The Indian Meal Moth

Fact Sheet FS1122



Indian Meal Moth Larvae



Plodia interpunctella - Adult



Pupae found in infested food

Cooperative Extension

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Introduction

The Indian Meal Moth is a common pest of stored food products. Affected foods include, but are not limited to: whole grain products, cereal foods, dried pet foods, seeds, nuts, dried fruits, spices, powdered milk, bird seed, fish food, pasta, cornmeal, crackers and chocolates. They may also infest nonfood items such as dried flowers and potpourri. Damage to these materials is caused by the larvae which are general feeders. As the larvae feed and crawl over food they spin silken threads leaving a mat of webbing and excrement. The insect is found worldwide and is a frequent pantry pest. It is also a major pest of storage food facilities and grocery stores.

Description

Eggs

Indian meal moth eggs are grayish white in color and range in length from 0.3 to 0.5 mm, or the size of the diameter of a single grain of medium grade sand, which is difficult to see without magnification.

Larvae

(Caterpillar stage) Indian meal moth larvae are usually off-white in color but can vary to pink, greenish or brown depending on the food eaten. Newly hatched larvae are too small to be readily seen. Mature larvae have a brown head and are about ½-inch in length. The larvae have well-developed thoracic legs and abdominal prolegs which enable them to move quickly from the food source to pupate in another location. This makes it very difficult to find the original source of infestation.

Pupae

Indian meal moth larvae can pupate either unprotected or in a silken light-brown cocoon.

Adults

The adult moths are about ½ inch long with a wingspan of about 5/8 inch. The forewings on the outer 2/3 portions are reddish brown with a coppery sheen. The front 1/3 of the fore-wings, head and thorax are gray. When at rest, the moth folds its wings flat along the length of the body.

Habitat and Lifecycle

Eggs and Larvae

Generally eggs are laid directly on a food source, in clusters or singly. Females can oviposit between 100 and 400 eggs. Indian meal moth eggs hatch in two to 14 days into larvae, which are tiny white caterpillars that disperse within a few hours after hatching. During this stage, larvae move to food-stuffs and feed. The larval stage can last from 13 to 288 days depending on the ambient temperature. Cooler temperatures prolong insect development. When fully developed, the larvae will move a considerable distance from their food sources to find a pupation site. They select cracks, crevices, on the top of cupboards, or the ceiling to spin a cocoon. In cold climates, larvae overwinter and pupate in March. Adult moths emerge from the cocoons.

Adults

The adults fly in a random pattern rather than in a straight line. The Indian meal moths do not feed and live one to 18 days. Their sole purpose is to mate and reproduce. You may

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see them in the kitchen and in other rooms of the home, as the moths are attracted to various light sources. On occasion, homeowners may see activity of these insects even though they may not have an infestation among their stored food stuffs. In these cases an animal, for example a mouse, may have gathered food material such as nuts, seeds etc., and stored it between the walls of the home. Since the source is difficult to pinpoint, the only recourse may be to let the insects consume the product.

Prevention

1. Before purchasing grains, dried fruit etc, inspect packaging for freshness or expiration date. Do not bring damaged packaging or boxes into the home.
2. Careful sanitation is the best method to avoid stored product pests. Keep your pantry and cabinet areas clean. Vacuum up any crumbs regularly.
3. Store long-term products in the freezer. If available, buy smaller packages of seldom used grains to avoid prolonged storage. Store newly purchased foods in glass jars with tight, screw cap lids in the pantry. Avoid storage in plastic bags, as the larvae may be able to enter such packaging.
4. Stored holiday decorations are often overlooked as possible infestation sites. Wreaths of dried flowers, seeds and nuts should be stored in tightly sealed containers.
5. Avoid using shelf paper as it can create gaps and crevices for the caterpillars to spin cocoons.

Control

1. All infested food must be discarded in a sealed plastic container. Check pet food, bird food and even grass seed, which also should be kept in sealed containers.
2. After you have disposed of infested stored products, vacuum cabinets and shelves thoroughly before replacing food. Discard the vacuumed infested material in the outdoor trash.
3. Pheromone sticky traps are available for monitoring and pinpointing infestations of adult Indian Meal Moths. Pheromones are natural compounds created by the female insect. These traps work by emitting airborne pheromones to lure male moths onto a sticky trap. The traps alone will not control an infestation. About one in eight Indian Meal Moths that approach a pheromone trap will enter it.
4. If all other methods fail to control infestation, after food is removed, an insecticide labeled for Indian meal moth control can be applied to cupboard cracks and crevices in food storage areas. Read and follow all instructions on the pesticide label. Be sure the material is labeled for use indoors and around food materials. Allow the spray to dry before replacing the food items.
5. If the problem becomes severe and widespread, contact a reputable, licensed pest control operator who has the training, experience and equipment to treat and control an Indian Meal Moth infestation. For information on selecting a pest control operator, please review the Rutgers Fact Sheet FS018 entitled "*How to Hire a Household Pest Control Professional*" at http://njaes.rutgers.edu/pubs/.

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