

# **Apple & Pear Industry Technical Officer**

Annie Farrow  
Apple & Pear Australia Limited (APAL)

Project Number: AP08039

**AP08039**

This report is published by Horticulture Australia Ltd to pass on information concerning horticultural research and development undertaken for the apple and pear industry.

The research contained in this report was funded by Horticulture Australia Ltd with the financial support of Apple & Pear Australia Limited (APAL).

All expressions of opinion are not to be regarded as expressing the opinion of Horticulture Australia Ltd or any authority of the Australian Government.

The Company and the Australian Government accept no responsibility for any of the opinions or the accuracy of the information contained in this report and readers should rely upon their own enquiries in making decisions concerning their own interests.

ISBN 0 7341 2724 3

Published and distributed by:  
Horticulture Australia Ltd  
Level 7  
179 Elizabeth Street  
Sydney NSW 2000  
Telephone: (02) 8295 2300  
Fax: (02) 8295 2399

© Copyright 2011



*Horticulture Australia*

# FINAL REPORT

**AP08039 (Completion date: 31 August 2011)**

**“Apple and Pear Industry Technical Officer”**

**Author:** Annie Farrow,  
Industry services Manager,  
Apple and Pear Australia Limited

**Research Provider:** Apple and Pear Australia Ltd  
39 O’Connell St,  
North Melbourne  
Victoria

**August 2011**



Apple & Pear Australia



Horticulture Australia

## **AP08039 FINAL REPORT**

Apple and Pear Industry Technical Officer

---

**Horticulture Australia Project Number:** AP08039

### **Key Personnel**

Project Leaders:

Tony Russell,  
General Manager  
Apple and Pear Australia Ltd  
39 O'Connell St  
North Melbourne, Vic 3051  
(resigned October 2010)

Annie Farrow  
Industry Services Manager  
Apple and Pear Australia Limited  
(November 2010 to August 2011)

Project Team members:

Richard Hawkes  
Technical Manager  
Apple and Pear Australia Limited  
(resigned September 2011)

Annie Farrow  
Industry Services Manager  
(October 2011 to August 2011)

Leanne Groves  
Financial Controller  
Apple and Pear Australia Limited

### **Purpose**

This report is the Final Report of the project known as AP08039 " Apple and Pear Industry Technical Officer"

### **Funding**

The author wishes to acknowledge the receipt of funding from the Commonwealth of Australia via Horticulture Australia Limited.

### **Date**

31 August 2011

### **Disclaimer**

Any recommendations contained in this publication do not necessarily represent current Horticulture Australia policy. No person should act on the basis of the content of this publication, whether as to matters of fact or opinion or other content without first obtaining specific, independent professional advice in respect of the matters set out in this publication.

## Contents

1. Media Summary .....	4
2. Technical Summary .....	5
3. Project Methodology.....	6
4. Project Achievements and Outputs.....	7
4.1 Management and evaluation of the Future Orchards program .....	7
4.2 Facilitating Industry Technical development .....	9
4.3 Communication with growers re technical matters .....	14
4.4 Technical input into industry policy and decision making .....	14
5. Recommendations.....	14
6. Acknowledgements .....	16
Attachment 1: Initial Technical Officer Work Plan.....	17
Attachment 2: Work plan of Technical Officer late in the project .....	22
Attachment 3: Formal Evaluation of Future Orchards program .....	28

## 1. Media Summary

This project was one of the early strategic initiatives, taken by the apple and pear industry, to prepare the Australian industry for the arrival of imported apples in the Australian market.

Its aim was to lead the growth in international competitiveness of the Australian industry - through helping growers develop orchards that would deliver internationally competitive yields of high quality apples at internationally competitive prices.

The main tool for this was the Future Orchards program and the Technical Manager position was seen as a leadership and management role for Future Orchards as well as other initiatives aimed at increasing the international competitiveness of the industry.

The Future Orchards program has been highly successful. APAL has had the program evaluated by the social research organisation Ipsos-Eureka. The findings of their 2010 survey (using a combination of qualitative and quantitative techniques) showed that

- FO had played a pivotal role in assisting growers implement change on their orchards
  - 86% of growers reported that the FO program had helped them decide how to develop their orchard
  - 79% of growers have changed their practises as a result of the FO program
- 52% of growers (nationally) had attended at least one of the FO farm walks. 89% of these growers rated the presenters as "very good" or "excellent".

Other projects initiated under the Technical Manager program include understanding the impacts of climate change on the apple and pear industry, developing the technical aspects of the "ready-to-eat" pear product to improve consistency, assisting with implementing a project to improve cool store efficiency within the industry and promoting the use of the apple and pear IPM Manual to industry

## 2. Introduction

This project was one of the early strategic initiatives, taken by the apple and pear industry, to prepare the Australian industry for the arrival of imported apples in the Australian market.

Its aim was to lead the growth in international competitiveness of the Australian industry, through helping growers develop orchards that would deliver internationally competitive yields of high quality apples at internationally competitive prices.

The main tool for this was the Future Orchards program. The Technical Manager position provided leadership and management role for Future Orchards as well as other initiatives aimed at increasing the international competitiveness of the industry.

The Future Orchards program has been highly successful. APAL has had the program evaluated by the social research organisation Ipsos-Eureka. The findings of their 2010 survey (using a combination of qualitative and quantitative techniques) showed that

- FO had played a pivotal role in assisting growers implement change on their orchards
  - 86% of growers reported that the FO program had helped them decide how to develop their orchard
  - 79% of growers have changed their practises as a result of the FO program
- 52% of growers (nationally) had attended at least one of the FO farm walks. 89% of these growers rated the presenters as “very good” or “excellent”.

The other roles of the Technical Manager included managing the technical and extension/communications aspects of a series of technical projects. These activities can be summarised as follows:

**Oversight of the apple and pear R&D program.** This role included identification of possible new areas for investment through the apple and pear levy, some project management duties and project problem solving.

A good example of this role was with the development of the PIPS program. The Technical Manager played a key role in liaising with the agency assembling the program, selecting R&D agencies and projects, managing the budget and reporting progress to the apple and pear IAC and APAL Board

**Technology Transfer.** This role was mainly about sourcing articles and writing articles for the various apple and pear industry communication organs – such as Australian Fruit Grower magazine and APAL's e-News.

The Technical Manager also had a role in direct, one to one, extension with growers, packers etc.

**Input into APAL activities of a technical nature.** This role included developing and editing/oversighting submissions to agencies such as Plant Health Australia, the various Import Risk Analyses developed in response to countries wishing to export apples to Australia, the technical aspects of the WTO cases re fire blight and New Zealand apples

### 3. Project Methodology

The Technical Manger project was designed around and driven by an annual work plan, approved by a Management Committee and reported against by the Technical Manager.

The initial members of the Management Committee included

Darral Ashton,	Chair APAL Board
Tony Russell,	General Manager, APAL
Alma Reynolds,	Deputy General Manager, APAL
Garry Langford,	General Manager, Australian Pome Fruit Improvement Company Ltd (APFIP Ltd)

The initial work plan developed for the Technical Manager program, and one of the final ones for the project, are provided at Attachments 1 and 2 respectively. Comparison of these work plans show that

- the work plan for the Technical Manager remained basically the same over the life of the project
- consisted of the following goals
  - Management of the Future Orchards program
  - Facilitating industry development
  - Communication with growers regarding technical matters– via magazine articles in Australian Fruit Grower magazine, APAL’s e-News and other channels;
  - Providing a technical resource for the industry to assist with grower and supply chain enquiries and assist with technical input to industry policy development;
  - Completing the reporting requirements for the HAL project that funded the technical officer



## **4. Project Achievements and Outputs**

### **4.1 Management and evaluation of the Future Orchards program**

The Future Orchards program has been highly successful in achieving technology transfer to improve the competitiveness of Australian orchardists. It is considered within the horticulture sector as a flagship for the dissemination and uptake of R&D outcomes and know-how by growers.

The current project established:

- Designated blocks with different tree densities in each apple and pear growing district. Farm activity on each block was measured continuously as were input costs. This and related information was presented to growers to give them first hand comparisons of the costs and returns from different tree densities and newer style tree management systems introduced with the program.
- Seasonal “walks” (generally June and November) through high density orchard blocks also provided opportunities for technical and specialist advisors to demonstrate best management techniques in areas such as thinning, pruning and harvesting to growers.
- OrchardNet, an online database tool enabling growers to compare the performance of their (better) blocks with those of growers in the same region or elsewhere in Australia.

Future Orchards is a program designed nationally but implemented regionally across the 8 major apple and pear production regions:

- south west Western Australia,
- Adelaide Hills, South Australia,
- Tasmania,
- Goulburn Valley, Victoria,
- Southern Victoria ,
- Batlow, New South Wales,
- Orange, New South Wales,
- Stanthorpe, Queensland

Future Orchards is delivered by a specialist horticultural consulting firm – AgFirst.

As directed by the work plan, the role of the Technical Manager was to:

1. Coordinate the activities with the service provider. This includes:
  - a. Identify an appropriate orchard or block to showcase world’s best practice orchard management or new /advanced tree management;
  - b. Set dates for the orchard walks and publicise the Orchard walks through industry communication channels and manage the service provider travel arrangements;
  - c. Identify grower knowledge gaps and subsequently those researchers who could speak on the particular topic during an orchard walk. Negotiating the participation of the researcher and arranging their travel was also required task of the Technical Manager.
  - d. Ensure appropriate articles were prepared for Australian Fruit Grower magazine.
  - e. Ensure photographs were taken (an important task) for dissemination to growers or to illustrate points within articles and distributed papers;
  - f. Ensure orchard block data is aggregated and analysed and results disseminated;

## **AP08039 FINAL REPORT**

Apple and Pear Industry Technical Officer

---

2. Engage a regional facilitator in each of the eight regions. In most cases the regional facilitator is used to organize the event at a local level. This includes:
  - a. arranging venues and equipment for the “inside” presentations;
  - b. encouraging growers to attend the events;
  - c. providing copies of hand-outs prepared by the service provider and the guest speaker;
3. Manage milestone reporting to meet HAL contractual obligations;
4. Undertake evaluation of the Future Orchards program. Three evaluation techniques have been employed:
  - a. After each round of orchard walks the Technical Manager contacted all facilitators to ensure evaluation sheets and attendance records were returned in a timely manner. These evaluation sheets were then assessed for learning points.
  - b. The technical Manger also completed a formal evaluation of Future Orchards via grower survey and convening an expert panel to (i) review extension techniques used (ii) recommend alternative approaches. The report of this evaluation is provided at Attachment 3.
  - c. Future Orchards has been evaluated (in 2010) by the independent social research company Ipsos-Eureka. APAL commissioned Ipsos to conduct quantitative and qualitative research to investigate the impact of the Future Orchards program on growers. Ipsos-Eureka found that:
    - i. Future Orchards had played a pivotal role in assisting growers implement change on their orchards;
    - ii. 86% of growers reported that the Future Orchards program had helped them decide how to develop their orchard;
    - iii. 79% of growers have changed their practises as a result of the Future Orchards program
    - iv. 52% of growers (nationally) had attended at least one of the Future Orchards farm walks.
    - v. 89% of these growers rated the presenters as “very good” or “excellent”.

### **4.2 Design and Commissioning of the next Future Orchards program**

The Future Orchards program has been highly successful in achieving technology transfer to improve the competitiveness of Australian orchardists. It is considered a flagship of technology transfer with the horticulture industry.

The Technical Manager was required to plan the development of the next stage of the Future Orchards program prior to the completion of the existing program. This was to provide a smooth transition as the existing program expired but also to refresh and renew the approach to engage all growers.

As a first step the technical manager undertook a comprehensive review of the current program. The Review (see Attachment 3) involved:

- Adopting lessons learned from the IPSOS Grower Survey
- Reviewing the evaluation sheets and discussion provided by local facilitators and grower attendees
- Feedback from the current service provider AgFirst

## **AP08039 FINAL REPORT**

Apple and Pear Industry Technical Officer

---

- Discussions with growers
- Discussions with Industry Development Officers and private agronomists
- Consideration of the outputs arising from the Transition Workshop
- Discussions with other peak industry bodies and extension service providers
- Discussions with the Future Orchards Management Committee
- Discussions with APAL management and Board and HAL staff

Some initial design work for the Future Orchards was undertaken as part of the transition plan for the apple and pear industry (AP10030). This project reviewed the potential for the industry to accelerate selected initiatives from the industry strategic plan, New Horizons 2015, as a means of positioning itself to better meet the competitive challenges presented by import competition. The initiatives were then assessed by the Centre for International Economics using the Future Focus Hi-Link model as potential industry transition options. As part of this project the Technical Manager developed an “accelerated model” of Future Orchards for the transition simulation exercise.

Following on from that initial design work, more detailed requirements for the next version of Future Orchards (Future Orchards 3) were mapped by APAL. The focus has been on the retention of a nationally managed but regionally delivered program with a refreshed approach and new themes to maximise grower engagement. Working closely with HAL, activities have included:

- refining the design of Future Orchards 3,
- developing a brief for consultants for FO3,
- providing this brief to various suitable consultants,
- assessing the proposals received,
- reporting the tender process to APAL senior management
- liaising with the preferred tenderer and with those who were not preferred tenderers
- developing strategies to fund the FO3 program.

APAL and its technical resources are currently negotiating the delivery of Future Orchards 3 with the preferred service provider and determining the most appropriate funding mechanisms to achieve an effective program.

### **4.3 Facilitating Industry research and development**

An important role of the Technical Manager is to provide the R&D Committee with reviews of the progress of commissioned projects and assessments of projects submitted for funding. This work provides an industry assessment of applications and progress and adds to the evaluations conducted by the investment manager, HAL.

Allied with this role is the identification of R&D gaps that, if filled, may increase the international competitiveness of the industry and/or improve the environmental sustainability of the industry. Accordingly, the Technical Manager is expected to keep a watching brief on the global horticultural research scene. This is done by following the literature, attending conferences and maintaining on-going relationships with pome fruit researchers.

During 2010 the Industry Advisory Committee commissioned, via the R&D subcommittee, a five year RD&E Investment Plan. In the past the R&D priorities for the apple and pear industry have been formulated and presented on a yearly basis. This approach has tended to reinforce a pragmatic decision-making approach, rather than a long-term, staged analysis to determine where investment is needed. In addition, short-term plans do not capture the changing trends and refocussing of partners’ and other stakeholders’ longer-term visions. The decision to develop

## **AP08039 FINAL REPORT**

Apple and Pear Industry Technical Officer

---

an investment plan spanning the five-year period 2010 to 2015 created an additional work-stream for the Technical Manager who closely assisted the service provider (D Richards).

An analysis of the past and current R&D investment portfolio, an assessment of key strategic documents, and discussions with key stakeholders were the key steps in developing a new RD&E Investment Plan. The resulting Plan is groundbreaking in a number of ways and is seen by HAL as a leading guideline document for other horticultural industries. The RD&E plan is unique in that it:

- Dovetails with the aims and strategies documented within the Industry Strategic Plan and covers the same period (rather than a one year focus);
- Focuses on the development of research programs rather than research projects. Ad hoc projects add to project management costs and fail to find the required scale to capture strategic linkages with similar or related research effort. Programs on the other hand enable greater collaboration across a wider number of research institutions, provide an integrated approach to meeting industry strategic needs and reduce overall management costs.
- Identifies seven new priority investment areas: Productivity & Supply Chain; Climate Change; Germplasm Improvement; Market Access & Biosecurity; Market Research; Industry Development; and Portfolio Management.
- Provides for a real and active link with the National Horticulture Research Network (NHRN). In this case the Department of Primary Industries Victoria is the nominated formal point of contact with the apple and pear industry/APAL. The Investment Plan envisages stronger connections between the parties to enable the NHRN to provide leadership and coordination across the entire network of RD&E provider agencies.
- Anticipates that the co-investment model will continue to be the primary funding mechanism for apple and pear research. This implies a priority to boost industry levy funding through voluntary contributions from other parties, particularly international research organisations, as well as seeking matched funding from the Australian Government.
- The Investment Plan is much more focused on industry development and extension activities as a driver of change.

### **4.4 Farm Ready Climate Change Project**

The Technical Manager acted as Project Leader for the Farm Ready (DAFF) Climate Change project. The Technical Manager ensured all contracted activities were undertaken and milestones were met. The Technical Manager critiqued the outcomes of the research on Best Management Practices for climate change adaptation on Australian apple and pear orchards and liaised with the service provider to disseminate the research to growers via the annual APAL road-shows. A critique of the draft Freshcare environment documentation was also provided by the Technical Manager.

### **4.5 Advisors Network**

The Technical Manager commenced the design of an Advisor's Network. The need for the Network was identified by the Industry Development Needs Assessment process. The Network would provide a mechanism reinforce the adoption of R&D outcomes by growers. Growers generally rely on chemical and agricultural-input suppliers and agronomists and agri-business consultants, as well as State government Industry development officers, as a key source of technical know-how and information. It is intended that training/updating participants in this segment of the supply chain in regard to apple and pear industry R&D outcomes and best practice know-how would ultimately flow back to growers and add to the messages imparted directly to them.

## **AP08039 FINAL REPORT**

Apple and Pear Industry Technical Officer

---

The Private Advisors network would be additional to existing extension programs (Future Orchards, Fruit Grower Magazine, AFFCO training). APAL believes that there are many advantages of the network to encourage the participation of advisors. Discussions with such advisors to date have generated considerable interest and an eagerness to start. The major benefits to advisors include:

- i. R&D outcomes and knowledge about orchard practices will be repackaged by the APAL Technical Manager and Communications Team (and other organisations) and subsequently disseminated to up-skill advisors within the network. Repackaging materials will mean that private advisors will no longer have to interpret academic output and trawl the international R&D field themselves;
- ii. Advisors from across the country will meet one another via webinars, conferences, teleconferences and the like. An exchange of industry needs and trends widens the knowledge base of advisors. It also provides opportunities for advisors to bounce ideas and learn from each other;
- iii. Advisors may have some of their training needs met. APAL intends to use the Network to identify training needs for advisors which can then be developed by an appropriate organisation into an R&D project to supply them with training (subject to that being consistent with the industry strategic plan).

To progress the development of the Advisor's Network, the Technical Manager and APAL developed a Terms of Reference to scope the development and implementation of an Advisors Network. The Terms of Reference were sent to two qualified organisations – SWP Solutions and the Victorian Department of Primary Industries Farm Services Division. The Terms of Reference sought:

- A better understanding of what other industries doing in this field and what lessons could be learned about the structure / content / operations of an Advisors Network?
- What the Network might look like – meetings with presentations by researchers / webinars / teleconferences / own newsletter / mixture / what would work best?
- Would the Network operate on a national scale or for each region or State?
- How might this Network fit in with the Horticulture Industry Network run by Victoria DPI?
- Defined key selling messages to generate interest and participation in the network – what will advisors get out of it?
- Investigation of whether there is an opportunity to gain sponsorship for the network (to fully fund it?) How would APAL go about doing this (steps required). Which companies should be targeted (and who in those organisations). What is the selling point to them for sponsorship?
- Identifying the key individuals (and the organisations they represent) should be targeted to join in each region (if not national)? How would we promote the concept to encourage others to join? Should the size be restricted?
- Recommending a proposed governance structure of the network
- Prepare a budget for the operation of the PAN over a two year program

Subject to outputs and recommendations from this work the Terms of Reference sought proposals to establish the network (which is assumed to start small and grow over time and as others see the value of participation). This would involve:

- a) Recruit members
- b) Recruit sponsorship

## AP08039 FINAL REPORT

Apple and Pear Industry Technical Officer

---

- c) With the APAL Technical Manager, design the content of the first network meeting(s)
- d) Set up the first first network meeting(s)
- e) Participate in first network meeting(s) - those held in Victoria - to provide critique on improvements required

The proposals associated with the Terms of reference are being evaluated. However with the appointment of a Technical Manager there may no longer be a need for this work to be out-sourced.

### 4.6 Study Tour

The Technical Manager designed and led a Study Tour to the apple growing region of Washington State in the USA. The objective of the study tour was to provide participants with an understanding of the processes being implemented by the US growers which have enabled them to remain profitable in an extremely competitive environment. Providing participants with the ability to learn from the US growers first hand, it was anticipated the transfer of knowledge will result in participants improving the production efficiencies on the orchards they are involved in.

One of the most significant points that was heard continually throughout the trip was the need to grow exactly what the consumer wanted, hence the catch phrase that was coined by Dave Allen, 'growers need to grow fruit that tastes better than a candy bar'. The growers that understand exactly what the consumer's wants and have adjusted their businesses to deliver the desired product are the businesses that continue to remain profitable in what has become an extremely cut throat industry.

The US growers visited all followed a similar formula that could be characterised by four general rules:

*Rule 1 – Need to grow 75% of genetic maximum yield of marketable fruit – this gives low unit costs*

*Rule 2 – Need to understand your cost structures to enable you to look at ways to*

*increase efficiency or reduce costs –this ensures you don't continue to grow fruit at a loss*

*Rule 3 – Need to embrace technology, whether it is machinery or genetics, to improve yields and reduce costs – this will help to reduce the unit cost*

*Rule 4 – Need to grow a special product to command a special price – all growers commented this was easier said than done!*

The study tour group visited a range of growers with the majority growing fruit on different systems, however every grower had a clear understanding of the product they needed to grow and was able to tell us why they chose their particular growing system and the processes they needed to go through to achieve high marketable yields. In many cases it seems as though the growing systems used have come about through reverse engineering from the product they need to grow.

Tour Participants included: Jason Shields – Plunkett's Orchard – Goulburn Valley; Paul Francis – Top Qual – Northern Tasmania; Glenn Staples – Staples Orchard – Southern Victoria; Brian Witchell – Golden Apple Orchard – Southern Victoria; Matthew McMahon – Batlow Co-op – Batlow; Paul James – PIRSA – Adelaide Hills; Martine Combret – DAFWA- W.A.; Jesse Reader – E.E. Muir and Sons – Southern Victoria; and Chris Peters – Pome-fruit Industry Development Officer – Victoria. Richard Hawkes attended as the APAL Tour Leader.

#### **4.7 Facilitating Industry Technical development**

The following examples highlight the important role played by the Technical Manager in leading industry technical development. The thrust of the Technical Manager's role is to understand and progress an issue (either through direct contact, a regional meeting, field day or similar) and then extend it nationally – via the communications channels described in the following section.

*1. Ripe and ready pears.* The Technical Manager organised and participated in a pre-ripened pear meeting at Mooroopna, near Shepparton in Victoria's Goulburn Valley. At this meeting a presentation was made to the Pear Advisory Group by Jason Johnston, from Hort. Research, who had proposed the development of industry guidelines for the conditioning of pears.

An action emanating from the meeting and undertaken by the Technical Manager, was for the same presentation to be made to the two supermarket chains. The final goal is a more consistent ripened product.

*2. Spray pump demonstration and calibration* The Technical Manager attended a sprayer demonstration for southern Victorian growers highlighting the benefit of the correctly setting-up orchard sprayers to ensure even distribution of chemicals throughout the tree canopy. The level of grower interest at the meeting led to an article being prepared (for Australian Fruitgrower magazine) in conjunction with Geoff Furness, SARDI, to highlight key learning's from the demonstration.

*3. Goulburn Valley Pear School:* The workshop (run by DPIV) provided growers with the opportunity to learn from two of the world's renowned pear consultants, Tom Deckers from Belgium and Chris Jurisch from South Africa. They spoke about methods to improve orchard profitability through vigour management, improved light interception and improvements to fruit quality. Ideas taken from the meeting were explored in a pear orchardist profile for the Australian Fruitgrower magazine. The article highlighted ideas presented at the workshop and show how they are being put into practice here in Australia.

*4. Lenswood Environmental program:* The Technical Manager participated in a meeting at Lenswood Co-op which was looking to develop an environmental program for growers in the Adelaide Hills. The Adelaide Hills growers are in a unique position in that they are growing apples and pears in a water catchment that feeds directly into Adelaide's water supply, therefore significant focus has been placed on their orchard practices to ensure no contamination occurs.

From the project and via the Technical Manager a national blueprint is to be developed which could be used to ensure the whole industry is undertaking environmental Best Management Practises.

*5. Chemical Issues:* The industry faces a number of chemical issues and the Technical Manager provides advice wither directly to government regulators or to APAL and HAL policy advisors. Examples include:

- o Participation in the Dimethoate and Fenthion Response Co-ordination Committee operated by DAFF;
- o Liaison with growers and State organisations and HAL in regard to current uses of certain chemicals to ascertain the need for permit reapplications or the need for alternates where the APVMA flagged possible changes to chemical access;

## AP08039 FINAL REPORT

Apple and Pear Industry Technical Officer

---

- Liaison with growers, NRS, State organisations and HAL in regard to current uses of certain chemicals where importing nations flag possible changes to chemical residue levels
- Liaison with authorities – DAFF/ National Residue Survey and state agricultural departments to monitor MRL breaches and develop educational tools to rectify breaches

6. *Pollination Issues:* The Technical Manager assisted the pollination industry address a number of key issues.

### 4.8 Technical input into industry policy and decision making

The Technical Manager also works with other APAL staff, including the Industry Services Manager and the Communications Manager to provide specialist technical advice on issues the industry is facing. These may be in response to questions or issues raised by government, the media or general public, HAL and/or the supply chain (importers, exporters, cool-store operators, processors, wholesalers, retailers).

Examples include spray drift, pollination, wax, environmental matters, climate change, water usage, R&D project outcomes, cool-store efficiency, bio-security and pests and diseases, market access issues, mechanisation, germplasm and varieties, orchard practices.

## 5. Communication

The Technical Manager has utilised a number of communication channels for liaising with growers and the supply chain. They include:

- *Australian Fruit Grower.* During the life of the project over 30 articles were prepared for the Australian Fruit Grower Magazine on technical matters. These were largely about the findings of the Future Orchards program but also included a range of other technical issues. Examples include pear ripening, pear management, sprayer calibration, pollination, environmental management;
- *APAL e-News.* The Technical Manager was required to provide timely articles on technical issues that require rapid dissemination. Examples include comment on chemical use/withdrawal and pest outbreaks (e.g. fruit fly issues);
- *One on one technical extension.* The Technical Manager attended regional grower association meetings and Future Orchard farm walks and responded to grower telephone calls and emails. The Technical Manager also developed extensive networks with the industry development officers associated with State departments of agriculture and state industry bodies as well as with private agronomists and agri-business consultants and chemical resellers.

## 6. Recommendations

The Technical Manager has helped focus the apple and pear industry on technical development. This is a key plank of the *New Horizons* industry strategic plan – preparing to compete with imports by raising the outputs from Australian orchards so that they are internationally competitive in terms of quality and price, as well as being environmentally sustainable.



## **AP08039 FINAL REPORT**

Apple and Pear Industry Technical Officer

---

As imports are now a reality and this technical redevelopment of the Australian industry is only partly complete, the continuation of the Technical Manager program is seen as **germane** to the industry not just surviving but prospering while competing with imports.

Just as important is the development of export markets for Australian apples. Again, leadership of the national orchard development program, via the Technical Manager, is critical to Australian apple and pear growers being able to supply fruit at the prices international markets will pay.

## **6. Acknowledgements**

This final report wishes to acknowledge:

- Mrs Annie Farrow, APAL's Industry Services Manager, who effectively took on the role of the Technical Manager when Richard Hawkes resigned from APAL in late 2010. This responsibility was made even greater by the absence of a General Manager for the Industry Services Division. Mrs Farrow has done an outstanding job in making sure that the responsibilities related to the Technical Manager position were not dropped but progressed. An excellent example has been the commissioning of the new Future Orchards 3 program.
- Mr Stuart Gray, APAL's Communications Manager. Mr Gray worked with the Technical Manager to achieve the industry communications roles of the Technical manager via the Australian Fruit Grower magazine and APAL's e-News

## Attachment 1: Initial Technical Officer Work Plan

KPI's and WORKPLAN Technical Manager – February 2009 to August 2009 (Project AP08039)

### Goal - Implementation and Management of Future Orchards Australia (FOA)

KPI	Time Frame	Method	Achieved
Manage facilitators to ensure photopoints for Early season varieties are completed and sent to Agfirst.	End February	Will send emails and follow up with a phone call to each facilitator two weeks before photos are expected to be taken. Follow up with DC to ensure the task is completed.	
Set dates for FOA June Orchard Walk (OW).	End March	Liase with RW and Industry groups to ensure there industry events don't clash. This is to ensure maximum participation at OW's.	
Contact potential Australian presenters, confirm availability to do presentations.	Early April	Liase with RW and AR to ensure the right presenters are chosen.	
Manage facilitators to ensure photos are taken for Late season varieties and sent to Agfirst.	End April	Will send emails and follow up with a phone call to each facilitator two weeks before photos are expected to be taken.	
Organise FOA June OW.	Mid May	Liase with RW and facilitators to ensure a suitable site has been picked at least a month in advance.	
Attend the Northern Loop of FOA program.	15th - 24th June	Network with growers, report on their feedback.	
Ensure all Evaluation Sheets and Attendance Records have been returned for June OW.	End June	Email all facilitators a week after the orchard walk and follow up with a phonecall to ensure evaluation sheets and attendance records are returned in a timely manner.	
Set dates for FOA September Orchard Walk (OW)	End July	Liase with RW and Industry groups to ensure there industry events don't clash. This is to ensure maximum participation at OW's.	
Complete Milestone 3.	1/08/2009		

**AP08039 FINAL REPORT**

Apple and Pear Industry Technical Officer

Organise FOA September OW.	Mid August	Liase with RW and facilitators to ensure a suitable site has been picked at least a month in advance.	
Set dates for FOA November Orchard Walk (OW).	End August	Liase with RW and Indusrty groups to ensure there industry events don't clash. This is to ensure maximum participation at OW's.	
Manage facilitators to ensure winter photopoint and measurements are completed and sent to Agfirst.	End September	Will send emails and follow up with a phone call to each facilitator two weeks before photos are expected to be taken. Follow up with DC to ensure the task is completed.	
Manage data collection for the various Monitoring Blocks (MB).	End September	Send out relevant data collection sheets and follow up with emails and phone calls to ensure at least partial data sheets are sent back to DC by the end of June. Completion of the data sheets required by end September.	
Ensure all Evaluation Sheets and Attendance Records have been returned for September OW.	End September	Email all facilitators a week after the orchard walk and follow up with a phonecall to ensure evaluation sheets and attendance records are returned in a timely manner.	

**Goal - Have a sound understanding of current and completed production based Research and Development projects and provide input for new projects into the future.**

KPI	Time Frame	Method	Achieved
Read through all current and completed production based research projects.	End June		
Identify any shortfalls in relation to current grower requirements.	On-going	Will require consultation with grower groups to determine their requirements.	
Look into methods for increased mechanization in the orchard.	On-going	Informal survey of mechanisation currently used on Australian properties.	
		Web-based literature search of items realted to orchard mechanisation.	
		Consult with Agfirst consultants for advice on international developments.	

**AP08039 FINAL REPORT**

Apple and Pear Industry Technical Officer

**Goal - Revive the Transferring Technology Together (TTT) e-newsletter which distributes news of progress and outcomes of R&D projects in the industry.**

<b>KPI</b>	<b>Time Frame</b>	<b>Method</b>	<b>Achieved</b>
Read through all current and completed production based research projects.	End June	Liase with Brad Mills, get list of all current and recently completed projects.	
Review and assess the relevance of past TTT e-newsletters and determine the need for its on-going requirement / revival.	End July	Consult with grower groups and Stuart Gray to determine their requirements and possible methods which will ensure maximum uptake.	
Compile distribution list.	On-going	Work through old lists, use lists from FO2012 attendance records, advertise to growers in Australian Fruit Grower of plans for TTT.	

**Goal - Work on specific projects arising from the revised strategic plan and related to orchard development activities**

<b>KPI</b>	<b>Time Frame</b>	<b>Method</b>	<b>Achieved</b>
Check the existing strategic plan for possible short-term actions	April to July	Identify any projects that require work to be done on them and act on them accordingly.	
Will work on specific projects as soon as the revised industry strategic plan has been completed			

**Goal - Complete Specific Technical Officer Requirements for HAL Funding**

<b>KPI</b>	<b>Time Frame</b>	<b>Method</b>	<b>Achieved</b>
Complete Milestone 2	27/03/2009		
Formulate workplan for August 2009 to August 2010	Mid August		

**AP08039 FINAL REPORT**

Apple and Pear Industry Technical Officer

Complete Milestone 3	28/08/2009		
Complete Milestone 4	28/02/2010		
Complete Milestone 5	31/08/2010		
Complete Milestone 6	28/02/2011		
Complete Final Report	31/08/2011		

**Goal - Provide Technical input and contribute to APAL activities which are of a Technical Nature**

<b>KPI</b>	<b>Time Frame</b>	<b>Method</b>	<b>Achieved</b>
Provide Input to PHA owner reimbursement costs.	End April	Work with DGM to provide input.	
Work on Carbon footprinting project to provide the industry with a greater understanding of the effect carbon trading will have on production .	End May	Liase with New Zealand researchers and HAL that are currently working on this topic.	
Work on coolstore efficiency and develop a proposal whereby growers can follow a stepwise program to increase energy efficiency / financial gains for off peak power use.	End April	Follow up on work done by Batlow Co-op and determine whether or not the effectiveness of the project and the merit of replicating it for the wider industry.	
Write an article to be included in Fruitgrower in relation to the effects of Neonictinoids on Bees.	End May	Contact Bayer, Pollination Australia, do web based research and follow up on leads from media items. Liase with Kevin Bodnaruk.	
Work on Irrigation Management articles for inclusion in Fruitgrower magazine.	End June	Aim to get a three part series to help build awareness for growers to improve efficiency in their system. Use work from Anne-Maree Boland's 'Guidelines for Irrigation Management'.	
Provide input and raise awareness of the Ripe and Ready Pear review. Try to help improve its uptake.	End July	Need to look at the outcomes from the preliminary review of the Ripe and Ready program and determine the best options for the dissemination of the recommendations.	

**AP08039 FINAL REPORT**

Apple and Pear Industry Technical Officer

---

Review of PHA categorisation of EPP's for the Apple and Pear Industry.	End August	Read and assess the categorisation of literature reviews to confirm or dispute the categorisation.	
		Create a plan to assemble required data for any EPP's that may be disputed.	
Network with Apple and Pear growers around Australia to seek their view on Technical requirements.	End August	Attend Gippsland Fruit Growers meeting - Robin Hood Inn, Bi monthly	
		Travel to Tasmania to attend Fruit Growers Tasmania Annual Conference and Visit key Orchardists.	
		Participate in the Northern Loop of the FOA June Orchard Walk series. Visit key Orchardists in each region.	
		Travel to South Australia visit key Orchardists.	
		Travel to Western Australia visit key Orchardists.	

## Attachment 2: Work plan of Technical Officer late in the project

### KPI's and Work Plan – Technical Manager August 2009 to August 2010 (Project AP08039)

#### Goal - Implementation and Management of Future Orchards Australia (FOA)

KPI	Time Frame	Method	Achieved
Manage facilitators to ensure photo points for Early season varieties are completed and sent to Agfirst.	End February	Will send emails and follow up with a phone call to each facilitator two weeks before photos are expected to be taken. Follow up with DC to ensure the task is completed.	x
Set dates for FOA June Orchard Walk (OW).	End March	Liaise with RW and Industry groups to ensure there industry events don't clash. This is to ensure maximum participation at OW's.	x
Contact potential Australian presenters, confirm availability to do presentations.	Early April	Liaise with RW and AR to ensure the right presenters are chosen.	x
Manage facilitators to ensure photos are taken for Late season varieties and sent to Agfirst.	End April	Will send emails and follow up with a phone call to each facilitator two weeks before photos are expected to be taken.	x
Organise FOA June OW.	Mid May	Liaise with RW and facilitators to ensure a suitable site has been picked at least a month in advance.	x
Attend the Northern Loop of FOA program.	15th - 24th June	Network with growers, report on their feedback.	
Ensure all Evaluation Sheets and Attendance Records have been returned for June OW.	End June	Email all facilitators a week after the orchard walk and follow up with a phone call to ensure evaluation sheets and attendance records are returned in a timely manner.	X
Set dates for FOA September Orchard Walk (OW)	End July	Liaise with RW and Industry groups to ensure there industry events don't clash. This is to ensure maximum participation at OW's.	X
Complete Milestone 3.	1/08/2009		X
Organise FOA September OW.	Mid August	Liaise with RW and facilitators to ensure a suitable site has been picked at least a month in advance.	x



**AP08039 FINAL REPORT**

Apple and Pear Industry Technical Officer

Set dates for FOA November Orchard Walk (OW).	End August	Liaise with RW and Industry groups to ensure there industry events don't clash. This is to ensure maximum participation at OW's.	x
Manage facilitators to ensure winter photo point and measurements are completed and sent to AgFirst.	End September	Will send emails and follow up with a phone call to each facilitator two weeks before photos are expected to be taken. Follow up with DC to ensure the task is completed.	
Manage data collection for the various Monitoring Blocks (MB).	End September	Send out relevant data collection sheets and follow up with emails and phone calls to ensure at least partial data sheets are sent back to DC by the end of June. Completion of the data sheets required by end September.	
Ensure all Evaluation Sheets and Attendance Records have been returned for September OW.	End September	Email all facilitators a week after the orchard walk and follow up with a phone call to ensure evaluation sheets and attendance records are returned in a timely manner.	
Organise FOA November OW.	Mid October	Liaise with RW and facilitators to ensure a suitable site has been picked at least a month in advance.	
Ensure all Evaluation Sheets and Attendance Records have been returned for November OW.	End November	Email all facilitators a week after the orchard walk and follow up with a phone call to ensure evaluation sheets and attendance records are returned in a timely manner.	
Set dates for FOA March Orchard Walk (OW).	Mid December	Liaise with RW and Industry groups to ensure there industry events don't clash. This is to ensure maximum participation at OW's.	
Organise FOA March OW.	Early January	Liaise with RW and facilitators to ensure a suitable site has been picked at least a month in advance.	
Complete Milestone 4.	1/02/2010		
<b>Undertake evaluation of FOA program, how the OW's have been perceived in the various regions</b>	<b>End February</b>	<b>Work with Wende Moss in undertaking a qualitative evaluation to determine how the program has been perceived and specifically where improvements could be made.</b>	

**AP08039 FINAL REPORT**

Apple and Pear Industry Technical Officer

Manage facilitators to ensure photo points for Early season varieties are completed and sent to AgFirst.	End February	Will send emails and follow up with a phone call to each facilitator two weeks before photos are expected to be taken. Follow up with DC to ensure the task is completed.	
Ensure all Evaluation Sheets and Attendance Records have been returned for March OW.	End March	Email all facilitators a week after the orchard walk and follow up with a phone call to ensure evaluation sheets and attendance records are returned in a timely manner.	
Set dates for FOA June OW.	End March	Liaise with RW and Industry groups to ensure there industry events don't clash. This is to ensure maximum participation at OW's.	
Manage facilitators to ensure photos are taken for Late season varieties and sent to Agfirst.	End April	Will send emails and follow up with a phone call to each facilitator two weeks before photos are expected to be taken.	
Organise FOA June OW.	Mid May	Liaise with RW and facilitators to ensure a suitable site has been picked at least a month in advance.	
Ensure all Evaluation Sheets and Attendance Records have been returned for June OW.	End June	Email all facilitators a week after the orchard walk and follow up with a phone call to ensure evaluation sheets and attendance records are returned in a timely manner.	
Complete Final Report.	31/10/2010		
<b>Future Orchards - post June 2010</b>	<b>On-going</b>	<b>Fulfil the requirements of the FO project based on the APAL board's decision.</b>	

**AP08039 FINAL REPORT**

Apple and Pear Industry Technical Officer

**Goal - Have a sound understanding of current and completed production based Research and Development projects and provide input for new projects into the future.**

<b>Action</b>	<b>Time Frame</b>	<b>Method</b>	<b>Achieved</b>
Read through all current and completed production based research projects.	On-going		x
Identify any shortfalls in relation to current grower requirements.	On-going	Will require consultation with grower groups to determine their requirements.	
Look into methods for increased mechanization in the orchard.	On-going	Informal survey of mechanisation currently used on Australian properties, participate in programs that involve mechanisation.	
		Web-based literature search of items related to orchard mechanisation.	
		Consult with Agfirst consultants for advice on international developments.	
<b>Involvement in the R&amp;D project reviews</b>	<b>On-going</b>	<b>Work with IAC R&amp;D committee to review projects to ensure new projects have clearly specified achievable outputs and current projects are on track to meet the agreed outputs.</b>	

**Goal - Revive the Transferring Technology Together (TTT) e-newsletter which distributes news of progress and outcomes of R&D projects in the industry.**

<b>Action</b>	<b>Time Frame</b>	<b>Method</b>	<b>Achieved</b>
<b>Investigate the demand for regular email contact with FO2012 participants</b>	<b>End January</b>	<b>Send an email to FO2012 email distribution lists to determine the level of interest in having regular email updates on technical information.</b>	
Compile distribution lists.	On-going	Work through old lists, use lists from FO2012 attendance records.	x

**AP08039 FINAL REPORT**

Apple and Pear Industry Technical Officer

**Goal - Work on specific projects arising from the revised strategic plan and related to orchard development activities**

<b>Action</b>	<b>Time Frame</b>	<b>Method</b>	<b>Achieved</b>
Check the existing strategic plan for possible short-term actions	April to July	Identify any projects that require work to be done on them and act on them accordingly.	x
<b>Development of an advisory network</b>	<b>Mar-10</b>	<b>Undertake a scoping study to determine what services are currently available to the industry and who are providing these services</b>	
	<b>Jun-10</b>	<b>From the scoping study determine the available skill sets available to the industry within the advisory network</b>	
	<b>Aug-10</b>	<b>Undertake a qualitative evaluation to determine what skills the industry requires from the industry advisory network</b>	
<b>Coordinate an independent national survey of growing businesses to establish baseline data on physical characteristics and farm financial performance.</b>	<b>Jun-10</b>	<b>Engage an independent specialist whom has experience in the horticultural sector to establish a baseline data for which the industry can use to improve upon.</b>	
<b>Implement the outcomes of the industry development needs analysis relevant to the role of the Technical Manager.</b>	<b>Jun-10</b>	<b>Use the IDNA as a guide to implement key outcomes relevant to the role of the Technical Manager.</b>	
<b>Advance environmental sustainability and promote what the industry is doing and achieving</b>	<b>Jun-11</b>	<b>Engage an independent specialist to undertake a qualitative audit to determine the environment / sustainability credentials of the industry.</b>	
	<b>Jun-11</b>	<b>From the audit a report will be prepared to promote the industries credentials. A key outcome of the audit should be recommendations as to where improvements can be made which would enable the industry to set targets for improvement.</b>	

**AP08039 FINAL REPORT**

Apple and Pear Industry Technical Officer

---

**Goal - Complete Specific Technical Officer Requirements for HAL Funding**

Action	Time Frame	Method	Achieved
Complete Milestone 2	27/03/2009		x
Formulate work plan for August 2009 to August 2010	Mid August		x
Complete Milestone 3	28/08/2009		x
Complete Milestone 7	31/10/2009		x
Complete Milestone 4	28/02/2010		
Complete Milestone 5	31/08/2010		
Complete Milestone 6	28/02/2011		
Complete Final Report	31/08/2011		

## **Attachment 3: Formal Evaluation of Future Orchards program**

### **Richard Hawkes Technical Manager, APAL**

#### **Executive Summary**

With the final round of Future Orchards Orchard Walks having taken in June this year, a review of the project was requested as the critical first step in the process of developing a new extension program for apple and pear growers.

The new extension program is considered an integral component for the implementation of the five year R, D and E plan which has recently been endorsed by the Apple and Pear Industry IAC. The key research and development outcomes have been planned to be integrated into the industry via the new program.

This document has been written as a guideline for developing a continuation program tentatively named Future Orchards Beyond 2012; development of this program will be undertaken by AgFirst taking into account recommendations made in this document.

The review is based on:

1. Reflections and feedback gathered during the course of the previous program
2. Management committee comments
3. Survey of Future Orchard participants
4. Extension workshop

Recommendations for developing the apple and pear industry's new extension program are:

- There is overwhelming support for the continuation of the program in all regions
- Future Orchards Beyond 2012 will connect industry participants to new ideas to improve the productivity and profitability of the industry by developing a program based on common points of focus. The results from the IPSOS survey will provide the necessary information required to form the common points of focus
- Activities and outcomes of the PIPS program are to be incorporated into the new program
- June and November should be the months for orchard walks to take place. However regular contact through the growing season as participants face specific issues will be used to improve the uptake and reinforcement of these new ideas; this will be undertaken via various forms of communication medium and will be developed according to the results of the IPSOS survey showing participants preferred forms of in season contact
- The current model of a 2 – 3 hour event with a mix of indoor presentations and infield demonstrations should be utilised for delivering information. However demonstrations should ideally be made to groups no larger than 20 people to encourage dialogue between presenters and participants
- A revised monitor block program that monitors a wider range of blocks within an orchard needs to be included which enables industry participants to benchmark themselves against;
- The regional aspect including regional champions (monitoring block growers) needs to remain to achieve buy in from industry participants
- The IPSOS Survey will be utilized to define:
  - Segmentation of the industry participants into identifiable groups, both regionally and nationally, based on their abilities and requirements for information
  - New common ground between the various groups.
  - New Point of focus for the program which connects industry participants to new ideas that will improve the productivity and profitability of the industry

## **AP08039 FINAL REPORT**

Apple and Pear Industry Technical Officer

---

- The new program will achieve the goal of cost effectively delivering information by collaborating with companies and organisations which have resources available to assist with the delivery of information
- The industry's private advisors and commercial consultants will become involved in the new program by actively engaging them through consultation to determine their motivations and drivers to be involved in a program. The consultation process will be undertaken by APAL and will form the basis for this group to be incorporated into the new program
- One of the objectives of the program will be to ensure industry participants understand how to determine block profitability on their own orchard
- A program needs to be specifically developed for the pear industry
- The program needs to extend beyond the orchard gate and incorporate outcomes of consumer research into on farm activities
- A new management committee for Industry Development Program should be initiated to incorporate the FO2012 activities into the overall Industry Development Program. Membership of this committee should incorporate grower, APAL, Regional IDO, Private Advisors and HAL representation.
- The final recommendations incorporating the outputs from the IPSOS Survey will be utilised to develop a tender document for the new Beyond FO2012 program.

The finalisation of the new program will need to take into account the results of the IPSOS survey to be completed in September. The survey will provide information relating to the priorities the industry participants, this is to be used to form the basis of information and ideas to be focused on in the new program.

### **Future Orchards 2012 Review**

#### **Overview: Success of Future orchards**

Since my appointment as national co-ordinator of the Future Orchards 2012 project and facilitator of the southern Victorian region, I have actively sought feedback from participants and obtained ideas to improve the program going forward.

Commentary from growers and other industry participants suggests the Future Orchards program has been one of the most successful programs the apple and pear industry has undertaken. The program has resulted in significant change in grower practices with the 2008 IPSOS survey finding that since the program started, 58 per cent of respondents had changed their growing practices and more importantly, 44 per cent of respondents had increased their planting densities. The goal of the Future Orchards program to be a catalyst to change the practices of growers towards more productive systems has largely been achieved. This I feel was due to the extreme focus on the idea of moving towards more productive systems.

There are many reasons for the success of the Future Orchards 2012 program. They include the quality of the preparation of the program, it was well financed with government support, the quality and skills of the consultants employed and the right timing as many growers were realising they had to change but did not know how to, so there was a ready listening for the messages provided.

However, I feel the success of the Future Orchards program was due in large measure to industry participants who saw a future in orcharding sharing a common goal of wanting to increase the productivity of their orchards. The Future Orchards program provided industry participants with the vehicle to become connected and provided them with the confidence to implement the change required to increase the productivity of their orchards largely by planting more intensive systems.

Success of the program should also be partly contributed to the fact industry participants could see the progression of the ideas that were being presented put into practice in their region. The regional focus of the Future Orchards program has created regional champions whose practices reinforce the ideas being presented at orchard walks and therefore it is essential the regional aspect of the program remains going forward.

## **AP08039 FINAL REPORT**

Apple and Pear Industry Technical Officer

---

As the Future Orchards program is open to all industry participants, there is a broad range of outcomes that people want from the program. The Future Orchards program to date has satisfied many industry participants' knowledge requirements to help them make the move towards increasing the productivity of their orchards.

It helped that most growers shared a common goal of wanting to lift the productivity of their orchards.

### **Issues**

It is evident that the program was designed and implemented as a one size fits all model and the strong support and recognition, which the program has received, confirms the success of the model.

However, what is now becoming evident is the variation in the participants' abilities, both within a region and also between regions. This highlights the fact that a one size fits all model is unlikely to succeed going forward.

The participants of the Future Orchards program range from part-time casual orchard workers through to large scale orchard owners. Delivering a program that is suitable for all participants is not possible. Trying to cater to such a broad range of participants has meant we are not sufficiently challenging the advanced growers who want to be challenged. We have either lost or are close to losing their interest in the program.

Having observed the Future Orchards program since it started in 2006, both in my current position and in my previous role with E.E. Muir and Sons, I have seen the enormous variation in what has been picked up from the orchard walks and actually implemented on growers' orchards. I strongly feel the reason that many good ideas presented at orchard walks are not being implemented is due to a lack of connection with and confidence in the idea. Participants walk away from the orchard walks with the greatest intention to implement the good ideas they saw presented and as soon as they get back to their own orchard there seems to be a disconnect with implementing the practices. The ideas as simple as they are outlined seem to overwhelm a significant majority of participants and therefore the ideas are either not being put into practice or are not resulting in long-term changes of practices.

The program was not designed to coach every individual grower as the cost of doing so to the industry versus the likely payback would not be favourable; the program relied upon the initiative of growers to implement the changes they learn at each of the events.

The most radical change in practices have occurred where groups of growers have met between the rounds of orchard walks to discuss how they are going about implementing the ideas and dealing with their change in practices. Having regular meetings, whether they be face-to-face or via phone hook-ups increased the individual growers connection to and confidence in the ideas.

A commercial example of a program that connects growers is the Precision Orchards program which I was involved in whilst working for E.E. Muir and Sons. The program is still running and is essentially a benchmarking program that works by aiming to maximise the growth of young trees and compare varieties and rootstock combinations in a number of growing regions nationally.

The success of the program in changing the growing practices in participants' young orchard blocks I feel is due to the regular contact and feedback that is given throughout the season. The precision orchards program was the vehicle for pulling together likeminded participants who shared the goal of wanting to maximise the growth rates of their young trees so the trees would fill their allocated space in the shortest period. The participants are connected to the project via a fortnightly update of their block's performance and this support provides them with the confidence they need to change their practices.

### **Improvements**

To ensure the Future Orchards program remains successful, I feel it needs to find new common ground between industry participants; however it is unlikely that one single point of focus will satisfy industry participant's knowledge requirements. Maintaining regional champions that focus on implementing the ideas being presented to the various regions and groups within the regions will reinforce the ideas and help increase the rate of adoption.



## **AP08039 FINAL REPORT**

Apple and Pear Industry Technical Officer

---

A key point going forward for the Future Orchards program will be to categorise the industry participants into identifiable groups, both regionally and nationally, based on their abilities and requirements for information. This will enable the Future Orchards program to focus on key issues relevant to each identified group.

In regions like Western Australia where participation and implementation of ideas were initially quite slow, a program similar to the current Future Orchards program is still likely to be beneficial for most industry participants in the region.

In more advanced regions like southern Victoria and the Adelaide Hills, where attendance rates were high and ideas were quickly implemented, a more multi-focussed program needs to be developed to cater for the broader variation in grower knowledge needs in these regions.

APAL will aim to develop programs for like minded participants to be connected and support them working towards their common goals.

For example, a group may want help to identify profitable and non-profitable blocks to help decide on which blocks should be pushed out. Another example could be a group that wants help to determine the strategic direction of their businesses, what varieties they should grow, the best method of marketing their fruit etc.

After defining the goals of the various groups, we need to develop cost effective strategies to deliver the outcomes they want to achieve.

Two currently underutilised resources that could assist with this process are the private advisors and the commercial consultants within the industry. To engage these resources, we need to determine what are their motivations and drivers.

In some cases it will just be the sale of their commercial product and this may have no benefit to the program. However in many cases the private advisors and commercial participants will share a common goal such was the case with the Precision Orchards. In this program, the common outcome was to maximise the rate of tree growth on young trees to ensure the trees filled their allocated space as quickly as possible. The net benefit for the grower participants was the common knowledge they gained that enabled the participant to move towards best management practices. The net benefit for E.E. Muir and Sons was the sale of commercial products, a deepening of the relationship with grower participants and the enhancement of their position within the industry as being leaders in this particular field of knowledge.

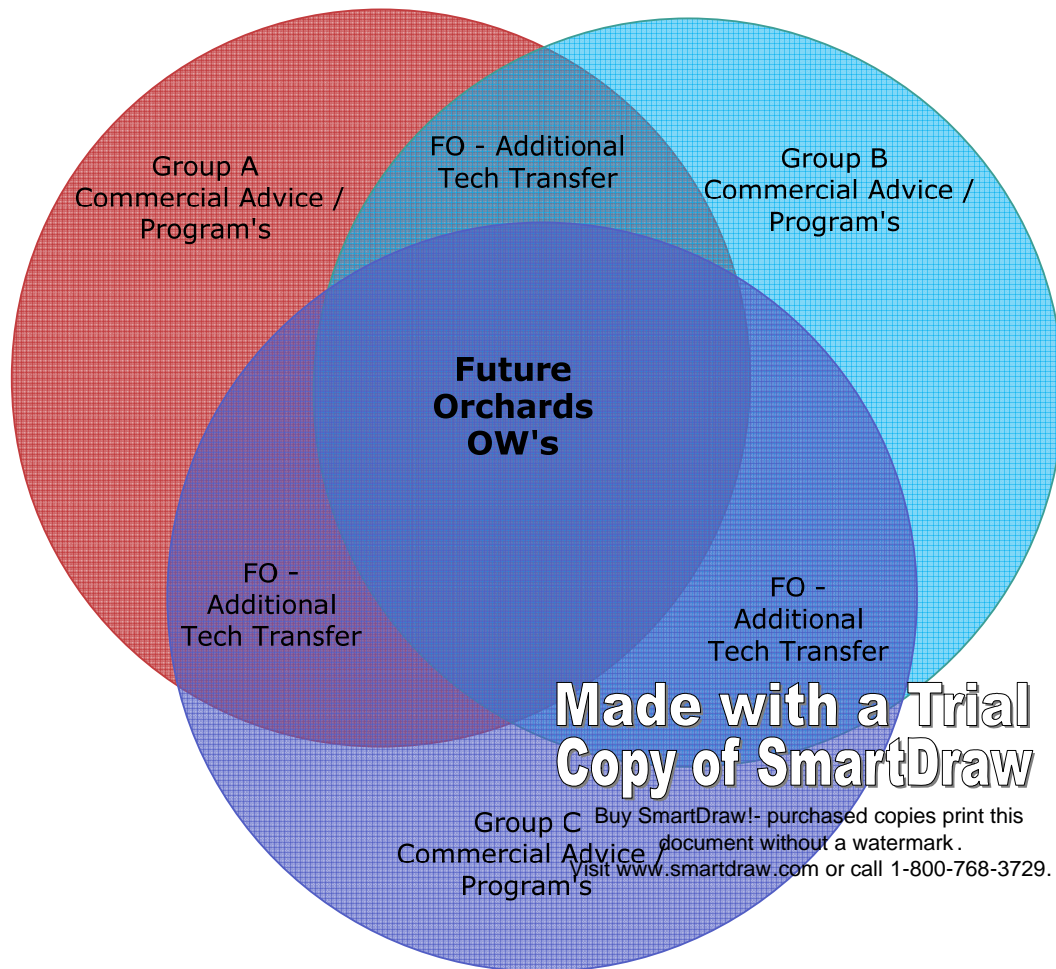
The initial process for engaging the private advisors and commercial consultants should be to actively seek their feedback on components of the new program, this would provide them with a feeling their views are considered important and help deepen the relationship with this group.

The consultation process should highlight their knowledge gaps, which could lead to a component of the new program being developed that would improve their capabilities.

Another important goal for growers is to understand individual block profitability. Growers would better understand where they could be making improvements within their businesses. The net benefit for the private advisor/s would be the knowledge and insight that would enhance the private advisors position as being a leader in this particular field.

To ensure commercial programs get off the ground, which has a net benefit to industry participants, a catalyst may be required. The new program could help initiate joint activities between commercial companies and groups of industry participants by providing them with a toolbox of information for funding sources and possibly some direction as to where they could be focussing their commercial programs. The net benefit in assisting the development of commercial programs is this would result in reduced cost to growers and private advisor/s are more likely to enter into the industry as they have a prescribed amount of work and they are highly likely to obtain additional work from growers who want greater insights into their orchard businesses.

**Diagram 1** – Industry participant's priorities



# The Future Orchards (FO) additional tech transfer is likely to include:

- *Webinars*
- *Phone – hook-ups*
- *Video demonstrations*
- *Written communications*

The above diagram aims to diagrammatically explain the various extension roles I believe need to exist in the Australian apple and pear industry to ensure the industry achieves its goal of improving its productivity and profitability.

The Future Orchards program would remain as the platform for the industry to introduce production related ideas to the industry. The future orchards activities would be open to all industry participants; this includes the additional tech transfer program which will be run to reinforce specific ideas that have been indicated as priorities for various groups.

It is possible that assistance could be provided by the industry to aid in setting up the framework for commercial advice/ program's to be run. However it is intended no specific commercial advice / programs would be run by the future orchards program.

**Management Committee**

In the initial development phase of the Future Orchards program a management committee was appointed which consisted of:

- DAFF: Vicki Manson, Program Manager, Industry Partnerships Program
- HAL: Brad Mills, Industry Services
- APAL: Alma Reynolds, Industry Services Manager
- APAL: Val Hilton, Industry Development Manager

## **AP08039 FINAL REPORT**

Apple and Pear Industry Technical Officer

---

- Alan Hill, WA Industry Development Officer
- Kevin Sanders, grower Yarra Valley, Victoria
- Howard Hansen, grower Huon Valley, Tasmania
- John Plummer, grower Adelaide Hills, South Australia
- Matthew Lenne, grower Goulburn Valley, Victoria

The participants of the current management committee are:

- Kevin Sanders, Chairperson, grower Yarra Valley, Victoria
- HAL: Brad Mills, Industry Services
- Michael Cunial, grower Orange, NSW
- Matthew Lenne, grower Goulburn Valley, Victoria
- Daniel Nicoletti, grower Stanthorpe, Queensland
- John Plummer, grower Adelaide Hills, South Australia
- Ryan Hankin, grower Huon Valley, Tasmania
- Shaun Witchell, grower Gippsland, Victoria
- Garry Langford, APFIP
- APAL, Richard Hawkes, Stuart Gray

The role of the original management committee was to develop and oversee the Future Orchards project. As co-ordinator of the program it was anticipated that the current committee would actively set the future direction of the program, however as no guidance was provided by the management committee I actively engaged participants in the program to obtain direction and feedback. In hindsight I should have seen the role of the current management committee as an advisory body.

In developing a new program, the Apple and Pear IAC need to review the structure of the management committee to ensure the program has sufficient guidance without being overburdened by management.

A new management committee for Industry Development Program should be initiated to incorporate the FO2012 activities into the overall Industry Development Program. Membership of this committee should incorporate grower, APAL, Regional IDO, Private Advisors and HAL representation.

## AP08039 FINAL REPORT

Apple and Pear Industry Technical Officer

---

### Survey

Additional feedback from growers was obtained from an in-depth survey that was undertaken in the February / March round of OW's. The survey was constructed with the help of the communications manager with the goal to determine whether the program should continue and if so, what topics should be focused on. **See appendix 1 for survey results**

The results from the survey were very positive for the program, all surveys rated the overall program either very good or excellent and in addition there was overwhelming support for the continuation of the program in all regions for the program.

The general consensus from all regions for the frequency of the orchard walks was for quarterly events to take place. In future, Future Orchards events may take on forms other than orchard walks and after greater consultation with participants, there may be greater demand for other activities such as a monthly phone hook-up or webinars during the season on specific topics of interest. The IPSOS survey will provide direction as to different forms of communication that will aid in the uptake and reinforcement of new ideas.

The attendance records indicate that June followed by September and November were the most popular orchard walks, while the February walks showed the poorest attendance. The evaluation surveys from the September and November round of orchard walks were incomplete and therefore it is difficult to distinguish participant's preference between the two time periods. The seasonal workload is likely to be the largest determining factor for the variable attendance rates with June being the period of time where the workload is less time critical for example winter pruning occurs in June and this is not as time critical as harvest which occurs in February.

The survey asked what the best method for delivering information was; the results overwhelmingly supported the current format of a 2 -3 hour event with a mix of indoor presentations and infield demonstrations.

Based on my experience, grower's knowledge and uptake of ideas are enhanced where information is presented or ideas are practised as they face them throughout the season. The new extension program would offer additional value to groups of industry participants were it able to deliver components of the program that targeted their specific issues as they faced them through the season.

An example could be a group that wanted to improve their profitability by growing fruit in a targeted size range. The extension program could work with the group to provide them with specific information throughout the season that would help them work towards their goal. In this particular case, the extension program could possibly collaborate with a commercial program to ensure the intended outcome is achieved.

The survey asked participants their preferred size for orchard walk groups; interestingly the majority of responses indicated a preference of groups to be no larger than 20 people.

The survey also asked participants to rate whether they found the data from the monitoring block program to be useful and whether they think the program should continue. The results were extremely favourable for the monitoring block program to continue as in nearly all survey responses the data was considered to be useful.

In developing the new extension program the monitoring block program should be reviewed to determine whether the current format is likely to enhance the uptake of ideas or whether another format could work better.

One of the criticisms of the current format of the monitoring block program is that it focuses too heavily on a single block within an orchard. The monitoring block program was designed to identify and highlight the best performing individual blocks across Australia. Focusing on a single block within an orchard allows an individual grower to focus on the improvements that need to be made to the monitoring block and this allows participants to identify the changes that have taken place over time. The program to date has successfully identified and demonstrated the key factors that differentiate the performance of a block and additionally the actions that need to be taken to transform a block from low performance to high performance.

## **AP08039 FINAL REPORT**

Apple and Pear Industry Technical Officer

---

However, the success of a single block within an orchard is unlikely to have a significant net effect on the overall profitability of an orchard. The format of the monitoring block program should therefore look at models that could incorporate monitoring of a wider range of blocks within an orchard. This would provide an understanding of the contribution each block makes to the overall success of the orchard.

The strongest criticisms in the survey came from the Goulburn Valley with the program needing to have greater focus on pears. The Future Orchards program has previously been criticised for having too greater emphasis on apples, this can largely be contributed to the fact the program deliverers, AgFirst, are more experienced with apples and in addition there has been no real direction from the pear industry as to what they want.

To ensure the knowledge requirements of the pear industry are met, it is likely that a program specifically designed for the pear industry will need to be developed. The development of a pear specific program would benefit from having pear specialists deliver the program and broad consultation from the pear industry to identify the areas for a program to be built.

Additional criticism included insufficient incorporation of local expertise in the program. As outlined in the five year R, D and E plan, the outcomes of the PIPS program are to be delivered through the new extension program, therefore sufficient opportunity will be made for local expertise to be included in the program.

Additional 'local expertise' will be incorporated into the program via the engagement of the private advisors. The exchange of knowledge between the extension program and the private advisors is likely to strengthen the program as they would become more supportive, rather than criticising the program from the sideline. The success of incorporating the private advisors into the new program will be dependent upon understanding the needs of this group, this knowledge will be determined through the engagement process.

## **AP08039 FINAL REPORT**

Apple and Pear Industry Technical Officer

---

### **Workshop**

In addition to the survey, a workshop was held at the APAL office with the goal of learning from other extension models. The meeting was attended by:

- Anne-Maree Boland, RMCG, Vegetable industry extension program leader
- Mark Krstic, GWRDC, Grape and Wine industry extension program leader
- Craig Hornblow, AgFirst
- Ross Wilson, AgFirst
- Dennis Richards
- Chris Peters, Pomefruit Industry Development Officer
- Richard Hawkes, Annie Farrow, Stuart Gray, APAL

Prior to the meeting a meeting was held with Dairy Australia to discuss their extension programs, the information gained from this meeting was discussed at the workshop with the ideas incorporated into the outcomes of the meeting.

The outcomes from the workshop were in line with many of the views expressed in the industry strategic plan and the industry development needs assessment; however additional points of view included:

- The regional aspect of the program needs to be maintained to ensure the regional champion is maintained; this aspect of the program was seen to be a significant strength in all successful extension programs
- Using regional champions (positive examples) will break down the status quo thinking; seeing is essential to believing.
- Other forms of presenting material need to be explored; the program would benefit from incorporating specific infield presentations that lend themselves to being practical and hands on
- The brand integrity of Future Orchards needs to be maintained to ensure industry participants connect with an ongoing program
- The Future Orchards program needs to extend beyond the orchard gate and incorporate information on consumer research so growers are more aware of methods that improve the sale of their product
- Part of the success of the Future Orchards program was due to the program having a very defined focus, this was a common element among other successful extension programs
- The program would benefit from segmenting the audience into groups that would enable the needs of the various groups to be more thoroughly met.
- The program needs to remain flexible to the demands of the participants, it was recognised that the Future Orchards program has done this to date.
- The Future Orchards program is likely to benefit from having local consultants and chemical reseller agronomist involved in the program in some form; greater involvement of these people will help enhance the uptake of ideas. Being inclusive rather than exclusive will also stop the program being derailed by negative commentary from these groups.

### **Additional Information Required**

Although the results from the survey undertaken during the February / March round of Orchard Walks provided a lot of information about the ideal format for the Future Orchards extension model, information specifically relating to priority areas for the program is required to ensure the program meets the requirements of industry participants.

An independent survey is being developed in conjunction with IPSOS, to gain the required information relating to participant priorities. The survey will help to define the various groups that are believed to exist within the industry and identify the priorities of the individual groups; this understanding will enable APAL to develop a program that can target the various group's

## **AP08039 FINAL REPORT**

Apple and Pear Industry Technical Officer

---

requirements. It is anticipated that results from the survey will demonstrate that the various groups will share some common goals but also some significant differences.

Where there is sufficient common ground between the various groups, a model similar to the current Future Orchards program is likely to provide the most successful outcome.

In situations where limited common ground exists, a model will need to be developed to ensure that a group can become connected to and confident that the information will be both inexpensive and effective to implement.

The use of new technologies is likely to provide solutions to many of the issues that prevent participants becoming connected to specific ideas.

## AP08039 FINAL REPORT

Apple and Pear Industry Technical Officer

### Appendix 1

#### FO2012 Survey Results

The results presented are the collation of 92 survey forms taken from 8 regions throughout Australia on the fifth round of the FO2012 program. When looking at the results it should be apparent that not all questions were answered, however the information presented was representative of the information provided on the survey forms and provides a significant amount of information for deciding upon the direction of a new extension model.

	Orange	Batlow	W.A	Sth Victoria	Goulburn Valley	Stanthorpe	Sth Australia	Total
Number of surveys returned	9	9	6	16	16	12	24	92

Orange	Batlow	W.A	Sth Victoria	Goulburn Valley	Stanthorpe	Sth Australia	Total
--------	--------	-----	--------------	-----------------	------------	---------------	-------

#### Question 1

Thinking about the FO2012 program over the last 2 years, how would you rate the overall program?

A) Excellent B) Very Good C) Fair D) Poor

	Orange	Batlow	W.A	Sth Victoria	Goulburn Valley	Stanthorpe	Sth Australia	Total
A	6	5	1	4	6	3	6	31
B	3	4	4	12	9	2	15	49
C	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0

#### Question 2

Do you support the continuation of the FO2012 project?

Y) YES N) NO

	Orange	Batlow	W.A	Sth Victoria	Goulburn Valley	Stanthorpe	Sth Australia	Total
Y	9	9	6	15	21	6	26	92
N	0	0	0	1	3	0	0	4

#### Question 3

What frequency would you like the orchard walks to be (on average)

A) Monthly B) every 2 months C) every 3 months D) 6 monthly E) Seasonal

	Orange	Batlow	W.A	Sth Victoria	Goulburn Valley	Stanthorpe	Sth Australia	Total
A	0	0	0	1	0	0	0	1
B	2	0	0	3	2	0	9	16
C	5	7	3	9	13	5	13	55
D	1	1	1	3	1	1	1	9
E	1	1	2	0	0	0	2	6

#### Question 4

Would you like the orchard walks to continue on a similar format with a mix of indoor presentations and infield demonstrations?



**AP08039 FINAL REPORT**

Apple and Pear Industry Technical Officer

A) YES

B) NO, would prefer a greater focus on indoor presentations

C) NO, would prefer to have more information delivered infield

A	9	8	6	16	14	5	22	80
B	0	1	0	1	0	0	1	3
C	0	0	0	0	2	0	3	5

**Question 5**

Are the FO2012 orchard walks the best way to deliver critical developments and learning's for your business?

Y) YES N) NO

Y	9	8	4	14	14	6	21	76
N	0	0	2	1	1	0	0	4

**Question 7**

If there was a nominal charge for attendance at future events, would you still attend?

Y) YES N) NO

Y	9	8	4	12	12	2	20	67
N	0	0	2	3	2	2	2	11

**Question 8**

How much time should an orchard walk take?

A) 2 – 3 hours B) 3 – 5 hours C) 5 – 8 hours

A	3	8	6	11	11	3	15	57
B	4	0	0	4	3	2	8	21
C	2	0	0	1	0	0	0	3

**Question 9**

What size orchard walk groups would you like to have?

A) 5 - 10 B) 11 – 20 C) Unlimited

A	1	1	0	1	1	0	4	8
B	6	6	3	7	9	1	12	44
C	2	2	3	7	4	3	6	27

**Question 10**

Do you use the FO2012 website?

Y) YES N) NO

Y	5	6	3	8	3	3	7	35
N	4	2	2	8	10	2	13	41

**Question 11**

Have you found the monitoring block data useful?

Y) YES N) NO

Y	8	7	4	12	11	4	14	60
N	0	2	0	4	1	0	1	8

**Question 12**

**AP08039 FINAL REPORT**

Apple and Pear Industry Technical Officer

---

Do you think the monitoring block program should continue?

Y) YES N) NO

Y	9	7	4	14	11	4	16	65
N	0	2	0	1	0	0	1	4

## AP08039 FINAL REPORT

Apple and Pear Industry Technical Officer

Due to the range of the answers returned in the survey, the answers to question 6 were prioritised according to a high, medium-high, medium, medium-low and low for each survey and then collated accordingly.

### Question 6

Please rate the following topics in terms of your preference of priorities as topics for future sessions – 5 - being highest priority, 1 - being lowest priority

- Orchard Husbandry (irrigation, nutrition, pest and disease)
- Crop Loading (chemical thinning, setting crop loads)
- Pruning and Training
- Business / financial management (orchard and profitability, costs of production)
- Harvest Management
- Marketing (Domestic and Export)
- New Varieties
- Regional specific topics

Orange	High	M/High	Med	M/Low	Low
Orchard	3	4	2		
Crop			1	5	3
Pruning	3	3	2	1	1
Business	1		5		1
Harvest		2	2	2	1
Marketing	1	3		1	1
New Varieties	2	2	1	3	1
Regional		3		2	

Batlow	High	M/High	Med	M/Low	Low
Orchard	1	5			
Crop	3	3	2		
Pruning	3	3	1	1	
Business	1	2	3	2	1
Harvest	4	2	1	1	1
Marketing	1	4	2		1
New Varieties	2	3	1	2	1
Regional	1	4	2		1

### Comments

Possibly more blocks or growers in Willigobung  
 Willingness to compare & adapt to new plans and orchards  
 We keep looking at the same orchard blocks

West Australia	High	M/High	Med	M/Low	Low
Orchard	5				
Crop	3	2			

## AP08039 FINAL REPORT

Apple and Pear Industry Technical Officer

<b>Pruning</b>	1	3	1		
<b>Business</b>	2	2	1		
<b>Harvest</b>	1	3	1		
<b>Marketing</b>	4			1	
<b>New Varieties</b>	1		2	1	1
<b>Regional</b>		1	3	1	

### Comments

Can we have more local experts involved?

<b>Sth Victoria</b>	<b>High</b>	<b>M/High</b>	<b>Med</b>	<b>M/Low</b>	<b>Low</b>
<b>Orchard</b>	6	5	2	2	
<b>Crop</b>	5	7	4		
<b>Pruning</b>	6	6	2	1	
<b>Business</b>	6	3	1	3	3
<b>Harvest</b>	2	3	7	1	
<b>Marketing</b>	4	1	4	2	3
<b>New Varieties</b>	3	1	5	3	2
<b>Regional</b>	1	1	7	1	2

### Comments

FO2012 Orchards needs to be backed up with IT Component

Q5 Orchard Husbandry with emphasis on lower chemical and Automation.

Update web site

There is no follow up on blocks

Is block A better than Block B and why?

It is time to go beyond 2012

It has been a good program, quit before it becomes tired.

<b>Stanthorpe</b>	<b>High</b>	<b>M/High</b>	<b>Med</b>	<b>M/Low</b>	<b>Low</b>
<b>Orchard</b>	4		1		
<b>Crop</b>	1		3	2	1
<b>Pruning</b>		2			1
<b>Business</b>	2	2			
<b>Harvest</b>	1			1	
<b>Marketing</b>	1			1	
<b>New Varieties</b>		1	2	1	
<b>Regional</b>			1		

<b>Goulburn Valley</b>	<b>High</b>	<b>M/High</b>	<b>Med</b>	<b>M/Low</b>	<b>Low</b>
<b>Orchard</b>	8	8	4	1	
<b>Crop</b>	5	3	5	1	1

**AP08039 FINAL REPORT**

Apple and Pear Industry Technical Officer

<b>Pruning</b>	3	4	3	2	2
<b>Business</b>	1	4	4	1	2
<b>Harvest</b>	2	3	3	3	1
<b>Marketing</b>	3		4	2	2
<b>New Varieties</b>	3	4	2		1
<b>Regional</b>	6	1	3	2	

**Comments**

Need to include Pears more often x 4 people  
 Grower questions on other topics  
 Lending – Rural Finance  
 Doing demonstrations  
 Talks with power point in a hall  
 Replanting-getting soils right prior to replanting  
 Keep finger on the pulse in responding to new ideas  
 More hot Back Packers  
 Practical tips to check canopy light  
 Stay focused on critical points  
 Thinning techniques used in N.Z.

<b>Sth. Australia</b>	<b>High</b>	<b>M/High</b>	<b>Med</b>	<b>M/Low</b>	<b>Low</b>
<b>Orchard</b>	10	3	3	2	5
<b>Crop</b>	5	9	4	2	3
<b>Pruning</b>	4	10	3	5	
<b>Business</b>	6	2	5	5	3
<b>Harvest</b>	5	1	4	6	3
<b>Marketing</b>	4	2	1	5	2
<b>New Varieties</b>	5	7	4	1	
<b>Regional</b>	4	1	5		1

**Comments**

Need to have updates on banned chemicals so there is no surprises  
 Maintain early crop loads & manage growth on young trees  
 Charge for attending events:- Levy Money

