

# Carambola fruit fly (*Bactrocera correcta*)

## EXOTIC PEST DETECTION & SAMPLING GUIDE



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Cesar Australia

## Background

The Carambola fruit fly is one of the world's most economically damaging pests of fruit crops. The species is native to Malaysia, Thailand and the west of Indonesia, but has now spread across most of south-east Asia, including Vietnam. It is also now very widespread in Brazil and some neighbouring countries after being introduced to that region in the 1980s. It has not been found in Papua New Guinea. The highest risk of it being introduced to Australia is through illegally imported fruit or through natural dispersal pathways (wind).

## How would I identify Carambola fruit fly?

### Identification by morphology

Carambola fruit flies are about 7mm long, and of a similar size and shape to the Queensland fruit fly (Qfly), which is native to parts of eastern Australia but is also a significant agricultural pest. However, adult Carambola fruit flies look different – most obviously they have a paler abdomen that has a distinct t-shape or thin stripe down the centre. The middle section of all six legs are dark, while the other leg sections are a pale straw colour (Figure 1).

It is not possible to distinguish Carambola fruit fly larvae from those of other pest fruit flies. Identification of larvae would rely on DNA molecular analysis to reliably discriminate between different fruit fly pests.

### Identification by damage

Carambola fruit fly poses a major additional threat to Australian fruit growing industries above and beyond that already caused by Qfly as it has potential to cause more extensive damage to produce, and may attack additional commercial host plants including guava, jackfruit and other tropical fruits. It may also be better suited to some climatic conditions than Qfly is.

Like other related pest fruit flies, adult females 'sting' ripening fruit and lay their eggs just below the skin. Affected fruit may show skin discolouration around the sting marks. After egg hatch, developing larvae (maggots) feast on the fruit, the flesh rots, and the fruit eventually

falls to the ground. The larvae then burrow into the soil and pupate. A week or more later, depending on ambient temperatures, new adult flies emerge.

### How do I scout for Carambola fruit fly?

Growers should be particularly on the lookout for unusual damage that would not normally be caused by Qfly in their region. If unusual damage is seen, trapping is an option. Unlike Qfly, Carambola fruit flies are strongly attracted to methyl eugenol lures.

### Could it be confused with an endemic species?

Carambola fruit flies are quite similar in appearance to the Banana fruit fly, *Bactrocera musae*, which is present in north-east Queensland and Papua New Guinea, but is generally only a pest of banana, although it is occasionally also found on guava and papaya. The T-shape on the abdomen of Banana fruit flies is less distinct or absent, and generally only the hind legs have dark mid-sections.

Carambola fruit flies are also morphologically similar to one other native species, *Bactrocera opilliae*, which occurs across much of northern Australia. However, this fly is not a pest and only feeds on a single wild host plant. Carambola fruit fly is similar in size and shape to Qfly, found in eastern Australia, and Mediterranean fruit fly, found in Western Australia, however it differs in appearance (markings and colouration) from these species.

Figure 1. Carambola fruit fly (*Bactrocera carambolae*), with and without wings



**This guide covers the exotic Carambola fruit fly (*Bactrocera carambolae*).** Check the additional exotic guides for specific information for the other two possible exotic *Bactrocera* fruit flies.

# What should I do if I suspect Carambola fruit fly?

Carambola fruit fly is a priority plant pest that is exotic to Australia. If you have made a suspect detection call the **Exotic Plant Pest hotline on 1800 084 881**. The hotline will divert you to the appropriate state biosecurity agency, which will investigate the suspect detection further.

To support an investigation you should take note of:

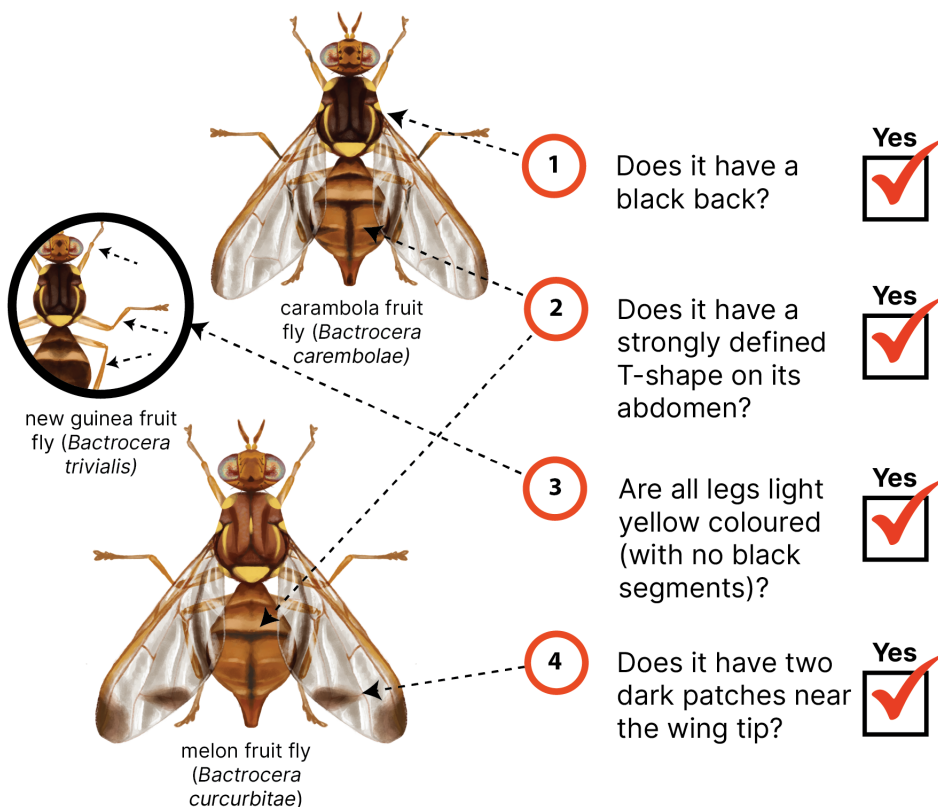
- The detection location (take a GPS coordinate using your phone);
- The host plant on which the suspect detection has been made;
- Damage symptoms (e.g. early fruit drop, rotting fruit, sting marks on fruit, evidence of larvae feeding on fruit pulp); and
- A photo of all life stages observed (taking close-up photos of the same specimen from multiple angles is most useful for identification).

## Taking a sample

Taking a sample will also assist in a biosecurity investigation. After cutting a sub-sample of fruit open to find evidence of larvae collect the larval infested fruit by placing it in a ziplock bag – double bagging of specimens is ideal. Label the bag with the date and collection location and keep the fruit in the fridge in case a larval sample is needed by the biosecurity agency. If suspect adult Carambola fruit fly are found in any pest monitoring traps on the property, extract the fly and place it in a jar or vial with 80-95% isopropyl alcohol (rubbing alcohol) or methylated spirit.

Figure 2. Reporting decision making for Carambola fruit fly (*Bactrocera carambolae*)

If you answer yes to ANY ONE OF the following three questions, it could be one of the **exotic Bactrocera fruit flies**. Report it!



-----> But if you answer no to ALL questions, it is likely the already established Queensland fruit fly (Q-fly), which has:



a brown back and abdomen



little to no T-shape



a black segment on the back legs



only a thin dark band along the wing tip

### More information

[Fruit Fly Identification Australia, Carambola fruit fly](#)

### References

Walker, K. (2005) Carambola Fruit Fly (*Bactrocera carambolae*) Updated on 1/24/2022 11:57:12 AM [Available online: PaDIL](#)

