

Table 1. Risk and monitoring period for Fuller's rose weevil activity.

Flowering			Fruit drop	Golf ball			Colour break		Maturation		
Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul

Description

Adult Fuller's rose weevils (*Pantomorus cervinus*) are wingless, grey-brown (Figure 1) and about 8 mm long. Mature larvae are legless, yellow and about 6 mm long.



Figure 1. Fuller's rose weevil (*Pantomorus cervinus*) adult.

Life cycle

There is one generation a year. Fuller's rose weevil (FRW) females produce 20–30 eggs glued together in yellowish, papery masses without mating. Eggs are laid under fruit calyces, in bark crevices or in micro-sprinklers under trees. After hatching, the larvae drop, burrow into the soil and feed on citrus roots. Adults emerge from the soil mostly between February and May but can be found all year round.

Damage

The adults chew leaf margins, leaving a serrated edge (Figure 2). Foliage near the trunk or touching the ground is most likely to be damaged. Having FRW eggs on fruit (Figure 3) is a major quarantine pest of concern to many Asian markets.

Monitoring

Actively monitor from December to May (Table 1). Trees selected for monitoring must be randomly scattered throughout the block (Figure 4). Shake the foliage of selected trees over a 1 m² light-coloured mat (Figure 5) and look for any adults. Examine low-hanging foliage for signs of feeding damage and low-hanging fruit near the trunk, looking for egg masses under the calyx.



Figure 2. Serrated leaves can indicate Fuller's rose weevil activity.



Figure 3. An egg mass (yellow circle) protruding from under the calyx of a navel orange.

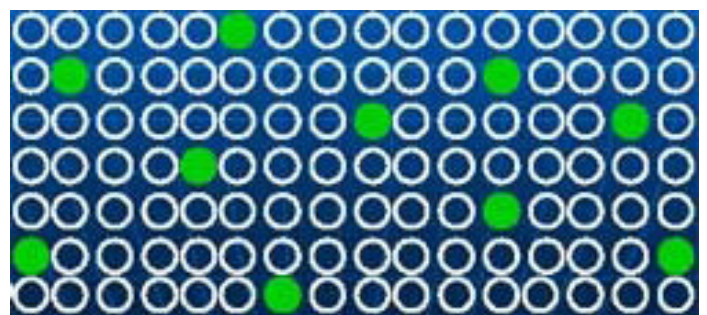


Figure 4. Select randomly located trees for monitoring.

Threshold: FRW is not a major concern for domestic or non-quarantine export countries, but there is zero tolerance for quarantine export countries.

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Figure 5. A Fuller's rose weevil monitoring mat. A length of electrical conduit is placed into a sleeve on either end of the shade cloth mat to make it easier to place it under the tree.

Management and control

Controlling FRW requires a multi-strategy approach based on orchard hygiene, skirting, weed control and chemical control. FRW control is mandatory for quarantine-sensitive export markets.

Biological: natural predators include Platygastriid parasitoid wasps (*Fidiobia citri*; Figure 6 and Figure 7), assassin bugs (various species), praying mantises, entomopathogenic fungi (Figure 8) and nematodes (such as *Heterorhabditis* sp.).

Cultural: prune the skirts of trees at the end of each season and control weeds. Sticky bands around the tree trunk are an effective barrier, but currently not practical.

Chemical: apply a registered insecticide when weevil numbers exceed threshold levels. If possible, avoid using broad-spectrum insecticides. While trunk band spraying in conjunction with skirting and weed control is effective in reducing FRW populations, using broad-spectrum insecticides causes outbreaks of secondary pests such as mites and scale insects. Careful monitoring and early intervention of secondary pests is recommended.

Orchards registered in the Korea, China and Thailand export program should contact their packer in spring to discuss their management program.

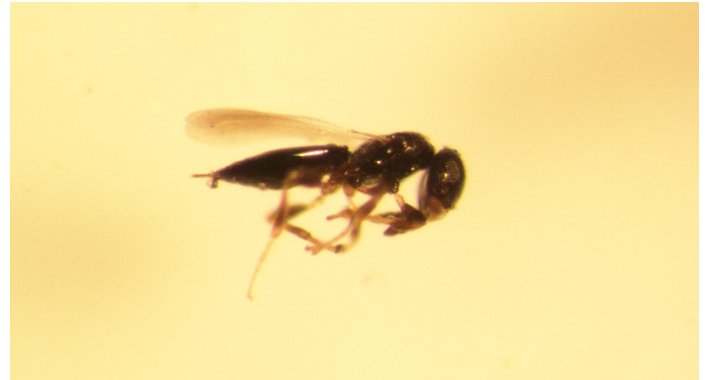


Figure 6. *Fidiobia citri* adult, a Fuller's rose weevil parasitoid.



Figure 7. Fuller's rose weevil eggs that have been parasitised by *Fidiobia citri*.

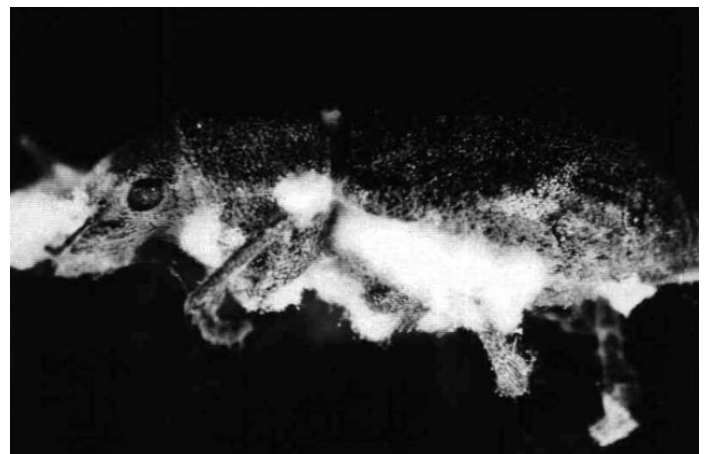


Figure 8. A Fuller's rose weevil adult infected with the entomopathogenic fungus, *Beauveria bassiana*.

Further information

[Fullers rose weevil trunk band spraying videos](#)



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