

New Guinea fruit fly (*Bactrocera trivialis*)

EXOTIC PEST DETECTION & SAMPLING GUIDE



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Background

The New Guinea fruit fly is one of the highest risk agricultural pests found around the globe. It is not present in Australia. The species currently occurs in Papua New Guinea and Indonesian West Papua, but there is a risk of it being introduced to Australia through the Torres Strait, or via illegally imported fruit. It poses a significant threat to Australian fruit growing industries above and beyond those of other fruit fly pests that are already present.

How would I identify New Guinea fruit fly?

Identification by morphology

New Guinea fruit flies are about 7mm long and are of a similar size and shape to the Queensland fruit fly (Qfly), which is native to parts of eastern Australia and is also a significant agricultural pest. The pattern of body markings is also quite similar, however adult New Guinea fruit flies are generally quite a lot darker in colour on the thorax and abdomen than Qfly adults (Figure 1).

It is not possible to distinguish New Guinea 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

The New Guinea fruit fly has potential to cause more extensive damage to produce than that of Qfly (and Mediterranean fruit fly in Western Australia). It may be more inclined to attack specific commercial host plants, particularly guava and some citrus.

Damage to fruit is similar to that caused by Qfly. Like other related pest fruit flies, adult females 'sting' ripening fruit and lay their eggs just below the skin. Developing larvae (maggots) then 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.

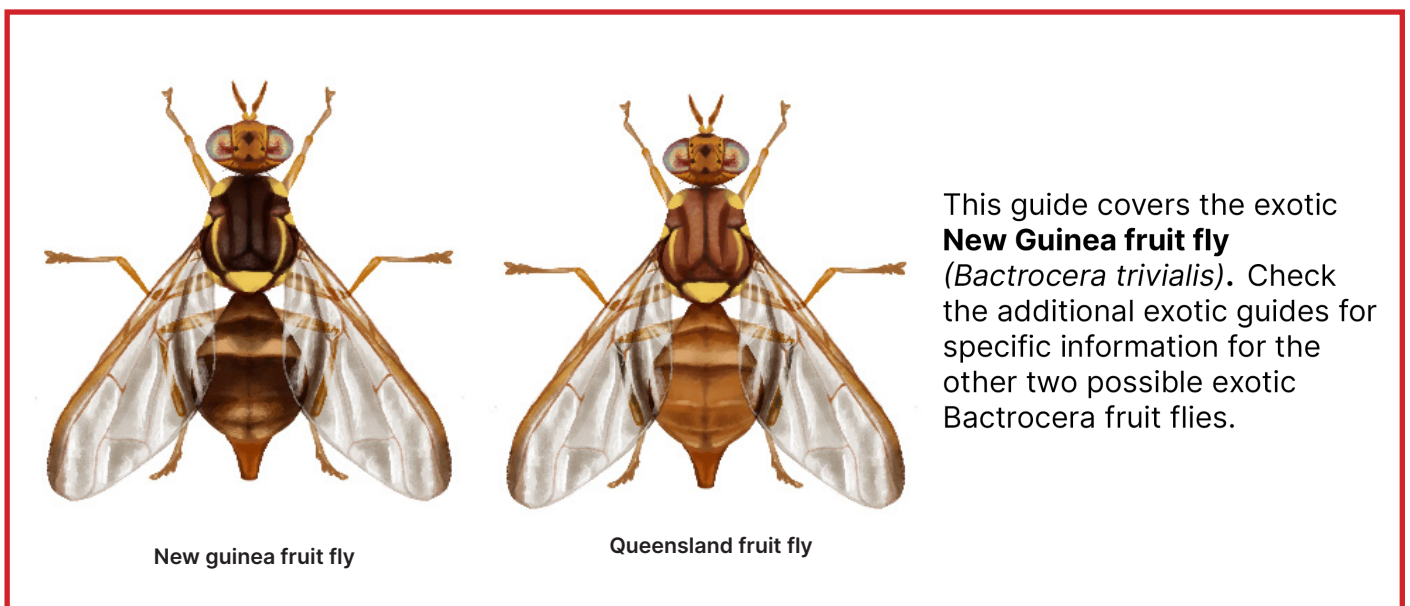
How do I scout for New Guinea fruit fly?

Growers should be particularly on the lookout for unusual damage that would not normally be caused by Qfly in their region. Male pheromone lure traps that are used to catch Qfly are also able to catch New Guinea fruit fly so traps should be checked for anything unexpected, particularly dead flies that otherwise look similar to Qfly but are very dark brown or almost black on parts of the thorax and abdomen.

Could it be confused with an endemic species?

Apart from similarities in appearance with Qfly, New Guinea fruit flies are also quite similar in appearance to two other fruit fly species that are native to Australia – *Bactrocera breviaculeus* and *Bactrocera rufofuscula*. These two species both occur in north Queensland, however, neither are considered to be of any threat to agriculture and they feed only on a limited range of native euphorbias or native rainforest fruits respectively.

Figure 1. New Guinea fruit fly (Left) and Queensland fruit fly (Right)



What should I do if I suspect New Guinea fruit fly?

New Guinea 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 New Guinea fruit fly (*Bactrocera trivialis*)

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

New Guinea fruit fly (*Bactrocera trivialis*)

Carambola fruit fly (*Bactrocera carambolae*)

melon fruit fly (*Bactrocera curcurbitae*)

- 1 Does it have a black back? Yes
- 2 Does it have a strongly defined T-shape on its abdomen? Yes
- 3 Are all legs light yellow coloured (with no black segments)? Yes
- 4 Does it have two dark patches near the wing tip? Yes

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](#), [Queensland Government](#), [New Guinea Fruit Fly](#)

