. 40 (4): p. 363-366; 1990 Jul. Includes references.

Language: English

Descriptors: Rats; Sialodacryoadenitis virus; Coronavirus; Immunity; Reinfection; Disease transmission; Disease course

Abstract: Infection of rats with sialodacryoadenitis virus (SDAV) or rat coronavirus (RCV) is acute and self-limiting, and elimination and control of either virus is based on the assumption that recovered rats are immune to reinfection. To test this hypothesis, we examined whether SDAV-immune rats could be infected with RCV or reinfected with SDAV. Sprague Dawley (SD) rats were inoculated intranasally with SDAV or with culture medium alone and serial SDAV antibody titers were obtained. Eleven months after inoculation, when antibody titers had stabilized, SDAV-immune and nonimmune rats were challenged with SDAV or RCV, and euthanatized 3 or 6 days later. SDAV-immune rats challenged with SDAV or RCV manifested acute rhinitis associated with virus antigen by 3 days after inoculation, but no lesions or antigen were subsequently found in the lower respiratory tract, salivary glands or lacrimal glands. There was also a marked anamnestic increase in antibody titer by 6 days after challenge. SDAV-immune rats challenged with SDAV or RCV also transmitted infection to nonimmune cage mates. This study indicates that 11 months after primary, infection with SDAV, rats can be infected with SDAV or RCV, but that the severity of disease is significantly reduced.

Influence of cage size on heart rate and behavior in rhesus monkeys. Line, S.W.; Morgan, K.N.; Markowitz, H.; Strong, S. Schaumburg, Ill. : American Veterinary Medical Association; 1989 Sep. American journal of veterinary research v. 50 (9): p. 1523-1526; 1989 Sep. Includes references.

Language: English

Descriptors: Rhesus monkeys; Cage size; Heart rate; Animal behavior; Vocalization; Animal welfare

Abstract: We studied 6 singly caged adult female rhesus monkeys to determine whether increased cage size had any effect on behavior or heart rate. Two monkeys at a time were placed in cages 40% larger than their standard cage for 1 week on 2 occasions, using a counter-balanced design. Direct behavioral observations were performed 75 minutes/week on each monkey. Heart rate and general activity were monitored 35 hours/week by a telemetry system. Statistically significant differences were not found in aggressive, submissive, abnormal, or self-abusive behavior, nor in time spent in the front half of the cage, duration of grooming, looking at the observer, or stereotyped or nonstereotyped locomotion. Vocalizations increased the first time in the larger cage, but not the second, and decreased upon the second return to the standard cage. Differences with respect to cage size were not found in heart rate or activity level, although there were significant variations at different times of day. We conclude that modest increases in cage size are unlikely to enrich the environment of singly caged laboratory primates.

273 NAL Call. No.: QL750.A6
Influence of housing conditions on beagle behaviour.
Hetts, S.; Clark, J.D.; Calpin, J.P.; Arnold, C.E.; Mateo, J.M. Amsterdam : Elsevier Science Publishers, B.V.; 1992 Jul. Applied animal behaviour science v. 34 (1/2): p. 137-155; 1992 Jul. Includes references.

Language: English

Descriptors: Dogs; Pens; Cages; Animal housing; Animal behavior; Social interaction; Isolation; Space requirements; Animal welfare

274 NAL Call. No.: QL55.I5
Influence of photoperiod, isolation and escape option on weight gain of golden hamsters.
Hoffman, R.A.; Habeeb, P. Sussex : The Institute of Animal Technology; 1988 Aug. Animal technology : journal of the Institute of Animal Technology v. 39 (2): p. 93-98; 1988 Aug. Includes references.

Language: English

Descriptors: Golden hamster; Photoperiod; Isolation; Weight gain; Animal housing; Animal burrows

275 NAL Call. No.: 410.9 P94
Infrequent shedding and transmission of Herpesvirus simiae from seropositive macaques.
Weir, E.C.; Bhatt, P.N.; Jacoby, R.O.; Hilliard, J.K.;

Morgenstern, S. Cordova, Tenn. : American Association for Laboratory Animal Science; 1993 Dec. Laboratory animal science v. 43 (6): p. 541-544; 1993 Dec. Includes references.

Language: English

Descriptors: Macaca mulatta; Macaca fascicularis; Herpesviridae; Epizootiology; Disease transmission; Environmental factors; Quarantine; Animal breeding; Cesarean section; Parturition; Stress

Abstract: The epizootiologic properties of Herpesvirus simiae (B virus) were studied in singly housed macaques (*Macaca mulatta* and *M. fascicularis*) in a biomedical vivarium to determine whether commonly encountered environments and procedures such as quarantine, breeding, Cesarean section, parturition, and social stress induced virus shedding and transmission. Macaques were tested serologically and for infectious virus. Oral, conjunctival, and vaginal swab samples were obtained repeatedly. Virus excretion was not detected during a 7-week quarantine of 32 newly acquired, singly housed animals tested every other week for 6 weeks, and none of 19 seronegative animals from this group seroconverted during 7 weeks in quarantine. No virus shedding was detected in 16 seropositive animals tested weekly for 3 weeks after Cesarean section or normal parturition or in 11 seropositive animals following introduction of new males to animal rooms. One animal seroconverted after repeated breeding of seropositive animals to seronegative partners. Fifty-three singly housed offspring remained seronegative for up to 10 years, even if born to seropositive dams, and only 1 of 86 singly housed animals less than 7 years old was seropositive. These results suggest that shedding of B virus from seropositive macaques is uncommon, when subjected to common laboratory procedures or environments, and that transmission is rare in singly housed animals. These results may be useful in establishing B virus-free colonies of macaques.

276 NAL Call. No.: 410.9 P94
An innovative technical approach for repetitive intratracheal instillation without anesthesia in small animals.
Blouin, A.; Kingma, I.; Boutet, M.
Cordova, Tenn. : American Association for Laboratory Animal Science; 1994 Jun. Laboratory animal science v. 44 (3): p. 274-279; 1994 Jun. Includes references.

Language: English

Descriptors: Golden hamsters; Drug delivery systems; Trachea

Abstract: Intratracheal instillation in small laboratory animals often involves repeated anesthesia and upper airway intubation. To facilitate this approach, we developed an indwelling system for repeated intratracheal administrations that was assembled from widely available simple components. Its installation can be considered a minor surgical procedure and is done under sterile surgical conditions. This system allows repeated intratracheal administration of substances in the lungs in unanesthetized animals, with the possibility to increase the frequency of instillations and lower the dose. Thoracic radiography was performed to document the reliability of this permanent instillation system. Furthermore, a potent toxic nitrosamine (NNK; N-nitrosamine 4-[nitrosomethylamino]-1-[3-pyridil]-1-butanone) was used to

demonstrate appreciable pulmonary toxicity at low dosage but with repetitive administration. This simple technique brings a significant simplification and improvement to small animal studies that require repeated bronchoalveolar administration of substances.

277 NAL Call. No.: 410.9 P94
Interspecific contrasts in response of macaques to transport cage training. Clarke, A.S.; Mason, W.A.; Moberg, G.P. Cordova, Tenn. : American Association for Laboratory Animal Science; 1988 Jun. Laboratory animal science v. 38 (3): p. 305-309; 1988 Jun. Includes references.

Language: English

Descriptors: Macaca; Transport of animals; Cages; Training (animal); Animal behavior; Adrenal cortex hormones

Abstract: Corticosteroid values in response to brief confinement in a transport cage were compared between rhesus, bonnet, and crab-eating macaques before and after they were trained to enter the cage. Behavioral data were collected to assess performance during training. Species differences were found both in training measures and in corticosteroid response to confinement in the transport cage after training. Bonnets took longer to train than rhesus or crab-eaters. Rhesus showed the smallest adrenocortical response to cage confinement after training and crab-eaters the greatest, suggesting that this group habituated more slowly to confinement than the other two groups. The results have implications for choice of experimental subject species and for management and husbandry of laboratory primates.

278 NAL Call. No.: QL55.A1L3
Introduction of Salmonellae into a centralized laboratory animal facility by infected day old chicks. Nicklas, W. Essex : Laboratory Animal Science Association; 1987 Apr. Laboratory animals v. 21 (2): p. 161-163; 1987 Apr. Includes references.

Language: English

Descriptors: Chicks; Animal husbandry; Laboratory animals; Facilities; Salmonella; Salmonellosis

279 NAL Call. No.: QL55.S5 1986
An introduction to bedding materials., [Rev. 1986]. Bethesda, Md. : Uniformed Services University of the Health Sciences?, 1986? :.; 1986.
The use of animals in research / compiled by Richard C. Simmonds. p. 66-79; 1986.

Language: English

Descriptors: Laboratory animals; Animal housing; Facilities; Floors; Litter; Wood shavings; Quality controls

280 NAL Call. No.: QL55.S5 1986
An introduction to housing, identification, and husbandry techniques for rodents., [Rev. 1986].

Bethesda, Md. : Uniformed Services University of the Health Sciences?, 1986? :.; 1986.

The use of animals in research / compiled by Richard C. Simmonds. p. 80-102. ill; 1986.

Language: English

Descriptors: Rodents; Animal housing; Identification; Animal husbandry; Cages; Boxes; Feed dispensers; Environment; Animal health

281 NAL Call. No.: QL55.S5 1986

An introduction to laboratory animal caging., [Rev. 1986]. Bethesda, Md. : Uniformed Services University of the Health Sciences?, 1986? :.; 1986.

The use of animals in research / compiled by Richard C. Simmonds. p. 53-65; 1986.

Language: English

Descriptors: Laboratory animals; Animal housing; Cages; Boxes; Plastics; Metals

282 NAL Call. No.: QL55.S5 1986

An introduction to procurement and obtaining sources for laboratory animals., [Rev. 1986].

Bethesda, Md. : Uniformed Services University of the Health Sciences?, 1986? :.; 1986.

The use of animals in research / compiled by Richard C. Simmonds. p. 44-48; 1986.

Language: English

Descriptors: U.S.A.; Laboratory animals; Supplies; Facilities; Management

283 NAL Call. No.: QL55.S5 1986

An introduction to the domestic cat., [Rev. 1986].

Bethesda, Md. : Uniformed Services University of the Health Sciences?, 1986? :.; 1986.

The use of animals in research / compiled by Richard C. Simmonds. p. 189-194; 1986.

Language: English

Descriptors: Cat; Animal husbandry; Animal anatomy; Physiology; Restraint; Handling; Animal breeding; Animal experiments

284 NAL Call. No.: QL55.S5 1986

An introduction to the rabbit., [Rev. 1986].

Bethesda, Md. : Uniformed Services University of the Health Sciences?, 1986? :.; 1986.

The use of animals in research / compiled by Richard C. Simmonds. p. 173-188; 1986.

Language: English

Descriptors: Rabbits; Animal husbandry; Handling; Animal housing; Cages; Identification; Rabbit feeding; Euthanasia; Animal health

285 NAL Call. No.: QL55.F43 1987
Investigating genetic variability between the MHS hypertensive strain of rats and its normotensive control, MNS.
Barber, B.R.; Torielli, L.; Ferrandi, M.; Ferrari, P.; Salardi, S.; Parenti, P.; Duzzi, L.
Dordrecht : M. Nijhoff; 1988.
New developments in biosciences : their implications for laboratory animal science : proceedings of the Third Symposium, Amsterdam, The Netherlands, 1-5 June 1987 / edited by Anton C. Beyneen and Henk A. Solleveld. p. 191-196; 1988. Includes references.

Language: English

Descriptors: Rats; Strains; Genetic variation; Hypertension; Breeding programs

286 NAL Call. No.: 410.9 P94
Investigators' interrelationship with laboratory animals.
Bustad, L.K.
Joliet, Ill. : American Association for Laboratory Animal Science; 1987 Jan. Laboratory animal science v. 37 (special issue): p. 167-170; 1987 Jan. In the series analytic: Effective animal care and use committees / edited by F.B. Orlans, R.C. Simmonds, W.J. Dodds. Includes references.

Language: English

Descriptors: Laboratory animals; Animal welfare; Animal housing; Animal nutrition; Animal experiments; Animal health; Handling

287 NAL Call. No.: SF407.P7I67
IPS international guidelines for the acquisition, care and breeding of nonhuman primates.. International guidelines for the acquisition, care and breeding of nonhuman primates
Else, James G.
International Primatological Society, Captive Care Committee, Institute of Primate Research (Kenya)
Kenya : Institute of Primate Research, National Museums of Kenya; 1988. 27 p. ; 24 cm. (Primate report ; 25). October 1989. Includes bibliographical references (p. 18).

Language: English

Descriptors: Primates; Animal welfare

288 NAL Call. No.: SF407.P7T49 1991
Is social housing of primates always the optimal choice?., 1st ed.;. Coe, C.L.
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. 78-92; 1991. Includes references.

Language: English

Descriptors: Primates; Animal housing; Social environment; Animal welfare

289 NAL Call. No.: QL55.A1L33
Isolation cubicles: space and cost analysis.
Ruys, T.
New York : Nature Publishing Company; 1988 Aug.
Lab animal v. 17 (5): p. 25-30. ill; 1988 Aug. Includes
references.

Language: English

Descriptors: Laboratory animals; Facilities; Animal housing;
Isolation; Space requirements; Cost analysis

290 NAL Call. No.: 410.9 P94
Isolation-induced renal functional changes in rats from four
breeders. Vadieli, K.; Berens, K.L.; Luke, D.R.
Cordova, Tenn. : American Association for Laboratory Animal
Science; 1990 Jan. Laboratory animal science v. 40 (1): p.
56-59; 1990 Jan. Includes references.

Language: English

Descriptors: Rats; Strains; Strain differences; Renal
function; Isolation

Abstract: The investigation of drug-induced nephrotoxicity depends on the adequate estimation of renal function at baseline and upon completion of the study. Typically, this procedure requires housing of the animal in an individual wire-bottom metabolic cage to facilitate complete urine collection. The present study compared the effects of 4 consecutive days of isolation on Sprague-Dawley rats from four breeders: Harlan Sprague-Dawley, Charles River Laboratories, BioLab and TIMCO Breeders. Following 4 days of isolation, weight loss was not significantly different between groups. However, urine flow rate declined significantly ($p < 0.0005$) in TIMCO and Charles River breeder rat groups during the study period compared to baseline values and other groups. Serum creatinine levels were 63% greater ($p < 0.01$) with a 40% decline in creatinine clearance ($p < 0.0001$) after 4 days of isolation in TIMCO rats. Although a 59% decrease in baseline creatinine clearance was found in Charles River rats after 96 hours of isolation ($p < 0.0005$), the mean baseline value was 38% greater than other rat groups ($p = 0.04$). Fractional reabsorption of sodium was 4.4% less ($p < 0.001$) in TIMCO rats compared to baseline. Fractional excretion of potassium was highly variable in all rat groups. We conclude that animal isolation was associated with a significant change in renal function in TIMCO rats which was not observed in others. Caution is required to consider the source of the rat, and also duration of isolation, in studies requiring the passive assessment of renal function.

291 NAL Call. No.: 410.9 P94
Ivermectin eradication of pinworms from rats kept in
ventilated cages. Huerkamp, M.J.
Cordova, Tenn. : American Association for Laboratory Animal
Science; 1993 Feb. Laboratory animal science v. 43 (1): p.
86-90; 1993 Feb. Includes references.

Language: English

Descriptors: Rats; Ivermectin; Syphacia

Abstract: Studies using rats that were naturally infested with *Syphacia muris* and kept in forced-air, individually ventilated cages showed that ivermectin given orally at a dose of 2 mg/kg for three treatments at 7- or 9-day intervals was eradicated. Paired ivermectin treatments given at 7- or 9-day intervals were ineffective in eliminating parasitism. Pinworm eggs persisted on the perianal region of rats for up to 17 days and eggs were also present in soiled contact bedding within cages and on surfaces within the animal room. Anal tapes as a diagnostic test had 88% sensitivity in detecting pinworms.

292 NAL Call. No.: 410.9 P94
Kong toys for laboratory primates: are they really an enrichment or just fomites?.
Bayne, K.A.L.; Dexter, S.L.; Hurst, J.K.; Strange, G.M.; Hill, E.E. Cordova, Tenn. : American Association for Laboratory Animal Science; 1993 Feb. Laboratory animal science v. 43 (1): p. 78-85; 1993 Feb. Includes references.

Language: English

Descriptors: Macaca mulatta; Toys

Abstract: Simple toys as enrichment devices have been associated with a rapid decline in their use by nonhuman primates. Other facets of toy presentation have not been described previously. For example, a comparison of the effect(s) of an enrichment device between two facilities should be validated if enrichment recommendations are to be made that affect diverse research facilities across the country. Additionally, a comparison of two methods of presentation (one highly accessible to the animal and the other less accessible) of the same enrichment device for potential differences in efficacy could provide direction in implementing an enrichment program based on simple toys. The handling of enrichment devices by nonhuman primates can lead to the spread of microbial contamination. The typical enrichment program rotates enrichment devices among animals to maximize the variety of stimuli available to each primate in the most economic manner. An adequate sanitation program is therefore pivotal to minimizing the potential for enrichment devices to be fomites. We conducted three experiments that addressed these issues. The results confirmed that, although the presence of a simple toy reduced behavioral pathology, there was variability in behavioral effect for an enrichment technique between facilities. Two methods of presentation (on floor and suspended) of a simple toy did not produce any significant differences in use. Finally, we demonstrated that microbial growth can persist on enrichment devices after they have been sanitized in a commercial cagewasher.

293 NAL Call. No.: QL55.I5
The Laboratory Animal Breeders' Association Accreditation Scheme for commercially bred laboratory animals within the United Kingdom. Bantin, G.C.; Smith, M.W.
Sussex : The Institute of Animal Technology; 1985 May.
Animal technology : journal of the Institute of Animal Technology v. 36 (1): p. 1-6; 1985 May. Includes references.

Language: English

Descriptors: United Kingdom; Laboratory animals; Breeders' associations; Accreditation; Animal breeding

294 NAL Call. No.: aZ5071.N3
Laboratory animal facilities and management: January 1985-July 1992. Berry, D.J.
Beltsville, Md. : The Library; 1992 Aug.
Quick bibliography series - U.S. Department of Agriculture, National Agricultural Library (U.S.). (92-58): 94 p.; 1992 Aug. Updates QB 91-43. Bibliography.

Language: English

Descriptors: Laboratory animals; Laboratories; Cages; Animal experiments; Bibliographies

295 NAL Call. No.: SF77.A22
Laboratory animal facilities fully accredited by the American Association for Accreditation of Laboratory Animal Care as of April 1, 1986. New Lenox, Ill. : The Association; 1986 Apr.
AAALAC activities report - American Association for Accreditation of Laboratory Animal Care v. 14: p. 8-15; 1986 Apr.

Language: English

Descriptors: U.S.A.; Laboratory animals; Facilities; Accreditation; Directories

296 NAL Call. No.: NA6751.Y64 1992
Laboratory animal facility planning and design.
Yokel, Uri
AEPA Architects Engineers, P.C.
Washington, D.C. : AEPA Architects Engineers, P.C., 1992?;
1992. 28 leaves : ill. ; 28 cm. Caption title.

Language: English

Descriptors: Architecture; Laboratory animals

297 NAL Call. No.: 410 IN84
Laboratory animal management in Malaysia.
Baskaran, G.
Oslo, Norway : The International Council for Laboratory Animal Science; 1988. ICLAS bulletin (62): p. 26-28; 1988.

Language: English

Descriptors: Malaysia; Laboratory animals; Animal husbandry; Facilities

298 NAL Call. No.: QL55.F43 1987
Laboratory animal science in Czechoslovakia.
Klir, P.
Dordrecht : M. Nijhoff; 1988.
New developments in biosciences : their implications for laboratory animal science : proceedings of the Third Symposium, Amsterdam, The Netherlands, 1-5 June 1987 / edited by Anton C. Beyneen and Henk A. Solleveld. p. 35-40; 1988. Includes references.

Language: English

Descriptors: Czechoslovakia; Laboratory animals; Animal husbandry; Animal breeding; Animal experiments; Germ free husbandry

299 NAL Call. No.: QL55.A1L33
Laboratory care and breeding of the African clawed frog.
Dawson, D.; Schultz, T.W.; Shroeder, E.C.
New York, N.Y. : Nature Publishing Company; 1992 Apr.
Lab animal v. 21 (4): p. 31-36; 1992 Apr. Includes references.

Language: English

Descriptors: Xenopus laevis; Animal husbandry; Animal breeding

300 NAL Call. No.: QL55.A1L33
Laboratory management and husbandry of the Japanese medaka.
Grady, A.W.; Greer, I.E.; McLaughlin, R.M.
New York, N.Y. : Nature Publishing Company; 1991 Mar.
Lab animal v. 20 (3): p. 22-28; 1991 Mar. Includes references.

Language: English

Descriptors: Freshwater fishes; Laboratory rearing

301 NAL Call. No.: 410.9 P94
Laboratory management of the ferret for biomedical research.
Moody, K.D.; Bowman, T.A.; Lang, C.M.
Joliet, Ill. : American Association for Laboratory Animal Science; 1985 Jun. Laboratory animal science v. 35 (3): p. 272-279. ill; 1985 Jun. Includes references.

Language: English

Descriptors: Ferrets; Laboratory rearing; Animal breeding; Animal housing; Animal nutrition; Zoonoses; Medical research

302 NAL Call. No.: QL55.I5
Laboratory swine--principles of husbandry and research techniques. Dopson, D.C. \u Brompton Hospital, London Sussex : The Institute; 1993 Dec.
Animal technology : journal of the Institute of Animal Technicians v. 44 (3): p. 175-200; 1993 Dec. Includes references.

Language: English

Descriptors: Pigs; Laboratory animals; Animal husbandry; Pig housing; Handling; Anesthesia; Miniature pigs; Strain differences; Veterinary medicine; Animal models

Abstract: Pigs are anatomically and physiologically similar to man in many ways. A fact which is supported by many and diverse scientific studies. However, they may be overlooked as research models for reasons of the presumed difficulties to be encountered in maintaining and handling animals of potentially great size. In fact, the type of pig available in the United

Kingdom ranges from the Large White or Yorkshire pig which may weigh > 200 kg to the Yucatan Miniature Pig which is considerably smaller and lighter at < 70 kg. There are a number of possible advantages to using pigs over other species in the laboratory and some selected points will be considered in this paper. The requirements for routine care and techniques for minor regulated procedures are also described. Emphasis is also placed on current perspectives in cardio-respiratory research for which the pig is a particularly suitable animal model.

303 NAL Call. No.: RB125.C68 1985
Laboratory methodology and management of swine in biomedical research. Panepinto, L.M.
New York : Plenum Press; 1986.
Swine in biomedical research / edited by M.E. Tumbleson. p. 97-109. ill; 1986. Proceedings of a conference on Swine in Biomedical Research, June 17-20, 1985, Columbia, Missouri. Literature review. Includes references.

Language: English

Descriptors: Pigs; Medical research; Laboratory methods; Animal husbandry; Restraint of animals; Animal nutrition; Pig housing; Animal welfare

304 NAL Call. No.: QL55.L353
LAMA lines newsletter of the Laboratory Animal Management Association. Laboratory Animal Management Association
Silver Spring, MD : The Association,; 1986-9999.
v. : ill. ; 28 cm. Description based on: Vol. 2, no. 7 (Sept./Oct. 1987); title from caption.

Language: English; English

Descriptors: Laboratory animals

305 NAL Call. No.: QL55.L35
The LAMA review journal of the Laboratory Animal Management Association. Laboratory Animal Management Association
Silver Spring, Md. : The Association,; 1989-9999.
v. : ill. ; 28 cm. Description based on: Vol. 1, no. 3 (summer 1989); title from cover.

Language: English; English

Descriptors: Laboratory animals; Management; Periodicals

306 NAL Call. No.: QL737.P9H78
Langur monkeys (*Presbytis entellus*) in captivity.
Taff, M.A.; Dolhinow, P.
Park Ridge, N.J. : Noyes Publications; 1989.
Housing, care and psychological well-being of captive and laboratory primates / edited by Evalyn F. Segal. p. 291-304. ill; 1989.

Language: English

Descriptors: Cercopithecidae; Laboratory animals; Animal behavior; Group behavior; Space requirements; Diets; Cages; Careproviders

307 NAL Call. No.: QL55.A1L33
Legislation policy attitudes: impacting ARF management.
Black, H.S.; Doepel, F.M.
New York : Media Horizons; 1985 Apr.
Lab animal v. 14 (3): p. 40-43. ill; 1985 Apr. Includes
references.

Language: English

Descriptors: Europe; Laboratory animals; Animal welfare;
Legislation; History

308 NAL Call. No.: Z7994.L3A5
The licensing and control of animal experimentation in Norway.
Nottingham : Fund for the Replacement of Animals in Medical
Experiments; 1988 Mar.
Alternatives to laboratory animals : ATLA v. 15 (3): p. 260;
1988 Mar. Includes references.

Language: English

Descriptors: Norway; Laboratory animals; Animal experiments;
Facilities; Inspection; Regulations; Licensing; Animal welfare

309 NAL Call. No.: HV4735.W7
Local animal control management.
Wright, Phyllis; Cassidy, Barbara A.; Finney, Martha
Management Information Service
Washington, D.C. : Management Information Service,
International City Management Association; 1986.
20 p. : ill. ; 28 cm. (MIS report ; v. 18, no. 7 (July 1986)).
Cover title. Bibliography: p. 16.

Language: English; English

Descriptors: Animals; Control; Municipal services; Animals and
civilization; Human-animal relationships; Pounds; Animal
welfare

310 NAL Call. No.: QL737.P9H78
Long term animal studies.
Bennett, C.L.; Davis, R.T.
Park Ridge, N.J. : Noyes Publications; 1989.
Housing, care and psychological well-being of captive and
laboratory primates / edited by Evalyn F. Segal. p. 213-234;
1989.

Language: English

Descriptors: Monkeys; Animal housing; Laboratory rearing;
Aging; Models; Groups; Longevity; Social behavior

311 NAL Call. No.: QL55.A1L3
Long-term data on the reproduction and maintenance of a colony
of common marmosets (*Callithrix jacchus jacchus*) 1972-1983.
Box, H.O.; Hubrecht, R.C.
Essex : Laboratory Animal Science Association; 1987 Jul.
Laboratory animals v. 21 (3): p. 249-260; 1987 Jul. Includes
references.

Language: English

Descriptors: Marmoset; Animal housing; Diets; Reproduction;
Sex ratio; Mortality; Data analysis

312 NAL Call. No.: 410.9 P94
Lymphoblastic lymphoma in a colony of N:NIH (S)-bg-nu-xid mice. Waggle, K.S.; Wu-Owens, J.; Hollifield, V.; Hansen, C.T. Cordova, Tenn. : American Association for Laboratory Animal Science; 1992 Aug. Laboratory animal science v. 42 (4): p. 375-377; 1992 Aug. Includes references.

Language: English

Descriptors: Mice; Lymphoma

Abstract: During a 1-year period, 28 animals from a breeding colony of N:NIH(S)-bg-nu-xid mice were discovered to have rapidly enlarging subcutaneous swellings in the ventral, cervical, and axillary regions. Five of the mice also had hind limb paresis. Twenty-two of the mice were heterozygous nude females, five were homozygous nude males, and one was a homozygous nude female. All of the above mice were homo- or hemizygous for the beige and X-linked immunodeficiency mutations. The average age of the mice was 8.3 months. Generalized enlargement of the peripheral and internal lymph nodes was present at the time of necropsy examination. Other lesions commonly noted at necropsy included splenomegaly (15 mice), pale and thickened ventral lumbar spinal musculature (11 mice), and opaque, thickened meninges of the brain (10 mice). Histologic examination consistently disclosed infiltrates of neoplastic lymphoblasts in multiple tissues including lymph nodes, spleen, bone marrow, and meninges of the brain and spinal cord. The cells were positive for IgG on immunofluorescent staining, suggesting that the tumors were of B cell origin. The neoplasms observed in these mice have several similarities to tumors found in immunodeficient humans, suggesting that these mice may serve as useful animal models of lymphoma.

313 NAL Call. No.: SF406.L2
The main provisions of the Animals (Scientific Procedures) Act 1986. Morton, D.B. London : Royal Society of Medicine Services for Laboratory Animals; 1988. Laboratory Animal Science Association Silver Jubilee 1988 : collected papers to celebrate LASA's 25th anniversary / edited by J.H. Seamer. p. 27-35; 1988.

Language: English

Descriptors: United Kingdom; Laboratory animals; Animal welfare; Legislation; Facilities; Research projects; Licensing

314 NAL Call. No.: QL737.P9H78
Maintenance of primates in captivity for research: the need for naturalistic environments. Pereira, M.E.; Macedonia, J.M.; Haring, D.M.; Simons, E.L. Park Ridge, N.J. : Noyes Publications; 1989. Housing, care and psychological well-being of captive and laboratory primates / edited by Evalyn F. Segal. p. 40-60. ill; 1989.

Language: English

Descriptors: Primates; Animal research; Environment; Capture of animals; Natural history; Medical research; Nature conservation; Diets; Animal housing; Facilities

315 NAL Call. No.: QL55.I5
The maintenance of *Schistocerca gregaria* (Forsk.) the desert locust in a controlled environment.
Matthews, D.A.
Sussex : The Institute; 1991 Aug.
Animal technology : journal of the Institute of Animal Technology v. 42 (2): p. 87-95; 1991 Aug. Includes references.

Language: English

Descriptors: *Schistocerca gregaria*; Rearing techniques; Animal husbandry

Abstract: A regular supply of *Schistocerca gregaria* were required for neurobiological research at the Anatomy Department of the University of Wales College Cardiff. A breeding colony was therefore established within a conventional Animal Unit to provide these locusts at known stages during their development. This paper is intended to provide information which should prove useful to those who may be considering establishing a similar colony, or to those existing colony holders who may wish to compare and contrast the information described here with their own results. The life cycle of *Schistocerca gregaria* is divided into three main stages, the egg, the nymph and the adult. The holding conditions provided in our colonies for adult locusts are described in this paper.

316 NAL Call. No.: 410.9 P94
Management of an infestation of sucking lice in a colony of rhesus macaques. Mader, D.R.; Anderson, J.H.; Roberts, J. Cordova, Tenn. : American Association for Laboratory Animal Science; 1989 May. Laboratory animal science v. 39 (3): p. 252-255. ill; 1989 May. Includes references.

Language: English

Descriptors: *Macaca mulatta*; Rhesus monkeys; Ectoparasitoses; Anoplura; Pediculus; Pest control; Insecticides

317 NAL Call. No.: QL55.A1L3
Management of craniotomy in young rabbits.
Alberius, P.; Klinge, B.; Isaksson, S.
London : Royal Society of Medicine Services; 1989 Jan.
Laboratory animals v. 23 (1): p. 70-72; 1989 Jan. Includes references.

Language: English

Descriptors: Rabbits; Young animals; Skulls; Surgical operations

Abstract: A safe and easy-to-manage technique for various craniotomy procedures in young rabbits has been developed.

This technique, which minimizes the need for special instrumentation, has been tested in 90 animals with a minimal mortality and morbidity: one death perioperatively caused by sagittal sinus bleeding and one rabbit disclosing a brief period of postoperative illness, respectively. The technique, including postsurgical strategy, is described in detail.

318 NAL Call. No.: SF601.V38

The management of Japanese quail and their use in virological research: a review.

Ratnamohan, N.

Amsterdam : Elsevier Science Publishers B.V.; 1985 Feb.

Veterinary research communications v. 9 (1): p. 1-14; 1985

Feb. Literature review. Includes references.

Language: English

Descriptors: Poultry rearing; Virology; Laboratory animals; Japanese quails

319 NAL Call. No.: QL55.I5

Management of newly imported primates.

Welshman, M.D.

Sussex : The Institute of Animal Technology; 1985 Nov.

Animal technology : journal of the Institute of Animal

Technology v. 36 (2): p. 125-135; 1985 Nov.

Language: English

Descriptors: Primates; Imports; Imported breeds; Animal husbandry; Animal health; Animal housing

320 NAL Call. No.: QL55.I5

The management of post-operative pain and distress in experimental animals. Flecknell, P.A.

Sussex : The Institute of Animal Technology; 1985 Nov.

Animal technology : journal of the Institute of Animal

Technology v. 36 (2): p. 97-103; 1985 Nov. Includes

references.

Language: English

Descriptors: Laboratory animals; Pain; Standards; Improvement; Analgesics; Surgical operations; Animal welfare; Anesthetics

321 NAL Call. No.: QL737.P9P6713 1984

Management of reproduction in a breeding colony of bushbabies.

Izard, M.K.; Simons, E.L.

Cambridge [Cambridgeshire] : Cambridge University Press; 1986.

Primate ecology and conservation / edited by James G. Else,

Phyllis C. Lee. p. 315-323; 1986. Paper presented at the

"Proceedings of the Tenth Congress of the International

Primatological Society," July 1984, Nairobi, Kenya. Includes

references.

Language: English

Descriptors: Primates; Animal breeding methods; Laboratory rearing; Reproduction

322 NAL Call. No.: HV4708.056 1992

A manual of standard operating procedures for animal facilities. Olson, Merle E.; Morck, Douglas W.; Nabrotzky, Viola C. A. Calgary, Alta. : Dept. of Animal Care Services, University of Calgary,; 1992. 1 computer disk ; 3 1/2 in. + 1 sheet. Title from disk label.

Language: English

Descriptors: Animal welfare; Veterinary surgery; Laboratory animals

323 NAL Call. No.: 410.9 P94

Maternal factors affecting reproduction in a breeding colony of cynomolgus macaques (*Macaca fascicularis*).

Gardin, J.F.; Jerome, C.P.; Jayo, M.J.; Weaver, D.S. Cordova, Tenn. : American Association for Laboratory Animal Science; 1989 May. Laboratory animal science v. 39 (3): p. 205-212; 1989 May. Includes references.

Language: English

Descriptors: Macaca; Reproduction; Maternal effects; Reproductive performance

Abstract: A breeding colony of cynomolgus macaques (*Macaca fascicularis*), composed of imported and colony-born animals and established for 9 years, was evaluated for maternal factors associated with reproductive failure. The factors evaluated included age, gravidity, parity, origin, previous stillbirths, clinical incidents and type of housing. The effects of each factor on pregnancy rate (PR), stillbirth rate (SR), infant mortality rate (IMR) and pregnancy success (PS) were evaluated. The overall colony rates were: PR = 53%, SR = 22%, IMR = 22%, and PS = 60%. Neonatal death rate for the group was 12%. Pregnancy rate was most affected by maternal factors. Clinical incidents occurring during pregnancy were associated with a significant increase in the stillbirth rate, but did not affect infant mortality rate. Maternal age did not affect any of the measures of reproductive output. Pregnancy rate peaked at 6-8 years of age and decreased thereafter, while pregnancy success peaked at 9-11 years of age. Gravidity and parity had a positive linear relationship with pregnancy rate.

324 NAL Call. No.: 410.9 P94

Measurement of cardiovascular and renal function in unrestrained hamsters. Fox, M.; Natarajan, V.; Trippodo, N.C. Cordova, Tenn. : American Association for Laboratory Animal Science; 1993 Feb. Laboratory animal science v. 43 (1): p. 94-98; 1993 Feb. Includes references.

Language: English

Descriptors: Hamsters; Physiological functions; Measurement

Abstract: We describe a preparation for measuring blood pressure, left ventricular end diastolic pressure, heart rate, and renal excretory variables (volume, electrolytes, glomerular filtration rate) in hamsters. The new approach offers an advantage over previously described methods by eliminating the problems associated with restraint. Hamsters were surgically implanted with venous and arterial catheters.

A specially constructed bladder catheter, which allows flushing to minimize errors due to dead space and permits urine collection without restraining the animals, was also implanted. The hamsters were allowed to recover from surgery for 3 hours before being studied in a specially designed lucite housing unit. Representative results were obtained in cardiomyopathic and healthy hamsters.

325 NAL Call. No.: QL55.A1L3
Mebendazole for worming mice: effectiveness and side effects.
Baskerville, M.; Wood, M.; Newton, C.M.
London : Royal Society of Medicine Services; 1988 Jul.
Laboratory animals v. 22 (3): p. 263-268. ill; 1988 Jul.
Includes references.

Language: English

Descriptors: Mice; Hymenolepis nana; Aspicularis; Nematode control; Mebendazole; Adverse effects

Abstract: The use of mebendazole-treated diet (60 ppm) effectively controlled Hymenolepis nana and Aspicularis tetraptera in a large mouse breeding colony. In a 3 generation pilot study using a medicated diet, there was some reduction in litter size and in female growth rate and an overall 2.07% incidence of kinky tails in the offspring. When the whole mouse colony was fed mebendazole-treated diet, a high incidence of kinky tails (maximum 46% of weaned offspring) occurred.

326 NAL Call. No.: QL55.H42
Medical and behavioral benefits from primate research.
King, F.A.; Yarbrough, C.J.
Washington, D.C. : Foundation for Biomedical Research, [1985?]; 1985. Health benefits of animal research / edited by William I. Gay for the Foundation for Biomedical Research. p. 65-79; 1985. Literature review. Includes references.

Language: English

Descriptors: Monkeys; Animal breeding; Animal behavior; Reproduction; Infectious diseases; Medical research; Disease models

327 NAL Call. No.: QL737.P925H36
Medical care and management of the squirrel monkey.
Abee, C.R.
New York : Plenum Press; 1985.
Handbook of squirrel monkey research / edited by Leonard A. Rosenblum and Christopher L. Coe. p. 447-488. ill; 1985.
Includes references.

Language: English

Descriptors: Squirrel monkeys; Animal husbandry; Animal housing; Cages; Sanitation; Hematology; Disease prevention; Injections

328 NAL Call. No.: QL737.P9H78
Mental well-being in anthropoids.
Bramblett, C.

Park Ridge, N.J. : Noyes Publications; 1989.
Housing, care and psychological well-being of captive and laboratory primates / edited by Evalyn F. Segal. p. 1-11; 1989.

Language: English

Descriptors: Primates; Animal health; Mental health; Animal housing; Animal welfare

329 NAL Call. No.: QL55.I5
A method for sedation of common marmosets (*Callithrix jacchus*) without handling.
Roberts, K.
Sussex : The Institute of Animal Technology; 1988 Aug.
Animal technology : journal of the Institute of Animal Technology v. 39 (2): p. 117-118; 1988 Aug.

Language: English

Descriptors: Marmoset; Anesthesia; Capture of animals; Animal housing; Cages

330 NAL Call. No.: QL55.A1L3
A method for the routine observation of sexual behaviour in rats. Mercier, O.; Perraud, J.; Stadler, J.
Essex : Laboratory Animal Science Association; 1987 Apr.
Laboratory animals v. 21 (2): p. 125-130. ill; 1987 Apr.
Includes references.

Language: English

Descriptors: Rats; Lighting; Sexual behavior; Cages; Estrus

331 NAL Call. No.: QL55.A1L3
A method of remote physiological monitoring of a fully mobile primate in a single animal cage.
Pearce, P.C.; Halsey, M.J.; Ross, J.A.S.; Luff, N.P.; Bevilacqua, R.A.; Maclean, C.J.
London : Royal Society of Medicine Services; 1989 Apr.
Laboratory animals v. 23 (2): p. 180-187. ill; 1989 Apr.
Includes references.

Language: English

Descriptors: Primates; Cages; Physiology; Monitoring; Monitors; Remote control; Blood pressure; Electrocardiograms; Electroencephalograms

Abstract: A system was designed to allow the physiological monitoring of a fully mobile, unstressed baboon (*Papio anubis*) in a single animal cage for the purpose of measuring the changes occurring in a hyperbaric environment. It was required to operate for at least three months, both inside a pressure chamber and outside, and to measure the following parameters; electroencephalogram (EEG, three channels), electrooculogram (EOG), electromyogram (EMG, two channels), electrocardiogram (ECG), arterial blood pressure, respiration and body temperature. Also in the system were catheters through which blood samples could be taken and intravenous drugs given. The overall system consisted of a harness and jacket, and umbilical and back pack, a combined electrical and fluid

transmission swivel and a monitoring implant and catheters.

332 NAL Call. No.: QL55.F43 1987
Microbial assessment of a single fumigation by formaldehyde of a multi-level animal facility.
Gamble, M.R.; Needham, J.R.
Dordrecht : M. Nijhoff; 1988.
New developments in biosciences : their implications for laboratory animal science : proceedings of the Third Symposium, Amsterdam, The Netherlands, 1-5 June 1987 / edited by Anton C. Beyneen and Henk A. Solleveld. p. 117-119; 1988. Includes references.

Language: English

Descriptors: Laboratory animals; Facilities; Animal housing; Formaldehyde; Fumigation; Staphylococcus aureus; Bacillus subtilis; Disease prevention

333 NAL Call. No.: QL55.A1L3
Microbiologically monitored fumigation of a newly built SPF laboratory rodent facility.
Sebesteny, A.; Milite, G.; Martellosi, P.
London : Royal Society of Medicine Services; 1992 Apr.
Laboratory animals v. 26 (2): p. 132-139; 1992 Apr. Includes references.

Language: English

Descriptors: Rats; Mice; Laboratories; Fumigation; Gnotobiotic animals; Sterilizing; Methyl bromide; Monitoring

Abstract: The initial sanitization and sterilization of a newly built animal facility for the breeding and holding of specified pathogen free (SPF) rats and mice is described. The fumigation programme was started with methyl bromide treatment directed primarily against arthropods, followed by ammonia spray to kill coccidial oocysts and concluded by three formaldehyde treatments with fog and spray against bacteria and viruses. The practicalities and problems involved are described in detail and the rationale and purpose of the programme and its monitoring are discussed. The report is expected to contribute towards the establishment of a rational, efficient and standardized fumigation programme for SPF animal facilities, under increasing constraints of safety and environmental considerations concerning pollution with toxic and corrosive agents.

334 NAL Call. No.: QL55.A1L3
Microclimate in two types of rat cages.
Hirsjarvi, P.A.; Valiaho, T.U.
Essex : Laboratory Animal Science Association; 1987 Apr.
Laboratory animals v. 21 (2): p. 95-98. ill; 1987 Apr. Includes references.

Language: English

Descriptors: Rats; Cages; Animal husbandry; Microclimate; Design

335 NAL Call. No.: QL55.A1L33

Microenvironmental conditions in isolator cages: an important research variable.

Lipman, N.S.

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

Lab animal v. 21 (6): p. 23-27; 1992 Jun. Includes references.

Language: English

Descriptors: Laboratory animals; Microenvironments; Cages

336

NAL Call. No.: 410.9 P94

Minerals leached into drinking water from rubber stoppers.

Kennedy, B.W.; Beal, T.S.

Cordova, Tenn. : American Association for Laboratory Animal

Science; 1991 Jun. Laboratory animal science v. 41 (3): p.

233-236; 1991 Jun. Includes references.

Language: English

Descriptors: Laboratory animals; Drinkers; Stoppers; Minerals; Drinking water; Mineral content

Abstract: Drinking water and its delivery system are potential sources of variation in animal research. Concern arose that rubber stoppers used to cork water bottles might be a source of some nutritionally required minerals which could leach into drinking water. Six types of stoppers, each having different compositions, were cleaned with stainless-steel sipper tubes inserted into them and attached to polypropylene bottles filled with either deionized water (pH 4.5) or acidified-deionized water (pH 2.5). After six days of contact, water levels of copper, magnesium, iron, manganese, zinc, chromium, and selenium were determined by atomic absorption spectroscopy. Additionally, three of the stopper types were analyzed for mineral content. Minerals were present in both stoppers and drinking water. Acidified-deionized water generally leached more minerals from the stoppers than did deionized water. The black stopper which is commonly used in animal facilities contained and leached measurable levels of some minerals, but it still can be recommended for typical animal husbandry uses, although other types of stoppers would be more suitable for specific nutritional and toxicologic studies.

337

NAL Call. No.: 410.9 P94

Mirrors as enrichment for captive chimpanzees (*Pan troglodytes*). Lambeth, S.P.; Bloomsmith, M.A.

Cordova, Tenn. : American Association for Laboratory Animal

Science; 1992 Jun. Laboratory animal science v. 42 (3): p.

261-266; 1992 Jun. Includes references.

Language: English

Descriptors: Chimpanzees; Mirrors; Social environment; Enrichment; Social behavior

Abstract: At many facilities, limitations of the physical environment have reduced the opportunity for captive chimpanzees to live in large, naturalistic social groups. Convex mirrors used to increase visual access of neighboring groups may improve the social environment. This was tested in a study of 28 chimpanzees (*Pan troglodytes*) group-housed in

conventional indoor/outdoor runs. A total of 47.8 hours of behavioral observations were conducted and comparisons made across three conditions: no mirror present, a mirror present with visual access to neighboring conspecifics, or a mirror present with visual access to the neighbors' empty run. When the mirror gave subjects visual access to neighboring animals, facial expressions, sexual, and agonistic behaviors increased, whereas affiliative behavior decreased compared with when no mirror was present. When the mirror gave subjects visual access to a neighbors' empty run, facial expressions and sexual behavior increased compared with when no mirror was present. When the mirror gave subjects visual access to a neighbor's empty run, agonism decreased compared with when a mirror gave subjects visual access to neighboring animals. When subjects had visual access to neighbors, they used the mirror 30% of the total data points; while they had visual access to the neighbors' empty run, they looked during 24% of the total data points. Juveniles' use of the mirror increased over time while adults' use remained stable. Adult males used the mirror less than did the other subjects. These findings indicate that a mirror allowing visual access to neighboring conspecifics has potential as an enrichment device that affects social behavior.

338 NAL Call. No.: RA1199.4.I5I58 1993
Models for national/international coordination and facilitation of validation. Becking, G.C.
Baltimore, MD : CAAT; 1993.
The International status of validation of in vitro toxicity tests : a report of the CAAT/TCA workshop of June 16-20, 1991. p. 37-38; 1993.

Language: English

Descriptors: Animal testing alternatives; Validity; Models; Testing; Evaluation

339 NAL Call. No.: RA1199.4.I5I58 1993
Models for national/international facilitation and coordination of validation activities.
Looy, H. van
Baltimore, MD : CAAT; 1993.
The International status of validation of in vitro toxicity tests : a report of the CAAT/TCA workshop of June 16-20, 1991. p. 36-37; 1993.

Language: English

Descriptors: Animal testing alternatives; Validity; Information systems

340 NAL Call. No.: QL55.I5
Modern concepts in cage and equipment design.
Klokager, F.
Sussex : The Institute of Animal Technology; 1987 Apr.
Animal technology : journal of the Institute of Animal Technology v. 38 (1): p. 55-58. ill; 1987 Apr. Includes references.

Language: English

Descriptors: Laboratory animals; Cages; Design; Air filters;

Equipment; Animal housing

341 NAL Call. No.: QL55.I5
Modification of existing animal cages to meet the guide-lines set by the Council of Europe.
Schlingmann, F.
Sussex : The Institute; 1988 Dec.
Animal technology : journal of the Institute of Animal Technology v. 39 (3): p. 177-181. ill; 1988 Dec.

Language: English

Descriptors: Europe; Rats; Animal housing; Cages; Modifications; Guidelines; European communities; Animal behavior; Animal experiments

342 NAL Call. No.: Videocassette no.1662
The Mongolian gerbil, *Meriones unguiculatus* Kansas State University, College of Veterinary Medicine ; written and directed by Sharon Alger, Carol Jantzi. Kansas State University, College of Veterinary Medicine
Manhattan, Kan. : The College,; 1990.
1 videocassette (26 min.) : sd., col. ; 1/2 in. 07-13-90. VC NO 90-036.

Language: English

Descriptors: *Meriones unguiculatus*; Gerbils as laboratory animals

Abstract: Presents an overview of gerbil taxonomy, behavior, adaptations, and history as a model in laboratory research. The topics of husbandry, general care, breeding, and preventive medicine through physical examination are also covered.

343 NAL Call. No.: QL55.A1L3
Monitoring of blood gas parameters and acid-base balance of pregnant and non-pregnant rabbits (*Oryctolagus cuniculus*) in routine experimental conditions.
Barzago, M.M.; Bortolotti, A.; Omarini, D.; Aramayona, J.J.; Bonati, M. London : Royal Society of Medicine Services; 1992 Apr.
Laboratory animals v. 26 (2): p. 73-79; 1992 Apr. Includes references.

Language: English

Descriptors: Rabbits; Pregnancy; Blood; Gases; Acid base equilibrium; Anesthesia

Abstract: Blood gas parameters and acid-base balance values were determined in adult pregnant New Zealand rabbits (*Oryctolagus cuniculus*) in standard laboratory housing conditions and during anaesthesia with an association of ketamine-chlorpromazine, administered before surgical procedures. All the variables were also studied in adult non-pregnant female, used as controls. No differences in pH, sO₂c, O₂Hb, COHb, sO₂m and a-vD_O2 were found between pregnant and non-pregnant rabbits in physiological conditions and during anaesthesia. Ketamine-chlorpromazine and pregnancy seemed to change the other parameters used to assess the acid-base

balance and the oxygenation conditions. Anaesthesia affected only Hb, O₂Ct, O₂Cap, C₂O₂ and P₅₀. The additive effect of pregnancy and anaesthesia modified pCO₂, PO₂, HCO₃⁻, TC₂O₂, BE_b, SBC, BE_{ecf}, A-aDO₂, RI, MetHb, RHb, CaO₂ and CvO₂. The patterns described are close to those of other species, suggesting the New Zealand rabbit might be a reliable animal model for monitoring selected variables.

344 NAL Call. No.: QL55.A1L33
Monitoring potential zoonoses in a multifaceted veterinary resource facility: a comprehensive personnel health program. Matherne, C.; Hill, M.; Keeling, M.; Thomas, G. New York, N.Y. : Nature Publishing Company; 1992 Apr. Lab animal v. 21 (4): p. 23-29; 1992 Apr. Includes references.

Language: English

Descriptors: Zoonoses; Laboratory animals

345 NAL Call. No.: QL959.M25
Mouse husbandry. Hetherington, C.M. Oxford : IRL; 1987. Mammalian development : a practical approach / edited by M. Monk. p. 1-12. ill; 1987. (Practical approach series). Includes references.

Language: English

Descriptors: Mice; Animal husbandry; Cages; Diets; Environment; Handling; Identification; Animal breeding; Anesthetics; Transport

346 NAL Call. No.: 410.9 P94
Mouse models of short- and long-term foreign body in the urinary bladder: analogies to the bladder segment of urinary catheters. Johnson, D.E.; Lockett, C.V.; Hall-Craggs, M.; Warren, J.W. Cordova, Tenn. : American Association for Laboratory Animal Science; 1991 Oct. Laboratory animal science v. 41 (5): p. 451-455; 1991 Oct. Includes references.

Language: English

Descriptors: Mice; Animal models; Bladder; Catheters; Foreign bodies; Bacterial diseases; Experiments; Long term experiments

Abstract: Catheter-associated bacteriuria is the most common infection occurring in hospitals, where urethral catheters are generally in place for a few days, and in nursing homes, where catheters may be in place for months or years. We developed murine models with intrabladder urinary catheters for studying complications of bacteriuria in short- and long-term catheterization. In the short-term model, a catheter segment was inserted transurethrally and lay free within the bladder lumen. Half of the animals expelled segments during a 2-to-7-day period, durations similar to catheterizations in hospitalized patients. For studies of long-term catheter use, the catheter segment was secured within the bladder by a single suture for up to 12 months. Antibiotics administered for 7 days after catheter placement and housing mice in cages

with wire screen floors reduced spontaneous bacteriuria to an acceptably low incidence rate of only 7%. *Proteus mirabilis* bacteriuria of high concentration provoked the same complications that are common in patients with long-term catheters: acute pyelonephritis, chronic renal inflammation, and struvite stone formation. These models allow inoculation of the bacteria of interest and are suitable for studies of short- and long-term foreign body-associated bacteriuria and its complications.

347 NAL Call. No.: QL55.H8

A mouse-friendly cage compared experimentally with a person oriented one. Wallace, M.E.
Washington Grove, MD : Psychologists for the Ethical Treatment of Animals, c1991-; 1993.
Humane innovations and alternatives v. 7: p. 534-539; 1993.
Includes references.

Language: English

Descriptors: Mice; Cages; Animal welfare

348 NAL Call. No.: QL55.I5

Murine cage density: a comparison between the reproductive performance of an inbred and outbred strain of monogamous breeding pairs.

Eveleigh, J.R.; Williams, H.L.
Sussex : The Institute; 1992 Apr.
Animal technology : journal of the Institute of Animal Technology v. 43 (1): p. 43-47; 1992 Apr. Includes references.

Language: English

Descriptors: Mice; Cage density; Reproductive performance

Abstract: Cage densities of CD-1 and Balb/c mice were compared during breeding. A monogamous breeding pair of outbred CD-1 mice have a greater cage density than inbred BALB/c mice at all stages of the reproductive cycle. At parity 1 and 2 on day 19 of lactation cage density is at its greatest when the population of CD-1 mice expressed in weight are respectively 71 and 82% heavier than BALB/c. Sixty nine percent of CD-1 litters and 5% of BALB/c litters had a mean litter size at birth of 14 or more. It is suggested that further investigation is warranted into whether the minimum floor area of 300 cm² recommended by the Laboratory Animal Breeders Association is optimal for outbred monogamous breeding pairs of mice.

349 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 cm² 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 cm² 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 cm²), 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.

350 NAL Call. No.: 410.9 P94
Murine encephalitozoonosis: the effect of age and mode of transmission on occurrence of infection.
Liu, J.J.; Greeley, E.H.; Shaddock, J.A.
Cordova, Tenn. : American Association for Laboratory Animal Science; 1988 Dec. Laboratory animal science v. 38 (6): p. 675-679; 1988 Dec. Includes references.

Language: English

Descriptors: Mice; Encephalitozoon cuniculi; Protozoal infections; Age; Disease transmission

Abstract: Experiments were conducted to determine whether neonatal mice are more susceptible to *E. cuniculi* than adult mice, and whether vertical and/or horizontal transmission occur in murine encephalitozoonosis. *E. cuniculi* infection in neonates did not cause mortality or clinical signs, but did result in chronic infection. Despite initial age-related immunodeficiency, mice infected as neonates eventually developed humoral and cell-mediated immune responses against the parasite comparable to those seen in adult mice. The results suggested that neonatal mice are not more susceptible to *E. cuniculi* than adult mice. Pups from either infected or normal parents did not differ in humoral and cell-mediated immune responses after challenge, suggesting that pups from infected parents were not infected with *E. cuniculi* during gestation. In contrast, mice became infected by caging with infected mice demonstrating that horizontal infection does occur.

351 NAL Call. No.: 410.9 P94
The muskrat in biomedical research.
Doyle, R.E.; Panneton, W.M.; Vogler, G.A.; Romeo, J.P.; Watson, B.J.; Higgins, B.
Cordova, Tenn. : American Association for Laboratory Animal Science; 1988 Dec. Laboratory animal science v. 38 (6): p. 667-674. ill; 1988 Dec. Includes references.

Language: English

Descriptors: Muskrats; Animal husbandry; Animal health;

Handling; Quarantine; Medical research; Animal experiments

Abstract: Muskrats are aquatic rodents of moderate size which are plentiful throughout North America, but are not used commonly in the laboratory. Recently, we tested the feasibility of muskrats as experimental models and have found them to be acquired and cared for easily in conventional laboratory animal facilities. Some of their natural characteristics and diseases are described. The husbandry techniques that we used are presented and form a base for the preparation of future guidelines for the maintenance and use of feral animals in research. The results of some initial experiments testing the muskrat's utility for investigations of cardiorespiratory control mechanisms also are presented. Our data show that even anesthetized muskrats possess brisk and dramatic cardiovascular and respiratory reflexes. Our findings that their brains possess the cytoarchitectural and myeloarchitectural features comparable to other mammals, combined with their relative uniformity in size, has allowed us to locate specific neuronal loci stereotaxically. We suggest that the muskrat be considered as an experimental animal model for studies of the neural control of cardiorespiratory systems.

352 NAL Call. No.: 410.9 P94
Mycoplasma pulmonis-host relationships in a breeding colony of Sprague-Dawley rats with enzootic murine respiratory mycoplasmosis.
Lindsay, J.R.; Davidson, M.K.; Schoeb, T.R.; Cassell, G.H. Joliet, Ill. : American Association for Laboratory Animal Science; 1985 Dec. Laboratory animal science v. 35 (6): 597-608. ill; 1985 Dec. Includes references.

Language: English

Descriptors: Rats; Mycoplasma; Respiratory diseases; Histopathology

353 NAL Call. No.: HV4758.N3 1991
National Institute of Health nonhuman primate management plan.. Nonhuman primate management plan, Rev..
NIH Office of Animal Care and Use
Bethesda, Md. : Office of Animal Care and Use, National Institutes of Health,; 1991.
49 p., [5] p. of plates : ill. ; 28 cm. Includes bibliographical references (p. 43-49).

Language: English

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

354 NAL Call. No.: QL55.I55 1983
National Laboratory Animal Center established and regional activities promoted in Finland.
Hanninen, O.O.
Stuttgart, [W. Ger.] : G. Fisher Verlag; 1985.
The Contribution of laboratory animal science to the welfare of man and animals--past, present and future : 8th Symposium of ICLAS/CALAS, Vancouver, 1983 / editors: J. Archibald, J. Pitchfield, H.C. Rowsell. p. 459-464. ill; 1985. Includes references.

Language: English

Descriptors: Finland; Training; Education; Animal welfare;
Laboratory animals; Facilities; Legislation

355 NAL Call. No.: 410.9 P94
A naturally occurring epizootic of simian agent 8 in the baboon. Levin, J.L.; Hilliard, J.K.; Lipper, S.L.; Butler, T.M.; Goodwin, W.J. Cordova, Tenn. : American Association for Laboratory Animal Science; 1988 Aug. Laboratory animal science v. 38 (4): p. 394-397; 1988 Aug. Includes references.

Language: English

Descriptors: Baboons; Epizootiology; Herpetoviridae;
Isolation; Identification

Abstract: An epizootic of genital lesions was observed on baboons (four *Papio* sub-species) housed in two different outdoor breeding corrals. Serological analysis revealed strong prevalence of antibodies to Simian Agent 8 (SA8). This herpesvirus was subsequently recovered from skin lesions and identified by restriction endonuclease digestion of infected cell DNA. Observations of lesion type, frequency and location were suggestive of venereal transmission. The remarkable similarity between infection resulting from SA8 in baboons and herpes simplex virus in man suggests that the baboon is an excellent model in which to study genital herpes virus transmission and infection.

356 NAL Call. No.: QL55.I5
A new animal house designed to house animals for the routine production of antisera. Ricketts, T.; McConomy, M.; Wills, J.E. Sussex : The Institute of Animal Technology; 1985 May. Animal technology : journal of the Institute of Animal Technology v. 36 (1): p. 7-17. ill; 1985 May. Includes references.

Language: English

Descriptors: Laboratory animals; Animal housing; Design;
Antiserum

357 NAL Call. No.: QL55.A1L3
A new device for long-term continuous enteral nutrition of rats by elementary diet via gastrostomy, following extensive oesophageal or lower gastrointestinal surgery. Muller, G.; Schaarschmidt, K.; Stratmann, U. London : Royal Society of Medicine Services; 1992 Jan. Laboratory animals v. 26 (1): p. 9-14; 1992 Jan. Includes references.

Language: English

Descriptors: Rats; Tube feeding; Cannulae; Cannulation; Long term experiments; Elemental diets; Feces collection

Abstract: A device for intragastric nutrition of unsedated and minimally restrained rats under complete alimentary abstinence has been developed. The cannulation system consists

of an infusion pump, modified glass syringe as flow swivel, rat-harness and a silicone-tube-gastrostomy. The animals were kept in special cages and coprophagy was prevented by an own model of faecal collection cup. Methionine and Ca-glycerophosphate had to be added to a commercial elementary diet. The rats were allowed to move freely during intragastric infusion, which was applied for 14 to 28 days in 118 Wistar-rats (350-400 g). They maintained weight on an energy supply of 86.4 kcal/day.

358 NAL Call. No.: 410.9 P94

A new model for study of pancreatic exocrine secretion: tethered pancreatic fistula rat.
Toriumi, Y.; Samuel, I.; Wilcockson, D.P.; Joehl, R.J.
Cordova, Tenn. : American Association for Laboratory Animal Science; 1994 Jun. Laboratory animal science v. 44 (3): p. 270-273; 1994 Jun. Includes references.

Language: English

Descriptors: Rats; Animal models; Animal welfare; Pancreas; Fistula; Restraint of animals; Tethering

Abstract: Diversion and recirculation of bile and pancreatic juice in rats are done in studies of pancreatic exocrine secretion. Previously, the modified Bollman cage was used to restrain rats with bile and pancreatic fistulas. To mimic physiologic conditions as closely as possible and to develop a more humane model, we designed a partial-restraint tethering system to study pancreatic exocrine secretion. Eight rats were prepared with biliary pancreatic, and duodenal fistulas, of which five were given enteral supplements via a gastric fistula and three were given saline supplements via a jugular venous line. Catheters exited at the nape of the neck and passed through the hollow of a cable coil that tethered the rat. On the fourth postoperative day pancreatic juice flow and protein output were studied. The tethering system allowed grooming, feeding, and ample mobility. This model of the tethered pancreatic fistula rat is a more humane model for studies of pancreatic exocrine secretion in conscious rats, compared with the Bollman cage system of near total restraint.

359 NAL Call. No.: QL55.I5

New perspectives in the animal house.
Hampson, J.E.
Sussex : The Institute; 1989 Dec.
Animal technology : journal of the Institute of Animal Technology v. 40 (3): p. 219-222; 1989 Dec.

Language: English

Descriptors: England; Laboratory animals; Animal housing; Animal welfare; Legislation

360 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.

361 NAL Call. No.: Slide no.437
Nonhuman primates biosafety.. Nonhuman primates : biosafety
Broderson, J. Roger
University of Washington, Health Sciences Center for
Educational Resources, American College of Laboratory Animal
Medicine, National Agricultural Library (U.S.)
Seattle, WA : Produced and distributed by the Health Sciences
Center for Educational Resources, University of Washington;
1992.

60 slides : col. + 1 sound cassette (25 min.) + 1 guide.
(Laboratory animal medicine and science. Series 2 ; V-9018).
Developed for the American College of Laboratory Animal
Medicine. Sound accompaniment compatible for manual and
automatic operation. Accompanying guide includes script.
Portions of this project have been funded by grant from the
National Agricultural Library.

Language: English

Descriptors: Primates as laboratory animals; Animal
experimentation; Primates

Abstract: Covers four major classes of health hazards within
a nonhuman primate facility; practices, equipment and facility
design to help prevent disease or injury from these hazards.

362 NAL Call. No.: 410 B77
The number of males in a primate troop.
Ridley, M.
London : Bailliere Tindall; 1986 Dec.
Animal behaviour v. 34 (pt.6): p. 1848-1858; 1986 Dec.
Includes references.

Language: English

Descriptors: Primates; Breeding season; Sexual behavior; Group
size; Reproductive behavior; Male animals

363 NAL Call. No.: 410.9 P94
A nylon ball device for primate environmental enrichment.
Ross, P.W.; Everitt, J.I.
Cordova, Tenn. : American Association for Laboratory Animal
Science; 1988 Aug. Laboratory animal science v. 38 (4): p.
481-483. ill; 1988 Aug. Includes references.

Language: English

Descriptors: Primates; Environment; Cages; Toys; Nylon; Animal welfare

364 NAL Call. No.: QL55.I5
Observations on a caging system for housing stump-tailed macaques. Burt, D.A.; Plant, M.
Sussex : The Institute; 1990 Dec.
Animal technology : journal of the Institute of Animal Technology v. 41 (3): p. 175-179; 1990 Dec.

Language: English

Descriptors: Macaca arctoides; Cages; Laboratory rearing; Animal welfare; Enrichment

Abstract: This paper describes the introduction of a modified caging system and the benefits to both the animals and staff.

365 NAL Call. No.: QL55.I5
Observations on a sandy lop breeding colony over an eleven period (1978-1988). Batchelor, G.R.
Sussex : The Institute; 1990 Aug.
Animal technology : journal of the Institute of Animal Technology v. 41 (2): p. 115-131; 1990 Aug. Includes references.

Language: English

Descriptors: Rabbits; Reproductive performance; Breeds; Breed differences; Litter size; Litter traits; Breeding efficiency; Mortality

Abstract: There are three main incentives for collecting data on this rabbit strain: 1. There is a large mass of breeding data available, covering the period from 1978 to the present day. 2. There has been a noticeable increase in breeding success (and a reduction in losses) seemingly to correspond with the diet given, although this may not be the sole reason. 3. Although the pre-weaning mortality rate has been reduced over the last four years to a mean of around 15% (range 8-29%), the littering rate, although showing an improvement, is still under 80% (range 70-77%). Whether further improvement is possible is one question which may be answered by the publication of this paper.

366 NAL Call. No.: SF724.T72
Observations on causes of mortality in a guinea pig breeding colony. Ochoili, R.A.; Ibu, J.O.
Ibadan, Nigeria : Faculty of Veterinary Medicine, University of Ibadan; 1989. Tropical veterinarian v. 7 (3/4): p. 128-130; 1989. Includes references.

Language: English

Descriptors: Guinea pigs; Mortality; Bacterial diseases; Salmonella; Escherichia coli; Coccidiosis; Eimeria; Animal health

367 NAL Call. No.: QL55.A1L33

Of mice and megabytes: a computer-based animal care management system. Hahn, J.

New York : Nature Publishing Company; 1989 Jan.

Lab animal v. 18 (1): p. 26-29; 1989 Jan.

Language: English

Descriptors: Mice; Animal husbandry; Records; Computer applications

368 NAL Call. No.: QL737.P9H78

On the care of captive chimpanzees: methods of enrichment.

Rumbaugh, D.M.; Washburn, D.; Savage-Rumbaugh, E.S.

Park Ridge, N.J. : Noyes Publications; 1989.

Housing, care and psychological well-being of captive and laboratory primates / edited by Evalyn F. Segal. p. 357-375. ill; 1989.

Language: English

Descriptors: Chimpanzee; Capture of animals; Animal housing; Cages; Design; Diets; Facilities; Equipment

369 NAL Call. No.: QL55.A1L33

Opening a world-class chimpanzee facility: ingredients for successful public relations.

Miller, L.

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

Lab animal v. 21 (7): p. 23-28, 30; 1992 Jul. Includes references.

Language: English

Descriptors: Chimpanzees; Public relations

370 NAL Call. No.: QP82.2.M507

Operations and management of government owned--contractor operated microwave exposure facility.

ERCI Facilities Service Corp

Fairfax, VA : ERCI, [1988?]; 1988, reprinted 1988.

3 v. : ill. ; 28 cm. Cover title. February 28, 1988.

Funding no. DAMD17-85-C-5083. Includes bibliographical references.

Language: English

Descriptors: Microwaves; Physiological effect; Rats as laboratory animals, Effect of radiation

371 NAL Call. No.: 410.9 P94

Organophosphate toxicity in rats associated with contaminated bedding. Gibson, S.V.; Besch-Williford, C.; Raisbeck, M.F.; Wagner, J.E.; McLaughlin, R.M.

Cordova, Tenn. : American Association for Laboratory Animal Science; 1987 Dec. Laboratory animal science v. 37 (6): p.

789-791; 1987 Dec. Includes references.

Language: English

Descriptors: Rats; Toxicity; Organophosphorus compounds; Terbufos; Cages; Litter; Softwoods; Contamination

372

NAL Call. No.: 410.9 P94

An outbreak of Plasmodium inui malaria in a colony of diabetic Rhesus monkeys. Schofield, L.D.; Bennett, B.T.; Collins, W.E.; Beluhan, F.Z. Joliet, Ill. : American Association for Laboratory Animal Science; 1985 Apr. Laboratory animal science v. 35 (2): p. 167-168; 1985 Apr. Includes references.

Language: English

Descriptors: Rhesus monkeys; Diabetes; Plasmodium; Facilities; Therapy

373

NAL Call. No.: 410.9 P94

Particle size of airborne mouse crude and defined allergens. Sakaguchi, M.; Inouye, S.; Miyazawa, H.; Kamimura, H.; Kimura, M.; Yamazaki, S. Cordova, Tenn. : American Association for Laboratory Animal Science; 1989 May. Laboratory animal science v. 39 (3): p. 234-236; 1989 May. Includes references.

Language: English

Descriptors: Mice; Animal housing; Laboratory rearing; Environment; Allergens; Air pollution; Allergies; Animal experiments

Abstract: Laboratory animal allergy is a serious occupational diseases of many workers and scientists engaged in animal experimentation. Control measures depend upon characterization of allergens including airborne particles. This study measured the particle size of crude mouse urine and pelt aeroallergens generated in mouse housing rooms and compared them with mouse serum albumin, a defined major allergen. Allergens were detected by specific immunological methods. Most crude and defined allergens (74.5-86.4%) concentrated on a filter with a retention size greater than 7 micrometer. In disturbed air, allergen concentration increased 1.4 (albumin) to 5 (crude) fold and the proportion of small particles increased from 1.4% in calm air to 4.5% in disturbed air. This information on the generation and size distribution of aeroallergens will be important in the development of effective counter measures.

374

NAL Call. No.: QL55.F43 1987

Passive infrared movement detector, a new equipment to monitor motor activity of small rodents in normal cages.

Sigg, H.; Tamborini, P.

Dordrecht : M. Nijhoff; 1988.

New developments in biosciences : their implications for laboratory animal science : proceedings of the Third Symposium, Amsterdam, The Netherlands, 1-5 June 1987 / edited by Anton C. Beyneen and Henk A. Solleveld. p. 349-352; 1988.

Language: English

Descriptors: Rodents; Cages; Movements; Monitoring; Detectors; Recordings; Computer applications

375

NAL Call. No.: QL55.A1L33

PC-based facility management.

Flato, A.

New York, N.Y. : Nature Publishing Company; 1994 Jul.
Lab animal v. 23 (7): p. 37-40; 1994 Jul.

Language: English

Descriptors: Laboratory animals; Monitoring; Microcomputers

376 NAL Call. No.: 410.9 P94
Persistent free-running circannual reproductive cycles during prolonged exposure to a constant 12L:12D photoperiod in laboratory woodchucks (*Marmota monax*).
Concannon, P.W.; Parks, J.E.; Roberts, P.J.; Tennant, B.C. Cordova, Tenn. : American Association for Laboratory Animal Science; 1992 Aug. Laboratory animal science v. 42 (4): p. 382-391; 1992 Aug. Includes references.

Language: English

Descriptors: *Marmota monax*; Reproduction; Photoperiod

Abstract: Serum levels of gonadal steroid were assayed at approximately 3-month intervals in groups of 5 to 8 male or female woodchucks which were exposed to a natural photoperiod for 1 year as yearlings or 3 years as adults (Study 1), or a constant photoperiod of 12L:12D from birth for 4.5 years (Study 2). After 4.5 years of 12L:12D, food intake was measured in November and compared with that in natural photoperiod animals (Study 3). Other groups of 11 males and 3 females were housed in 12L:12D for 2.5 years after capture at 2 months of age, and gonadal structure and serum steroid levels in November were compared with those of animals at selected times in the normal annual cycle (Study 4). All animals were provided food and water ad libitum and were not induced to hibernate. In Study 1, normal circannual breeding season elevations in testosterone in males and in progesterone in females were detected in most animals maintained in natural photoperiod. In Study 2, similar cycles persisted for 4.5 years in animals exposed to 12L:12D. However, based on quarterly blood samples, obvious asynchrony relative to natural light animals appeared to develop after 2, 3, or 4 years, with apparent free-running intervals of about 10 to 11 months. In Study 3, mean daily food consumption in late autumn for woodchucks in the 12L:12D group was 72% greater than animals in the natural photoperiod. In Study 4, some woodchucks exposed to 12L:12D for only 2.5 years had prematurely increased spermatogenic activity, Leydig tissue development, and elevated serum testosterone levels in November. They were similar in November to those in natural photoperiod animals in March, and significantly greater than those in natural photoperiod animals in November when normal regression and repair of the testis was complete. Likewise, females in the 12L:12D group had luteinized follicles and elevated progesterone in November which were not noted in natural photoperiod animals and which were similar to those observe

377 NAL Call. No.: 410.9 P94
Persistent reduction of B virus (*Herpesvirus simiae*) seropositivity in rhesus macaques acquired for a study of renal allograft tolerance. Olson, L.C.; Pryor, W.H. Jr; Thomas, J.M.
Cordova, Tenn. : American Association for Laboratory Animal Science; 1991 Dec. Laboratory animal science v. 41 (6): p.

540-544; 1991 Dec. Includes references.

Language: English

Descriptors: Macaca mulatta; Herpesviridae; Disease control; Immunosuppression; Screening; Animal housing; Immunodiagnosis; Culling

Abstract: One hundred and two rhesus macaques were used in a study of renal allograft tolerance. Each animal was monitored serologically more than one time to determine its B virus (Herpesvirus simiae) antibody status. The follow-up period for some individuals was 3 years, extending from 1986 to 1989. The accumulated test results eventually provided an opportunity to retrospectively support a contention that a small research colony of rhesus macaques could become and remain B virus seronegative if the animals were housed individually, monitored periodically, acquired only if they were seronegative, and culled if they converted to positive status. It was also possible that the test results might disclose useful information about the influence of acute immunosuppression on the reliability of determining B virus antibody status by serologic methods, and help formulate guidelines for selecting donor-recipient pairs. A review of the serologic test results disclosed that antibody status before the initiation of experimental therapy, and subsequent seroreactivity, did not change throughout the experimental lifetime of 92 monkeys. The few exceptions were six juveniles that lost detectable antibody, and four other juveniles that converted to positive. Preliminary data suggested that total lymphoid irradiation (TLI) and splenectomy were associated with the loss of detectable antibody; however, further study is needed to establish the validity and significance of this association. No other unexpected or unexplained results were associated with concomitant periods of acute immunosuppression. The number of seropositive animals in the colony was reduced to three through attrition and culling by the end of 1989. These three seropositive animals were culled shortly thereafter, and there were no conversions to seropositive during the subsequent 2 years. The findings suggested that research institutions with a small number of rhesus macaques could reliably achieve B virus seronegative status

378 NAL Call. No.: 410.9 P94
Persistent sympathetic nervous system arousal associated with tethering in cynomolgus macaques.
Adams, M.R.; Kaplan, J.R.; Manuck, S.B.; Uberseder, B.; Larkin, K.T. Cordova, Tenn. : American Association for Laboratory Animal Science; 1988 Jun. Laboratory animal science v. 38 (3): p. 279-281; 1988 Jun. Includes references.

Language: English

Descriptors: Macaca; Tethering; Heart rate; Sympathetic nervous system; Restraint of animals; Animal housing

Abstract: The swivel-tether system has been used extensively in biomedical research involving nonhuman primates, yet there has been little or no investigation into potential adverse influences of this form of restraint on research results. In the study described here, a portable electrocardiographic telemetry system was used for continuous monitoring of the heart rate of 26 cynomolgus monkeys while: (a) pair-caged, 8

weeks prior to tethering; (b) singly-caged, tethered; (c) singly-caged, tethered, administered propranolol (30 mg/kg/day) in the diet; (d) group-housed (five monkeys per group), 1 week after group formation; and (e) group-housed (five monkeys per group), 4 weeks after group formation. Tethering resulted in persistent elevations in heart rate relative to the other conditions. Administration of propranolol, a beta-adrenergic antagonist, resulted in an abrupt, sustained decrease in heart rate indicating that the increase in heart rate associated with tethering was due to persistent stimulation of the sympathetic nervous system. Since multiple aspects of cardiovascular function are influenced by the sympathetic nervous system, and other organs and systems (e.g., pituitary-gonadal) also may be affected, investigators using the swivel-tether system should be cognizant of these potential effects when designing experiments and interpreting the results.

379 NAL Call. No.: 410.9 P94
Pickle barrels as enrichment objects for rhesus macaques.
Lehman, S.M.; Lessnau, R.G.
Cordova, Tenn. : American Association for Laboratory Animal Science; 1992 Aug. Laboratory animal science v. 42 (4): p. 392-397; 1992 Aug. Includes references.

Language: English

Descriptors: Macaca mulatta; Environment; Enrichment

Abstract: Two breeding groups of rhesus monkeys (*Macaca mulatta*) housed in outdoor enclosures on Key Lois island were observed for 84 hours. Instantaneous scan sampling of a focal animal was used to gather data to test hypotheses concerning frequencies of agonistic and affiliative behaviors as well as differential use of pickle barrels as enrichment objects. Type of barrel used, behavior, and age/sex class of the animal were noted. Barrels were arranged three ways: unattached, on a swivel, and stationary. The behaviors of animals in an enriched environment were compared with control condition animals, which did not have pickle barrels. Animals in an enriched environment accounted for 60.8% (n = 56) of total affiliative contact, 62.2% (n = 399) of total social grooming, and 26% (n = 5) of total agonistic noncontact. A total of 134 scans of barrel use were observed. Analyses of the data showed that swivel and stationary barrels were used the most (55% of all scans of barrel use). Yearlings, juvenile females, and old males used barrels most often (82.8% of all scans of barrel use), although they constituted only 39% of the enriched environment population. In this study, pickle barrels provided enrichment for young and old animals of both sexes.

380 NAL Call. No.: QL750.E74
Plasma-testosterone development in colony and individually housed male guinea pigs.
Sachser, N.; Prove, E.
Berlin, W. Ger. : Paul Parey; 1988 Sep.
Ethology v. 79 (1): p. 62-70; 1988 Sep. Includes references.

Language: English

Descriptors: Guinea pigs; Male animals; Animal housing; Blood plasma; Testosterone; Animal behavior; Relationships

381 NAL Call. No.: 410.9 P94

Platelet function testing in the pony.
Boudreaux, M.K.; Wagner-Mann, C.; Purhoit, R.; Hankes, G.;
Spano, J.; Pablo, L.; Lee, S.; Conti, J.
Cordova, Tenn. : American Association for Laboratory Animal
Science; 1988 Aug. Laboratory animal science v. 38 (4): p.
448-451; 1988 Aug. Includes references.

Language: English

Descriptors: Horses; Platelets; Isolation; Testing

Abstract: Platelet isolation techniques and platelet function were evaluated in 35 adult ponies. Platelet recovery from whole blood was consistent and the preparation of platelet rich plasma was facilitated by an enhanced erythrocyte sedimentation rate. All platelet samples aggregated in response to 10 microM ADP. However, concentrations of ADP as high as 100 microM did not elicit significant 14C-serotonin release. Collagen induced irreversible platelet aggregation and 14C-serotonin release in all samples. The threshold dose for collagen in most ponies was 1.5 microgram. Arachidonic acid (500 microM) failed to induce irreversible platelet aggregation or 14C-serotonin release in any of the samples evaluated. Pony platelets were nonresponsive to epinephrine (5.5 microM).

382 NAL Call. No.: QL55.I5

Poor breeding performance of rabbits.
Assal, A.N.
Sussex : The Institute; 1988 Dec.
Animal technology : journal of the Institute of Animal
Technology v. 39 (3): p. 183-187; 1988 Dec. Includes
references.

Language: English

Descriptors: Australia; Rabbits; Animal breeding; Performance;
Newborn animals; Survival; Mortality; Postmortem examinations;
Animal husbandry

383 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 cm² 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 cm² 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.

384 NAL Call. No.: 410.9 P94
Practical and effective eradication of pinworms (*Syphacia muris*) in rats by use of fenbendazole.
Coghlan, L.G.; Lee, D.R.; Psencik, B.; Weiss, D.
Cordova, Tenn. : American Association for Laboratory Animal Science; 1993 Oct. Laboratory animal science v. 43 (5): p. 481-487; 1993 Oct. Includes references.

Language: English

Descriptors: Rats; *Syphacia*; Fenbendazole

Abstract: Oxyurid parasites are common contaminants of laboratory rodents, and despite many described treatments, no method has assumed preeminence. Limitations in drug efficacy and the general inability to control for exposure to infective eggs are the primary contributors to treatment failure. In addition, some effective drugs must be eliminated from consideration because of narrow safety margins, other toxic aspects, or concerns related to particular uses of the experimental animals. As an alternative to currently described treatments or surgical derivation, we conducted an efficacy study against *Syphacia muris* in rats with a new fenbendazole-based protocol. Fenbendazole is a highly efficacious broad-spectrum anthelmintic with adulticidal, larvicidal, and ovicidal actions. Its pharmacokinetic behavior, ovicidal activity, and exceptionally wide safety margin in rats and mice make it an attractive choice for pinworm treatment. We used a 150-ppm medicated feed formulation to reach a targeted dose of 8.0 to 12.0 mg/kg/day in three separate studies designed to assess drug intake and efficacy under different housing conditions and in breeding and nonbreeding populations of ACI rats. In all cases, drug was given on alternating weeks, and nonbreeding populations were medicated for a cumulative period of 14 days. The same schedule was used for breeding populations, but the treatment was repeated after a 2-week rest period to ensure sufficient exposure for newly weaned animals. The results of our study indicate that our described treatment, in combination with environmental control measures against pinworm eggs, is capable of eliminating *S. muris*.

385 NAL Call. No.: QL55.I5
Practical methods for the prevention of genetic contamination in inbred and congenic rat and mouse colonies.
Peters, A.G.
Sussex : The Institute of Animal Technology; 1986 Apr.
Animal technology : journal of the Institute of Animal Technology v. 37 (1): p. 17-23. ill; 1986 Apr. Includes references.

Language: English

Descriptors: Rats; Mice; Animal breeding; Inbred lines; Genetic control; Strains

386 NAL Call. No.: RC261.A2R62
Practices for controlling genetic quality of mice.

Bailey, D.W.; Scott, O.C.A.
New York : Pergamon Press; 1987.
Rodent tumor models in experimental cancer therapy / edited by
Robert F. Kallman. p. 57-58; 1987.

Language: English

Descriptors: Mice; Neoplasms; Genetic control; Animal
breeding; Hybrids; Tissues; Transplantation

387 NAL Call. No.: 410.9 P94
Preliminary characterization of hereditary cerebellar ataxia
in rats. La Regina, M.C.; St. Louis, MO; Yates-Siilata, K.;
Woods, L.; Tolbert, D. Cordova, Tenn. : American Association
for Laboratory Animal Science; 1992 Feb. Laboratory animal
science v. 42 (1): p. 19-26; 1992 Feb. Includes references.

Language: English

Descriptors: Rats; Hereditary diseases; Cerebellar ataxia;
Disease models; Cells; Cerebellum

Abstract: A spontaneous model of Purkinje cell degeneration
in rats is described. Breeding data indicate that the
condition is hereditary and not sex linked. The breeding
colony has remained free of common murine pathogens, including
parvovirus. In older rats with pronounced ataxia, the major
lesions consisted of greatly reduced numbers or complete
absence of Purkinje cells (PCs), particularly in the anterior
lobe of the cerebellum. There was a decreased thickness and
increased cellular density of the molecular layer and
degeneration of the inferior olivary nuclei. Morphometric
analysis indicated that the anterior lobes of affected rats
were 52% smaller than those of normal rats. In young rats,
before severe signs of ataxia had developed, microscopic
changes were minimal. The preliminary findings are discussed
in relationship to human cerebellar ataxias and mouse models
of Purkinje cell degeneration.

388 NAL Call. No.: QL55.A1L33
A preliminary survey of the incidence of abnormal behavior in
rhesus monkeys (*Macaca mulatta*) relative to housing condition.
Bayne, K.; Dexter, S.; Suomi, S.
New York, N.Y. : Nature Publishing Company; 1992 May.
Lab animal v. 21 (5): p. 38, 40, 42-46; 1992 May. Includes
references.

Language: English

Descriptors: *Macaca mulatta*; Abnormal behavior; Animal housing

389 NAL Call. No.: Z7994.L3A5
Pressure for better care for chimpanzees in captivity.
Nottingham : Fund for the Replacement of Animals in Medical
Experiments; 1988 Mar.
Alternatives to laboratory animals : ATLA v. 15 (3): p.
255-259; 1988 Mar.

Language: English

Descriptors: U.S.A.; Chimpanzee; Facilities; Animal housing;
Animal welfare; Regulations; Usda

390

NAL Call. No.: 410.9 P94

Prevalence of *Campylobacter* in infant juvenile and adult laboratory primates. Russell, R.G.; Krugner, L.; Tsai, C.C.; Ekstrom, R.
Cordova, Tenn. : American Association for Laboratory Animal Science; 1988 Dec. *Laboratory animal science* v. 38 (6): p. 711-714; 1988 Dec. Includes references.

Language: English

Descriptors: Primates; Young animal diseases; Neonates; *Campylobacter*; Infection; Incidence

Abstract: A cross-sectional study of *Campylobacter* spp. infection was conducted on 125 infant (*Macaca nemestrina* and *Macaca fascicularis*) in an infant primate nursery housing infants from birth to 18 months of age, and 145 *M. nemestrina* aged from 4 months to 15 years at another facility (Primate Field Station) housing animals from birth to aged adults. The objective was to determine the prevalence of *Campylobacter* spp. in various age groups and to investigate the correlation with diarrhea. In the Infant Primate Research Laboratory approximately 70% of infants were infected at 18 months-old. *Campylobacter coli* was isolated from approximately two-thirds of the infected infants. One-third were *Campylobacter jejuni* and occasional infants were infected with a naladixic acid resistant, hippurate negative (NAR) *Campylobacter* spp. At the Primate Field Station virtually all animals cultured in 4-6 month-old, 16-20 month-old, and 3-5 year-old age groups were positive. Approximately one-third of middle-aged adults (10-15 years old) were positive with *C. coli* or NAR *Campylobacter* spp. Environmental factors such as location and movement of animals may provide an explanation for the prevalence data obtained in the two facilities and different age groups of animals. An etiologic role of *Campylobacter* spp. in diarrhea of laboratory primates was not established in this study.

391

NAL Call. No.: 410.9 P94

Prevalence of feline immunodeficiency virus and feline leukemia virus infections in random-source cats. Glennon, P.J.; Cockburn, T.; Stark, D.M.
Cordova, Tenn. : American Association for Laboratory Animal Science; 1991 Dec. *Laboratory animal science* v. 41 (6): p. 545-547; 1991 Dec. Includes references.

Language: English

Descriptors: Cats; Feline immunodeficiency virus; Leukemia; Feline oncovirus; Disease prevalence; Mixed infections; Serological surveys; Sex differences; Sources

Abstract: Retroviral serologic profiles were generated for 506 random-source cats (*Felis catus*) that were received by our facility during a twenty-month period. Feline leukemia virus antigens were detected in plasma samples from 26 (5.1%) of the cats. Antibodies to feline immunodeficiency virus were present in 24 (4.7%) of the samples tested. A single cat (0.2%) was positive for both viruses. Neither gender nor vendor correlation with retroviral seropositivity could be demonstrated.

392 NAL Call. No.: 410.9 P94
Prevalence rates of infectious agents among commercial
breeding populations of rats and mice.
Casebolt, D.B.; Lindsey, J.R.; Cassell, G.H.
Cordova, Tenn. : American Association for Laboratory Animal
Science; 1988 Jun. Laboratory animal science v. 38 (3): p.
327-329; 1988 Jun. Includes references.

Language: English

Descriptors: U.S.A.; Rats; Mice; Animal husbandry; Infectious
diseases; Bacteria; Viruses; Parasites; Serological diagnosis

393 NAL Call. No.: QL55.A1L33
Prevention of cage-associated distress.
Spinelli, J.S.; Markowitz, H.
New York : Media Horizons; 1985 Nov.
Lab animal v. 14 (8): p. 19-22, 24, 28; 1985 Nov. Includes
references.

Language: English

Descriptors: Laboratory animals; Cage rearing; Stress;
Prevention

394 NAL Call. No.: QL737.P9C86
Primate colony management of harem breeding groups of rhesus
monkeys (*Macaca mulatta*).
Goo, G.P.
New York : Van Nostrand Reinhold; 1986.
Current perspectives in primate biology / edited by David M.
Taub and Frederick A. King. p. 71-78; 1986. Includes
references.

Language: English

Descriptors: Rhesus monkeys; *Macaca mulatta*; Groups;
Management; Animal breeding; Reproduction; Mortality

395 NAL Call. No.: QL55.H8
Primate facilities and environmental enrichment: an ecological
and evolutionary perspective.
Bercovitch, F.B.; Kessler, M.J.
Washington Grove, MD : Psychologists for the Ethical Treatment
of Animals, c1991-; 1993.
Humane innovations and alternatives v. 7: p. 435-439; 1993.
Includes references.

Language: English

Descriptors: Primates; Environment; Enrichment

396 NAL Call. No.: QL55.A1L33
The Primate Information Center.
New York : Media Horizons; 1986 Apr.
Lab animal v. 15 (3): p. 44-45; 1986 Apr.

Language: English

Descriptors: Washington; Primates; Organizations; Facilities;
Information centers

397 NAL Call. No.: RC862.C6P75 1993
A Primate model for the study of colitis and colonic carcinoma
the cotton-top tamarin (*Saguinus oedipus*).
Clapp, Neal K.,
Boca Raton : CRC Press,; 1993.
339 p. : ill., maps ; 25 cm. Includes bibliographical
references and index.

Language: English

Descriptors: Colitis; Colon (Anatomy); *Saguinus oedipus*

398 NAL Call. No.: QL55.H8
Primate preference for outdoors.
Pereira, M.E.
Washington Grove, MD : Psychologists for the Ethical Treatment
of Animals; 1991.
Humane innovations and alternatives v. 5: p. 313-315; 1991.
Includes references.

Language: English

Descriptors: Primates; Animal housing; Environment;
Enrichment; Animal welfare

399 NAL Call. No.: QL737.P9H78
Primate research models and environmental enrichment.
Markowitz, H.; Line, S.
Park Ridge, N.J. : Noyes Publications; 1989.
Housing, care and psychological well-being of captive and
laboratory primates / edited by Evalyn F. Segal. p. 203-212.
ill; 1989.

Language: English

Descriptors: Primates; Environment; Cages; Social behavior;
Laboratory rearing; Animal research; Models

400 NAL Call. No.: QL55.H8
A primer for anti-dissectionists.
Bickleman, T.G.
Washington Grove, MD : Psychologists for the Ethical Treatment
of Animals; 1991.
Humane innovations and alternatives v. 5: p. 264-265; 1991.

Language: English

Descriptors: Rats; Cages; Enrichment; Animal behavior

401 NAL Call. No.: RM267.E97
Principles of animal care.
Bruhin, H.
London : Academic Press; 1986.
Experimental models in antimicrobial chemotherapy / [edited
by] Oto Zak, Merle A. Sande. v. 1 p. 7-18. ill; 1986.
Literature review. Includes references.

Language: English

Descriptors: Laboratory animals; Animal welfare; Medical research; Ethics; Animal experiments; Breeding; Identification; Nutrition; Guidelines

402 NAL Call. No.: QL55.L274
Principles of animal husbandry.
Wilson, M.S.
Chichester [England] : Wiley; 1987.
Laboratory animals : an introduction for new experimenters /
edited by A.A. Tuffery. p. 99-116; 1987. Includes references.

Language: English

Descriptors: United Kingdom; Laboratory animals; Cage size; Veterinary hygiene; Disease control; Drinking water; Animal feeding; Animal husbandry

403 NAL Call. No.: SF406.B5 1987
Principles of laboratory animal management., 3rd ed..
Blackshaw, Judith K.; Allan, David J.
N.S.W., Australia : Australian Society for the Study of Animal
Behaviour, [1987?]; 1987.
103 p. : ill. ; 24 cm. Includes bibliographies and index.

Language: English

Descriptors: Laboratory animals; Animal welfare

404 NAL Call. No.: aQL55.B36
Principles of aseptic technique.
Schofield, J.C.
Beltsville, Md. : USDA, National Agricultural Library; 1990
Apr. Essentials for animal research : a primer for research
personnel / by B.T. Bennett, M.J. Brown and J.C. Schofield. p.
59-77. ill; 1990 Apr. Includes references.

Language: English

Descriptors: Laboratory animals; Aseptic state; Sterilization; Surgical operations; Facilities; Veterinary equipment

405 NAL Call. No.: QL737.P9H78
The problem of foraging in captive callitrichid primates:
behavioral time budgets and foraging skills.
Molzen, E.M.; French, J.A.
Park Ridge, N.J. : Noyes Publications; 1989.
Housing, care and psychological well-being of captive and
laboratory primates / edited by Evalyn F. Segal. p. 89-101.
ill; 1989.

Language: English

Descriptors: Callithricidae; Primates; Capture of animals; Foraging; Animal housing; Animal behavior; Animal feeding

406 NAL Call. No.: QL55.A1L33
Problems that limit or complicate breeding transgenic mice.
Donnelly, T.M.; Walsh-Mullen, A.
New York, N.Y. : Nature Publishing Company; 1991 Mar.
Lab animal v. 20 (3): p. 34-35; 1991 Mar. Includes

references.

Language: English

Descriptors: Mice; Transgenics; Animal breeding

407 NAL Call. No.: 410.9 P94
Progesterone as a predictor of cyclicity in Bolivian squirrel monkeys during the breeding season.
Aksel, S.; Diamond, E.J.; Hazelton, J.; Wiebe, R.H.; Abee, C.R. Joliet, Ill. : American Association for Laboratory Animal Science; 1985 Feb. Laboratory animal science v. 35 (1): p. 54-57. ill; 1985 Feb. Includes references.

Language: English

Descriptors: Squirrel monkeys; Breeding season; Progesterone; Estradiol

408 NAL Call. No.: QL55.A1L3
Prolapsus vaginae in the IIIIVO/JU rabbit.
Herck, H. van; Hesp, A.P.M.; Versluis, A.; Zwart, P.; Zutphen, L.F.M. van London : Royal Society of Medicine Services; 1989 Oct.
Laboratory animals v. 23 (4): p. 333-336. ill; 1989 Oct.
Includes references.

Language: English

Descriptors: Rabbits; Vaginal prolapse; Inbred lines; Genetic defects

Abstract: In a specified pathogen free (SPF) breeding colony of IIIIVO/JU rabbits 8 cases of prolapsus vaginae occurred in 5 years. Clinically the animals were in shock. Haematocrits ranged from 9 to 15%. The prolapses started from the submucosal layer of the proximal part of the vestibulum vaginae. The prolapsed tissue consisted of over-expanded blood-sinuses. Between the sinuses signs of an inflammatory reaction were present. All 8 animals were in a period of increasing sexual activity when the prolapse developed. The 8 rabbits were closely related, indicating a possible hereditary defect.

409 NAL Call. No.: QL55.H8
Promoting psychological well-being in a biomedical research facility: sheep in wolves' clothing.
Petto, A.J.; Russell, K.; Watson, L.; Lareau-Alves, M. Washington Grove, MD : Psychologists for the Ethical Treatment of Animals; 1992.
Humane innovations and alternatives v. 6: p. 366-370; 1992.
Includes references.

Language: English

Descriptors: Primates; Laboratory mammals; Animal welfare

410 NAL Call. No.: QL55.A1L33
Promoting safety in a laboratory animal facility.
Lukas, V.; Charron, D. New York, N.Y. : Nature Publishing Company; 1993 Feb.

Lab animal v. 22 (2): p. 22-25, 27-29; 1993 Feb. Includes references.

Language: English

Descriptors: Laboratories; Safety at work

411 NAL Call. No.: QL55.I5

A prototype rhesus cage to satisfy the needs of the home office, research, the animal technician and most importantly the monkey.

Applebee, K.A.; Marshall, P.E.; McNab, A.M.

Sussex : The Institute; 1991 Apr.

Animal technology : journal of the Institute of Animal Technology v. 42 (1): p. 23-38; 1991 Apr. Includes references.

Language: English

Descriptors: Macaca mulatta; Cages; Design; Prototypes; Animal welfare

Abstract: The publication in early 1989 of the Code of Practice for the Housing and Care of Animals Used in Scientific Procedures, enabled United Medical and Dental Schools to order a prototype primate cage to house principally Rhesus monkeys (*M. mullata*). The design of this cage and the lessons we have learned will enable us to improve on present facilities and, it is anticipated, to help relieve the stress and boredom which so often occurs when primates are kept in captivity.

412 NAL Call. No.: SF601.C66

Providing environmental enrichment to captive primates.

Bayne, K.

Trenton, N.J. : Veterinary Learning Systems Company, Inc; 1991 Nov. The Compendium on continuing education for the practicing veterinarian v. 13 (11): p. 1689-1692, 1694-1695; 1991 Nov.

Literature review. Includes references.

Language: English

Descriptors: Primates; Laboratory mammals; Animal welfare; Animal behavior; Abnormal behavior; Environmental factors; Animal housing; Social environment; Toys; Visual stimuli; Sounds; Locomotion; Feeding behavior; Literature reviews

413 NAL Call. No.: QL55.I5

Provision of environmentally enriched housing for cats.

Loveridge, G.

Sussex : The Institute; 1994 Aug.

Animal technology : journal of the Institute of Animal Technicians v. 45 (2): p. 69-87; 1994 Aug. Includes references.

Language: English

Descriptors: Cats; Animal housing; Environment; Enrichment; Design; Animal husbandry; Socialization; Animal welfare

Abstract: This paper describes the philosophy and design incorporated into the construction and operation of cat

buildings in a centre that houses both dogs' and cats in the most animal friendly conditions providing maximum environmental interest to the pet consistent with the requirements of nutritional and behavioural studies. The husbandry systems use best health care practices, with emphasis on canine or feline companionship and the human pet relationships.

414 NAL Call. No.: QL55.A1L33
Psychological enrichment techniques and new world monkey restraint device reduce colony management time.
Moseley, J.R.; Davis, J.A.
New York, N.Y. : Nature Publishing Company; 1989 Oct.
Lab animal v. 18 (7): p. 31-33. ill; 1989 Oct. Includes references.

Language: English

Descriptors: Monkeys; Mental stress; Restraint of animals

415 NAL Call. No.: QL737.P9H78
Psychological well-being of captive primates: general considerations and examples from callitrichids.
Snowdon, C.T.; Savage, A.
Park Ridge, N.J. : Noyes Publications; 1989.
Housing, care and psychological well-being of captive and laboratory primates / edited by Evalyn F. Segal. p. 75-88; 1989.

Language: English

Descriptors: Marmoset; Callithricidae; Primates; Capture of animals; Psychological factors; Environment; Cages; Animal welfare

416 NAL Call. No.: QL737.P9H78
Psychological well-being of nocturnal primates in captivity.
Wright, P.C.; Haring, D.M.; Izard, M.K.; Simons, E.L.
Park Ridge, N.J. : Noyes Publications; 1989.
Housing, care and psychological well-being of captive and laboratory primates / edited by Evalyn F. Segal. p. 61-74. ill; 1989.

Language: English

Descriptors: Cebidae; Monkeys; Capture of animals; Cages; Environment; Natural history; Social behavior; Reproductive behavior; Animal welfare; Diets

417 NAL Call. No.: QL55.A1I43
Psychological well-being of primates in captivity.
Novak, M.A.; Suomi, S.J.
Washington, D.C. : Institute of Laboratory Animal Resources, National Research Council; 1989.
I.L.A.R. news v. 31 (3): p. 5-14. ill; 1989. Includes references.

Language: English

Descriptors: Primates; Animal welfare; Animal housing; Cages

418 NAL Call. No.: QL55.I55 1983
Q fever control measures: recommendations for research facilities using sheep. Bernard, K.W.; Parham, G.L.; Winkler, W.G.; Helmick, C.G. Stuttgart, [W. Ger.] : G. Fisher Verlag; 1985.

The Contribution of laboratory animal science to the welfare of man and animals--past, present and future : 8th Symposium of ICLAS/CALAS, Vancouver, 1983 / editors: J. Archibald, J. Pitchfield, H.C. Rowsell. p. 89-96; 1985. Includes references.

Language: English

Descriptors: Sheep; Animal experiments; Facilities; Q fever; Disease control; Zoonoses

419 NAL Call. No.: QL55.H8
Quantitatively tested environmental enrichment options for singly-caged nonhuman primates: a review.

Reinhardt, V.; Reinhardt, A.

Washington Grove, MD : Psychologists for the Ethical Treatment of Animals; 1992.

Humane innovations and alternatives v. 6: p. 374-383; 1992.

Literature review. Includes references.

Language: English

Descriptors: Primates; Laboratory mammals; Cages; Animal welfare

420 NAL Call. No.: QL55.A1L3
Rabbit encephalitozoonosis in Kenya.

Wesonga, H.O.; Munda, M.

London : Royal Society of Medicine Services; 1992 Jul.

Laboratory animals v. 26 (3): p. 219-221; 1992 Jul. Includes references.

Language: English

Descriptors: Kenya; Rabbits; Encephalitozoon cuniculi; Histopathology; Brain; Cerebellum; Kidneys; Case reports

Abstract: Encephalitozoon cuniculi infection was diagnosed in a laboratory rabbit breeding colony at Muguga, Kenya. This is the first report of the disease in rabbits in Kenya. Post-mortem examination showed gross renal lesions and the presence of the parasite in histological sections of the cerebrum and cerebellum. On Gram stain, spores were observed in the kidney sections.

421 NAL Call. No.: SF601.V523
Rabbit husbandry and medicine.

Harkness, J.E.

Philadelphia, Pa. : W.B. Saunders Company; 1987 Sep.

The Veterinary clinics of North America : Small animal practice v. 17 (5): p. 1019-1044. ill; 1987 Sep. In the series analytic: Exotic pet medicine / edited by J.E.

Harkness. Includes references.

Language: English

Descriptors: Rabbits; Animal husbandry; Cages; Reproduction;

Rabbit feeding; Disease prevention; Rabbit diseases

422 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.
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.

423 NAL Call. No.: QL55.A1L3
Rapid diagnosis and management of parainfluenza I virus
infection in common marmosets (*Callithrix jacchus*).
Sutherland, S.D.; Almeida, J.D.; Gardner, P.S.; Skarpa, M.;
Stanton, J. London : Laboratory Animal Science Association;
1986 Apr. *Laboratory animals* v. 20 (2): p. 121-126. ill; 1986
Apr. Includes references.

Language: English

Descriptors: Marmoset; Paramyxoviridae; Serological diagnosis;
Histopathology

424 NAL Call. No.: QL55.A1L3
Rationalization and computerization of the drug supply to an
animal unit. Wootton, R.; Henderson, F.
Essex : Laboratory Animal Science Association; 1987 Oct.
Laboratory animals v. 21 (4): p. 283-288. ill; 1987 Oct.
Includes references.

Language: English

Descriptors: Laboratory animals; Animal experiments; Drugs;
Pharmacy; Management; Computer applications; Stock accounting

Abstract: Drug stocks in an animal unit were rationalized by
discarding out-of-date or unwanted items and drawing up an
approved stock list. A computerized system of stock control
which enables a regular and accurate inventory of
pharmaceuticals to be made was then established. In addition,
the paperwork required for reordering drugs is produced
automatically. Pharmaceuticals to a total value of 1650 pounds
were discarded during the rationalization phase. The value of
drugs stocked in the animal unit then stabilized at about one-
third of previous levels. In the first 6 months of operation
of the new system drug expenditure fell by about 40% in
comparison with the same period 1 year previously. The drug

stock control system has proved economical to operate and accurate, and can be run by persons without computer expertise. Valuable savings in both cost and labour have resulted. Effective management of drug expenditure by the animal unit is now possible.

425 NAL Call. No.: QL55.A1L3
Rearing a second generation of cotton-top tamarins (*Saguinus oedipus oedipus*) in captivity.
Kirkwood, J.K.; Epstein, M.A.; Terlecki, A.J.; Underwood, S.J.
Essex : Laboratory Animal Science Association; 1985 Oct.
Laboratory animals v. 19 (4): p. 269-272. ill; 1985 Oct.
Includes references.

Language: English

Descriptors: Animal breeding; Callithricidae; Endangered species; Mortality; Parturition

426 NAL Call. No.: QL55.I5
Rearing and maintenance of the Australian anuran *Limnodynastes tasmaniensis*, under laboratory conditions.
Chapman, J.E.
Sussex : The Institute of Animal Technology; 1987 Dec.
Animal technology : journal of the Institute of Animal Technology v. 38 (3): p. 175-182. ill; 1987 Dec. Includes references.

Language: English

Descriptors: Australia; Frogs; Laboratory rearing; Facilities; Animal housing; Animal breeding; Anesthesia; Euthanasia

Abstract: Methods are described for rearing and maintaining in the laboratory the anuran *Limnodynastes tasmaniensis*. It is necessary to provide a range of live foods for adults and to ensure high water quality for all growth stages. The frog does not hibernate and breeds throughout the year in the laboratory, making it an excellent subject for experimental research.

427 NAL Call. No.: QL55.R42 1985
Recommendations for governance and management of institutional animal resources.
Joint AAMC-AAU Ad Hoc Committee on the Governance and Management of Institutional Animal Resources, Association of American Medical Colleges, Association of American Universities
Washington, D.C. : Association of American Medical Colleges : Association of American Universities,; 1985.
9 p. ; 24 cm. Cover title. October, 1985. Includes bibliographical references.

Language: English

Descriptors: Laboratory animals

428 NAL Call. No.: 410.9 P94
Recrudescence of *Entopoloypoides macaci* Mayer, 1933, (*Babesiidae*) infection secondary to stress in long-tailed macaques (*Macaca fascicularis*). Emerson, C.L.; Tsai, C.C.;

Holland, C.J.; Ralston, P.; Diluzio, M.E. Cordova, Tenn. : American Association for Laboratory Animal Science; 1990 Mar. Laboratory animal science v. 40 (2): p. 169-171. ill; 1990 Mar. Includes references.

Language: English

Descriptors: Macaca fascicularis; Entopolypoides; Protozoal infections; Stress; Relapse; Immunofluorescence

Abstract: Parasites were found in red blood cells of two long-tailed macaques (*Macaca fascicularis*) imported from Indonesia and housed in the Washington Regional Primate Research Center breeding colony for 7 years or longer. Both macaques developed parasitemias secondary to stress (type D retrovirus in one case and severe trauma in the other). *Entopolypoides macaci* (Babesiidae) was diagnosed on the basis of morphology from peripheral blood smears stained with Wright's stain. Antibodies against *Babesia* sp. were detected by immunofluorescence assay (IFA) from one infected macaque, which showed antibody cross-reactions (high titer) to *B. bigemina*, *B. bovis*, *B. canis*, and (low titers) to *Plasmodium falciparum*. Five feral long-tailed macaques that had been imported recently from the same country had no detectable antibodies. This is the first report of IFA as an aid to diagnose *E. macaci* in nonhuman primates.

429 NAL Call. No.: 410.9 P94
Rederivation of MHV and MEV antibody positive mice by cross-fostering and use of the microisolator caging system.
Lipman, N.S.; Newcomer, C.E.; Fox, J.G.
Cordova, Tenn. : American Association for Laboratory Animal Science; 1987 Apr. Laboratory animal science v. 37 (2): p. 195-199. ill; 1987 Apr. Includes references.

Language: English

Descriptors: Barrier husbandry; Viral hepatitis; Encephalitis; Mice; Cages; Specific pathogen-free state; Isolation

430 NAL Call. No.: QL55.J55
Reduced fertility in gracile axonal dystrophy (*gad*) mice.
Yamazaki, K.; Wakasugi, N.; Sakakibara, A.; Tomita, T.
Tokyo : Keio University School of Medicine; 1988 Apr.
Jikken dobutsu; experimental animals v. 37 (2): p. 195-199; 1988 Apr. Includes references.

Language: English

Descriptors: Mice; Female animals; Female fertility; Crosses; Litter size; Fetal death; Breeding efficiency; Strains

431 NAL Call. No.: 410.9 P94
Reference blood values of iron metabolism in cynomolgus macaques. Giulietti, M.; La Torre, R.; Pace, M.; Iale, E.; Patella, A.; Turillazzi, P. Cordova, Tenn. : American Association for Laboratory Animal Science; 1991 Dec. Laboratory animal science v. 41 (6): p. 606-608; 1991 Dec. Includes references.

Language: English

Descriptors: *Macaca fascicularis*; Iron; Mineral metabolism;
Blood; Normal values; Reference standards; Sex differences

Abstract: Iron deficiency anemia is a human health problem of global significance, particularly as it affects pregnant women and infants. While the study of nonhuman primates has resulted in valuable knowledge about iron metabolism, hematologic and biochemical reference ranges for the parameters of iron metabolism are difficult to document in healthy monkeys. At our institution, we maintain a large breeding colony of healthy cynomolgus monkeys (*Macaca fascicularis*). Data compiled after sampling nonpregnant females and male members of this colony are presented as reference ranges for red cell number, hemoglobin, hematocrit, mean cellular volume, mean cellular hemoglobin, mean cellular hemoglobin concentration, serum iron, total iron-binding capacity, serum transferrin, and serum ferritin.

432 NAL Call. No.: RA1190.F8
Refinement of animal research technique and validity of research data. Rowan, A.N.
Duluth, Minn. : Academic Press; 1990 Jul.
Fundamental and applied toxicology : official journal of the Society of Toxicology v. 15 (1): p. 25-32; 1990 Jul. Includes references.

Language: English

Descriptors: Animal welfare; Research; Environmental factors;
Animal housing

433 NAL Call. No.: QP1.A2 SUPPL.
Regulation of animal experimentation in Sweden.
Skoglund, E.
Stockholm : Blackwell Scientific Publications; 1986.
Acta physiologica Scandinavica v. 128 (554): p. 153-157; 1986.
Paper presented at the "Second CFN Symposium on the Ethics of Animal Experimentation," August 12-14, 1985, Stockholm, Sweden.

Language: English

Descriptors: Sweden; Animal experiments; Legislation; Ethics;
Animal housing; Regulations

434 NAL Call. No.: RA565.A1E54
Relationship of dietary iodide and drinking water disinfectants to thyroid function in experimental animals.
Revis, N.W.; McCauley, P.; Holdsworth, G.
Research Triangle Park, N.C. : National Institute of Environmental Health Sciences; 1986 Nov.
E H P Environmental health perspectives v. 69: p. 243-248; 1986 Nov. Includes references.

Language: English

Descriptors: Pigeons; Rabbits; Diet; Iodides; Drinking water;
Disinfectants; Thyroid gland

435 NAL Call. No.: QD415.A1X4
Report of the Validation and Technology Transfer committee of

the Johns Hopkins Center for Alternatives to Animal Testing.
Framework for validation and implementation of in vitro
toxicity tests.

Goldberg, A.M.; Frazier, J.M.; Brusick, D.; Dickens, M.S.;
Flint, O.; Gettings, S.D.; Hill, R.N.; Lipnick, R.L.;
Renskers, K.J.; Bradlaw, J.A. London : Taylor & Francis, 1971-
; 1993 May.
Xenobiotica v. 23 (5): p. 563-572; 1993 May. Includes
references.

Language: English

Descriptors: In vitro; Animal models; In vitro culture;
Methodology

Abstract: The development and application of in vitro
alternatives designed to reduce or replace the use of animals,
or to lessen the distress and discomfort of laboratory
animals, is a rapidly developing trend in toxicology. However,
at present there is no formal administrative process to
organize, coordinate, or evaluate validation activities. A
framework capable of fostering the validation of new methods
is essential for the effective transfer of new technological
developments from the research laboratory into practical use.
This committee has identified four essential validation
resources: chemical bank(s), cell and tissue banks, a data
bank, and reference laboratories. The creation of a Scientific
Advisory Board composed of experts in the various aspects and
endpoints of toxicity testing, and representing the academic,
industrial and regulatory communities, is recommended. Test
validation acceptance is contingent upon broad buy-in by
disparate groups in the scientific community--academics,
industry and government. This is best achieved by early and
frequent communication among parties and agreement upon common
goals. It is hoped that the creation of a validation
infrastructure composed of the elements described in this
report will facilitate scientific acceptance and utilization
of alternative methodologies and speed implementation of
replacement, reduction and refinement alternatives in toxicity
testing.

436 NAL Call. No.: SF407.F39B56
Reproduction, breeding, and growth.
Fox, J.G.
Philadelphia : Lea & Febiger; 1988.
Biology and diseases of the ferret / [edited by] James G. Fox.
p. 174-183. ill; 1988. Literature review. Includes
references.

Language: English

Descriptors: Ferrets; Reproduction; Animal breeding; Growth

437 NAL Call. No.: 410.9 P94
Reproduction, development and physiology of the gray short-
tailed opossum (*Monodelphis domestica*).
Kraus, D.B.; Fadem, B.H.
Cordova, Tenn. : American Association for Laboratory Animal
Science; 1987 Aug. Laboratory animal science v. 37 (4): p.
478-482; 1987 Aug. Includes references.

Language: English

Descriptors: Opossums; Reproduction; Breeding methods;
Developmental stages; Physiology; Laboratory rearing

438 NAL Call. No.: QL737.P925H36
Reproductive cyclicity and breeding in the squirrel monkey.
Dukelow, W.R.
New York : Plenum Press; 1985.
Handbook of squirrel monkey research / edited by Leonard A.
Rosenblum and Christopher L. Coe. p. 169-190. ill; 1985.
Literature review. Includes references.

Language: English

Descriptors: Squirrel monkeys; Reproduction; Estrous cycle;
Ovulation; Fertilization; Artificial insemination; Pregnancy

439 NAL Call. No.: 410.9 P94
Reproductive performance in C57BL and I strain mice.
Hoover-Plow, J.; Elliott, P.; Moynier, B.
Cordova, Tenn. : American Association for Laboratory Animal
Science; 1988 Oct. Laboratory animal science v. 38 (5): p.
595-602; 1988 Oct. Includes references.

Language: English

Descriptors: Mice; Strains; Reproductive performance; Animal
breeding; Laboratory rearing

440 NAL Call. No.: HV4701.A45
Researching your local research facility.
Budkie, M.A.
Monroe, Conn. : Animal Rights Network; 1990 Oct.
The Animals' agenda v. 10 (8): p. 16-18. ill; 1990 Oct.

Language: English

Descriptors: Research institutes; Animal experiments; Research
projects; Data collection

441 NAL Call. No.: 410.9 P94
Research-oriented genetic management of nonhuman primate
colonies. Williams-Blangero, S.
Cordova, Tenn. : American Association for Laboratory Animal
Science; 1993 Dec. Laboratory animal science v. 43 (6): p.
535-540; 1993 Dec. Includes references.

Language: English

Descriptors: Primates; Animal breeding; Animal experiments;
Genetic variation; Pedigree; Genetic markers; Quantitative
traits; Heritability

Abstract: Genetic management is an important component of the
general management of nonhuman primate colonies. However,
standard genetic management techniques were developed
primarily to address the goals of population conservation,
particularly in zoo situations. The special needs of colonies
that produce animals for biomedical research have not
previously been fully addressed and the great potential of
genetic management in the research environment remains to be
realized. A research-oriented genetic management approach

balances long-term breeding goals and current and future experimental needs, yielding a comprehensive overall colony management program. Pedigree information, genetic markers (e.g., serum proteins, red blood cell enzymes, restriction fragment length polymorphisms, and single-locus microsatellites), and quantitative traits (e.g., routinely gathered clinical chemical values, weights, and blood pressures) can be used alone or in combination to estimate genetic variability in the colony and to characterize animals for experimentally relevant traits. The statistical power of experiments using nonhuman primates can be improved when animals are selected on the basis of their genetic values or genotypes for experimentally relevant traits because the quantified genetic variation among subjects can then be minimized. The incorporation of experimental needs into the overall genetic management plans for captive breeding colonies helps ensure the long-term viability of colonies for meeting the demands of both breeding and research.

442 NAL Call. No.: QL737.P9H78
Resolving issues of psychological well-being and management of laboratory nonhuman primates.
Bayne, K.
Park Ridge, N.J. : Noyes Publications; 1989.
Housing, care and psychological well-being of captive and laboratory primates / edited by Evalyn F. Segal. p. 27-39; 1989.

Language: English

Descriptors: U.S.A.; Primates; Laboratory rearing; Animal experiments; Animal welfare; Surveys; Research institutes

443 NAL Call. No.: 410.9 P94
Response of adult New Zealand white rabbits to enrichment objects and paired housing.
Huls, W.L.; Brooks, D.L.; Bean-Knudsen, D.
Cordova, Tenn. : American Association for Laboratory Animal Science; 1991 Dec. Laboratory animal science v. 41 (6): p. 609-612; 1991 Dec. Includes references.

Language: English

Descriptors: Rabbits; Animal welfare; Cages; Enrichment; Social behavior

Abstract: Enhancing the psychological well-being of laboratory animals has received much attention recently. Although many studies have been undertaken to determine the effects of cage enrichment techniques on dogs and nonhuman primates, other than scant empirical observations, little has been done to measure these events objectively in lagomorphs. We studied adult female New Zealand White (NZW) rabbits to learn if, when given the opportunity, individual rabbits would use different enrichment objects placed in their cages, and to determine if rabbits preferred to be in proximity to one another, or apart. Three different objects were evaluated with eight rabbits individually housed in conventional cages. Each object introduced into individual rabbit cages stimulated substantial interaction, especially chewing behavior. Eight other rabbits were pair-housed in a modified caging system with a special access port between two separate cages. When given a choice, rabbits preferred to be in the same cage with

other rabbits. In both studies, individual behaviors were monitored, as well as either the type of interaction and percentage of observations spent with each object or, in the housing study, percentage of observations involved with different types of activity, and relative location of the paired rabbits.

444 NAL Call. No.: QL55.A1L3
Responses of female rhesus macaques to an environmental enrichment apparatus. Line, S.W.; Clarke, A.S.; Markowitz, H.; Ellman, G.
London : Royal Society of Medicine Services; 1990 Jul.
Laboratory animals v. 24 (3): p. 213-220; 1990 Jul. Includes references.

Language: English

Descriptors: Macaca mulatta; Environment; Enrichment

Abstract: Environmental enrichment devices are a potential way to enhance psychological well-being in laboratory animals. The effects of such devices need to be systematically evaluated before they are recommended for widespread use. The purpose of this research was to monitor the behavioural and physiological responses of adult female rhesus macaques to a simple enrichment device. The apparatus consisted of a box attached to the monkey's home cage that contained a radio and a food dispenser, which could be controlled by the monkeys via contact detectors. Radio and food dispenser use were automatically recorded. Whole blood serotonin (WBS), plasma cortisol and abnormal behaviour were measured in 5 monkeys before, during and after a 20-week period in which the monkey's cages were equipped with the device. All monkeys used the device (3 of the 5 subjects earned an average of more than 200 food pellets per day). Mean plasma cortisol and whole blood serotonin did not differ across sampling times, suggesting that the apparatus had no effect on basal stress levels. There was an inverse relationship between apparatus use and cortisol levels in 76% of the samples, but only 3 of 17 coefficients were significant. There was a significant but small negative correlation between apparatus use and self-abusive behaviour. This enrichment device was readily used by adult rhesus monkeys and could be adapted for use in a wide variety of laboratory settings.

445 NAL Call. No.: QL55.A1L3
A restraint system for the common marmoset (*Callithrix jacchus*). O'Byrne, K.T.; Morris, K.D.
London : Royal Society of Medicine Services; 1988 Apr.
Laboratory animals v. 22 (2): p. 148-150. ill; 1988 Apr.
Includes references.

Language: English

Descriptors: Marmoset; Restraint; Facilities; Equipment; Blood specimen collection

Abstract: A method for restraining the marmoset in a primate chair is described. The device is inexpensive to construct, is reliable, and the majority of animals can be habituated to its use. The chair has been used in neurobiological studies employing electrophysiological recordings, with or without concurrent collection of serial blood samples.

446 NAL Call. No.: 410.9 P94
Retinal cyclic light damage threshold for albino rats.
Semple-Rowland, S.L.; Dawson, W.W.
Joliet, Ill. : American Association for Laboratory Animal
Science; 1987 Jun. Laboratory animal science v. 37 (3): p.
289-298. ill; 1987 Jun. Includes references.

Language: English

Descriptors: Rats; Cages; Lighting; Light intensity; Retinas;
Damage

447 NAL Call. No.: 410.9 P94
Rigid plastic balls as enrichment devices for captive
chimpanzees. Bloomsmith, M.A.; Finlay, T.W.; Merhalski, J.J.;
Maple, T.L. Cordova, Tenn. : American Association for
Laboratory Animal Science; 1990 May. Laboratory animal science
v. 40 (3): p. 319-322; 1990 May. Includes references.

Language: English

Descriptors: Chimpanzees; Environment; Enrichment; Toys; Play;
Sex differences; Age differences; Animal housing

Abstract: The use of rigid, plastic balls as enrichment
devices for 16 captive chimpanzees was studied at The
University of Texas M.D. Anderson Cancer Center chimpanzee
colony. After the subjects were presented with balls, 10 hours
of data were collected for each subject using a scan-sampling
technique. The mean percentage of ball-use time for all
subjects during the study was 7.1%. There was no sex
difference in ball use. Age and housing effects were obtained,
with younger animals and those housed in more barren
environments exhibiting higher levels of ball use. It is
concluded that the balls were worthwhile additions to the
chimpanzee environments with use stabilizing at a mean of 2.5%
of the subjects' time.

448 NAL Call. No.: QL55.A1L3
Ringtail in the pouched mouse (*Saccostomus campestris*).
Ellison, G.T.H.; Westlin-Van Aarde, L.M.
London : Royal Society of Medicine Services; 1990 Jul.
Laboratory animals v. 24 (3): p. 205-206; 1990 Jul. Includes
references.

Language: English

Descriptors: Mice; Tail; Animal diseases; Relative humidity

Abstract: Laboratory colonies of the pouched mouse
(*Saccostomus campestris*) were housed in solid bottom cages and
fed a varied diet containing excess fatty acids. Ringtail was
only initiated in animals of all ages, from populations
originating from different areas of South Africa, when the
relative humidity fell below 30%. The incidence of ringtail
was curtailed by maintaining relative humidity above 45% in
animal houses.

449 NAL Call. No.: QL55.I5
The rinkhals (*Hemachatus haemachatus*) a southern African

venomous snake--housing, husbandry and maintenance.

Dawson, P.; Alexander, G.J.; Nicholls, S.

Sussex : The Institute; 1991 Aug.

Animal technology : journal of the Institute of Animal Technology v. 42 (2): p. 71-76; 1991 Aug. Includes references.

Language: English

Descriptors: Elapidae; Animal housing; Animal husbandry

450 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.

451 NAL Call. No.: SF105.W693 1986

The role of computer simulation and laboratory animals in the design of breeding programs.

Harris, D.L.; Stewart, T.S.

Lincoln : University of Nebraska, Institute of Agriculture and Natural Resources; 1986.

3rd World Congress on Genetics Applied to Livestock Production : July 16-22, 1986 / editors: G.E. Dickerson and R.K. Johnson. v. 4 p. 251-268; 1986. Includes references.

Language: English

Descriptors: Breeding programs; Systems analysis

452 NAL Call. No.: QL737.P9H78

A room with a view for captive primates: issues, goals, related research and strategies.

O'Neill, P.

Park Ridge, N.J. : Noyes Publications; 1989.

Housing, care and psychological well-being of captive and laboratory primates / edited by Evalyn F. Segal. p. 135-160. ill; 1989.

Language: English

Descriptors: Cercopithecidae; Capture of animals; Cages; Medical research; Environment; Animal housing; Social

behavior; Psychoses

453 NAL Call. No.: aHV4701.A952
S.544.
Heflin, H.
Beltsville, Md. : National Agricultural Library, AWIC; 1992
Jul. Animal Welfare Information Center newsletter v. 3 (3): p.
1, 7-8; 1992 Jul.

Language: English

Descriptors: U.S.A.; Animal experiments; Legislation

454 NAL Call. No.: QL55.A1L33
A safe and easy way to pick up B6C3F1 mice from wire-bottom
cages. Quezada, A.
New York, N.Y. : Nature Publishing Company; 1994 Jul.
Lab animal v. 23 (7): p. 53; 1994 Jul.

Language: English

Descriptors: Mice; Handling

455 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.

456 NAL Call. No.: Z7994.L3A5
Salvation or extinction of the chimpanzee: the final struggle

begins?. Nottingham : Fund for the Replacement of Animals in Medical Experiments; 1988 Mar.

Alternatives to laboratory animals : ATLA v. 15 (3): p. 176-179; 1988 Mar. Includes references.

Language: English

Descriptors: Chimpanzee; Laboratory animals; Animal welfare; Animal housing; Wildlife conservation; Endangered species

457 NAL Call. No.: Q1.S37

Scientists doubtful about new law aiming to protect animal research facilities.

Kaufman, R.

Philadelphia, Pa. : Institute for Scientific Information; 1992 Oct26. The scientist v. 6 (21): p. 1, 5; 1992 Oct26.

Language: English

Descriptors: Animal welfare; Animal experiments; Legislation; Vandalism

458 NAL Call. No.: 410.9 P94

Screening rabbit colonies for antibodies to Pasteurella multocida by an ELISA. Zaoutis, T.E.; Reinhard, G.R.; Cioffe, C.J.; Moore, P.B.; Stark, D.M. Cordova, Tenn. : American Association for Laboratory Animal Science; 1991 Oct. Laboratory animal science v. 41 (5): p. 419-422; 1991 Oct. Includes references.

Language: English

Descriptors: Rabbits; Pasteurella multocida; Screening; Elisa; Immunodiagnosis; Serological surveys

Abstract: Rabbit serum samples from eleven different research facilities were evaluated for the presence of immunoglobulin G against Pasteurella multocida by using an enzyme-linked immunosorbent assay (ELISA). Each facility which submitted serum samples also provided a brief history of each rabbit colony tested. Rabbits from colonies reported to have endemic P. multocida or of undetermined status had 83 (58.9%) of 141 rabbits that were positive. Colonies reported to be free from P. multocida had 110 (92.4%) of 119 rabbits that were negative by ELISA. The ELISA test described here showed a high degree of agreement (92-94%) with two other P. multocida ELISAs at different diagnostic facilities. This study confirms that an ELISA testing for serum antibodies against the P. multocida is a reliable diagnostic tool to screen colonies for P. multocida.

459 NAL Call. No.: QL55.A1L33

Security in the research laboratory. 2. Communications, personnel and publicity.

Clifford, D.H.; Green, K.

New York : Media Horizons; 1986 Apr.

Lab animal v. 15 (3): p. 23-24, 28-29. ill; 1986 Apr.

Includes references.

Language: English

Descriptors: Laboratory animals; Animal husbandry; Security;

Animal housing; Research institutes; Public relations;
Personnel

460 NAL Call. No.: QL55.A1L33
Security in the research laboratory. I. Perimeter and internal control. Green, K.A.; Clifford, D.H.
New York : Media Horizons; 1986 Mar.
Lab animal v. 15 (2): p. 22-24, 27-28, 31, 34, 36. ill; 1986 Mar.

Language: English

Descriptors: Security; Animal research; Research institutes;
Laboratories; Facilities

461 NAL Call. No.: QL55.A1L3
Semen characteristics of vervet monkeys.
Seier, J.V.; Fincham, J.E.; Menkveld, R.; Venter, F.S.
London : Royal Society of Medicine Services; 1989 Jan.
Laboratory animals v. 23 (1): p. 43-47; 1989 Jan. Includes references.

Language: English

Descriptors: Cercopithecidae; Monkeys; Electroejaculation;
Semen characters

Abstract: Semen samples (91) from 47 vervet monkeys were collected by electroejaculation over a 2 year period. Seventy-eight of these were from 37 singly caged males of unknown fertility and 13 from 10 breeding males of known fertility. Mean values for semen characteristics of the singly caged males were: volume 0.45 ml, pH 7.8, concentration 184×10^6 /ml, forward progression rating 2.95 (scale 0-4), motility 55.4%, live 68% and abnormal morphology 3.5%. Mean values for semen characteristics for the breeding males were: volume 0.86 ml, pH 9.00, concentration 117.15×10^6 /ml, forward progression rating 3.00 (scale 0-4), motility 43.6%, live 53.3% and abnormal morphology 6%. Semen volumes in the singly caged males were lower than the volumes reported in other studies.

462 NAL Call. No.: QL55.F43 1987
Serological following of a laboratory rat breeding contaminated with respiratory viruses during 1981-1986. Pribylova, M.; Svoboda, T.; Klir, P.
Dordrecht : M. Nijhoff; 1988.
New developments in biosciences : their implications for laboratory animal science : proceedings of the Third Symposium, Amsterdam, The Netherlands, 1-5 June 1987 / edited by Anton C. Beyneen and Henk A. Solleveld. p. 379-384. ill; 1988. Includes references.

Language: English

Descriptors: Rats; Laboratory rearing; Contamination;
Respiratory diseases; Viruses; Serological diagnosis;
Histopathology; Isolation

463 NAL Call. No.: QL55.A1L3
Sex ratio and litter size in relation to parity and mode of

conception in three inbred strains in mice.

Krackow, S.; Gruber, F.

London : Royal Society of Medicine Services; 1990 Oct.

Laboratory animals v. 24 (4): p. 345-352; 1990 Oct. Includes references.

Language: English

Descriptors: Mice; Sex ratio; Litter size; Conception; Estrus; Postpartum interval; Anestrus; Parous rates

Abstract: Breeding records from three inbred strains of mice (BALB/c ABom, C57BL/10ScSn, C3H/He/Kon) were examined with respect to the effects of parity and mode of conception upon litter size and sex ratio at birth. Litters from 3 modes of conception were considered: litters of primipares, litters of multipares conceived during postpartum oestrus and litters conceived after lactational anoestrus. Litters of multipares were assigned to one of these latter groups according to the inter-litter intervals. Parity had no significant effect upon the sex ratio but had a significant one upon the litter size, which did not vary between the strains when first litters were excluded from analysis. The expected variations in response to the mode of conception were found in BALB/c ABom mice but both the effects on the litter size as well as on the sex ratio varied significantly between the strains. Litter size reduction per se could be ruled out to be the cause of the sex ratio variations found. Rather, it is suggested that sex-specificity of embryonic loss depends upon the mode of conception.

464

NAL Call. No.: 410 B77

Sexual selection for spatial-learning ability.

Gaulin, S.J.C.; Fitzgerald, R.W.

London : Bailliere Tindall; 1989 Feb.

Animal behaviour v. 37 (2): p. 322-331. ill; 1989 Feb.

Includes references.

Language: English

Descriptors: Microtus; Rodents; Sex differences; Learning ability; Ranges; Size; Cage size; Laboratory methods

Abstract: Sex differences in spatial learning have been thought to be universal among mammals, but their adaptive significance has been neglected. Spatial-learning skills are hypothesized to evolve in proportion to navigational demands, and it is predicted that sex differences in spatial ability will evolve only in species where range expansion contributes differentially to the reproductive success of males and females. This prediction was tested via field studies of ranging behaviour and laboratory studies of spatial ability in two congeneric rodent species whose mating systems differ. Radiotelemetric studies showed that, in a polygynous species (meadow voles, *Microtus pennsylvanicus*) males expanded their ranges only during the breeding season and only when they attained full reproductive status. Females showed neither response. This suggests that range expansion was a male reproductive tactic. In contrast, a monogamous congener (prairie voles, *M. ochrogaster*) showed no sex differences in ranging, regardless of reproductive status. This probably reflects the relative inability of monogamous males and females to benefit from increased exposure to members of the opposite sex. When subsequently tested in a series of seven

symmetrical mazes, subjects from the field studies exhibited the predicted sex-by-species patterns of spatial ability: only meadow voles showed consistent male superiority on these spatial tasks.

465 NAL Call. No.: QL55.I5

The Siconbrec project--conditioning and breeding facilities for the cynomolgus monkey (*Macaca fascicularis*) in the Philippines: a review after the first five years.

Hobbs, K.R.

Sussex : The Institute; 1989 Apr.

Animal technology : journal of the Institute of Animal Technology v. 40 (1): p. 55-64. ill., maps; 1989 Apr.

Includes references.

Language: English

Descriptors: Philippines; Macaca; Facilities; Breeding programs; Exports

Abstract: Five years after its establishment in the Philippines, the Siconbrec project has made rapid and effective progress in establishing large-scale breeding programmes to produce *Macaca fascicularis* for biomedical purposes. If the current rate of expansion is continued, the need to use wild-trapped monkeys from the Philippines will decline to a point where few should be required for export by the mid 1990s.

466 NAL Call. No.: QL737.P9H78

Signs of enrichment toward the psychological well-being of chimpanzees. Fouts, R.S.; Abshire, M.L.; Bodamer, M.; Fouts, D.H.

Park Ridge, N.J. : Noyes Publications; 1989.

Housing, care and psychological well-being of captive and laboratory primates / edited by Evalyn F. Segal. p. 376-388; 1989.

Language: English

Descriptors: Chimpanzee; Animal welfare; Cage size; Exercise; Habitats; Social interaction; Facilities

467 NAL Call. No.: QL55.A1L3

The simian-type M and the human-type ABO blood groups in the African green monkey (*Cercopithecus aethiops*): their inheritance, distribution and significance for the management of a breeding colony.

Terao, K.; Hiyaoka, A.; Cho, F.; Honjo, S.

London : Royal Society of Medicine Services; 1988 Oct.

Laboratory animals v. 22 (4): p. 347-354; 1988 Oct. Includes references.

Language: English

Descriptors: Cercopithecidae; Blood groups; Genetics; Inheritance; Animal breeding

Abstract: We have established a new simian-type blood group system (M blood groups) in the African green monkey (*Cercopithecus aethiops*), using a haemagglutinating antibody which was developed by alloimmunization. The M blood groups

consisted of two phenotypes, type-M and type-m. We have also determined the mode of inheritance as well as the distribution of both simian-type M and human-type ABO blood groups, employing 113 families including 160 animals. The family analysis revealed that (1) the simian-type M blood groups were governed by the two alleles, dominant M and recessive m, and (2) the human-type ABO blood groups were governed by 3 alleles, codominant A and B and silent O, although no monkey of phenotype-O was found in our breeding colony. Differences in the phenotypic distribution and gene frequency of respective M and ABO blood groups were observed among 3 populations imported at different times. The genetic management of the African green monkey breeding colony was discussed in relation to the difference in distribution of phenotypes of M and ABO blood groups between the parental (wild-originated) and the first filial (colony-born) populations.

468 NAL Call. No.: QL55.I5
A simple, cheap barrier system to upgrade the health status of a conventional rat breeding colony.
Lewin, L.; Hansen, G.
Sussex : The Institute of Animal Technology; 1986 Aug.
Animal technology : journal of the Institute of Animal Technology v. 37 (2): p. 93-104. ill; 1986 Aug. Includes references.

Language: English

Descriptors: Rats; Animal health; Respiratory diseases; Bacteria; Disease prevention; Floors; Testing

469 NAL Call. No.: QL55.A1L3
A simple device for the objective measurement of activity.
Chalain, T.M.B. de; Whitefield, D.
London : Royal Society of Medicine Services; 1991 Jul.
Laboratory animals v. 25 (3): p. 212-215; 1991 Jul. Includes references.

Language: English

Descriptors: Laboratory animals; Activity; Measurement; Cages; Monitors

Abstract: The activity of small experimental animals is difficult to quantify without prolonged observation and note-taking. We describe a relatively cheap and easily constructed device for monitoring and recording activity. Appropriate modifications make the basic device suitable for limited field applications.

470 NAL Call. No.: 410.9 P94
A simple method for the concurrent stimulation of skeletal muscle in several animals.
Rosenblatt, J.D.; Lin, P.J.; McKee, N.H.; Kuzon, W.M. Jr
Cordova, Tenn. : American Association for Laboratory Animal Science; 1989. Laboratory animal science v. 39 (4): p. 347-348. ill; 1989. Includes references.

Language: English

Descriptors: Rats; Skeletal muscle; Stimulation; Electricity;

Methodology; Cages; Electrical equipment

471 NAL Call. No.: QL55.A1L3
Simple methods which maintain the barrier status of specific-pathogen-free animals during experimentation.
Herbert, J.; Roser, B.
Essex : Laboratory Animal Science Association; 1987 Apr.
Laboratory animals v. 21 (2): p. 149-154. ill; 1987 Apr.
Includes references.

Language: English

Descriptors: Rats; Mice; Animal experiments; Specific pathogen free state; Equipment; Facilities

472 NAL Call. No.: 410.9 P94
A simplified method for stress free continuous blood collection in large animals.
Ladewig, J.; Stribrny, K.
Cordova, Tenn. : American Association for Laboratory Animal Science; 1988 Jun. Laboratory animal science v. 38 (3): p. 333-335. ill; 1988 Jun. Includes references.

Language: English

Descriptors: Cattle; Pigs; Stress; Blood specimen collection; Catheters; Animal housing

473 NAL Call. No.: 410.9 P94
Skeletal lesions and anemia associated with ascorbic acid deficiency in juvenile rhesus macaques.
Eisele, P.H.; Morgan, J.P.; Line, A.S.; Anderson, J.H.
Cordova, Tenn. : American Association for Laboratory Animal Science; 1992 Jun. Laboratory animal science v. 42 (3): p. 245-249; 1992 Jun. Includes references.

Language: English

Descriptors: California; Macaca mulatta; Ascorbic acid; Vitamin deficiencies; Anemia; Bone diseases; Lameness; Symptoms; Diagnosis; Therapy; Vitamin supplements; Case reports

Abstract: Young rhesus macaques housed in outdoor corn cribs and fed a commercially prepared primate diet became weak, depressed, were reluctant to move, and expressed locomotor abnormalities. Thirteen severely affected animals were hospitalized for evaluation. Physical examination disclosed swellings and instabilities involving the ends of long bones. Radiography confirmed physeal fractures in 11 of 13 animals. Affected bones included the distal femur, proximal humerus, distal tibia/fibula, and distal radius/ulna. Other, less obvious changes were noted on radiographs. Anemia was a consistent finding. Ascorbic acid deficiency was suspected and therapy was initiated that consisted of vitamin supplements, diet change, cage rest, and support bandages. Feed samples were submitted to a laboratory for analysis and were confirmed deficient in vitamin C. Follow-up radiographs showed large calcifying subperiosteal hematomas in epiphyseometaphyseal regions, consistent with a diagnosis of scurvy. Twelve of 13 animals recovered clinically. Subsequent radiographs documented improvement of initially severe angular deformities

associated with displaced fractures.

474 NAL Call. No.: QL55.A1L33
Skills and responsibilities in laboratory management.
Scher, S.
New York : Media Horizons; 1985 May.
Lab animal v. 14 (4): p. 43; 1985 May. Includes references.

Language: English

Descriptors: U.S.A.; Laboratory animals; Technicians;
Management; Skills; Responsibility

475 NAL Call. No.: SF774.5.J66 1985
Smaller laboratory animals., 4th ed.
Keeley, A.
Oxford [Oxfordshire] : Pergamon Press; 1985.
Jones's animal nursing / edited by D.R. Lane for the British
Small Animal Veterinary Association, with contributions from
twenty-six authors. p. 148-153. ill; 1985. Includes
references.

Language: English

Descriptors: Laboratory animals; Environmental temperature;
Cages; Animal housing; Animal feeding; Diets; Nursing

476 NAL Call. No.: QL55.I5
Social enrichment for aged rhesus monkeys that have lived
singly for many years.
Reinhardt, V.
Sussex : The Institute; 1991 Dec.
Animal technology : journal of the Institute of Animal
Technology v. 42 (3): p. 173-177; 1991 Dec. Includes
references.

Language: English

Descriptors: Macaca mulatta; Enrichment; Social environment;
Aggressive behavior

Abstract: There is widespread concern that aged rhesus monkeys who have been housed singly for a long time would do better living alone than sharing a cage with a companion. Ten female and five male rhesus monkeys (*Macaca mulatta*) 22 to 33 years old and deprived of physical contact with any other conspecific for more than 10 years, were socialised with weaned infants (11 pairs) or with each other (2 female--female pairs) using two standard methods of pairing. Pairing was associated with a total of 7 non-injurious aggressions during the first hour. Pairs were compatible (no visible signs of injury, adequate food sharing, no signs of depression) in every case throughout a one year follow-up period. The aged monkeys' body weight three weeks after pairing were not average 0.8% greater than one week before pairing, suggesting that their well-being was not jeopardised by the presence of a compatible companion. It was concluded that social enrichment can be achieved for old rhesus monkeys who have lived singly for many years without undue risks. The animal's high degree of social acceptance was taken as a sign of their inherent social disposition.

477 NAL Call. No.: 410.9 P94
Social housing of monkeys and apes: group formations.
Bernstein, I.S.
Cordova, Tenn. : American Association for Laboratory Animal
Science; 1991 Aug. Laboratory animal science v. 41 (4): p.
329-333; 1991 Aug. Includes references.

Language: English

Descriptors: Monkeys; Pongidae; Animal housing; Social
structure; Groups

478 NAL Call. No.: 410 B77
Social influences on vigilance in rabbits.
Roberts, S.C.
London : Bailliere Tindall; 1988 Jun.
Animal behaviour v. 36 (3): p. 905-913; 1988 Jun. Includes
references.

Language: English

Descriptors: Rabbits; Social behavior; Social structure;
Feeding behavior; Multiple regression

Abstract: The potential advantage of corporate vigilance to
rabbit, *Oryctolagus cuniculus*, groups was studied in free-
ranging rabbits that associated and cohabited basically in
male-female 'consorting' pairs. Evening observations were
conducted of rabbits during the breeding season. Levels of
vigilance of an individual rabbit during feeding decreased
with proximity to that rabbit's 'consort'. In contrast,
rabbits increased their vigilance in the presence of greater
numbers of non-consort rabbits either nearby or over 12 m
away. An experiment using stuffed animals as stimulus objects
indicated that the presence of a strange rabbit or of a fox
increased the proportion of time that rabbits spent vigilant.
Non-social factors also influenced vigilance and feeding. In
particular, vigilance decreased as the evening proceeded and
with higher temperature. For bucks only, it also decreased as
the season advanced.

479 NAL Call. No.: 410.9 P94
Social interaction in nonhuman primates: an underlying theme
for primate research.
Novak, M.A.; Suomi, S.J.
Cordova, Tenn. : American Association for Laboratory Animal
Science; 1991 Aug. Laboratory animal science v. 41 (4): p.
308-314; 1991 Aug. Includes references.

Language: English

Descriptors: Primates; Social interaction; Animal experiments;
Animal housing; Animal welfare

Abstract: Social living is assumed to be a critical feature
of nonhuman primate existence inasmuch as most primate species
live in social groups in nature. Recent USDA legislation
emphasizes the importance of social contact in promoting
psychological well-being and recommends that laboratory
primates be housed with companions when consistent with
research protocols. Our goals were to examine the link between
social housing and psychological well-being and to explore the

idea that research may be compromised when primates are studied in environments that vary too greatly from their natural ecological setting (individual cage housing versus group housing). Three general points emerge from these examinations. First, providing companionship may be a very potent way in which to promote psychological well-being in nonhuman primates; however, social living is not synonymous with well-being. The extent to which social housing promotes psychological well-being can vary across species and among individual members of the same species (for example, high- and low-ranking monkeys). Secondly, housing conditions can affect research outcomes in that group-housed animals may differ from individually housed animals in response to some manipulation. Social interaction may be a significant variable in regulating the biobehavioral responses of nonhuman primates to experimental manipulations. Finally, a larger number of socially housed subjects than individually housed subjects maybe necessary for some biomedical research projects to yield adequate data analysis. Thus, social living has significant benefits and some potential costs not only for the animals themselves, but for the research enterprise.

480 NAL Call. No.: QL55.L342

Social stress in laboratory mouse colonies.

Brain, P.F.

Potters Bar : Universities Federation for Animal Welfare; 1989. Laboratory animal welfare research : rodents : proc of a symposium organized by Universities Federation for Animal Welfare, held at the Royal Holloway and Bedford New College, Univ of London, Egham, Surrey, 22nd April 1988. p. 49-61; 1989. Includes references.

Language: English

Descriptors: Mice; Stress; Animal housing; Groups

481 NAL Call. No.: 410.9 P94

A social tethering system for nonhuman primates used in laboratory research. Coelho, A.M. Jr; Carey, K.D. Cordova, Tenn. : American Association for Laboratory Animal Science; 1990 Jul. Laboratory animal science v. 40 (4): p. 388-394; 1990 Jul. Includes references.

Language: English

Descriptors: Primates; Tethered housing; Catheters; Cages; Social behavior; Monitoring; Sampling; Physiological functions; Animal welfare

Abstract: A housing and tether system was designed to permit sampling of body fluids, chronic monitoring of physiologic parameters (e.g. blood pressure, heart rate), performance of species typical behavioral interactions (aggression, affiliation, reproduction, etc), physical exercise (work on a motorized treadmill), assessment of water and diet consumption, as well as feces and urine collection. The system provided primates with the opportunity to engage in species typical social behavior and thereby minimized conditions which have been identified as contributing to the development of abnormal behaviors associated with individual housing. The system consisted of two parts: (a) a specialized cage system for housing small social groups of primates and (b) a tether and indwelling catheter system. Each modular system permitted

four adult baboons (*Papio cynocephalus anubis*) to be tethered and housed in a social group. Each cage was 2.44 X 2.44 X 1.22 m (L X W X H) and could be subdivided by means of woven wire wall partitions. The tether system consisted of a backpack, a cloth jacket, a stainless-steel flexible cable containing electrical cables and catheters, and a saline infusion pump mounted on top of the cage. The system provides laboratory primates with the ability to socially interact with other nonhuman primates. The social cage tether system represents an example of a housing environment which could conform to both the letter and spirit of the new animal welfare legislation and still remain compatible with the objective of obtaining scientific data.

482 NAL Call. No.: QL737.C22C36
Socialization and management of purpose-bred dogs.
Carroll, T.; Valerio, D.A.; Pucak, G.
Bethesda, MD : Scientists Center for Animal Welfare; 1990 Jan.
Canine research environment / edited by Joy A. Mench and Lee Krulisch. p. 33-37; 1990 Jan. Paper presented at a conference held by the Scientists Center for Animal Welfare, June 22, 1989, Bethesda, Md. Question and answer session p. 37.
Includes references.

Language: English

Descriptors: Dogs; Animal husbandry; Animal housing; Animal breeding; Animal welfare; Socialization

483 NAL Call. No.: QL737.P9H78
Solution to psychological enhancement of the environment for the nonhuman primate.
Blackmore, W.M.
Park Ridge, N.J. : Noyes Publications; 1989.
Housing, care and psychological well-being of captive and laboratory primates / edited by Evalyn F. Segal. p. 235-243. ill; 1989.

Language: English

Descriptors: Primates; Environment; Facilities; Cages; Exercise; Animal welfare; Psychological factors

484 NAL Call. No.: 41.8 AM3A
Some effects of limited exercise on purpose-bred Beagles.
Campbell, S.A.; Hughes, H.C.; Griffin, H.E.; Landi, M.S.; Mallon, F.M. Schaumburg, Ill. : American Veterinary Medical Association; 1988 Aug. American journal of veterinary research v. 49 (8): p. 1298-1301; 1988 Aug. Includes references.

Language: English

Descriptors: U.S.A.; Dogs; Exercise; Stress; Lymphocyte transformation; Cortisol; Animal welfare

Abstract: Amendments to the Animal Welfare Act (PL 99-198) require that an exercise program for dogs be established by the attending veterinarian. A 6-week study was conducted to determine the effects of a moderate exercise program in purpose-bred Beagles. Sixteen male Beagles (4/group) were maintained as follows: (1) standard cage without exercise; (2) standard cage with individual exercise periods (35 minutes, 3

times/week); (3) large cage without exercise; and (4) standard cage with group-release exercise periods. Blood samples were collected for CBC, serum biochemical analysis including determination of serum cortisol concentration, and immune function (lymphocyte transformation assay). Group-released dogs interacted with each other during most of the exercise time. Fighting in these dogs occurred only during the third week. Dogs had little inclination to exercise when released along into the exercise area. Regardless of the size of the cage, dogs did not exercise unless human beings were present in the room. There were no significant differences in laboratory findings among dogs in the 4 groups. This moderate exercise program had no demonstrable effects. Similarly, continuous cage housing, without a formal exercise program, could not be determined to be detrimental to the physiologic or health status of dogs.

485 NAL Call. No.: QL55.I5
Some factors which affect the ability of rats to cope with food deprivation. Naylor, V.H.; Davies, K.
Sussex : The Institute of Animal Technology; 1987 Apr.
Animal technology : journal of the Institute of Animal Technology v. 38 (1): p. 35-44. ill; 1987 Apr. Includes references.

Language: English

Descriptors: Rats; Animal experiments; Deprivation; Animal housing; Male animals; Rat feeding

486 NAL Call. No.: RB125.C68 1985
Specialized management of a miniature swine herd for the EPRI electric field study.
Beamer, J.L.; Horstman, V.G.
New York : Plenum Press; 1986.
Swine in biomedical research / edited by M.E. Tumbleson. p. 217-221. ill; 1986. Proceedings of a conference on Swine in Biomedical Research, June 17-20, 1985, Columbia, Missouri. Includes references.

Language: English

Descriptors: Washington; Pigs; Small animal rearing; Electric field; Pig housing; Herds; Facilities

487 NAL Call. No.: 410.9 P94
Spontaneous and experimental infections in scid and scid/beige mice. Percy, D.H.; Barta, J.R.
Cordova, Tenn. : American Association for Laboratory Animal Science; 1993 Apr. Laboratory animal science v. 43 (2): p. 127-132; 1993 Apr. Paper presented at a conference entitled "The Scid Mouse in Biomedical and Agricultural Research," August 5-7, 1992, Guelph, Canada. Includes references.

Language: English

Descriptors: Mice; Mutants; Infections

Abstract: Severe combined immunodeficient (scid) mice are valuable animals to study a variety of logic and disease processes. Their capacity to support multiple tissue xenografts permits these mice to be used as intermediate

models for host-specific, fastidious organisms for which a small animal model has not been available previously. However, because they are unable to mount a normal immune response, they are very susceptible to a variety of primary and opportunistic microbial pathogens. Fatal, naturally occurring infections with bacteria such as *Proteus mirabilis*, *Streptococcus viridans*, and *Escherichia coli* have been observed. In addition, based on observations after experimental or naturally occurring viral infections, scid and scid/beige mice have been shown to be very susceptible to infections with viruses such as mouse hepatitis virus, Sendai virus, and murine respiratory virus, with resulting mortality. Of the parasitic infections, *Pneumocystis carinii* is a relatively common contaminant of the respiratory tracts of scid mice and may complicate research projects, particularly experimental respiratory tract infections. In view of the enhanced susceptibility of these mice to infections of this type, it is essential that they be housed under optimal conditions, which include implementing stringent management practices and a functional barrier system.

488 NAL Call. No.: QL55.A1L3
Spontaneous inclusion body hepatitis in young tamarins. I. Morphological study.
Stiglmaier-Herb, M.T.; Scheid, R.; Hanichen, T.
London : Royal Society of Medicine Services; 1992 Apr.
Laboratory animals v. 26 (2): p. 80-87; 1992 Apr. Includes references.

Language: English

Descriptors: Laboratory mammals; Viral hepatitis; Nuclear inclusions; Liver cells; Endoplasmic reticulum; Histopathology

Abstract: Over a period of 4 years approximately 60% of the new born and juvenile animals in a breeding colony of tamarins (*Saguinus fuscicollis*) died a sudden death. Histological examination at necropsy revealed interstitial hepatitis in 22 of the 30 young animals of the present study. The hepatocytes contained intranuclear inclusion bodies in 12 of the 22 cases. Upon ultrastructural examination, tubulovesicular structures and amorphous material were found in the nuclei. The endoplasmic reticulum had proliferated and was closely associated with undulating curved membranes. These morphological alterations resemble those reported in chimpanzees experimentally infected with NANB hepatitis viruses.

489 NAL Call. No.: 410.9 P94
Sprague Dawley rat mutant with tremor, ataxia, tonic immobility episodes, epilepsy and paralysis.
Holmgren, B.; Urba-Holmgren, R.; Riboni, L.; Vega-Saenz de Miera, E.C. Cordova, Tenn. : American Association for Laboratory Animal Science; 1989 May. Laboratory animal science v. 39 (3): p. 226-228; 1989 May. Includes references.

Language: English

Descriptors: Rats; Mutations; Mutants; Paralysis; Epilepsy; Tremor; Ataxia

Abstract: A spontaneous neurological mutation was detected in a colony of Sprague Dawley rats. The animals developed a

progressive neurological syndrome characterized by tremor (which appeared at the age of 1 month), ataxia (at 4 months), immobility episodes (after 5-6 months), audiogenic seizures and hindlimb paralysis (after 10 months). Cross breeding experiments indicate that this is an autosomal recessive mutation, which we have named taiep subline.

490 NAL Call. No.: 410.9 P94
Streptobacillus moniliformis epizootic in barrier-maintained C57BL/6J mice and susceptibility to infection of different strains of mice. Wullenweber, M.; Kaspareit-Rittinghausen, J.; Farouq, M.
Cordova, Tenn. : American Association for Laboratory Animal Science; 1990 Nov. Laboratory animal science v. 40 (6): p. 608-612; 1990 Nov. Includes references.

Language: English

Descriptors: Mice; Streptobacillus; Strain differences; Susceptibility; Outbreaks; Genetic resistance

Abstract: We report a Streptobacillus moniliformis epizootic in barrier-maintained SPF mice. Although various inbred and F1 hybrid strains of mice have been kept in this animal facility, only Han:C57BL/6J mice showed clinical signs of disease. During the course of the epizootic, 825 breeding animals (approximately 36% of the breeders) died or had to be killed because of severe clinical signs. Although sequential treatment with ampicillin and chlortetracycline gave good therapeutic results, the animal facility was vacated in order to exclude any risk of cross-contamination of the other rodent colonies in our institute. The source and route of transmission of S moniliformis could not be elucidated. To investigate strain dependent differences experimental infection of different strains of mice with our S moniliformis isolate was performed. After oral infection only C57BL/6J showed the typical signs of a cervical lymphadenitis and gave an immunological response. BALB/cJ, C3H/He, DBA/2J, CB6F1 and B6D2F1 mice were not affected except in two cases of DBA/2J and B6D2F1 mice where seroconversion was observed. After intravenous infection of C57BL/6J, DBA/2J and BALB/cJ all animals showed positive titers in the indirect immunofluorescence test (IIF). One hundred percent of the C57BL/6J, forty percent of the DBA/2J, and none of the BALB/cJ mice developed severe symptoms. The results demonstrate that the susceptibility to streptobacillosis is predominantly influenced by genetic factors.

491 NAL Call. No.: HV4701.A45
The stress of captivity.
Pereira, M.E.
Westport, Conn. : Animal Rights Network; 1987 Jul.
The Animals' agenda v. 7 (6): p. 46-47. ill; 1987 Jul.

Language: English

Descriptors: Primates; Social interaction; Stress; Cages; Animal behavior; Animal housing; Medical research

492 NAL Call. No.: QL55.A1L3
Studies on beige-nude mice with low natural killer cell activity. 1. Introduction of the bg gene into nude mice and

the characteristics of beige-nude mice.

Hioki, K.; Maruo, K.; Suzuki, S.; Kato, H.; Shimamura, K.; Saito, M.; Nomura, T.

Essex : Laboratory Animal Science Association; 1987 Jan.

Laboratory animals v. 21 (1): p. 72-77. ill; 1987 Jan.

Includes references.

Language: English

Descriptors: Mice; Strains; Mutants; Genes; Genotypes; Animal breeding; Cell physiology

Abstract: To improve the take-rate of human tumours in nude mice, a nude mouse strain with the bg gene was established. The introduction of the bg gene was confirmed by examination of giant granules of blood neutrophils. The genetic profile of beige-nude mice was the same as that of the C57BL/6 strain according to genetic screening. The natural killer cell activity in the beige-nude mice was much lower than that in ordinary nude mice but slightly higher than that in beige mice. The reproductivity of beige-nude mice was as high as that of ordinary nude mice.

493

NAL Call. No.: 290.9 AM32P

A study of existing lighting systems and the potential for energy conservation in Wisconsin dairy facilities (preliminary results).

Severance C.W.; Herrman, A.D.; Bowe, D.A.

St. Joseph, Mich. : The Society; 1989.

Paper - American Society of Agricultural Engineers (89-3021):

p. 13-49; 1989. Paper presented at the International Summer

Meeting of the American Society of Agricultural Engineers and

the Canadian Society of Agricultural Engineering, June 25-28,

1989, Quebec, PQ, Canada. Includes references.

Language: English

Descriptors: Wisconsin; Dairy farms; Lighting; Electricity; Energy conservation

494

NAL Call. No.: QL55.L274

The supply of laboratory animals.

Donnelly, H.

Chichester [England] : Wiley; 1987.

Laboratory animals : an introduction for new experimenters /

edited by A.A. Tuffery. p. 63-78; 1987. Includes references.

Language: English

Descriptors: United Kingdom; U.S.A.; Laboratory animals; Reproduction; Animal breeding; Animal breeding methods; Legislation; Supply; Costs

495

NAL Call. No.: 410.9 P94

A survey of Pneumocystis carinii infection in research mouse colonies in Japan.

Serikawa, T.; Kitada, K.; Muraguchi, T.; Yamada, J.

Cordova, Tenn. : American Association for Laboratory Animal

Science; 1991 Oct. Laboratory animal science v. 41 (5): p.

411-414; 1991 Oct. Includes references.

Language: English

Descriptors: Japan; Mice; *Pneumocystis carinii*; Disease prevalence; Disease surveys; Laboratories; Germfree animals

Abstract: To determine the frequency of *Pneumocystis carinii* infection in mouse colonies maintained for biomedical research in medical colleges or medical faculties in universities in Japan, 409 nu/nu mice were sent to 43 animal facilities from a *P. carinii*-free colony. The animals were housed for 6 months in groups of 3 to 10 animals per room, and examined for the presence of parasites and infection. Colonies in 10 (24.4%) of 41 facilities were positive for the infection. Of 383 animals in 69 rooms, the organism was detected in 66 (17.2%) animals in 13 (18.8%) rooms. The difference in the proportion of rooms where mice were positive for *P. carinii* is clearly seen among these three groups; SPF mouse rooms (4 of 38 rooms, 10.5%), SPF mouse rooms with breeding units (5 of 25 rooms, 20.0%) and conventional mouse rooms (4 of 6 rooms, 66.7%). The survey indicates that strict housing arrangements and husbandry techniques are necessary to keep SPF mice free from *P. carinii* infection.

496 NAL Call. No.: 410.9 P94
A survey of staphylococci isolated from the laboratory gerbil. Solomon, H.F.; Dixon, D.M.; Pouch, W. Cordova, Tenn. : American Association for Laboratory Animal Science; 1990 May. *Laboratory animal science* v. 40 (3): p. 316-318; 1990 May. Includes references.

Language: English

Descriptors: Gerbils; *Staphylococcus*; Dermatitis; Nose; Opportunistic infections

Abstract: A microbiological survey of the Mongolian gerbil, *Meriones unguiculatus*, revealed coagulase-negative staphylococci to be common inhabitants of representative animals derived from three different breeding colonies. The nasal area was most often culture positive, and *Staphylococcus xylosus* was a predominant species. *S. xylosus* was the only organism cultured from nasal dermatitis. These organisms were found to be susceptible in vitro to the majority of the antimicrobial agents tested. This survey indicates that the possible role of *S. xylosus* as an opportunistic pathogen warrants further investigation.

497 NAL Call. No.: QL55.A1I43
Swine in biomedical research management and models. Swindle, M.M.; Smith, A.C.; Laber-Laird, K.; Dungan, L. Washington, Institute of Laboratory Animal Resources, National Research Council; 1993. *ILAR news* v. 36 (1): p. 1-5; 1993. Includes references.

Language: English

Descriptors: Pigs; Animal experiments; Medical research; Animal husbandry; Animal models

498 NAL Call. No.: 41.8 C81
Swine models for cardiovascular research: a low stress transport and restraint system for large swine. Lighty, G.W. Jr; Spear, R.S.; Karatay, M.C.; Hare, C.L.;

Carlson, R.J. Ithaca, N.Y. : Cornell Veterinarian, Inc; 1992 Apr.

Cornell veterinarian v. 82 (2): p. 131-140; 1992 Apr.
Includes references.

Language: English

Descriptors: Pigs; Disease models; Cages; Restraint of animals; Transport of animals; Stress; Safety; Blood specimen collection; Echocardiography

499 NAL Call. No.: 60.18 J82

Technical note: automatic sorting of free-ranging cattle.

Anderson, D.M.; Rouda, R.R.; Murray, L.W.; Pieper, R.D.

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

Journal of range management v. 45 (3): p. 312-314; 1992 May.

Includes references.

Language: English

Descriptors: Cattle; Free range husbandry; Sorting; Automation; Cattle feeding; Weight determination; Liveweight; Supplementary feeding; Cottonseed protein; Drinking behavior

Abstract: An automated system to weigh and sort free-ranging cattle was adapted to administer cottonseed pellets (41% crude protein) to free-ranging cattle. The frequency with which animals drank water determined the interval between supplemental feedings. The automatic spacing of individual animals was the weakest link in the chain of events leading to the sorting of cattle into groups to administer treatments. Periodically during the study, free-standing water was available due to above-average precipitation. This resulted in an inconsistent supplementation schedule because animals did not have to return through the maze to drink water. Single herd management eliminated potential pasture-treatment confounding but accentuated individual animal behavior, which resulted in a range of supplement intakes and drinking water patterns.

500 NAL Call. No.: QL55.A1L3

Technique for long-term infusion into the inferior mesenteric artery of unrestrained rats.

Aguiar, J.L.A.; Garzon, F.T.; Schneider, S.; Berger, M.R.;

Schlag, P.; Schmahl, D.

London : Royal Society of Medicine Services; 1988 Apr.

Laboratory animals v. 22 (2): p. 173-176. ill; 1988 Apr.

Includes references.

Language: English

Descriptors: Rats; Colon; Rectum; Neoplasms; Drug therapy; Arteries; Injection; Cannulation

Abstract: A technique for long-term infusion into the inferior mesenteric artery was developed which allows simple and reliable regional infusion into the colorectal segment of unrestrained rats. The cannulation system consists of an injection port 'In Stoppers' as a flow swivel, connected to an injection needle, which is inserted into a polyethylene tube protected by a steel spiral. During infusion the animals are free to move in the cage with access to food and water ad libitum. The method is suitable for regional chemotherapy as

well as for studies of colorectal tumours in rats. In this study 73% of the cannulae remained functional for continuous infusion over a 15 day period.

501 NAL Call. No.: QL55.A1L3
A technique for rearing germfree piglets obtained without surgery. Ratcliffe, B.; Fordham, J.P.
Essex : Laboratory Animal Science Association; 1987 Jan.
Laboratory animals v. 21 (1): p. 53-59. ill; 1987 Jan.
Includes references.

Language: English

Descriptors: Piglets; Germ free husbandry; Laboratory rearing; Cages; Isolation technique; Equipment

Abstract: A relatively simple procedure is described for obtaining germfree piglets which does not involve hysterectomy or hysterotomy. Newborn pigs were delivered into an isolator and their freedom from microbial contamination was ensured by applying bactericidal solutions externally and a combination of antibiotics in solution per os. 40 piglets so derived have been maintained free from detectable micro-organisms, some for up to 140 days. Equipment is described which allowed the long-term holding of these animals so that nutritional balance studies could be completed.

502 NAL Call. No.: QL55.L342
Territory formation by mice under laboratory conditions: welfare considerations.
Bishop, M.J.; Chevins, P.F.D.
Potters Bar : Universities Federation for Animal Welfare; 1989. Laboratory animal welfare research : rodents : proc of a symposium organized by Universities Federation for Animal Welfare, held at the Royal Holloway and Bedford New College, Univ of London, Egham, Surrey, 22nd April 1988. p. 25-48; 1989. Includes references.

Language: English

Descriptors: Mice; Animal welfare; Territoriality; Male animals; Stress; Corticosterone; Blood plasma; Urea; Testes; Testosterone; Animal housing

503 NAL Call. No.: 410.9 P94
Tetanus in baboons of a corral breeding colony.
Goodwin, W.J.; Haines, R.J.; Bernal, J.C.
Cordova, Tenn. : American Association for Laboratory Animal Science; 1987 Apr. Laboratory animal science v. 37 (2): p. 231-232. ill; 1987 Apr. Includes references.

Language: English

Descriptors: Baboons; Tetanus; Clostridium tetani; Treatment

504 NAL Call. No.: 410 Z35
The timing of mating by postpartum estrous rats.
Hedricks, C.; McClintock, M.K.
Berlin, W. Ger. : Paul Parey; 1985 Jan.
Zeitschrift fur Tierpsychologie v. 67 (114): p. 1-16; 1985 Jan. Includes references.

Language: English

Descriptors: Rats; Mating behavior; Pups; Maternal behavior; Breeding season; Estrus; Nesting

505 NAL Call. No.: QL55.A1L3
Towards the computerized animal house: the Newcastle University Animal House Management System.
Wootton, R.; Flecknell, P.A.
London : Laboratory Animal Science Association; 1986 Apr.
Laboratory animals v. 20 (2): p. 165-172; 1986 Apr. Includes references.

Language: English

Descriptors: United Kingdom; Animal housing; Computer software; Management units; Animal husbandry; Accounting

506 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

507 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.
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.

508

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).

509 NAL Call. No.: aZ5071.N3
Training material for animal facility personnel, January 1989-January 1994. Allen, T.
Beltsville, Md., National Agricultural Library; 1994 Mar.
Quick bibliography series - National Agricultural Library (94-17): 60 p.; 1994 Mar. Updates QB 91-107.07.

Language: English

Descriptors: Animals; Laboratories; Research; Careproviders; Workers; Training; Teaching materials; Bibliographies

510 NAL Call. No.: aZ5071.N3
Training materials for animal facility personnel, January 1979-August 1989. Clingerman, K.
Beltsville, Md. : The Library; 1989 Dec.
Quick bibliography series - U.S. Department of Agriculture, National Agricultural Library (U.S.). (90-08): 18 p.; 1989 Dec. Bibliography.

Language: English

Descriptors: Animal housing; Laboratory animals; Animals; Careproviders; Teaching materials; Bibliographies

511 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

512 NAL Call. No.: QL55.A1L33
Transgenic mouse colony management.
Geistfeld, J.G.
New York, N.Y. : Nature Publishing Company; 1991 Jan.
Lab animal v. 20 (1): p. 21-25, 28-29; 1991 Jan. Includes
references.

Language: English

Descriptors: Mice; Transgenics; Breeding methods

513 NAL Call. No.: QL55.A1L3
Transmission experiments of cilia-associated respiratory
bacillus in mice, rabbits and guineapigs.
Matsushita, S.; Joshima, H.; Matsumoto, T.; Fukutsu, K.
London : Royal Society of Medicine Services; 1989 Apr.
Laboratory animals v. 23 (2): p. 96-102. ill; 1989 Apr.
Includes references.

Language: English

Descriptors: Mice; Rabbits; Guinea pigs; Respiratory diseases;
Disease transmission; Bacillus

Abstract: Transmission experiments of cilia-associated respiratory (CAR) bacillus were performed in mice in order to clarify the principal route of the infection, and in rabbits and guineapigs in order to examine their susceptibility. Determination of the infection was evaluated serologically by the indirect immunofluorescence assay (IFA) technique and histologically by the presence of CAR bacillus in the airways. BALB/c mice were intranasally inoculated with the SMR strain of CAR bacillus. The IFA antibody to the bacteria in these mice rose to more than 1:160 at 4 weeks postinoculation (PI) and the mice utilized as transmitters for the following experiments. One out of 15 uninfected mice kept in intracage contact with infected mice became infected from 4 weeks after contact. Incidence of contact infection increased thereafter. On the other hand, there was no evidence of infection in the uninfected mice housed in the separate cages from the cage in which infected mice were housed throughout the 12-week observation period. The primary method of CAR bacillus transmission seems to be direct contact with infected mice or fomites contaminated by infected mice; airborne transmission appears to be of little importance. Rabbits and guineapigs were also intranasally inoculated with the SMR strain of CAR bacillus. IFA antibodies were positively detected by 4 weeks PI, but no CAR bacillus nor histological changes relating to the infection were observed in the airways of either species. It is suggested that rat origin CAR bacillus can transmit to rabbits and guineapigs, and that the infection can spread to other species of rodents and rabbits.

514 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.

515 NAL Call. No.: 472 N42
Trapped in a guilt cage: How do scientist and technicians avoid getting close to the animals they work with?.
Arluke, A.
London, Eng. : New Science Publications; 1992 Apr04.
New scientist v. 134 (1815): p. 33-35; 1992 Apr04.

Language: English

Descriptors: U.S.A.; Animal experiments; Animal welfare;
Public opinion

516 NAL Call. No.: 410.9 P94
A typical moist dermatitis in rabbits.
Garibaldi, B.A.; Fox, J.G.; Musto, D.R.T.
Cordova, Tenn. : American Association for Laboratory Animal
Science; 1990 Nov. Laboratory animal science v. 40 (6): p.
652-653; 1990 Nov. Includes references.

Language: English

Descriptors: Rabbits; Dermatitis; Cages; Moisture; *Pseudomonas aeruginosa*; *Staphylococcus aureus*; Case reports

517 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 & management of cephalopods in the laboratory Boyle, P. R.
Universities Federation for Animal Welfare
Potters Bar, Herts. [England] : Universities Federation for Animal Welfare,; 1991.
63 p. : ill. ; 25 cm. Includes bibliographical references (p. 53-58).

Language: English

Descriptors: Marine invertebrates as laboratory animals;
Cephalopoda

518 NAL Call. No.: QL55.U5 1987
The UFAW handbook on the care and management of laboratory animals., 6th ed.. Poole, Trevor B.; Robinson, Ruth,
Universities Federation for Animal Welfare
London : Longman ; New York : Churchill Livingstone,; 1987. x,
933 p. : ill. ; 25 cm. Includes index. Bibliography: p. 848-918.

Language: English

Descriptors: Laboratory animals

519 NAL Call. No.: 410.9 P94
Ultrasonic determination of fetal parameters in baboons (*Papio anubis*). Herring, J.M.; Fortman, J.D.; Anderson, R.J.;
Bennett, B.T. Cordova, Tenn. : American Association for Laboratory Animal Science; 1991 Dec. Laboratory animal science v. 41 (6): p. 602-605; 1991 Dec. Includes references.

Language: English

Descriptors: *Papio anubis*; Fetal development; Age determination; Normal values; Age; Measurement; Dimensions; Ultrasound

Abstract: The use of nonhuman primates to study reproductive physiology, fetal development, and neonatal management often depends on the availability of pregnant and fetal animals of known gestational history. The purpose of this study was to establish and correlate normal fetal growth parameters with gestational age in olive baboons (*Papio anubis*). Normal cycling females were bred to proven males by using the degree of perineal swelling and vaginal cytology to determine onset of ovulation. The subjects were evaluated to determine pregnancy beginning 18 days postmating, using an Aloka-650 diagnostic ultrasound unit, equipped with a 7.5 mhz prostate probe and a 5 mhz transabdominal probe. Ten pregnant animals were then evaluated sonographically every 3 days through day 30 and weekly through day 135 (average gestation 184 days). Measurements included gestational sac, greatest-length, biparietal diameter, femur length, head circumference, and abdominal circumference. Using the means and standard deviations, growth curves were constructed, and the data used to develop predicted value charts for gestational age estimation. Using the predicted value charts established in our study, subsequent evaluation of pregnant baboons in our

colony disclosed concordance with actual gestational age.

520 NAL Call. No.: 410.9 P94
Unidirectional distribution of mosaicism in chimeric rats.
Yamashita, T.; Kasai, N.; Miyoshi, I.; Namioka, S.
Cordova, Tenn. : American Association for Laboratory Animal
Science; 1992 Jun. Laboratory animal science v. 42 (3): p.
270-274; 1992 Jun. Includes references.

Language: English

Descriptors: Rats; Chimeras; Mosaicism; Inbred strains; Coat;
Color; Erythrocytes; Cholinesterase; Isoenzymes; Major
histocompatibility complex

Abstract: Experimental rat chimeras were produced by aggregation of eight-cell embryos from two inbred strains, ACI/Hkm and WKAH/Hkm, which differ from each other in their major histocompatibility, complexes and coat colors, and their mosaicism was analyzed. The existence of the isozyme Es-1, a serum cholinesterase specifically produced by WKAH-derived cells, and the agouti coat color due to ACI cells, indicated that all of the rats analyzed were unequivocal chimeras. The proportion of ACI cells in the red blood cell populations of the chimeras varied from 45% to 98% as determined with a fluorescence-activated cell sorter and a monoclonal antibody against class I (RT1) antigen. Digital analysis of the coat color revealed that the proportion of the ACI type of coat color ranged from 72% to 98% in these chimeric rats. Each phenotype expressed in the coat color was complex and varied in size. The ratios of red blood cells and the coat color inclined toward the ACI type of cell population. Conversely, the rate of the WKAH-cell-type population was less than 50%. A breeding test disclosed chimerism of germ cells in two chimeric rats, and there were more pups with agouti coats than with albino coats. Taken together, it was shown in most of the phenotypes analyzed that the ACT type of cells was predominant in all of the chimeric rats. We discuss the possible causes for this unbalanced distribution in the rats.

521 NAL Call. No.: QL55.A1L33
A unique housing system for rhesus macaques.
Kaplan, M.L.; Lobao, B.J.
New York, N.Y. : Nature Publishing Company; 1991 Jun.
Lab animal v. 20 (6): p. 48-50; 1991 Jun. Includes
references.

Language: English

Descriptors: Macaca mulatta; Cages

522 NAL Call. No.: 410.9 P94
Urologic syndrome associated with wire caging in AKR mice.
Everitt, J.I.; Ross, P.W.; Davis, T.W.
Cordova, Tenn. : American Association for Laboratory Animal
Science; 1988 Oct. Laboratory animal science v. 38 (5): p.
609-611; 1988 Oct. Includes references.

Language: English

Descriptors: Mice; Strains; Cages; Animal housing; Wire;
Toxicology; Urinary tract diseases

523

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.

524

NAL Call. No.: QL55.I55 1983

The use of computer controlled drinking systems in pharmacological research. Petrie, B.F.; Gabert, H.F.; Toms, M.P.; Tressel, W.R.; Alexander, B.K.; Beyerstein, B.L. Stuttgart, [W. Ger.] : G. Fisher Verlag; 1985.

The Contribution of laboratory animal science to the welfare of man and animals--past, present and future : 8th Symposium of ICLAS/CALAS, Vancouver, 1983 / editors: J. Archibald, J. Pitchfield, H.C. Rowsell. p. 105-110. ill; 1985.

Language: English

Descriptors: Laboratory animals; Animal housing; Water troughs; Computer applications; Pharmacology

525

NAL Call. No.: 410.9 P94

The use of dirty bedding for detection of marine pathogens in sentinel mice. Thigpen, J.E.; Lebetkin, E.H.; Dawes, M.L.; Amyx, H.L.; Caviness, G.F.; Sawyer, B.A.; Blackmore, D.E. Cordova, Tenn. : American Association for Laboratory Animal Science; 1989 Jul. Laboratory animal science v. 39 (4): p. 324-327; 1989 Jul. Includes references.

Language: English

Descriptors: Mice; Cages; Litter; Viral hepatitis; Antibody titer; Myobia musculi; Environment; Laboratory tests

Abstract: Sentinel Swiss (CD-1) mice, housed without filter bonnets, were seronegative for mouse hepatitis virus (MHV) for 8 consecutive months in an experimental colony of CD-1 mice. MHV titers had been detected sporadically in sentinel mice housed in this colony during a 2 year period. In an effort to determine whether MHV was still present in the colony, two methods of exposing sentinel mice to an animal room environment were compared under routine husbandry practices. Eight cages (12 mice per cage; 2 cages per rack) of experimental virus antibody free sentinel mice, housed without filter bonnets, were placed on the bottom shelf of 4 of 12 racks in the room. Twice each week, four cages of sentinel mice received a composite sample of dirty bedding (bedding used previously by mice in the room). The remaining four cages of experimental sentinels received fresh non-used bedding. Sentinel mice were bled at monthly intervals for MHV serology. After 4 months, mice from two cages which received dirty bedding seroconverted to MHV and mice from one cage were positive for Myobia musculi (mites). Three weeks later, all four cages of mice which received dirty bedding were positive for MHV and three were positive for mites. In contrast, only two of four cages of mice which received fresh bedding were positive for MHV and all were negative for mites. These findings indicate the importance of exposing sentinel mice to dirty bedding and that MHV and mites may go undetected for several months in a mouse colony when the incidence levels are low where standard sanitation procedures are used.

526 NAL Call. No.: QL55.L28
Use of laboratory animals as models for studies on genetics in domestic animals.
Beilharz, R.G.
Amsterdam : Elsevier Science Publishers; 1986.
Laboratory animals : laboratory animal models for domestic animal production / edited by E.J. Ruitenbergh and P.W.J. Peters. p. 253-264; 1986. (World animal science. C, Production-system approach ; 2.). Literature review.
Includes references.

Language: English

Descriptors: Laboratory animals; Domestic animals; Models; Quantitative genetics; Breeding programs

527 NAL Call. No.: 410.9 P94
Use of serum progesterone levels as an early, indirect evaluation of pregnancy in the timed pregnant domestic cat.
Hammer, J.G.; Howland, D.R.
Cordova, Tenn. : American Association for Laboratory Animal Science; 1991 Jan. Laboratory animal science v. 41 (1): p. 42-45; 1991 Jan. Includes references.

Language: English

Descriptors: Cats; Queens; Progesterone; Blood serum; Pregnancy diagnosis; Embryos; Age

Abstract: There has been much research studying the effect of

homotypic embryonic neural tissue transplantation in the central nervous system of rats and cats, with promising results. The benefits of transplantation are dependent upon the appropriate aged donor. Therefore, it is critical that the exact age of the embryonic tissue be known. For this reason we have developed a method of determining, indirectly, the pregnancy status and embryonic age in the domestic cat (*Felis catus*) using serum progesterone levels. Serum progesterone levels were monitored in 16 domestic cats during 26 breeding trials. Blood samples were taken prior to and 6 days after natural breeding to determine if ovulation had occurred, indirectly indicating pregnancy status. By knowing the exact date bred and if it resulted in pregnancy, an accurate embryonic age was calculated. A day 6 post-breeding serum progesterone concentration of < 5.0 ng/ml was considered a negative indication of pregnancy, > 5.0 ng/ml a positive indication of pregnancy. Pregnancy was confirmed by abdominal palpation 21 to 26 days after breeding. Serum progesterone levels taken on the sixth day after observed breeding provide an accurate, indirect evaluation of pregnancy in the timed pregnant domestic cat (81%, $p=0.003$).

528 NAL Call. No.: 410.9 P94
Use of streptomycin and isoniazid during a tuberculosis epizootic in a rhesus and cynomolgus breeding colony.
Ward, G.S.; Elwell, M.R.; Tingpalapong, M.; Pomsdhit, J. Joliet, Ill. : American Association for Laboratory Animal Science; 1985 Aug. Laboratory animal science v. 35 (4): p. 395-399. ill; 1985 Aug. Includes references.

Language: English

Descriptors: Rhesus monkeys; Tuberculosis; Streptomycin; Treatment

529 NAL Call. No.: QL55.I55 1983
The use of the flexible film isolator in the management of rat and mouse colonies.
Peters, A.G. Stuttgart, [W. Ger.] : G. Fisher Verlag; 1985.
The Contribution of laboratory animal science to the welfare of man and animals--past, present and future : 8th Symposium of ICLAS/CALAS, Vancouver, 1983 / editors: J. Archibald, J. Pitchfield, H.C. Rowsell. p. 435-438; 1985. Includes references.

Language: English

Descriptors: Rats; Mice; Isolation; Management; Animal breeding; Animal husbandry

530 NAL Call. No.: QL55.A1L3
Uterine involvement in guineapig salmonellosis.
Okewole, P.A.; Uche, E.M.I.; Oyetunde, I.L.; Odeyemi, P.S.; Dawul, P.B. London : Royal Society of Medicine Services; 1989 Jul. Laboratory animals v. 23 (3): p. 275-277; 1989 Jul. Includes references.

Language: English

Descriptors: Nigeria; Guinea pigs; Salmonella typhimurium;

Uterus; Lesions; Symptoms; Mortality; Salmonellosis; Outbreaks

Abstract: Of 334 mature breeding guineapigs, 53 (15.9%) died in a disease outbreak involving *Salmonella typhimurium* serotypes 1, 4, 5 and 12:i:1,2. The uterus was consistently involved. Nine other *Salmonella*-free mature female guineapigs when inoculated with a pure isolate from the outbreak, using the subcutaneous, intramuscular or per os route, succumbed to salmonellosis, reproducing signs and lesions observed during the outbreak. Abortion was not recorded during the outbreak despite many pregnant sows being affected. The isolate was sensitive to gentamicin, tetracycline, ampicillin and cefuroxime but resistant to co-trimoxazole, erythromycin and penicillin.

531 NAL Call. No.: QL750.A6
Varied cages result in more aggression in male CFLP mice.
McGregor, P.K.; Ayling, S.J.
Amsterdam : Elsevier Science Publishers, B.V.; 1990 May.
Applied animal behaviour science v. 26 (3): p. 277-281; 1990 May. Includes references.

Language: English

Descriptors: Mice; Aggressive behavior; Cages; Animal welfare

532 NAL Call. No.: 410.9 P94
Viral battery testing in nonhuman primate colony management.
Kalter, S.S.; Heberling, R.L.
Cordova, Tenn. : American Association for Laboratory Animal Science; 1990 Jan. Laboratory animal science v. 40 (1): p. 21-23; 1990 Jan. Includes references.

Language: English

Descriptors: Primates; Viral diseases; Viruses; Immunoassay; Disease surveys; Monitoring

Abstract: Good colony management is associated with monitoring of animals for infectious agents. Of major current concern are B virus and simian AIDS (SAIDS) viruses. However, other viral agents frequently cause serious disease outbreaks which can be avoided if their presence is detected sufficiently early. The recent development of a rapid, sensitive and specific diagnostic test system, i.e., the dot immunobinding assay (DIA) permits the monitoring of a colony for many of the viruses that pose problems. By employing battery type testing using a panel of appropriate viral antigens, investigators are able to detect the increased presence of viral agents of concern and take necessary measures to prevent extension of the problem.

533 NAL Call. No.: QL55.A1L33
The visual display board: an aid to facility management.
Weichbrod, R.H.; Cisar, C.F.; Miller, J.G.; Simmonds, R.C. New York : Media Horizons; 1986 Jan.
Lab animal v. 15 (1): p. 22-24. ill; 1986 Jan.

Language: English

Descriptors: Laboratory animals; Facilities; Management; Displays; Visual aids

534 NAL Call. No.: HV4701.U4 no.1
Welfare and housing of old world non-human primates (*Macaca fascicularis* and *Papio* sp.).
Harris, Duncan
Universities Federation for Animal Welfare
Potters Bar, Hertfordshire, England : Universities Federation for Animal Welfare, [1988?]; 1988.
64 p. : ill. ; 30 cm. (UFAW animal welfare research report ; no. 1). Cover and spine title: Welfare and housing of laboratory primates. Includes bibliographical references.

Language: English

Descriptors: Primates as laboratory animals; Animal welfare; *Papio*; *Kra*

535 NAL Call. No.: RA1190.R42
Why different regulatory decisions when the scientific information base is similar? -- Human risk assessment.
Nilsson, R.; Tasheva, M.; Jaeger, B.
Orlando, Fla. : Academic Press; 1993 Jun.
Regulatory toxicology and pharmacology v. 17 (3): p. 293-332; 1993 Jun. Includes references.

Language: English

Descriptors: Pesticides; Regulation; Decision making; Management; Usage; Risk; Assessment; International cooperation

Abstract: The main objective of this analysis has been to characterize the role of science, in a broad sense, in relation to social, economical, political, and other factors in explaining why regulatory decisions vary in different countries, although they are based on more or less identical scientific data. Eleven countries from different geographical areas and with varying cultural background have provided information in response to an extensive questionnaire aimed at identifying procedures for registration, restricting, or banning registration for certain selected pesticides. Although many of these responses lacked sufficient detail in certain aspects, together with other documentary sources they nonetheless provided insight with respect to some of the main concerns among and between nations regarding decisions in pesticide management. Among the main conclusions presented in this analysis, the following deserves particular emphasis: The underlying reasons for introducing restrictions on pesticide use on the national level will have to be more explicitly stated and openly declared by regulatory bodies of all nations. Although more pronounced in some countries, there is a strong influence of nonscientific considerations in pesticide management, that is not always based on rational considerations. In the field of hazard and risk assessment differences in scientific opinion have primarily, but not exclusively been identified regarding the evaluation of carcinogenic effects in experimental animals. In this area debated issues are the interpretation of the significance for man of certain types of tumors, methods for dose-response extrapolation, genotoxic versus nongenotoxic carcinogens, the use of MTD in long-term studies, mechanistic approaches to interpret cancer induction, and others. Another area identified to cause divergence is exposure assessment. Evaluation of pesticides on the national level for the purpose

of regulation involves a tremendous duplication of efforts that could be substantially reduced by effective cooperation on the international level.

536 NAL Call. No.: SK357.A1W5
Why do we debate animal rights?.
Schmidt, R.H.
Bethesda, Md. : The Society; 1990.
Wildlife Society bulletin v. 18 (4): p. 459-461; 1990.
Includes references.

Language: English

Descriptors: California; Animal welfare; Hunting; Regulations; Trapping; Wildlife management

537 NAL Call. No.: QL55.U5 1987
Wild rats and mice., 6th ed.
Redfern, R.; Rowe, F.P.
London : Longman; 1987.
The UFAW handbook on the care and management of laboratory animals / edited by Trevor B. Poole; editorial assistant, Ruth Robinson. p. 266-274; 1987.

Language: English

Descriptors: Laboratory animals; Murinae; Cages; Animal husbandry; Occupational hazards; Health hazards

538 NAL Call. No.: 410.9 P94
The wire-bar cage top as a barrier to breeding and genetic contamination of laboratory mice.
Bean-Knudsen, D.E.; Wagner, J.E.
Joliet, Ill. : American Association for Laboratory Animal Science; 1987 Jun. Laboratory animal science v. 37 (3): p. 350-351; 1987 Jun. Includes references.

Language: English

Descriptors: Mice; Cages; Animal breeding; Barriers; Genetics; Contamination; Mating behavior

539 NAL Call. No.: QL55.A1I43
Wistar diabetic fatty rat.
Kava, R.; Peterson, R.G.; West, D.B.; Greenwood, M.R.C.
Washington, D.C. : Institute of Laboratory Animal Resources, National Research Council; 1990.
I.L.A.R. news v. 32 (3): p. 9-13; 1990. Includes references.

Language: English

Descriptors: Rats; Animal models; Animal breeding; Diabetes mellitus

540 NAL Call. No.: QL55.A1I43
WKY fatty rat as a model of obesity and non-insulin-dependent diabetes mellitus.
Peterson, R.G.; Little, L.A.; Neel, M.A.
Washington, D.C. : Institute of Laboratory Animal Resources, National Research Council; 1990.

I.L.A.R. news v. 32 (3): p. 13-15; 1990. Includes references.

Language: English

Descriptors: Rats; Animal models; Obesity; Diabetes mellitus;
Animal breeding

541 NAL Call. No.: SF406.3.W67 1993
Workshop proceedings approaches to the design and development
of cost-effective laboratory animal facilities : a workshop
sponsored by the Canadian Council on Animal Care, Ottawa,
Ontario, June 9-11, 1993.. Approaches to the design and
development of cost-effective laboratory animal facilities
McKay, Donald G.; Neil, David H.
Canadian Council on Animal Care
Ottawa, Ont. : Canadian Council on Animal Care, [1993?]; 1993.
xvi, 274, [31] p. : ill. ; 28 cm. Includes bibliographical
references.

Language: English

Descriptors: Laboratory animals

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