

Storage Pests: Rodents

What are rodents?

Rodents are rats and mice. The three most important rodent species in rice storage are

- Black rat or House rat (*Rattus rattus*),
- Norway rat or Common rat (*Rattus norvegicus*), and
- House mouse (*Mus musculus*).



Why is knowing about rodents in storage important?

Rats have been estimated to damage more than 1% of the world cereal crops and 3-5% in developing countries. They can transfer around 50 diseases to humans, including typhoid, paratyphoid, and scabies. They also may be vectors of a large number of diseases affecting domestic animals.

How to determine rodent infestation

Losses caused by rats and mice

Feeding on stored produce

Rats consume about 25 gm of food per day and mice eat approximately 3-4 gm per day. They contaminate a lot of the stored produce with urine, feces, hair and pathogenic agents. Infested batches often have to be declared unfit for human consumption. As rodents mainly feed on the embryo, they cause particular damage to the nutritional value and germination ability of seeds.

Damage to material and equipment

Rodents damage tarpaulins, bags, pallets, sprayers, and to the store itself (cables, doors). These often lead to subsequent damage:

- Produce leaking out of bags or containers
- Bag stacks collapsing
- Sparks or fire from short circuits
- Silos and warehouses may subside or even collapse as a result of being undermined
- Damaged drainage canals around a store.

Signs of rodent infestation

There are a number of signs of rodent infestation:

Live animals: Rodents are mainly active at night. If they are seen during the daytime, it is a sign of an already advanced stage of infestation.

Droppings: The shape, size and appearance of droppings can provide information as to the species of rodents and the degree of infestation. Droppings are soft and shiny when fresh, becoming crumbly and matt black or gray in color after 2 - 3 days.

Runs and tracks: Found along the foot of walls, fences or across rubble. Rodents don't cross open areas, but always pass through overgrown territory. Runs inside buildings are free of dust. The animal's Storage rodents.doc

fur coming into contact with the wall leaves dark, greasy stains.

Footprints and tail marks: Look for footprints and tail marks in the dust. Talcum powder or flour scattered on the floor at several places can visualize traces. The size of the back feet indicates the species:

- Back feet larger than 30mm: Black rat, Norway rat, Bandicoot rat.
- Back feet smaller than 30mm: House mouse, Multi-mammate rat, and Pacific rat.

Tell-tale damage: Check for the following damage:

- Rats leave relatively large fragments of grain they have nibbled at (gnaw marks). Sharp and small leftovers are typical for mice.
- Damaged sacks with spilled/ scattered grain.
- Small heaps of grain beneath bag stacks.
- Damaged material and equipment.

Burrows and nests: Inside the store in corners as well as in the roof area, outside the store in burrows, in overgrown areas or close to the foundations of a store. Rat holes diameters: 6-8cm, Mice holes diameters: 2cm.

Urine: Urine traces are fluorescent in ultraviolet light. Where available, ultraviolet lamps can be used to look for traces of urine.

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