



WESTERN CONNECTICUT STATE UNIVERSITY

INTEGRATED PEST MANAGEMENT PLAN
RODENT CONTROL

PROCEDURE E-110

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Please direct any questions or comments about the applicability of this document
to Pano Koukopoulos, Director of Environmental & Facilities Services

The Department of Environmental Protection has developed this model plan to assist with the development of comprehensive integrated pest management programs at state departments, agencies, and institutions as outlined in Connecticut General Statutes, Section 22a-661. Integrated Pest Management (IPM) is defined as the use of all available pest control techniques, including judicious use of pesticides, when warranted, to maintain a pest population at or below an acceptable level, while decreasing the unnecessary use of pesticides.

The primary goal of IPM is to reduce the amounts of pesticides applied by using alternative methods of pest control which may include structural maintenance, sanitation, and mechanical or biological control. These methods will help to eliminate conditions that are favorable to pest infestation, making their survival more difficult.

Please consult with your pest control provider or the DEP Pesticide Management Program for technical assistance, if needed.

Section 22a-661 of the Connecticut General Statutes states:

- a. Each state department, agency, or institution shall use integrated pest management at facilities under its control if the Commissioner of Environmental Protection has provided model pest control management plans pertinent to such facilities.
- b. Each state agency which enters into a contract for services for pest control and pesticide application may revise and maintain its bidding procedures to require contractors to supply integrated pest management services.
- c. The Commissioner of Environmental Protection shall annually review a sampling of state department, agency, or institution pest control management plans required by regulations adopted under section (e) of this section and may review any application of pesticides to determine whether a state department agency or institution acted in accordance with subsection (a) of this section.
- d. The Commissioner of Environmental Protection may provide model pest control management plans which incorporate integrated pest management for each appropriate category of commercial pesticide certification which is offers. The Commissioner shall, within available resources, notify municipalities, school boards, and other political subdivisions of the state of the availability of the model plans for their use. The Commissioner of Environmental Protection shall consult with any state agency head in the development of any such plan for properties in the custody or control of such agency head.
- e. The Commissioner of Environmental Protection, in consultation with the Commissioner of Public Health, shall adopt regulations in accordance with the provisions of chapter 54 establishing requirements for the application of pesticides by any state department, agency, or institution. Such regulation shall include provisions for integrated pest management methods to reduce the amount of pesticides used. Notwithstanding the provisions of this section and any regulations adopted under this section, a pesticide may be applied if the Commissioner of Public Health determines there is a public health emergency or the Commissioner of Environmental Protection determines that such application is necessary for control of mosquitoes.
- f. The Commissioner of Environmental Protection shall develop and implement a program to inform the public of the principles of integrated pest management and to encourage its application in private properties.

Rodents to be Controlled

For the purposes of this program, rodent control refers to commensal rodents, such as the Norway rat, Roof rat, House mouse, Deer mouse, and White Footed mouse. Squirrels, chipmunks, woodchucks, muskrats, and other non-commensal rodents and similar species are specifically excluded.

General

Western Connecticut State University will be inspected by name of the pest control company for the purpose of identifying potential problem areas that may be contributing to rodent infestation within the facility, making recommendations for corrective measures that should be implemented, and developing a comprehensive integrated pest management (IPM) plan. The IPM plan will utilize all methods of rodent control, which may include structural maintenance, sanitation, monitoring for rodent populations, mechanical and biological control, and judicious use of pesticides. These methods will help to eliminate food, moisture, and harborage for rodents, making their survival more difficult. Pesticides will not be applied on a routine basis, however, they may be used as a tool to maintain rodent populations at or below an acceptable level. The selection of pesticides that may be used will be based on a predetermined hierarchy which will utilize least toxic products as first choice. Proper implementation of this program will reduce the volume, toxicity, and frequency of pesticide applications, thereby reducing the risk of potential exposure of building occupants who may be sensitive to their use.

The (company) and John Butkus, Maintenance Grounds Supervisor, shall meet to discuss areas that have been problematic or sensitive. Areas that are sensitive to pesticide use will also be discussed (i.e., daycare areas, work area of sensitive employees, etc.).

Once these areas have been identified, the (company) and John Butkus will discuss various rodent control options and determine the speed of control necessary, as well as threshold/action levels based on population and species.

Recommendations

PCO will submit recommendations for corrective measures in writing to John Butkus prior to the application of any pesticides. He is responsible for scheduling and coordinating structural maintenance of the facility and will act on the recommendations as soon as possible. He will report in writing which recommendations will not be followed and state the reasons if no action is to be taken as required by RCSA Sec.22a-661-1(c). Otherwise, all IPM methods that are recommended will be followed.

Pest control services will be supervised by name and certification number, and performed by name and certification number(s) of name of pest control company and business registration number. The IPM program will begin on date with six weekly visits in order to start the program. Subsequent service calls will be performed twice a month or as needed, depending upon pest pressure. Service calls will be scheduled on day of week and approximate time and will include a visual inspection of potential problem areas and all monitoring devices, application of pesticides where pest populations exceed their threshold level. Records will be completed at the conclusion of each service call and will include written recommendations of corrective measures that need to be made by building maintenance personnel. A member of the

maintenance staff should be available to allow the pest control technician to access areas that may be locked.

Records

The pest control technician will indicate pest problem areas and provide written recommendations for structural, sanitary or procedural modifications on a Pest Control Service Record and Pest Inspection Report form or substantially similar substitute. These forms will be kept in a file that will be maintained in John Butkus' office. He will act as a liaison between the pest control company and department supervisor(s) and will be responsible for notifying the appropriate personnel of corrective actions that are needed (i.e., sanitation).

Pest sighting report logs provided by name of company will be reviewed by the pest control technician at the beginning of each service call. The log will be maintained in John Butkus' office and will serve as a tool to facilitate communication between all personnel and the pest control technician. **All** rodent sightings should be reported in the logs and should include specific information as to the location and type of rodent, if known. Whenever possible, a sample (animal or fecal) will be provided to the pest control technician for identification purposes.

Monitoring

Service call/monitoring inspections will be limited to list specific areas that will be inspected, i.e., kitchen, kitchen storage, dish room, laundry room, cafeteria, employee lounge, custodial closets, locker rooms, laundry room, main office, hallways on ground and main floors, boiler room and the perimeter of the building unless activity or sightings in other areas have been reported in the past sighting log.

Non-toxic glue boards and non-toxic bait blocks placed in tamper proof bait stations will be used for the duration of the IPM program to monitor rodent populations and activity within the facility. Nonrodent activity has been identified or is likely to occur. The dates of installation and servicing will be indicated on each monitor and the pest control technician will create diagrams or maps indicating their placement. The diagrams will be maintained as part of the pest control companies service record. Visual inspections of the glue boards and bait stations will help the pest control technician to identify specific areas of infestation, if any, and assess the need for further action. The glue boards and bait stations will be placed as follows:

List specific areas, i.e., kitchen and dish room – 20 glue boards + 2 bait stations, kitchen storage – 8 glue boards + 2 bait stations, laundry room – 2 glue boards, cafeteria – 1 glue board (under the vending machine), employee lounge – 4 glue boards, men's locker room – 2 glue boards, women's locker room – 2 glue boards, laundry – 2 glue boards, custodial closets – 2 glue boards, main office – 6 glue boards and boiler room – 8 glue boards + 2 bait stations.

Rodents

In addition to structural damage, mice and rats are known to spread organisms such as salmonella bacteria, eggs of the tapeworm, hantavirus and leptospirosis, to name a few. They reproduce an average of 4-8 times per year. They can reproduce more often when conditions are favorable. Litters average 4-12 young. Rodents, particularly Deer Mice, will hoard food. This is an important fact to consider if baits will be utilized for their control. Pelleted, seed, or loose

meal bait will only be used for outdoor applications and placed in a manner to limit the risk of exposure to unprotected persons and non-target animals. Bait blocks will be anchored properly to prevent mice from carrying bait off to another location.

Norway Rats

Norway rats are much larger than mice, usually brown with scattered black. Their tails are shorter than the head and body. They will build a nest of soft materials in and around lower floors of buildings and foundations in burrows, crawlspaces, and underneath/behind stationary objects. Rats will range an average of 100-175 feet from their nesting area. They may range farther if food is limited. They are omnivorous, preferring food with a high carbohydrate and protein content. They need water on a daily basis in order to survive. Norway rats will prey upon mice, therefore, they are usually not found living in the same area of the building.

House Mice

House mice are small, light brown to light gray in color, with smooth fur. Their tails are longer than their head and body. Mice will nest in walls, ceiling voids, cabinets, drawers, appliances, furniture, etc. They usually nest close by to their food source, with an average range of 10-35 feet. They do not need water on a daily basis. House mice are omnivorous, however, they prefer seeds and grains.

Deer Mice

Deer mice, known vectors of hantavirus, will also enter houses, garages, and other structures, particularly as cold weather approaches. They are reddish brown with a white chest and white feet. Their nests are usually underground, however, they will construct nests above ground in areas similar to the House mouse. Deer mice normally breed during spring and fall, however, they will breed more frequently under favorable conditions. They prefer to feed on nuts, seeds, berries, and insects.

Hantavirus

Building maintenance and custodial staff should always take appropriate precautions to protect themselves against hantavirus. Documented cases of hantavirus have occurred mostly in the Southwestern United States, however, two cases have been documented in the Northeast – one in New York and one in Rhode Island. Infected rodents shed virus in saliva, urine, and feces. Hantavirus can be transmitted to humans through inhalation of rodent excretions when disturbed, directly introduced into broken skin, introduced onto the conjunctivae, or, possibly ingested through consumption of contaminated food or water. Hantavirus has also been transmitted through rodent bites.

Areas of rodent infestation should be cleaned according to recommendations made in Appendix A – Clean Up of Rodent Contaminated Areas.

**Refer to Appendix A for Hantavirus Risk Reduction Recommendations.

Prevention

In an effort to prevent and eliminate rodent populations, it is important that conditions favorable to their survival be reduced as much as possible or eliminated.

- Action should be taken to mouse-proof the facility by plugging holes in the foundation and walls. Steel wool can be used as a temporary patch while waiting for permanent repairs to be done. (Attention should be given to utility tunnels and areas where sewers and drains enter a building.)
- Water runoff should be directed away from the building. Drains should be screened with 2” hardware cloth to prevent rodent access and kept free of debris to reduce puddling of water.
- Weather-stripping on doors should be repaired or replaced to reduce gaps to less than ¼”. Exterior doors should have automatic closing mechanisms installed and remain closed at all times. Loading dock areas should be clean, free of debris, and doors should remain closed as much as possible.
- Trees, shrubs, vines, and brush should be trimmed away from the building at least 12-18” to allow access for the pest control technician to monitor and place traps and bait stations if necessary. Grass should be mowed and trimmed.
- Dumpsters should be in good condition with all doors closed and drain holes capped. They should be located away from the building on a paved surface. Trash should be contained.
- Storage areas should be managed using a first in, first out program. Inventory should be elevated on pallets or shelving that is 12” or more away from any wall.
- Areas where rodent feces are found should be identified in the pest sighting log. Taking proper precautions to protect against hantavirus infection as described in Appendix A, the area should be disinfected and vacuumed with a HEPA filter vacuum cleaner. This will help the pest control technician to determine if the infestation is ongoing by whether or not new feces are found after the area has been cleaned.

Control Methods

Non-toxic glue boards will be used to trap and monitor for rodent populations within the building. Non-toxic baits and/or non-toxic tracing powder may also be utilized to monitor for rodent activity. Multiple catch traps and/or snap traps may be used if there is evidence of increased infestation or if five or more rodents are trapped on any inspection. If used, they will be placed in areas where they cannot be tampered with.

If populations cannot be suppressed otherwise, _____ or _____ bait will be placed in tamper proof rodent bait stations. The bait stations will be placed only in areas where they are not accessible to children, pets, wildlife, or domestic animals. Written approval will be obtained from John Butkus prior to their use.

If bait stations are used, they will be attached or anchored to discourage disturbance by nonauthorized personnel. Each station will be labeled with the name and address of the pest control company and the dates of installation and servicing will be indicated. The pest control technician will create diagrams or maps indicating the placement of bait stations which will be maintained as part of the pest control companies service record.

The pest control technician will fill burrows that are located around the perimeter of the building. On the next inspection the pest control technician may place _____ or _____ bait in reopened

burrows, filling them in to protect and conceal the bait. Retreatment will be performed as burrows reappear.

Poison tracking powder may be utilized by placing dust into wall voids or other concealed areas that are not treatable by any other means. Placement of poison tracking powder in tracking powder stations may also be considered if other baiting methods have not been successful due to bait shyness or resistance. Careful consideration will be given to their use with regard to the potential for exposure to building occupants and/or non-target animals, air movement, and moisture levels.

**Written approval will be obtained from John Butkus prior to their use.

Poison tracking powder must not be used in areas where:

- Utility personnel, building construction personnel, or remodelers may inadvertently or unknowingly contact the powder at any future time.
- There is any risk of rodents tracking the powder onto exposed food or food preparation surfaces.
- Tracking powder can be blown by drafts, air currents, or utility motor fans.
- There is a danger of the powder drifting or falling onto potentially sensitive areas (ledges, suspended ceilings).

Use of liquid baits may be appropriate in situations where the supply of water is scarce or nonexistent. Only tip resistant professional liquid baiting containers will be used if this method of baiting is employed. Consideration will be given to environmental factors such as heat or cold. Placement of the containers will be determined based on the risk of exposure to people or non-target animals and spilling or splashing liquid bait in areas sensitive to exposure and contamination.

**Written approval will be obtained from John Butkus prior to their use.

Pesticide Plan

Pesticides may be applied if rodent populations exceed an acceptable level. Priority is given to those pesticides having the lowest toxicity, taking into consideration the method and frequency of application and the risk of exposure to building occupants. Pesticides selected for possible use are as follows:

- **First Choice** (Products having the lowest toxicity and/or least risk of exposure based on the formulation, method, and frequency of application.)
 - Rodenticide (outdoor use only)
 - a)
 - b)
 - c)
- **Second Choice** (Products having moderate toxicity and/or risk of exposure based on the formulation, method, and frequency of application.)

Rodenticide (interior use only – does not include any formulation that may be translocated)

- a)
- b)
- c)

- **Third Choice** (Products having moderate to high toxicity and/or risk of exposure based on the formulation, method, and frequency of application.)

Use of any third choice pesticide product requires written approval of COR prior to application

Rodenticide (interior use)

- a)
- b)

Rodenticide (outdoor use)

- a)
- b)

Rodenticide (tracking powder)

- a)
- b)

Rodenticide (liquid baits)

- a)
- b)

An appraisal of this IPM program will be conducted quarterly by John Butkus and name of company representative. A determination will be made as to the effectiveness of the program and revisions will be made to correct potential problems. Revisions may include reimplementing of IPM methods already utilized and/or implementation of IPM techniques which have not been utilized.

Appendix A

Hantavirus Risk Reduction Recommendations
Adapted from
Morbidity and Mortality Weekly Report
Recommendations and Reports
July 30, 1993, Volume 42, Number RR-11

Clean Up of Rodent Contaminated Areas

Persons involved in the clean up should wear rubber or plastic gloves.

Spray dead rodents, rodent nests, droppings, or foods or other items that have been tainted by rodents with a general-purpose household disinfectant. Soak the material thoroughly and place in a plastic bag or vacuum with a HEPA filter vacuum cleaner. When a clean up is complete (or when the bag is full), seal the bag, then place it into a second plastic bag and seal. Dispose of the bagged material by burying in a 2 to 3 foot deep hole or by burning. If these alternatives are not feasible, contact the local or state health department concerning their appropriate disposal methods.

After the above items have been removed, mop floors with a solution of water, detergent, and disinfectant. Spray dirt floors with a disinfectant solution. A second mopping or spraying of floors with a general-purpose household disinfectant is optional. Carpets can be effectively disinfected with household disinfectants or by commercial grade steam cleaning or shampooing. To avoid generating potentially infectious aerosols, do not vacuum or sweep dry surfaces before mopping.

Disinfect countertops, cabinets, drawers, and other durable surfaces by washing them with a solution of detergent, water, and disinfectant, followed by an optional wiping down with a general-purpose household disinfectant.

Rugs and upholstered furniture should be steam cleaned or shampooed. If rodents have nested inside furniture and the nests are not accessible for decontamination, the furniture should be removed and burned.

Launder potentially contaminated bedding and clothing with hot water and detergent. Use rubber or plastic gloves when handling the dirty laundry. Before removing the gloves, wash gloved hands in a general household disinfectant and then in soap and water. A hypochlorite solution prepared by mixing 3 tablespoons of household bleach in 1 gallon of water may be used in place of a commercial disinfectant. When using the chlorine solution, avoid spilling the mixture on clothing or other items that may be damaged. Thoroughly wash hands with soap and water after removing the gloves.

Precautions for Workers in Affected Areas Who are Regularly Exposed to Rodents

A baseline serum sample, preferably drawn at the time of employment, should be available for all persons whose occupations involve frequent rodent contact. The serum sample should be stored at –20C.

Workers in potentially high risk settings should be informed about the symptoms of the disease and be given detailed guidance on prevention measures.

Workers who develop febrile or respiratory illness within 45 days of the last potential exposure should immediately seek medical attention and inform the attending physician of the potential occupational risk of hantavirus infection. The physician should contact local authorities promptly if hantavirus associated illness is suspected. A blood sample should be obtained and forwarded with the baseline serum through the state health department to the Centers for Disease Control for hantavirus antibody testing.

Workers should wear a half-face air purifying (or negative pressure) respirator or a PAPR equipped with HEPA filters when removing rodents from traps or handling rodents in an affected area. Respirators (including positive pressure types) are not considered protective if facial hair interferes with the face seal, since proper fit cannot be assured. Respiratory use practices should be in accord with a comprehensive user program and should be supervised by a knowledgeable person.

Workers should wear rubber or plastic gloves when handling rodents or traps containing rodents. Gloves should be washed and disinfected before removing them as described above.

Traps contaminated by rodent urine or feces or in which a rodent was captured should be disinfected with a commercial disinfectant or bleach solution. Dispose of dead rodents as described above.

Pest Control Service Record

Service Location	Servicing Company

Date	Supervisor	Certification#
Time In Out	Technician	Certification#

Specific Recommendations / Actions Needed (see also Inspection Report)

Pest Monitoring Report

Location	Activity Noted	Replacements/Actions

Pesticide Application Record

Pesticide Applied	Rate/Amt Applied	Target Post	Area Treated

Pest Inspection Report

Service Location:

Exterior

Sanitation

Pests Present Good Fair Poor

- Perimeter of building; kept free of vegetation, debris, clutter
- Exterior/structure in good repair, windows/doors/screens in good repair, holes and cracks repaired and/or caulked
- Dumpster area neat, contained, not overflowing, doors closed
- Loading dock free of debris, doors closed

Comments/Actions Needed:

Kitchen

- Walls/ceilings; clean, free of grease, mold, etc.
- Floors clean, including underneath appliances, free of grease residue, food particles
- Food prep area sanitary, cleaned daily, no food left out or accessible
- Food processing equipment including ovens, fryers and grills cleaned frequently, free of food and grease residue, well maintained
- Refrigeration units have clean interiors, proper storage containers, no items stored on top/along side
- Dishwashing area clean, no dirty dishes/utensils left unattended, no leaks/puddles

Comments/Actions Needed:

Other

- Trash area free of debris, trash properly stored, receptacles frequently cleaned
- Storage areas – items elevated off the floor, away from the wall, removed from cartons
- Dining areas – tables/floors clean, free of food debris, condiment/salad bar clean
- Restrooms are sanitary, floors sinks, counters clean, no leaking faucets, drains, etc.
- Classrooms neat, clutter free, no food stored or left out

- Locker rooms are clutter free, showers/drains cleaned, no leaks/puddles

Comments/Actions Needed:

Inspector: _____ Date: _____

Next Scheduled Inspection: _____

Client Signature: _____