



Lesser Grain Borer, *Rhyzopertha dominica* (Coleoptera, Bostrichidae)¹

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Appearance

The adults of this beetle are very small (2 to 3 mm or 1/13 to 1/8 inches). They are dark brown to black in color. The body has a slender cylindrical form (Figure 1). The head is hidden under the slightly knobby, pitted prothorax. The elytra (hard, shell-like forewings) have distinct rows of pits running their length. The antennae have 10 segments with the last 3 enlarged, forming a loosely segmented club. The larvae are white, stout bodied and c-shaped.

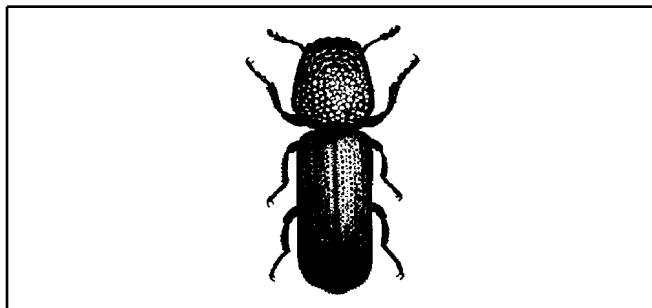


Figure 1. Lesser grain borer.

Habits

The lesser grain borer is characterized as both an internal and external feeder and is a serious pest of both whole kernel stored grain and cereal products. The adults and larvae bore into undamaged kernels of grain, reducing them to hollow husks. They are also able to survive and develop in the accumulated "flour" produced as the seeds are chewed up. The lesser grain borer is primarily a pest in stored wheat and corn, but it can infest tobacco, nuts, beans, bird seed, biscuits, cassava, cocoa beans, dried fruit, peanuts, spices, rodenticide baits, and dried meat and fish.

Biology

Adult females lay eggs singly or in groups of up to 30. The eggs are laid on the outside of the grain or in the fine powdered grain associated with infestations of this beetle. A female can lay from 200 to 500 white eggs during a lifetime. Development from egg to adult depends on temperature. In hot summer conditions it may take as few as 30 days, but the average is about 58 days. Pupation takes place inside the hollow shell of the

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seed or in the "flour" that accumulates with infested grain.

Control

Inspection is very important to prevent infested materials being brought in to infest other goods. Warehouses and stores, especially feed and health food stores, should monitor for beetle infestations with pheromone traps. Store whole grains such as bird seed, popcorn, wheat berries, spice seeds, dried beans, and seeds for sprouting in insect-proof glass, metal, or plastic containers. Infested products should be discarded. Infestations in homes are sometimes a result of grain-stuffed animals or other ornaments. There is an unpleasant odor associated with infestations of lesser grain borer that makes infested material unpalatable. Sanitation is very important in control of this and other stored product pests. Shelves should be vacuumed, paying careful attention to cracks and crevices, and wiped down with warm soapy water. Small, isolated infestations may be controlled with residual and space sprays. Large infestations usually require fumigation to control pest populations. Grain protectants are used to discourage infestations, but some are less effective against lesser grain borer than they are against other insects.

Table 1. Pesticides Available

Trade Name (Formulation)		Common Name - %		
Site(s)	Pest(s)	Re-Entry Time	Preharvest Time	Retreatment Interval
Demand CS (Microcapsulated suspension)		Lambda-cyhalothrin - 9.7%		
Hotels/Motels	Lesser Grain Borers	Do not contact until dry	None	3 weeks
For use as a general surface spray and crack and crevice or spot treatment in, on, or around buildings and structures and their immediate surroundings.				
Ficam D (Dust)		Bendiocarb - 1.0%		
Restaurants/Commercial Kitchens	Lesser Grain Borers	None	None	None
This product is intended to be applied with a hand or power duster to hiding and runway areas and those places where pests are found. Treat exposed stages. Apply dust in cracks and crevices behind are under cupboards and cabinets for residual control. Do not apply directly to food, utensils, or food storage areas.				
Pestab (Wettable/soluble powder)		Lambda-cyhalothrin - 10.0%		
Restaurants/Commercial Kitchens	Lesser Grain Borers	Do not contact until dry	None	3 weeks
Use as a crack and crevice or spot treatment to selective surfaces. Do not apply when facility is in operation or when foods are exposed.				
Grocery Stores/Supermarkets, Hotels/motels	Lesser Grain Borers	Do not contact until dry	None	3 weeks
Apply as a crack and crevice or spot treatment to selective surfaces. Do not apply when facility is in operation or food is exposed.				
Prelude (Emulsifiable concentrate)		Permethrin - 25.6%		
Food Storage Areas (warehouses)	Lesser Grain Borers	Do not contact until dry	None	None
Do not apply in warehouses while raw agriculture commodities for food or feed are being stored. During indoor application, do not allow dripping or runoff to occur. Do not apply when occupants are present in the immediate area.				