

E-300 (Revised)

Bugs

In Your Cupboards

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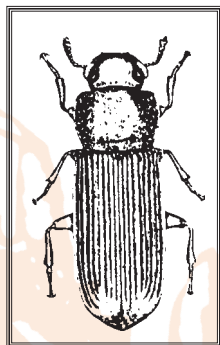
Most home owners at some time or another find insects in their flour, cereals, breakfast foods or dry baking ingredients in cupboards or other storage places. Infestations of this type are not necessarily the fault of the homemaker; the insects may gain entrance into the house as a result of buying some cereal product that already has become infested. Commercially prepared dry pet food is one of the primary sources of insect infestation in many households.

The most common cereal insect pests and control measures that generally are suitable for this entire group of insects will be discussed in this circular.

Confused Flour Beetle and Red Flour Beetle

These beetles are frequent invaders in the home and are also one of the worst pests of flour mills. The beetles are about 1/8 inch long and reddish-brown in color.

Females may live a year or more, dropping up to 500 eggs on infested foods. Small, white worms (larvae) hatch from these eggs and they feed until they're about 1/6 inch long. Under ideal conditions, development from egg to adult takes about two months. The beetles infest flour, breakfast food, baking powder, beans, peas, dry pet food and other starchy materials.

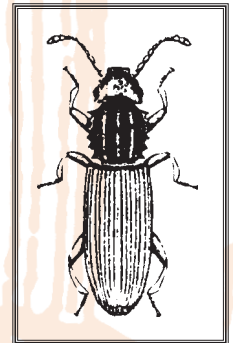


Hundreds of flour beetles can live and reproduce in a small box or bag of infested food. The adults can migrate throughout the kitchen and infest any other attractive foods in open containers left undisturbed for long periods.

The red flour beetle so closely resembles the confused flour beetle in appearance and habits that the illustration of the red flour beetle applies to both insects.

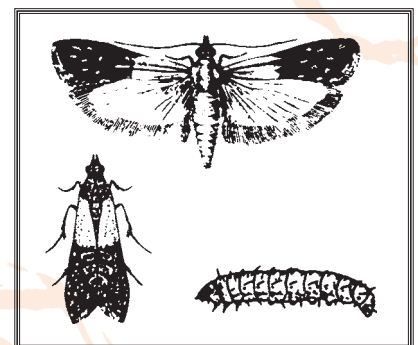
Sawtoothed Grain Beetle

These beetles are found in cereal products and, like the flour beetles, are included in the bran bug group. These usually are found around the cupboard where flour or sugar has spilled during baking. Nuts, seeds, dried fruit and candy are also suitable food sources. Adult beetles are dark brown, flattened, slender and about 1/10 inch long. A distinctive feature is a row of six sawtoothlike projections on each side of the thorax just back of the head, which can be seen using a hand lens. The adults can live up to two or three years. The females lay from 45 to 285 eggs, which hatch into small yellowish-white, wormlike larvae that later pupate inside a covering of food materials. After one week, adults emerge. The beetles can penetrate packaged foodstuffs and may be brought into the home in groceries.



Indian Meal Moth

Indian meal moths are among the most troublesome pests infesting stored foods. Infested material will be more or less webbed together and often fouled with dirty silken masses containing the discharge of the larvae. These moths attack nearly every cereal product, and frequently infestations in the home can be traced to dog food. They also can be found in candy, nuts and spices. The adult moth has a wingspread of 3/4 inch. The outer two-thirds of the wings are reddish-brown. Females are capable of laying about 200 eggs. Larval forms are white with a distinct greenish or pinkish tinge and have a light brown head.

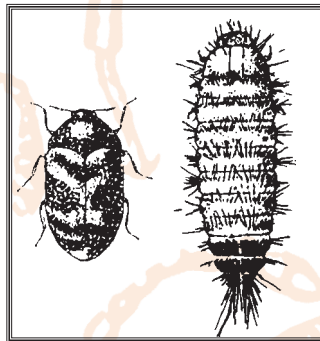


Dermestid Beetles

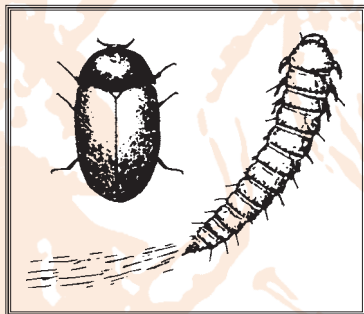
The members of this family are scavengers and feed on a wide variety of products of both plant and animal origin. The larvae do most of the damage; adults are thought to feed mainly on flower pollen outdoors.

The adults are small, oval, convex beetles varying in length from 1/8 to 1/4 inch. They usually are hairy or covered with scales. Most have a distinct color pattern based upon these hairs or scales. The larval stages have a tubular shape or body and are generally brownish or reddish-brown, covered with relatively long hairs. They may reach about 1/4 inch in length when mature. Some species have bundles of hairs on the last three or four segments while others have a terminal tuft of long hairs.

Cabinet beetles: Several species of this group are common pantry pests that prefer cereal grain products. The fuzzy, slow-moving larvae are the stages most often found in infested food products. The adults likely are to be found around lights or windows in the area of the infested food product.



Carpet beetles: This group prefers products of animal origin. The larval stages may feed on carpet, clothing, furniture or anything containing animal products. Occasional invasions into plant-origin food products are usually accidental.



Larder beetles:

Larder beetles also prefer products of animal origin, such as dried meat and cheese. However, larval and adult stages occasionally will invade food products of plant origin, such as dry pet foods.

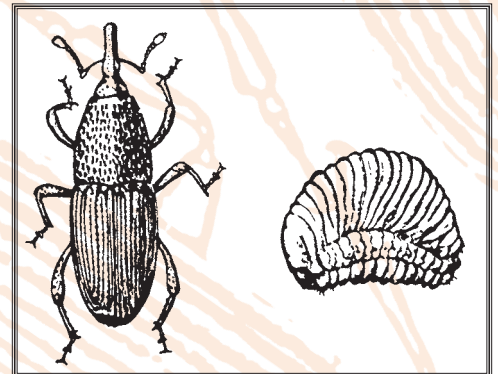


Grain Weevils

Weevils, or snout beetles, are characterized by a head elongated into a snout. Two species of this large family, the rice weevil and the granary weevil, are common pests of stored whole grain and may become pantry pests. The adults feed on the outside of grain kernels. The larvae are small, white, legless grubs that develop inside the kernel.

Granary weevil: This weevil is about 3/16 inch long and is chestnut brown to black.

There are no wings under the wing covers, so it cannot fly. Both adults and larvae feed on a wide variety of grains. The adult female uses her



mandibles to bore a small hole in a kernel, into which she lays an egg. The larva develops entirely inside the kernel. Developmental time from egg to adult is about four weeks.

Rice weevil: This weevil is almost 1/8 inch long, reddish-brown to nearly black and marked with four light red to yellow spots on the wing covers. Unlike the granary weevil, it has a second pair of wings under the wing covers and can fly. Its biology and habits are very similar to that of the granary weevil.

Methods of Control

Sanitation is the best method of control and prevention at present. Removal of all cereal refuse does away with possible breeding places for the insects. Therefore, controlling insect pests in stored cereal products should include the following steps:

- ❗ Discard all infested foodstuffs and place all newly purchased flour, sugar, breakfast food and similar products in canister-type containers.
- ❗ Thoroughly clean the cupboard and storage bins of all refuse material. Be sure to clean out the cracks along the shelves and top of the cupboard. Scrub out these areas with soap and water, adding a little household disinfectant.
- ❗ Purchase foods in quantities small enough so they may be used up rapidly.
- ❗ Keep all food storage space clean at all times.

❗ Spray the shelves or other infested areas lightly, particularly cracks where shelves and cupboards come together. Suggested insecticides include resmethrin, sumithrin, tetramethrin, permethrin and pyrethins.

Caution: All foodstuffs and cooking utensils should be removed before spraying. All sprayed surfaces should be allowed to dry thoroughly before packaged foods or utensils are placed back. Small children should not be allowed to come in contact with the insecticide until the sprayed surface has dried completely.

❗ When spray dries, cover shelves with clean, fresh paper before replacing packaged food and utensils.

Nonchemical control: Either destroy the infested products, or salvage them by heating in an oven at 130 degrees Fahrenheit for one-half hour, or super-cooling by placing in a deep freeze at 0 F for four days.

For more information on this and other topics, see: www.ag.ndsu.edu



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