



Carpet Beetles

Fact Sheet No. 26

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Biology, Description, and Habits

Carpet beetle is a common name applied to any one of several species of small beetles belonging to the family Dermestidae. The name probably arose from the larvae's habit of feeding on wool carpets and rugs. It is an unfortunate name from the standpoint that few carpets today are made of wool and the primary problems caused by carpet beetles have nothing to do with them feeding on rugs.

The adults of the various species commonly encountered by the homeowner range in size from 1/16 to about 3/16 inch long. They are hard-shelled, somewhat rounded beetles. The wing covers may be all black or mottled in shades of reddish-brown, white yellow, gray, and black. Larvae range up to 1/2 inch long, are carrot-shaped, and covered with bands and/or tufts of brown to reddish-brown hairs, which sometimes give them a striped appearance.

Females deposit up to 90 eggs in cracks and crevices in or near the food source. Eggs hatch in 6 to 20 days, depending on the species. Larvae feed on the food source until full grown, pupate, and emerge as adults to continue the cycle. The length of the larval stage is greatly influenced by the quality of the food source and the temperature. Larval stage of the different species vary from as short as 70 days to as long as 640 days in length. One or more generations are produced each year under normal household conditions.

Carpet beetles are common in the environment and adults are good fliers. They are often found on various flowers where they feed on pollen. Infestations in homes can originate from adults flying through open windows, doors, attic vents, or other openings. The beetles are attracted to light and the first sign of an infestation is often the accumulation of large numbers of dead adults on window sills.

Damage

Carpet beetle larvae are common household "pantry pests" and feed on a wide variety of stored food items. Different species tend to utilize different basic groups of food items. Some feed predominately on dry food materials of vegetable origin and may be found infesting such items as bran, flour, meal, spices, seeds, nuts, grain, cereal, pasta, cake and cookie mixes, dried fruit, dry pet food, powdered milk, corn starch, and even dried flower arrangements.

Other species commonly feed upon items of animal origin such as hair, horn, hide, fur, feathers, wool, leather, bristles, silk, dead insects, dried dead animals, tortoise shell, and fertilizers made from animal by-products. In addition, such things as cotton, linen, jute, softwood, and synthetics may be damaged if they are soiled with animal materials such as perspiration or fats.

In spite of the preference demonstrated by the various species, most of the carpet beetle larvae will utilize both groups of food materials. Regardless of this, identification of carpet beetles to genus can help identify the more likely sources of infestation. For example, carpet beetles of the genus *Trogoderma* are most commonly submitted in association with stored foods (particularly grain products), while carpet beetles of the genus *Anthrenus* are more often associated with products of animal origin.

Damage to dried food consists of actual consumption of the food source and contamination of the food source with larvae, shed skins, and fecal material. Infestations may also impart "off" colors or odors to the food source. Damage to furs, feathers, skins, fabric, etc. ranges from a few pinpoint holes eaten into the material to total destruction of the item, depending on the extent of the infestation.

Control

Regardless of the species involved, the only reliable control technique is to locate and remove all infested food sources. Insecticide treatment of the home will not give control if infested food sources remain. The beetles and larvae will merely reinvade the treated areas from the hidden food source and will continue to do so until the food source is removed or consumed.

It is advisable to rotate all dried food, using the older material before the recently purchased items. Severe carpet beetle infestations generally occur in containers of food that have stored for extended periods of time. When infestations do occur in dried food, the recommended control procedure is to check all stored food items for signs of infestation -- adult beetles, larvae, and shed larval skins, or off odors, flavors, or colors. Infested food sources can be treated with heat or cold or simply discarded.

Heat treatment consists of placing the food item in an oven for 1/2 to 1 hour at 130-140 degrees F. (or as long as takes to heat the food item all the way through). This temperature should kill all stages of the insects. Heat treatment may alter the characteristics of some foods and may not be economical in terms of energy cost versus replacement cost of the food item. Do not attempt to heat treat finely ground foods such as flour due to the danger of fire or explosion in the oven.

Cold treatment is accomplished by placing the food item in a freezer at zero degrees F. or lower for 4 to 7 days after the entire bulk of the food reaches zero degrees. This should also kill all stages of insects present. As with the heat treatment, there are some foods that do not freeze well and will be adversely altered by this treatment. Neither the heat treatment nor the cold treatment will remove insect bodies, skins, fecal material or off odors, favors, or colors. Infested food items should be checked closely for the presence of molds before attempting a salvage operation.

Molded foods should be discarded regardless of the degree of insect infestation.

To prevent problems with carpet beetles in food, all susceptible food items should be stored in sealed, air-tight metal, glass, or thick-plastic containers. Paper, cardboard, plastic bags, or cloth containers will not prevent infestations by carpet beetles.

Wipe out the cupboards and storage areas and vacuum the cracks and crevices to remove food particles. For residual control, a crack and crevice application of a suitable household insecticide may be made. Do not contaminate food, foodstuffs, dishes, or food-handling equipment, utensils, or areas. Treat only the cracks and crevices; do not spray entire areas. Allow the spray to dry before replacing food items, dishes, or utensils. If the infestation persists, it means at least one infested food source remains, and the process will have to be repeated until it is found.

Aerosol and ready-to-use solutions labeled for carpet beetle control in domestic dwellings include about 250 homeowner-type products and about 100 professional-type products that are registered in Utah. These include numerous formulations containing allethrin, chlorpyrifos, diazinon, phenothrin, permethrin, and synergized pyrethrins. Various other active ingredients are found in other products labeled for this use, but the above list includes the most common active ingredients. Not all formulations containing these active ingredients are necessarily labeled for indoor use. Before purchasing or applying any insecticide, read the label to be sure the site you want to treat is listed.

For infestations in animal products, you must still locate the source of the infestation. Check all clothing items that contain wool, fur, feather, hide, or hair. Normal dry cleaning procedures will kill all stages of the insect. Store uninfested or decontaminated items in sealed containers with moth crystals or moth balls. This will prevent reinfestation but may not kill fumes. Take expensive furs to a furrier for storage or treatment. Thoroughly vacuum furniture to remove accumulations.

Check for and remove accumulations of dead insects from light fixtures and window sills -- they too can serve as a carpet beetle food source. Old wasp nests in attics are another possible source of an infestation. Check chimneys for dead birds and old nests. Dead rodents killed by poisoned bait or caught in mouse traps have also been implicated as the source of some infestations.

Spray around the baseboards, cracks and crevices of infested rooms with suitable household aerosol or pump insecticide formulations (such as those discussed above). As with infestations in dry food items, if the infestation persists in spite of control efforts, it means that at least one infested food source remains.

Precautionary Statement

All pesticides have both benefits and risks. Benefits can be maximized and risks minimized by reading and following the labeling. Pay close attention to the directions for use and the precautionary statements. The information on pesticide labels contains both instructions and limitation. Pesticide labels are legal documents, and it is a violation of both federal and state laws to use a pesticide inconsistent with its labeling. The pesticide applicator is legally responsible for proper use. Always read and follow the label.

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