



Final Report

Orchard Action – Co-production of knowledge to Victoria pome fruit orchards

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Summary

The Orchard Action Project commenced in June 2014 and ran for 3 years. This period of time saw many changes to the Victorian pome fruit industry, some of which were consolidation of orchards resulting in less growers with larger orchards; extreme weather events – particularly hail damage in the Goulburn Valley which destroyed the majority of pear and some apple crops in 2015; changing markets – predominantly the effect the cannery had on the fresh market with the reduction of preferred growers suppliers in 2014, and the cost of production and implementation of new technologies.

The project objective was to provide quality information about the latest technologies in pome fruit production to Victorian apple and pear growers through industry development services.

Activities in this project were planned to assist Victorian growers with the implementation of efficient transformational changes in their orchards. These activities included;

- One-on-one grower visits to discuss specific issues
- Publication of technical articles
- Facilitation of the Young Grower Group (GV Emerging Leaders Group)
- Grower Meetings – including season reviews
- Networking
- Development of a project dedicated section on FGVL's website.

Key Outputs were;

- 6 businesses contacted in person or via phone every month
- 8 Technical articles published every year
- One grower meeting a year
- 2 meetings per year for the Young Grower Group (GV Emerging Leaders Group)
- Attend conferences and visit other growing regions.
- Website section dedicated to Orchard Action articles.

Key results.

- More than the required amount of grower visits and technical articles were achieved. In some cases growers requesting an article on a particular issue they were experiencing.
- Improved attendance at seasonal reviews with growers showing interest in new technologies as well as improved production practices.
- The GV Young Grower Group was stagnating due to the perceived restriction of the name, this group morphed into the GV Emerging Leaders group. This group now meets regularly and is very active in information sharing, technology advancements and leadership development.
- The IDO's participated in and contributed significantly to many structured working groups, these included QFF Task Force, Pear Mapping for Export, Plant Standards MRL breaches, Master classes on Horticulture production, Review of Chemical Registration, Market Access to China, IPM export training and Victorian Work Safe.
- The library of technical articles on the website has had significant and regular hits.

The FGVL staff involved in this project were;

- Virginie Gregoire IDO (project commencement – October 2014)
- Tony Filippi IDO (November 2014 – November 2015)
- Jabbar Khan IDO South (October 2014 – August 2015)
- Veronique Froelich IDO (August 2015 – March 2016)
- Petar Bursac IDO (October 2015-December 2016)
- Julie Godwill IDO (January 2017 – June 2017)
- Kath Boast (project commencement until completion)
- Fiona Pogue (project commencement until completion)

Keywords

Apples; pears; pome fruit; fruit growers; orchards; technology; IPM- Integrated Pest & Disease management; fertigation; crop loading; resistance management; monitoring; Queensland Fruit Fly; MRL – Maximum Residue Levels; soil drenching; targeted water use

Introduction

Victoria is a critical player in the Australian Pome fruit Industry as according to ABS 2014/15 statistical data it produces 45% of Australia's apples and 89% of pears. Victoria produces fruit for processing and the fresh market. The Southern growing regions produce fresh fruit while the Goulburn Valley historically is a processing fruit and fresh production region. The cannery (SPC) had been making changes to their supplier criteria but this underwent a major transformation in 2013 when the cannery delisted many growers to consolidate their preferred grower suppliers. This resulted in some growers re-evaluating their fruit growing methods and also establishing new markets or leaving the industry.

Growers were not only faced with changing market conditions but extreme weather events and innovative technology altering the way growers managed their production.

This project assisted growers with these production changes by providing quality information about the latest technologies in pome fruit production via technical articles (website and newsletter), grower visits and grower meetings.

The project built on AP10019 "Technology transfer of modern production techniques in the Victorian Goulburn Valley pome fruit industry". An end of project evaluation made 18 recommendations that were incorporated into the delivery of this project. These recommendations were;

1. Growers do not have a clear recognition of the project. It should have its own distinct identity, built on its strengths, and should be branded appropriately. The full project could be called "Orchard Action" for example.
2. The project needs to position its activities within a space that is already occupied by APAL to a degree. The IDOs offer a position that APAL cannot fulfil and this advantage needs to be clearly defined to guide effective technology transfer.
3. There is an opportunity to garner additional project resources by aligning the project with APAL's New Extension Network. Some mechanism is required to work more closely with APAL.
4. APAL's Future Orchards and PIPS initiatives are, and should remain, a key part of the project's offerings whilst still identifying an event as promoted by "Orchard Action".
5. The core aspects of the project should be agreed and clearly understood. These are:
 - a. Providing growers with opportunities to acquaint with new information; and
 - b. Mentoring growers to encourage the rapid adoption of that information to achieve industry objectives.
6. Although the number and type of project elements is important, the Key Performance Indicators for the next project should include clear, identifiable measures of outcomes, perhaps detailing distinct sub-projects.
7. Ensure that sufficient time is given to planning each event or publication. The project must make a difference to the industry and planning some months ahead, rather than weeks ahead, should allow better outcomes;

8. It is imperative that new information is presented in such a way that encourages growers to attend an event, or read a publication, rather than do anything else. Specific events must be well-planned, and efforts made to provide top-class presenters or examples. Fewer, better-planned events are preferable than numbers of events that do not excite growers.

9. The IDOs need to link with researchers to set up good networks. One option is to attend major conferences, such as the horticultural conference taking place in Brisbane in 2014.

10. As now, growers should have the opportunity to discuss ideas with their peers. The barbecues which are part of current orchard walks are well-received as such an opportunity.

11. Growers like to hear about the outcomes from practices from other growers. Field day demonstrations which include a narrative, or a Q&A session, with the orchard operator add to the event delivery.

12. A stand-alone "Orchard Action" technical bulletin should be published at a frequency of about six times each year – content and presentation quality are paramount rather than quantity. This bulletin should present a distillation of, and commentary about, new technologies, information or research that are emerging in Australia or overseas. It may be that a few best practice growers could be used as a sounding board for determining and reviewing bulletin content.

13. Use one-to-one discussions as an opportunity to plan some orchard development work or information transfer for each grower. Consider a mentoring role.

14. Information about project outcomes needs to be gathered. This has been difficult to do for the current project for which an Excel database has been designed. It is likely that a more flexible style is required which collects grower narratives about change as well as some basic but meaningful data; for example, new block planting density, block or variety yields, packout rate, or applied practice.

15. There is an opportunity for the IDOs to develop some meaningful economic benchmarks which could help growers better understand the financial implications associated with orchard development or a change in agronomic practice. For example, it would be possible to identify the full costs associated with planting a new block in a particular configuration, and so provide meaningful comparative information for growers.

16. An area of the FGV website should be developed to present growers with a picture of the project and its activities. This area could also be used to archive appropriate Australian and overseas research/technology references.

17. More time should be given to working with the Young Grower Group.

18. More time should be given to the pear sector.

A steering committee was formed and tasked with ensuring that these recommendations would be included in this current project. The initial members of the steering committee were: Alison Anderson (HIA), Kath Boast (FGVL), Angus Crawford (APAL), Brad Fankhauser (grower), Tony Filippi (IDO), Peter Gray (Project Administrator) and Andrew Plunkett (grower). Tony Filippi ceased to be a member of the steering committee in November 2015, and this was the only change to the composition of the steering committee.

A revised Work Plan was developed to include the following: the project objectives; APAL strategic objectives; and the recommendations from the previous project review. To ensure that objectives were in line with the peak industry body strategic plan a rigorous review of the workplan was conducted mid-February 2015 with APAL's John Dollinson (CEO); Annie Farrow (ISM) and Angus Crawford (TM).

This project also complemented Apple and Pear Australia Ltd (APAL) "Future Orchards" projects as local growers were visited to facilitate individual uptake and adaption of the new technologies. The Industry Development Officer's also had regular contact with APAL staff and linked in with APAL on National Apple and Pear Development Program (AP15004). These linkages were achieved through activities such as; regional liaising, attending research and development forums, informing growers of upcoming events, writing and publishing articles on events.

The project had many changes of staff, this caused significant problems with recruitment and training. The project was not budgeted adequately especially in the area of staffing, in many cases Industry Development Officers were trained by Fruit Growers Victoria Ltd but then left the organisation for better paying positions in the industry.

Methodology

1. One-on-one visits to local growers by the Industry Development Officers.

IDO's visited Victorian apple and/or pear growers on appointments to discuss best production practices for a particular business. Topics covered included any aspect of producing good quality pome fruits including pruning techniques, crop management, fruit quality, chemical thinning regimes, integrated pest and disease management, irrigation regimes, sun protection practices, fruit coloring and new orchard establishment.

A requirement was for six orchard businesses to be visited or called every month. This was exceeded every month.

2. Publication of simple technical articles – Orchard Action articles

IDO's produced and published concise and easy to read technical articles at critical times of the year. Topics covered by these articles included, but not restricted to, integrated pest and disease management, crop load management, irrigation/sunburn management, harvest planning, post-harvest/storage management, pruning/canopy management, spray planning and new planting preparation.

In some situations, the Project Leader organised for articles to be written by industry experts; these included topics such as; managing mites in the orchard, what you need to know about the Carpophilus beetle, finishing off the Pears – Mealybug control, Post-harvest for Pears and fruit fly numbers rising.

Orchard Action articles were published in the weekly E Newsletter, CoreFacts, and also publicly posted in a library on the FGVL (Fruit Growers Victoria Ltd) website

<http://www.fgv.com.au/component/content/category/10-orchard-action?Itemid=352>

A requirement was that 8 articles would be produced each year, many more than this were produced

3. Annual season review meetings – Preparing for the coming season

IDO's organised annual meetings for Victorian orchardists with expert local and international speakers. These meetings were after the harvest period with the purpose being to summarise issues encountered during the growing season and address solutions for the coming season. Guest speakers presented on innovative practices currently being developed and/or put into practice in leading pome fruit growing regions around the world.

Grower meetings were organised when the need arose, such as when hail wiped out the majority of the pear crop.

4. Goulburn Valley Leading Hand Network meetings (GV Emerging leaders group)

The Goulburn Valley IDO organised meetings for the Goulburn Valley Leading Hand Network to enable a strong network amongst growers of that region. Industry speakers were invited to these meetings. The name of this group morphed many times during the project, the name changes were mainly due to ensuring that the group was inclusive to all growers who wanted to be involved.

The group is now known as the GV Emerging Leaders Group.

A requirement of this group was to meet twice per year, this did happen in the beginning of the project but due to the success and proactive leadership this group now meets on a more regular basis.

5. Study tour

Due to the change in HIA funding for Study tours this was no longer an outcome of the project but IDOs would organise self-funded study tours for growers if determined a priority by the Steering Committee. IDOs would encourage participation in any levy-funded study tours.

6. Networking

The IDOs would actively maintain a strong network of pome fruit production experts from Australia and other leading countries by attending relevant conferences and by visiting innovative orchards interstate. These visits were to include discussion with local growers and relevant consultants and/or researchers. On-farm discussion groups facilitated by IDOs will be used as a strategy for dissemination of information, targeting topics to the locations and needs of participants.

The IDOs shared relevant information about conferences and/interstate visits to the Victorian industry through a simple report that was published in the weekly newsletter and Grower News on the FGV website.

7. Development of a project dedicated section on FGV's website

Fruit Growers Victoria Ltd developed a section on the fgv.com.au website entirely dedicated to the orchard Action project, enabling storage and easy access to all material developed through this project for the industry. These materials included appropriate branding and acknowledgements as per the HIA Publications.

8. Linkage to the national program, AP15004 - Australian apple and pear innovation and adoption program.

This will ensure two-way communication and that the IDOs are up to date with information from the national apple and pear R&D program funded by Hort Innovation and contribute to brokering information from the national program to the Victorian apple and pear industry. The IDOs will participate in any teleconferences for information wholesalers that are facilitated through AP15004 – Australian apple and pear innovation and adoption program. The IDOs will communicate regularly with APAL staff delivering R&D projects.

9. IDOs will contribute to Hort Innovation membership processes by encouraging growers to join Hort Innovation so as to support the levy-funded R&D mechanism.

Outputs

1. One-on-one visits to local growers by the Industry Development Officers

An average of 6 growers per month were visited with a target of at least 216 growers visited over the course of the project. The 6 growers visited each month were documented, with revisits in following months based on notes from visit. While the aim was to contact as many apple and pear growers as possible through the duration of the project, this activity was highly dependent on the interest level of each grower. A total of 237 visits were conducted – either on farm or via one to one phone contacts.

2. Publication of simple technical articles – Orchard Action articles

IDO's produced, published and stored online 8 technical articles per year addressing pre-determined topics for a total of 24 articles over the course of the project. The articles were published when the topic addressed was of the most relevance to the fruit growing issue at that time of the season.

3. Annual season review meetings – Preparing the coming season

One meeting was organised annually, hosting quality Australian or overseas speakers presenting on innovative practices applicable to the Australian apple and pear industry. Other workshops/field days/grower nights were held as the need arose (as per work plans).

4. Goulburn Valley Leading Hand Network meetings

The Goulburn Valley IDO to organised 2 meetings annually for the Goulburn Valley Leading Hand Network - with local guest speakers.

5. Study tours

Self-funded study tours for growers was determined a priority by the Steering Committee, young growers from the Goulburn Valley self-funded a trip to the new Melbourne market. A report addressed to the industry, summarising findings from the study tour to be written and made available to the industry.

6. Networking

Under the HIA Project AP13027 Fruit Growers Victoria Ltd has been heavily involved in networking and dissemination of information vital to Apple and Pear Growers. The Fruit Growers Victoria Annual Report contains information across a broad range of activities within the Company, presented as an overarching view of the Victorian apple and pear industry. IDOs attended 2 relevant conferences and interstate orchard walks.

7. Development of an Orchard Action project dedicated section on FGV's website

FGVL has dedicated a section of their revamped website to the Orchard Action project and continue to store all related material including technical articles and reports to industry.

<http://www.fgv.com.au/grower-services/current-projects/orchard-action/technical-articles>

8. Linkage to the national apple and pear industry development program (AP15004 - Australian apple and pear innovation and adoption program)

Two-way communication to assist the brokering of information by the IDOs. Participation in any teleconferences for information wholesalers that are facilitated through AP15004

Outcomes

1. One-on-one grower visits to discuss specific issues

More than the required 216 grower visits occurred during the life of this project. To improve management and data collection of these visits, a cloud-based database was established with important data fields such as region divided in to sub categories, contact person/manager, crops grown, varieties, this allowed the IDO to be better prepared for visits. Database categories will be further developed to include: hail netting, orchard size physical and postal address, and technical knowledge of staff. A data collection sheet was used for visits and added to the database. Some of the issues raised by growers were as follows;

Issue	Resolution or Follow up
Hail Damage	Method of assessment provided. On 15/10/2015 an Information night at the Hort Centre of Excellence was quickly organized. It involved growers, APAL, VFF and other industry reps, Centrelink, Rural Finance and local politicians.
Preventive spraying for diseases – (particularly after hail and leaving fruit on the trees)	Information and resources provided with links to the website and information provided in the Core Facts newsletter.
Physiological disorders of apple and pear trees such as bitter pit.	Strategies organised for bitter pit prevention and treatment with foliar fertilisers. Technical factsheet published on bitter pit – Available on FGV website.
Monitoring and spray predictions for codling moth.	Positioning of monitoring traps, determining of biofix date and egg hatching/spraying prediction.
Monitoring and spray predictions for Woolly aphid.	Advised re soil drenching and foliar treatment applied together. Growers also advised to read newsletter article on woolly aphid – Information published on the website and in the newsletter.
Two Spotted Mite	Examined spray program and gave recommendations for mite control.
Hail Netting	Provided costs of installation and maintenance, explained benefits of hail netting regarding pest management. Sourced small quantities of netting for

	growers.
Crop forecasting and PPE (Personal Protective Equipment)	Information sourced and provided
Management of old style orchards	Information sourced and provided
Chemical thinning and limitations regarding phonological stages of stress	http://www.fgv.com.au/grower-services/current-projects/orchard-action/technical-articles/518-help-for-apple-blossom-thinning Information sourced and provided
Resistance management, soft chemicals, biopesticides	Positioning, mixing and effects on beneficials
Marketing information	New varieties and consumer specifications
Pruning in relation to crop regulation, fruit quality and pest management	Provided information and demonstrated different techniques
QFF fruit movement	Explained protocols and treatment options
QFF GV Taskforce Business Case	Information provided re the cost benefit of grower's expenditure on QFF management Contributed to the RMCg report "Management of QFF in the Goulburn Valley" business case which was the precursor to Managing Fruit Fly in Victoria Action Plan 2015-2020
MRL Breach	Organized visit with DEDJTR plant standards and provided spray solutions to reduced risk of future breaches
Integrated Pest and Disease Management	Information provided to individual orchardists regarding their circumstances, needs and desired outcomes. Many growers have expressed a desire to learn applicable practices for their orchard.
Water usage	Information provided regarding targeted water use. Drip irrigation methods and use of technology – tensiometers to help with decision making.

Flower monitoring	Advise re using a precision ag machine for assessing flower load in spring.
Neglected orchards	Visited sites as requested by growers and passed on grower information to DEDJTR regarding neglected orchards in the GV.
Browning of Pink Lady apples	Problem investigated, article written and published in newsletter and on website 16/2/16 http://www.fgv.com.au/grower-services/current-projects/orchard-action/technical-articles/402-postharvest-browning-of-apples
Coloring or apples in the GV	Advice re fertigation program and use of reflective foil to aid coloring
Water Allocation	As a result, from grower queries an information session held with water industry expert in July 2016 http://www.fgv.com.au/grower-services/current-projects/orchard-action/technical-articles/526-goulburn-murray-water-land-water-entitlements-presentation
Research	Growers interested in research have been provided with tender search information, HIA membership information and website details.
Pruning in general. Growers have expressed concern that employees need more training in pruning methods.	Advised to attend pear masterclasses held by APAL and DEDJTR
Phytophthora infection	Explained some principles of root pruning in regard to Phytophthora infection
New varieties	Growers were advised to attend future orchards events as well as DEDJTR and HIN events. Including accessing the websites of DEDJTR, HIN and HIA in searching for information relevant to each individual business

As well as the above specific topics the IDO's also used these visits to help growers create a profile of the orchard, conduct assessments on the technologies used, water supply, netting, IPM and labour in order to identify areas for improvement. The IDO's introduced the project to growers and explained its origins and also provided info on upcoming events. Printed copies of articles of interest were provided to growers who were not using the internet.

The IDO's noticed during some visits during winter that growers were unsure how to determine the type of pruning required and how many buds should remain on trees. After inspection of some of these orchards the IDO explained to growers the principles of bud counting and pruning. Growers were referred to websites and technical articles for further information on this process.

It was also observed during grower visits that most tractor operators do not wear PPE (Personal Protective Equipment) while spraying. This issue was raised with information provided to growers, orchard managers and individual tractor operators.

The IDO utilised these visits to update growers on other industry activities and obligations such as; APAL events, educational opportunities, ACUP obligations (Agricultural Chemical User Permit), HIA changes and applications for membership

2. Publication of technical articles

Articles were written by IDO's and other industry experts and published in the weekly E Newsletter and on the FGVL website. Content was usually specific for what was happening on orchards at the time. Sometimes articles were a result of a grower request for more information on a particular issue. These articles were recognised as relevant and valuable to the industry with APAL regularly republishing articles on their website.

Some of the articles have been cited by some of local newspapers such as the article Apple Browning <http://www.weeklytimesnow.com.au/agribusiness/horticulture/apple-browning-a-problem-for-growers/news-story/cc4465e86b5ff9c5a9ce09b84b10f370>

Many more than the required 24 were published, below is a list of some of the articles published (with hyperlink);

TECHNICAL ARTICLES LIST AS PER FGVL WEBSITE

[Goulburn Murray Water Land & Water Entitlements Presentation](#)

[Fire Blight](#)

[Keeping pears firm](#)

[Tree-Row-Volume: concept, calculations and application](#)

[The nutrient element calcium](#)

[Fertilizer tips to maximize baby tree growth](#)

[What's going on down there? Facts about organic matter](#)

[Help for Apple Blossom Thinning](#)

[Seeing scald before it happens!!](#)

[EMERGING LEADERS GROUP VISIT SEEKA](#)

[High summer temperatures and shallow soils can adversely affect canopy development and yield of apple trees on M.9 rootstock](#)

[Understanding and managing transplant shock](#)

[Check your Soil PH!](#)

[How useful is a soil test?](#)

[Train and prune young fruit trees in SUMMER, not in WINTER](#)

[HARPS hits the right note for growers and retailers.](#)

[Finishing off the Pears - Mealybug control, Post harvest for Pears, QFF numbers rising!](#)

[Can earwigs be beneficial in apple orchards?](#)

[Tips to build a trusty trellis.....](#)

[Are you ready for automated harvests?](#)

[Managing Mites in the Orchard !!](#)

[Why do some fruit crack or split when it rains?](#)

[FIELD WALK AT TATURA CENTRE OF EXCELLENCE 25/1/17](#)

[What you need to know about the Carpophilus beetle](#)

[Find out about Beneficial Insects in the Orchard.](#)

[Bitter Pit in Apples](#)

[Blackspot in the orchard!](#)

[Orchard Nutrition Workshop night a success !!](#)

[Orchard Hygiene and Winter Inspections](#)

[Gippsland Fruit Growers Meeting and Orchard Walk Held in Conjunction with The AustSafe Roadshow](#)

[FGVL's Winter Snapshot!!!](#)

[Busy Pruning? Read this article from FGVL's Petar Bursac on Winter Pruning of Apples and Pears!](#)

[Tank Mixing of Pesticides and Fertilizers](#)

[How do insects become resistant to pesticide?](#)

[How to Improve Fruit Color](#)

[Postharvest Browning of Apples](#)

[Woolly Aphid - Time to Inspect your Blocks and Mark Infested Trees](#)

[New Orchard Action Reminder OUT NOW!!!](#)

[Codling moth IPM – Basic Principle](#)

[Apple Scab IPM - Basic Principles !!!](#)

[FGVL's New Seasonal Newsletter.....OUT NOW!!!](#)

[Are your Bees Buzzing ???](#)

[CROPWATCH - Orchard Action Reminders Vol 5, No 1](#)

[New Biological Insecticide for Codling & Oriental Fruit Moth in Pome & Stone fruit](#)

[WORKPLACE SAFETY : "Have Your Staff Really Understood The On Farm Induction?"](#)

["It's Spring cleaning time" - how to safely dispose of chemical containers.](#)

[FGVL's Grower IPM for New Season Outcome](#)

[WORKPLACE SAFETY for You and Your Employees](#)

[Be prepared for late frosts!](#)

[Cover Spray Option Extended for Queensland Fruit Fly](#)

[Pruning and Managing Orchard Designs for the Future](#)

[PIPS - Codling Moth Biocontrol & Mass Trapping](#)

[Increase Your Bottom Line\\$ with Compost/Mulch](#)

[Why should you be managing your labour using mechanical assist?](#)

[Fruit Fly Technical Information & Presentations](#)

[Neonicotinoids under the radar](#)

****Please note all technical articles can be found on the FGVL website.***

3. Annual Season Review Meetings

The IDO's organised a Season in Review meeting for growers at the end of each season. A meeting was held each year in the Goulburn Valley and Gippsland, these meetings generated interest from within the horticulture community with a focus on the season just completed, and issues to be addressed for the coming season. Below is a summary of the outcomes from each meeting.

In 2015 overseas speaker Dr. Dean Metcalf and Dr. Phillip Kessler were the main presenters for the evening at the Goulburn Valley Season in Review. Their presentations focused on "Viable Biological Brown Rot Control" and "Next Generations Virus for Codling Moth & OFM".

FGVL IDO Tony Filippi also updated the attendees regarding Queensland Fruit Fly, mite control, dealing with MRL breaches and give a PIPS update on Codling Moth Management. A head count of the meeting indicated there were at least 20 growers in attendance.

The same presentation was replicated in Southern Victoria for Gippsland Growers with the same presenters in attendance. 21 interested growers attended the meeting.

As indicated by the [2015 Season in Review meetings](#), IPDM is an issue of increasing interest to growers.

[The End of Season Review in 2016 for Northern Victoria](#) saw presentations from Michael Wynne of AustSafe Super and Kristen Elliott from Madec. Tony Filippi from Integrity Fruit used an informative PowerPoint display which covered a broad range of issues and focused on changing the way growers look at their production data with a view to producing more marketable fruit.

Local orchardist, Peter Hall gave an overview of the 2016 season, whilst also eliciting informed responses and enquiries from the 30 growers in attendance.

[The Season in Review 2016 for Southern Victoria](#) attracted a crowd of 24. This meeting was held in conjunction with a Gippsland Growers meeting and was addressed by Grower Services manager Russell Fox from IKC. His presentation regarding Fruit Fly was well received by those in attendance with many questions being raised by growers wishing to be prepared. Brad Fankhauser provided a review of the season on how he saw it and obtained input from other growers.

The Season in Review 2017 – Northern Victoria and Southern Victoria

[The Season in Review for Southern Victoria](#) was held on 20th June 2017 at the Darnum Hall. Speakers on the day were Sergio Zucal of Zucal Orchard Platforms discussing one of the most widely known and well-regarded platforms in Europe and a presentation by Matty Bloomfield of Hectre in NZ discussing the refinements and additions to their orchard management software extending their bin ticketing system to spray recording etc. Michael Wynne, FGVL director and AustSafe Super representative also addressed

the meeting.

The Season in Review segment revealed the following:

- Overall the season was good
- There were a good number of pickers and backpackers available
- The season ran much later than usual
- Mild conditions with no significant rain events and no hail.
- Pink Lady Crop was good. Good color due to the temperate climate conditions.
- Whilst the season was good growth wise prices in the market and movement of fruit is quite concerning.

There were 29 present at this meeting. Grower interest was high as indicated by the number of questions directed to each of the presenters. Mechanisation and time saving are areas of importance in Southern Victoria.

[The annual Season in Review for Northern Victoria](#) was held on 22nd June 2017 in Shepparton. Approximately 30 people were in attendance to hear presentations from several guests. The FGVL chairman, Gary Godwill, facilitated the meeting.

Elizabeth Mace and Mitchell McNab presented on activities from the Emerging Leaders Group.

Michael Wynne spoke regarding superannuation and the need to consolidate all superfunds into one.

Ross Abberfield presented regarding his role as Regional Fruit Fly Co-Ordinator. Bronwyn Koll attended and spoke individually to growers regarding fruit fly.

Kristen Elliot spoke regarding labour issues during the recent fruit season.

Sergio Zucal from Zucal Mechanical attended the meeting and gave a presentation on new automated picking/packing machinery from Italy.

Matt Lenne spoke about a new App "Hectre" from New Zealand which is an orchard management software including a portable bin ticketing system.

All presentations were well received and created interest and discussion within the room.

Well-known and respected Goulburn Valley orchardist, Peter Hall, presided over the information session discussing the 2016/17 fruit season. Peter gave an overview of how he saw the season and then opened the meeting for discussion and opinion from other growers.

Points to come from the meeting were:

Wet winter/ low chill hours

- Late and extended blossoming which meant crop load was hard to estimate
- In general, the apple and pear crops were heavier than expected.
- Presence of water affected trees. This has not been seen in recent years.

Harvest

- Harvest in general was two weeks late. This affected the export window of opportunity.
- Volumes were better than expected.
- Mild summer, low temperatures produce poor tasting fruit.
- Large volumes of WBC pears affect the sale ability of Packhams
- Pink Ladies were late to color

- Pink Lady picking was difficult due to heavy rain.

The information gained was of immense interest to all present.

An attendance headcount revealed numbers in excess of 30 attended the meeting. Long after the official meeting proceedings concluded a table of growers were still in deep discussion with presenters.

Indicative of more change and progress in the GV.

4. Goulburn Valley Leading Hands Network Meetings (GV Emerging Leaders Group)

Initially two meetings per year were held with low attendance, feedback was that the then name of the group (GV Young Growers) was prescriptive and some growers who would have been interested in the speakers felt they didn't "qualify" to attend. There have been several name changes to the group with the final one being GV Emerging Leaders – this name is more inclusive and provides a subtle direction for the group.

Two young leaders in the group (Mitchell McNab and Elizabeth Mace) have stepped up to increase interest and participation. This has led to more frequent meetings (bi-monthly), increased attendance and interest from industry as well as growers. The project leader and FGVL provides support and guidance to this group with the FGVL board setting up a program for individuals of the group to participate in board activities and leadership training that FGVL will be involved in.

The group set up their own Facebook group to communicate, convey information and seek advice.

<https://www.facebook.com/groups/1189344384475273/>

Below is a summary of some recent meetings:

In July 2016, a meeting was held in Shepparton at the Peppermill Hotel where an impressive list of guest speakers, chosen specifically to appeal to the Goulburn Valley community of younger growers, assembled. Phone calls were made to growers to ensure good attendance.

Presenters were:

- Luke Sofi (GMW) – Water Allocation System
- David Morey – (IKC) – IPM in Apple and Pear Production
- Geoffrey Derrick (Campbell Chemicals) – Alternative Control of Codling Moth
- Ross Wade (GOTAFE) – GOTAFE Courses for growers
- Mitchell McNab (Nuffield Australia) – Presentation of Nuffield Scholarship Program

A head count of attendees put the attendance at 20-25. From there an informal meeting of attendees reported back to Fruit Growers Victoria that the project concept of one meeting every six months was not enough to maintain grower interest. In January 2017 Fruit Growers Victoria, together with a small core group of the Emerging Leaders decided to hold meetings on a more regular basis at intervals of approximately 2 months.

The first of these meetings was hosted by Mitchel McNab at his family orchard in Ardmona.

Approximately 20 growers attended to hear from two app developers regarding capture of critical information for making informed choices on the orchard. Mitchel then reported on his use of the apps in his orchard. Elizabeth Mace and past FGVL IDO Tony Filippi addressed the group regarding Queensland Fruit Fly.

On the 23rd of March MADEC, the company in the GV with the Government Contract to find seasonal labour, hosted a successful breakfast meeting at their new premises. The speakers were:

- Kristen Elliott – MADEC, who gave a rundown on grower services provided by MADEC.
- David Bell – Independent Agronomist, who reported on his research in to color and blush in Bi-color apples.
- Laura and Nancy from the CSIRO detailed their research and activities regarding Queensland Fruit Fly.

Grower surveys collected reported that this event was highly successful.

From the MADEC meeting, a large kiwifruit and nashi grower in the Goulburn Valley offered to host a meeting at his property. Again, the event was well attended. Growers were able to experience the conditions and challenges of another style of horticulture in the Goulburn Valley.

Fruit Growers Victoria will continue to support this group in conjunction with local businesses who have an interest in horticulture and with the motivation of the group members

5. Study tours

FGVL supported a member of the GV Emerging Leaders group, Mitchell McNab, to participate in the APAL European Study Tour in August 2015.

A grower tour of the new Melbourne Wholesale Market, in August 2015, was organised by the IDO just before it opened. This tour was very well attended by 19 growers from the Goulburn Valley and Gippsland. The tour itinerary was organised by the Melbourne Market Authority.

6. Networking

The IDO's attended the yearly National Horticulture Conventions. A summary of learnings and outcomes from these conventions was circulated to growers via the weekly E Newsletter and also on the FGVL website (FGV.com.au)

Southern IDO, Virginie Gregoire, attended the International Horticultural Congress in Brisbane; this was a tremendous opportunity for the IDO of FGVL to learn about the latest developments on the following topics:

- Physiology of Perennial Fruit Crops & Production;
- Innovative Plant Protection in Horticulture;
- Post-Harvest Knowledge for the Future;
- Abscission Process in Horticulture;
- Biosecurity, Quarantine Pests & Market Access; and
- Mechanisation, Precision Horticulture & Robotics

The following is a link to the media summary report from her attendance.

<http://fgv.com.au/grower-services/grower-news/178-the-international-horticultural-congress-2014-report>

IDO's were part of formal networking groups that met regularly, these include; Gippsland Growers Group, QFF Task Force, Yarra Valley Pest Free Place of Production, FGVL Board, SITplus. They regularly meet with industry bodies such as DEDJTR, APAL, AgFirst, AgVet Dept. of Ag, VFF and PHA.

Topics and networking events included the following;

- DEDJTR – Qfly project trial, QFF Task Force, Pear mapping for export, Plant standards MRL breach, Food Industry Alliance Food Cluster workshop, Master Classes on Production Horticulture
 - APAL – Export to Asia, R & D projects, Potential industry manual on exports, Review of chemical registration (with AgVet via DOA)
 - Tour of 9 Mile Creek facility for NZ Biosecurity (July 2015)
 - Victorian Worksafe – issues with mobile plant equipment
 - Goulburn Valley Rural Finance Counsellors – determining capabilities and opportunities to assist growers (Nov 2015)
 - SEDA Committee – Market access to China
 - Cobram Growers – IPM export training
 - GO TAFE – “Fruit School” and “Get Ready for Export” training programs.
 - Food Futures (Goulburn Valley Cluster) where 4 themes were identified: regional vision, leadership and efficiency, market diversification and workplace plan and labour survey
 - Goulburn Valley Rural Finance Counsellors: determining capabilities and opportunities to assist growers, especially after the hail storms that badly affected a number of growers in the Goulburn Valley
 - MADEC, to gain a better understanding about their services and pass the information to growers.
 - Brendan White, Commercial Manager – Horticulture at TAFE College, to ensure we will work together in the future regarding IPM courses’ needs.
 - Karen Thomas, from the Western Port Catchment Landcare Network, to exchange information about the “Compost under fruit trees” trial that she has implemented on the Fankhauser property. Karen contributed to FGVL Newsletters regarding this project by producing an article. (May 2015)
 - Melbourne University researcher Pange Pangzhen Zhang, for a first tour of the soil science laboratories and a presentation of the research undertaken in this institution that could be relevant to FGVL. Followed up with other Melbourne Uni researchers as well Dr Zhang, they included Dr Alexandra Nefedova, Dr Dorin Gupta, Ruvini Lelwala and Azin Moslemi.
 - Ashley Roger, the recently appointed Landcare regional coordinator for the local CMA.
- Where appropriate key learnings from these meetings have been communicated to growers either on a one to one basis or via articles in the FGVL weekly E newsletter. International articles of interest have been published in the FGVL E Newsletter.

A strong network with researchers, organisations and different businesses and experts have been maintained since the appointment of the IDO. The purpose of the meetings was to keep abreast with new technologies and new experts and services which can be referred to growers. This has been done through appointed meetings with researchers at Universities or some discussions at seminars.

7. Development of a project dedicated section on FGVL’s website

Fruit Growers Victoria has been continuously updating information on the website related to the Orchard Action project. This information includes technical articles, local and regional events, relevant news etc.

All articles have HIA and Orchard Action logo. <http://www.fgv.com.au/grower-services/current-projects/orchard-action/technical-articles>

8. Linkage to the national program, AP15004 - Australian apple and pear innovation and adoption program.

Fruit Growers Victoria has been actively supporting APAL on this project through different activities such as regional liaising, attending research and development forums (e.g. Queensland Fruit Fly Forum), informing growers on ongoing events, writing articles on visited events (see Appendix 21), taking enquires from growers, updating growers with new pests and diseases, supporting growers with chemical programs for specific export market, educating growers on new technologies in order to produce good quality apples and pears through grower visits and technical articles.

All IDO's met with APAL staff within 1 week of their commencement and then kept up regular contact.

9. Contribution to HIA membership

The IDO encourages growers to join Horticulture Innovation Australia through providing HIA membership application forms and promoting HIA during the grower visits.

Relevant promotion collaterals were obtained from HIA and displayed at events, HIA membership application forms were made available. The facilitators at the Annual Season in Review Meetings emphasized to growers that they should be members of HIA.

Evaluation and Discussion

1. One-on-one grower visits to discuss specific issues

Improve grower's confidence in implementing practice changes on their orchard and increase on farm implementation probability. This is to be measured through oral surveys between IDOs and growers, and presented as % growers who have intentions to make changes.

All growers indicated ongoing levels of change depending on current situation. Growers are now much more aware of ways to implement change and easily accessible tools to help with decision making. The current generation is more inclined to bring in outside help, research an issue and seek advice from other growers as well as attending orchard walks. In the Goulburn Valley, during the life of the project, there has been a large uptake of closer plantings and changed pruning styles. Visual evidence affirms this together with enquiries from growers regarding trellis, alternative planting styles and use of netting, progressive grower members such as Plunkett Orchards, Silverstein Orchards, Moondooma Orchards, Lenne Orchards and Pickworth Orchards have all benefitted from project technology transfer.

2. Publication of technical articles

KPI: Create an easy to access library with easy to understand articles delivered to industry at key times of the growing season. Success (practicality and usability of information) measured via industry comments FGV's website and oral surveys.

All articles, reports and events have been published in the weekly E Newsletter and Website. The library of articles is easy to access with a button on the home page or alternatively scrolling through the menus.

Analytics show that these articles are often accessed, with high traffic consistently in this part of the website. High surges of traffic occurred during October and November 2015 which was when the Goulburn Valley experience severe hail storms.

3. Annual Season Review Meetings

KPI: Attendance numbers reaching at least 15 to 20 growers. Presentations and discussions to trigger practice changes in orchards. Method of measuring will include attendance sheet and written multiple choice and short answer survey.

Growers are asked to sign-in to record attendance. Growers tend not to RSVP for events and in the same vein they are hesitant to sign-in. We therefore conduct a headcount which gives a good indication of the numbers present. Short phone surveys are conducted in the days following an event as growers do not wish to complete paper surveys at the conclusion of a

meeting. More information is gathered at a later time. Over the three years of the project there have been increasing numbers of growers at the event each year. Numbers for this year were 30+. This shows a level of interest and engagement which had been waning. Of particular interest is the number of “Emerging Leaders” who are now attending these meetings and making valued contribution to both discussion and suggestion of topics for the following year. Industry suppliers are also keen to attend and present information to growers. This year growers were keen to discuss with presenters long after the formal meeting procedures had come to an end.

Oral discussions at the meetings elicited the following areas where growers were keen for more information to implement change to their orchard practices;

- IPDM
- Fruit Fly
- Mechanisation
- Fruit colouring
- Managing timing of fruit for export,
- How to manage excess water on trees
- How to estimate crop load from blossoming
- New technologies available that can help with reducing labour costs and improving orchard management, in particular apps and automated picking and packing.

Some of these issues were able to be addressed by industry experts on the night, other issues were followed up by the IDO with relevant articles and websites for further information.

4. Goulburn Valley Leading Hands Network Meetings (GV Emerging Leaders Group)

KPI – Address targeted topics relevant for new generation of orchardists. Evaluation to be done by recording topics discussed and via oral feedback of the quality of the meetings

Topics ranged from water allocation, Integrated Pest Management, Courses offered by Goulburn Ovens TAFE, Control of codling moth, coloring of apples, Queensland Fruit Fly, use of technology and apps in the orchard, other hort commodities which included an orchard visit to one of the largest orchards in the Goulburn Valley displaying advanced growing techniques.

Evaluation sheets from the meetings show the following information;
Comments on what growers got from the event and what change they will implement on orchard;

- Blush spray for Corella pears
- Trapping program
- Networking with Industry
- Fruit Fly information

Growers liked orchard locations for meeting but be mindful of winter conditions.
Growers overwhelming said they would attend similar events.

Evaluation sheets indicated that growers were interested in further information on the following topics;

- Managing Codling Moth
- IPM strategies for whole orchard approach
- Fertilisers
- Irrigations
- Exports
- New Varieties
- Hail Netting
- Pest monitoring
- Pruning Techniques
- Bees
- Best Management Practices
- Fruit Fly
- Two spotted mite

Note that FGVL has provided articles or one to one information on most of these issues and will be also addressing them in future GV Emerging Leader meetings.
Local business and local council will be providing support and sponsorship to maintain the emerging leaders group.

An agronomist (Michelle Egan) who was invited to present and participate at the GV Emerging Leaders Group provided the following feedback

"As a relative new comer to the horticultural industry, the platform provided by the Emerging Leaders group for me, has been an invaluable source of information and networking. It brings together young like-minded people from all backgrounds, including growers, managers, advisors and other industry stakeholders, to pool knowledge and resources, as well as exploring new ideas, with the aim of building our skill level within the industry. This has included discussions on key pests, how technology can assist orchard management and crop walks through a range of major and minor crops. The benefit here is that different schools of thought are brought together to create a comfortable environment for constructive discussions, from which everyone can gain valuable information and insights on topics which are largely driven by the members.

The group still has room for improvement and further funding would be vital, allowing us to do more. Moving forward I would like to see more meetings targeting specific timing in the field, focusing on how we can maximise efficiencies and production at each crop stage. This could include how we can minimise the effect of key pests and diseases, crop nutrition and management, and what role technology can play in the orchard of the future. Ideally many of these strategically placed meetings would include talks or crop walks with industry leaders in each field to pass on expertise and experience to help our development as a group.

I believe this group is really starting to gain some momentum and it can only get better from here. Further funding will greatly assist the development of both the group and its members, which in turn will benefit the industry as a whole. Once again thank you to the key members involved in the organisation

of the group and I look forward to its continuation in the coming years. "

5. Study tours

KPI – Participants to come back with a clear list of new learnings, identified orchard issues and option to address these issues in relation to what was discovered during the study tour.

With the change of HAL to HIA the funding of study tours was no longer supported. But FGVL co funded a member of the GV Emerging Leaders Group (Mitchell McNab) who attended the APAL European Study Tour August 2015. He presented a summary of this tour and his learnings to the GV Emerging Leaders Group.

The IDO organised a tour of new Melbourne Wholesale Market just before it opened in August 2015. 19 Growers were able to have their concerns addressed particularly on opening hours and access. This information was made available in the weekly newsletter and FGVL website. Informal discussions held on the bus trip home confirmed that while growers were happy with the information they had received they still had concerns about some of the practical operations of the market. The itinerary was set out by the Melbourne Market Authority.

6. Networking

KPI One annual report distributed to the Victorian pome fruit industry. Feed the local industry with latest topics of interest in the international pome fruit production world.

Fruit Growers Victoria produces an Annual Report which is distributed to industry each year. Included in the Annual Report was a yearly update of this project, with links to further reading for growers.

More importantly information from networking events is stored for easy access on the FGVL website. Analytics show that these reports are often and regularly accessed.

7. Development of a project dedicated section on FGVL's website

KPI Make FGV's website a central place for growers to find information about their local IDO's activities. Traffic (new and recurrent visits) on the new website to be used as a measurement.

The library of Orchard Action articles on the FGVL website was easily accessed with analytics reporting that all articles had receiving over 400 hits with the majority receiving over 100 hits. The 3 most popular articles were;

- How do insects become resistant to pesticide? 3559 hits
- Tank mixing of pesticides and fertilisers. 2924 hits
- Neonicotinoids under the radar 2421 hits

Project performance involving grower activities achieved more output than what was required of the

project.

All project deliverables were achieved.

Input from growers supported the methods of delivering information.

Website library of articles proved to be a valuable resource, judging by the number of hits.

Growers became actively involved in the project by requesting technical articles and topics for guest speakers, attendance and participation at events continually increased.

GV Emerging Leaders group has become a group that growers want to be involved in and want to see continue. Growers in this group are very proactive in facilitating change – this is seen by them networking with industry, sourcing guest speakers, meeting attendance, setting up and maintaining their own Facebook group which is used for sharing of information and assistance with orchard issues.

The ability for IDO's to respond to local issues quickly was evident in the meetings and articles organised for growers that were affected by successive hail storms pre-season in 2015. Evidence of the importance for industry to act quickly in these events was in the high number of growers at the meetings, the request for grower visits and the high number of hits to the FGVL website during this time.

The learnings from this project are as follows;

- Technology is forever changing and growers need and want to keep up with these changes that will lead to improved orchard practices and labour cost reduction.
- Growers want assistance with technology information and orchard practices at a local level.
- Proven relationships need to happen with IDO's and growers before growers will engage.
- It's impossible to achieve a location and timing that is suitable to all growers – one on one visits are and will always be valuable to growers.
- An access to an information library proved successful, this resource will continue beyond the life of the project.
- Growers respond positively to informal industry networking and information sharing.
- Growers don't particularly care who funds extension activities, they just want to see it continue.
- Consistence in project staffing is important, the continual change in IDO's meant limited resources used in recruitment and training and growers were often slow to respond to new staff. This could have been achieved by improved budgeting provision and funding.

Due to the success of the project and personal investment by growers, FGVL will continue to support the following activities while possible;

- Local grower groups such as; GV Emerging Leaders Group and Gippsland Fruit Growers Group.
- Provide technical information on the FGVL website and social media.
- Run Season in Review Meetings.
- Visit growers and provide access to relevant information.
- Work with training providers to ensure appropriate training is accessible to growers.
- Involve emerging industry leaders in governance development and industry decision making by peak industry bodies.

Recommendations

From well attended Season in Review meetings, one to one discussions and orchard walks it has become apparent that growers are thirsty for knowledge. The information listed below has come from oral grower comments and evaluation data over the course of the project;

- Knowledge is sought to both gain a competitive edge and increase production at a time when growers are facing increased competition and escalating prices.
- There is a high level of interest across the pome fruit industry for automation. Automated irrigation is now quite common, along with a plethora of apps to shorten the time taken to record information, be it accounting or record keeping.
- Growers are interested in drone technology and what role it can play in the future.
- Automated picking and packing is high on the list of grower enquiries. The ever-increasing cost of wages is causing a high level of angst within the horticulture industry. Orchard walks and the 2017 Season In Review meeting which focused on picking/pruning platforms elicited a large level of interest as productivity is much increased using this equipment.

In short, growers want help with using technology to increase productivity and decrease time to get their product to the market whilst also decreasing costs.

Growers are reporting that they need to see benefit for the Research and Development contribution made via levy contributions and less spent on projects of little value to a growers core business.

To achieve the above at a national industry level the following needs to happen;

- Funding available for extension work, particularly one to one visits.
- Support of small local grower groups.
- Industry information easily sourced.

Intellectual Property/Commercialisation

No commercial IP generated

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