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Khapra beetle (*Trogoderma granarium*)



What is khapra beetle?

Khapra beetle (*Trogoderma granarium*) is Australia's number two National Priority Plant Pest and the number one plant priority pest for grains. It is not present in Australia, but it is a highly invasive pest that poses a major threat to Australia's grains industry. The species feeds directly on goods such as stored grain and dry food stuffs, which can result in significant damage. Infested goods may also become contaminated with beetles and cast larval skins and hairs, which can be a health risk and are difficult to remove from grain storage structures and transport vessels.

What does it look like?

Adults are 1.6–3mm long. They are oval shaped and light yellowish brown to dark brown in colour. Adult beetles have many fine hairs and indistinct markings on their wing covers. When viewed from the side, the adult beetle's partly concealed head and downward facing mouthparts can be seen (Figure 2).

Eggs are less than 1mm long and milky white to pale yellow in colour.

Larvae are 1.6–4.5mm long, golden brown in colour, and have distinctive hairs across the body, including longer hairs at the end of the body that resemble a tail (Figure 3 and 4).

Pupae have a similar appearance to late stage larvae except that they are slightly shorter and more rounded.

FIGURE 1: Adult khapra beetle (dorsal view)



FIGURE 2: Adult khapra beetle (side view)



FIGURE 3: Khapra beetle adult (A) and larva (B) on grains of rice



FIGURE 4: Khapra beetle larva against split coriander seed



What can it be confused with?

Khapra beetle can be confused with the warehouse beetle (*Trogoderma variabile*) and native *Trogoderma* species. If you find a beetle that resembles khapra beetle, please report it and have it identified by an expert.

What should I look for?

Khapra beetle will only be found in stored products and around places where stored products are kept or transported. This includes between cracks and wall linings of storage containers (Figure 5).

FIGURE 5: Heavy infestation under the flooring of a shipping container comprising larvae and larval skins



Source: Department of Agriculture, Water and the Environment

The most common signs of infestation are larvae and the presence of cast larval skins. There may also be visible signs of damage and waste. To check for infestations, inspect all cracks and crevices in storage areas, including behind panelling on walls and under floors and other objects. For bagged consignments, pay particular attention to the inner corners or ears of the bags.

What is its life cycle?

Mating between adult male and female beetles occurs around 2–3 days after emergence. Shortly after mating, adult females begin laying eggs in or near host material and generally lay 50–100 eggs during their lifetime. Eggs hatch within 5–7 days into larvae, which are the major feeding stage and therefore the most damaging. Larvae moult four or more times, resulting in numerous cast larval skins. The larval development period can be as short as 30 days, but larvae can also survive in a dormant state for several years in unfavourable conditions. The larva finally develops into an immobile pupa, from which the adult emerges.

Adults are short-lived, do not feed much, and although they are winged, they are not known to fly. There can be up to ten generations per year during warm, dry conditions, which can quickly result in damaging infestations.

How can the pest enter Australia?

The most likely pathway for khapra beetles to enter Australia is with the movement of contaminated goods, including grains, food stuffs, personal effects and machinery.

Khapra beetle has been recorded infesting more than 100 commodities including most dried plant products such as grains, seeds, beans and nuts. Affected commodities include wheat, maize, barley, rice, millet, sorghum, pulses, cotton, sunflower, sesame and spice seeds. The pest can also infest other dried plant or animal products such as flour, animal feed, pet food and bread. The species has also been detected as a hitchhiker pest on a wide range of cargo (plastic beads, nuts and bolts, timber doors) and as a contaminant in shipping containers.

Global distribution

Khapra beetle is native to India, but has spread to many parts of Africa, Asia, Europe and the Middle East. Global spread of khapra beetle is increasing.

Visit the [Department of Agriculture, Water and the Environment](#) for a full list of target risk countries.

How can you protect your grain stores from infestation?

Check your stored grain and storage facilities frequently for the presence of pests and damage. Good store hygiene plays an important role in limiting infestation, including the removal of spillages and residues from the previous season's harvest, and the sealing of any cracks or crevices where pests could hide.

Report your find

SEE. SECURE. REPORT.

If you find a khapra beetle or signs of infestation, secure the goods immediately. Stop all movement of goods and immediately report it to the Department of Agriculture, Water and the Environment. **Phone the See. Secure. Report Hotline on 1800 798 636.**

Watch our short [cargo pest video](#) on the Department of Agriculture, Water and the Environment website to see how you can help.



1800 900 090 or
+61 3 8318 6700 (from outside Australia)



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