

Managing Queensland fruit fly in your home garden



AGRICULTURE VICTORIA



Queensland fruit fly

Queensland fruit fly (QFF) (*Bactrocera tryoni*) is a significant horticultural pest that is found in Victoria. QFF creates problems for home gardeners and producers because it attacks a wide range of fruits and vegetables, leaving them inedible.

Understanding QFF behaviour

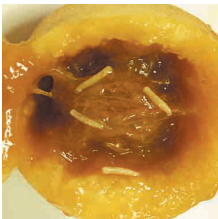
QFF activity usually increases at the start of spring. When sunset temperatures exceed 16 °C, they mate and lay eggs inside suitable host fruit and vegetables. QFF remain active in summer and autumn, with some surviving over winter by taking refuge in sheltered areas (e.g. buildings and trees).



QFF life cycle



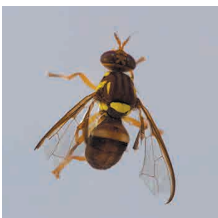
Egg: Female QFF lay white, banana-shaped eggs inside host fruits and vegetables. One female QFF can lay up to 100 eggs per day. Eggs are 1 mm long and difficult to see.



Maggot (larva): A small creamy coloured maggot hatches from each egg. Maggots eat the fruit, growing up to 9 mm long. Once fully grown, the maggot chews its way out of the fruit - which by then has usually fallen to the ground - and burrows into the soil.



Pupa: Once in the soil, the maggot changes into an oval, brown, hard pupa. Inside the pupal case, the adult QFF develops.



Adult fly: Adult QFF emerges from the ground. They are about 7 mm long and are reddish-brown in colour, with distinct yellow markings.

After feeding and mating, females search for suitable fruit to lay their eggs inside, restarting the cycle.

In the right conditions (i.e. 26 °C), QFF can complete their lifecycle in around 30 days.

Popular home-grown QFF hosts



Apples



Apricots



Avocados



Capsicum



Chillies



Cumquats



Eggplants



Figs



Table grapes



Lemons



Limes



Loquats



Nectarines



Oranges



Passionfruit



Peaches



Pears



Persimmons



Plums



Pomegranates



Prickly pears



Quinces



Strawberries



Tomatoes

For a full list of hosts, visit the website:
www.agriculture.vic.gov.au/qff.

Ways to control QFF

If you grow QFF host fruit or vegetables in your garden, start your control program at least 6-8 weeks before fruit is ripe for picking (QFF can lay eggs inside hard, green fruit).

For active gardeners wanting a harvest

1

Use traps to monitor QFF

QFF traps are designed to attract, catch and monitor QFF in your garden. There are a variety of QFF traps commercially available that use attractants to lure QFF inside, where they are killed by an insecticide or trapped by a liquid or sticky surface.

Para-pheromone traps attract male QFF. Food-based traps contain protein, attracting and killing both male and female QFF. Fruit scented traps mimic ripe fruit, attracting female QFF seeking to lay eggs. Using a combination of these traps in the garden helps to manage QFF.

Note that traps may also attract other beneficial insects, so check for QFF before spraying any insecticides.

Hang traps approximately 1.5 m high, inside the foliage of a tree where QFF are likely to be (i.e. warm, shady spot out of direct sunlight).

Remember to refresh lures/attractants inside the trap according to their label directions.

Make a home-made QFF trap

You will need an empty 1.5 L soft-drink bottle (with lid). Cut three 10 cent piece sized holes in the bottle, 10 cm from the top. Add the bait mixture: three cups of 100 per cent fruit juice with pulp and three tablespoons of cloudy ammonia (or wheelie bin cleaner), until the bottle is approximately half full. Tie a string around the bottle's neck and hang it in a shady part of the tree, 1-1.5 m above the ground (where pets and children cannot access it). Change the mixture weekly for best effect.

Traps may also catch other beneficial insects. Check your trap for QFF before spraying any insecticides.

**Traps alone are unlikely to manage QFF
- use a combination of control methods
to manage QFF in your garden.**



2

Use a control method

Exclusion is best

Exclusion uses netting, bags or sleeves to stop female QFF from reaching and laying eggs inside fruit and vegetables. Despite the costs involved in purchasing materials, they can be re-used. Exclusion allows you to protect fruit and vegetables, even if your neighbours are not actively controlling QFF.

Insect netting - drape fine, UV stable mesh over trees or frames made from PVC tubes or stakes to protect fruit after pollination has occurred. Secure nets around the base of the trunk (best if you have had QFF before) or to the ground to prevent QFF from getting inside. Any fruit touching the netting may be stung by QFF, so it's important to avoid direct contact.

Bags and sleeves – when the fruit have set, place bags or sleeves over the fruit you want to keep. Secure them to the plant, ensuring there are no gaps where QFF can enter. Remove and destroy any unwanted fruit.



Baiting

Bait sprays or gels combine a protein/food-based attractant with an insecticide to attract and kill QFF. It is applied onto the trunk and foliage of plants, not the fruit. QFF are attracted to the bait as a food source and are killed by eating the insecticide. Make sure you follow the label instructions as different baits have different application directions.

Spraying insecticides

Insecticides are generally sprayed onto foliage and developing fruit to kill QFF on contact. Insecticide sprays can be harmful if used incorrectly so always read and follow the label directions.

QFF traps, exclusion products, baits and insecticides can be purchased from nurseries, home garden stores and online retailers.

3

Inspect ripening fruit

Check your ripening fruit and vegetables for QFF by looking for sting marks on skins and by cutting them open to check inside for maggots.



Cutting fruit for visual inspection



Sting marks on apple

4

Good hygiene

Keep your garden free from unwanted, fallen and rotten fruit to stop QFF from breeding in your garden.

Remove any flowers or developing fruit that you are not protecting using a control method. Prune fruit trees to a height that allows you to easily pick fruit, apply an insect net or spray.

Pick and use fruit as it ripens. Don't leave infested fruit on trees or let it drop to the ground, where the maggots can enter the soil and pupate.



Before disposing of fruit, destroy any maggots that may be inside by freezing, microwaving, boiling, or solarising (sealing fruit inside a plastic bag and leaving it in the sun for at least 14 days). The bagged fruit can then be discarded in your rubbish bin.

Strategies for less active gardeners

Host plant removal and alternative planting

Remove unwanted or unmanageable QFF host plants and replace them with non-host, ornamental plants such as native wattles or grevilleas.

Neglected host plants

Report neglected host plants on public land to the land manager (e.g. local council) to encourage removal of these plants which will improve QFF management in your region.

Don't spread QFF

The best way to prevent QFF from spreading to new locations is to not travel with QFF host fruits or vegetables, especially those grown at home, which have a higher chance of being infested with QFF.

Fines may apply if you are caught travelling with QFF host produce into certain areas where fruit fly is not present – for more information, visit www.quarantinedomestic.gov.au.

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