
1. PURPOSE

This Standard Operating Procedure (SOP) describes the basic procedures for routine care and husbandry of macaques.

2. RESPONSIBILITY

Animal care staff, facility supervisor, facilities manager

3. MATERIALS

- 3.1. Personal protective equipment:
 - 3.1.1. Shoe covers
 - 3.1.2. Laboratory gown
 - 3.1.3. Hair bonnet
 - 3.1.4. N-95 Mask
 - 3.1.5. Gloves
 - 3.1.6. Face shield
 - 3.1.7. Protective Kevlar® sleeves (optional)
- 3.2. Diet:
 - 3.2.1. Appropriate animal diet (within six months of the milling date)
 - 3.2.2. Fresh fruits and other special treats (appropriate for human consumption)
- 3.3. Clean water bottles
- 3.4. Clean cage trays with bedding
- 3.5. Bedding
- 3.6. Clean environmental enrichment devices
- 3.7. Clean cages
- 3.8. Cage cards
- 3.9. Disinfectant

4. PROCEDURES

- 4.1. Observation of animals:
 - 4.1.1. Observe all animals daily for illness, injury and general condition, including weekends and holidays.
- 4.2. Emergency and holiday care:
 - 4.2.1. Provide routine care and husbandry for all animals on weekends and holidays.
 - 4.2.2. Make provisions for emergency care by providing both work and after hours contact information for Principal Investigators (PI's) and their staff. Provide special requests or instructions if needed.
- 4.3. Animal identification methods:
 - 4.3.1. Identify all cages or enclosures with a cage card.
 - 4.3.2. Include, at a minimum, the following information:
 - 4.3.2.1. Investigator
 - 4.3.2.2. Protocol number
 - 4.3.2.3. Species
 - 4.3.2.4. Strain
 - 4.3.2.5. Sex

- 4.3.3. Identify individual animals as needed in accordance with SOP. Examples of individual identification methods include: tattoos, micro-chips.
- 4.4. Caging:
 - 4.4.1. Provide cages that are appropriate in size for the species, number and weight of the animals housed in them. Refer to CCAC recommendations.
 - 4.4.2. All macaque cage doors and cage dividers are locked with a padlock to prevent accidental opening and escape of the animal.
- 4.5. Food and water:
 - 4.5.1. Feed animals to meet current National Research Council (USA) recommendations for primate nutrition.
 - 4.5.2. Food storage:
 - 4.5.2.1. Store feed on plastic pallets off the floor and 4-6 inches away from walls, in a vermin-proof storeroom.
 - 4.5.2.2. Store open feed bags in leak-proof containers with tightly fitting lids.
 - 4.5.2.3. Maintain temperature and humidity controls in the storeroom. Avoid temperatures above 21°C and extremes in humidity.
 - 4.5.2.4. Use feed within 6 months of milling date.
 - 4.5.2.5. Stack feed in a manner that allows easy reading of the milling date.
 - 4.5.3. Check automatic watering devices and flush them weekly for proper operation.
 - 4.5.4. Empty water bottles, rinse and fill with fresh water daily. Change bottles weekly.
 - 4.5.5. Monitor water quality routinely to ensure that it is free of contaminants that could potentially expose animals to chemical or infectious agents. Refer to SOP for water quality monitoring requirements.
- 4.6. Social and environmental enrichment:
 - 4.6.1. Group-house animals whenever possible.
 - 4.6.2. Provide environmental enrichment devices for all macaques.
 - 4.6.3. Refer to Environmental Enrichment Program for NHPs SOP.
- 4.7. Quarantine procedures:
 - 4.7.1. Refer to SOP.
- 4.8. Euthanasia and disposal of dead animals:
 - 4.8.1. Euthanize animals by overdose of anesthetics. Refer to Large Animal Euthanasia SOP.
 - 4.8.2. Ensure that euthanasia is conducted by trained and experienced staff.
 - 4.8.3. Dispose of dead animals by incineration.
- 4.9. Vermin control:
 - 4.9.1. Refer to SOP for a description of the vermin control program.
- 4.10. Environment and environmental control:
 - 4.10.1. Maintain room temperatures between 18 and 29° C.
 - 4.10.2. Maintain relative humidity between 30% and 70%.
 - 4.10.3. Maintain a daily log of room temperature and humidity.
- 4.11. Lighting:
 - 4.11.1. Provide a regular diurnal lighting cycle
Note: Lights are controlled by timers set at a photoperiod of 12 to 14 hours of light. Check the timer performance routinely.
- 4.12. Space requirements:
 - 4.12.1. Follow the Canadian Council on Animal Care (CCAC) recommendations for space requirements.
- 4.13. Bedding
 - 4.13.1. Provide approved bedding in enclosures (e.g., wood shavings). Cedar shavings are not recommended, due to the presence of aromatic hydrocarbons.

- 4.13.2. Use a sufficient quantity of bedding to keep the animals clean and dry.
- 4.13.3. Store the bedding off the floor on pallets and in such a manner to prevent contamination.
- 4.14. Cleaning and sanitation of cages:
 - 4.14.1. Cage pans are cleaned three times per week, at a minimum.
 - 4.14.2. Change cages once every two weeks, at a minimum:
 - 4.14.2.1. Cover cage and bring to cage wash area.
 - 4.14.2.2. Environmental enrichment devices are cleaned and replaced at the time the cages are changed.
- 4.15. Cleaning and sanitation of enclosures:
 - 4.15.1. Enclosures are washed every two weeks, at a minimum:
 - 4.15.1.1. Remove soiled bedding.
 - 4.15.1.2. Clean the soiled cage thoroughly by hosing down and removing debris.
 - 4.15.1.3. Spray with disinfectant and let sit. Remove debris using a brush if necessary.
 - 4.15.1.4. Rinse cage thoroughly then add clean bedding.
 - 4.15.2. Environmental enrichment devices are cleaned and replaced at the time the enclosures are cleaned.
 - 4.15.3. Foraging treats can be added to the clean bedding before returning animals to the enclosure.
- 4.16. Cleaning and sanitation of housing room and equipment:
 - 4.16.1. Daily:
 - 4.16.1.5. Clean walls surrounding the cages if necessary.
 - 4.16.1.6. Wash the floors with disinfectant solution.
 - 4.16.1.7. Bring waste to compactor.
 - 4.16.2. Weekly:
 - 4.16.2.1. Flush the floor drains.
 - 4.16.2.2. Restock supplies (mask, gloves, feed, bedding, etc.)
 - 4.16.2.3. Launder lab coats, Kevlar® sleeves.
 - 4.16.2.4. Clean face shields.
 - 4.16.3. Monthly:
 - 4.16.3.1. Clean the walls with disinfectant solution
 - 4.16.3.2. Wipe down all surfaces such as sinks, doors, door jams and doorknobs, windows, cart tops, shelves, etc. with the disinfectant solution.
 - 4.16.3.3. Run garbage container through cage washer.
- 4.17. Transportation:
 - 4.17.1. Transport animals as per SOP.
- 4.18. Preparation disinfecting solution:
 - 4.18.1. Wear personal protective equipment when preparing and using disinfectant solution.
 - 4.18.2. Dilute according to manufacturer's recommendation.
 - 4.18.3. Clean surfaces prior to disinfection to remove any organic material.
 - 4.18.4. Apply disinfectant and allow for adequate contact time.
- 4.19. Waste Management:
 - 4.19.1. Deposit non-regulated or non-infectious Medical Waste and soiled materials in dumpsters.
 - 4.19.2. Regulated or infectious Medical Waste is processed by McGill University's Waste Management program.

5. SAFETY

- 5.1. Observe the Macaque-Related Injury SOP.