Texas A&M AgriLife Extension

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Pantry and Fabric Pests in the Home

House and Landscape Pests

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Food and fabric pests can be found at some time in nearly every home. Many of these pests are no more than an occasional inconvenience; others can cause significant damage to food or personal articles. If an infestation develops in your home, the advice below should help you manage it.

Some insects feed primarily on *plant materials* and are usually found in stored foods in kitchens and pantries. Other insects feed primarily on *products containing animal proteins,* such as hair, feathers, powdered milk, woolen fabrics, leather and hides, and some pet foods. Pests of animal products are more likely to infest closets and areas other than kitchens.

Both food and fabric pests can be found almost anywhere in a home. If you find the same kind of insect repeatedly in a kitchen or closet, it is good evidence of a pest problem.

Food pests are often brought home accidentally from the grocery or pet store. Food can become infested while in the farm or garden or during storage or transport. Although food manufacturers and grocery stores control most food pests with strict sanitation and the judicious use of pesticides, it is possible that a few insects will make their way into your home.

Insects that feed on animal products may also enter your home from the grocery store, but these are just as likely to enter from outdoors. Clothes moths and carpet beetles occur outdoors in bee, bird, and rodent nests. Carpet beetle adults are often found on crape myrtles and other ornamental shrubs and flowers. Once indoors, carpet beetles or clothes moths may lay their eggs on woolen carpets or stored fabric items.

Pantry pests

Pests of seeds, grains, and spices

The most common pests in Texas home pantries are **cigarette** and **drugstore beetles** (Fig. 1). The larvae of these beetles feed on all kinds of plant material, including beans, flour, grains, nuts, seeds, spices, tobacco, potpourri, cottonseed meal, dried flower arrangements, and dried fruits and vegetables.

The adults are ⅛ to ⅒ inch long with cylindrical, brown to reddish brown bodies. From above, the head is not visible. These beetles are strong fliers and may be attracted to light fixtures and windows. The adults do not feed but lay their eggs on food sources.

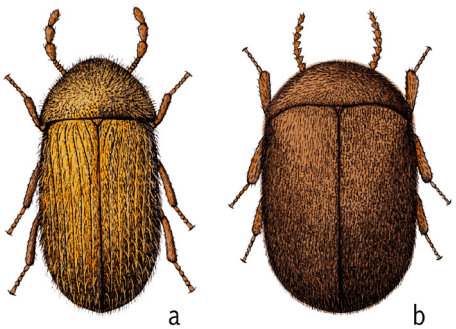

Figure 1. Drugstore (a) and cigarette beetle (b) adults (adapted from R. White, USDA).

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Figure 2. Saw-toothed grain beetle adult (adapted from A.D. Cushman, USDA).

Merchant grain beetles and **saw-toothed grain beetles** (Fig. 2) can infest birdseed, pasta, dried fruits, sunflower seeds, and cereal and flour products. The adults are brown, about ⅛ inch long, and elongated and flattened in shape.

Under a magnifying glass, they can be distinguished from other grain beetles by their six sawlike teeth on the margins of the segment behind the head. The adults do not fly, but their flattened bodies make it easy for them to enter food packages.

Rice weevils (Fig. 3) and **granary weevils** are pests of whole grain or processed grain foods, such as pasta. These beetles are cylindrical and about ⅛ inch long. They have prominent snouts. The larvae are pale, C-shaped, and legless. Adults of both species are reddish brown to black, but the rice weevil may have four pale red or yellow markings on the wing covers.

Figure 3. Rice weevil adults (photo by W. Brown).

These beetles rarely penetrate unopened food packages. Rice weevil adults can fly and are attracted to lights. Granary weevils do not fly but can enter homes in infested food.

Flour beetles (Fig. 4) are also common and destructive pests. Adult flour beetles are elongated, reddish brown, and ⅛ to 3⁄16 inch long. They feed on beans, cereals, chocolate, grains, nuts, spices, dried fruits, dried milk, and occasionally hides. They tend not to feed on whole grains or intact seeds, but favor flour and other milled grain products. Food products infested with flour beetles can have a foul odor and taste.

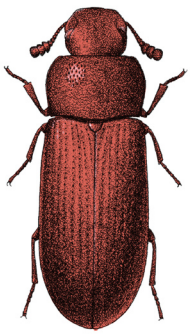

Figure 4. Red flour beetle adult (adopted from A.D. Cushman, USDA).

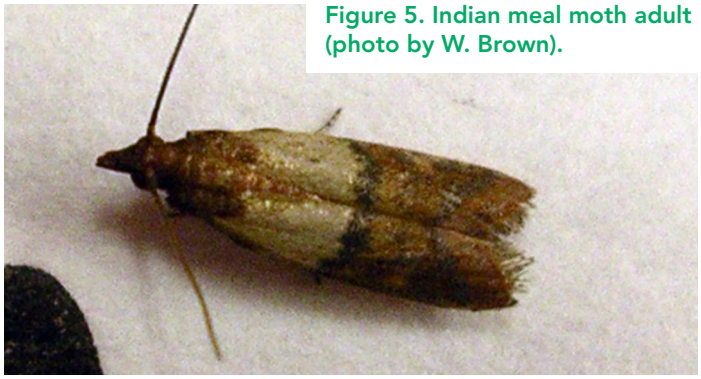

Figure 5. Indian meal moth adult (photo by W. Brown).

The **Indian meal moth** (Fig. 5) is the most common and distinctive pantry-infesting moth. It is the most common pest of nuts, cereals, oilseeds, and dried fruit. It also infests birdseed, dog food, powdered milk, and chocolate and other candies.

The adult Indian meal moth has wings that are whitish gray at the base and deep pink or copper colored on the outer two-thirds. The wingspan is about ¾ inch.

The caterpillar, or immature stage, of the Indian meal moth, is creamy white with a brown head capsule. The caterpillars often crawl over surfaces and spin cocoons on textured walls or ceilings. Inside the cocoons, they pupate and become adults.

Another pantry moth is the **Angoumois** (AHN-goom-wah) **grain moth,** which commonly infests popcorn, Indian corn decorations, and seeds in dried flower arrangements.

The adult is creamy white with a wingspan of ⅝ inch. The hindwings are narrow with a fingerlike projection of the tip, which can distinguish these moths from clothes moths and other pantry moths.

Controlling pantry pests

Nonchemical control. The first step in controlling pantry pests is to find and eliminate infested items. Often all that is needed to solve the problem is to remove an infested package of flour, macaroni, or cake mix.

But finding the source of an infestation is not always easy. Infested packages are usually the oldest, most difficult to reach foods in the pantry. Even unopened containers may be infested; some pests can easily penetrate plastic, waxed paper, and cardboard containers. Before buying an item in the store, check that the bag or container is well sealed and undamaged.

Good sanitation is important. Infestations often start in pet foods, spilled grains, or other foods. Clean up spilled food promptly. Discard old packages of grain and pasta. Vacuum and clean pantry areas periodically to remove spilled foods. Remove and clean underneath

shelf paper. Caulk around pantry edges and in cracks and crevices to reduce areas where spilled food may collect.

Most pantry pest problems can be prevented by using all dried food within 2 to 4 months of purchase. Spices and other products kept for longer periods should be sealed in airtight containers.

Pet food can be a special problem. The most commonly infested pantry items are birdseed and dog and cat foods. Store pet foods in well-sealed plastic buckets or storage containers, and use them promptly. Clean the containers thoroughly before refilling them with food.

Occasionally, mice or other rodents can cause a persistent beetle infestation. Hoarded seed and grain in abandoned rodent nests can support a small population of pests. Old rodent bait that contains grain also can harbor insects. When controlling rodents, prevent insect problems by placing the bait where it can be retrieved and discarded after the rodents are controlled.

Heat or cold treatments can eliminate pests in some food items such as pet food, bulk grains and beans, and home-grown dried beans or peas. Put the product in the oven at 130 degrees F for 1 hour, or in the freezer for 7 to 14 days. To prevent an infestation, store foods that may attract pantry pests in the refrigerator or freezer.

Chemical control. On rare occasions, insecticides may be needed to control difficult infestations. Insecticides can reach inaccessible areas that cannot be easily cleaned; they can also help reduce heavy pest infestations more quickly.

Insecticide sprays may be applied to crevices and void areas around cupboards, drawers, and pantries. Before spraying, remove all food products, utensils, and containers from the treatment area. Allow the spray to dry before placing clean shelf paper on the shelves and returning food, utensils, or containers to the pantry.

Insecticide products that are labeled for use in food-storage areas generally contain ingredients that are short-lived and relatively safe to use in the home. Active ingredients of these products include pyrethrins, resmethrin, allethrin, and tetramethrin.

For areas where long-term residual control is desired, look for products containing synthetic pyrethroids, such as permethrin, esfenvalerate, cyfluthrin, or bifenthrin. Aerosol fog products can temporarily suppress infestations of flying insects, but these fogs will not kill pantry pests in food containers or protected locations.

Before using an insecticide, always make sure that the label says that the product may be used indoors and in kitchens. Never spray food, dishes, utensils, or cooking items with pesticides.

Fabric pests

Pests of woolens, hides, and feathers

Beetles in the family Dermestidae include the carpet, hide, and larder beetles (Fig. 6). Although most of these beetles feed on animal proteins, some also feed on high-protein plant materials. In the pantry, they may be found in powdered milk, dried meats, or pet foods that contain fish meal or other animal byproducts.

Hide beetles, in the genus *Dermestes,* are a serious problem in museums. They attack hides, skins, dried fish, leather goods, and trophy heads. In the home, they also feed on bacon, cheese, feathers, and pet food.

Household infestations of hide beetles can often be traced to bird or rodent carcasses in attics, old bee nests, or accumulations of dead insects in windows or light fixtures. When fully grown, these larvae sometimes bore into the wood or other hard substances to pupate, leaving ⅛-inch-wide holes.

Adult hide beetles are relatively large—¼ to ⅜ inch long. They are dark brown to black, with various markings. The larvae are cigar shaped and covered with fine hairs that give them a fuzzy appearance. Hide and larder beetles in the genus *Dermestes* can be identified by a pair of large, curved "horns" on the last body segment.

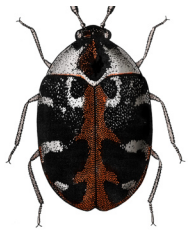

Fig 6. Carpet beetle adult (adapted from USDA).

Carpet beetles of the genus *Anthrenus* and the genus *Attagenus* are smaller than *Dermestes* beetles and are colorfully marked. *Anthrenus* and *Attagenus* beetles are ⅛ to 3⁄16 inch long, with round or oval bodies. The larvae are light tan to brownish and about the size and shape of small rice kernels. The larvae are ringed with circular tufts of hairs, giving them a banded appearance.

Like hide beetles, carpet beetles may start their infestation in bird nests or accumulations of dead insects in light fixtures. Once established inside a home, these beetles can greatly damage furs, feathers, woolen articles, other valuable possessions, and hair brushes with natural bristles.

Warehouse beetles of the genus *Trogoderma* (Fig. 7) look much like black carpet beetles but have light-brownish bands on the wing covers. They feed on both animal and plant products. The bodies of both *Trogoderma* and *Anthrenus* beetle larvae have barbed hairs that can irri-

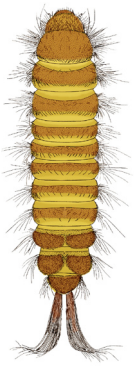

Figure 7. Warehouse beetle larvae (adapted from C. Feller, USDA).

tate the digestive tract if the beetles are accidentally ingested.

Clothes moths feed on fur, hair, silk, wool, and feathers. Rugs and clothing that contain these substances can be seriously damaged. These moths also feed on powdered milk and products containing meat or fish meal, such as pet food. Synthetic or cotton fabrics are attacked only if they are soiled or interwoven with natural animal fiber materials.

Clothes moths occur naturally outdoors. In homes, they may be found in accumulations of pet hair or feeding on dead insects.

The adult **webbing clothes moth** is gold colored with a tuft of reddish, hairlike scales on its head and a wingspan of about ½ inch. The larvae of some webbing moths build tunnels of silk in which they feed; others spin small silken patches from which they graze.

The **casemaking clothes moth** looks like the webbing clothes moth, with a wingspan of ⅜ to ½ inch. It has brownish wings and three dark spots on each front wing. The larva is creamy white with a brown head capsule. Casemaking larvae get their name from the silken cases they spin and drag along as they move.

Clothes moths larvae prefer to feed in protected places such as under clothing collars or in folded sweaters. The adults also shun light and are rarely seen flying during the day.

One of the best ways to control these pests is the old-fashioned practice of "spring cleaning," or periodically shaking and airing rugs and woolens outdoors in the sun. Clothes moth larvae are very sensitive to light and low humidity.

Controlling fabric pests

Eliminating clothes moths and dermestid beetles can be a challenge. As with pantry pests, the first step is to find and eliminate all feeding sites. Unfortunately, there may be many points of infestation. Check these potential problem areas:

- **In drawers:** leathers, felt fabrics, folded silks, woolen blankets, natural-hair art brushes, and other susceptible materials
- **In closets:** woolen sweaters, shirts, and jackets, especially under the collars; furs; feather dusters or other feather items; felt hats; and stuffed trophy mounts
- **On the floor:** woolen rugs, carpet pads made of animal hair, and pet hair accumulations along baseboards and under furniture
- **Furniture:** old chairs or sofas stuffed with horsehair; accumulations of pet hair
- **On walls:** susceptible art objects; wool, mohair or silk draperies; trophy mounts; and dried flower arrangements
- **In walls, ceilings, and attics:** old rodent baits; stored items; bird or animal carcasses; old bird, rodent, bee, or wasp nests; and accumulations of dead insects in light fixtures or on window sills. Previous infestations of lady beetles or box elder bugs may leave accumulations of dead insects that provide food for dermestid beetles.
- **Other sites:** potpourri, spilled pet food in utility rooms, old mouse nests under cabinets, and decorations containing grains or noodles

Nonchemical control. Discard infested items, or treat and protect them from further attack. Clothing can be disinfested by washing or dry-cleaning.

Annual or semi-annual "spring cleaning" is especially effective in controlling clothes moths. Rugs and blankets should be beaten or shaken vigorously and exposed to bright sunlight for several hours. Thoroughly vacuuming storage areas and susceptible rugs is helpful. The best protection for valuable stored items is to open and inspect them often.

Treat valuable articles of clothing and other items by freezing them for 7 to 14 days; if done properly, freezing is less destructive than is heating. In general, textiles, furs, feathers, leather, paper, and wood can be frozen safely. Before placing articles in the freezer, enclose them in airtight polyethylene bags with as much of the air removed as possible. This reduces the chance of ice forming directly on an article and damaging it. If you are concerned about possibly damaging a valuable item, contact a local museum with experts in the conservation of historical artifacts.

Clothing that is susceptible to insect damage should be stored in airtight boxes or garment bags. Cold storage can effectively protect furs and other valuable items from attack.

Chemical control. Cedar closets, cedar chests, and pieces of cedar wood placed in storage areas may repel insects for a short while, but they do not guarantee protection. Vapors from cedar wood are effective only when the wood is freshly cut or chipped and the container is sealed well. Few cedar chests more than 2 or 3 years old produce enough vapors to kill pests.

Naphthalene and paradichlorobenzene (PBD) products are more effective than is cedar, but they must be sealed tightly with the clothes. To kill moth larvae, use 1 to 2 pounds of repellent per 100 cubic feet of air. Because the fumes from PDB crystals will soften or melt certain plastic products, be careful when using them with plastics.

Insecticide sprays can supplement good sanitation and other measures. To help keep pests out of the home, spray around windows and light fixtures. Closets with carpet beetle or moth infestations may also be treated. Remove the clothing before spraying, and let the spray dry completely before putting items back in the closet.

Sprays also can be applied along the edges of carpets where pet hair and insects accumulate, or on the undersides of carpets or carpet pads.

Because most clothing pests live in protected locations, aerosol insecticides ("bug bombs") are not very effective for treating these pests. Often the best choice for controlling carpet beetles and clothes moths is to get help from a pest control professional.

Monitoring

Some pests can be detected with pheromone traps or other devices. Pheromones are special hormones that insects produce to communicate with one another. There are pheromone lures for several storage pests, including cigarette beetles, drugstore beetles, Indian meal moths, Angoumois grain moths, warehouse beetles, and webbing clothes moths.

Although pheromone traps do not control pests, they can help detect infestations and pinpoint problem areas. Pheromone traps are generally most effective for flying insects.

Other traps, such as the Storgard® and Pantry Patrol™ traps, lure pests with food or other attractants in addition to pheromones. These traps are useful in kitchens and pantries and are available from the manufacturers online or through local pest control providers.

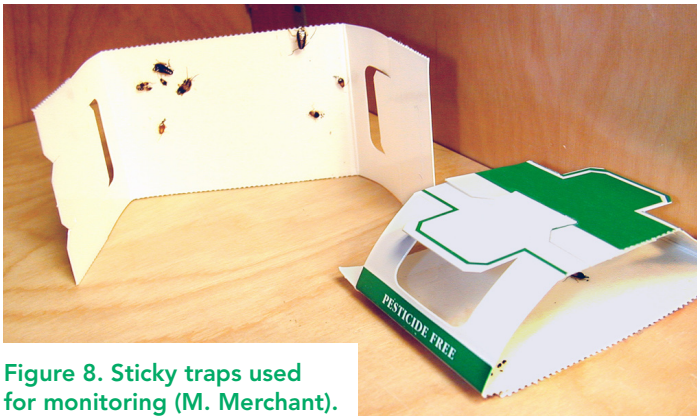

Figure 8. Sticky traps used for monitoring (M. Merchant).

Sticky traps (Fig. 8) can help you monitor the success of your control program. They are available through pest control companies, do-it-yourself pest control shops, and some grocery or home improvement stores. Sometimes sold as roach "hotels," sticky traps contain glue that captures crawling insects. When placed on the closet floor or on closet shelves, they trap dermestid beetles and other crawling pests.

Acknowledgment

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