



24<sup>th</sup> January 2014

Committee Secretary  
Senate Rural and Regional Affairs and Transport References Committee  
PO Box 6100  
Parliament House  
Canberra ACT 2600  
Australia

Dear Sir/Madam,

**RE: Inquiry into the Implications of the use of Fenthion on Australia's horticultural industry**

The control of fruit flies in stonefruit is essential to the long-term viability of the Australian stonefruit industry. Summerfruit Australia, the peak industry body representing Australian fresh stonefruit growers, is acutely aware of the importance of having reliable and affordable fruit fly control options available to Australian growers. Fruit flies are the major economic pest of the Australian peach, nectarine, plum and apricot industries, and without satisfactory control of this pest the Australian stonefruit industry will be decimated.

Effective control measures for fruit flies are required for the following reasons:

1. To allow growers to produce a viable crop without excessive losses due to fruit fly infestation.
2. To allow growers to produce a crop that is consistently of marketable quality.
  - a. Australia's two largest supermarket chains, Coles and Woolworths, have product specifications for stonefruit that stipulate freedom from live insects.
  - b. All existing and emerging export destinations require freedom from fruit flies for fruit to be accepted.
  - c. Although options such as fumigation and irradiation may be available in some instances, facilities do not exist that could possibly hope to cope with the volumes required to be treated if in-field control is not at a satisfactory level.
3. To give growers the ability to maintain the pest-free area status currently in place in areas such as the Sunraysia PFA and South Australia, and help to protect the millions of dollars of investment made as a result of these PFAs.

Summerfruit Australia, in partnership with Horticulture Australia Limited, and various governmental and non-governmental research organisations, has invested hundreds of thousands of dollars into fruit fly research since it became apparent that there was a possibility that the use of Dimethoate and Fenthion to control fruit flies in stonefruit could be restricted, or lost altogether. The most recent research projects are appendixes to this document.



As a result of this research work, some new control options have been identified, but in such a short space of time their effectiveness in commercial situations across the many different growing regions and conditions in Australia has not yet been properly assessed.

With the current maximum residue level (MRL) in place for Fenthion in Australian stonefruit, the Australian Pest and Veterinary Medicines Authority (APVMA) has indicated (29/10/13) that there is no risk to human health. Anecdotally, this statement would be supported by the fact that there are no recorded instances linking human health issues as a result of exposure to Fenthion as a result of the consumption of peaches, nectarines, plums or apricots grown in Australia.

There has been 5 different rulings on Fenthion by the APVMA in just 16 months is causing immense tension and operational uncertainty in the industry. The industry needs stability and certainty whilst new programs and products are being assessed or further angst may lead to a situation where producers start walking away from an industry with no certainty in the short-medium term. Fenthion has been widely used in Australia by commercial orchards and, until recently, home gardeners, for almost 50 years.

To put the magnitude of developing new control options for fruit flies in Australia into context, the National Fruit Fly Strategy (NFFS) is an initiative aimed at significantly reducing the impact of fruit fly in Australia through better management. Sustainable management of fruit fly is of central concern to Australia's \$6.9 billion horticultural industries, which capitalise on both domestic and international trade. In 2002–2006, the total average export value for Australia's top 25 commodities that are host to fruit fly was \$432 million. (no recent extrapolation update). The value of interstate trade of all host commodities subject to fruit fly quarantine requirements is estimated at more than \$1 billion annually.

The NFFS builds on substantial investments in fruit fly management made over many years by government and industry. A stock take undertaken by the Office of the Chief Plant Protection Officer (OCPPO) estimates expenditure on fruit fly-related activities and projects as being more than \$128 million over the five years from 2003 to 2008. Nevertheless, fruit fly funding has decreased steadily over recent years. Since 2008, \$30.6 million has been expended on the National Fruit Fly Strategy and Horticulture Australia Limited projects, yet other than Fenthion, we still do not have a reliable in-field control option for fruit fly in stonefruit. The economic cost of fruit flies to Australia is estimated at \$125 million per annum (Vickers 1994). Without an effective control option to underpin this National Fruit Fly Strategy, it could be likened to undermining the foundation of a building and then expecting major cracks and structural damage not to appear.

The South Australian Government with the support of HAL and some commercial partners has recently announced the development of a Sterile Insect Technology (SIT) facility in South Australia. Unfortunately this facility will take large amounts of capital investment and many years to reach full operation and by that time QFF will more than likely be endemic across the whole of Australia.

Producers have also offered up sections of their own crops for trials to be conducted on other possible products that may be beneficial into the future.



It is against this background of extensive and ongoing research into finding alternative viable fruit fly control options, the limited and largely commercially-untested new control options, the existing permit and MRL protocol instituted by the APVMA, and public statements from the APVMA that there is no risk to human health in eating produce treated with Fenthion in accordance with current protocols, that Summerfruit Australia Limited asks the Rural and Regional Affairs and Transport Committee Inquiry to look favourably upon the retention of Fenthion as a control option for fruit flies in Australia in the interim period until suitable alternative control measures become available.

Yours Truly

Andrew Finlay

**Chair, Summerfruit Australia Limited**

## **HAL FRUIT FLY R&D INVESTMENT SUMMARY – November 2013**

### **Horticulture Australia Ltd**

Horticulture Australia Limited (HAL) is a not-for-profit, industry-owned company. It works in partnership with Australia's horticulture industries to invest in research, development and marketing programs that provide benefit to industry and the wider community. HAL invests around \$100 million annually in programs designed to align with the strategic investment priorities of Australia's horticulture industries and the Australian Government's Rural Research and Development priorities. HAL receives recommendations on investment from Industry Advisory Committees (IACs), which provide industry specific experience and expertise. IACs are committees of HAL that provide advice to the HAL Board. The Peak Industry Body (PIB) of each industry recommends IAC membership to HAL. The PIB is responsible for ensuring the persons they recommend meet the skills required on an IAC. As part of the Australian Government's commitment to rural research and development, horticulture industries can access matching Commonwealth funding through HAL for research and development activities.

### **Background**

Fruit fly is a constant enemy, it costs Australian horticultural producers more than \$150 million a year in eradication procedures, destroyed fruit, field control and quarantine treatments to access interstate and overseas markets. Fruit fly is Australia's worst fruit pest and eradication is usually by lure trapping, insecticide baiting or by the release of numerous sterile male fruit flies. There are about eighty species of fruit fly in Australia. Two of the most economically damaging are the native Queensland fruit fly in eastern Australia, and the introduced Mediterranean fruit fly, they surpass the other species in numbers of known hosts and destructive potential.

### **HAL Fruit Fly R&D Funding**

To date HAL (and its predecessor HRDC) have funded 149 fruit fly related projects valued at \$30.061 million (matched dollar value). The project funding has targeted both In-field control methods and End point treatments. In-field control research represented 56.19 percent of the total investment with the remaining 43.81 percent representing End point treatments.

### **In-Field Control Fruit Fly R&D Projects**

To date HAL has funded 73 In-Field Control R&D projects with a matched dollar value of \$16.893 million. A summary follows over the page:

**Table 1 – In-field control projects**

Funding Area	No of Projects	Value of Projects
IPM	4	1,317,950
Attract & Kill	4	1,743,548
Area Freedom	10	2,807,580
Trapping	6	1,644,006
Chemicals	4	864,059
Host Status	5	82,523
SIT	9	2,663,675
Genetics	1	14,156
Systems	12	3,872,812
Other	18	1,883,564
<b>Total</b>	<b>73</b>	<b>\$16,893,873</b>

### End Point Treatment Fruit Fly R&D Projects

To date Horticulture Australia Ltd (HAL) has funded 76 End Point treatment R&D projects with a matched dollar value of \$13.167 million. A summary follows:

**Table 2 – End point treatment projects**

Funding Area	No of Projects	Value of Projects
Heat/Hot Water	12	1,490,238
Cold Disinfestation	25	6,336,097
Fumigants	20	2,605,881
Modified Atmosphere	3	179,846
Irradiation	8	909,324
Combination Treatments	1	180,000
Chemicals	1	56,341
Other	6	1,410,112
	<b>76</b>	<b>\$13,167,839</b>

Source: Horticulture Australia Limited



Horticulture Australia



**Horticulture Australia Limited**

**HAL Project Number: SF11004 (10 March 2013)**

**FINAL REPORT**

# **Industry workshops to identify alternate fruit fly control methods**

**Authors: Bruce Tomkins, John Moore**

**Research provider: Summerfruit Australia Limited**

**HAL Project Number: SF11004**

**Project Title:** Industry workshops to identify alternate fruit fly control methods

**Project Leader:** Bruce Tomkins, Department of Primary Industries, Victoria  
Knoxfield Centre

Other key personnel who contributed to the outcomes of this project included John Moore CEO SAL (Secretary), Sonja Winkler DPI Vic (Minute secretary), Jodie Pedrana HAL Portfolio Manager - IPM & Chemicals, Mark Wilkinson Chairman SAL, Andrew Jessup NSW DPI, Jenny Ekman NSW DPI, Kevin Bodnaruk AKC Consulting, Olivia Reynolds NSW DPI, Assoc. Prof. Anthony Clarke Queensland University of Technology, Jane Moran Program Manager CRC Biosecurity, Andrew Finlay SAL Board, Robyn Shipp APVMA, Brendan Missenden Qld DPI, Peter Dal Santo AgAware, Les Mitchell Agrisearch, Kim James HAL Biosecurity and Market Access R&D Manager, Malcolm Taylor Fruit Grower, Peter Leach Qld DPI, Ray Hick SAL Board, Fred Baronio SAL Board, John Golding NSW DPI, Sonja Winkler DPI Vic, David Minnis Minnis Horticultural Services & Chairman AHEA, Alastair Scott Hannay Douglas, Philip Wilk NSW DPI.

**Purpose of Report:** This final report describes the outcomes of a one year project that facilitated three industry workshops to identify the research capability relevant to fruit fly control in stonefruit, research recently completed and underway and important gaps in our knowledge and research effort. From these meetings a number of research projects were identified and contracted by HAL to develop alternate fruit fly control methods for stonefruit.

**Funding Sources:**

This project has been funded by HAL using the Summerfruit levy and matched funds from the Australian Government.

**Date:** 10<sup>th</sup> March 2013

*Any recommendations contained in this publication do not necessarily represent current HAL policy.*

*No person should act on the basis of the contents of this publication, whether as to matters of fact or opinion or other content, without first obtaining specific, independent professional advice in respect of the matters set out in this publication.*



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## Abbreviations

APVMA	Australian Pesticides and Veterinary Medicines Authority
R&D	Research & development
DPI Vic	Department of Primary Industries, Victoria
HAL	Horticulture Australia Limited
SAL	Summerfruit Australia Limited
IAC	Industry Advisory Committee
Qfly, QFF	Queensland fruit fly ( <i>Bactrocera tryoni</i> )
Medfly, MF	Mediterranean fruit fly ( <i>Ceratitus capitata</i> )
DAFF	Department of Agriculture Fisheries and Forestry
QUT	Queensland University of Technology
NSW DPI	New South Wales Department of Primary Industries

## Media summary

The Australian Pesticides and Veterinary Medicines Authority (APVMA) have recently banned or restricted the use of the chemicals dimethoate and Fenthion for the control of fruit fly in summerfruit. At present there are no replacement chemicals or systems approaches available that provide the same, demonstrated level of control. Without dimethoate and Fenthion many growers have had high levels of fruit fly infections this season which has reduced productivity and the ability to export fruit interstate and overseas. Some low chill growers have decided to stop growing stonefruit and are removing their trees. Without effective fruit fly control, stonefruit producers are vulnerable.

This project was developed to enable the Australian summerfruit industry to undertake a number of planning workshops to identify alternate control methods for fruit fly.

Three industry workshops were held in Melbourne and Brisbane. A wide cross section of interests were represented at each meeting including industry leaders, research providers, research funders/managers, regulators and private consultants.

Presentations of existing and recently completed fruit fly research were given by researchers to identify where existing capability lies and where there are substantial gaps in knowledge that can be addressed by further research.

The meetings identified research priorities to address short and longer term issues in developing fruit fly control strategies in the absence of dimethoate and most likely Fenthion.

The outcomes of the workshops have resulted in a number of new fruit fly projects being funded by HAL using the Summerfruit industry levy and matched funds from the Australian Government. The projects address short term pragmatic objectives such as determining chemical residues on fruit, screening new chemicals and developing a market access protocol for airfreight of fruit as well as longer term strategic approaches to develop new fruit fly control tools such as the development of an effective female lure and kill device.

## **Technical summary**

The withdrawal of dimethoate and restrictions on the use of Fenthion for the control of fruit fly in stonefruit has left the industry vulnerable unless alternative control measures can be found. This project was funded by HAL using the Summerfruit industry levy and matched funds from the Australian Government to identify and facilitate funding of research projects to develop alternate control measures for fruit fly in stonefruit.

Three industry workshops were held in Melbourne and Brisbane. A wide cross section of interests were represented at each meeting including industry leaders, research providers, research funders/managers, regulators and private consultants.

Presentations of existing and recently completed fruit fly research were given by researchers to identify where existing capability lies and where there are substantial gaps in knowledge that can be addressed by further research.

Research priorities were identified and scoped at these meetings and research providers were asked to develop full research proposals. Around nine new summerfruit and multiple industry projects have been funded. Research projects on dimethoate (SF11007) and Trichlorfon residues (SF12011) residues have already been completed. A major project to screen alternative chemicals and test the best options to control fruit flies in the field (SF12012) has been developed by NSW DPI in consultation with the SF11004 project team. Another project taking a more strategic view to developing an understanding of fruit fly behaviour and ecology and to develop a female lure and kill device (SF12013) has been developed Queensland University of Technology.

Commissioning of these projects achieved the objectives of this project. The anticipated outcome is that these projects will provide systems for fruit fly control in stonefruit in the field and after harvest without access to dimethoate and fenthion. This will enable the industry to remain viable and competitive in local and export markets.

## **Introduction**

This project enabled the Australian summerfruit industry to undertake a number of planning workshops to identify alternate control methods for fruit fly now that dimethoate use is limited and Fenthion is restricted and under review.

Industry had a high reliance on dimethoate and Fenthion for the control of fruit fly. Without the appropriate fruit fly management and controls available to growers the incidence of fruit fly damage will increase resulting in reduced productivity and the loss of markets.

In this project, Summerfruit Australia Limited, on behalf of its growers, has facilitated the development of research projects that will develop alternative strategies for the management of fruit fly.

Three industry workshops were facilitated to scope and identify a number of projects to research new fruit fly management strategies for stonefruit. Workshop participants included growers, exporters, consultants, research providers, members of the SAL Board and IAC and HAL (See Appendix 4). At each meeting presentations by researchers described recent and existing fruit fly control work and identified opportunities for new research to expedite development of new control methods. Firstly, options were identified to address short-term fruit fly control and market access needs by testing existing chemicals and systems that are available. These include low dose MeBr for postharvest disinfestations, measuring trichlorfon residues in fruit and screening all compounds with potential for their efficacy in controlling fruit fly. Additional medium to long-term solutions were also proposed which included improving the efficacy of the male annihilation technique (MAT) and developing a new control technique; an effective female lure and kill device.

The projects commissioned represent a balanced portfolio of work developed using the best knowledge and capability available at the time. It is expected that outputs from the research will provide new knowledge to assist in developing new systems to control fruit fly in stonefruit.

## **Materials and Methods**

Three workshops were held to develop a suite of research projects on alternate control measures for fruit fly in stonefruit. Attendees represented a broad cross section of industry, research providers, consultants, regulators and research funders.

### **Workshop 1**

Research scientists presented work that was underway and recently completed work on the control of fruit fly. At the same time, areas where knowledge was required were recorded and prioritised into 5 broad research options to be circulated and specific projects developed for discussion at workshop 2.

### **Workshop 2**

There were more presentations from research providers and ideas for specific projects developed. Researchers at NSW Dpi, Dr Andrew Jessup and Dr Olivia Reynolds were asked to prepare and cost a proposal to look at the efficacy of up to 17 insecticides against QFF in the laboratory, then test the 5 best in cage trials in the field. Professor Tony Clarke from QUT was asked to prepare a proposal to look at a systems approach to QFF control in two parts. The first part was to make an evaluation of existing QFF traps and make recommendations on their application and relative efficacy. The second part is a longer term approach to develop a new control measure for QFF, a female lure and kill trap. Both research agencies were asked to prepare proposals for circulation and discussion at the third workshop in Melbourne.

### **Workshop 3**

Brendan Missenden QDPI gave an update on his project SF12002 "Evaluation of a multi stage in-field control program and post-harvest inspection for Qld fruit fly for stonefruit". Jenny Ekman (NSW DPI) gave a presentation on recent research which tested the efficacy of kaolin and oil sprays in controlling fruit flies in apples and stonefruit. Kevin Bodnaruk gave an update on APVMA review of chemicals suitable for fruit fly control. Project proposals from Dr Reynolds and Prof Clarke were discussed and full proposals requested.

## Results

After the research presentations and comment on the regulatory situation with respect to chemicals with the potential to control fruit flies in workshop 1, there were a number of broad research options scoped for further discussion. These were:

### *1. Combination of applications of Fenthion together with Maldison and Trichlorfon*

Fenthion application will need to be greater than 28 days from harvest in peaches as APVMA have accepted that later applications will exceed MRL. Application of Fenthion possible at 21 days for nectarines

Residue testing required for Fenthion and Trichlorfon.

Efficacy data can be used to alter the ICA.

Crops – to meet requirements for change of use pattern. Testing will need to be done for each crop across at least 6 sites.

### *Option 2. Lower rates of Fenthion as a foliar treatment.*

Same ICA protocol but lower rates

Residue and efficacy data required

Fenthion is used at a lower label rate in South Africa

### *Option 3. Lower rates of Dimethoate as a postharvest treatment.*

This was seen as high priority and has already been contracted by HAL. See SF11007 progress update by Les Mitchell - Given in agenda item 4.

### *Option 4. Spinetoram preharvest cover sprays*

“Environmentally sound” option

Will be useful in developing a systems approach as well

Need to identify and test other products to be used in a systems approach

At this stage no suitable systemic alternatives available. Existing tools available for systems approach will not achieve zero tolerance needed

### *Option 5. Systems approach.*

To ensure 100% control new tools are needed (e.g. an effective female lure and kill trap)

Need to workshop this option at Brisbane meeting

Good opportunity to develop across industry research projects

There were more presentations from researchers and updates on the regulatory situation in workshop 2. The broad options for funding developed in workshop1 were discussed and a number of projects proposed. The workshop recommended that there should be a mix of short term pragmatic approaches as well as longer term strategic approaches to developing fruit fly controls. Two major projects recommended for further development were one to take a shorter term, approach and test up to 17 chemicals identified with the potential to control of fruit fly in the laboratory. The best 5 options would then be tested in field trials to identify whether there are chemical options available by next season. The second project recommended for development is a longer term approach to look at developing an effective systems approach to controlling fruit fly in stonefruit. Based on the demonstration of research capability presented at the two workshops, NSW DPI and QUT respectively were asked to develop and cost full proposals.

In workshop 3 the proposals from NSW DPI and QUT were reviewed and recommended for funding. A number of other projects were also recommended for funding over the course of the 3 workshops.

The full list of projects recommended for funding through this industry workshop process were: