

PRINCIPAL STORED GRAIN INSECTS

GRANARY WEEVIL *Sitophilus granarius*

Length: Approximately 4 mm 


Small, moderately polished, blackish or chestnut-brown beetle. The head extends into a long slender snout with a pair of stout mandibles or jaws at the end. There are no wings under the wing covers, and the thorax is well marked with longitudinal punctures, two characteristics that distinguish this insect from the closely related rice weevil with which it is often found.

The adult live an average of 7 to 8 months. Each female lays 50 to 250 eggs during this period.

After mass infestation, the grain becomes warm and damp, this leading to the formation of mold.



RICE WEEVIL *Sitophilus oryzae*


Length: Approximately 3 mm 

Small snout beetle; varies from reddish brown to nearly black and is usually marked on the back with four light-reddish or yellowish spots. It has fully developed wings beneath the wing covers. The thorax is densely pitted with somewhat irregularly shaped punctures; except for a smooth narrow strip extending down the middle of the upper (dorsal) side.

The adult live an average of 4 to 5 months, and each female lays 300 to 400 eggs during this period. The early life stages are almost identical in habit and appearance to those of the granary weevil.



MAIZE WEEVIL *Sitophilus zeamais*

Length: Approximately 5 mm 


A small snout beetle. It varies from dull red-brown to nearly black and is usually marked on the back with four light reddish or yellowish spots. It is slightly larger than the rice weevil and has more distinct colored spots on the forewings.

The maize weevil has fully developed wings beneath its wing covers and can fly readily. The thorax is densely pitted with somewhat irregularly shaped punctures, except for a smooth narrow strip extending down the middle of the dorsal (top) side.

While developing, the larvae eat the internal contents of the maize; approximately 18 to 23 days.



CADELLE *Tenebroides mauritanicus*

Length: Approximately 9 mm 


An elongate, oblong, flattened, black or blackish beetle.

Both the larva and adult feed on grain and have the destructive habit of going from kernel to kernel devouring the germs. Found in mills, granaries, and storehouses where it infests flour, meal, and grain.

It is one of longest lived of the insects that attack stored grain. Many of the adults live for more than 1 year and some of them for nearly 2 years. Both the larvae and adults can live in the woodwork of the bin for a long time after the grain has been removed.



LESSER GRAIN BORER *Rhizopertha dominica*

Length: Approximately 3 mm 

Slender, cylindrical form and small size. Polished dark brown or black, with a somewhat roughened surface. The head is turned down under the thorax and is armed with powerful jaws used for cutting into wood.

Both the beetles and larvae cause serious damage in warm climates by attacking a great variety of grains.

The eggs are deposited on the outside of the kernels. Badly infested wheat takes on a honey-like odor.



SAW-TOOTHED GRAIN BEETLE *Oryzaephilus surinamensis*

Length: Approximately 3 mm 


Slender, flat, brown beetle. It gets its name from the peculiar structure of the thorax, which bears six sawtoothlike projections on each side.

It attacks in both the larval and adult stages. The adults live on an average 6 to 10 months. The female lays 43 to 285 eggs.

Infests mainly grain and grain products but also noodles, wafers, nuts, and dried fruit. Causes sometimes the so-called "hot spots" in stored grain.



FLAT GRAIN BEETLE *Cryptolestes pusillus*

Length: Approximately 2 mm 

Minute, flattened, oblong, reddish-brown beetle, with elongate antennae about two-thirds as long as the body. One of the smaller beetles commonly found in stored grain.

Females deposit small white eggs in crevices in the grain or drop them loosely upon farinaceous material. The larvae are fond of the wheat germ, and, in infested grain, many kernels are found uninjured except for the removal of the germ. Larvae also feed on dead insects.

Frequently found in enormous numbers with the rice weevil. This insect is a scavenger and often infests grain and meal that are in poor condition.



CONFUSED FLOUR BEETLE *Tribolium confusum*

Length: Approximately 4 mm 

Shiny, flattened, oval, reddish-brown beetle. The head and upper parts of the thorax are densely covered with minute punctures. The wing covers are ridged lengthwise and are sparsely punctured between the ridges.

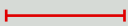
The average life is about 1 year. Badly infested flour has a sharp odor and turns brown; its baking properties are damaged.

This beetle is closely related and almost identical in appearance to the Red Flour Beetle.



ANGOUMOIS GRAIN MOTH *Sitotroga cerealella*

Length: Approximately 8 mm

Wing span: Approximately 16 mm 


Small buff or yellowish-brown moth. The rear edges of the forewings and hindwings have long fringes.

Larva crawl to a kernel of grain and often spins a small cocoon to assist it in boring into the hard kernel. After entering the grain, it feeds on either the endosperm or the germ until fully grown. It attacks all types of grain, particularly corn and wheat. Badly infested grain has a sickening smell and taste that makes it unpalatable.



INDIAN MEAL MOTH *Plodia interpunctella*

Length: Approximately 17 mm

Wing span: Approximately 17 mm 

Easily distinguished from other grain pests with peculiar markings of its forewings which are reddish brown with a copper luster on the outer two-thirds but whitish gray on the inner or body ends.

Each female lays 100 to 300. Larvae feed upon grains, grain products, dried fruits, nuts, and a rather wide variety of foodstuffs.

Fully grown larva leave a silken thread behind wherever it crawls.



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