

# **Storage / Stored Grain Insect Pests**

Stored grain insect pests  
Red flour beetle\_susri (*Tribolium castaneum* ; Tenebrionidae, Coleoptera)

**Identification**

Adult: Reddish brown with 11 segmented antennae (body length 4-5 mm)

Larva/grub: Yellowish white with light brown head (10 mm long)



**Damage:**

Larvae feed on broken kernels and grain dust (flour particles)

- Active period: March to November
- Overwintering as adult
- Infestation in wheat flour and other stored grain products produces disagreeable odor and flavor through production of benzoquinones from pest's abdominal glands
- High rate of dispersal (flying adults) and reproduction under optimum temperature and conditions

**Identification**

Adult: Reddish brown to black with a developed rostrum , elytra with 4 brownish orange spots  
(adult body length 2.5 –3.5 mm)

Larva/grub: dirty white found inside rice grains (10 mm long)



**Damage:**

- Active period: March to October-November
- Overwintering as larva inside grains
- Female oviposits inside grains (egg-site) where grubs begin to feed on germ material, leaving only intact grain shells.
- Single weevil grub may consume one third of a grain during its development.

## Identification

Adult: Dark brown beetles with 11 segmented clubbed-shape antennae (body length 1.5 – 3.5 mm)

Larva/grub: Dark reddish brown (4 – 6 mm long) with long spicisetae hair tuft on 9<sup>th</sup> abdominal segment.

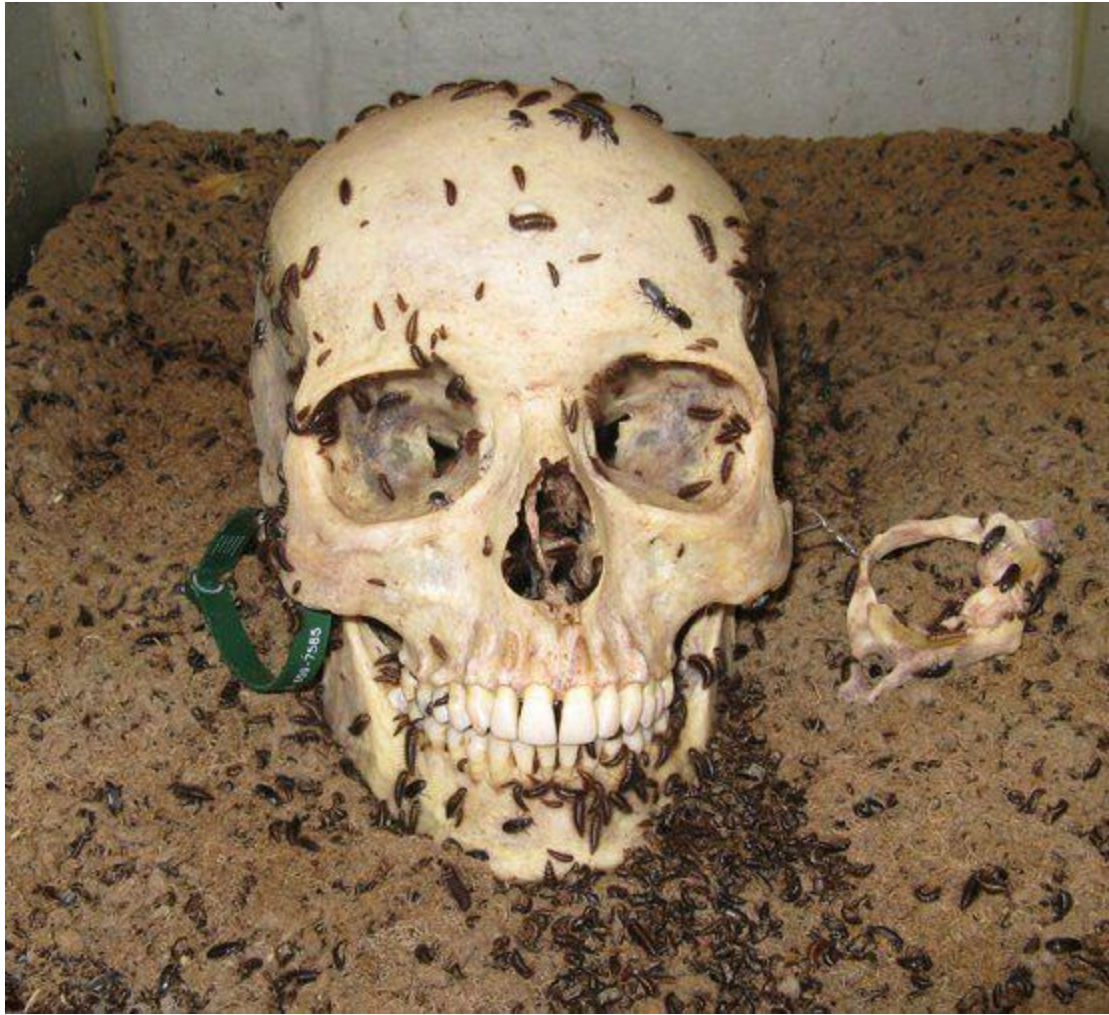


## Damage:

- Active period: March to November
- Overwintering as larva
- Adults rarely eat or drink and do not fly.
- Development is more high in warm and humid conditions inside the grain godowns.
- The pest is resistant to low humidity, temperature conditions, insecticides etc. but sensitive to oxygen supply inside the grain heap. Therefore it is a surface feeder and not infest beyond a certain depth.



Hide or leather beetle - *Dermestes maculatus*



### Identification

Adult: Dark brown beetles (body length up to 5 mm)

Larva/grub: Creamy white cylindrical (2.5 – 3.5 mm long), found inside grains



### Damage:

- Active period: March to November
- Overwintering as larva
- Both adults and larvae bore into the grains and feed on grain contents including germplasm.
- Infestation of Lesser grain borer develops more frequently on milled rice and flour than highly polished rice.



Stored grain insect pests  
Dhara \_ Pulse beetle(*Callosobruchus chinensis/maculatus*; Bruchidae, Coleoptera)

**Identification**

Adult: Reddish brown body with usually brownish elytra and pectinate antennae (body length up to 3-4 mm)  
Larva/grub: Pale yellowish (2-3 mm long), usually lie inside the grains



**Damage:**

- Active period: March to November
- Overwintering as larva
- Major pest of chick pea and other pulses and lentils.
- Grubs bore and feed on the internal seed cotyledons and excavate a growth chamber inside the grain.

# **General Instructions for the Storage of Cereals/ Pulse Grains in order to reduce spoilage and pest infestation**

1. Cleaning/Grading/Sieving of Grains
2. Sun drying/ Heat treatment
3. Treatment of grains with different plant extracts (such as neem seed oil or extract)
4. Treatment of storage structures/stores
5. Superheating of stores
6. Cleaning of stores and plugging of crevices.
7. Maintaining the unfavorable/non-conducive conditions for the pest development
8. Fumigation with Aluminum-phosphide (Phosphine) tablets (@ 1 tablet / m<sup>3</sup>)
9. Regular monitoring/pest-scouting of stores