

Red Flour Beetles (*Tribolium castaneum*)

Biology

- Eggs: are white to yellow and a broad ovoid (ellipsoidal) shape
- Larva: is white, fleshy and sparse covering of hairs.
- Adult beetle is 3 - 4.5 mm long, dark brown body.
- The antennae have 10 segments, made up of a 7-segment 'stem' and a 3-segment 'club'.
- Females live longer (61 days) than males (45 days).
- under the optimum conditions of 32°C and 80% humidity takes about 27 days.

Geographical distribution

- In Kenya it can be found in (Ahero, Bunyala, Kirinyaga, Kisumu, Kiilifi, and Kwale counties), Tanzania (Morogoro, Kilimanjaro, Arusha, Mbeya, Moshi) and Uganda (lake Kioga, Buguri, butalenja and lira districts).



Fig 1. Adult Red
(Source: epestsupply)



Fig 2. Red flour beetles feeding on rice (Source: epestsupply)

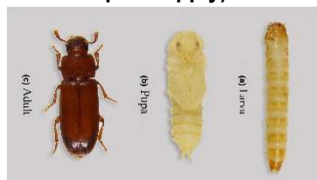


Fig 3. Red Flour Beetles larvae and pupae
Source: researchgate.net

Damage on rice crop

- Adults bore into rice husks, producing large quantities of grain dust as they tunnel.
- Damage on unshelled rice is greater than on loose, shelled rice.
- They are more of a nuisance than a damage-causing pest. They will not feed on or destroy furniture like many household pests.
- 10-100% yield loss.

Management strategies

1. Cultural control

- Practice good store hygiene by cleaning the store before harvesting, removing and burning infested residues.
- Place all grains in a sealed plastic bag or an air-tight plastic container with a tight fitting lid.

Management Strategies

- Regular inspection of stored grain.
- Dry grains well before storage.
- Use plant extracts such as neem, pyrethrum and castor seed.
- Sorting the rice grains to remove those with visible pest damage.
- Using repellent plant materials (e.g. 5-10% of neem leaf powder has strong repellence qualities against red flour).
- Use pheromone traps to attract both species or natural enemies 10m².

2. Chemical control

- Spray store surfaces well before use using Pirimifosmethyl (Actellic25EC-200ml/10Lt water).
- Dust rice grains by use of Actellic 1% at the rate of 50gm/90kg bag, Skana super, Spintor dust by storage or Malathion + permethrin Fenitrothion + fenvalerate (Sumicombi 1.8%- 30g/90Kg Maize) Spinsad (spintor dust - 50g/ 90Kg).