Food Protection

Lesson 12

Pest Control

NYC DOHMH Poster

This lesson describes a system that combines preventive and control measures to eliminate pest infestations. Rodents and insect pests have been with us since the beginning of time. We may not be able to eliminate them completely, but there is a lot that can be done to control infestations. This takes a concerted effort between the operator of a food service establishment and a licensed pest control operator.

Section 81.23 of the New York City Health Code States:
81.23 (a) Food establishments shall be kept free from rodents, insects and other pests, and from any condition conducive to rodent or insect and other pest life. When required by the Department, equipment and fixtures shall be of such construction and design and of such material as to be rodent-proof.

Historically, rodents have been responsible for more human illnesses and deaths than any other group of mammals. They are found worldwide and are associated with such diseases as plague, murine typhus, hantaviral diseases, rickettsialpox, rat-bite fever, leptospirosis, lymphocytic choriomeningitis, and listeriosis.

The presence of rodents in a food area is a critical violation. Food that has been exposed to rodents is contaminated and must be discarded. Food must always be protected against contamination from pests. These pests carry filth and contamination and may transfer them to food.

Controlling Rodents
Despite the fact that millions of dollars are spent each year combating these pests, they continue to cause destruction of property and contamination of food supplies. Unfortunately much of the effort and money expended to defeat these pests is directed only at trapping and poisoning them.

In combating rodent infestation, the use of cats, traps and poisons are only temporary expedients and do not eliminate rodent life completely from your premises.

The way to get rid of rodents completely is to:
(1) Starve them; (2) Build them out; (3) Destroy them

Starve Them
Because rats are capable of eating almost anything, it is important to remove all possible food items such as garbage, empty food containers, spilled food, and food residues on equipment and surfaces each day. Garbage should be covered and completely unavailable to the pests. All food storage areas should be protected, and made inaccessible to these pests. Foods should be stored in vermin proof containers with tight fitting lids. Eliminate water sources such as leaky taps, water puddles, sweating pipes and open drains. Remember, garbage, waste and unprotected food stores are the rodents' food supply. They must eat every day. Once food and water are removed, the vermin cannot survive and will either die or move away.

Build Them Out

Block all doorways and windows against entry. Rodents can enter through very small openings. A mouse needs only a quarter-inch opening to gain access and rats, only a half-inch opening. Once they have gained entry, they live behind walls and floorboards.

Cover all holes and means of entry with rodent-proof material. Hardware cloth and good commercial sealants should be used as rodents can gnaw through most other material. A well-maintained structure is your first defense against rodents. Frequently inspect the facility to identify openings and defects, and ensure that it remains vermin free.

Destroy Them

Destroy pests by using traps for temporary control; get a professional, licensed pest control service if rodenticides will be used—such chemicals are not allowed to be used in a food service establishment unless applied by a licensed pest control operator.

Harborage

To combat infestation in your premises, it is necessary to be able to recognize rodent harborage or hiding places, both actual and potential, as they are the conditions favoring rodent life and propagation. There are three general types of rodent harborage (1) Temporary, (2) Incidental and (3) Structural

Temporary Rodent Harborage

Temporary harborage is common in establishments that are not maintained in a clean and sanitary manner, are cleaned improperly and do not store stock with care.

Incidental Rodent Harborage

Installing fixtures or equipment on the premises in a way that allows for hollow spaces, enclosures and hard to reach areas, can lead to incidental harborage.

Structural Rodent Harborage

Defective design or construction of a building (from a rat-proof standpoint) and not making proper repairs using rat-proof materials can end in structural rat harborage. Prevention is the key in preventing rodent harborage.

Prevention

- Unused materials should be stored neatly and away from walls, allowing enough space for an individual to pass through during cleaning. These spaces should preferably be stored at least 6 inches above the floor to permit cleaning. The amount stored should be minimized as much as possible and moved around once every three weeks to prevent nesting of rodents.

- Promptly clean up food scraps and spills, as these are readily available as rodent food.

- Store all garbage in non-leaking metal receptacles with tight-fitting lids.

- Place soiled linen into suitable containers.

- When installing refrigerators and other equipment, care must be taken to eliminate narrow, inaccessible spaces behind and below them. Any space left behind or beneath a piece of equipment must be wide enough to allow for inspection and cleaning. The alternative is to place them flush against walls or cemented directly to the floor.

- Eliminate any space between ventilation ducts and the ceiling, as these can become rat runways. Ducts should be placed flush against ceilings and preferably be round in shape, instead of square.

- Remove decorative boxing-in around radiators, columns, etc. to avoid hollow enclosures, or protect gnawing margins with metal flashing extending at least 6" above the floors. If they've just been sheathed for appearance, use sheet metal.

- Repair and securely close all breaks in insulation around pipes, refrigerators or cooling cabinets.

- Line interiors of wooden bins with sheet metal, or store foods in rodent-proof containers.

- Promptly seal up all holes or openings around pipelines or cables where they enter the building. Seal with concrete mortar or cement mortar. For better results, add ground glass to the mortar.

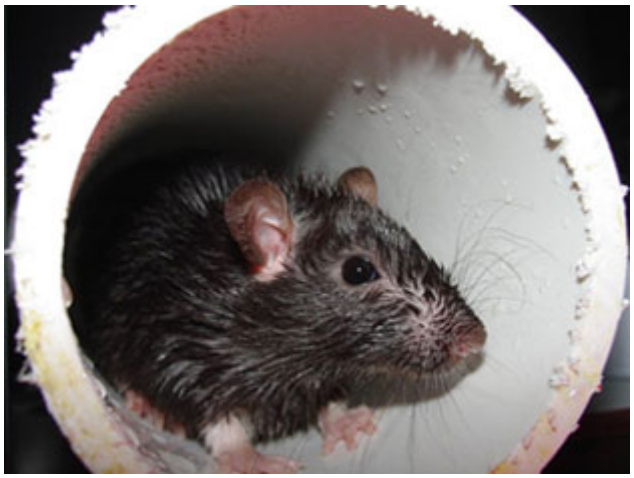
- Seal up all openings around beams.

- Find all openings before rodents do—inspect all parts of the premises for holes and seal every opening in walls and ceilings with cement. Move away fixtures and stock that may hide holes in floors and use a flashlight so as not to miss any. Look for loose bricks, cracks or other openings in cellar foundation walls. Inspect regularly and repair weak spots before actual breaks occur.

- Replace earthen cellar floors with a floor of concrete at least 3" to 4" thick and tied securely into foundation walls.

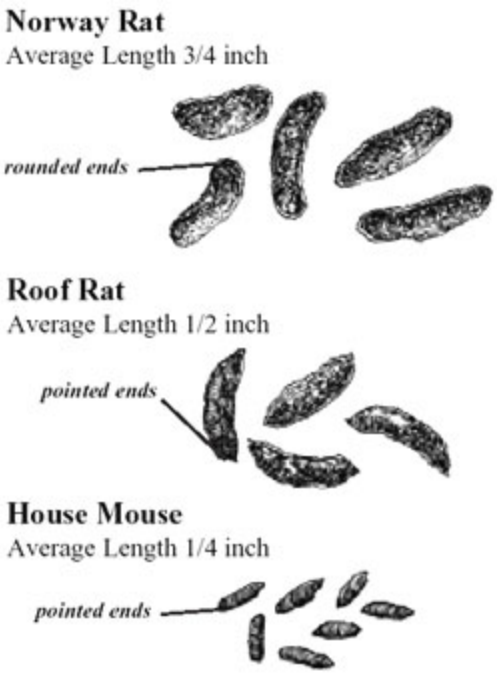
- Securely anchor window and door screens to the frames.

RODENT INFESTATION SURVEY



A rodent infestation survey will indicate the presence and approximate extent of an infestation.

Rodents are nocturnal creatures, they will seldom be observed during the day. Rats seen during the day is an indication of severe infestation. However there are several other signs of rodent infestation that one can easily detect. These signs alert one to the presence of these pests. The presence of these signs anywhere in the restaurant, including non-food areas, is recorded as **critical violations**.



Rat Droppings

Excreta or Pellets

Rodents urinate continuously, causing pollution of food and water. A rat expels more than a gallon of urine per year. Human infection is most often caused by contact with urine. Rats produce about 40 droppings per day, mice about 80. Therefore, any areas that have been visited by rodents will be infected.

Adult rat excreta (droppings) are one-half inch to one inch long; an adult mouse excreta is one-sixteenth of an inch long. Excreta is typically found in areas that receive little attention such as the rear of shelves in the darkened area of basements, behind large equipment, etc. A flashlight is useful in detecting rodent excreta.

The presence of droppings can show a recent or an old infestation, and the amount of droppings indicates heavy or light infestation. The size of the pellets indicates if the rodents are large or small, and if different sizes are present, it indicates litters of young are being reared.

Gnawing

Rodents' gnawing habits are widely known. It has been estimated that rodents spend about 2% of their entire day gnawing on material.
Rodents will gnaw on wood, pipes, walls, lumber, masonry, plastic, food packaging and paper. Their teeth marks will be evident on these materials, and as a result of this gnawing, piles of shredded paper, sawdust and other material may be observed. This activity can also be heard, along with climbing noises and squeaks.

Rat Runs

Rats are creatures of habit and have poor vision. They traverse the same trails and routes each night, pressing up against the surfaces they pass through. After passing over these surfaces night after night, an accumulation of a greasy, dark film is left on the surfaces they touch. This greasy film is the indication of a rat run. It is difficult to tell by their appearance if a **rat run** is new or old. If painted over in white and if the pests are still present they will continue to use the same passageway and will leave new marks on the surfaces.

Insect Control

Proper restaurant or food facility sanitation must obviously include measures for eliminating insects and vermin. Insect infestation in a food service establishment is a critical violation, and the establishment will be closed if severe infestation is found. Food that has been exposed to insects is considered contaminated and must be discarded. Insects carry millions of bacteria in and on their bodies, and contaminate the food on which they crawl. Food establishments are particularly susceptible to insect infestation, as insects are attracted to the food.

These pests seek food, water and nesting sites. The principles for preventing rodent infestation also apply to the elimination of insects.

STRAVE THEM OUT

Insects enter food establishments in search of food; every day, remove all possible food items, such as garbage, empty food containers, spilled food, and food residues on equipment and on surfaces. Insects need only a very small amount of food to survive.

Garbage should be covered and completely unavailable to the pests. All food storage areas should be protected and made inaccessible. Foods should be stored in pest-proof containers and covered with tight-fitting lids at all times.

Eliminate water sources such as leaky faucets, water puddles, sweating pipes and open drains. Garbage, waste, food residues and unprotected food stores are the insects' food supply.

Build Them Out

Block all doorways and windows against entry. Insects will enter through doors, windows and small openings in a building. All opened windows should be fitted with metal screens that are free of defects.

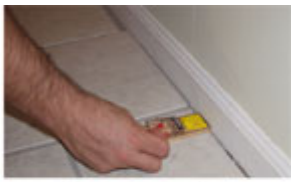
The insects are known to enter restaurants through food deliveries as adults or eggs in the packaging material in boxes, and in the food itself. Inspect all food deliveries for the presence of pests. Conduct frequent inspections of the facility to identify openings and defects, and signs of insect infestation. Repair cracks and holes in floors, walls and ceilings.

Breeding and hiding areas: All potential insect breeding places, such as rubbish, debris and piles of paper, cardboard and lumber, as well as stagnant water, should be eliminated. Openings around plumbing fixtures, furnace flues and electrical conduit should be completely sealed.

Destroy Them

This is best left to a licensed pest control operator who is trained in the use of pesticides. Some pesticides are prohibited in a food service establishment while others can only be applied by a person licensed to do so. A joint effort with the food service establishment taking care of preventive measures and a licensed pest control operator applying pesticides can eliminate the problem of insect infestation.

Flies

Remove all breeding places that are in or adjacent to the establishment; for example, piles of manure, uncovered garbage, and filth in general. Keep garbage cans tightly covered and thoroughly clean. When the garbage containers are emptied, they should be rinsed and sprayed with a solution of one part of household bleach and three parts of water. The garbage should be sealed in plastic bags before being put into vermin proof containers with tight fitting lids.

KEEP THEM OUT

Be sure doors and windows have screens, and ensure that all doors open out and are self-closing. Install air curtains if needed.

KILL THEM

Hire a licensed pest control operator who is trained in the use of pesticides. Some pesticides cannot be applied in a food service establishment, and a licensed pest control operator must apply those that are allowed.

Fly strips and zappers are permitted in food service establishments; however, these must be placed away from foods and food preparation areas so that insect parts will not fall on the food and contaminate it. A better approach is to use ultra violet light devices with glue pads on the bottom to catch the flies.

Roaches

The presence of roaches in food establishments is a serious public health problem. Roaches carry disease-causing bacteria on their bodies and deposit them on the food through their excreta and body contact. They have been linked to allergies in humans and many people with asthma are allergic to "roach dust" — roach body parts and roach droppings. Roach dust is a very strong asthma trigger.

Control

It is difficult to prevent the invasion of a food establishment with insects, especially roaches that may come from an adjoining building or in packages delivered to the premises. The emphasis must be placed on eliminating harborage and breeding places within the establishment, as well as extermination.

All cracks and holes in the floor, walls and ceilings should be sealed filling with cement, plaster, putty or plastic wood. Seams in fixtures and equipment should receive the same treatment.

Equipment and fixtures should be placed flush against the wall and floor; if not, then a sufficient distance away from the wall and above the floor to facilitate cleaning around it. Wherever possible, wooden fixtures should be replaced with metal.

All potential insect-breeding places, such as rubbish, debris and stagnant water should be eliminated. Garbage should be kept in tightly covered metal cans, and the cans should be thoroughly cleaned after being emptied. The room in which garbage is kept prior to removal should be constructed of impervious, washable material (preferably cement) and should have facilities to wash garbage cans. If this room can be refrigerated, the cold temperature will prevent insects from breeding and odors from decomposing garbage will be lessened.

Good housekeeping is a very important factor in insect control. Food establishments and equipment therein should be completely cleaned each night before closing, not only for good sanitation, but to remove all grease, food encrustation and food particles on which insects can feed.

In addition, roaches can be destroyed with effective insecticides applied by a licensed pest control operator.

PESTICIDE USE IN FOOD SERVICE OPERATIONS

Operators of food service establishments must ensure that the establishment remains free of pests and must use the methods described in the sections above to prevent pest infestation. Additionally, they may use glue traps and baited traps. However they may not use chemical pesticides of any kind in the establishment, unless they also possess certification as a "commercial applicator." This applies even to aerosol cans of pesticides, available at most grocery stores.