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Insects

Insects in Grain Bins

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Introduction

One of the most common insects in stored grain is the Indian-meal moth, *Plodia interpunctella* (Hubner). These moths are called “flour moths” in Tennessee because they feed on flour or milled products. In farm grain bins, they prefer broken grains or grains damaged by other pests and seldom attack sound grain kernels. They cause problems by spinning webbings as immature. This causes lower quality in stored grain.

Life History and Description

The Indian-meal moth (Fig. 1) is easily distinguished from other grain-infesting moths by the markings of its forewings. The outer two-thirds of the wings are brown with a copper luster. The inner wing area is whitish gray. The female moth deposits her eggs singly or in groups on the food material. After a few days, the eggs hatch and small whitish larvae emerge. These larvae feed on broken grains or grain products. The larvae are about one inch long when fully grown. They are dirty white, sometimes varying to greenish or pinkish hues. The larva spins a silken cocoon and transforms into a light brown pupa. The moth emerges about a week later. During warm periods, the entire life cycle may take only six to eight weeks.

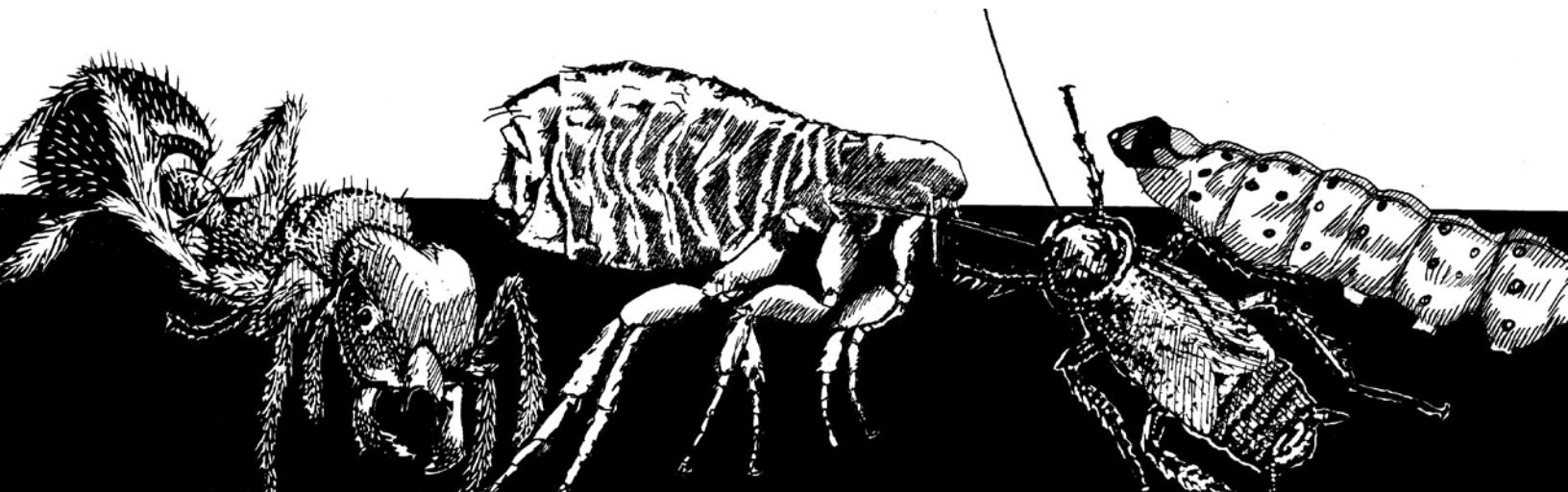


Figure 1. Indian-meal moth larva, adult.
Photo credit: University of Georgia slide series.

One recognizable feature about the larvae is the silken threads they spin behind them as they crawl over a food source. This webbing can be quite extensive if large numbers of larvae are present.

Control Measures

Maintaining sound, clean grain, and preventing other insect damage in bins, will help prevent Indian-meal moth infestations.



Use an insecticide on the grain, the bin walls and floors to reduce Indian-meal moth infestations. Treat the base of the bin on the outside to prevent the moth larvae from entering the bin. Any old grain within the bin should be removed before adding new grain. Use of the fumigant chloropicrin to treat the empty bin prior to adding new grain will destroy any moth infestations below the false flooring of the grain bin.

Use pesticides with care and follow the label. When using chloropicrin fumigant, follow all label requirements and safety precautions. The University of Tennessee recommends the application of all fumigants be made only by trained, certified applicators.

| Chemical Control Measures | | |
|---|---|---|
| Crop | Insecticide | Per 1,000 bushels |
| Corn, Milo | Actellic 5E | 9.2-12.3 oz. |
| Crop spray (Pyronyl) (Can be mixed with other insecticides – see label.) Used on most stored grain. | 1 pt. in 3-5 gallons water – see label. 4-5 gallons mix per 1,000 bushels. | |
| Oats, Rice, Barley, Wheat or Grain Sorghum | Storcide II | Barley – 9.6 oz. Oats – 6.4 oz. Rice – 9.0 oz. Milo – 11.2 oz. Wheat – 12.0 oz. |
| Empty Bin Fumigation and Treatment: | | |
| Only Phostoxin is available, but it must be used with extreme care. The bin must be sealed to prevent leakage of the gas. | | |
| Empty bin only | Tempo (20WP) | Spray prior to storage of corn or small grain. Use 1-2 packets per 1,000 sq ft. |
| Empty bin only | Tempo SC Ultra | 8 ml/gal water. |

Precautionary Statement

To protect people and the environment, pesticides should be used safely. This is everyone's responsibility, especially the user. Read and follow label directions carefully before you buy, mix, apply, store or dispose of a pesticide. According to laws regulating pesticides, they must be used only as directed by the label. Persons who do not obey the law will be subject to penalties.

Disclaimer Statement

Pesticides recommended in this publication were registered for the prescribed uses when printed. Pesticide registrations are continuously reviewed. Should registration of a recommended pesticide be canceled, it would no longer be recommended by the University of Tennessee. Use of trade or brand names in this publication is for clarity and information; it does not imply approval of the product to the exclusion of others which may be of similar, suitable composition, nor does it guarantee or warrant the standard of the product.

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