

# FEATURED CROP – CHERRIES

## Trials yield confidence in Qfly trade protocol

Jane Muller\*

For east coast tree crop producers, Queensland fruit fly (Qfly) can pose a significant barrier to interstate trade. Recent incursions and outbreaks have sharpened the focus on ensuring domestic trade protocols and risk management measures are effective and backed by solid scientific evidence.

The cherry, citrus and apple industries have been actively working with researchers to find ways to minimise infestation risks of fruit flies and other pests while optimising fruit quality using risk-based systems approaches.

The research is being progressed through a project led by the CSIRO to develop improved scientific methods to guide the design of systems approaches and validate their efficacy. The research is supported through the Hort Innovation Frontiers Fund and delivered in partnership with Agriculture Victoria, NSW DPI, the Western Australian DPIRD, Cherry Growers Australia and PomeWest.



Trapping and crop inspection over six seasons have provided clear data to show that Qfly were not present or active in the orchards monitored.

Participating cherry growers in Victoria and New South Wales are trialling a systems approach protocol for Queensland fruit fly. For the cherry industry, six seasons of data collection has built a strong evidence base that could yield improved domestic market access in the years ahead – and may also enhance export pathways.

Systems approaches enable the use of multiple measures to cumulatively reduce the risk of pest or pathogen movement through the trade of commodities to a required level of phytosanitary protection. The measures can be applied across the production, harvest and post-harvest process and at least two of the measures must act independently. In some cases, one of the measures can be a partial-kill treatment or end point treatment.

Koala Cherries is one of the participants in the cherry trial. “A systems approach based protocol gives growers an opportunity to use their professional farm practices and integrated pest management systems to their advantage,” said CEO, **Michael Rouget**.

“Systems approaches need to be part of industry’s long term market access tool kit alongside other strategies like areas of low pest prevalence and end point treatments.

“This project gives industry the opportunity to scientifically test the outcome of the various factors and management practices in play within commercial orchards and supply chains,” Mr Rouget said.

While systems approach protocols are currently used for both domestic and international trade for horticulture, they can be difficult to reach agreement on in market access negotiations.

Lead CSIRO researcher, Dr **Rieks van Klinken** said this was partly because the methods for demonstrating their efficacy have been less well developed when compared with end point treatments such as fumigation or irradiation.

“Our research aims to address this gap by building better tools to quantify the outcomes of combined measures. The analysis and modelling tools developed through the project have identified the best mix of measures to include in a systems approach protocol to manage Qfly in cherries.

“The proposed protocol would apply only to cooler production districts of NSW and Victoria where there is limited overlap between the life cycles of Qfly and the ripening and harvest periods when the fruit would be vulnerable to infestation.

“It includes block-based pest monitoring throughout the growing season, corrective action (or rejection) if triggered by monitoring results, and inspection of the crop and graded fruit by an authorised officer,” Dr van Klinken said.

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“The block-based monitoring requirement – which includes trapping and crop inspection – is an essential part of the protocol. This provides clear data to show that pests are not present or active in the orchards. If even a single larva is found in the orchard, the property is excluded from trade under the protocol for the remainder of the season. This provides greater confidence to trading partners.”

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Extensive data has been gathered about pest pressure in the cherry orchards from traps and crop scouting, and about infestation rates from pack house inspections and fruit rear-outs. The analysis shows that Qfly are absent or very rare on cherry orchards in cool temperate areas, at least through to end of harvest, and that the inspection steps are effective for detecting infested fruits.

A data package has now been prepared to bring together all of the analysis from the cherry case study. It provides comprehensive evidence of the efficacy of the measures proposed within the protocol and that – in combination – the measures reduce the risk of fruit fly infestation to very low levels.

This is confirmed by six seasons of commercial production under the trial protocol: over 17,000 tonnes of cherries were produced with no infested fruit detected in final consignments.

The scientific methods and models developed through the project can now be applied to any horticulture crops and pests. These tools can assist industry to design and validate the most efficient mix of risk management strategies for areas with different pest pressures – to improve market access pathways while protecting our biosecurity.

***\*Jane Muller is an engagement consultant, agricultural exports at CSIRO and leads the industry engagement and implementation planning process for the systems approaches research, liaising closely with biosecurity regulators, industry organisations and growers. For more information, visit <https://research.csiro.au/psa/> or contact Jane Muller at [Jane.Muller@csiro.au](mailto:Jane.Muller@csiro.au)***



Cherries in blossom. Photo – Andrea Magiafoglou.