# The implications of the restriction on the use of Fenthion on Australia's horticultural industry

Submission from
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**Summary**

- There have been many years warning of the loss of access to Fenthion
- The continued use of Fenthion on fruit is not sustainable
- There are viable alternatives to Fenthion for Medfly control
- Attempts to maintain Fenthion are counterproductive
- There is much scope to improve control with more research

As a grower of fruit in the Perth Hills I have known that my access to Fenthion was not assured since the mid 1990s. As a Chair of the Hills Zone of the Western Australian Fruit Growers Association, and later as the Chair of the Summerfruit Council of the same organisation I frequently presented the problem of Fruit fly control without Fenthion to fellow growers, Agriculture Department of Western Australia and Agriculture Ministers.

By 2008 I began importing Fruit Fly traps from Argentina to try mass trapping as an alternative, these were made available to growers at a local supply store. In my peach orchard they did not provide sufficient control by themselves, but backyard growers found them very effective. The APVMA drew my attention to the lack of registration for the trap and attractant and I stopped importing the traps in 2011, there is still no registered trap for monitoring or control of Medfly available for general sale.

In 2010 Garrie Vincenti, a fellow grower, and I went to Israel to meet with Dr Nimrod Israeli and investigate his Biofeed system of controlling fruit flies. This trip was done without us requiring outside support and was reported to all growers in the FruitWest magazine Dec 2010. The Biofeed system has not been imported into Australia but the possibility is still there.

By 2011/2012 the Department of Agriculture began monitoring Medfly numbers on my orchard on Bracken rd. In this season I stopped using Fenthion on this property relying on alternative cover sprays including malathion, spinetoram, mineral oil and abamectin. Control was not perfect but better than the previous year where I had mistimed the Fenthion cover sprays.

In the 2012/2013 season I began a baiting program and stopped using any organophosphate cover sprays on both of my orchards. The Medfly pressure in this season was very high, many orchards using Fenthion lost much fruit and my losses peaked at around 20% for the worst pick, 5% over this variety. Despite the pest pressure, an increase in control measures on my orchard ensured that losses decreased to a few fruit per block after this peak. I reported this season in the Summerfruit Australia magazine and the FruitWest magazine, this led to some correspondence

from the APVMA regarding some of the use patterns reported. Since then, more minor use permits for Medfly, and a change to State laws has increased my compliance with the regulations.

The 2013/2014 season has been far quieter on the Medfly front, with a few fruit being found with fly, but no increase in numbers over time. There would appear to be fewer fruit infected where my neighbours are also baiting, there is at most 100M between fruit on my trees, and my neighbours trees, so we share our Medfly problem.

I am a paid up member of the Hills Orchard Improvement Group, HOIG, and attend most meetings. On June 23, 2011 I organised a HOIG dinner meeting on chemical fruit fly control with speakers from Bayer and Cropcare, at this meeting I presented on the No Observable Effect Level {NOEL} method of assessing toxicology.
HOIG established the Fruit Fly Action Group, {FFAG} as a sub-committee to lobby for the interests of affected growers in the Perth Hills in 2012. After the setting up of the FFAG it morphed into a pan-Australian political force with the implied aim of maintaining the use of Fenthion by any means possible. Any alternatives to Fenthion are seen as a threat to the maintenance of the use of Fenthion. Any grower, scientist or industry body that may express a view, or point out a fact that may weaken the image of solidarity and crisis, about the use of Fenthion is to be silenced. This has resulted in withdraw of services from the Hills of Perth as Government and Industry find calmer waters. The perception among growers that Fenthion use will be maintained and that alternatives will weaken the case has led to two seasons of at best secretive preparations for a post Fenthion world, if Fenthion was removed now a large number of Hills growers would have to start from a position of no experience and reduced support.

The Office of Chemical Safety operates from the department of Health and Ageing, it establishes the limits of human exposure to various chemicals, and issues standards of exposure according to the best science available. For Fenthion an Acute Reference Dose {ARfD} of 0.07 mg/kg was established using unexceptional reasoning. The ARfD in the USA is 1/10 of the Australian at 0.007 mg/kg because of their exclusion of some human trials. There is no ARfD for Fenthion set in the European Union and so food in the EU may not have any Fenthion residue.
The APVMA uses the limits of exposure provided by the Office of Chemical Safety to measure the possible exposure of consumers to residues of Agrichemicals when used at the maximum rates and minimum intervals as detailed on the label. The residue data is not generated by the APVMA and must be supplied by others, but meet strict standards for quality to be considered. The measured Fenthion residues when assessed against an ARfD of 0.07 mg/kg exceed the safe limits by a wide margin at withholding periods of less than two weeks, even with a single spray of Fenthion. This is all unexceptional, consistent and in keeping with Internationally accepted protocols.

The FFAG variously make issues with every step of the above process and implicitly request that the Australian Parliament pass legislation to compel the Director of the APVMA to apply a lesser standard for Fenthion and a lower standard of assessment than in other jurisdictions. I could not justify using Fenthion on my produce if this was to happen.

Alternatives to Fenthion

- Baiting 100+ years of science and experience says that baiting for Medfly works to greatly reduce numbers. FFAG publishes material saying baiting increases numbers of Medfly in orchards.
- Neonicitinoids, trials and field experience show that some of this class of chemicals have good activity against most stages of Medfly life cycle. FFAG takes concern about honeybee Colony Collapse Disorder out of the context of use on Medfly, to discredit the chemical.
- Spinetoram {Delegate} May not be the fastest knockdown of Medfly but it can work, use pattern needs adjusting.
- Trichlorfon {Lepidex} an organophosphate of long standing, wide use and proven safety. Good knockdown, low residual effect and short withholding period. FFAG claims major public health issues from a few isolated references.
- Sterile Male Release. Proven world over, Western Australia has a small factory, with no ongoing funding. Requires population suppression by baiting.
- Area Wide Management. Used in many other countries. Western Australia lacks the minimum commitment from growers, the general public, or Government to make this work

Research needed

- Surface modification to make crop less attractive
    - Mineral oils, at 0.5% fruit is less attractive for egg laying QFly
    - Essential plant oils, shown to deter egg laying by Medfly
    - Kaolin deters egg laying in citrus, apples
- Alternative cover sprays
    - Synthetic pyrethroids, kills everthing
    - Beuvaria species fungi, kills and deters medfly
- Baiting
    - Best practice research, what does baiting mean?
    - Optimising composition of attractants
    - Gums as modifiers and extenders
    - Glycerine or propylene glycol as humectants
- Genetic
    - Dominant lethal {RIDL] from Oxitech
    - Other genetic defects.
- Monitoring
    - Establish trap counts as basis for other control measures
    - Remote real time traps, reporting when and where at the time of capture.

In conclusion my orchards and not a few of the others in the district are prepared to grow fruit without using Fenthion. Most of us are prepared for the blame that will come from our neighbours, because we know that the fate of this old chemical is not our fault.