



Pantry Pests and Their Control

Several insects, commonly referred to as pantry or kitchen pests, infest dry or stored food products in the home. Most are either beetles or moths. In the case of beetles, both the adult and larval stages may be damaging while only the larvae of moths are destructive. Infestations may be noted when these insects are found in some products, but more commonly when the adults are seen crawling or flying about the kitchen or pantry. Since most of these insects are of tropical or semi-tropical origin, they live and breed best under warm, humid conditions – conditions often found in kitchen cupboards. Since most do not hibernate, reproduction is continuous throughout the year and populations can build up rapidly if they are left undisturbed.

Source of Infestation

Pantry pests are almost always brought into the home in infested food packages. From here, they spread to other susceptible products. On occasion, adults fly in through open doors and windows. Pantry infestations of carpet beetles and larder beetles may be due to a change of habitat – from products containing wool, fur, or feathers to dried food products. Larder beetles are attracted to the fat in dry dog and cat food. Psocids, or book lice, like to feed on starchy materials and may infest dried food products after first feeding on non-food products.

Susceptible Products

Items most likely to be infested with pantry pests include grains, flour, bran, cereal, breakfast foods, dried fruits, nuts, crackers, cookies, matzos, macaroni, spaghetti, candy, chocolate, cocoa, cheese and dried meats. Also, they can be found in dry dog and cat food, bird and vegetable seeds, cornstarch, dried soup mixes and other dehydrated foods, and in spices – especially red pepper, paprika and chili powder.

Most Common Pantry Pests

The most frequently encountered pantry pests in Connecticut homes are the saw-toothed grain beetle, the Indian meal moth, and the rice weevil. A brief description and life history of each is as follows:

The Saw-Toothed Grain Beetle

The adult is a small brownish beetle about 1/10-inch long with six tooth-like projections on either side the thorax (that part of the insect just behind the head.). The worm-like larva is less than 1/8-inch long and dirty white in color. Both the larva and adult cause damage by their feeding. The adult beetle is often mistaken for a small ant when seen walking around. Because of its small size, it can readily penetrate tiny cracks and crevices to get into unopened food packages.

Eggs are laid in or near food products and hatch into larvae in a week or less. The larvae feed for two to three weeks and then pupate within a protective cocoon-like covering made by sticking small bits of food together. About a week later they emerge as adults. Infestations can build up rapidly if left undisturbed since adults can live and breed for three years.

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Both larva and adult feed on a wide variety of stored products. These include grains, cereals, breakfast foods, flour, bread meal, corn meal, corn starch, cookies, crackers, dried fruits and vegetables, nuts, dried soup mixes, dry dog and cat food, garden seeds, bird seed, macaroni, spaghetti, yeasts, chocolate, candy, dried meats and similar products.

The Indian Meal Moth

The Indian meal moth is a small insect with a wingspan of about $\frac{3}{4}$ of an inch. Its wings lie flat along the body when at rest. The front wings are a light tannish color on the front third, while the back two thirds are reddish-brown with a coppery luster. The moth itself does no damage. However, when seen it is an indication that the larvae, which are worm-like in form, dirty white, and about $\frac{1}{2}$ inch long when mature, are at work.

Female moths can lay from 200 to 400 eggs. Upon hatching, the larvae disperse and feed in or near a tunnel-like case of debris and silk that they web together. When the larvae reach maturity, they leave their case and food supply and wander about looking for a place to pupate. It is during this wandering that they are most likely to be seen. When a suitable place is found, the larvae construct a white silken cocoon, pupate and later emerge as adult moths. The Indian meal moth can complete its life cycle in 27 days under ideal conditions but it probably takes much longer in most cases. The larvae will feed on most foods that are attacked by the saw-toothed grain beetle.

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The Rice Weevil

The adult weevil is a small, black snout beetle about 1/8-inch long with four reddish or yellowish spots on its back. The larva is legless and has a short, stout, whitish body and tan head.

This pest is largely confined to whole grain products such as rice, wheat, kernel corn, table beans, nuts, seeds (especially sunflower seeds), etc. Normally a householder does not know these weevils are present until the adults are seen crawling about because they feed inside the whole grain and plug their entrance holes so that the grain looks normal. The rice weevil can also be found in solidified milled products such as macaroni and cake flour.

The female beetle eats out a cavity in a whole grain product large enough for an egg, lays the egg in it and seals over the cavity. The egg hatches and the larvae feeds inside and remains there until it transforms to an adult. The entire life cycle can be completed in as little as 32 days.

Less Common Pantry Pests

Other pantry pests less frequently encountered include the granary weevil, Angoumois grain moth, bean weevil, and lesser grain borer. These insects are largely internal feeders on whole grain products like the rice weevil and therefore are seldom seen until the adults emerge from the grain.

The rest of the stored products pests are either external feeders or scavengers who feed on grain only after the seed coat has been broken either mechanically or by some other insect, or secondary pests that feed only on materials which are out of condition, damp, or have some mold on them. These pests include the Mediterranean flour moth, confused flour beetle, red flour beetle, cigarette beetle, drugstore beetle, spider beetle, black carpet beetle, larder beetle, cadelle, yellow mealworm, grain mite, psocid, and others.

Control of Pantry Pests

Inspection

Always keep in mind that many pantry pests are strong fliers and that their larvae can crawl some distance from a source of infestation. The source of infestation is usually limited to a small area such as the kitchen, or a single cabinet, or a single susceptible product. Before you attempt control, find out this source and eliminate it.

This is not always an easy job. Check all the materials mentioned as susceptible products. Do not overlook the fact that a sealed container may be infested because the lid may be loose enough to allow pantry pests to escape from it.

Sterilization

It is possible to kill pantry pests by putting lightly infested packages in the refrigerator freezer compartment for two or three days.

Sanitation

Periodically clean all shelves in storage areas. Many pantry pests can breed in food particles that spill or sift from packages and accumulate in cracks and corners. The insects can then infest food packages on the shelves later.

Buy only small quantities of foods susceptible to infestation, especially in the summer. Carefully examine these foods when you get them to be sure they are free of pests.

Whenever possible, dry foods can be stored in clean glass or metal containers with tight fitting lids. (Empty coffee cans with plastic lids make excellent storage containers.) Clean containers thoroughly before placing fresh food in them. Never leave them undisturbed for long periods of time.

Insecticides

Are not recommended for use against pantry pests.

Pheromone Traps

Pheromone traps are only available for Indian meal moths and they just attract male moths. They are generally used after the source of infestation has been found and contained to detect any remaining moths rather than as a control measure. If more moths are found, inspection and cleaning should continue.

Despite good cultural practices, pests and diseases at times may appear. Chemical control should be used only after all other methods have failed.

For pesticide information please call UConn Home and Garden Education Center weekdays, in Connecticut call toll free 877-486-6271. Out of state call 860-486-6271.

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