



Red Flour Beetle

Tribolium castaneum

Description

Adults: These small beetles are reddish brown, and about 3.5 mm (0.15 inches) long. Red flour beetles can be differentiated from Confused flour beetles by, the last four segments of the antennae. On Red Flour Beetles, the last three segments of the antennae are abruptly enlarged to form a club. Confused flour beetle are gradually enlarged towards the tip. Adults of this species fly in warmer temperatures, usually above 29°C (85°F).

Eggs: Oval, ivory in color and only visible under microscopic examination of flour products.

Larvae: The immature stage is approximately 4-5 mm (0.25 inches) long, white to yellowish in color, and wiry in appearance. The last abdominal segment ends with two prominent points.

Pupae: Pupal cases are white to yellowish in color and nearly the same size as adult beetles. The tip of the abdomen ends with two prominent points

Life Cycle

Female red flour beetles will deposit 200-450 eggs in food during a 1-3 year life span. Eggs hatch in 5-12 days, and the larvae can mature within 30 days in warmer months or as long as 120 days in cooler months. The life cycle of this species is shorter than the Confused Flour beetle. The reproductive rate, as a result, is usually higher as well.

Damage and Detection

Heavy infestations of flour by this insect may cause the product to turn greyish or mold prematurely. This insect can also give a citronella-like smell and taste from its scent glands to the material infested. They are primarily pests of flour, but also feed on processed beans, nuts, spices, chocolate, and pharmaceuticals. Both adults and larvae cause damage.

Corresponding Products from Insects Limited

- [Bullet Lures Only \(IL-303\)](#)
- [All Beetle with RTU Gel \(IL-2750\)](#)
- [All Beetle Trap with SPB Lure and Glueboard \(IL-2800\)](#)

QUICK SCAN

	SIZE	/	LENGTH
Adult	0.15 inch		(3.5 mm)
Larvae	0.25 inch		(4-5 mm)

	COLOR	RANGE
Adult	Reddish-brown	
Larvae	White to yellowish	

	LIFE CYCLE
Adults	1-3 year life span
Eggs	Hatch 5-12 days
Larvae	30-120 days to mature

FEEDING HABITS

Both adults and larvae cause damage. Primarily pests of flour.

INFESTATION SIGNS

Infestation of flour may cause product to turn grey or mold. Gives off citronella-like smell and taste to material infested.



Red Flour Beetle Monitoring Guidelines

Lure

BULLET LURE Contains aggregation pheromone to attract male beetles.

PANTRY PATROL Pheromone /oil dispenser. Contains grain-based food attractants and aggregation pheromones to attract males and female Red Flour Beetle.

STORED PRODUCT BEETLE Lures are food bait and pheromone lures that was specifically designed to make the Pantry Patrol gel into a tablet form.

ALL BEETLE TRAP READY-TO-USE TRAY is a preloaded accessory of the ALL BEETLE TRAP that contains either the PANTRY PATROL Pheromone/oil dispenser or the STORED PRODUCT BEETLE LURE and glueboard.

Lure Storage

Keep unopened BULLET LURES, PANTRY PATROL pheromone /oil dispensers, READY-TO-USE TRAYS, and STORED PRODUCT BEETLE LURES in cool storage for 12 Months or in refrigeration for up to 24 months before using or discarding.

Trap Designs Used with Lure

ALL BEETLE TRAP consists of three parts: A clear lid, blue base, and snap in tray. This device can be paired with many different types of attractants available by Insects Limited depending on the insect you are monitoring.

PANTRY PATROL “CORNER” pitfall traps contain a triangular pit to receive full dispenser of pheromone /oil. Dust cover is incorporated into cardboard packaging.

Trap Placement Techniques

Pheromone traps can be out placed year-round but are especially recommend when temperatures exceed 12.5°C (55°F). Floor pheromone traps like the All Beetle Trap and Flat Trap are most effective at capturing red flour beetle. In areas such as a pantry or home, place one or two pheromone traps per room. In commercial areas such as warehouses or retail stores, place pheromone traps 7.5–15 m (25–50 feet) apart to determine the presence or absence of red flour beetle. Increase pheromone trap density to 4.5–7.5 m (15–25 feet) apart to help locate source of red flour beetle. Keep pheromone traps 7.5 m (25 feet) away from exterior doors. Red flour beetle pheromone traps are best utilized in areas that store dried goods such as food, grains, seeds, nuts, animal feed, or pet food.

Trap and Lure Maintenance

Replace traps when glue is filled with insects or becomes dusty. Replace pheromone lures every 90 days. Replace all pheromone lures in a location at the same time. Do not cut the cap off the bullet lure. Do not stagger lure replacement over several weeks. Record date and number of catches to identify trending information.

Fun Facts

- Similar species include confused flour beetle (*Tribolium confusum*), black flour beetle (*Tribolium madens*), American black flour beetle (*Tribolium audax*), broadhorned flour beetle (*Gnatocerus cornutus*), and longheaded flour beetle (*Latheticus oryzae*).
- Other common names include rust-red flour beetle, red brown rice flour beetle, and small flour worm.
- Red flour beetles initiate flight at temperatures above 20°C (68°F).
- The pheromone that attracts red flour beetle also attracts similar species including:
 - Confused flour beetle (*Tribolium confusum*)
 - American black flour beetle (*Tribolium audax*)
 - Destructive flour beetle (*Tribolium destructor*)
 - Kashmir flour beetle (*Tribolium freeman*)
 - Black flour beetle (*Tribolium madens*)