



Standards for the Breeding, Care and Management of Laboratory Cats (1964)

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INTRODUCTION

GENERAL CONSIDERATIONS: The following standards are based on present-day knowledge and experience in the care and maintenance of the laboratory cat and shall apply to experimental as well as production colonies.

A. Special Situations: It is recognized that colonies of cats require unique caretaking procedures, and these may differ slightly in reference to an animal's use for short- or long-term study or for breeding.

Facilities, Equipment, and Operation: The facilities, equipment, and husbandry procedures shall be designed and operated to afford maximum environmental control, optimum comfort and well-being for the animals, and the least possible opportunity for the transmission of disease organisms and parasites between animals.

1. The physical facilities shall be designed and constructed to prevent clean material and equipment coming into contact with soiled and contaminated material and equipment, and shall afford maximum control of temperature, humidity, ventilation, and light.
2. The physical facilities shall include locker rooms, shower stalls, toilets, and a separate lunchroom (if personnel is required to consume food on the premises).
3. The equipment washing and sterilizing area, food and bedding storage, mechanical services, shop, office space, laboratories, quarantine space, treatment room, food preparation rooms, experimental laboratories, receiving and shipping room, and shipping box storage shall be so located as to minimize crossovers from clean to soiled or contaminated areas.

4. The caging equipment and feeding and watering devices used shall be designed and fabricated to afford maximum comfort for the animals, make the food and water readily available, minimize opportunity for the transmission of disease and parasites, and make sanitation and sterilization easy and efficient.
5. Auxiliary equipment such as washing machines, cage racks, refrigerators, freezers, rolling equipment (dollies, tables, carts, etc.), and fixed equipment (cabinets, sinks, shelving, etc.) shall be designed, fabricated, and used in such manner as to promote maximum sanitation and operating efficiency.
6. Operating procedures shall be consistent with these specifications and with the best available information on nutrition, genetics, and animal breeding, care and maintenance, colony management (production and research), disease control, etc.

C. Definitions: For the purpose of these standards, sanitization and sterilization are defined as follows:

Sanitization - to make physically clean and to remove and destroy agents injurious to the health of laboratory animals.

Sterilization- the act or process of killing all living organisms.

FACILITIES

I. GENERAL CONSIDERATIONS:

Cats may be housed in indoor or outdoor facilities or a combination of the two. Housing other laboratory animals in the same room or pen area with laboratory cats is not recommended.

II. INDOOR FACILITIES:

A. Construction

1. Exterior walls should be fire resistant and impervious to liquids, moisture, rodents, and vermin. The inside surface shall be smooth and hard, and without pits or cracks to allow easy cleaning. Wooden construction is not recommended.
2. Interior walls (interior bearing walls and partitions) shall be of masonry, metal, masonite, dry wall, cement plaster, or comparable material. They should not be of wood, and the finished surfaces should comply with the specifications noted above for the inside surfaces of the exterior bearing walls. Wooden studding is acceptable for interior walls and partitions if covered with plaster, metal or other impervious material. Interior doors and window frames, window sashes, and doors may be constructed of wood, provided they are rendered impervious to moisture and are rodent and vermin proof.
3. Roofs may be constructed of any materials commonly used for this purpose by the building trades. Roof coverings fastened to sheathing or directly to the roof joists shall be so laid as to preclude the entrance of rodents and vermin. This is best accomplished with a solid concrete roof. Access to roofing frame areas, crawl spaces, etc., should be screened to exclude

any cats that may be loose in the building.

4. Ceilings shall be constructed of materials similar to those suggested for walls and partitions, and shall be subject to identical finishing conditions. They shall meet the walls and partitions in a close fit without crevices. Crevices which may develop due to settlement or vibration shall be filled with caulking compound or equivalent material and painted. Access panels in ceilings shall completely fill the opening when in a closed position in order to render them completely vermin and rodent proof.

5. New floors shall be constructed of dense mix concrete or equivalent to provide a smooth surface, to render them impervious to moisture, to prevent dusting, and for easy cleaning. A waterproof membrane over the finished coat of cement, concrete or equivalent material is recommended. If a membrane is used, it should extend for a distance of 6 inches up the sides of the walls and partitions. All bases should be provided with a cove and rounded corners for easy cleaning.

Existing floors constructed of wood shall be rendered impervious to liquid, and no cracks shall exist where floors meet walls and partitions.

If metal is used, it shall be corrosion resistant and fastened to the wood in a manner which will not allow it to buckle or warp. It shall present a smooth, unbroken, water-tight surface, and all joints, including those at the walls, shall be closed.

If the floor is to be washed by hosing or spraying, there should be a floor drain, and the floor shall slope to the floor drain.

If floor drains are present but are not used, they shall be closed with a gas-tight seal.

If linoleum or tile is used, it shall be firmly fixed to the floor with a suitable moisture-resistant adhesive. The upper finished surface shall be smooth and unbroken and all joints completely filled.

6. All room entrances shall be provided with doors that will be effective barriers between rooms and corridors. External doors shall have an adequate door latch and lock, and shall be vermin and rodent proof when closed. If these doors are left open during warm weather, adequate screening is essential. Door frames shall be sealed to the walls and partitions with caulking compound or similar material. When rooms are cleaned by hosing, a raised threshold is recommended to prevent liquid flowing between room and hall. A window or viewing port should be installed in each room to limit ingress to the room. Double doors (a vestibule) shall be used on all animal rooms where animals are allowed at large within the room or corridors having access to these animal rooms.
7. Outside windows, though not necessary, may be desirable in some cases. They should fill the same basic requirements listed above under # 6.

8. Lights shall be of types and in locations that simplify cleaning. Lighting fixtures, switches, convenience outlets, etc., shall be designed and constructed so they will not afford shelter for rodents and vermin. Waterproof electrical outlets should be available in each animal room.

B. Air Conditioning:

1. Ventilation is an extremely important environmental factor in the production, maintenance, and use of laboratory cats. Due consideration should be given to the relationship between animal population density and effective ventilation.
 - a. If duct work is installed below the ceiling, the upper surface shall be sealed to the ceiling or suspended at least six inches below the ceiling to facilitate cleaning.
 - b. The diffusers and exhaust openings shall be located and controlled so as to avoid drafts.
 - c. Outside openings and exhaust ventilation grillwork shall be screened to prevent the entrance of rodents and vermin. Screening should be cleaned at regular intervals.
 - d. The supply of air shall be such as to provide a minimum of six air changes per hour. Ten to twenty changes are recommended.
 - e. The air pressure within clean spaces and animal rooms shall be greater than that in public and refuse areas. In areas containing pathogenic organisms, a separate pressure system is necessary.

- f. It is recommended that the heating and ventilating mechanisms be equipped with a suitable alarm system to give warning in the event the existing temperature moves outside the desired limit or in the event of a power failure.
 - g. Supplemental exhaust fans, if used, shall be permanently mounted in external windows or wall openings which are screened. Their frames shall be sealed to the building structure.
 - h. Emergency power sources should be available in the event of power failure.
 - i. Central heating, if used, should be compatible with the requirements stated above.
2. Temperature, ventilation, and air filtration control are required for all indoor animal quarters. Recirculation of air is not recommended, but may be used if filtration equipment used will provide air as clean as that normally drawn through filters from the outside.
 3. Animal room temperatures should be maintained within a range of 65°F. and 80° F. Supplemental heat will be necessary for sick and young animals.
 4. Relative humidity levels should be maintained between 40% and 70% in colony rooms (cage rooms).
 5. Each room should be provided with temperature controls. High and low temperature alarms are valuable for animal protection ,

and graphic recorders are useful for tabulation of system performance.

C. Caging and Equipment:

1. Cages

- a. Cages shall be fabricated of a smooth, corrosion-resistant material, shall be impervious to liquids and moisture, and easily sanitized and sterilized. Acceptable materials include plastics, stainless steel or other stainless alloys, fiber glass, and aluminum. Wood is not desirable. Plastic cages with cracks or holes are not acceptable for further use. Galvanized metal is acceptable, but not recommended.
- b. All cages should be equipped with a suitable hinged door which shall cover the opening (doorway) in such a manner to prevent escape of cats. This door should be equipped with a satisfactory latch which will keep the door securely closed.
- c. A minimum of six inches between the bottom layer of cages and the floor will be required in cages on racks, stands or shelving, in order to allow adequate ventilation. Such cages should be situated so that no drainage between or into other cages is possible.
- d. The minimum cage area for a queen and her litter shall be ten cubic feet. Large litters maintained for periods longer than eight weeks will require more space.
- e. A cage with a floor area of three square feet is re-

commended for housing individual animals weighing up to four kg. These cages should be 24" high.

f. Animals weighing in excess of 4 kg should be provided with 4 square feet of floor space and 24" high or placed in community pens.

g. In many circumstances, for example, when exercise is necessary, more space per animal may be needed.

h. The painting or spraying of cages is not recommended since many such materials contain substances toxic to cats.

2. Indoor Pens

a. Indoor pens should provide 15-18 cubic feet per adult animal.

b. Exposed steam or hot water pipes should be inaccessible to cats, but if this is not possible, they should be insulated to protect the animals.

3. Perches should be provided in cages and pens. A width of 6 to 8" is recommended with a distance of 15 to 24" between tiers of perches.

4. Litter boxes should be placed in cages and pens. Scratching posts are recommended in pens and exercise areas.

5. Cage sides, tops, bottoms, doors, and fencing for pens should have maximum openings of 1" to prevent cats attempting to escape.

6. Equipment

- a. Racks (stands, shelving) shall be fabricated of a smooth material, impervious to liquids, moisture, and vermin, easily cleaned, sanitized and sterilized. If racks are fabricated of pipe or tubular material, all joints shall be completely filled, and openings at the ends shall be closed without crevices. If metal sheets are fastened to round shapes, the design shall be such as to facilitate the cleaning of crevices. Racks may be of fixed or portable (movable) design, placed to facilitate cleaning activities and to allow a service aisle of at least 48 inches. All parts of the rack shall be of material other than wood, and shall be held rigidly in place without distortion.

- b. Cage food hoppers may be used whenever dry food is fed. They shall be fabricated of any durable material other than wood, shall be resistant to clawing, and corrosion resistant when exposed to detergents, moisture, liquids, and excreta. They shall be designed so as to be easily sanitized and sterilized. Food hoppers which show rust spots due to the deterioration of metallic coatings will not be acceptable. Fixed receptacles should be suspended at least 1' above the floor of the cage and designed to provide ready access to food. The opening should be large enough to prevent entrapment of the animal, but not large enough or situated so as to permit soiling of the contents. Since the daily evaluation of a cat's appetite is important in determining its status of well-being, the value of automatic feeding

devices should be weighed accordingly.

- c. Containers used for moist food, milk, or water should be immobilized to avoid spillage, and should be sterilized or disposed of between feedings. Only sufficient material for a single feeding shall be placed in such containers.
- d. Any food or water that is present in hoppers or containers when cages are scheduled for washing shall be discarded.

7. Cage and Equipment Washing

- a. Mechanical cage and equipment washing is recommended for portable equipment, and the washer should be such as to insure a continuous supply of water at about 180°F. for all sanitization. The duration of the complete cycle shall not be less than three minutes, which shall include at least 1½ minutes exposure to a safe detergent solution. There should be at least one clear water rinse with water supplied directly from the fresh hot water supply. Periodic bacteriologic examinations of washer efficiency should be made. The washing machine should be equipped with pump pressure gauges, a thermometer for each phase of the cycle, an adjustable temperature control, and an automatic detergent dispenser.
- b. Daily sterilization of feeding and watering devices is recommended as a disease control measure. Single use disposable feeders may be used instead.
- c. Steam jennies or portable high pressure cleaning devices shall be maintained and safely operated according to the

manufacturer's directions. They shall be capable of delivering steam or water of at least 180^oF., together with detergent and rinsing water. They shall be portable and capable of reaching all cat quarters.

- d. Disinfecting chemicals must be harmless to cats, and compounds containing phenol and chlorinated hydrocarbons shall not be used.

8. Fixed Equipment

- a. Each room should have a sink, primarily for the washing of hands. The sink shall be supplied with hot and cold water and dispensers for soap, detergent and bactericide, separately or in combination. A paper towel dispenser shall be mounted nearby. Bactericide solutions should be changed frequently. This sink shall not be used to wash animal care equipment.
- b. Cabinets, shelving, work benches, and carts, if required, shall be designed and located in such a manner as will facilitate cleaning. It is recommended that these articles be portable (movable).

9. Ancillary Equipment

- a. Equipment and material not in constant use, or not required during a 24-hour period, shall not be stored in any animal room.
- b. Each room shall be supplied with an adequate number of dust pans, scoops, scrapers, brushes, and brooms. These pieces

of equipment shall not be moved from one room to another without being sterilized or sanitized.

- c. If food, bedding, and litter are kept in animal rooms, each room should be equipped with durable and easily sanitized containers for each.
- d. Transport cages are recommended for moving cats from cages to other areas. They shall be cleaned and sanitized between uses.

III. OUTDOOR FACILITIES:

General: These facilities should be constructed to provide maximum comfort for the animals as well as ease of cleaning and sanitation. Outdoor runs should allow 15 cubic feet of pen area and 3 square feet of hutch space per adult cat. Climatic conditions must be considered in locating such a facility. Protection from extreme heat is essential for cats of all ages and adequate shade is important.

- 1. Fencing should be of corrosion-resistant wire having a mesh size of no greater than 1' square where kittens are to be maintained. Welded wire is preferred to woven, unless the woven wire is double twisted (as chicken wire) at each joint. The top of the pen must be covered, and side and end fences should be attached firmly to the poured base or imbedded in the ground to prevent escape. All wire shall be attached so that no sharp ends protrude. A wire enclosed aisle should provide access to pen doors as a measure to prevent loss of animals. Openings around pen doors (between door and sill, and door and jamb) should have a

clearance of no more than 1 inch. A completely out-of-door facility should be doubly fenced to exclude stray cats and other animals.

2. Posts should be of corrosion-resistant metal for ease of sanitizing.
3. Perches should be provided. Wooden perches are recommended and should be firmly attached for stability, but easily removed for thorough cleaning or disposal. A perch of 6 to 8" width is recommended. They may be arranged in tiers no less than 15" apart, but should be located in a staggered pattern to minimize the possibility of the cats' falling.
4. Hutches should provide protection from extremes of temperature. Supplementary heat is essential if temperatures fall below freezing for prolonged periods. A hutch area of not less than 3 square feet per adult animal is recommended. Hutches should be designed for ease of sanitization in place or for ease of removal for sanitization elsewhere. An ambient temperature of $75^{\circ} \pm 5^{\circ}$ should be maintained for kittens during the first five weeks of life; however, a somewhat higher temperature may be necessary during the first two weeks.
5. Pen floors should be impervious to water if a solid poured material is used. In the event such a base is used, an area or litter box for urination and defecation should be available. Smooth pebbles also provide a suitable base, but are difficult to sanitize unless periodic complete removal and replacement is practiced. They have the advantage of providing better drainage, which is important during cold weather.

IV. FACILITIES COMBINING INDOOR AND OUTDOOR AREAS:

Those facilities which are made up of an indoor cage or pen with an attached outdoor run should incorporate those appropriate requirements listed under Section II- Indoor Facilities, and Section III- Outdoor Facilities.

FOOD, BEDDING, AND LITTER

I. GENERAL CONSIDERATIONS:

Food, bedding, and litter are expendable materials purchased both by animal breeders and research laboratories, and are generally used in animal facilities without prior treatment. They may serve as a source for the introduction of diseases and parasites. It is, therefore, urged that both the producer and user be aware of these problems and exercise care in their preparation, transportation, and storage. As used in this document, the following definitions are applicable:

Bedding - Non-toxic absorbent material distributed over the floor of the cage or pen to absorb excreta from animals not trained to use a box.

Litter - That material placed in a box or designated area for use as a cat toilet facility.

II. FOOD:

A. Users should obtain the vendor's guarantee that the food he uses meets the following requirements:

1. No deterioration has occurred that would reduce the contents of the package below that which appears on the analysis tag.
 2. It is within normal acceptable limits of naturally occurring hormone activity.
 3. It is free of additives containing drugs, hormones, antibiotics, or other substances which may create abnormal physiological conditions, or interfere with investigative procedures.
 4. It is free from rodent and vermin contamination.
 5. It is free from all unrendered meat scraps of fish meal that may contain pathogens.
- B. Dry food shall not be accepted unless it is marked with the milling date plainly printed on the container or on a firmly affixed tag.
- C. Food should be accepted only if received in undamaged containers.
- D. Food shall be stored in a special area that is clean, dry, rodent and vermin free, and rodent and vermin proof. It shall be stored preferably in covered containers with tightly fitted lids or in its original container. Fresh or reconstituted dry milk should be kept under refrigeration and used promptly.

III. BEDDING AND LITTER:

- A. It is recommended that bedding, if used, shall be of a composition that is not readily eaten by the animals, and is not attractive to vermin. White pine, cedar, poplar, or basswood

shavings, shredded newspaper, toweling, or crushed corn cobs are acceptable. Resinous and hardwoods are not recommended.

- B. Litter should be absorbent and have a deodorizing action. It should be free from dust which may be irritating to the respiratory system.
- C. Bedding and litter, unless sterilized prior to use, should be obtained from the vendor in a container which is not returnable. If furnished in bags, they shall be nonporous and sealed (i.e., burlap bags shall not be used unless bedding is sterilized prior to use). Baled bedding should be furnished in closed containers, i.e., paper or plastic bags, paper wrappings, etc.
- D. Bedding and litter shall be kiln-dried, unless it is dried prior to use.
- E. The bedding and litter shall be stored in dry, rodent and vermin proof, frequently sanitized containers or storage area.

EQUIPMENT CLEANING

I. GENERAL CONSIDERATIONS:

- A. Procedures in the operation of a cat colony are of utmost importance, for they determine the effectiveness of the environmental controls that are used. The latest design in physical facilities and equipment are effective only if they are supported by satisfactory methods. It is, therefore, strongly recommended that producers and users alike constantly review and revise their

management practices in accordance with the development and improvements in this field so that optimal conditions can be provided for the animals.

- B. Frequent cleaning of floors, walls, ceilings, exposed plumbing, duct work, electrically activated equipment and conduits, doors, door frames, windows, window frames, viewing ports, and equipment other than cages, feeders, identification card holders, and racks is necessary.
- C. Floors shall be scrubbed at least once every week with a solution containing a detergent and a safe bactericide, then thoroughly rinsed.
- D. Doors and door frames, window and window frames, viewing ports and their frames, walls, ceilings, plumbing, duct work, and lighting fixtures shall be washed frequently with a solution containing a detergent and a bactericide safe for cats. This should be done at least once every three months, and as often as indicated. Non-portable equipment shall be moved away from walls and partitions for this purpose.
- E. Work tables, carts, shelving, sinks, hoses, scales, and other ancillary equipment in the animal room shall be washed daily with a solution containing a detergent and safe bactericide.
- F. Washing machines, drain boards, autoclaves, cage washing areas (clean and soiled sides), refuse areas, storage spaces, shipping rooms, locker and toilet rooms, and public areas shall be kept meticulously clean in accordance with the stipulated requirements for animal rooms. Animal cage racks shall be washed at least once

- every two weeks.
- G. All refuse shall be placed in closed containers. The use of disposable liners is recommended.
 - H. Reusable refuse containers shall be fabricated of metal or durable plastic materials and shall have a closely fitting cover or top which can be fastened securely.
 - I. Non-reusable containers such as metal or plastic containers which have been basically designed for another purpose, i.e., plastic or five-ply paper bags, food and bedding sacks and fibre drums, after their original contents have been removed, and cardboard cartons, are acceptable only for a single usage.
 - J. Burlap sacks and baskets are not acceptable.
 - K. Reusable containers for refuse shall be sanitized after each time they have been emptied. Partially filled containers shall not be held over in the animal room until the following day.
 - L. Refuse chutes shall be sanitized at the end of each working day and shall be designed to prevent the entry of rodents and vermin.
 - M. If refuse chutes, outside containers or silos are used, the management shall adopt and maintain a firm rodent- and vermin-control program for these pieces of equipment and surrounding area.
 - N. The daily incineration of dead animals, refuse, soiled bedding, used disposable containers, and other burnable trash is strongly recommended.

- O. Dead animals should be removed to a refrigerator or other cold storage area immediately on discovery. It is recommended that they be placed in waterproof bags, but in a manner that will not prevent rapid cooling.

II. CAGES, RACKS, FEEDERS, WATERERS, ETC.

- A. Cages, pens, and outdoor runs should be cleaned daily. Soiled litter and bedding should be replaced with clean daily, and more often if it is largely soiled. Cages and racks should be washed and sanitized weekly if possible, in accordance with the specifications described previously under cage washing.
- B. Regularly operated equipment other than cages and racks shall be cleaned daily. They shall be washed with a solution containing a detergent and a bactericide at least once every month.
- C. Daily sterilization of feeding and watering devices or the use of disposable containers was recommended in a previous section.
- D. It is recognized that cages containing pregnant queens, queens with their litters, cats on special experiments, and cats in quarantine may require a cleaning schedule that will not disturb their occupants, nevertheless efforts should be made to keep them clean and dry. The weekly cage sanitization and change schedule should be adhered to whenever possible.

DISEASE AND PARASITE CONTROL

- I. GENERAL CONSIDERATIONS: Commercial breeding of laboratory cats is non-existent at present. The only sources of these animals are local pounds, animal vendors who collect from any number of widely scattered pounds, or a breeding colony within the user institution. The following recommendations include those of a general nature to be followed with all animals as well as some specific recommendations based on the source of the animals.
- A. Personnel assigned to quarantine areas shall not work in rooms housing breeding or other animals on long-term studies, and vice versa.
- B. Facilities for showering and personal hygiene should be available. It is recommended that outer clothing be changed prior to entering the cat colony.
- C. Visitors shall not be allowed in any animal room quarantine area or space that is considered a clean area unless they follow the recommendations in Section B. Visitors to the breeding and experimental colonies should be kept at a minimum.
- D. The use of ultraviolet lights to reduce air-borne infection should be considered.
- E. All animals should be inspected daily by someone trained in the recognition of signs of ill health. Caretakers should be instructed to report any change in an animal's daily habits, i.e., appetite, water intake, bowel movement, urination, etc.
- F. Sanitary precautions shall be observed by all personnel in the handling of sick and dead animals.

- G. Sick animals should be isolated and efforts made to establish a diagnosis and institute appropriate treatment. If treatment is not considered feasible for any reason, euthanasia should follow promptly.
- H. A complete autopsy should follow the death of any animal which may have exposed other animals to a contagious disease, since every effort should be made to evaluate the health status of the colony. Appropriate measures to protect the apparently well stock should follow any exposure to an infectious disease. A plan for dealing with highly infectious diseases discovered in the colony should be developed in advance.
- I. An effective vermin and wild rodent control program shall be maintained. Compounds toxic to cats, i.e., those containing phenolic compounds or chlorinated hydrocarbons or their derivatives, shall not be used.
- J. Pets or stray animals shall not be allowed in or near the animal rooms.

II. PURCHASED ANIMALS:

- A. All newly arrived animals shall be examined by a veterinarian or an individual competent in the recognition of infectious diseases, dermatoses, and other illnesses common to cat. Those animals showing signs of the above should be rejected, or if conditions dictate their acceptance, adequate steps should be taken to isolate sick animals and appropriate treatment should be undertaken.
- B. New animals should receive prophylactic immunization against feline infectious enteritis (panleukopenia). Normal or hyperimmune serum is safest for the young and provides a passive immunity. Vaccines

usually afford adequate protection lasting approximately twelve months in older animals. The value of pneumonitis vaccines is questionable due to the multiplicity of respiratory viruses.

- C. Annual revaccinations with infectious enteritis vaccine is recommended.
- D. Appropriate anthelmintics should be administered on arrival, and an external parasiticide applied.
- E. A quarantine period of ten days is recommended for those cats to be used for short-term studies. Animals which will be used for long-term study shall be quarantined at least three weeks.
- F. Daily inspection of animals during their quarantine period is essential, with a complete examination being carried out again at the end of this quarantine period.
- G. Cages in the quarantine area should be designed to minimize cross contamination, i.e., closed sides, end, and bottom with only the front of the cage (door) open, and possibly several small vents in the rear of the cage for air movement.
- H. Personnel assigned to quarantine areas should not work in other animal rooms and vice versa.

III. BREEDING STOCK:

- A. Establishment of a breeding colony should be accomplished in accordance with the recommendations in Section II - Purchased Animals. If possible, the breeding nucleus should be started as a group, and no new animals should be introduced into this nucleus. This appears

to be the most effective method of maintaining breeding stock free of infectious disease. Animals removed from the breeding colony should not be returned to it, unless they undergo quarantine.

- B. Annual viral enteritis booster vaccinations given pregnant queens increase the passive immunity of their kittens.
- C. Kittens should be provided a passive immunity in the form of normal or hyperimmune serum. Active immunization should be accomplished in accordance with the manufacturer's directions accompanying the vaccine.
- D. Periodic examination of fecal specimens in conjunction with appropriate anthelmintics is strongly recommended. These procedures will be necessary at more frequent intervals for younger animals.
- E. Annual booster vaccinations with viral enteritis vaccine are recommended.
- F. Sick animals should be removed from the breeding colony, and appropriate treatment should be administered. An animal having shown signs of an infectious disease should not be returned to the breeding colony unless, in the judgment of a competent individual, recovery has been complete, and there is no danger of infecting the remainder of the colony.
- G. A complete autopsy should follow the death of any animal in the breeding colony. Any animal exposed to an infectious disease should receive appropriate prophylaxis.

IV. PERSONNEL:

- A. The success of a cat colony is greatly dependent upon the quality of the animal care technician responsible for caring for these animals. Technicians should be gentle but firm, and should be made aware of the peculiarities of this species.

- B. In addition to the special problems associated with maintaining cats, the following items should also be considered:
 1. Personnel should be made aware of the danger of cat scratch fever and instructed to take necessary precautions. Scratches should receive immediate medical attention.

 2. Newly arrived animals which inflict bites on personnel should be quarantined from ten days to two weeks and inspected daily in keeping with local public health regulations relating to animal bites. Injured personnel should receive immediate rabies prophylaxis if a quarantined animal dies within this period. Some medical facilities recommend routine rabies immunization of personnel caring for laboratory cats and dogs. Prophylaxis should continue as directed by a physician until a negative (or confirmatory) diagnosis is made from the cat's brain by an appropriate laboratory.

 3. It is advisable to maintain tetanus immunization titer in all personnel handling these animals.

BREEDING AND MATING SYSTEMS

I. GENERAL CONSIDERATIONS:

Cats obtained from pounds and similar sources can be assumed to be derived from random breeding populations. Since no inbred strains of cats are presently available, the tolerance of this species to inbreeding is unknown.

II. HOUSING:

- A. The general requirements for cage sizes, litter boxes, watering, and feeding, etc., shall apply to breeding colonies.
- B. Tomcats used for stud purposes should be allowed ten square feet of floor space. It is recommended that toms be housed in sight of the queens to allow development of territorial familiarity. This will also allow the male to be aware of the female's vocal and visual displays.
- C. Queens should be allowed three to five square feet of floor space, and community housing is recommended.
- D. Isolation of the queen during her delivery is recommended.

III. SANITATION:

- A. Those recommendations made previously under washing, sanitizing, and sterilizing of cages, bedding, and equipment should be applied to breeding colonies.
- B. Since olfactory stimuli are important in mediating courtship and mating behavior, compounds which are strongly deodorizing or highly aromatic should be avoided in the breeding colony situation.

RECORD KEEPING

GENERAL CONSIDERATIONS:

- A. Records should be maintained on the source of all animals. Those obtained from vendors should be accompanied by a statement that they were obtained and transported by legal methods. A system of identifying animals used for breeding stock and long-term study should refer back to this legal procurement guarantee in order to protect the users of such animals. Tattoos or collars provide adequate means of identifying animals.
- B. Records on the breeding performance of toms and queens should be kept in accordance with the utilization of such stock. Information on growth curves, weaning weights, litter size, mortality, etc., would provide useful data.
- C. Individual case history and clinical evaluation records are valuable aids in evaluating animals used for breeding and long-term studies. Appropriate forms for such records will vary in accordance with the utilization of animals.

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