

## Indian Meal Moth

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Are little moths fluttering around the kitchen? Are white worms crawling out of the bird seed? A very common indoor pest at any time of the year is the Indian meal moth.

Adult Indian meal moths are small insects with a wingspread of about  $\frac{3}{4}$  inch. When moths land, they fold their wings flat along the length of their bodies. Moths appear two-toned, with the front one third of their wings whitish-gray and the remaining two-thirds a reddish-brown to coppery color. If moths are crushed they leave a dark powdery smudge. Adults often fly in a zigzag pattern and are often seen weakly flying indoors, or resting on walls or cupboard doors.



An adult Indian meal moth.

Because adults are so mobile, they often lay eggs and infest numerous products before the infestation is discovered. Indian meal moth larvae are small, white, worm-like caterpillars that can crawl on walls or in food, can produce holes or webbing in packaging..

Indian meal moths come from the store in pet food or dried plant products such as rice, flour, and noodles. The insects can be in the house for months before they are numerous enough to be noticed. The original source of the infestation can be very difficult to trace.

**Life Cycle:** Adult moths usually emerge, mate, and lay eggs at night. Females lay between 40 to 350 eggs, either singly or in groups, on or adjacent to

food materials during a two to three week period. Eggs may also be placed directly on the exterior of packaging material. The eggs are white, flattened sideways and too small to be easily seen with the naked eye.

The full-grown, worm-like larvae are about  $\frac{1}{2}$  inch long and off-white in color with a light brown head. The body color may have a greenish to a pinkish hue, depending on the food the caterpillar feeds on. Mature larvae usually leave their food supply and wander about looking for a place to pupate (transform into adults). Larvae seen on ceilings and counters, etc. are often the first indication of a problem. Indian meal moth cocoons are covered with a loose, silk webbing and are often found in package seams, in cracks and crevices, folded napkins, or in other protected sites. The life cycle (egg to adult) of the Indian meal moth can take as few as 27 days or as long as six months or more. There are generally four to six generations per year indoors. If allowed to cool down gradually during the fall and winter months, larvae will often survive the cold and emerge as adults in the spring.

**Food Infested and Damaged:** The larvae of the Indian meal moth will feed on cracked grain; flour including coarser grades of flour such as whole-wheat or graham

flour, cornmeal (Indian meal) products, powdered milk, corn starch, bread meal, breakfast foods and cereals, crackers, cookies, biscuits, dried fruits including raisins and dried apples, shelled nuts including peanuts, chocolate, herbal tea, dried peppers, some spices, dry dog and cat food, bird seed, garden seeds, and dried flowers. Extensive webbing can spoil more food than the larvae can consume. Any of the foods mentioned above that are hidden by mice, or used to make decorations, can still serve as food for the larval stage of Indian meal moths.

**Control:** Indian meal moths should be controlled without the use of pesticides. Store noninfested susceptible food materials so that adults and larvae do not have access. Glass jars and plastic containers with air-tight covers can effectively keep food insect-free. Indian meal moth larvae can easily chew through light-weight plastics, so be cautious about storing products in re-sealable bags. When appropriate, the refrigerator and freezer may also be used for storage of susceptible foods. Susceptible food that can not be tightly contained should be consumed within two to three weeks of purchase.

Infestations in food stored in hard plastic storage containers are trapped and unable to spread to other food items. Unopened infested packaging can be placed in a freezer for two to three days to kill any larvae or eggs. Dispose of infested food. Bird seed can be recycled if frozen. If most moths are found in a room other than the kitchen, check closets for bags of pet food, dried flowers, or art objects made from seed, nuts, etc. Using residual spraying on shelving will not control the problem if the source can not be located. In addition, the Indian meal moth has shown major resistance to some pesticides used in grain treatments. Use a vacuum cleaner to get into cracks and crevices and remove Indian meal moth adults, larvae and eggs. If all sources of the insect are eliminated, moths should disappear within two to three weeks. Most home problems can be solved with sanitation alone.

**For more information on stored grain insects:** See UW-Extension bulletin A2509, or contact your county Extension agent.