



Australian

STONEFRUIT

GROWER

incorporating the Low Chill Stonefruit Grower

FEBRUARY 2014

...Issue No. 1/14

'Australian Stonefruit Grower' is the official publication of Summerfruit Australia Ltd & Low Chill Australia Inc. – the industry bodies representing the interests of Australian stone fruit growers.



Know-how for Horticulture™

“This project (LCA Communications including this publication) has been funded by HAL using levy contributions with matching funds from the Australian Government.”

IN THIS ISSUE –

Summerfruit Information –

Contacts -	Page 2
2013 Conference Presentations available -	Page 2
2013-2014 Board -	Page 3
From the Summerfruit Chairman -	Page 4
Summerfruit CEO Round Up -	Page 9
Industry Notice - Summerfruit Call for Directors -	Page 29

Low Chill Australia Information –

Contacts -	Page 2
2013-2014 Committee -	Page 7
From the LCA President -	Page 8

Export / Imports Update –

Export Market Intelligence -	Page 5
------------------------------	--------

Product Information –

Birdwood Nursery -	Page 6
Bluezone® World first for Bluezone® Technology -	Page 21
New aphid control expands Crop Care insecticide range -	Page 22

Industry News – Grower Feature –

From Innovation to graceful Real Estate - Retirement -	Page 10
--	---------

Industry Information –

Outlook 2014 Conference -	Page 12
IHC 2014 Congress -	Page 19
Digital Rural Futures Conference -	Page 28
ATO app for small business on the move -	Page 30

Research –

Natural enemies of fruit fly -	Page 14
Sterile Insect Technique -	Page 16
Evaluation Project reaches Commercialisation Phase -	Page 18
Sterile Insect Technique as part of an Area Wide Integrated Pest Management campaign for Queensland Fruit Fly -	Page 20
Crop Hygiene for Fruit Fly Control -	Page 23
Bureaucrats in Rome and Australian Fruit Flies: why should we care? – Part I -	Page 24
Part II -	Page 26

Publication Details –

Rates & Deadlines -	Page 30
---------------------	---------

Cover Photo –

Supplied by Summerfruit Australia Ltd.

CONTACTS –



Summerfruit Australia Ltd - ACN 105 962 196

John Moore – CEO

8/452 Swift Street, Albury NSW 2640

Ph: 02 6041 6641, Mobile: 0419 305 901,

Fax: 02 6021 0011

Email: ceo@summerfruit.com.au

Website: www.summerfruit.com.au

CONTACTS –

Low Chill Australia Inc

ABN 283 812 712 44



Office Address:

PO Box 25, BANGALOW NSW 2479

Phone: (02) 6687 2376

Mobile: 0413 007 197

Email: president@lowchillaustralia.com.au

Website: www.lowchillaustralia.com.au

Communications Manager:

Col Scotney

PO Box 372, BURRUM HEADS QLD 4659

Phone: (07) 4129 5960; Mobile: 0407 589 445

Email: cm@lowchillaustralia.com.au

Email: australian.stonefruit.grower@aapt.net.au



The link to all the 2013 Combined Fruit Industry conference presentations –

<http://apal.org.au/events/biennial-conference-innovate-or-real-estate/conference-presentations/>



Know-how for Horticulture™





2013-2014 Board

Andrew Finlay (Chair)

Pikes Creek Homestead, MS 312
Stanthorpe, QLD
Phone: 07 4685 6171
Fax: 07 4685 6171
pikescreek@bigpond.com

Adrian Conti (Deputy Chair)

482 Campbell Road
Cobram VIC 3644
Fax: 03 5872 2915
Mobile: 0418 302 873
adrianconti@summerfruit.com.au

Mark Napper

PO Box 25 Bangalow
NSW 2479
Phone: 02 6687 2376
Fax: 02 6687 2374
fruitsofbyron@gmail.com

Mike Oakley

133-137 Brown Mountain Road
Campania TAS 7026
Phone: 03 6260 4463
Fax: 03 6260 4455
Mobile: 0438 271 848
mikeoakley@summerfruit.com.au

Jason Size

PO Box 696 Berri
South Australia 5343
Fax: 08 8582 5147
Mobile: 0417 811 977
jasonsize@bigpond.com

Gaye Tripodi

Murrawee Farms
Prince Road
Swan Hill VIC 3585
Mobile: 0438 332 286

Brett DelSimone

Spring Hill Orchards 195 Urch Rd
Rolystone WA 6111
Fax: 08 9496 2252
Mobile: 0413 343 227
springhillorchard@gmail.com



To find out more about Summerfruit Australia Ltd, check out the website: www.summerfruit.com.au





From the Summerfruit Chairman -

As the 2013 /14 harvest heads towards its conclusion we are reminded how two consecutive seasons rarely ever follow the same pattern. At this time in 2013 the summerfruit industry had coldrooms full of fruit and prices that would make even the most sympathetic bank manager grimace.

In contrast, this year we have demand and supply fairly evenly matched and at times, due to the vagrancies of the season and some extreme weather events, when some categories have been in extremely short supply. With estimates of the national crop being down on 2012/13 by as much as 15 – 20%, the end result has seen stronger prices sustained through the latter half of the season and giving those growers who have had reasonable crops the prospect of a better return this year.

In the months since the last industry newsletter in November, SAL's directors have been doing in their orchards the same sort of activities that happen right across the country at harvest time however, in that time, SAL has still continued to work on the issues that are of importance to our industry.

At the forefront of these issues are market access and still one of our greatest challenges, getting to a point where fruit flies can be controlled without the use of the cover spray, fenthion.

China is the focus of our energy in securing direct market access for nectarines and, to this end, SAL is working closely with exporters and the Federal Department of Agriculture to secure a protocol for the export of Australian nectarines directly into China – a protocol that allows for significant quantities of fruit to be sent from the key growing areas each season. At times we have felt that this goal has been almost close enough to reach out and touch only for something else to be identified that then has to be worked through. It is however the view of all involved in this process that the most important thing is to ensure that we have a workable protocol and not one that makes it impossible, except for a select few, to export to this important destination. As much as we would like to have a protocol in place now, reality is such that negotiations of this nature can end up being protracted.

SAL has made a submission to the Senate Rural and Regional Affairs and Transport References Committee Fenthion Inquiry on behalf of our members. That submission highlights the importance of having an effective control program for the fruit flies that affect the Australian Summerfruit industry, the research on fruit fly control that we have invested in to date and, if fenthion was to be removed as a control option today, what the ramifications for our industry would be.

There are still numerous ongoing research projects being funded out of grower levy payments which are addressing control of fruit flies and this continues to be a priority for us.

The Strategic Investment Plan that has guided SAL for the past five years in the funding of research projects made possible through the collection of grower levy payments is currently being reviewed. The ensuing few months will see a considerable amount of time refining that plan to ensure that document is relevant to the Australian Summerfruit industry until at least the end of this decade.

Finally, **I would like to thank those growers who have paid a \$100 voluntary subscription to SAL.** Under federal government legislation, the monies collected through the grower levy payments on fruit sales can only be used to fund R &D and marketing activities, so the voluntary subscription to SAL allows us to undertake important work that occurs outside of the R &D and marketing fields.

Kind regards

Andrew Finlay – Chairman



EXPORT ... IMPORTS ... UPDATE

Project MT12009 – Export Market Intelligence

The first export update for the 2013/14 season. The key highlights are –

- Summerfruit season has started with lower volumes though much higher returns per kilogram with Hong Kong being the major market influencing trade.
- **Key results – 2013/14 season to date** (24% of 2013/14 season)

• Volume	2,725 MT	-3.9%
• Value	A\$10.82m	+28 %
• \$ per kg	\$3.97	+33% (+.98c)
- **Hong Kong** is tracking almost the same volume as last year while **Taiwan** has not recorded any trade so far this season.
- **Nectarine and peaches** dipped 4% so far over last year though values are much higher.
- **Plum** exports have had a strong start in December though account for 5 per cent of the season so far
- **Apricot** gained 5% during the season with Middle East growth offset by declines in Hong Kong.
- State data shows that **Victoria** accounts for 68% of Summerfruit exports is tracking 19 per cent lower while **New South Wales** with 22 per cent of the exports is tracking 30 per cent higher.
- Western Australia and Queensland have recorded some stronger starts to the season off small bases – caution some Queensland exports may be supplied from interstate fruit.
- Of the last 5 years Summerfruit exports overall have increased on average 3 per cent per year based on compound average annual growth analysis with 2013 the strongest year since 2005.
- Australian Summerfruit exports were valued at **A\$35.22 million** for the 12 months to Dec 2013.

Summary of import trade including the 2,671 tonnes of peaches and nectarines imported from United States for the first time.

Summerfruit imported 884MT of apricots from New Zealand in Jan-Dec period, which was 6% less than the previous year.

The first imports of United States peaches and nectarines arrived in August-September 2013 and recorded 2,671 tonnes from California.

Variety	JAN –DEC’12	JAN-DEC’13
Apricots	937,270	884,350 -6%
Peach & Nectarine	4,880	2,671,626
Total	942,150	3,555,976

Source: ABS data, Fresh Intelligence analysis

This data is funded from project MT12099

Summary by Fresh Intelligence Analysis – Wayne Prowse

Ph: 02 9440 2138 M: 0408 164 966

Email: wayne.prowse@bigpond.com



National Winner 2012-13 Australia's Best Large Production Nursery

Taking
Orders
NOW



- Fruiting varieties available from the major breeding programmes.
- All trees now supplied standard on superior 'Nemasun' low-chill rootstock.
- 'Nemasun' selected 1985 and fully tested since 1995.
- We no longer offer 'Okinawa' rootstock due to poor tree performance under certain conditions.
- Will consider making 'Okinawa' rootstock if seed is sourced by customer.
- Contact us for a 'Nemasun' Fact Sheet or to place your orders.



Fully accredited world's best practice growing facilities.

BIRDWOOD NURSERY
Phone **07 5442 1611**

E. info@birdwoodnursery.com.au Est.1978

www.birdwoodnursery.com.au

Product Information ...

Brief history of Nemasun Rootstocks

The idea to start Birdwood Nursery came about in 1976 when Peter Young was an extension officer in the Queensland Dept of Primary Industries based in Nambour. Many fruit growers planting avocados, custard apples and citrus at the time were having troubles establishing orchard trees due to soil borne diseases. The QDPI identified a shortage of clean nursery trees as a major contributing factor. In 1978, Birdwood Nursery was the first purpose built accredited fruit tree nursery in Australia to supply nursery stock tested soil pathogen free.

The low chill stonefruit industry commenced in SE Qld at about 1975 with Professor Wayne Sherman's University of Florida cultivars *Sunred Nectarine* and *Flordasun Peach* being the first two varieties to be grown commercially.

High chill peach rootstocks '*Elberta*', '*Golden Queen*' and later '*Nemaguard*' proved totally unsuitable with a 'spring shock syndrome' disorder delaying vegetative growth and impacting on fruit quality. '*Okinawa*' low chill peach rootstock was a real breakthrough. However compared to some local coastal peach rootstocks, *Okinawa* did not cope well with waterlogging and succumbed to rootrot during hot wet summers. It also never did well in the Bundaberg region due to inadequate chill in some years.

In search of a lower chill peach rootstock more suited to Qld, in 1982, Birdwood Nursery selected seed from 20 local coastal peach rootstocks (being used at the time) for nematode testing with nematologist **Dr Graham Stirling**, QDPI Pathology



Branch Indooroopilly. *Okinawa* was also included as the benchmark control. Testing over 2 seasons showed just 2 rootstocks equalled *Okinawa* and only one exceeded *Okinawa*. Budwood was then collected from the original mother trees and virus tested for Birdwood to supply our own seed going forward.

We then started to test the 3 rootstocks and called them *Nemasun 1, 2 and 3* in order of nematode resistance (*Nemasun*'s derivative is Nematode resistance from the Sunshine coast). Extensive testing in very low chill areas in particular within the Bundaberg region showed *Neamsun 1* was by far the best and far superior to *Okinawa* in terms of earlier full flowering, earlier maturity, larger fruit, less picks, less soft nose (calcium), less vigour from second year and generally better eating quality fruit. It is most likely that the lower vigour contributes to higher precocity. Another interesting characteristic was it is well suited to delayed/staggered pruning of the same variety within the same block to spread the harvest.

Further testing was carried out at the Bangalow trial block over a period of 4-5 years where two trees of each *Nemasun* and *Okinawa* rootstock of most low chill cultivars were planted side by side and comparisons reported in the Low Chill Stonefruit leaflet/magazine by NSW Dept of Agriculture stonefruit specialist, **Phillip Wilk**. A thorough examination of the reports demonstrates that across all cultivars, *Nemasun* and *Okinawa* were very similar with *Nemasun* being superior with some of the new generation, very low chill cultivars but never worse. The higher vigour of *Okinawa* rootstock across all varieties tested is often referred to throughout reports with the need to do additional pruning of new season growth pre and postharvest.

In recent times, it has been reported by Qld growers that new low chill stonefruit cultivars from Californian breeding programmes have only achieved commercial status when grown on *Nemasun*. As a result, all low chill cultivars supplied to Qld growers for the past 5 years have only been grafted to *Nemasun* low chill peach rootstock.

Peter Young - Managing Director
Birdwood Nursery

LOW CHILL AUSTRALIA INC.

ABN 283 812 712 44

2013-2014 COMMITTEE



PRESIDENT

Mark Napper

P: 02 6687 2376, M: 0413 007 197

E: president@lowchillaustralia.com.au

VICE PRESIDENT

Ross Stuhmcke

P: 07 5462 5202, F: 07 5462 5333, M: 0413 179 133

E: vice.president@lowchillaustralia.com.au

SECRETARY

Position Currently Unfilled

Email Directed through the President's Email

E: secretary@lowchillaustralia.com.au

TREASURER

Greg Foster

P: 02 6687 1295, F: 02 6687 2406, M: 0407 871 756

E: treasurer@lowchillaustralia.com.au

COMMITTEE MEMBER

Neil Mungall

P: 07 4160 0500, F: 07 4162 4748, M: 0427 739 540

E: neil.mungall@lowchillaustralia.com.au

COMMITTEE MEMBER

Frank Pirlo

P: 02 6628 2328, F: 02 6628 2139

E: frank.pirlo@lowchillaustralia.com.au

COMMITTEE MEMBER

Rod Thomson

P: 02 6629 5187, F: 02 6629 5427

E: rod.thomson@lowchillaustralia.com.au

COMMITTEE MEMBER

Dr Bruce Topp

P: 07 5453 5973, F: 07 5453 5901

E: bruce.topp@lowchillaustralia.com.au



From the LCA President – Mark Napper



As Australia starts the year in continuing drought, our growing regions on the eastern seaboard are not exempt. In the Northern Rivers of NSW, whilst not experiencing the devastating conditions of the western country, we saw rain at 34% of long term averages during January and worsening throughout February.

Whilst handling the vagaries of the weather comes with the business we are in, there are two major issues that are industry structural changes which we need to tackle as an industry. Whilst not new, the last season saw them emerge as market realities which affected adversely on grower returns. These issues are not going to be resolved by the normal industry and grower response of “heads in the sand” or “she’ll be right, mate”.

The first issue is of course *fenthion*. This chemical is the only proven and effective tool to control fruit. It was pleasing to see that on 12 December 2013, the Senate requested the *fenthion* issue for horticulture be referred to the *Rural and Regional Affairs and Transport References Committee* for inquiry and report by 25 June 2014. Both Summerfruit Australia Limited and Low Chill Australia Inc. made submissions. Thank you to all the growers who also took the time to make a submission. Until we have a viable sustainable alternative, it is your committee’s view that a transition period is essential.

As an industry we must continue to invest in seeking alternatives to *fenthion*. As growers we must look for alternatives and work in a collegiate manner, sharing experiences and learnings. A great forum was held at our AGM in December. More needs to be done. The LCA Executive has decided to investigate the scientific protocol necessary to have a review of the APVMA decision specific for low chill.

The other major issue is of course the arrival of USA peaches and nectarines. From LCA research, the in store fruit had mixed quality results. The certainty is that the Americans will improve on their quality and plan to increase volumes. The fruit will be arriving earlier than last year but will probably be finished by end of September. Their arrival has already impacted on some low chill growers who have seen their price eroded and have decided to exit the industry. Others are still considering their future. We need to work with the Americans to ensure quality and price are maintained and importantly, ensure that the consumers eating experience on our fruit does not disappoint.

We need to market strongly Australian product. This can only be achieved as a united Australian industry.

At our 2013 AGM saw the resignation of our secretary Phil Wilk. Unfortunately due to a NSW DPI restructure, their staff can no longer provide extension type services. The industry has lost a valuable resource in Phil. We thank him for his dedication and tireless service to the industry.

Regards

Mark Napper – President –

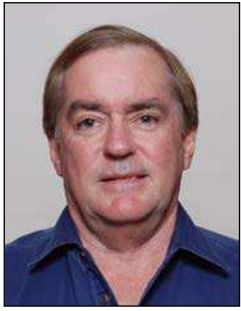


CHECK OUT THE LOW CHILL AUSTRALIA INC. WEBSITE www.lowchillaustralia.com.au





Summerfruit CEO Round Up ...



With lots happening, did you survive the heat..... was it a traditional '60s summer?

Firstly, I wish to thank many of you for subscribing to Summerfruit Australia by way of renewing memberships. Actually every commercial producer is technically a member of Summerfruit Australia. Producers who have kindly contributed recently are in effect showing their support for the agri political work SAL undertakes on your behalf and I would hope more of you could oblige and send financial support. Please respond and follow the process as outlined in the recent letter you will have received.

If you did not receive any notification, please contact me and I will gladly attend to your offer of support.

As this season has progressed, again many of you have endured all sorts of extreme weather events, an unusual pattern of fruit fly outbreaks, in particular South Australia and no end in sight to the high temperatures.

There appears to be plentiful supplies of quality fruit, which is a credit to the ingenuities of all producers, and the farm gate prices are also said to be of reasonable and favourable trends. Exports have been seesawing particularly into Hong Kong. With our southern competitors experiencing more serious weather events in the earlier part of their seasons has been favourable for our exporters and in particular an attractive exchange rate for the greater part of our season.

With regard to fruit fly control, the state governments of **South Australia** and **Tasmania** are thankfully engaged in active measures to eradicate fruit fly from within state boundaries. Recent activity of fly detections in parts of South Australia, particularly the Riverland, has seen excellent cooperative measures and implementation of the fruit fly action plan to curtail these sporadic outbreaks. The economic importance of fruit fly freedom is clearly understood by these respective governments.

The economic importance of fruit fly freedom is clearly understood by these respective governments.

The Victorian government is partially acting to ensure that the Sunraysia PFA remains intact but the onus rests squarely on producers across 3 Industries – Stonefruit, Table Grapes and Citrus.

All producers within the PFA will be consulted to fund 70% (Government – 30%) of management, containment and eradication of outbreaks, a task of huge financial commitment by these producers but saving the PFA will have great economic benefit significance for their efforts. The current funding of the PFA is undermined by scant financial commitments and will cease 30th June 2014. It is hoped that an Order under the Agricultural Industry Development Act 1990, will be in place and facilitate a combined Industry and government committee to continue the maintenance of the PFA.

The current funding of the PFA is undermined by scant financial commitments and will cease 30th June 2014.

Internationally, the importance of PFA's or Area Wide Pest Freedom or Place of Pest Free Production is the key to commercially viable protocols. QFF and Medfly exports from areas outside of these areas will continually attract stringent and extreme controls as we have seen recently with the new Thailand protocol. The cold treatment schedules are cumbersome and will not deliver fresh fruit to consumers. Until there are changes to gazette schedules sought by Industry the current in-

Internationally, the importance of PFA's or Area Wide Pest Freedom or Place of Pest Free Production is the key to commercially viable protocols.



transit cold treatment requires treatments of below 2.22degrees C for 22 days – QFF and below 2.22degrees C for 18 days – Medfly. A host of quality issues may arise and in particular chill burn to fruit. Industry has asked for a T108a –USDA schedule protocol for airfreight and acceptance of the below 3degrees for 14 days. Thailand has internal issues currently and the administrative process internally is very slow and could hinder a quick outcome for any expectations for this season.

China is proving a slow protracted process. Department of Agriculture (D O A) previously known as DAFF is working though issues that will ultimately produce a reasonable commercially viable protocol. It was hoped Industry would have been able to have a token number of containers leave this season to China but for the longer-term viability it has been agreed to work towards a position that will be amicable for Industry.

China is proving a slow protracted process.

Over to the more current issues facing Industry; the pending Senate estimates inquiry into Fenthion. I have attached the link for you to review the number of submissions, closed 28th January 2014.

http://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Rural_and_Regional_Affairs_and_Transport/Fenthion/Submissions

SAL has lodged 2 submissions; a wider Industry submission with section 2 covering the terms of reference of the inquiry and the other submission on behalf of the Board.

Finally, members interested in the HAL review, you are encouraged to attend either of the remaining forums if time permits or take a moment and convey you thoughts and views to the email address below

The Consultation Paper that will be presented at stakeholder forums around Australia is available for download from the website: <http://www.acilallen.com.au/microSite?idMicroSite=22> .

In addition to attending a forum, stakeholders are also invited to provide feedback on the consultation paper by either:

- calling the review team via the HAL Review **hotline 1300 794 025**
- providing brief comments via an email to halreviewteam@acilallen.com.au

John Moore CEO – *Summerfruit Australia Ltd*



For any further assistance, please contact

John Moore – CEO – Summerfruit Australia Ltd. – Ph: +61 419 305 901 - Mobile: 0419 305 901

Email: ceo@summerfruit.com.au – Address: 8/452 Swift St., Albury NSW 2640

Industry News ... Grower Feature

From Innovation to graceful Real Estate -Retirement

After 22 years of growing fruit, Jim Olson and wife Suzette have finally got a good handle on fruit fly control, and they have done so with fewer pesticides available.

In the past few years the Australian Pesticides and Veterinary Medicines Authority (APVMA) has reviewed several 'traditional' methods of fruit fly control including fenthion and dimethoate which have subsequently been heavily inhibited or effective for use by orchardists.

There have been few effective alternatives, thereby limiting the options for fruit fly control and the markets where fruit can be sold. It has been of particular concern to Queensland growers where the pest is endemic.



Jim and Suzette moved to Anamoor in the Sunshine Coast hinterland of Queensland in the early 1990s to enable their son to grow up in a small country town. They purchased a 17ha hobby farm planted with 300 lychee, 150 avocado and 100 custard apple trees.



Jim and Suzette Olson's orchard at it's prime.

Neither had any knowledge of horticulture, but they embarked on a fact finding journey to learn how to grow fruit and how to redevelop the farm into a commercial enterprise.

"As hard as we tried, there just weren't enough fruit trees to make a living. A friend living down the road who grew nectarines suggested we plant a few stone fruit because they could handle the occasional frost," he said.

"We planted a trial with a few nectarines and peaches only to find that the peaches did much better. We decided on a mix of peaches, figs and pomelos.

"Suzette worked in the local sawmill and provided an income for us while I worked on establishing an orchard. Then once the farm had turned a profit Suzette returned to work alongside me on the farm.

Only two years ago Jim is quoted in Growcom's *Fruit & Vegetable News* saying, "The withdrawal of fenthion could end the crop...I don't think pheromone and bait traps will control fruit fly," so you can imagine his surprise when the property was relatively free of fruit fly damage.

Jim attributes this to the multi-faceted plan devised by his agronomist and a relatively dry season. About 100 pheromone traps were distributed over a 4-5ha area to attract and kill any flies within the orchard, with fly numbers monitored in four traps along the perimeter of the orchard. Every seven days a small volume (about 50ml) of bait laced with insecticide was sprayed on the trunks and lower foliage of each tree.

Native habitats are encouraged around the perimeter of the orchard. Fruit flies coming into the area often rest in the long grass and as a result it is also sprayed with insecticide.

Jim said a small build up of fly numbers close to harvest was bought quickly under control with a single spray of *Samarai*.

Fly numbers dropped from three to five per trap to a single fly or in some cases no flies for several days.

Even though fruit fly control was quite good this season Jim has had enough and is winding back production.

"That single spray was enough to suppress the fly population and the number of flies remained below the damage threshold," he said. Even though fruit fly control was quite good this season Jim has had enough and is winding back production.

"The main problem is that the Mary Valley where we live has had five floods in the past two years," he said. The last occurred in January 2013 when there was heavy rain on four consecutive days over the Australia Day long weekend. Rainfall figures for nearby Gympie were 73.6mm, 43.0mm, 239.2mm, and 61.4mm; the soil filled up with water and there was nowhere for it to drain.

"Ironically we haven't had any real rain to speak of since then," Jim said.

"We lost a lot of trees soon after the water subsided and there are quite a few that still haven't recovered 12 months later.

These peach trees (right) were planted on 600mm mounds, but have not recovered from the last flood and Jim has chosen to walk away from them, focusing on other parts of the orchard.





"It's quite disheartening to see the losses and so we decided that we wouldn't replace the trees. Instead we would farm those trees that had survived and take the opportunity to reduce our workload."

Previous to this decision the Olsons had employed an additional eight staff out in the field and a further three or four in the packing shed for four weeks. Now there is only Jim and Suzette working together. They are enjoying the relaxed nature of the farm.

"It's not full on every day," Jim said. "I still have to go out and do the everyday tasks associated with running a farm, but there's no pressure, so I can have a little bit of extra time at smoko or lunch."

Having turned 65, he is also eligible for a pension which helps to relieve the financial pressure of growing a crop. This is particularly important given the poor returns this season.

"Usually our early season fruit attracts a premium price of \$70-80 a tray, but with an abundance of Californian fruit still on the shelves of supermarkets in September we received half of that price."

"Usually our early season fruit attracts a premium price of \$70-80 a tray, but with an abundance of Californian fruit still on the shelves of supermarkets in September we received half of that price."

"Quite simply, it's just not worth it anymore."

"I no longer have the enthusiasm and energy associated with youth, but I do enjoy what I do and Amamoor's not a bad spot to live, so we will continue to farm while we are still able and take each day as it comes."

Article supplied by Paula Smith – published with appreciation. Jim & Suzette Olson have been members of Low Chill Australia Inc.

Industry Information ...



ABARES confirms Minister Barnaby Joyce and Parliamentary Secretary Richard Colbeck speaking at Outlook 2014

Minister for Agriculture Barnaby Joyce will deliver the conference's opening address on Tuesday 4 March. Then join delegates at the *Scanning long term horizons* session as Senator Richard Colbeck, Parliamentary Secretary to the Minister for Agriculture, provides his views on strategic directions for our industries, Wednesday 5 March.



Women in Agriculture

ABARES is committed to supporting women in agriculture and will feature the following extraordinary women at Outlook 2014 on the program:

- *Gabriela Ramos, OECD Chief of Staff and Sherpa to the G20*
- **Alexandra Gartmann**, Foundation for Rural and Regional Renewal
- **Mariele Pickler**, Bayer CropScience, Brasil
- **Caroline Welsh**, Birchip Cropping Group
- **Jackie Healing**, Coles
- **Catherine Marriott**, Influential Women / Australian Rural Leadership Foundation
- **Isabel MacNeill**, Dairy Australia
- **Jayne Gallagher**, Australian Seafood Cooperative Research Centre

In addition senior women from across the Department of Agriculture will contribute including: **Rona Mellor, Fran Freeman, Karen Schneider, Trish Gleeson, Saan Ecker** and **Caroline Gunning-Trant**.

Outlook 2014 will provide you with the opportunity to network with these and other inspiring speakers and stakeholder groups to develop shared benefits for women in agriculture.

Join the conversation at ABARES Outlook 2014 conference as we examine the opportunities for our agricultural industries. Our theme for Outlook 2014 is *realising the opportunities*. It reflects the evolution of conversations in agricultural communities from identifying innovations and export opportunities, to positioning our industries to take advantage of those prospects.

Register now

Confirm your registration for Outlook 2014 today. Register online or download the registration form. The group registration rate is available to groups of four or more delegates registering together by contacting the ABARES conference team. For further information please visit the website: <http://www.daff.gov.au/abares/outlook>.

Event details

Outlook 2014

4-5 March
National Convention Centre
CANBERRA

Registration fees

All costs include GST
Full conference rate \$1400p/p
*Group rate (min 4) \$1000p/p
Single day (excl dinner) \$750p/p
Dinner tickets \$120p/p

Enquiries

Katy Baumeister or Lara Cole
Event Coordinators
+61 2 6272 3051 / 2303
Email: conferences@daff.au





Research ...

Natural enemies of fruit fly

The natural enemies of fruit flies have been very poorly utilised in Australian fruit fly management. There are still few obvious ways by which fruit fly natural enemies can be manipulated by growers, but natural mortality of fruit flies does occur and this needs to be understood within an Area Wide IPM system.

Parasitoids

The most common natural enemies of fruit flies are small parasitoid wasps of the insect family Braconidae. Within the braconids are a group known as the opiine braconids, which only attack fruit flies and leaf-miners (the commonality is that the eggs/larvae of the attacked insect are concealed within plant tissue). Opiine braconids lay their eggs into the eggs or larvae of fruit fly. As the fruit fly larva grows, the wasp larva grows within it. After the fruit fly maggot leaves the fruit and pupates, the wasp larvae itself pupates within the fruit fly pupae, at which stage the fruit fly pupae is killed and a new adult wasp eventually emerges from it.

Parasitoids will not directly protect a crop as they do not kill the fruit fly maggot until the maggot has finished feeding and left the fruit. However, within the context of an area wide IPM program, parasitoids can help reduce the total fly population. Importantly the parasitoids do not differentiate between commercial and non-commercial fruit fly hosts, so they help provide off-crop control.

The fruit fly parasitoids currently within Australia are a mix of native and deliberately introduced exotic species. It is highly unlikely that further new parasitoids would ever be introduced for Q-fly, although the potential exists for Med fly if quarantine issues can be satisfied. Parasitism rates for Q-fly vary from only a few percent, up to some records of around 80%, with an average of around 15 to 20%. This is important to keep in mind, because while the parasitoids are largely ignored in fruit fly management, they still kill approximately one in five flies. The variation in parasitism rate depends on location (e.g. there are fewer parasitoids in southern Australia than northern Australia), time within the crop cycle (highest parasitism in late fruit) and crop plant.

All opiine braconids use plant derived cues to help locate fruit fly maggots and they hone in on the smell of some plants much better than others. This is exemplified in stone fruit. In South-east Queensland there are two common parasitoids of Q-fly, *Fopius arisanus* and *Diachasmimorpha krausii* (see figure). While both can be recovered from low-chill stone-fruit, *D. krausii* is much more commonly reared than *F. arisanus*, despite the latter species being generally more abundant in the environment. The difference seems to be that *D. krausii* orientates more to cues from damaged stone-fruit than do *F. arisanus*.

A full review on the parasitoids of Queensland fruit fly can be found at <http://www.mdpi.com/2075-4450/3/4/1056>.

Other natural enemies

Other than the braconids, few natural enemies of fruit flies are documented. Vertebrate fruit feeders (e.g. birds, small rodents, possums) will cause direct mortality of larvae and, in natural rainforest systems, are thought to be the major mortality agents of fruit flies. Ants are reported in the international literature to be important mortality agents of prepupal larvae (i.e. the stage leaving the fruit before pupation), but there is no Australian data on this.

Very small parasitoid wasps of the genus *Spalangia* are known to attack fruit fly pupae, although parasitism rates for *Spalangia* are almost entirely undocumented. Various microorganisms can affect the fertility of fruit flies, but their manipulation for field management is still very much in the realms in exploratory research. In organic hobby orchards the running of chickens within an orchard will lead to a significant reduction in pupal numbers and, in village gardens in Asia and the Pacific, this may be an important method of fruit fly control.



Manipulating natural enemies

At the moment there are few means by which fruit fly parasitoids can be actively manipulated. In other orchard systems natural enemies are encouraged through the maintenance of flowering plants (for nectar and pollen) and for the supply of alternative targets (e.g. aphids) for generalist predators. No research has yet been done on providing nectar sources for fruit fly parasitoids, and the specialist nature of their parasitism means it is impossible to provide alternative hosts. In Hawaii and Le Reunion, research has looked at special mesh cages in which newly fallen fruit can be dumped. By being very particular about the mesh size, such cages can allow the emergence and dispersal of the smaller parasitoids, while retaining the larger adult flies. This approach has not been trialled in Australia and is unlikely to be commercially viable in our large scale production systems.

Fruit fly parasitoids can be mass reared if fruit flies are also mass reared; thus the pro-active use of parasitoids for fruit fly management in Australia is almost entirely dependent on the wider uptake of fruit fly SIT. International practice has confirmed theoretical predictions that parasitoid mass releases, made in conjunction with the mass release of sterile males for SIT, can give better control than either technique on its own. This is certainly something which should be trialled in Australia if SIT gets off the ground.



The fruit fly parasitoid Diachasmimorpha krausii. The long 'tail' is the ovipositor, with which the wasp penetrates fruit to lay eggs into feeding fruit fly maggots.
(Photo credit Mrs Amy Carmichael, QUT)

Acknowledgements

This article was written by **Tony Clarke** of the *Queensland University of Technology* as part of HAL Project SF12013 “*Fruit fly IPM for Summerfruit, with a focus on developing an effective female lure-and-kill device*”. This is the seventh of a series of articles providing information on fruit flies and their integrated control.

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





Research ...

Sterile Insect Technique - SIT

Queensland fruit fly (Q-fly) is the number one pest of horticulture in Australia's eastern states and an ever present threat to production and market access for South Australian and West Australian growers. Managing this pest has become significantly harder in recent times due to a perfect storm of events: loss of *dimethoate* and *fenthion* as chemical control agents; adaptation of the insect to colder climates; warming with climate change increasing its geographical range; and withdrawal of State Government support for population control.



Queensland Fruit Fly

Without alternative chemical control options there is a need for a more integrated approach to ensure fruit fly does not create a more significant economic and market access burden for producers. One approach that has been used successfully overseas on fruit fly, and is used successfully in South Australia and Western Australia on Mediterranean fruit fly (Medfly), is Sterile Insect Technique (SIT).

SIT is a proven method for suppressing or eradicating fruit fly populations and can be used to manage incursions and, as part of a management system, to manage populations in endemic areas. **Horticulture Australia (HAL), the CSIRO Biosecurity Flagship, Plant and Food Research Australia (PFRA) and Primary Industries and Regions South Australia (PIRSA)** have combined to develop a capability to use SIT for Q-fly management. Underpinning the collaboration is an A\$3 million investment, by PIRSA, to build a fruit fly facility in Port Augusta, South Australia to produce sterile, male fruit flies.

What is SIT?

SIT involves the release of male fruit flies that have been sterilised, to mate with wild female flies in the field. The sterile male flies are strategically released in significantly greater numbers than the wild fly population and as a result limit the opportunity for wild females to mate with wild males. SIT has the advantage of being environmentally friendly and can be used in orchards, urban and environmentally sensitive areas, where application of conventional chemical treatments isn't possible or is too intrusive.

The outcome of the unsuccessful mating is the prevention of subsequent generations of the wild flies.

Larval Rearing Cabinet



One problem of conventional SIT is that sterile females will still sting produce, reducing the marketable yield or downgrading produce quality. To overcome this hurdle, methods have been developed to only allow release of sterile males. Releasing only sterile males means no risk to produce, but also significantly reduces the number of flies that need to be released (as they only mate with wild flies, not each other). Hence a male-only line of fruit fly reduces crop damage and costs through increased efficacy.

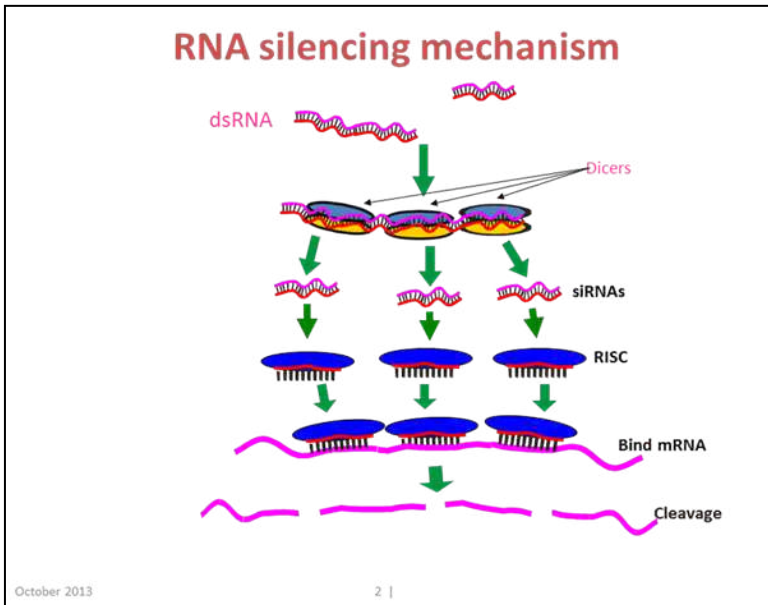


Researchers have previously bred fruit fly species, including Medfly, which have a temperature-sensitive gene in females that allows them to be culled in a fly factory. These strains are referred to as male-only lines. A male-only line of Medfly is reared and successfully used in Western Australia for SIT. Q-fly is part of the genus *Bactrocera*, which has yet to have a male-only line developed. As a male-only line is so important to underpinning the SIT approach, two options are to be pursued to develop a male only line: **1) a conventional breeding approach** and **2) a feeding approach using RNA interference (RNAi) technology.**

Once a male-only line is developed, it will be produced in the fruit fly factory in Port Augusta. Produced flies will then need to be sterilised. Again, two approaches are being considered for sterilisation: **1) X-ray technology** and **2) oral RNAi.**



X-ray technology is the current sterilisation approach in most SIT facilities; however, it has the disadvantage of potentially lowering the fitness of the flies. The application of RNAi represents a new approach which has the advantage of not needing to expose flies to x-rays and also of the potential to feed in wild fly populations to the factory on a regular basis to maintain fitness.



RNA interference is a process in the cell that stops the action of specific genes by destroying messenger RNA (mRNA) and thus preventing translation of the gene product. The dicer is an enzyme which chops double stranded RNA (dsRNA) into small pieces called short interfering RNA (siRNA). The siRNA combines with protein subunits to form an RNA-induced silencing complex (RISC). The siRNA within RISC unzips, exposing a mirror image of the specific section of the target mRNA and thus "activating" the RISC. The activated RISC binds to target mRNA. The RISC causes target mRNA to break apart, preventing translation of the gene product. This in effect silences or switches off the gene.

RNAi works by destroying messenger RNA; this in turn blocks or changes very specific features of the fly. In the case of Q-fly SIT, the aim is to manipulate the genetic control of sex determination to produce only males and to inhibit fertility in the male flies. The RNAi is ingested by the flies as part of their diet. This approach does not alter the DNA of the fly in any way; it is not a GM approach.

Fitness is a major concern in producing Q-fly in a factory. Populations of flies raised in a factory have been shown previously to have a lower fitness than wild flies. Add to this the impact of breeding to develop a male-only line and then subjecting the flies to x-ray and you can have a serious effect on fly fitness and hence, its ability to find females and mate.

To overcome this potential issue, standard tests for fitness will be developed and diet will be manipulated to maximise fitness. In a longer term approach, CSIRO will mine the fruit fly genome for genetic traits for fitness in Q-fly, including high temperature tolerance and host plant attraction. When found, these genes can be targeted in conventional breeding to maximise efficacy of fly releases.

Alongside research to develop the male-only Q-fly strains, and to maximise fitness of those strains, the collaboration will undertake research to optimise the field activity involved in SIT. One of the exciting

research areas being proposed is the use of automated traps, or "Smart Traps". This project will evaluate three technologies for automated surveillance of fruit fly. Once this is complete a trap will be tailored for fruit fly and field tested to assess durability, reliability and attractiveness at sites in Tatura, Victoria, and Redlands, Queensland. Over a two year period, trap design will be evaluated and refined with the goal of deploying to south-eastern Australia and South Australia.

Research on automated surveillance will include automation of image analysis to detect whether a given image contains a fruit fly and development of web-based tools for verifying a positive detection, managing and disseminating an alert, and visualising an outbreak. Deployment will occur in the Adelaide grid, stone fruit orchards of Tatura, and both mangoes and passionfruit in Redlands.

Research will also focus on understanding the link between catch of flies in a trap and the Q-fly population. The relationship between trap catch and population is paramount to determining pest pressure and the success of population management tools such as sterile insect release. This work will build on previous Q-fly trap catch analyses and will include trials to determine the efficacy of current trapping systems and assess improvement with new lures, as well as determine the efficacy of various sterile insect release strategies.

The number of flies required to flood the wild population will be determined by laboratory and field cage studies. The parameters such as competitive-mating fitness, re-mating propensity as well as wild population sizes over time will be modelled to determine the minimum number of flies required for release to crash the wild population. Models will be





validated in the laboratory and in the field. Further, SIT is likely to need to be part of a system in endemic areas, so other population management tools (e.g. Male Annihilation Technique) will be assessed to be placed out at the same time or in a step-wise fashion with SIT releases to get the best system.

The program approach detailed above is still being developed, but research will come on line during 2014 and continue for a five-year period. Gaps in the research are being assessed and other parties are likely to join the collaboration to help ensure success. Overseeing development of the program is **Interim Program Director, Dan Ryan**. A steering committee has been assembled to oversee the program and a technical advisory committee will ensure quality and relevance of the science.

A broad program of consultation has started to ensure all stakeholders' views are accommodated and that industry is well-informed. The **HAL Fruit Fly Working Group** has been briefed and consulted as have various industry associations. The **Plant Biosecurity CRC** has been well briefed and is consulting on its involvement in the collaboration. Consultation with industry and providers will continue throughout the life of the program to ensure focussed research that accommodates industry concerns.



If you would like any further information, or would like to discuss any aspects of the program, please contact Dan Ryan.

Dan Ryan – SIT^{plus} Program Director

T: +61 2 4382 6379

M: +61 403 915 894

F: +61 2 4382 6703

Dan.Ryan@plantandfood.com.au

Postal Address:

PO Box 116, Avoca Beach, NSW 2251, Australia

Research ...



Continuing the Fleming Family Tradition

Evaluation Project reaches Commercialisation Phase

For the last three years, Graham's Factree has been operating the stone fruit variety evaluation R&D project known as "MT10051: Making good variety investment decisions. A tree fruit variety evaluation program for Australia". The project is now providing a much needed stream of comprehensive evaluation information for the Australian industry. This data is available to all growers and packers at the Graham's Factree website at <http://evaluations.factree.com.au/>. The evaluation program's Annual Reports can also be downloaded from this website.

The project has been successful in identifying new peach, nectarine, cherry, plum and interspecific varieties that could improve commercial returns at particular times during the season. These varieties are rated at a score of 6.0 or higher in the evaluation reports (and Annual Report). This score is interpreted as indicating that the new variety has been evaluated as being equal to, or in some cases better than, current commercial varieties for the same timeslot.

Graham's Factree is now looking to encourage growers who may like to receive test trees (2 trees per variety) to try any of these higher scoring new varieties on their own orchards, to contact the nursery. The only obligations associated with receiving the test trees are to sign a standard cultivar testing agreement and to provide feedback to Graham's Factree about the performance of the variety on your orchard.

Growers considering testing the new varieties from the evaluation project should call Graham Fleming at Graham's Factree on (03) 9999 1999.

The MT10051 research project is funded by Graham's Factree and the Australian Government through Horticulture Australia Limited.



Horticulture Australia



Industry Information ...



29th International
Horticultural
Congress 2014
17 – 22 August 2014

Brisbane Convention &
Exhibition Centre
Brisbane Queensland
Australia

Several Symposia on Fruit Crops

Those in the Australian stonefruit industry will enjoy a unique opportunity when the 29th International Horticultural Congress (IHC2014) is held in Brisbane in August of 2014. Several symposia on fruit crops will be included in the program of this event, covering issues such as physiology of perennial fruit crops and production systems, postharvest technologies and consumer & sensory driven improvements to the quality of fruit & nuts. These symposia will discuss improvements to and research in the field of fruit production & marketing. Special attention will be given to new developments.

Fruit symposium speakers will include **Prof Luca Corelli Grapadelli** from University of Bologna, Italy, who is an ecophysiologicalist with special interest in tree/light interactions and fruit growth, particularly for Summerfruit, apple, pear and kiwifruit and **Dr Sara R Jaeger**, from Plant & Food Research in New Zealand, who will challenge delegates by talking about sensory and non-sensory factors of product experience: a consumer-centric perspective.

Dr Carlos Crisosto from the University of California, together with his colleague **Dr Bruce Lampinen**, will present a joint keynote presentation on orchard factors and postharvest handling of fruit & nuts influence on consumer quality. Dr Crisosto's research has focused on the post-harvest biology & technology of fruits such as peaches, nectarines, plums and apricots.

Also of relevance to Summerfruit industry will be a symposium on non-destructive assessment of fruit attributes.

ABOUT IHC2014: The Congress is a world forum, covering all aspects of horticulture and horticultural science. Although it is held every four years, this will be only the second Congress to be held in a southern hemisphere location. This will be a rare chance to gain insights into the latest international developments in emerging science and technology within the horticultural sphere, at a venue relatively close to home. This major international conference is not just for scientists. It is also expected to attract technical specialists from the various horticultural sectors, progressive growers, packhouse operators, industry consultants, service providers, academics, and students.

The Congress theme of *Horticulture – Sustaining lives, livelihoods and landscapes* was chosen to highlight the unique potential of horticulture for addressing modern society's key issues, including health, poverty, food production and the environment. The Congress will showcase advanced technologies that are becoming globally significant with a rapidly growing population, less cultivatable land and an environment under threat.

The organisation of IHC2014 is a joint initiative of the Australian Society of Horticultural Science (AuSHS), the New Zealand Institute of Agricultural and Horticultural Science (NZIAHS) and Pacific Island countries. It is expected that over 2,500 international delegates from at least 120 countries will attend the 2014 congress in Brisbane.

Full details of this event, including the scientific program, are available at www.ihc2014.org; where you can also register your interest (at no charge) in order to receive newsletters and updates about this event. Early bird registration closed on 17 February, although you can still register after that date at a higher registration fee.



Research ...

Sterile Insect Technique as part of an Area Wide-Integrated Pest Management campaign for Queensland fruit fly control

By Dr Olivia Reynolds

Queensland fruit fly 'Qfly', is a fruit fly that feeds and breeds on a variety of important crops and is the most significant biosecurity threat to Australian horticulture. This pest attacks almost all commercial fruit crops and several fruiting vegetable crops. In areas where fruit flies are native or have established populations, rigorous field control must occur to ensure the production of high quality produce.

Recently, restrictions have been placed on the use of chemicals used to control Queensland fruit fly, with few viable options remaining. A permit was issued for *Clothianidin* on 5 September 2013 (PERMIT NUMBER - PER14252) for the control of Qfly and Mediterranean fruit fly in persimmon, pome fruit and stone fruit. This permit allows for another chemical control option in a growers toolbox but we are seeing increasing restrictions placed on insecticides due largely to environmental and public health concerns.

In addition, *Clothianidin* is a *neonicotinoid* insecticide which is a group increasingly coming under scrutiny due to their alleged role in the demise of bee populations. There is a need to find alternate 'softer' in-field control options for Qfly. An **Area Wide-Integrated Pest Management** (AW-IPM) program that incorporates the sterile insect technique (SIT) is one such option.

An AW-IPM SIT program is not only a preventative control option but is intended to have a positive impact on society by improving the quality of horticultural products at a lower cost, while protecting the environment and human health. AW-IPM focuses on the preventive management of pest populations throughout a delimited geographic area. This technique has a strong emphasis on treating all habitats of the pest population preventing migrants re-establishing significant infestations, which are damaging to crops.

In contrast, conventional control focuses narrowly on protecting the crop from direct attack by pests. The SIT is a target-specific form of birth control imposed on a pest population that may be applied in the AW-IPM of insect pests of agricultural, medical and veterinary importance. The case for the SIT on an environmental, economic and biological basis is persuasive. The main objective of the study is to establish an effective AW-IPM SIT program to provide control of Qfly in an endemic area and that will inform the development of similar future campaigns.

Like most pest control techniques, the SIT is not a stand-alone technique, and in most situations requires pre-release population suppression to be effective and economically viable. There are at least 20 AW-IPM programs worldwide that have successfully incorporated the SIT to control fruit flies and include prevention, containment, eradication and suppression of these pests. The SIT is environmentally benign and can be a cost-effective component of an AW-IPM program including for the control of fruit flies of major economic importance, such as the Mediterranean fruit fly and Qfly.

The program, led by Dr Reynolds, will operate in a region identified in south-eastern Queensland, near the New South Wales border and will involve several growers and their properties, collectively known as 'Trap Rock' which are unique in that they are geographically isolated from urban centres.

With the exception of the orchards, the country is largely sheep terrain and is unsuitable fruit fly habitat. This project has been funded by HAL using voluntary contributions from growers **Rowan Berecny, Andrew & Graham Finlay, John & Julie Pratt, Duncan & Angus Ferrier** and matched funds from the **Australian Government**. This funding has resulted in a million-dollar project (MT13040) spanning 3.5 years. In order to establish an AW-IPM SIT program, a phased approach to Queensland fruit fly control will be used and will include a pre-intervention phase, population reduction phase, release phase and a maintenance phase.





There are several outcomes which are possible as a result of this work and include a reduction in the number of wild flies trapped over consecutive seasons, a reduction in fruit fly populations to below economic thresholds using AW-IPM, a reduction in pesticide use and reduced secondary pest outbreaks associated with pesticide usage and associated control costs.

Other benefits of this project may include protection of the environment and the health of farm workers resulting in savings in public health and environmental costs through reduced insecticide residues in fruit, water reservoirs and soil and strengthening research and development support of the stone fruit industry.



Photos – 'Warroo Orchard participating in the Area Wide Integrated Pest Management Sterile Insect Technique trial'.

Product Information ...

Bluezone®

Air Purification Technology

- Reduces ethylene
- Kills mould and fungi
- Eliminates odours
- Increases shelf life
- Improves profits
- Cost effective
- Best fruit and vegetable shelf life extender on the market
- Used by Australia's leading wholesalers and packers
- At the price 'It's a no brainer'

Makes you a hero

Australia, New Zealand & Oceania agents -
Environmental Technologies Australia
 Phone: +61 (0) 400 545 760
 Email: enviro-tech@bigpond.com

World First for Bluezone® Technology

In a world first *Bluezone*® technology is to be built into shipping containers extending the life of exported fruit, vegetables and flowers during sea freight. This announcement means *Bluezone*® technology now covers all aspects of the cool chain with its proven results in cool rooms, transport and of course retail areas.

If you don't have *Bluezone*® installed in your storage rooms and transport vehicles now is the best time to consider doing so. For more on the sea freight announcement see the link below.

<http://www.ferret.com.au/articles/news/Maersk-Container-Industry-releases-new-refrigerated-container-air-cleaning-system-n2511809>

For more information on Bluezone® technology check the Bluezone® web site www.bluezone-technology.com or call 0400 545 760 (+61 400 545 760 international) and arrange a trial and/or quotation.

Contact –

Keith Maggs

Environmental Technologies Australia

Suppliers of air purification technologies

Mob: 0400 545 760

Fax: 03 9776 2694

Web: www.Bluezone-technology.com

CHECK OUT THE LOW CHILL AUSTRALIA INC. WEBSITE www.lowchillaustralia.com.au

The Taste of Spring



Home About Us Growers News Contact Conferences Springfruit



Product Information ...

New aphid control expands Crop Care insecticide range

This summer, Crop Care has a new insecticide *Endgame 500WG* registered for aphid control in potatoes, stonefruit and brassicas. As a different chemical group (Group 9B) *Endgame* provides a valuable alternative insecticide for resistance management.

Announcing the product's recent registration, Crop Care's regulatory affairs manager **Bronwyn Vorpapel** said the active ingredient pymetrozine was a specific aphicide that disrupted the insects' feeding. "Rather than having a neurotoxic effect, it has a very specific anti-feeding mode of action.

"Aphids treated with *Endgame* simply cease feeding, usually within a short time of treatment, and ultimately starve to death. It inhibits feeding without any neurotoxic signs, so aphids may remain but are unable to feed."

Ms Vorpapel said that *Endgame* was a valuable, novel insecticide for controlling these serious sucking-insect pests. She said Crop Care had commissioned trials in 2012 in southeast Queensland and central NSW to demonstrate the activity of *Endgame* on a number of aphid species across a range of crop types.

"In the trials conducted against green peach aphid in potato; cabbage aphid in cabbage; and black peach aphid in peaches, *Endgame* provided very good control, similar to or better than other standard aphicides."

Endgame has been registered to control cabbage aphid and green peach aphid in several brassica vegetables – broccoli, brussel sprouts, cabbage (except Chinese cabbage) and cauliflower; green peach aphid in potato crops; and both green peach and black peach aphid in stone fruit.

Ms Vorpapel said the Australian Pesticide and Veterinary Medicine Authority had also issued permits to cover additional crops not on the label, permitting the use of *Endgame* on:

- silverleaf whitefly in lettuce, cucurbits, broccoli & eggplant; and lettuce aphid in lettuce, chicory, endive & radicchio (PER13111)
- greenhouse whitefly, silver leaf whitefly and green peach aphid in greenhouse tomatoes (PER13725);
- green peach aphid in almonds (PER13383);
- aphids and greenhouse whitefly in cut flowers (PER11771).
- aphids in snow peas and sugar snap peas (PER14185)
- aphids and whitefly in nursery stock (PER11973)

Refer to the APVMA website (www.apvma.gov.au) for the latest *Endgame* permits.

To aid in aphid resistance management, Ms Vorpapel said that no more than two applications of *Endgame* (or other Group 9B insecticides) should be applied per crop, and as non-consecutive sprays.

For More Information Contact:

Bronwyn Vorpapel – Regulatory Affairs Manager

Crop Care Australasia

07 3909 2017

bronwyn.vorpapel@cropcare.com.au



Aphid – green peach aphid damage



Aphid - green peach aphid - GRDC

GREEN PEACH aphid is just one of this serious sucking-insect family controlled by the novel insecticide *Endgame 500WG*, which prevents aphids from feeding. *Endgame* is a new insecticide from Crop Care for aphid control in stonefruit, brassica and potato crops. (Aphid photo courtesy of GRDC).



Research ...

Crop Hygiene for fruit fly control ...

In any article about fruit fly management, the collection and removal of fallen fruit (i.e. crop hygiene) is always promoted. However, there are biological and operational constraints which limit how useful crop hygiene for fruit fly control can actually be, especially in commercial situations. Other treatments, such as targeted protein bait sprays, are likely to be more effective and operationally viable.

Biological background

Fruit fly maggots breed in fruit, causing fruit rot and premature fruit drop. The maggots leave the dropped fruit and pupate in the soil, subsequently emerging as adults and so continuing the next generation. This simple and very well-known cycle has meant that picking up and destroying fallen fruit, so destroying the maggots, has been a fruit fly control method advocated since the 1800s. While logical, the biological and commercial value of the technique is questionable.

With very few exceptions, fruit fly maggots leave the fruit within 24 to 48 hours of fruit drop: most will leave the fruit within only a few hours. This rapid leaving of the fruit is considered an evolved response by fruit flies to avoid being eaten by the many small mammals and birds which feed on fallen fruit in their natural, rainforest habitats.

In experiments in north Queensland rainforest, 80% of artificially infested fruit left on the canopy floor in the late afternoon was gone by the next morning: if maggots didn't leave fruit quickly they get eaten along with the fruit. Operationally, the rapid departure of maggots from fruit means that for crop hygiene to work effectively, fruit should be picked up every day. Additionally, as maggots leave the fruit to pupate in the soil, shallow fruit burial or light tilling is also largely ineffective: fruit must be buried deeply (>0.8m), 'cooked' or fermented under plastic, or placed in water.

Operational issues

At a commercial scale, the biological limitations of making crop hygiene effective for fruit fly control are probably too great to justify its recommended use. This does not mean that attempting to control flies breeding on-farm is not worthwhile. In summer-fruit production systems the number of flies which can potentially breed in even a few fruit remaining per tree after harvest is large, while the number of flies which can breed in a single untreated house tree can be enormous.

To control these flies using protein bait sprays will be a much more operationally effective strategy than trying to collect and destroy fallen fruit. In an earlier article, I wrote that there are significant limitations to using protein bait sprays and this remains true: but where they are effective is when the target is immature flies, as such flies are protein hungry. The flies which emerge from within the orchard, or under an untreated house-tree, will be immature and so highly responsive to protein.

One or two late season and post-pick bait spray applications in orchards, or a spray or two around an individual house or paddock tree dropping a lot of fruit fly susceptible fruit, will not give commercial control in the current crop but will help towards controlling the total on-farm fly population for the next season.

Control of non-commercial trees

Most properties will contain fruit trees which are producing non-commercial fruit: young orchards not fully in production, old orchards waiting to be replanted, a few individual trees along a laneway, feral trees in scrub, or house-trees for the kitchen. When combined, such trees have the potential to produce large numbers of fruit flies which will ultimately infest the crop. Such trees should be identified and fruit flies managed for total on-farm hygiene.

Caveat

While removal of fallen fruit is unlikely to be effective for fruit fly management unless undertaken on an almost daily basis, removal of fruit can have benefits for other orchard pest and disease management. Decisions about an orchard hygiene program should be based on total pest and disease control, not just fruit fly.



Acknowledgements: This article was written by **Tony Clarke** of the *Queensland University of Technology* as part of HAL Project SF12013 "Fruit fly IPM for Summerfruit, with a focus on developing an effective female lure-and-kill device". This is the eighth of a series of articles providing information on fruit flies and their integrated control. This project has been funded by HAL using the summerfruit industry levy and matched funds from the Australian Government.





Research ...

Bureaucrats in Rome and Australian fruit flies: why should we care?

I: Background to the IPPC, ISPMs and Pest Free Areas

The International Plant Protection Convention (IPPC) is an international, legally binding agreement on plant health to which Australia and 180 other nations are signatories. Created in 1951, the IPPC aims to protect cultivated and wild plants by preventing the introduction and spread of plant pests. The IPPC is governed by the Commission on Phytosanitary Measures (CPM) and is operationally implemented by the IPPC Secretariat.

The CPM, which meets once a year, consists of a member from each of the signatory countries (normally the head of the nation's plant protection organisation, for Australia this is **Vanessa Findlay** our Chief Plant Protection Officer); while the Secretariat is provided by the Food and Agricultural Organisation (FAO) of the United Nations and is based at FAO headquarters in Rome.

So what does a high level, multinational agreement have to do with day to day management of Australian fruit flies? The answer is a great deal.

Despite the fact that few Australians even know about the existence of the IPPC, their adopted standards – known as the International Standards for Phytosanitary Measures (ISPMs) – directly impact on how fresh commodities produced in fruit fly areas can be traded, and hence how we manage our flies.

How the IPPC operates

The aim of the IPPC (<https://www.ippc.int>) is to facilitate international movement and trade of plant and plant products, while minimising the risk of spreading plant pests and diseases. The CPM represents the global community and, on advice from experts and with long and drawn out negotiation and comment opportunities, approves the ISPMs. The ISPMs are the basis for any phytosanitary conditions associated with plant commodity trade – for example ISPM 07 is “*Phytosanitary certification system*” and ISPM 11 “*Pest risk analysis for quarantine pests*”.

Approval of ISPMs is not done lightly – in the 53 years since the signing of the convention only 36 have been approved with a further 19 ‘Annexes’ added to existing ISPMs (all ISPMs and Annexes can be found at <https://www.ippc.int/core-activities/standards-setting/ispms>).

One problem of the ISPM system is that they are such high level documents, and go through such a political process to be approved, that the final wording is so legalised and indirect that operationally that can be very difficult to apply to specific pest situations. Recognising this, a new generation of ISPMs have been created in recent years which are aiming to be much more pest specific – fruit flies figure highly in this process and this directly impacts on the future of fruit fly management in Australia.

Fruit fly specific ISPMs and Annexes

Of the 36 ISPMs and 19 Annexes, three ISPMs and eight Annexes are specific to tephritid fruit flies. Of direct relevance to Australia are: ISPM 26 “Establishment of pest free areas for fruit flies (Tephritidae)”; ISPM 30 “Establishment of areas of low pest prevalence for fruit flies (Tephritidae)”; ISPM 35 “Systems approach for pest risk management of fruit flies (Tephritidae)”; ISPM 28 Annex 04 “Irradiation treatment for *Bactrocera jarvisi*”; ISPM 28 Annex 05 “Irradiation treatment for *Bactrocera tryoni*”; and ISPM 28 Annex 14 “Irradiation treatment for *Ceratitidis capitata*” (all of these can be found at the web site above).

What do they say?

Discussion of ISPMs 30 and 35 will be provided in the next article of this series, as they are complex and open to significant interpretation, but ISPM 26 and the Annexes are relatively straight forward and useful for illustrating the role these documents play in international trade negotiations.



ISPM 28 Annex 5 (Irradiation treatment for *B. tryoni*) is a simple document, and states that an irradiation treatment with a minimum absorbed dose of 100 Gy has a treatment efficacy (for preventing emergence of *B. tryoni* adults) of ED_{99,9978} at the 95% confidence level. It further notes that the irradiation may not cause direct mortality, and so inspectors should be aware that they may encounter live, but not viable, larvae or pupae.

The acceptance of this Annex by the CPM means that this treatment, if used by an exporter as a single step disinfestation treatment for a *B. tryoni* susceptible commodity, should not need to be further justified to the importing country: the annex is all the evidence that should be needed. Should the importer reject the treatment outright, then a case could be made before the World Trade Organisation that a technical barrier to trade had been erected. Commodity negotiations rarely reach that level, but that is the power of accepted ISPMs and their annexes.

ISPM 26 (Establishment of pest free areas for fruit flies) is a slightly more complex document but its guidelines, if you go and look at it (<https://www.ippc.int/publications/establishment-pest-free-areas-fruit-flies-tephritidae>), will be immediately recognisable to any grower who operates within, or has operated within, a fruit fly free area.

It identifies what should be considered before setting up a pest free area, the need for public awareness, official documentation and record keeping, surveillance and trapping requirements, the need of a buffer zone, movement control of regulated articles, and what happens around the suspension, reinstatement or loss of pest freedom. This document provides the internationally accepted guidelines under which area freedom can be gained and maintained, while also providing insight as to why fruit fly area freedom has been abandoned in many parts of eastern Australia.

Reading ISPM 26, you will quickly recognise that this is a ‘negotiation’ document. It is not about being tightly prescriptive, but is much more about providing a basis for bilateral and multilateral negotiations in biosecurity risk reduction and trade of fruit fly affected commodities. All the ISPMs are like this. For a simple statement concerning an irradiation dosage, or even about demonstrating there are no flies in an area, interpretation and implementation of such documents is relatively straightforward from both regulatory and operational perspectives.

As will be discussed in the next article, implementing ISPMs 30 and 35 for fruit fly areas of low pest prevalence and systems approaches – which is where Australia must go to manage fruit fly - is much more complex.



Acknowledgements

This article was written by **Tony Clarke** of the *Queensland University of Technology* as part of HAL Project SF12013 “*Fruit fly IPM for Summerfruit, with a focus on developing an effective female lure-and-kill device*”. This is the ninth of a series of articles providing information on fruit flies and their integrated control. This project has been funded by HAL using the summerfruit industry levy and matched funds from the Australian Government.



Horticulture Australia

To find out more about Summerfruit Australia Ltd, check out the website: www.summerfruit.com.au





Research ...

Bureaucrats in Rome and Australian fruit flies: why should we care?

PART II

II: Areas of Low Pest Prevalence and Systems Approaches

The losses of area freedom and *dimethoate* and *fenthion* have led to a range of other concepts being discussed for fruit fly management. Two of these – ‘**Areas of Low Pest Prevalence**’ (ALPP) and ‘**Systems Approaches**’ (SA) – have been discussed as potential alternatives. Systems approaches, particularly, has been commonly talked about. However, what is often not made clear in general discussions, is that these two concepts both have formal meaning under the International Plant Protection Convention and adoption of either is as complex as maintaining area freedom (in the case of ALPP), or more complex than arguing a single step disinfection treatment (in the case of SA).

Following on from the previous article in this series, this document introduces **ISPM 30 ‘Establishment of area of low pest prevalence for fruit flies’** and **ISPM 35 ‘Systems Approaches for Pest Risk Management of fruit flies’** (<https://www.ippc.int/core-activities/standards-setting/ispms>).

ISPM 30 Areas of low pest prevalence for fruit fly

The formal requirements for creating and maintaining an area of low pest prevalence (ALPP) for fruit flies are, in most ways, identical to maintaining area freedom for fruit flies. There is a need for delimitation of a specific geographic area, ongoing monitoring and surveillance, coordination of the process by the government or an appropriately accredited body, loss of ALPP if some trap threshold is passed, and so on: all are required for ALPP. However the difference, as the name suggests, is the basic assumption that at least some flies are permanently established in the region/district of interest, not that there are no flies. Low fly pressure in an ALPP may be the result of naturally low pressure (e.g. on the southern edge of *B. tryoni*’s distribution), or the result of direct controls such as SIT or AW-IPM.

Because some flies are expected in an ALPP, the status of ALPP is not regarded as satisfactory (on its own) for market access; as is the case for area freedom. An ALPP can serve two functions: firstly, an ALPP can act as a buffer zone around an area free zone, where it acts as a risk reduction zone; secondly, an ALPP can act as one component of a systems approach for fruit fly.

ISPM 35 Systems approach for pest risk management of fruit flies

Systems approaches for fruit fly management are very straight forward – at least in theory. A systems approach uses two or more *independent* risk reduction steps to reduce the risk of a fruit fly establishing in a new country or region free of that pest.

The risk reduction steps can be applied anywhere from growing and harvest, packing, post-harvest and transport, and at the entry and distribution point within the receiving country. Systems are best suited when a single risk reduction step (e.g. a post-harvest treatment) is not possible, or effective enough. A system might include growing a fruit which is of low host status, in an area with low pest prevalence, and then cold storing for a given time. Any one of these treatments on their own may not be considered by the importing country sufficient to reduce the risk of spreading fruit fly, but when combined they may. Examples of systems approaches to get fruit fly affected commodities into the U.S.A. can be found at

http://www.naweb.iaea.org/nafa/ipc/SA_Several_E_Miller.pdf

Why so difficult?

If internationally accepted guidelines exist for both ALPP and systems approaches, why do they seem so difficult to implement? The problem is the ISPMs, which while defining what these terms mean and what you need to set them up, are largely silent on critical issues such as ‘*how few flies do you need to have to get an ALPP*’, and ‘*how do you assess the risk reduction of different risk reduction steps*’?

That the ISPMs are largely silent on these issues is not a fault of the authors of these documents, but the nature of trade negotiation and also problems of science. Under the agreements of the International Plant Protection Convention, determining the acceptable



level of risk posed by an exported commodity is the sovereign right of the importing nation (while recognising that there is no such thing as no risk). Thus what might be deemed 'risky' to one nation, might be quite acceptable to another. If this concept is translated to ALPP, it can be easily seen that different fly levels might be acceptable to different nations, and this is one reason why ISPM 30 is not prescriptive.

There are also major issues related to fruit fly biology which impact on the issue of 'how low is low'. Not all fruit types, or even varieties within a fruit type, are equally susceptible to fruit fly damage. For Queensland fruit fly while citrus are hosts, some types (e.g. murcott mandarins) are more susceptible than others (e.g. myer lemon); while all citrus are bad hosts compared to nearly all stone fruit.

In the field this means the risk posed by a given number of flies to stone fruit is much greater than the risk posed by the same number of flies to citrus. This issue is again modified by what other potential hosts are around. If good hosts and bad hosts are both available at the same time the flies will choose the good host almost exclusively, but if the bad host only is available then that fruit may get quite heavily damaged.

When such issues are combined with ripening effects (flies prefer ripe or over-ripe fruit to under-ripe), time of year affect (spring versus autumn), the number of generations the fly has per year, and so on, then calculating what is an acceptable threshold number of flies in a trap to reduce the commodity infestation risk to an acceptable level (which is in itself dependent on the importer) is very difficult.

One other major technical problem, which has not yet been overcome, also impinges on systems approaches. Systems approaches rely, by definition, on two or more risk reduction steps acting together to reduce risk to an acceptable (to the importing nation) level. For single step post harvest treatments (e.g. heat, cold, irradiation, etc.), calculating the efficacy of the treatment is technically challenging, but still relatively straight forward. Fruit are infested with a known number of eggs or maggots, the fruit is subjected to the treatment, and the number of survivors counted. When this is done with enough replication, over enough different treatment types, very accurate estimates of efficacy can be calculated and presented to a trading partner.

If I have a system which combines seasonal low pest prevalence (e.g. a winter crop), stage of ripeness (mature green rather than ripe), and picking and packing shed cull, calculating the risk reduction step posed by each independent treatment varies from very difficult to impossible. Rather, what tends to happen in practice, is that a final point assessment is made (e.g. the infestation level of packed fruit) and the whole system judged on that. While that works, it makes it difficult to work backwards to find the weak link if the system fails, and it makes it difficult to determine redundancy in the system (which will be costing money somewhere).

Should we go for areas of low pest prevalence and systems approaches in Australia?

My professional belief is that trying to get formally recognised ALPP in most areas of Australia is not justified. To get trading partner recognition of an ALPP requires exactly the same government support as for area freedom, and this is unlikely to be obtained in most states. I do strongly believe in AW-IPM and a total reduction in pest fruit fly numbers, but this does not require a formal ALPP to put in place to be used as part of a systems approach. Systems approaches are of potential value for Australian growers, and some have previously been negotiated by Queensland for commodity access into the southern states.

Back to Rome

This article and the previous have focused on issues stemming directly from the International Plant Protection Convention, an internationally legally binding agreement to which Australia is signatory. The standards published as part of the IPPC process impact directly and explicitly on the management of fruit fly risk in traded commodities, and hence influence how pre- and post-harvest fruit fly management is done. While decided upon in Rome, the ramifications affect Australia and where our options lie for new fruit fly management strategies which, in the absence of area freedom and D&F, maximise opportunities for maintaining and gaining market access for fruit fly affected commodities.



Acknowledgements

This article was written by **Tony Clarke** of the **Queensland University of Technology** as part of HAL Project SF12013 "*Fruit fly IPM for Summerfruit, with a focus on developing an effective female lure-and-kill device*". This is the tenth of a series of articles providing information on fruit flies and their integrated control. This project has been funded by HAL using the summerfruit industry levy and matched funds from the Australian Government.



Horticulture Australia



Industry Information ...



The Digital Rural Futures Conference is an initiative of the Regional Universities Network (RUN). In June 2013, the inaugural event was hosted by the University of New England in Armidale.

The Conference aim is to raise awareness of challenges and opportunities affecting rural and regional Australia across three themes: regional futures, agricultural futures and digital futures.

The 2014 Conference recognises the power of digital technology to act as an enabler to transform the lives of people in regional Australia, linking these dynamic themes. It will provide opportunities to build networks and partnerships locally, nationally and internationally, and raise awareness of challenges and opportunities across the themes of regional futures, agricultural futures and digital futures.

This conference provides an interface between the researcher and the primary producer, communities, government agencies, industry and other potential partners to facilitate discussion relevant to the regional agenda, providing opportunities to build cross-sector networks and partnerships locally, nationally and internationally.

The conference will explore

Regional futures

- Skills for transforming regions
- Creating New Value – Clusters, hubs and value chains
- Growing innovation and entrepreneurship in regional Australia
- Enhancing regional wellbeing using digital technologies
- Building regional social capital

Agricultural futures

- Agricultural extension including agricultural systems and mechatronics
- Revolutionising farming using Big Data
- Digital decision making and discussion support system tools for agriculture and climate
- Innovative technologies for agricultural and regional issues

Digital futures

- Digital literacies to transform rural and regional futures
- Early adoption of technology in education, health, agriculture and associated sectors
- Regional communication, digital and mobile networks and impacts on the digital divide on regional communities
- Assisted living and telehealth including digital applications for aged care
- Innovative approaches to learning and teaching including blended learning, flipped classroom, personalised learning, digital communities and learning spaces
- Research related to digital identity, digital inclusion, digital economy and digital society

Who should attend?

The Conference is designed to bring together researchers and academics from Universities, research and development corporations, CSIRO and cooperative research centres, representatives from industry peak bodies; agricultural innovators and technologists; agribusiness; agricultural extension practitioners; regional entrepreneurs; digital economy developers and service providers ; economic and community development organisations; those involved in agricultural, digital, educational, health and regional policy and programming; local government ; not for profits and social enterprise ; consultants.

- **Early Bird registrations close – 30 April 2014**
- **Standard registrations close – 10 June 2014**
- **Conference Dates: 25 – 27 June 2014**

The 2014 Digital Rural Futures Conference Organising Committee welcomes enquiries.

Telephone: +61 (7) 4631 2280 or 4631 1844

Email: DRFCConference@usq.edu.au - Website: <https://www.usq.edu.au/digital-rural-futures>



Industry Notice ...

Call for Directors

The Summerfruit Australia Ltd (SAL) Annual General Meeting will be held in Swan Hill, Victoria on **26th August 2014** - venue and time to be advised. **Please bookmark this date.**

This correspondence plus the *SAL Election Process Document*, *Nomination as a Director Form* and the *Consent to act as a Director Form* will be available from the SAL Website after 5th March 2014.



5th March 2014

Dear Member,

Re: Summerfruit Australia Limited – Election of Directors

Summerfruit Australia Limited has commenced its Annual Directors' Election process and as a registered member, I welcome your participation.

Elections are held to ensure a fair and democratic system of governance.

The process starts with a call for nominations of candidates in March and ends with a declaration of the results of a ballot (if required) in June. The attached documents explain the key steps in some detail. I would ask you to please familiarise yourself with the election process.

The Board welcomes the call for nominations The following Directors Mr M. Oakley Tas; Mr B. DeiSimone WA; Mr A. Conti and Mrs G. Tripodi –Vic are commencing there second term. Mr A. Finlay Qld and Mr Jason Size SA are re-nominating for election. Due to the resignation of Mr M. Napper NSW a nomination is required for this position, failing any nomination the Board may appoint a nominee to fill this position.

I encourage all members to participate in the election process.

All of the necessary forms are available on our web site.
www.summerfruit.com.au

Yours sincerely,

Andrew Finlay
Chairman

8/452 Swift Street, Albury NSW 2640
Tel: 02 60416641 Fax: 02 60416641
e-mail: ceo@summerfruit.com.au web: summerfruit.com.au



Industry Information...



ATO app for small business on the move

Businesses can now access tax and superannuation advice anytime, anywhere, courtesy of an upgrade to the ATO app. The upgrade means small business now has the ATO's *Small business assist* plus a range of tools, calculators, answers to their questions plus news and updates, at their fingertips, free of charge.

The ATO's Steve Vesperman says 200,000 people already enjoy the convenience it offers for personal tax and super information and advises small business to give it a go. "The small business assist service will allow business owners to book after-hours advice calls, work out debt payments and access useful calculators and advice. It also links to YouTube videos offering quick and easy explanations of tax issues

"There's also a decision making tool to determine if someone is an employee or a contractor, very useful to make sure you're on top of your superannuation and tax withheld obligations. And the *Tax withheld calculator* tells you how much tax to withhold and remit to the ATO.

"Businesses trying to manage tax debt can use the *Payment plan estimator* to find out how to establish a payment plan and how to tailor it to suit their needs. And *frequently asked questions* puts you on track without having to go searching for answers, while *News & updates* keeps you informed."

The upgraded App can be downloaded free of charge from Google Play, Windows Phone Store or the Apple App Store. <http://ato.gov.au/app>. Steve says there's more to come. "We are going to be adding more functions and tools to make it even easier to stay on top of tax and super."

Publication Details ...

Australian Stonefruit Grower incorporating the Low Chill Stonefruit Grower - 2014 Publication Timetable -

Contributions are invited for the next scheduled publication - **MAY 2014**.

FEBRUARY	MAY	AUGUST	NOVEMBER
<i>Advertising Deadline</i> 7 February	<i>Advertising Deadline</i> 21 April	<i>Advertising Deadline</i> 31 July	<i>Advertising Deadline</i> 31 October
<i>Copy Deadline</i> 10 February	<i>Copy Deadline</i> 28 April	<i>Copy Deadline</i> 7 August	<i>Copy Deadline</i> 7 November

Note: Publication Dates are subject to change at the discretion of the Publishers.

Advertising in this publication are very reasonable and provide a cost effective way of informing members about your products and services.

ADVERTISING RATES – *Please request an **ADVERTISING BOOKING FORM**.*

Full Page - \$250.00* Half Page - \$175.00* Quarter Page - \$100.00*

**Rates are subject to GST if applicable. Advertisers will be invoiced following the publication issue and the terms are Strictly 30 Days.*

CONTACT –

Col Scotney – National Producer/Editor

Australian Stonefruit Grower – Email: australian.stonefruit.grower@aapt.net.au

Communications Manager

Low Chill Australia Inc., PO Box 372, Burrum Heads QLD 4659 – Phone: (07) 4129 5960; Mobile: 0407 589 445 –

Email: cm@lowchillaustralia.com.au