

Community IPM

Indian Meal Moth: A Common Kitchen Pest

The Indian meal moth is a pest of stored food products, especially grains. Moths are typically introduced to a home in packaged dry pet food, and are not observed until adults emerge and are seen flying around the kitchen. The larvae (caterpillars) of this moth create silk webbing in their food source, which can be seen when opening an infested package. Once this moth has been identified, it is usually possible to eliminate them without pesticides.

Did you know ... ?

- **Troubled Youth:** Indian meal moth larvae are responsible for all the damage caused by this insect. Larvae feed on and contaminate food sources, while adults do not feed at all.
- **Global Problem:** Indian meal moths originated in the Old World, but are now distributed worldwide. They are the most common moth pest of stored food.
- **Secondary Pest:** Indian meal moths can infest nuts and other food items stored by rodents in chimneys, attics, crawl spaces and wall voids.

Identification

Adult Indian meal moths are easily recognized by the color of their wings. A white band near the head is contrasted by the bronze color of the wing tips. The adults are about 3/8 inch long and fly in the evening when they are attracted to light sources, such as a television. When squished on a light colored surface, these moths leave a bronze or red color from scales on the wings (not blood).

Food contaminated by larvae contains silken webbing. Larvae are off-white in color, about 2/3 of an inch long with a brown head. Larvae spin silken pupal cases in protected areas such as corners and gaps. These are sometimes mistaken for spider webs in corners of rooms.

Biology

Female Indian meal moths can begin to lay eggs within 24 hours of emerging as an adult. Eggs are placed on or near food source such as unsealed grains and cereals. After hatching, larvae disperse to find food. Due to their small size, larvae can enter packages through small cracks and infest food items. The preferred food item of this pest are cereals and grains, but dried fruits, powdered milk, cornmeal, flour,



Indian Meal Moth, *Plodia interpunctella*. Photo: G. Alpert.



Indian meal moth larvae, adult and webbing on a food source. Photo: Clemson University, USDA Cooperative Extension Slide Series, Bugwood.org



Indian Meal Moth showing its curled mouthparts. Photo: G. Alpert.

raisins, prunes, nuts, chocolate, candies, health food, seeds, bird seed, dry dog and cat food, fish food, graham crackers, dried red peppers, and pastas might also be attacked. While feeding, larvae create a tunnel of silk that accumulates food particles as camouflage.

When enough food has been consumed, larvae leave the infested item in search of a dark, secure place for pupation. The amount of time required for larval development depends on food and temperature availability, but is usually about two weeks. Larvae pupate in cracks and crevices associated with kitchen cabinetry, or even at the wall/ceiling or wall/floor junction. Larvae will spin a silken pupal case, and typically emerge as adults at night one week later. Adults live for one to three weeks, with females depositing between 100 and 400 eggs each. Adult moths do not feed on stored food items, instead having coiled mouthparts for drinking.

Management

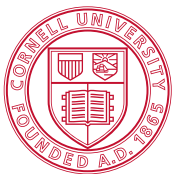
Indian meal moths can be effectively controlled without the use of pesticides. This begins with proper identification of the pest, and removal of infested items. Follow the steps below to manage Indian meal moths and other stored food pests.

1. Identify your pest: look for adult moths, off-white larvae or silken webbing in food items, and silken pupal cases in cracks and crevices.
2. Examine and dispose of infested items by sealing

them in a plastic bag and discarding outside the home. Infested items can include any dried food item, but especially bags of pet food, stored seeds, and nuts that have been kept for an extended period of time. If the source of infestation is not obvious, consider food items that might have been cached by rodents such as squirrels or mice.

3. Food items can be placed in a freezer for one week to sanitize and eliminate the possibility of contamination.
4. After purchase, food items should be stored in sealed containers with a tight-fitting lid. This prevents an item from becoming infested.
5. Shelves and drawers where food items are stored should be vacuumed to remove caterpillars, moths, or spilled food items that could provide nourishment. Crumbs found in cracks and crevices of these areas can provide sufficient nourishment for larval development.
6. Employ a first-in, first-out policy for stored-food items. Empty containers completely and wash before re-filling.
7. Use of pheromone traps to survey for moths may not be applicable in residential settings. Only when a problem is unresolved would you want to use these traps to identify the source. Because Indian meal moths naturally exist outdoors, adult males can be attracted indoors by traps.

Prepared by Gary Alpert, Museum of Comparative Zoology, Harvard University. Updated 2015
by Matt Frye, New York State Integrated Pest Management Program, Cornell University.



Cornell University
Cooperative Extension



Produced by the New York State Integrated Pest Management Program, which is funded through Cornell University, Cornell Cooperative Extension, the New York State Department of Agriculture and Markets, the New York State Department of Environmental Conservation, and USDA-NIFA. Design by Karen English, New York State IPM Program. Cornell Cooperative Extension provides equal program and employment opportunities. © 2015 Cornell University and the New York State IPM Program. Posted 3/2015 at www.nysipm.cornell.edu/factsheets/buildings/indian_meal_moths.pdf

www.nysipm.cornell.edu