

*Clothes Moths & Carpet Beetles:*

# Controlling Fabric Pests

**When you find an infestation:**

- **Check carefully. Find everything that is infested.**
- **Clean, treat or get rid of infested items.**
- **Clean and treat the closet, container or area.**
- **Store woolen and similar items properly to avoid future infestations.**

**To prevent damage:**

- **Clean and vacuum regularly. Don't neglect closets, upholstered furniture, cracks and crevices and under furniture. Vacuum both sides of wool rugs and rotate them periodically.**
- **Store only freshly washed or dry-cleaned garments made of wool and other fabrics of animal origin in airtight containers with plenty of moth repellents.**
- **Store furs professionally.**

## **Clothes moths**

Clothes moth larvae (shown on page 2) feed mostly on wool, fur, hair and feathers, and occasionally on leather, lint, mohair, silk and similar materials. They are after keratin, a protein found only in animal-based materials. Fabric stained with food, perspiration and oils is especially vulnerable. Most damage is done in areas where

the larvae are undisturbed for long periods of time, such as in stored clothing or carpet under heavy furniture.

Adult clothes moths (shown on page 2) are buff-colored insects about 1/2-inch long. They have four wings, are weak flyers, and, since they avoid lighted areas, are seldom seen. Any small moths seen flying around the room and toward lights are probably not clothes moths. Female clothes moths lay 100 to 300 eggs in a place where the larvae will have plenty to eat when they hatch. Only larvae feed on textile items; the moths do not cause any direct feeding damage. After feeding on the clothes or carpets, the larvae spin cocoons from which the adult moths emerge several days later.

The most prevalent clothes moth in North Carolina is the casemaking clothes moth. The larva of this moth lives inside a fuzzy case, which it spins from silk and pieces of the fabric on which it is feeding. When it is full-grown, the larva crawls up and attaches itself to the wall, ceiling or another high place. The appearance of these cases alerts the homeowner to the fact that he has a clothes moth problem. The color of the case depends on the color of the fabric on which the larva has been feeding. Matching the colors in the case with nearby stored susceptible fabrics may lead the homeowner to the larval infestation.

Another type of moth, the webbing clothes moth, does not make cases. They are usually found under silken webbing spread over the infested fabric. This moth is seldom found in North Carolina.

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Cooperative Extension Service**

NORTH CAROLINA STATE UNIVERSITY  
COLLEGE OF AGRICULTURE & LIFE SCIENCES

## ***Carpet beetles***

Carpet beetle larvae (shown on page 3) feed on animal materials like wool, fur, hair, feathers, glue, book bindings, silk, horns, bone, leather and dead insects. They attack cotton, linen and synthetic fibers if they are soiled. (Some species also infest cereals, cake mixes, spices, flour, powdered milk and pet foods, but these are not the same species that attack fabrics.) Adult beetles and larvae live behind baseboards and moldings, in heating and cooling system ducts and vents, dresser drawers, carpets, clothing and upholstered furniture. Adult beetles can feed on flower pollen and nectar outdoors. Adults don't feed on fabric and often are found at windows and on windowsills.

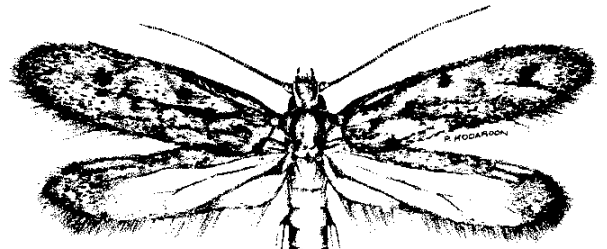
Adult carpet beetles (shown on page 3) are small, 1/16" to 3/16" long. They may be black or mottled with white, gray and red. Adult female beetles lay about 100 eggs where the larvae will have plenty to eat. In one or two weeks, larvae emerge from the eggs. They are somewhat oval, brownish-black, with bristles, and they feed from nine months to three years before pupating into adult beetles.

## ***Habits of these pests***

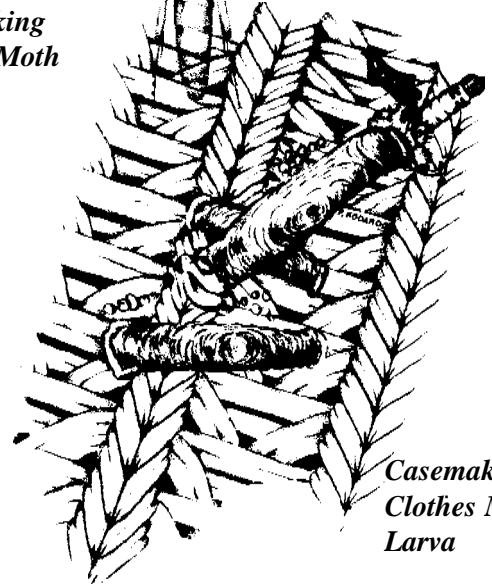
The larvae of clothes moths and carpet beetles attack clothing and a wide range of household furnishings, including blankets, comforters, rugs, carpets, draperies, pillows, natural bristle brushes and upholstery. Only animal-based materials that contain the protein keratin are damaged. For the most part, synthetic and plant-based fibers like cotton and linen are immune, especially if they are clean when stored. Wool blends may be attacked. The larvae digest only the wool, but damage other fibers as they feed. Textile articles soiled with food, body oils, feces and urine are most susceptible. Carpet beetle larvae tend to chew holes through fabric, while clothes moth larvae like to graze along the surface, but they can make holes, too.

Larvae prefer dark, undisturbed areas and they can attack an amazing array of items. In addition to clothes and carpets, they may attack mounted animal trophies, felts in seldom-used pianos, or a stored lock of baby's hair.

Some infestations occur when adult carpet beetles or clothes moths fly from one house to a nearby house. Occasionally carpet beetles breed and feed outdoors in places such as bird and rodent nests and may enter homes from these locations or from floral bouquets picked outdoors. More commonly, the eggs or larvae hitchhike into a home on articles containing wool or other animal fibers, particularly secondhand clothing, upholstered furniture and woolen scraps exchanged for making rugs or quilts.



***Casemaking  
Clothes Moth  
Adult***



***Casemaking  
Clothes Moth  
Larva***

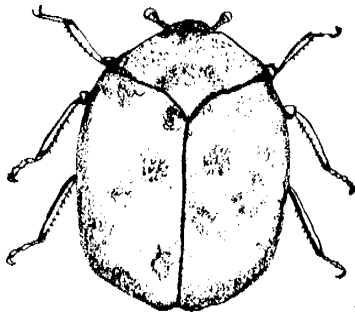
Once the insect gains entry, the larvae may crawl from room to room, closet to closet, rug to rug, slowly causing major fabric damage. An infestation usually takes at least a year or two to reach major proportions, particularly if the homeowner does not watch for signs of a clothes moth problem. These insects work and reproduce slowly, so the earlier you discover an infestation and the more quickly you react, the more likely you are to prevent serious fabric damage.

## ***Eliminating infestations***

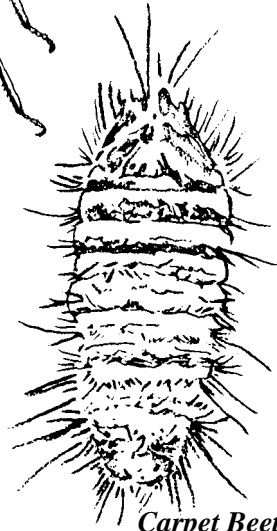
Infested articles should be cleaned according to manufacturers' directions or discarded. Remove all items from the infested closet or container. Be careful not to spread the infestation. Thoroughly brush or vacuum items, giving special attention to seams, pockets and cuffs. Then dry clean or launder using hot water, if it won't damage the fabric.

Laundering and dry cleaning will kill insects in fabrics but will not protect against future infestations. Inspect your home to locate all sites of infestation. Unless all are found, the infestation cannot be eliminated.

If infested areas are cleaned thoroughly, it may not be necessary to spray. If a pesticide is used, treat only cracks, crevices and hidden surfaces with a residual spray designed for use by homeowners. It is not necessary to treat walls, ceilings or storage shelf surfaces. Many of the household pesticides labeled for



*Carpet Beetle Adult*



*Carpet Beetle  
Mature Larva*

ant and cockroach control are also labeled for fabric pests. However, most of these insecticides may be used only on storage surfaces; only a few may be used directly on fabrics. Before using an insecticide for any purpose, read the label thoroughly. Then follow the directions carefully. Look for products with active ingredients such as permethrin, bifenthrin, cyfluthrin and others ending in "thrin".

While the homeowner may control many infestations, professionals are able to treat hidden infestations in closets or rugs and carpets most effectively. Valuable items, such as expensive rugs, furs, carpets and pianos, definitely require the help of professionals. The homeowner who tries to treat such infestations may fail to eliminate the problem and damage the item in the process. Also, pest control operators may use certain insecticides not available to the general public.

Once a fabric pest infestation has been eliminated, follow the advice given in the next section to prevent new problems.

### ***Preventing infestations***

Good housekeeping is the foundation of any good fabric pest prevention program. Thorough and frequent cleaning, taking special care with those hard-to-clean areas, is important. Such cleaning removes debris deep in rugs and carpets. Pay attention to areas under the edges of rugs and along the wall, under couches, sofas, chairs and chests. Vacuum both sides of area rugs once

a month during the summer and every other month in other seasons. Rotate rugs or rearrange furniture periodically to expose different areas of the floor coverings.

Clean woolens and similar materials at the end of the winter and place them into storage. Dry cleaning or laundering in hot water kills all stages of insects. Store furs commercially. In addition to protection from insects, furs need controlled temperature and humidity.

Pesticides cannot take the place of cleanliness and good storage practices. Few household insecticides can be sprayed on fabrics, and those that are labeled for such use are not likely to provide more than six months' protection against fabric pests. If insecticides are used to protect a carpet or other vulnerable item, pyrethroids, such as tetramethrin, sumithrin, resmethrin or permethrin, are among the best choices for homeowners' use. Additional pyrethroids, with names often ending in "methrin," are under development and may become available in the future.

Naphthalene or paradichlorobenzene (PDB) crystals, balls or flakes can be used to treat air-tight containers. As these chemicals evaporate, they produce vapors which, in sufficient concentration, will repel and slowly kill insects. Place clean items in the container. Since the fumes are heavier than air, the insecticide should be placed as near the top of the storage container as possible. Place mothballs, flakes or crystals on a layer of paper on top of the items in the container. They should not touch any plastic items, such as buttons, zippers, hangers or the sides of the storage boxes. Otherwise, the plastic may soften, melt and stick to the fabric. Since the insecticide vapors will build up sufficiently only in an airtight container, seal the storage box as tightly as possible, sealing any holes or cracks. If the lid does not fit tightly, seal it with tape or wrap the entire container with heavy paper or plastic and seal it with tape.

Coats, suits and similar items may be stored in tight garment bags with repellants suspended near the top in a small bag of netting. Small blocks or pouches of these materials which have built-in hooks also are available.

The fumes given off by naphthalene or PDB repellants should not harm people as long as the fumes are confined to the air-tight storage containers and people are not exposed to them for extended periods. Before using stored items, air them out for a few days to get rid of any insecticide odor.

Plastic resin strips, such as "Pest Strips", contain Vapona or DDVP, an insecticide that slowly vaporizes and effectively kills small flying insects in confined areas. Hanging a strip in a seldom-opened closet will help protect fabrics from adults, but it will have little effect on larvae already infesting materials. A strip

should last for about six months. Some people dislike the odor of DDVP, but it normally goes away after the item has been aired for one or two days. The strips should never be used in rooms where people are exposed to the vapors for extended periods of time.

As always, when using any pesticide, read all the information on the label and follow instructions carefully and precisely.

Heat and cold destroy insects. Researchers have found that temperatures of 120 degrees F. for 30 minutes or 0 degrees F. for four days or water temperatures of 140 degrees F. along with soap or detergent in the wash cycle usually will destroy all eggs, larvae, pupae and adult insects. Thorough cleaning removes some of the organic matter that larvae can eat. It also removes some insects and eggs. Take special care in cleaning rugs, carpets, draperies, upholstered furniture, closets, and hard-to-reach areas like corners, cracks, baseboards and behind radiators. Vacuum cleaning is best, but be sure to discard the bag contents promptly so that reinfestation cannot occur.

Items labeled “moth resistant” or “mothproofed” when purchased were treated with a protective chemical when they were manufactured. Many woolens made in the United States have this protection, which remains effective through many washings and dry cleanings.

Some dry cleaning and rug and carpet cleaning businesses offer fabric pest control services. They treat cleaned fabric with a chemical that temporarily mothproofs the fabric for about six months. Many dry cleaners no longer offer this service because they lack a practical way to safely dispose of their waste materials.

Check stored woolen items every month or two and replace repellent, as needed. Although woolens are the

preferred food, check other possible food sources, such as furs, feathers, leather, piano felts, tennis balls, hats, gloves and boot liners.

### ***Pesticide precautions***

1. Follow all the restrictions and precautions on pesticide labels.
2. Store all pesticides behind locked doors in original containers with labels intact.
3. Use the correct dosage and intervals to avoid excessive pesticide residues and injury to plants and animals.
4. Apply pesticides carefully to avoid drift.
5. Dispose of surplus pesticides and used pesticide containers properly.

### ***What doesn't work***

**Cedar wood** storage chests and closets do not keep woolens and furs safe from clothes moths and carpet beetles for long periods. The mothproofing value of cedar wood disappears after about two years. However, most cedar closets and chests are carefully constructed and make excellent storage containers, particularly when an insect repellent is used in them.

**Sunning** items exposes the insects to heat, light and activity and upsets their lodging, but this may not be enough to get rid of an infestation. Combine sunning with vigorous brushing of the articles to dislodge insect eggs and larvae. This will help in controlling these pests.

**Herbs and spices** placed in storage containers may provide some repelling effects, but they do not protect susceptible articles from fabric pests. Some of these plant products, if hung in closets, may actually attract pantry pests.

*The use of brand names in this publication does not imply endorsement of the products or services named or criticism of similar ones not mentioned.*

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