

Fruit-fly trapping role in biosecurity

Rural Business April 2018 Organic Market Insight

18 March 2018

EFFECTIVE biosecurity from national down to farm and backyard level underpins Australia's freedom from some of the world's worst pests and diseases; individual Australian region's claims of specific pest and disease freedom; and access to lucrative export markets.

It also provides major protection for organic food production, reducing potential disease and pest pressure that would otherwise make growing organically very difficult, if not impossible.

An example of Australia's ability to quickly and effectively swing into large-scale action to contain and control a serious pest was on display following the January detection of Queensland fruit fly larvae at sites in northern Tasmania and on Flinders Island.

Aiming to quickly regain its fruit-fly-free status, the Tasmanian government response and state-wide alert – akin to managing a natural disaster – focussed on containment and eradication; quickly determining the extent of the infestation; and the likely source of the detected fruit fly. The steps taken are summarised separately.

Maintaining Tasmania's valuable fruit-fly-free status

This fruit-fly incursion had the potential to significantly restrict trade of Tasmanian fresh fruit into valuable markets both in Australia and overseas. It takes a long time to win market access and overnight to lose it.

Tasmania relies on its fruit-fly-free status for produce exports into key premium markets – including Japan, Korea, USA, Taiwan and China – which puts Tasmania at a significant advantage, and is why the state takes biosecurity and quarantine very seriously.

The state's biosecurity measures also save Tasmanian growers the substantial cost of prevention, control, fruit treatment and certification faced by growers in fruit-fly-affected areas.

Trapping, surveillance and monitoring Queensland and Mediterranean fruit fly

Fruit fly traps played an important role in quickly detecting the pest in defined parts of the state.

Tasmania maintains a permanent grid of close to 1000 surveillance traps targeting Queensland and Mediterranean fruit-fly throughout Tasmania, which are continually checked and monitored to demonstrate pest freedom to trading partners, and to provide early warning if an incursion occurs.

Traps also played a very important part in the response, with trapping intensified to monitor, identify and eradicate any active fruit fly. 500 extra traps were added to the existing network, concentrated around areas where fruit fly had been detected.

Following the incursion, and looking into the future, backyard and commercial growers were advised to ramp up their biosecurity measures to maintain their own and Tasmania's fruit-fly-free status.

Effective organic fruit-fly trap available

Barmac technical support and product development officer Chris Poletto said traps were an effective early-warning system to alert growers to an incursion, and for recognising the start of the fruit-fly season in areas where it is endemic.

He advised growers to consider using organic Cera Traps, which are useful for attraction and mass trapping female and male Queensland and Mediterranean fruit fly.

"While some traps contain a lure plus insecticide, Cera Trap is insecticide free, containing a protein hydrolysate liquid formulated by Bioberica in Spain, a company specialising in protein hydrolysis.

“Many other traps and lures only attract male fruit fly, but the specific protein in Cera Trap has proven highly attractive to female as well as male fruit fly, and is believed to contain the most powerful protein-attractant for fruit flies on the Australian market. Female flies are especially attracted due to their need for protein to begin egg-laying.”

He said trials along Australia’s east coast and in Western Australia and Papua New Guinea had confirmed that Cera Trap is highly attractive to both major, commercially-damaging fruit fly – Queensland fruit fly (*Bactrocera tryoni*) and Mediterranean fruit fly (*Ceratitis capitata*) – as well as Jarvis fruit fly (*B. jarvisi*), Melon fruit fly (*B. cucurbitae*), Pumpkin fruit fly (*B. decipiens*) and Oriental fruit fly (*B. dorsalis*), making it an extremely valuable tool for Australian horticulture.

“As demonstrated around the world, the capture ratio of females (responsible for fruit stinging and damage) to males was 4:1.

“Once inside the trap the flies can’t escape so they drown. It takes around two days for flies to sink to the bottom of the trap – knowing this is useful for counts and monitoring activity.”

Cera Trap has been successfully used in citrus, stone and pome fruit in the Mediterranean, Middle East and South America. Distributed by Barmac, Cera Trap has been available commercially in Australia since 2013.

Recommendations for best results:

- Set up ahead of the expected fruit-fly season or at least 60 days before fruit ripening. Even earlier will catch juvenile flies.
- 100 traps/ha (120/ha in crops more sensitive to fruit fly) spaced evenly through the orchard, with additional traps in areas with recognised higher fruit-fly pressure.
- Hang traps 1.5 to 2 metres high within the canopy on the north-facing side of trees, where the sun can heat the protein attractant, making it volatile.
- For perimeter baiting to prevent fruit fly entering clean orchards, hang traps on posts every 20 metres around the outside of the orchard.

Benefits of Cera Traps include:

- Attractive to female fruit fly – those that cause fruit damage – as well as males;
- Non-toxic to bees and beneficial insects and no insecticide residue;
- Cost- efficient;
- Safe for farm workers, the environment and consumers;
- Ready to use and easy to set up. Bait ingredients are only activated when trap is opened and exposed to air.
- Reduced evaporation rates. The 600mls in each trap lasts 60-120 days before needing a refill. Refill in seconds in the canopy with a slightly-modified spray wand. The refill liquid flows smoothly through pumps and valves