

Citrus planthoppers (*Colgar peracutum*)
Mango planthoppers (*Colgaroides acuminata*)
Green planthoppers (*Siphanta acuta* and *Siphanta hebes*)

Emily Pattison, QDPI, 2024

Table 1. Risk and monitoring period for planthoppers in Queensland.

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

Description

Planthoppers or flatids (order Hemiptera) are sap-feeding insects found in most citrus-producing regions of Australia. There are 4 species of planthopper that infest citrus: citrus planthopper (*Colgar peracutum*), mango planthopper (*Colgaroides acuminata*) and 2 species commonly known as green planthopper (*Siphanta acuta* and *Siphanta hebes*). Generally, mango and citrus planthoppers are mainly in Queensland and green planthoppers are mainly in the southern states (Figure 1).

The planthopper pest rating has been upgraded in Queensland because several broad-spectrum chemicals are no longer registered. An integrated pest management approach will help overcome this.

Larvae: females lay eggs in oval-shaped masses about 5 mm in diameter. Eggs are white at first (Figure 2), but darken closer to hatching. Between 40 and 70 planthoppers can emerge from one egg mass.

Immature: juvenile planthoppers are pale green and often covered in a white, waxy layer (Figure 3). They have an angular head and distinctive waxy filaments protruding from the tail. When disturbed, juveniles can propel themselves with high acceleration for a short distance using their legs.

Adults: planthopper adults are flat on the vertical axis and hold their wings in a triangle shape resembling a sail (Figure 4). Citrus and mango planthopper adults can be differentiated from green planthopper adults by a red dot in the centre of their wing. Planthopper adults are poor fliers but can propel themselves for short distances.

Life cycle

Planthopper life cycles generally take 2 weeks to 2 months, depending on temperature and region. In Queensland and the Northern Territory, there are at least 8 generations per year, whereas in New South Wales, Victoria and South Australia, there are 3–4 generations per year.

Damage

Planthoppers are sap-feeding insects and prefer to feed on young foliage inside the tree canopy. The primary damage is indirect, caused by the sooty mould that develops on the honeydew secreted by adults (Figure 5). The honeydew and subsequent sooty mould can coat fruit, leaves and branches, limiting photosynthesis. It can also cause large volumes of fruit to be downgraded.



Figure 1. The distribution and importance of planthoppers in Australian citrus.



Figure 2. A recently laid citrus planthopper (*Colgar peracutum*) egg mass.



Figure 3. Juvenile citrus planthoppers (*Colgar peracutum*).

IPDM for the citrus industry Project CT19011



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Light feeding marks might be seen but are unlikely to cause economic damage.

Threshold: 15–20%.

Risk period: all year (Table 1).

Monitoring

Planthoppers are well camouflaged and can be difficult to detect. Their presence can often be identified by a white residue left behind from their tail filaments shedding. Planthoppers are often found on tender, young shoots and prefer the tree's interior, particularly if the canopy is dense.

Management and control

Biological: planthoppers found in Australia are native and have many natural insect parasitoids (Figure 6 and Figure 7) that parasitise the juvenile and egg stages.

- Dryinid wasps (*Dryinus australianus* and *Neodryinus koebelei*) larvae can attach to the wing bud of juvenile planthoppers to feed, causing premature death. All 4 species of planthoppers found on citrus are parasitised. A study in North Queensland suggests that where limited chemical sprays are used, Dryinid wasps can parasitise 100% of planthopper juveniles (De Faveri 2013).
- *Achalcerinys* sp., *Aphanomerus* sp. and *Ooencyrtus* sp. are parasitoid wasps of planthopper eggs. *Aphanomerus* sp. and *Ooencyrtus* sp. naturally occur in Mareeba and Ayr (Queensland). Surveys report that 25–50% of flatid egg masses are naturally parasitised. Reports in Gayndah and Mundubbera (Queensland) suggest *Achalcerinys* sp. can parasitise up to 90% of egg masses (De Faveri 2013).

Adults can be infected with various fungal pathogens.

Cultural: planthoppers prefer dense tree canopies with high humidity and low light. Pruning to open up the canopy can help reduce planthopper populations.

Chemical: there are currently no chemicals registered for use on planthoppers in citrus. Often planthoppers are incidentally controlled as a non-target insect when broad-spectrum chemicals are applied. Parasitism of planthoppers is high in areas of low pesticide use, particularly broad-spectrum pesticides.

References

De Faveri S (2013) Biological control options for mango scale. Final report for MG08003, Horticulture Australia Limited.

Smith D, Beattie GA and Broadly R (1997) *Citrus pests and their natural enemies: integrated pest management in Australia*. Queensland Department of Primary Industries.



Figure 4. Adult citrus planthoppers on a lemon sucker.

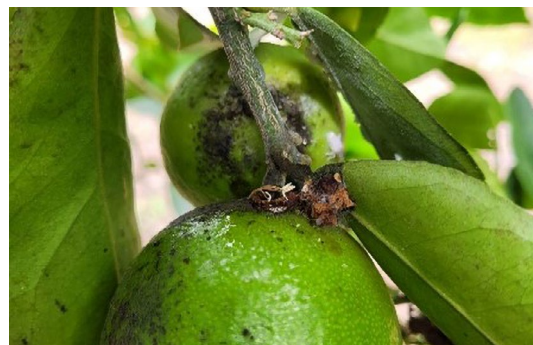


Figure 5. Sooty mould damage caused by planthoppers on lime fruit.



Figure 6. A parasitised planthopper egg mass, with parasitic wasps emerging.



Figure 7. Dryinid wasp larva attached to the wing bud to feed on a planthopper.

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