

MONITORING GUIDELINES

Saw-toothed and Merchant Grain Beetles

Oryzaephilus surinamensis and *Oryzaephilus mercator*

Description

Adult: These small beetles are reddish brown, and about 2.5 mm long and have 6 teeth on both sides of the thorax. Looking at the head of the Saw-toothed grain beetles, the segment behind the eye is the same size as the eye. For Merchant grain beetles, the segment behind the eye is distinctly smaller.

Larvae: The immature stage is approximately 3-4 mm long, white to yellowish in colour, and slightly flat. The last abdominal segment does not end in a prominent point like flour beetles.

Damage and Detection

The grain beetles can invade many types of packaging found in stores and pantries. They do not chew into our out of packaging. Their presence is usually found after opening a package and finding dark beetles in light colored products like rice and flour. Both adults and larvae can feed on dry food product.

Life Cycle

Female grain beetles will deposit 50-300 eggs in food during a 6 month -3 year life span. Eggs hatch in 5-12 days, and the larvae can mature within 35 days or as long as 50 days depending on temperature. These insects are very good at crawling on any surface including glass, and steel. They can roam far from the kitchen looking for foods.

Lure PANTRY PATROL[®] Pheromone /oil dispenser. Contains grain based food attractants for grain beetles. The food attractant is effective for 12 weeks. There are no pheromones for grain beetles in this product. PC FLOOR trap lures are food bait lures that was specifically designed to attract adults and larvae of grain beetles and keep them live. Live insects produce their own natural pheromone to attract more beetles. This lure will attract other species of food beetles as well. Using this lure will provide a "dry" (no oils) set. Insects are removed by shaking the trap like a salt shaker over water or sticky board. This food bait lure lasts 30 days.

Lure Storage

Keep unopened Pantry Pest pheromone /oil dispensers in cool storage or in refrigeration. Keep unopened foil pouches with PC Floor bait lures in cool storage (less than 60° F) or place in freezer for extended storage.

Trap Designs used with Lure

PANTRY PATROL[®] "CORNER" pitfall traps contain a triangular pit to receive full dispenser of pheromone /oil. Dust cover is incorporated into cardboard packaging. PC Floor pitfall traps have a round plastic tray to receive food oil from a separate dispenser and filter papers placed in bottom of pit. PC Floor bait lures can be used as a "dry" set (no oils).

Trap Placement Techniques

- Timing - Traps can be placed year round but should be in greater numbers during the warmer months.
- Density - It is recommended that traps be placed near materials susceptible to attack at one per every 10-15 feet.
- Location - Trapping along corners, walls and posts is most effective for these beetles and trap designs. In residences, place on shelving of cabinets near food products. Use all traps at once for faster catch.

Trap and Lure Maintenance

Pantry Patrol traps must be replaced when filled with beetles or become dusty. Traps may remain effective for many months if maintained. Pheromone/oil mix must be replaced every 12 weeks. Oils will evaporate and change to a gel when outdated. PC Floor bait lures must be replaced every 4 weeks. The old lure should be removed from the trap. Trapped beetles should be recorded regularly on a separate monitoring Data Sheet to determine trapping trends.

Expectations and Interpretations

Threshold limits need to be established for each client where a trapping program is in place.

Important Notes:

Large numbers of beetles require other means of control and management to eradicate infestations. The aggregation pheromones used with these trapping combinations cannot be successfully be used in a mass trapping program for control, but are excellent tools to help you locate infested products in the early stages.