



Pantry and Stored Food Pests¹

P. G. Koehler²

There are many species of stored food pests found at various times in food pantries. Most of these pests are introduced into our homes in infested food. Some invade homes through normal methods of entry.

There is hardly a food item in the kitchen or food pantry which can escape being infested by some pest if it remains unused and exposed in some dark corner or drawer long enough. All items are susceptible, including spices, hot pepper, ice cream cones, and even cereals, grits, and cake mixes. Dried flower arrangements and stuffed furniture and toys, often harbor infestations.

Stored food pests are economically important and are responsible for millions of dollars of loss every year in stored foods and other products. Most of the stored food pests under Florida conditions can reproduce quickly and have several to many generations in a year. Many species are active the year around under suitable conditions.

Some of the common pantry pests are flour beetles (Figure 1), saw-toothed grain beetles (Figure 2), cigarette beetles (Figure 3), drugstore beetles, larder beetles, granary weevils (Figure 4), rice weevils (Figure 5), spider beetles, grain moths (Figure 6), flour moths (Figure 7, Figure 8), psocids,

and grain mites. Although there are many different kinds of insects that attack stored food, the damage they produce and the control procedures are similar.

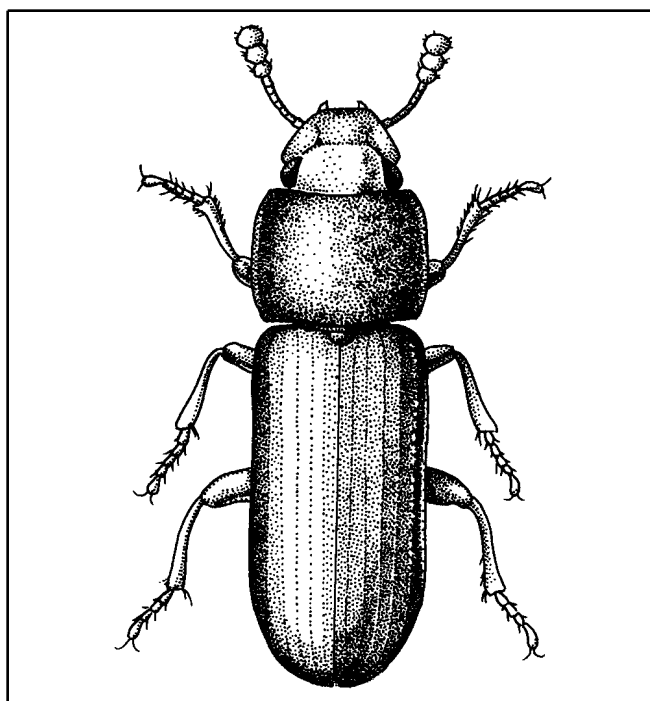


Figure 1. Red flour beetle.

Large populations of these food pests may develop in unused or undisturbed foods which were infested when purchased. A food package which is

1. This document is ENY-213, one of a series of the Entomology and Nematology Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Revised: May 1999. Please visit the EDIS Web site at <http://edis.ifas.ufl.edu>. Additional information on these organisms, including many color photographs, is available at the Entomology and Nematology Department WWW site located at <http://www.ifas.ufl.edu/~entweb/entomolo.htm>.

2. P. G. Koehler, professor/extension entomologist, Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, 32611.

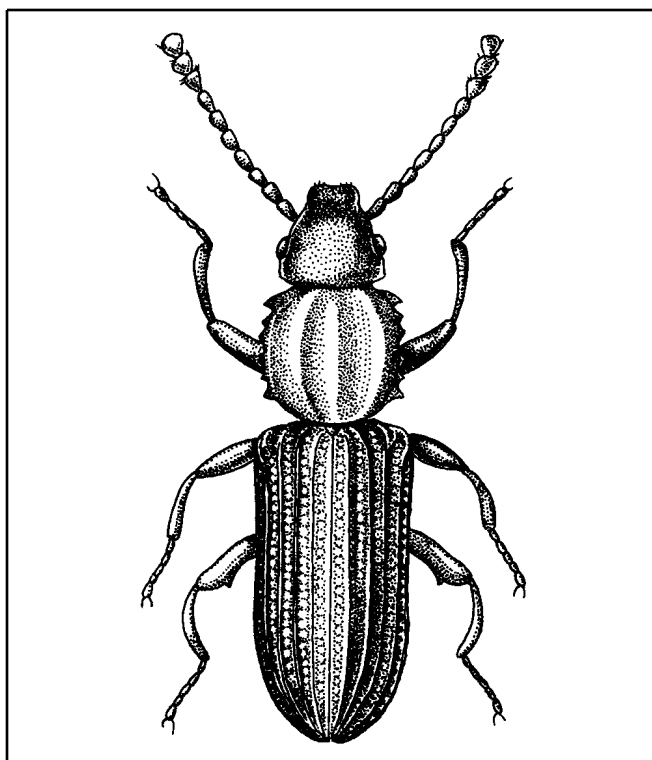


Figure 2. Sawtoothed grain beetle.

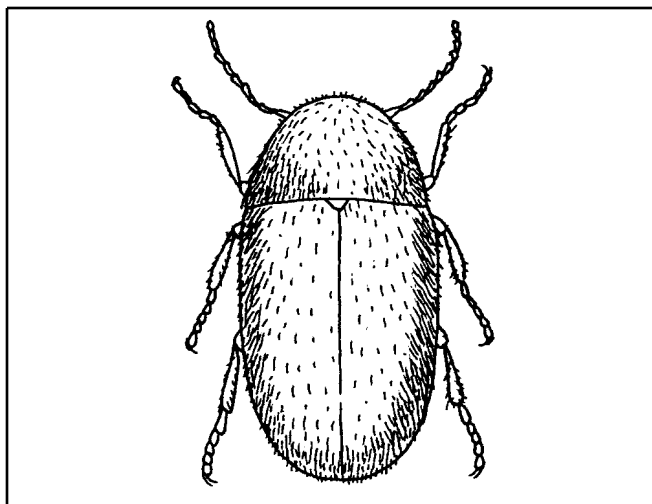


Figure 3. Cigarette beetle.

not tightly sealed after use can also lead to infestation. From the infested food packages, the pests may spread to other exposed food. Often the only way that one knows of their presence is by discovery of an infested and infrequently used food item or the encounter of flying or crawling adults coming from the pantry shelves. Moths and beetles are often attracted to lights or windows and may indicate an infestation. The presence of stored food pests is not an indication of uncleanness since infestation may be brought home in purchased food.

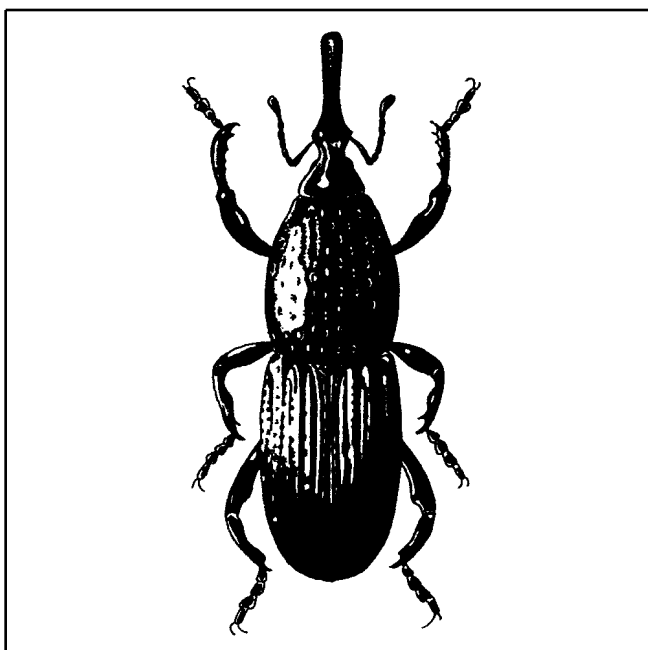


Figure 4. Granary weevil.

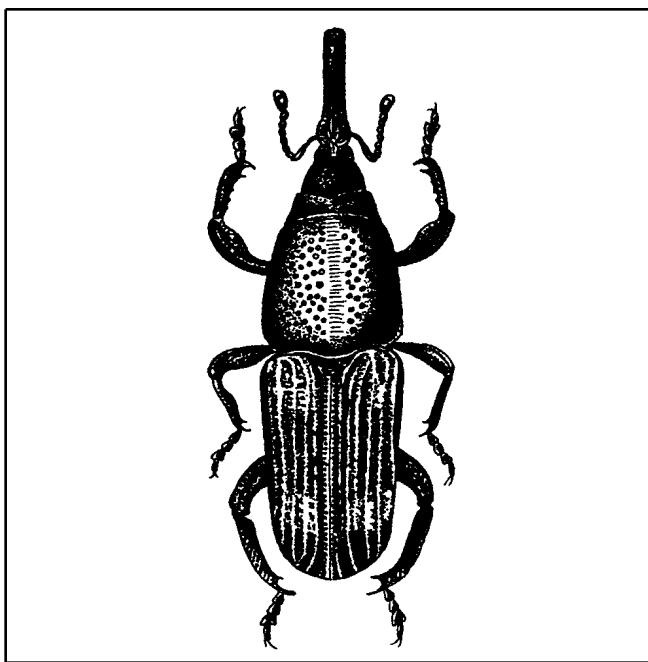


Figure 5. Rice weevil.

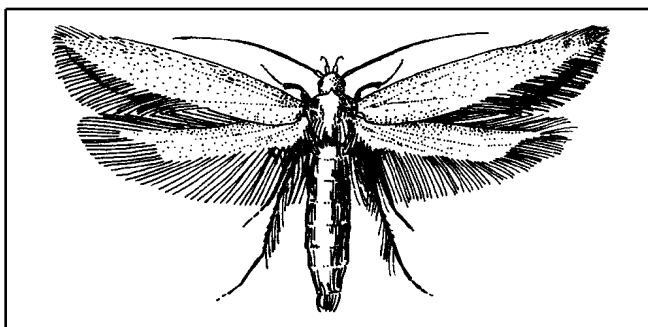


Figure 6. Angoumois grain moth.

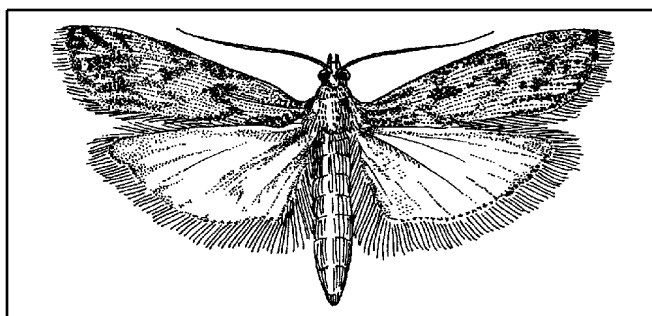


Figure 7. Mediterranean flour moth.

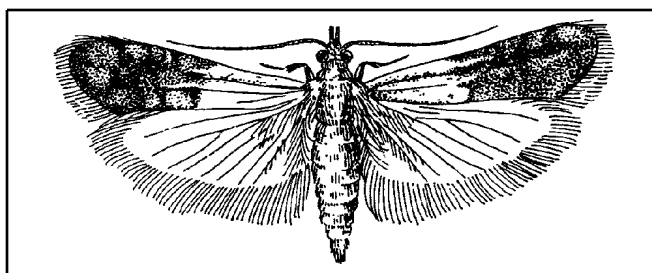


Figure 8. Indian meal moth.

Control

The basic fundamentals of controlling stored food pests are exclusion, regular inspections, cleaning of shelves, and chemical treatment. Sometimes an infestation can develop on bread or cracker fragments or in some undisturbed, loose flour or meal on one corner of the shelf. Keep all containers tightly closed. Put susceptible items in tight containers or screw-top jars or other sealable containers. Do not overstock shelves with products which will not be used frequently or in a short period of time.

The first step in controlling pantry pests is to locate the source of infestation. All susceptible foods should be thoroughly inspected, and badly infested items discarded. Insects in infested foods may be killed by heat or cold if the item is of value. Infested foods may be placed in an oven at 130°F for 30 minutes or a freezer at 0°F for 4 days to kill insects. If placed in a freezer, the commodity should be used as soon as possible since defrosting usually causes excess moisture in the item. The excess moisture could cause mold to form later. Freezing and defrosting the item in a tightly sealed plastic bag can limit condensation on the product.

To kill insects in the storage area, cabinets and shelves should be thoroughly vacuumed to pick up loose infested material and washed with warm, soapy water. After the storage area is dry, apply a residual spray to the cracks, corners, and surfaces of the shelves. Use caution by removing all food items which may be contaminated with spray. Allow the spray application to dry before replacing the food items. Be sure to remove and spray all drawers as well as the inside of the cabinets after cleaning.

Storage of grains and grain products has resulted in considerable problems with stored grain insects in homes and institutions. Whole grain can be fumigated in storage containers with carbon dioxide. Dry ice (frozen carbon dioxide) can be placed in storage containers directly on top of grain at the rate of 1/4 lb per 5 gal container. The container lids should not be tightened for 1/2 hour. After 1/2 hour tighten lids and place the commodity in storage. At least 14 days exposure is necessary to be certain of satisfactory control.

Table 1. Pesticides Available

Trade Name (Formulation)		Common Name - %		
Site(s)	Pest(s)	Re-Entry Time	Preharvest Time	Retreatment Interval
CB-38 Extra (Aerosol)		Pyrethrins - 0.30%		
Hotels/motels	Angoumois Grain Moths, Indian Meal Moths, Confused Flour Beetles, Red Flour Beetles, Rice Weevils, Granary Weevils	None	None	None
Hospitals, Day Care Centers, Schools	Angoumois Grain Moths, Indian Meal Moths, Confused Flour Beetles, Red Flour Beetles, Sawtoothed Grain Beetles, Rice Weevils, Granary Weevils	None	None	None
Close doors and windows. Direct spray into all parts of room, especially around stored food product containers, pallets and darkened areas. Do not spray in areas where food is exposed in anyway. Keep area closed for 15 minutes following treatment. Do not remain in treated areas. Ventilate after treatment. Spray into cracks and crevices, around cartons or containers and other areas where these insects tend to congregate. Spray 30 seconds for each 100 square feet of surface. Keep area closed for 45 minutes to 1 hour after treatment.				
Buses/Automobiles	Angoumois Grain Moths, Indian Meal Moths, Confused Flour Beetles, Red Flour Beetles, Rust Red Flour Beetles, Sawtoothed Grain Beetles, Rice Weevils, Granary Weevils	None	None	None
Spray into cracks and crevices, around cartons or containers and other areas where these insects tend to congregate. Spray 30 seconds for each 100 square feet of surface. Keep area closed for 45 minutes to 1 hour after treatment.				
Railroad Cars/Box Cars/Trains	Angoumois Grain Moths, Indian Meal Moths, Confused Flour Beetles, Red Flour Beetles, Rust Red Flour Beetles, Sawtoothed Grain Beetles, Rice Weevils, Granary Weevils	None	None	None
Spray into cracks and crevices, around cartons or containers and other areas where these insects tend to congregate. Spray 30 seconds for each 100 square feet of surface. Keep area closed for 45 minutes to 1 hour after treatment.				

Table 1. Pesticides Available

Trade Name (Formulation)		Common Name - %		
Site(s)	Pest(s)	Re-Entry Time	Preharvest Time	Retreatment Interval
Trucks/Trailers, Vessels (Boats/Ships)	Angoumois Grain Moths, Indian Meal Moths, Confused Flour Beetles, Red Flour Beetles, Sawtoothed Grain Beetles, Rice Weevils, Granary Weevils	None	None	None
Close doors and windows. Direct spray into all parts of area, especially around stored food product containers and darkened areas. Do not spray in areas where food is exposed in anyway. Spray 7 to 10 seconds for each 1,000 cubic feet of space. Keep area closed for 15 minutes following treatment. Do not remain in treated areas. Ventilate after treatment. Spray into cracks and crevices, around cartons or containers and other areas where these insects tend to congregate. Spray 30 seconds for each 100 square feet of surface. Keep area closed for 45 minutes to 1 hour after treatment.				
Conquer (Emulsifiable concentrate)		Esfenvalerate - 3.48%		
Apartments/Houses/Dwellings/Structures/Garages	Confused Flour Beetles, Rust Red Flour Beetles	Do not contact until dry	None	14 days
Apply as a coarse wet spray to surfaces where these pests are normally found. Pay particular attention to cracks, crevices and similar protected locations in floors and walls. Spray directly on insects when possible. Do not apply this spray to surfaces or utensils that may come into contact with food. Prior to treatment, aquariums and fish bowls should be covered and birds, such as canaries, removed from the area. Do not spray pets.				
Commercial Warehouses/Industrial Buildings/Storage Buildings	Angoumois Grain Moths, Indian Meal Moths, Mediterranean Flour Moths, Cadelles, Cigarette Beetles, Confused Flour Beetles, Sawtoothed Grain Beetles, Rice Weevils, Grain Mites	Do not contact until dry	None	3 days
Infested stored products should be removed and destroyed, fumigated or treated with other products approved for this use. Use in mechanical aerosol foggers. Keep area closed for at least 1/2 hour and ventilate thoroughly before re-entry. Do not remain in treated area.				
Demand CS (Microcapsulated suspension)		Lambda-cyhalothrin - 9.7%		
Hotels/Motels	Cigarette Beetles, Confused Flour Beetles, Red Flour Beetles, Rust Red Flour Beetles, Lesser Grain Borers, Sawtoothed Grain Beetles, Rice Weevils	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.				

Table 1. Pesticides Available

Trade Name (Formulation)		Common Name - %		
Site(s)	Pest(s)	Re-Entry Time	Preharvest Time	Retreatment Interval
Ficam D (Dust)		Bendiocarb - 1.0%		
Restaurants/Commercial Kitchens	Almond Moths, Angoumois Grain Moths, Cereal Moths, Chocolate Moths, Cocoa Bean Moths, Dried Fruit Moths, European Grain Moths, Flour Moths, Indian Meal Moths, Meal Moths, Mediterranean Flour Moths, Raisin Moths, Tobacco Moths, Warehouse Moths, Coffee Bean Weevils, Common Bean Weevils, Cadelles, Cigarette Beetles, Cabinet, Hide Beetles, Khapra Beetles, Larder Beetles, Warehouse Beetles, Dried Fruit Beetles, Drugstore Beetles, Flat Grain Beetles, Confused Flour Beetles, Red Flour Beetles, Rust Red Flour Beetles, Hairy Fungus Beetles, Lesser Grain Borers, Yellow Meal Worms, Dark Mealworms, Merchant Grain Beetles, Rusty Grain Beetles, Sawtoothed Grain Beetles, Shiny Spider Beetles, Golden Spider Beetles, Rice Weevils, Granary Weevils, Maize Weevils, Cheese Mites, Grain Mites, Cheese Skippers, Fruit Flies, Mushroom Flies	None	None	None
<p>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.</p>				

Table 1. Pesticides Available

Trade Name (Formulation)		Common Name - %		
Site(s)	Pest(s)	Re-Entry Time	Preharvest Time	Retreatment Interval
Ficam D (Dust)		Bendiocarb - 1.0%		
Restaurants/Commercial Kitchens	Almond Moths, Angoumois Grain Moths, Cereal Moths, Chocolate Moths, Cocoa Bean Moths, Dried Fruit Moths, European Grain Moths, Flour Moths, Indian Meal Moths, Meal Moths, Mediterranean Flour Moths, Raisin Moths, Tobacco Moths, Warehouse Moths, Coffee Bean Weevils, Common Bean Weevils, Cadelles, Cigarette Beetles, Cabinet, Hide Beetles, Khapra Beetles, Larder Beetles, Warehouse Beetles, Dried Fruit Beetles, Drugstore Beetles, Flat Grain Beetles, Confused Flour Beetles, Red Flour Beetles, Rust Red Flour Beetles, Hairy Fungus Beetles, Lesser Grain Borers, Yellow Meal Worms, Dark Mealworms, Merchant Grain Beetles, Rusty Grain Beetles, Sawtoothed Grain Beetles, Shiny Spider Beetles, Golden Spider Beetles, Rice Weevils, Granary Weevils, Maize Weevils, Cheese Mites, Grain Mites, Cheese Skippers, Fruit Flies, Mushroom Flies	None	None	None
<p>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.</p>				

Microcare Pressurized Pyrethrum Capsule Suspension (Aerosol)		Pyrethrins + Piperonyl Butoxide + MGK264 - 0.300 + 2.200 +0.336%		
Site(s)	Pest(s)	Re-Entry Time	Preharvest Time	Retreatment Interval

Table 1. Pesticides Available

Trade Name (Formulation)		Common Name - %		
Site(s)	Pest(s)	Re-Entry Time	Preharvest Time	Retreatment Interval
Mobile Homes/Travel Trailers/Recreational Vehicles, Vessels (Boats/Ships)	Angoumois Grain Moths, Indian Meal Moths, Cadelles, Cigarette Beetles, Cabinet, Hide Beetles, Khapra Beetles, Larder Beetles, Warehouse Beetles, Dried Fruit Beetles, Drugstore Beetles, Confused Flour Beetles, Red Flour Beetles, Sawtoothed Grain Beetles, Rice Weevils, Granary Weevils, Maize Weevils, Grain Mites	Do not contact until dry	None	None
Use with the supplied actuator and injection tubes. Make spot and/or crack and crevice treatment to localized areas. Close all windows and doors. Disperse in all locations. Leave area closed for 15 minutes.				
Microcare Pressurized Pyrethrum Capsule Suspension (Formula 1) (Aerosol)		Pyrethrins + Piperonyl Butoxide + MGK264 - 0.300 + 2.200 + 0.336%		
Mobile Homes/Travel Trailers/Recreational Vehicles, Vessels (Boats/Ships)	Angoumois Grain Moths, Indian Meal Moths, Mediterranean Flour Moths, Cadelles, Cigarette Beetles, Cabinet, Hide Beetles, Khapra Beetles, Larder Beetles, Warehouse Beetles, Dried Fruit Beetles, Drugstore Beetles, Confused Flour Beetles, Red Flour Beetles, Yellow Meal Worms, Dark Mealworms, Sawtoothed Grain Beetles, Rice Weevils, Granary Weevils, Grain Mites	None	None	None
Use this product with supplied actuator and tubes. Inject this product into cracks and crevices. Spot, space, and general treatments are permitted for certain applications. To make a spot treatment release product onto surface. Make spot or crack and crevice treatments to localized areas. Treat area for 1-3 seconds. Leave unoccupied for 15 minutes.				

Table 1. Pesticides Available

Trade Name (Formulation)		Common Name - %		
Site(s)	Pest(s)	Re-Entry Time	Preharvest Time	Retreatment Interval
Mobile Homes/Travel Trailers/Recreational Vehicles, Vessels (Boats/Ships)	Angoumois Grain Moths, Indian Meal Moths, Cadelles, Cigarette Beetles, Cabinet, Hide Beetles, Khapra Beetles, Larder Beetles, Warehouse Beetles, Dried Fruit Beetles, Drugstore Beetles, Confused Flour Beetles, Red Flour Beetles, Sawtoothed Grain Beetles, Rice Weevils, Granary Weevils, Maize Weevils, Grain Mites	Do not contact until dry	None	None
Use with the supplied actuator and injection tubes. Make spot and/or crack and crevice treatment to localized areas. Close all windows and doors. Disperse in all locations. Leave area closed for 15 minutes.				
Microcare Pressurized Pyrethrum Capsule Suspension (Formula 1) (Aerosol)		Pyrethrins + Piperonyl Butoxide + MGK264 - 0.300 + 2.200 + 0.336%		
Mobile Homes/Travel Trailers/Recreational Vehicles, Vessels (Boats/Ships)	Angoumois Grain Moths, Indian Meal Moths, Mediterranean Flour Moths, Cadelles, Cigarette Beetles, Cabinet, Hide Beetles, Khapra Beetles, Larder Beetles, Warehouse Beetles, Dried Fruit Beetles, Drugstore Beetles, Confused Flour Beetles, Red Flour Beetles, Yellow Meal Worms, Dark Mealworms, Sawtoothed Grain Beetles, Rice Weevils, Granary Weevils, Grain Mites	None	None	None
Use this product with supplied actuator and tubes. Inject this product into cracks and crevices. Spot, space, and general treatments are permitted for certain applications. To make a spot treatment release product onto surface. Make spot or crack and crevice treatments to localized areas. Treat area for 1-3 seconds. Leave unoccupied for 15 minutes.				

P.I. Contact Insecticide (Formula 1) (Aerosol)		Pyrethrins + Piperonyl Butoxide - 0.5 + 4.0%		
Site(s)	Pest(s)	Re-Entry Time	Preharvest Time	Retreatment Interval

Table 1. Pesticides Available

Trade Name (Formulation)		Common Name - %		
Site(s)	Pest(s)	Re-Entry Time	Preharvest Time	Retreatment Interval
Hospitals	Angoumois Grain Moths, Chocolate Moths, Indian Meal Moths, Mediterranean Flour Moths, Cigarette Beetles, Drugstore Beetles, Confused Flour Beetles, Red Flour Beetles, Rust Red Flour Beetles, Sawtoothed Grain Beetles, Rice Weevils, Granary Weevils, Grain Mites, Fruit Flies	None	None	None
Apply as space treatment. For exposed adult and larval stages only. Contact as many insects as possible. Inject into cracks and crevices. Repeat treatment as necessary. Patients should be removed from room prior to treatment. Room should be ventilated for at least 2 hours after spraying. Do not return patients to room until after ventilation.				
Nursing Homes	Angoumois Grain Moths, Chocolate Moths, Indian Meal Moths, Mediterranean Flour Moths, Cigarette Beetles, Drugstore Beetles, Confused Flour Beetles, Red Flour Beetles, Rust Red Flour Beetles, Sawtoothed Grain Beetles, Rice Weevils, Granary Weevils, Grain Mites, Fruit Flies	None	None	None
Apply as space treatment. For exposed adult and larval stages only. Contact as many insects as possible. Inject into cracks and crevices. Repeat treatment as necessary. Patients should be removed from room prior to treatment. Room should be ventilated for at least 2 hours after spraying. Do not return patients to room until after ventilation.				
Pestab (Wettable/soluble powder)		Lambda-cyhalothrin - 10.0%		
Restaurants/Commercial Kitchens	Cigarette Beetles, Confused Flour Beetles, Red Flour Beetles, Lesser Grain Borers, Sawtoothed Grain Beetles, Rice Weevils	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.				

Table 1. Pesticides Available

Trade Name (Formulation)		Common Name - %		
Site(s)	Pest(s)	Re-Entry Time	Preharvest Time	Retreatment Interval
Hospitals	Angoumois Grain Moths, Chocolate Moths, Indian Meal Moths, Mediterranean Flour Moths, Cigarette Beetles, Drugstore Beetles, Confused Flour Beetles, Red Flour Beetles, Rust Red Flour Beetles, Sawtoothed Grain Beetles, Rice Weevils, Granary Weevils, Grain Mites, Fruit Flies	None	None	None
Apply as space treatment. For exposed adult and larval stages only. Contact as many insects as possible. Inject into cracks and crevices. Repeat treatment as necessary. Patients should be removed from room prior to treatment. Room should be ventilated for at least 2 hours after spraying. Do not return patients to room until after ventilation.				
Nursing Homes	Angoumois Grain Moths, Chocolate Moths, Indian Meal Moths, Mediterranean Flour Moths, Cigarette Beetles, Drugstore Beetles, Confused Flour Beetles, Red Flour Beetles, Rust Red Flour Beetles, Sawtoothed Grain Beetles, Rice Weevils, Granary Weevils, Grain Mites, Fruit Flies	None	None	None
Apply as space treatment. For exposed adult and larval stages only. Contact as many insects as possible. Inject into cracks and crevices. Repeat treatment as necessary. Patients should be removed from room prior to treatment. Room should be ventilated for at least 2 hours after spraying. Do not return patients to room until after ventilation.				
Pestab (Wettable/soluble powder)		Lambda-cyhalothrin - 10.0%		
Restaurants/Commercial Kitchens	Cigarette Beetles, Confused Flour Beetles, Red Flour Beetles, Lesser Grain Borers, Sawtoothed Grain Beetles, Rice Weevils	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.				

Trade Name (Formulation)	Common Name - %
--------------------------	-----------------

Table 1. Pesticides Available

Trade Name (Formulation)		Common Name - %		
Site(s)	Pest(s)	Re-Entry Time	Preharvest Time	Retreatment Interval
Grocery Stores/Supermarkets, Hotels/motels	Cigarette Beetles, Confused Flour Beetles, Red Flour Beetles, Lesser Grain Borers, Sawtoothed Grain Beetles, Rice Weevils	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)	Almond Moths, Angoumois Grain Moths, Cereal Moths, Chocolate Moths, Cocoa Bean Moths, Dried Fruit Moths, European Grain Moths, Flour Moths, Indian Meal Moths, Meal Moths, Mediterranean Flour Moths, Raisin Moths, Tobacco Moths, Warehouse Moths, Coffee Bean Weevils, Common Bean Weevils, Cadelles, Cigarette Beetles, Cabinet, Hide Beetles, Khapra Beetles, Larder Beetles, Warehouse Beetles, Dried Fruit Beetles, Drugstore Beetles, Flat Grain Beetles, Confused Flour Beetles, Red Flour Beetles, Rust Red Flour Beetles, Hairy Fungus Beetles, Lesser Grain Borers, Yellow Meal Worms, Dark Mealworms, Merchant Grain Beetles, Rusty Grain Beetles, Sawtoothed Grain Beetles, Shiny Spider Beetles, Golden Spider Beetles, Rice Weevils, Granary Weevils, Maize Weevils, Cheese Mites, Grain Mites, Cheese Skippers, Fruit Flies, Mushroom Flies	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.				

Table 1. Pesticides Available

Trade Name (Formulation)		Common Name - %		
Site(s)	Pest(s)	Re-Entry Time	Preharvest Time	Retreatment Interval
Pro-Control Plus Total Release Aerosol Insecticide (Aerosol)		Pyrethrins + Cyfluthrin + Piperonyl Butoxide - 0.5 + 0.1 + 1.0%		
Hospitals, Nursing Homes	Sawtoothed Grain Beetles, Rice Weevils	2 hours	None	None
Do not apply this product in any rooms while occupied by patients, the elderly, or infirmed. Open doors, drawers, and closets. Shut off fans and air conditioning. Set fogger on stand. Immediately leave treated area. Keep area closed for at least 2 hours. Allow treated area to air for 30 minutes.				
Day Care Centers, Schools	Sawtoothed Grain Beetles, Rice Weevils	2 hours	None	None
Do not apply in classroom when in use. Open doors, drawers, and closets. Shut off fans and air conditioning. Set fogger on stand. Immediately leave treated area. Keep area closed for at least 2 hours. Allow treated area to air for 30 minutes.				
Saga WP Insecticide (Wettable/soluble powder)		Tralomethrin - 40.00%		
Aircraft	Angoumois Grain Moths, Indian Meal Moths, Mediterranean Flour Moths, Cigarette Beetles, Confused Flour Beetles, Red Flour Beetles, Rust Red Flour Beetles, Lesser Grain Borers, Merchant Grain Beetles, Sawtoothed Grain Beetles, Rice Weevils, Granary Weevils, Maize Weevils, Grain Mites	Do not contact until dry	None	None
Do not apply when passengers or non-essential personnel are present in area to be treated. Remove all food and utensils from cupboards, shelving, and storage areas before spraying. Allow all treated surfaces to dry and cover shelves with clean paper prior to replacing food stuffs, utensils or other items. Treatments can be repeated as necessary.				
TKO Diazinon Capsule Suspension (Microcapsulated suspension)		Diazinon - 23.0%		
Hospitals	Cabinet, Hide Beetles, Khapra Beetles, Larder Beetles, Warehouse Beetles, Confused Flour Beetles, Red Flour Beetles, Rust Red Flour Beetles	Do not contact until dry	None	None
This product should be diluted in water and may be sprayed on any surface which will not be damaged or stained. Do not use this product indoors as an overall surface spray or as a space spray; take care not to introduce this product into the air during application. Use only in well ventilated areas. Do not apply where children are likely to frequently contact treated surface. Remove or cover fish bowls and remove pets before application. Do not treat pets with this product. Do not apply when occupants are present in the immediate area.				

Table 1. Pesticides Available

Trade Name (Formulation)		Common Name - %		
Site(s)	Pest(s)	Re-Entry Time	Preharvest Time	Retreatment Interval
Nursing Homes	Cabinet, Hide Beetles, Khapra Beetles, Larder Beetles, Warehouse Beetles, Confused Flour Beetles, Red Flour Beetles, Rust Red Flour Beetles	Do not contact until dry	None	None
This product should be diluted in water and may be sprayed on any surface which will not be damaged or stained. Do not use this product indoors as an overall surface spray or as a space spray; take care not to introduce this product into the air during application. Use only in well ventilated areas. Do not apply where children are likely to frequently contact treated surface. Remove or cover fish bowls and remove pets before application. Do not treat pets with this product. Do not apply when occupants are present in the immediate area.				
Day Care Centers, Schools	Cabinet, Hide Beetles, Khapra Beetles, Larder Beetles, Warehouse Beetles, Confused Flour Beetles, Red Flour Beetles, Rust Red Flour Beetles	Do not contact until dry	None	None
This product should be diluted in water and may be sprayed on any surface which will not be damaged or stained. Do not use this product indoors as an overall surface spray or as a space spray; take care not to introduce this product into the air during application. Use only in well ventilated areas. Do not apply where children are likely to frequently contact treated surface. Remove or cover fish bowls and remove pets before application. Do not treat pets with this product. Do not apply to classrooms when in use.				