
1. PURPOSE

The intent of this Standard Operating Procedure (SOP) is to describe procedures used to prevent and control vermin in animal facilities.

2. RESPONSIBILITY

Animal care staff, animal facility manager, veterinarian

3. MATERIALS

- 3.1. Door sweeps
- 3.2. Pallets
- 3.3. Screening materials
- 3.4. Caulk
- 3.5. Vermin traps
- 3.6. Disinfectant

4. CONSIDERATIONS

- 4.1. Vermin are defined as any undesirable or disturbing offender such as flies, lice, fleas, cockroaches, ticks, mice, rats, weasels, etc.
- 4.2. Vermin enter on food, bedding, people, and animals. Insects and arthropods thus introduced, may act as the intermediate hosts of certain parasites and may also mechanically transmit bacterial and other pathogens. Wild rodents may transmit a wide variety of bacteria, viruses, and parasites to caged members of closely related species.
- 4.3. Programs designed to prevent, control, or eliminate the presence of or infestation by pests are essential in an animal environment. A regularly scheduled and documented program of control and monitoring should be implemented. The ideal program prevents the entry of vermin into and eliminates harborage from the facility. For animals in outdoor facilities, consideration should also be given to eliminating or minimizing the potential risk associated with pests and predators.
- 4.4. The most effective control is by preventing entry by the appropriate screening of openings and sealing cracks, maintaining the integrity of all surfaces, and eliminating vermin breeding sites. Pesticides should only be used judiciously and when necessary and where the risk to animals and the experimental process is minimal.
- 4.5. Pesticides can induce toxic effects on research animals and interfere with experimental procedures and they should be used in animal areas only when necessary. Use of pesticides should be recorded and coordinated with the animal care management staff and be in compliance with federal, state, or local regulations. Whenever possible, nontoxic means of pest control, such as insect growth regulators and nontoxic substances (for example, amorphous silica gel), should be used. If traps are used, methods should be humane; traps used to catch pests alive require frequent observation and humane euthanasia after capture.

5. PROCEDURES FOR LABORATORY ANIMAL FACILITIES

- 5.1. In laboratory animal facilities, vermin include insects and wild rodents.
- 5.2. Preventive measures:
 - 5.2.1. Consult with the institutional contracted service or a professional exterminator to accomplish the following:
 - 5.2.1.1. Identify potential sources of vermin.
 - 5.2.1.2. Propose a preventive plan for the facility (type/location of traps, frequency of monitoring, etc.).

- 5.2.2. Feed and bedding storage areas:
 - 5.2.2.1. Prevent vermin access to feed and bedding storage areas:
 - 5.2.2.1.1. Install door sweeps on all feed room doors.
 - 5.2.2.1.2. Store feed bags on pallets or shelves kept far enough away from walls so as to allow regular cleaning and inspection.
 - 5.2.2.2. Areas should be clean, and free from accumulated waste and vermin.
 - 5.2.2.3. Store hay in an area isolated from the food and bedding of other laboratory animals.
 - 5.2.2.4. A sanitation program should be available indicating the frequency of cleaning and the methods to be used to clean storage areas.
- 5.2.3. Do not store large quantities of feed or bedding in animal holding rooms. When storing small amounts of feed or bedding, use covered, vermin-proof containers.
- 5.2.4. Restrict vermin access to receiving areas, loading docks and exterior doors by installing door sweeps to all doors that have direct access to the exterior of the building.
- 5.2.5. Perform routine maintenance on drains to prevent vermin from accessing them.
 - 5.2.5.5. Flush drains no less than once a month.
- 5.3. Monitoring:
 - 5.3.1. Inspect live trap bait stations a minimum of once a day.
 - 5.3.1.1. Log all live trap monitoring.
 - 5.3.2. Place rodent traps in areas of concern (i.e., feed/bedding storage, under sinks, near outdoor entrance, etc.) in all facilities.
 - 5.3.2.1. Do not use sticky traps for rodents.
 - 5.3.2.2. Captured wild rodents can be sent for diagnostic testing at the discretion of the veterinarian.
 - 5.3.2.3. Remove dead rodents from traps and dispose of carcass by incineration.
- 5.4. Maintain records of regular vermin inspections and maintenance procedures.
- 5.5. Corrective measures:
 - 5.5.1. Consult with an institutional contracted service or a professional exterminator.
 - 5.5.2. Use of chemicals must be approved by a veterinarian, the facility manager and applicable PI(s).
 - 5.5.3. Document all corrective measures in a vermin control log.

6. PROCEDURES FOR AGRICULTURAL FACILITIES

- 6.1. In agricultural facilities, vermin include insects such as flies, rodents, wild mammals, and birds.
- 6.2. Preventative measures:
 - 6.2.1. Arrange for professional evaluation of the facility to accomplish the following:
 - 6.2.1.1. Identify potential sources of vermin entry.
 - 6.2.1.2. Propose a preventative plan for the facility (type/location of traps, frequency of monitoring, etc.).
 - 6.2.2. Prevent entry of vermin to enclosed facilities:
 - 6.2.2.1. Cover openings and ceilings with screens.
 - 6.2.2.2. Seal cracks in walls.
 - 6.2.2.3. Eliminate vermin breeding, roosting, and refuge sites.

- 6.2.3. Control vermin that have accessed the buildings:
 - 6.2.3.1. Limit access of vermin to feed supplies and water sources.
 - 6.2.3.2. If using barn cats as vermin control, ensure the following measures are taken:
 - 6.2.3.2.1. Spay or neuter all barn cats on protocol for vermin control.
 - 6.2.3.2.2. Vaccinate cats against common cat diseases.
 - 6.2.3.2.3. Keep individual health records for each cat.
- 6.3. Monitoring:
 - 6.3.1. Inspect live trap bait stations a minimum of once a day.
 - 6.3.1.3. Document all live trap monitoring and subsequent actions in a vermin control log.
 - 6.3.2. Place rodent traps in areas of concern (i.e., feed/bedding storage, under sinks, near outdoor entrance, etc.) in all enclosed facilities.
 - 6.3.2.4. Do not use sticky traps for rodents.
 - 6.3.2.5. Remove dead rodents from traps and dispose of carcass by incineration.
- 6.4. Corrective measures:
 - 6.4.1. Contact a licensed pesticide applicator or a commercial service.
 - 6.4.2. Get approval for proposed treatments from a veterinarian and applicable PI(s).
 - 6.4.3. Document regular or seasonal treatments per farm SOPs.
 - 6.4.4. Document all corrective measures in a vermin control log.

7. REFERENCES

- 7.1. Hughes DE, Kassim OO, Gregory J, Stupart M, Austin L, Duffield R. "Spectrum of bacterial pathogens transmitted by Pharaoh's ants". Lab Anim Sci. 1989 Mar;39(2):167-8.
- 7.2. Levine JF, Lage AL. "House mouse mites infesting laboratory rodents". Lab Anim Sci. 1984 Aug;34(4):393-4.
- 7.3. National Research Council (US) Committee for the Update of the Guide for the Care and Use of Laboratory Animals. (2011). Guide for the Care and Use of Laboratory Animals. (8th ed.). National Academies Press (US).

SOP REVISION HISTORY

DATE	NEW VERSION
2016.09.22	6.1 In agricultural facilities, vermin include insects and wild rodents.
2016.09.22	<p>5.3. Monitoring:</p> <p>5.3.1. Inspect live trap bait stations a minimum of once a day.</p> <p>4.3.1.1. Log all live trap monitoring.</p> <p>5.3.2. Place rodent traps in areas of concern (i.e., feed/bedding storage, under sinks, near outdoor entrance, etc.) in all facilities.</p> <p>5.3.2.1. Do not use sticky traps for rodents.</p> <p>5.3.2.2. Remove dead rodents from traps by using an inverted bag or gloves. Bag and dispose of carcass.</p>
2017.02.20	<p>4. CONSIDERATIONS</p> <p>4.1. Vermin are defined as any undesirable or disturbing offender such as flies, lice, fleas, cockroaches, ticks, mice, rats, weasels.</p> <p>4.2. Vermin enter on food, bedding, people and animals. Insects and arthropods thus introduced, may act as the intermediate hosts of certain parasites and may also mechanically transmit bacterial and other pathogens. Wild rodents may transmit a wide variety of bacteria, viruses, and parasites to caged members of closely related species.</p> <p>4.3. Programs designed to prevent, control, or eliminate the presence of or infestation by pests are essential in an animal environment. A regularly scheduled and documented program of control and monitoring should be implemented. The ideal program prevents the entry of vermin into and eliminates harborage from the facility. For animals in outdoor facilities, consideration should also be given to eliminating or minimizing the potential risk associated with pests and predators.</p> <p>4.4. The most effective control is by preventing entry by the appropriate screening of openings and sealing cracks, maintaining the integrity of all surfaces, and eliminating vermin breeding sites. Pesticides should only be used judiciously and when necessary and where the risk to animals and the experimental process is minimal.</p> <p>4.5. Pesticides can induce toxic effects on research animals and interfere with experimental procedures and they should be used in animal areas only when necessary. Use of pesticides should be recorded and coordinated with the animal care management staff and be in compliance with federal, state, or local regulations. Whenever possible, nontoxic means of pest control, such as insect growth regulators and nontoxic substances (for example, amorphous silica gel), should be used. If traps are used, methods should be humane; traps used to catch pests alive require frequent observation and humane euthanasia after capture.</p>
2017.02.20	5.2.2.3. Store hay in an area isolated from the food and bedding of other laboratory animals
2017.03.29	5.2.2.2. Areas should be clean, and free from accumulated waste and vermin.
2017.03.29	5.2.2.4. A sanitation program should be available indicating the frequency of cleaning and the methods to be used to clean storage areas.
2017.03.29	5.2.3. Do not store large quantities of feed or bedding in animal holding rooms. When storing small amounts of feed or bedding, use covered, vermin-proof containers.
2017.03.29	5.4 Maintain records of regular vermin inspections and maintenance procedures.
2023.09.08	5.3.2.2. Remove dead rodents from traps by using an inverted bag or gloves. Bag and dispose of carcass by incineration.
2023.09.08	6.1.1.5.5.1. Consult with an university institutional contracted service or a professional exterminator.
2023.09.08	6.3.1. Note: The use of live traps for rodents is discouraged. If live traps are used, monitor them daily.
2023.09.08	6.3.2.2. Remove dead rodents from traps by using an inverted bag or gloves. Bag and dispose of carcass by incineration.
2023.09.08	5.3.2.2. Captured wild rodents can be sent for diagnostic testing at the discretion of the veterinarian.