

MAINTENANCE GUIDEBOOK VII TERMITE, INSECT, AND RODENT CONTROL

CHAPTER ELEVEN - FABRIC PESTS

SECTION A CHARACTERISTICS AND RECOGNITION

1. GENERAL

Fabric pests are represented by two kinds of clothes moths and an array of different, although similar-appearing, small, variously colored beetles, which are grouped here under the generic name of "carpet beetles." Carpet beetles are probably the most difficult of all insects to control. Except for fumigation, pesticides are rarely effective for very long. Regardless of the treatment used, the best controls for fabric pests are thorough and very careful inspections, good sanitation, and exclusion.

Textiles infested and damaged by pests are usually wool-based items such as clothing, carpets, and tapestries. However, both carpet beetles and clothes moths feed on a broader diet than just wool, including items containing hair, mohair, bristles, fur, feathers, and leather, as well as dead insects, pollen, silk, grains, seeds, and many stored foods. Inside, infestations frequently occur when fabric pests develop on dead animal carcasses (birds and rodents) or nests located in or adjacent to buildings, on dead insects (wasps and bees) and molted insect skins, or in spilled foods. Clothing that has food, sweat, or urine stains is especially attractive to clothes moths.

Female moths and carpet beetles lay soft white eggs on materials that will later serve as a larval food source (including lint and debris in concealed cracks). Larvae hatch and feed until mature, at which time they may move away from the food source into secluded spots where they pupate. Upon emerging as adults, they mate and fly around looking for egg-laying locations. Since larvae and adults often avoid light, finding a random larva, pupae, or adult fabric pest in a dwelling may be the only signal of an impending infestation.

2. CLOTHES MOTHS

Webbing clothes moths, *Tineola bissolliella* (Fig. 11-1), and casemaking moths, *Tinea pellionella* (Fig. 11-2), look very much alike. Adults are yellowish or golden colored, 1/2-inch long or less, with narrow wings of about a 1/2-inch span. Adults do not feed, but they fly to find food materials on which they lay 40 to 150 eggs, which hatch in seven to ten days. From two to four generations per year are possible in warm, heated areas. Larvae are white, about 1/3-inch long, with brown heads.

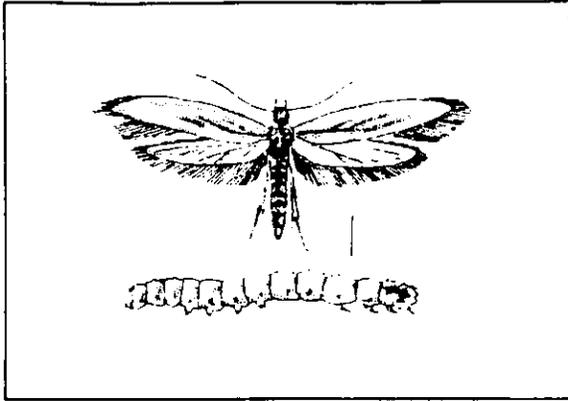


Figure 11-1

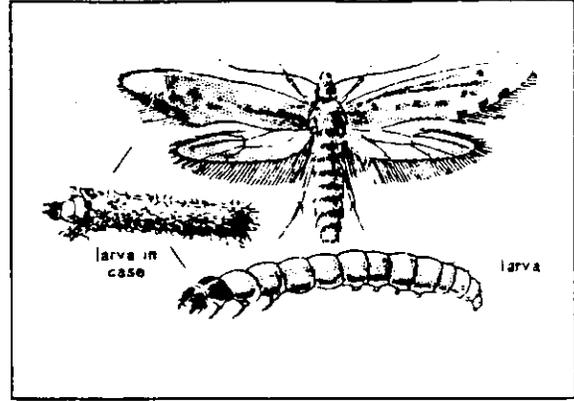


Figure 11-2

Casemaking moth larvae are easily identified by the slender, silken 1/4-inch case they carry around. Webbing clothes-moth larvae make similar silken cases or mats in fabrics but leave them to feed.

3. CARPET BEETLES

There are a many different kinds of carpet beetles (Fig. 11-3) in the United States, and all have greatly varying life cycles and habits. Therefore, it is best to request pest identification by an insect specialist before considering controls. In nature carpet beetles are scavengers that infest bird, mouse, rodent, tent caterpillar, old bee or wasp nests, and spider webs. In general, adult carpet beetles are broadly oval in shape, about 1/16 to 1/8-inch long, and calico, brown, or grayish in color. The round shape and mottled color distinguishes fabric beetles from such other stored-product pests as flour and grain beetles. Female carpet beetles lay up to 100 eggs, which hatch in about two weeks. Carpet-beetle larvae are brownish or yellowish, about 1/4- to 1/2-inch long, with slender bodies that taper towards a tail bearing tufts of hair on the upper surface. Larvae are generally found on products of animal origin. Adults are attracted to the light at windows.

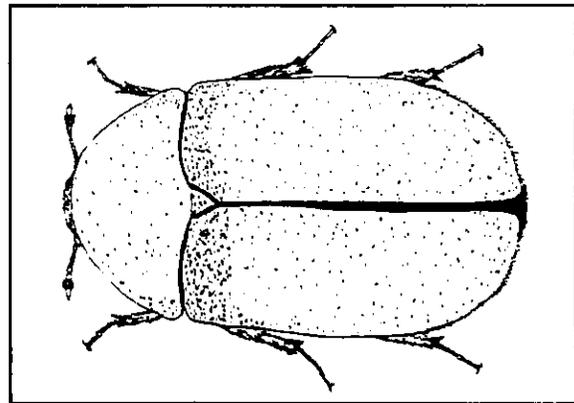


Figure 11-3

SECTION B HAZARDS OF INFESTATION

Small hairs on larval carpet beetles, when ingested or inhaled, may cause dermatitis and irritations to nasal passages and sinuses. Food containing carpet-beetle larvae has sometimes been responsible for enteric irritation in infants who have eaten it.

Although fabric pests are not known to transmit diseases, feeding larvae do considerable damage to organic materials. Clothes moths damage clothing and rugs.

SECTION C INSPECTION AND MONITORING

1. INSPECTION

Since ordinarily inspection for and control of fabric pests would be carried out by residents themselves, HA staff members are likely only to be called on for assistance when the infestation is very serious or extensive. The information contained here may be passed on to a concerned resident by an HA staff member.

The first step in controlling carpet-beetle or clothes-moth infestations is to inspect the dwelling carefully to discover sources of infestation. Any occurrence of moths or carpet beetles (adults, eggs, larvae, or pupal cases) is ample reason to initiate controls. Prior to inspecting, determine whether soundproofing or insulating materials used in the building's construction are of plant or animal origin and supportive of fabric pests. Since fabric pests feed on a wide variety of items, inspection of the premises and subsequent control should be carefully and thoroughly performed in order to eliminate the problem. If infestation is found, inspect all spaces and destroy all adults and larvae. Populations can expand rapidly from only a few adults. Inspect the following:

- Stored woolen clothing and bedding;
- Down pillows and comforters;
- Silk, fur, mohair objects;
- Upholstered furniture, animal hides and trophies, stuffed animals;
- Light fixtures, washers and dryers;
- Dried-flower arrangements, stored foods, pet foods, dresser drawers and contents,
- Floor cracks, baseboards, and vents for lint, debris, and pet-hair accumulations;
- Eaves, attics, wall voids, and crawlspaces for wasp and bee nests, bird nests, bat roosts, and dead or live animals;
- Fireplaces, chimneys, and vents for dead animals;
- Likely locations for rodent infestations;
- Cereal, meal, and flour goods; seeds and pet foods;
- Wool carpets, rugs, and blankets.

To inspect carpets, pull back the edges from the tack strip and look under edges. Use sticky traps around walls and make careful visual observations. Insects do not infest the entire rug, only those parts not exposed to light and traffic. Closely examine compressed fibers under rugs and under furniture legs; this is an important area to spot-treat with pesticide. Also inspect carpet edges under

the quarter round trim.

Monitor for fabric-pest infestations at least twice a year, using a hand lens and flashlight to search for eggs, adults, larvae, granular feces, and cast larval skins. Check window sills, under windows, window runners, behind baseboards, in cracks, crevices, radiators, and air ducts.

Request help from residents by asking:

- Whether they noted rodents or birds in their homes;
- If animal carcasses or nests have been found and removed;
- If there have been bee, wasp, or ant nests in attic or wall voids;
- If there have been cluster-fly problems: dead insects in wall voids support fabric pest infestation.

2. MONITORING

Pheromone traps are available for several moths and beetles, and others are being developed for monitoring fabric pests. Pheromone traps are usually sticky traps with a lure, usually a sex attractant, for a specific species of insect.

SECTION D CONTROLS

1. MAJOR MISTAKES IN FABRIC-PEST CONTROL PROGRAMS

The following are some of the major mistakes made in fabric-pest control programs:

- Failing to find and control or remove sources of infestation;
- Allowing fabric-pest infestations from the outside through poor exclusion or importing by infested clothing, firewood, and contaminated foods;
- Failing to monitor for fabric pests and allowing infestations to become severe before initiating controls or prevention.

2. PHYSICAL, MECHANICAL, AND CULTURAL CONTROLS

a. Sanitation

- Store all foods susceptible to fabric pests in glass or plastic jars with tight-fitting lids. Promptly dispose of infested food in outside garbage cans at some distance away from the dwelling. Freeze flour and pasta goods when first bringing them into the house. One commonly overlooked source of pests is infested pet food or bird seed cached by mice, rodents, or squirrels in inaccessible wall voids, under kitchen cabinets, under enclosed bath

tubs, and in attics.

- Periodically examine stored clothing to determine extent and location of damage.
- Illuminate closets; moths prefers darkness and search out dark folds in fabrics and other secluded places in which to hide and lay eggs.
- Regularly vacuum rugs, floors, windows; vacuum lint and dust from behind baseboards, under appliances, and heating units. Frequently vacuum organic debris from floor cracks, drawers, closets, radiators, air ducts, under and behind furniture and kitchen machines, where moths breed. Place vacuum bag in a sealed plastic bag and discard it outside to prevent spreading moths and larvae.
- Remove bird nests from window sills and eaves, rodent nests and dead rodents from attics and basements. Nests and carcasses provide food that supports moths and carpet beetles.
- Trap rodents rather than poisoning them; dead carcasses in wall voids become food sources for moths and insect pests and cause unpleasant odors.
- Moths normally only damage seldom-used clothing and blankets; frequently rotate or use woolen fabrics. Once or twice a month during summer, brush hidden areas (pockets, reverse cuffs, collars) on those garments which are infrequently worn and then shake, brush, comb, beat, and air them out in bright sun. Beating, brushing, and vacuuming dislodges and crushes eggs and young larvae. Sunning and dry-cleaning removes both moths and larvae.
- Comb fur skins with a fine-toothed comb close to the skin where larvae spin cocoons.

b. Exclusion

- Regularly and carefully inspect clothing for insects and evidence of damage; do not import insect eggs or larvae on unprotected or uncleaned articles. Inspect new articles for possible infestation and damage (especially antique upholstered furnishings) before mixing them with articles already in the house.
- Seal and screen all vents, cracks, crevices, holes, and chimneys through which fabric pests could enter the dwelling; install tight-fitting doors and windows; place filters over air ducts.
- Send valuable items out to be cleaned, treated, and stored by a commercial fumigator. Dry clean other fabrics and store them in tightly sealed plastic bags, to exclude moths. Moths cannot live on clean wool and feathers; remove unprotected or soiled woolens from the house or have them treated. Although professional dry-cleaning sterilizes fabrics, it can also uncover undetected damage; fabrics that were originally only held together by moth webbing may fall apart when cleaned.
- Maintain the lowest humidity and temperature conditions and as much illumination as possible.

3. OTHER CONTROLS

a. Biological Controls

Mites, insects, centipedes, scorpions, praying mantises, and spiders prey on fabric pests but cannot be relied upon to prevent infestation.

b. Humidity

Carpet-beetle eggs may be destroyed in highly humid conditions by fungi, but low humidity is the best preventive measure against clothes moths.

c. Sterilization

- Storing fabrics in atmospheres containing more than 50 percent carbon dioxide or inert gas suffocates insects.
- Freeze objects (18 degrees F) for several days to kill larvae and moths, warm them to 40 degrees F to encourage any eggs that survived to hatch, and then freeze again to kill any newly emerged larvae.
- Subject infested objects to a temperature of 120 degrees F or more in a microwave, in a plastic bag placed in the sun, or for an extended period of time in temperatures greater than 93 degrees F. Fabric pests have very low resistance to heat.

4. CHEMICAL CONTROLS

Some modern colorless chemicals used on woolens during manufacture provide permanent moth and carpet-beetle protection, and moth balls were once widely used to prevent moth and fabric-pest damage. Note that these may be dangerous substances.

Take the following precautions with chemical controls:

- Moth balls and naphthalene are very toxic chemicals and pose serious health risks. Moth-ball vapors damage leather goods, synthetic fabrics, plastic buttons, and pine pitch-covered artifacts. Babies can absorb gas from moth-ball treated clothing which may cause acute reactions; low solubility makes these chemicals hard to remove from fabrics. Moth balls can look like candy to youngsters, who can be poisoned by eating them.
- Various insecticides are labeled for fabric-pest control. Before applying any chemical, test fabrics for possible staining and damage. Apply general treatments over the entire carpet surface, as per label. If the nap is thick and moth larvae are deep in the pile, surface treatment will have only

limited effect, and the carpet undersides will need to be treated.

- If extensive damage is present, and moths have infested, or when adult moths are often seen, apply commercially labeled fog, aerosol, or spray treatment and nonresidual insecticide. Some new low-toxicity products may have good residual effects for six or more months in dark closets. Test articles for staining and damage before treating. Carefully follow product label instructions. Schedule any pesticide treatment to take place when moths are active (at night) since pesticide droplets suspended in the air do not easily penetrate cracks and crevices to reach hidden moths. Sensitive persons should dry clean and air treated garments, before wearing to prevent reactions.

END OF CHAPTER ELEVEN