Insect Pests of Stored Foods

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Insects infesting stored foods are one of the most common household insect problems. The many different kinds of insects that invade stored dried foods are often referred to as &quot;pantry pests." They contaminate more food than they consume, and most people find the contaminated products unfit for consumption. Pantry pests are often discovered when they leave an infested food to crawl or fly about the house. They often accumulate in pots, pans or dishes or on window sills. Fortunately, they do not bite or sting people or pets nor do they feed on or damage the house structure or contents.

Nearly all dried food products are susceptible to insect infestation, including cereal products (flour, cake mix, commereal, rice, spaghetti, crackers, and cookies); seeds such as dried beans and popcorn; nuts; chocolate; raisins and other dried fruits; spices; powdered milk; and cured meats. Non-food items that may be infested include birdseed, dry pet food, ornamental seed and dried plant displays, ornamental corn, dried flowers, garden seeds, potpourri, and rodent baits.

A stored food product may become infested at the processing plant or warehouse, in transit, at the store, or right in your home. Most of the stored food insects also are pests of stored grain or other commodities and may be relatively abundant outdoors. Food products that are left undisturbed on the shelves for long periods are particularly susceptible to infestation. However, foods of any age can become infested.

Stored food insects are capable of penetrating unopened paper, thin cardboard, and plastic, foil, or cellophane-wrapped packages. They may chew their way into packages or crawl in through folds and seams. Insects within an infested package begin multiplying and can spread to other stored foods or food debris that has accumulated in corners, cracks and crevices, and eventually the entire cupboard. All stages (egg, larva, pupa, and adult) may be present simultaneously in infested products.

Pantry Pest Management

Prevention, detection, and elimination are the steps to pantry pest management. You will find descriptions and drawings of common pantry pests below. Other, less common pests can be treated in the same way.

Prevention and Detection

- Purchase dried foods in quantities small enough to be used up in a short period of time. Use oldest products before newer ones, and opened packages before unopened ones.
- Inspect packages or bulk products before buying. Packages should be sealed and unbroken. Also check the freshness packaging date. Look for evidence of insects, including holes in the packaging or wrapping.
- Store insect-free foods in tightly closed glass, metal, or heavy plastic containers. Refrigerate or freeze small amounts of highly susceptible foods.
- Keep food storage areas clean. Do not allow crumbs or spilled food to accumulate. Remove and discard old, unused products and inspect the remainder. Thoroughly clean cracks and corners with a vacuum cleaner. Also check and clean areas where pet food and birdseed are stored. Washing with detergents, ammonia, or bleach will not have any effect on insect pests. There is no evidence to prove that placing bay leaves or sticks of spearmint gum in a cupboard will prevent or deter stored food insect pests.

Pest Elimination

1. Locate the source of the infestation. Carefully examine all susceptible foods. Look at the top surface of the product with a flashlight or pour the package contents onto a cookie sheet.

2. Throw away all foods that are infested.

3. If infested material is to be salvaged (for example, birdseed) or if infestation is questionable, heat the product in shallow pans in a 130 degrees oven for at least 30 minutes, or place in the freezer at 0 degrees for at least 4 days.

4. Empty and thoroughly clean cabinets and shelves with a vacuum cleaner (especially cracks and corners) to pick up crawling insects and spilled or infested material. Empty the vacuum cleaner or discard the vacuum cleaner bag after use to prevent reinestation. Washing shelves with detergent, bleach, ammonia, or disinfectants will not have any effect on insect pests.

5. As a precaution against re-infestation, consider storing susceptible foods in sealable glass, metal, or heavy plastic containers or in the freezer or refrigerator until you are convinced the infestation is gone. It is typical to see an occasional Indianmeal moth flying for as long as 3 weeks after the source of caterpillars has been eliminated.

6. Insecticide sprays are not recommended for controlling insects in stored food cupboards. Household insecticides have no effect on insects within food packages and any control is temporary unless the source is found and eliminated.

7. If insects are infesting ornaments or decorations made with plant products or seeds, place the items in a freezer for 4 days.
**Common Stored Food Pests**

| **Sawtoothed grain beetles** can be found in numerous food items, especially dried fruit, cereals, nuts, dried meat, macaroni, and seeds. Adults are nearly 1/8 inch long, slender, flattened, brownish-red to almost black in color, and have saw-like teeth on either side of the thorax. Larvae are cream-colored, slender, and about 1/8 inch long. |
| **Spider beetles** of several species may infest stored foods, usually dried plant products. The reddish-brown, 3/16 inch beetles have long legs and a vague, spider-like appearance. The off-white, C-shaped larvae remain in the infested material. |
| **Drugstore beetles and cigarette beetles** are about 1/8 inch long, oval, and brown. The head is bent downward giving the insect a humped appearance. Larvae are 1/8 inch long when mature, and yellowish-white with a light brown head. They have a curved body covered with fine hair. Cigarette and drugstore beetles are primarily pests of dried plant products such as spices, macaroni, dried flowers, tobacco products, and paper products, including books. |

| **Flour beetles** are 3/16 inch long, reddish-brown, and elongate oval in shape. Larvae are cylindrical, whitish, or cream-colored and up to 1/4 inch long and have 2 small pointed spines on the tail end. Two species of flour beetles may be found: red flour beetles are common in homes and the confused flour beetle is a frequent pest in flour mills. Flour beetles do not feed on whole grains but do infest flour, bran, cereal products, dried fruits, nuts, and chocolate. |
| **Granary weevils and rice weevils** attack only whole grains or seeds. They leave small round exit holes in kernels that were infested. Rarely are they found in nuts, dried fruits, macaroni, and caked or crusted milled products such as flour. Adult weevils are shiny dark brown and less than 3/16 inch long with a snout projecting from the head. Eggs are laid inside seeds and grains. The white, legless, wrinkled larvae are only found inside whole kernels or seeds. Similar looking though larger weevil larvae found on the floor of the house in the fall usually have emerged from acorns or hickory nuts collected and stored inside. |
| **Warehouse and cabinet beetles** are relatives of the carpet beetles. Carpet beetles are pests of stored woolen clothing or wool carpeting while cabinet and warehouse beetles may be in grain products, seeds, and dried fruits. Adult warehouse and cabinet beetles are elongate oval and 1/8 to 3/16 inch long. They may be solid black or mottled with yellowish-brown markings. Larvae are long and narrow, yellowish to dark brown and hairy. Most species grow to about 1/4 inch. If carpet beetles infest stored foods, they are likely to be in animal protein products such as dried cheese and meat. |

**Indianmeal moths** are the most common moths infesting food in the home. Moths, which may be found inside infested products or flying about the house, have a wingspan of 1/2 to 5/8 inch. The base of the front wing is pale gray or tan and the outer two-thirds is reddish-brown with a coppery luster. The wing markings are distinctive, but may not be clear if the scales have been rubbed from the wings. The larvae are off-white with shades of yellow, pink, green, or brown and grow to 1/2 inch. Only the larvae feed in infested products, which can be any dry stored food or whole grain. Foods infested with these insects will have silk webbing present on the surface of the product. Larvae often leave the food when mature and may move long distances before stopping to spin a cocoon. It is common to find caterpillars and cocoons on ceilings and walls. Adult moths may be seen for several weeks after the food source has been removed.

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