SAGE | Sustainable Agriculture & Gardening Eurobodalla

# Fruit Fly Information Sheet

as at September 2016

## Controlling Fruit Fly in our gardens and beyond

The Queensland Fruit Fly (QFly) (*Bactocera tryoni*) is a serious pest in our backyards, commercial orchards and vegetable gardens. By working together we can reduce the numbers of QFly and once again enjoy the fruits of our labour.

## Know your enemy – think like a Fruit Fly

1. QFly spend the majority of time in the host tree in the shade of the canopy
2. They need a balanced diet of proteins (manures, bacteria on leaf surfaces) and carbohydrates (fruit juices, secretions from aphids and scale etc) for a long life and to reproduce.
3. The urban environment suits the Qfly better than rural as there is more shelter, host fruit trees, humid micro-climates, therefore urban areas are going to require more vigilance.
4. Male QFly usually mate once a night, at dusk during a half hour period and the temperature needs to be at least 15°C. They can survive to -2°C in winter but do not mate in these temperatures. They need a protein source before mating.
5. A female QFLy needs to feed on protein source before laying eggs which she does at dawn and for a few hours after.
6. Adult QFly can live for a number of months and the female can lay between 500 and 800 eggs in suitable conditions.
7. A healthy adult QFly can travel long distances, but up to 1km is more normal.

## What can you do?

Consider a combination of any or all the below options to try to break the life cycle of QFly wherever possible:

**Hygiene** – Pick up all fallen fruit. This breaks the cycle as larvae cannot pupate. Destroy fallen fruit with heat: in a black plastic bag in hot sun, in a fire, or a microwave, then compost them. Without heat treatment do NOT bury, put in your bin or put in your compost pile, as they will continue to pupate to adults.

**Exclusion** – This may be a time-consuming or an expensive option if you have a lot of fruit but you can grow your tomatoes, capsicums etc in paper bags, under mesh cover or in poly tunnels.

**Removal** – If you cannot manage your fruit trees due to time constraints or only occasionally visit the place you keep fruit trees or fruiting vegetables, consider replacing them with non-fruiting types.

**Chickens** – Keeping chickens in your orchard disrupts the QFly life cycle through the eating of fallen fruit and maggots and predation on pupae and emerging adults.

**Trapping and baiting** – There are a few effective trapping options:

**Pheromone traps** – These traps only lure male QFly and will not prevent an already mated female from stinging your fruit. They work by giving off an odour that mimics that of receptive females. They can be an effective indicator of QFly activity in Spring. Wild May, Pheromone Wicks and Dak Pots are examples of these and are available from your local nursery. Wild May is useful early in the season (August, September, October) to catch males before they mate, before there are many females around.

**DIY Traps** – Your own liquid traps can be made. Comprehensive instructions can be found at seedsavers.scpa.org.au. These traps are usually protein based which is required by males pre-breeding for sperm production and females post-breeding for eggs to reach maturity. However they are not specific to QFly and may trap other beneficial and/or harmless insects. The ingredients in these traps usually require weekly checking and replacement to continue the initial effectiveness.

**Commercial *baits* for males and females** – These use proteins to attract the flies and use a poison to kill the fly when it consumes the protein. Eco-Naturalure contains Spinosad as the active ingredient which is a soil bacterium poisonous to many insects but not humans. Other proprietary baits use different insecticides. Eco- Naturalure continues to be part of the strategy employed by SAGE's sister organisation SCPA, further down the coast.

**Commercial *traps* for males and females** – These use long-lasting proteins to attract the Qfly and then drown or poison them. The protein liquid/gel will last 3-4 months if the traps are properly placed, and traps can be refilled. The protein attractants are fairly specific to fruit fly species, and the traps are easy to use and monitor. Qfly drown in CeraTraps. New on the market are the Australian BioTraps, where a small cube of the poison Diclorvos kills the Qfly. Effectiveness depends on careful placement. CeraTraps are available at Turnbull's Produce, Moruya.

## Where to place your CeraTraps

- **Place the trap in the tree canopy** where the QFly rest. About 1.5 m from the ground (or higher if the lowest point of the tree canopy is above 1.5m). On the eastern side is good, to entice the females early in the mornings. Too much heat destroys the protein attractant.
- Ensure the trap is **in the shade of the leaves** to reduce evaporation and protect from sunlight.
- Use **one trap per host tree** or if trees are touching, one trap every 20 square metres particularly in urban areas. In rural areas one per 100 square metres. This is subject to trapping results. If you are trapping many flies in a week consider increasing the number of traps.
- Place traps in trees **when fruit are 1/3 of the ripened size**. Leave the traps in these trees for a couple of weeks after all fruit has been picked, to catch any strays.
- For plants without real canopy, like tomatoes, place traps in nearby trees that do have canopy, where Qfly are likely to rest. These trees may be non-fruiting, Pittosporums for example. Surrounding your crop with traps N, S, E and W around the perimeter is good, so that you can monitor which direction the Qfly are coming from. Increase the number of traps in the favoured direction, and locate the favoured rest trees if you can. Remember Qfly will fly up to 1km.
- **Keep your own records** to help plan your traps and trap placement for the next year.

For enquiries about any of this information, contact:

Bronwyn Dunn (aka Sarah Trapp)
e: sarah.trapp@optusnet.com.au