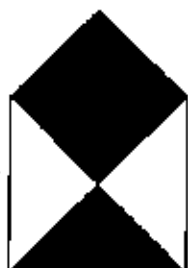


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DISASTER SALVAGE TEAM

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UNIVERSITY OF CANTERBURY

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RODENTS

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Rodent Control

The rodents most likely to be encountered in museums and art galleries are:

- 1 The Brown or Sewer rat =
 RATTUS NORVEGICUS
- 2 The Ship, Roof or Black rat =
 RATTUS RATTUS
- 3 The House Mouse =
 MUS MUSCULUS

These three rodents are entirely different in their habits and an understanding of these is the key to their control.

The Brown rat is a fairly reliable and constant performer. It will live indoors as well as outside in burrows. It can climb and swim but will climb only when circumstances require it to do so. Droppings are deposited in defined areas and food is consumed regularly at the same point - as long as supply is available. The Brown rat is larger than the Black rat. Because of its regular habits the Brown rat is easy to control.

The Ship or Black rat is smaller than the Brown rat and very agile. It is an incredibly good climber but does not swim or burrow from choice.

Black and Brown rats are enemies and a Brown rat will attack and kill a Black rat when the two are confronted.

This rat has very irregular habits in eating and movement and for this reason is difficult to control by baiting. Bait stations should be widely dispersed at all levels in the building from basement to roof.

The House Mouse is reasonably static and will not move far from its nest. Mice are usually difficult to control by baiting because they are finicky erratic feeders and will often stay in harbourage where bait cannot be placed.

note: Terms such as Brown or Black Rat have no real value for identification. The fur

colour of both rats can vary from albino to jet black and a white belly fur is often present in both species.

Inspection for Infestation

Infestation can range from just a few mice in the whole building to Ship rats in the upper floors, Brown rats in the basement and wall cavities, and mice inside objects and storage areas.

The only way of obtaining the whole picture is by undertaking a detailed inch by inch survey of all buildings, rooms and grounds and to make on the spot notes at the time.

Do include disused stores, roof or attic spaces and floor cavities and do not be put off by remarks such as "Oh there are no pests here" or "Only a couple of mice" and similar dangerous remarks!

What to look for during an inspection:

Look for rat or mouse signs, these will show by droppings, urine stains, footprints, gnawed wood, tail swipes, body grease smears on walls and beams or pipes. Then there could be nesting material like heaped up dry grass, leaves, gnawed paper etc. Empty walnut shells in attics are sure signs of Black rats.

Drinking points should be recognised as such because they are very important to rats.

Eating points should be located but could be difficult to identify.

Areas of quiet daytime harbourage.

When all, or most of these have been discovered and listed, a picture of the extent of infestation will emerge and a control plan, followed by a protection plan can be drawn up.

Control Campaign

At the start of every control campaign it is advisable to review the following points:

- 1) What is the present source of food and water?
- 2) Can the present supply be discontinued

or made unattractive?

- 3) Can a more attractive substitute for food and (or) water or a more convenient supply be offered?
- 4) Can neighbouring buildings like houses, factories etc. be included in the program?

It is important to know that the water requirements of rats are high, if rats can be denied their usual source of water by turning off, drying out, meshing over, adding disinfectants to puddles, removing fruits and juicy material from waste buckets, then water baits placed at convenient points will have a tremendous effect.

Baiting

Baiting can be done with solids, semi-solids and liquids.

The type of poisons added can be either acute or chronic poison.

Solids : seeds, cereals ground or whole, pellets, fruit, bread, biscuits, fish or meat.

Semi solids: hardened animal fat, tallow, cocos and palm oil fat, waxes.

Liquids: water, apple juice, cooking oils, neatsfoot oil, linseed oil.

Acute poisons:
Thallium Sulphate
Zinc Phosphide
Yellow Phosphorus
Arsenic Trioxide
Emetic substances like
Fortified Red Squib

(rats cannot vomit and in trying to do so are fatally injured)

Chronic poisons: War farin, Pivalyn and Coumarin - either liquid or solid.

Gases (acute) Cyanide, Methyl
Bromide, Chloropicien

Where to place bait:

- 1 If possible start with a good number of outside baiting stations well protected from the weather and consumption of birds and animals. These bait stations will form a perimeter ring of defence outside the buildings.
- 2 Every room and area inside the building must be thoroughly baited
 - eg. - on ledges and beams under the floor (heavy)
 - under lockers, cabinets desks etc
 - inside storage cupboards and dead spaces
 - in the roof space especially on roof trusses

Anti coagulant baiting stations should never be allowed to become empty since a rat's or mouse's blood recovers rapidly and the sequence has to start all over again.

Blood anti coagulants are the nearest yet to a perfect rodenticide. They are slow in action requiring consumption everyday over a 5-10 day period thereby totally avoiding bait shyness, they keep well and are relatively safe in the presence of humans and animals.

They appear to cause few corpse odours since most rodents with bodies affected by the chemical move into the open or become too weak to return to harbourages with difficult access.

Acute poisons and gases can be very effective for a quick initial kill, however they are very dangerous to animals. Acute poisons cause bait shyness and thereby lose their effectiveness and they cause corpse odours since most, or in the case of gases, all rodents die inside.

The use of gases should at all times be left to the expert fumigators because even minor mistakes can have lethal consequences.

Follow Up and Prevention

To assure long term results, at least two procedures should be followed.

- 1 A sensible baiting program. Once in place this has to be maintained indefinitely including the outer perimeter.
- 2 All buildings have to be proofed against rodents and although 100% proofing is nigh impossible, work well done will have a significant effect in reducing penetration.

Proofing Buildings

- 1 Check all doors at ground level. If a fountain pen can be passed beneath it, then a mouse or a young rat can flatten itself and crawl beneath it.
- 2 Cover all drains with grills.
- 3 When using mesh to cover holes and gaps use metal mesh with a diameter not larger than 0.25 inch, but preferably smaller.
- 4 To protect the bottoms of entrance doors from gnawing - fold copper or stainless steel sheeting around both ends for at least 2 inches and glue or screw in place permanently.
- 5 When filling a wall, hole or pipe entrance with concrete, first fill the cavity with crushed chicken wire and mix finely broken glass into the concrete mix.
- 6 Keep trees and shrubs from touching buildings.
- 7 Provide false ceilings with trapdoors so those spaces can be checked, cleaned and baited.
- 8 Hygiene represents a very useful and

effective method of rodent control particularly in preventing reinfestation.

Some do's and don't's

Do not leave bits of food, especially fruit material in open rubbish tins or other places where rodents can get at it.

Never feed the birds around your premises in late afternoon or evening, birds don't feed at night, rodents do.

Do wear rubber gloves when handling poisons.

Do check bait stations every other day and top up.

Do not disturb bait stations.

Do mix different types of grains combined with other baits at the same bait stations for greater acceptance.

Don't leave the distribution and storage of poisoned baits to persons who have not been fully informed about the dangers of the products and the handling thereof.

Never give chemicals away. If you do legal action could be taken against you when those chemicals cause harm.

Don't keep rodenticides near insecticides, the smell could make the rodenticide unacceptable.

When unsure or in doubt of what to do it is best to call in a registered pest-control firm and to let them do the job for you. After all they are the experts who know how to deal with your problem professionally.

How to draw up a pest control tender

The tender should include the following items:

- a which pests are covered by the service.
- b what active ingredients (poisons are used).
- c is additional treatment necessary and

how often? (frequency of service)

- d is each visit charged individually or can a total package be arranged?
- e what is the ability to deal with resistant pests?
- f are insurance covers in force?
- g are there any other special features in place?
- h any other items you like to include.

Just one hint, the lowest tender is not necessarily the best choice, just compare and choose carefully.

NOTE: Traps and sticky boards have not been mentioned because of strong resistance by most people to deal with these contraptions.

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