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## INDIANMEAL MOTH (*Plodia interpunctella*)

The Indianmeal moth is the most commonly reported insect pest of grain products stored in the home pantry. These moths are named after an archaic term for cornmeal, and are a member of the Pyralid or snout moth family.

### **Description and Life Cycle:**

The Indianmeal moth has four stages in its life cycle.



**Fig. 1: Adult Indianmeal moth**

**Adult:** The adult Indianmeal moth is a small insect with a wingspread of about 3/4". The patterned, front wings of the resting adult lie flat along the length of the body. The front one third of the resting adult is whitish-gray. The remaining two-thirds is reddish-brown with a coppery luster (Fig. 1).

**Egg:** The eggs are white, flattened sideways and too small to be easily seen with the naked eye.



**Fig. 2: Larval Indianmeal moth**

**Larva:** The full-grown, worm-like larva is about 1/2-inch (about 13 mm) long and off-white in color. This color may vary from a greenish to a pinkish hue, depending on the food the larva feeds on. The head is brown (Fig. 2).

**Cocoon/Pupa:** The cocoon is a loose, oval shaped capsule that mature larvae spin around themselves prior to transforming into the pupa stage. The pupa is an intermediate stage between the larva and the adult.

**Life Cycle:** Adult moths usually emerge, mate, and lay eggs at night. Females lay (oviposit) between 40 to 400 eggs on or adjacent to food material, either singly or in groups depending on several factors. Eggs

may also be placed directly on the exterior of product packaging material. Eggs hatch within 4-8 days, usually beginning in April, even with generations overlapping. The 1/16 inch larva begins searching for food. Those emerging on the outside of a container are often able to penetrate containers that appear well sealed because they are so small. As the developing larvae move about, they spin a continuous strand of thin webbing. Over time, this webbing extends throughout the infested material. In a heavy infestation the webbing becomes dense enough to be easily visible.

Larvae mature in 21 to 70 days, depending on food availability, temperature, and day length. Mature larvae usually leave their food supply and wander about looking for a secluded and protected place to pupate. Larvae seen climbing on ceilings and counters are often the first indication of a problem. In heavy infestations, pupation may occur far from the original food source. The life cycle (egg to adult) can take as few as 27 days or as long as 305 days. There are generally four to six generations a year, but the number can vary from one to eight (seven to eight under favorable temperature conditions). During the fall and winter months, larvae will often enter diapause (a form of hibernation) and pupate in the spring.

*Food Infested (Damaged):* The larvae of this cosmopolitan insect feeds on cracked grain; coarser grades of flour such as whole-wheat or graham flour and cornmeal (Indianmeal) products; dried fruits, shelled nuts and others. Examples include raisins, dried apple, peanuts, chocolate, and powdered milk. Other foods are birdseed, biscuits, bread meal, breakfast foods, cereals, corn meal, corn starch, cookies, crackers, dry dog and cat food, flour, garden seeds, and red peppers. The Indianmeal moth has also been reported to breed in shelled or ear corn, matting it over

with silken threads. The extensive webbing can spoil more food than the larvae can consume. Stored product materials used in decorations may be an overlooked source of infestation. Rodent caches of seeds can also be a food source for larvae.

**Control:**

The Indianmeal moth can be controlled without the use of pesticides. It is important that susceptible food material be stored so that adults and larvae may not have access to it. Glass jars and plastic containers with airtight covers can effectively keep food insect-free. Infestations observed on food stored in either type of storage container are trapped and unable to spread to other food items. Pet food and wild bird seed should also be stored in airtight storage containers to prevent access or caching by rodents. Susceptible food items that cannot be tightly contained should be consumed within two to three weeks of purchase. When appropriate, the refrigerator and the freezer may also be used for storage of susceptible foods.