

## **Final Report**

# **Avocado industry development and extension**

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**Delivery partner:**

The Queensland Department of Agriculture and Fisheries

**Project code:**

AV17005

**Project:**

*Avocado industry development and extensions (AV17005)*

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## Public summary

The end of project outcome was to improve Australian avocado orchard productivity, fruit quality and profitability through the promotion of best practice. This outcome links to the 2017-2022 Avocado Strategic Investment Plan outcomes of:

- By 2021, productivity (marketable yield per hectare) has improved by 15% on average, without increased production costs per kilogram
- By 2021, over 90% of avocados received by consumers will meet or exceed their expectations of quality

The project's key intermediate outcomes were:

- Promote adoption of best practice by growers, nurseries, consultants, advisors, and resellers
- Expand national and international networks

The project delivered a range of events and resources to help the avocado industry access, understand and implement best practice information. A total of 2,450 industry stakeholders attended project events, with an average of 62% of the evaluated attendees (1,167) intending to make changes to their businesses as a result of participating.

National and international networks were strengthened and expanded through collaborating with relevant national avocado research delivery partners, attending the 2019 Avocado World Congress in Colombia, organising and conducting the 2019 Californian avocado industry study tour, and hosting six international guest speakers who presented at 'Avo Grow' webinars or at the 'Advanced Management Workshops'.

Outputs and activities of the project included:

- 19 Regional Forums (24 were scheduled but 5 were replaced by webinars during Covid lockdowns)
- 8 'Avo Grow' webinars (undertaken to replace Regional Forums during Covid lockdowns)
- Presentations, recordings and minutes for all Regional Forums and 'Avo Grow' webinars prepared and available on the Best Practice Resource (BPR)
- 5 'Avo Skills' workshops (Foundation Workshops), training resources and an online forum for new growers and resellers
- 3 Advanced Management Workshops (reviews) conducted on the topics of avocado irrigation, canopy management and soil health
- Detailed reports and resources developed from the Advanced Management Workshops and accessible via the BPR
- 7 face-to-face Wholesaler Workshops and 1 online Workshop that targeted 3 capital city markets during Covid lockdowns
- 45 sets of monthly 'Avo Alerts' for each region and two varieties
- 3 educational videos
  - 'Protecting your avocado trees from Phytophthora root rot: effective application of phosphorous acid'
  - 'Principles of avocado canopy management'
  - 'Options for avocado canopy management'
- 2 educational posters
  - 'Managing spotting bugs in avocado'
  - 'Managing six spotted mite in avocado'
- Updates to the Best Practice Resource

- Attendance and reporting of the 2019 World Avocado Congress in Colombia
- Organisation and reporting of the Californian avocado industry study tour
- 6 Project Reference Group meetings with annual workplans developed and delivered
- Relevant scientific and technical articles shared with industry every quarter in 'Talking Avocados' magazine
- 1 phenological crop calendar developed for the Maluma® variety in North Queensland
- Australian Avocado Industry Extension Strategy 2023-2027 'A plan for the transition to 2027'

Evaluation has confirmed the project has successfully:

- 'Improved productivity, quality and profitability' - more than 65% of industry claimed that the project contributed to improvements in these areas of their business
- 'Met industry needs' - 91% of industry agreed that the project had met industry needs
- 'Used appropriate methods' - 90% of industry agreed that the project had provided a range of suitable learning formats
- 'Effectively engaged stakeholders' - 45% of all grower entities (representing 73% of industry production), 92% of avocado consultants, and 96% of researchers attended at least one project event. These figures do not include those that used any of the large number of resources created by the project.
- 'Used feedback to generate efficiencies' – as an example, the relatively low cost but high value 'Avo Grow' webinars (an alternative developed to replace the Regional Forums during COVID-19 lockdowns) were continued as an additional service post lockdowns as a result of positive feedback from growers

Recommendations for future avocado extension were explored in depth as part of the development of the 'Australian Avocado Industry Extension Strategy'.

Recommendations for research and extension were generated at the summits held for each of the three Advanced Management Workshops.

## Keywords

Avocado; quality; profitability; productivity; extension

## Introduction

The Australian avocado industry is in a strong growth phase with extensive new plantings established over the past five years. The industry is experiencing significant changes in market dynamics and industry profitability due to substantial increases in production volumes. However average industry yields and fruit quality are below those of leading export nations and need to be improved in order for the industry to expand successfully and to become internationally competitive. This will be particularly important for successfully developing export markets, and if imports are permitted from countries with good quality fruit and lower costs of production. (Chile was a successful applicant of an import permit during the life of the project with the first shipment of fruit arriving in September 2020).

The demographics of avocado businesses is also changing with a significant rise in corporate ownership of orchards. This sector generally demands a more agronomically advanced level of information and engagement and it is also creating a demand for more consultants, so it is important to ensure that this sector is supplied with scientifically sound information.

Challenges were presented with the arrival of COVID-19 which meant face-to-face events weren't able to take place for most of 2020, the project team adapted to this challenge and supplemented grower engagement with the successful 'Avo Grow' webinars that replaced the Regional Forums. The interruptions of not being able to carry out planned face-to-face events also meant an extension was granted to deliver delayed activities, with

two further extensions requested for the development of the 'Australian Avocado Industry Extension Strategy', resourcing the co-design process for developing the next extension project, for the project team to complete an update to the 'Problem Solver Field Guide' and to attend the 2023 World Avocado Congress in New Zealand.

Previous avocado extension projects including AV06003 (Study groups to achieve globally competitive avocados), AV10002 (Avocado best management practices and Internet based information delivery) and AV14000 (Achieving more consistent yields of quality fruit in the Australian Avocado Industry) have delivered regular regional grower workshops, growing guidelines for the industry's Best Practice Resource (BPR), YouTube videos on important industry topics and detailed reports from international conferences and overseas study tours. Outcomes from AV14000 demonstrated direct industry benefit.

For example, in AV14000 89% of respondents indicated they had made changes to their businesses as a result of attending a grower workshop and 52% noted a reduction in irregular and alternate bearing after incorporating new knowledge, gained through the project. Furthermore, survey respondents each attended an average of 4.3 workshops of the average 5.25 events available to them in each region, demonstrating the strong value regional growers placed on this project. In addition to BPR and YouTube outputs listed above, key publications from previous projects included 'The Avocado Problem Solver Field Guide' and 'Manage Phytophthora root rot' poster both of which are still in strong demand.

This project built on the success of previous work and sought to further improve information delivery and uptake by segmenting the industry according to skill and experience levels, with outputs specifically tailored to suit. The project team also aimed to engage major wholesalers in capital cities to assist in the maintenance of fruit quality post-harvest and to engage the participation of consultants and re-sellers to ensure consistency and accuracy of advice reaching growers.

The Department of Agriculture and Fisheries (DAF) and Avocados Australia Ltd (AAL) worked closely to deliver an effective extension project to the Australian avocado industry. The Department of Primary Industries and Regional Development (DPIRD) were also included in the planning and delivery of project extension events in Western Australia and their input was sought when preparing information resources. The DAF team included five officers with extensive knowledge and previous experience in avocado production and post-harvest handling research and extension. The project leader Mr Newett had led avocado extension projects for the past 30 years. The AAL team included the CEO, Mr John Tyas, the Industry Development Manager (IDM) Ms Anne Larard and the support of the AAL staff.

## Methodology

The primary purpose of this project was to encourage the adoption of improved practice throughout the Australian avocado industry. The suite of activities was built in line with the stakeholder engagement framework developed by Dr Jeff Coutts in 2017. Where possible, activities were adapted and combined to rationalise the number of events across the year to a manageable level as well as overcome the challenges that COVID-19 presented with delivering face-to-face events over 2020 and 2021.

The DAF team led the project with AAL as subcontractors and with liaison with DPIRD in Western Australia. The project delivered an avocado extension programme that targeted different levels within the grower base, those that advise them (particularly the expanding number of consultants and re-sellers) and the major wholesalers in capital city markets. The main strategies of engagement were face-to-face events (when possible), training of new growers and resellers, providing consultants with up-to-date information, reviews of key practices, keeping abreast of agronomic developments both domestically and internationally and the development and delivery of targeted hard copy and online resources for stakeholders.

### Project Reference Group

A Project Reference Group (PRG) of 12 people was formed to oversee the project and provide input into planning and evaluating various activities and deliverables of the project. The group included growers (3), consultants (2), team members from DAF (2) and AAL (2), a reseller (1), a representative from DPIRD (1) and a representative from Hort Innovation (1).

1. Anne Larard (AAL IDM)

2. Brad Rogers (WA grower and AAL chairperson)
3. Bridie Carr (DAF)
4. Chad Simpson (Central Queensland reseller and ex-grower)
5. Chris Searle (Consultant)
6. Declan McCauley (WA DPIRD)
7. Graeme Thomas (Consultant)
8. Jim Kochi (North Queensland grower)
9. John Tyas (AAL CEO)
10. Olive Hood (HIA)
11. Simon Newett (Project leader)
12. Tom Silver (New South Wales grower)

The PRG met six times during the life of the project. Comprehensive minutes were recorded for each meeting and reported in the relevant milestone reports. An annual work plan was also developed in consultation with the PRG and agreed on each calendar year.

#### **Keep abreast of national and international R&D developments**

Two DAF staff and the AAL IDM attended the World Avocado Congress (WAC) in Colombia in September 2019 and organised an associated Californian avocado industry study tour for thirty-five growers. In addition to valuable scientific information learnt, these events offered substantial networking opportunities and highly relevant site visits to orchards and pack houses. A key objective of these activities was to identify relevant specialists who could be drawn upon to provide new information for industry on specific areas of interest (e.g. nutrition, canopy management, irrigation etc). This proved invaluable with the successful employment of highly respected international guest speakers for 'Avo Grow' webinars and Advanced Management Workshops.

The project team also communicated regularly with its network of team members, researchers, growers and consultants in each avocado producing state to keep abreast of national industry and R&D developments. The project leader was a member of Hort Innovation's Strategic Industry Advisory Panel (SIAP) for avocado which also assisted with keeping abreast of both national and international R&D developments.

The AAL IDM undertook searches of CABI databases (the world leading publisher of scientific research in agriculture) for new and relevant research abstracts related to avocado production and supply chains. A high-level overview of a select number of these were published in 'Talking Avocados' magazine each quarter.

#### **Engagement with R&D levy investments**

The development and delivery of R&D information both at grower events and as technical resources was a team effort by DAF and AAL staff with the project leader acting as the **central point of contact**.

The projects that actively engaged with AV17005 activities included:

- Implementing best practice of avocado fruit management and handling practices from farm to ripening – AV18000
- Multi-scale monitoring tools for managing Australian tree crops: Industry meets innovation - ST15012 and ST19013
- Implementing precision agriculture solutions in Australian avocado production systems – AV18002
- Management of six-spotted mite in WA avocado orchards – AV19002
- Avocado sunblotch viroid survey – AV18007
- Improved fruit robustness and quality in avocado supply chain (mineral nutrition) – AV19004
- Growing robust avocados – AV21005

- Avocado industry communications program – AV21004 and AV18003
- Review and extension of avocado pests and their management – AV19001
- Carbohydrate monitoring to predict yield and understanding fruit set – AV19006
- Transforming sub-tropical and tropical tree crop productivity – AI13004
- National tree crop intensification program – AS18000
- eDNA analysis of plant-pollinator relationships to improve Hass avocado production in south-west Western Australia – PH19007
- Understanding the mode of action of phosphite in avocado for enhanced management of Phytophthora root rot – AV19005
- Monitoring avocado quality in retail – AV19003
- Investigation into citrus blossom bugs in avocado – AV19000
- Avocado retail sampling – AV18006
- Managing flies for crop pollination – PH16002
- Avocado industry capacity building – Western Australia – AV17006
- Maximising yield and reducing seasonal variation – AV16005
- Improved avocado orchard productivity through disease management - AV16007
- Developing management strategies to enhance the recovery of horticulture from bushfires – AS19002

### Best Practice Resource

AAL has successfully established the BPR within the AAL website as the central information hub for avocado R&D and BMP covering all parts of the supply chain. The BPR continues to be the main repository of best practice information including articles, graphics, documents, video and online training. One hundred percent of all growers in the AAL database are now registered for the Best Practice Resource. Access is restricted to Australian stakeholders only and managed through a secure log-in. During the life of the project DAF maintained and updated the Growing Section of the BPR. Topics which had a major content and layout update included:

#### ***Insect pests***

Avocado bark beetle	Thrips – Greenhouse
Zebra shield bug	Tea red spider mite
Whitefly	Tea mosquito bug
Tussock moth	Scale – Latania
Leafrollers	Spotting bug
Garden weevil	Scale insects
Avocado fruit borer	Red-shouldered leaf beetle
Orange fruit borer	Queensland fruit fly
Mediterranean fruit fly	Planthopper
Looper caterpillars	Avocado dimpling bug
Light brown apple moth	

#### ***Diseases***

Anthraxnose	Bacterial soft rot
Phytophthora Root Rot	Algal leaf spot

#### ***Management***

Harvesting	Site selection
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In addition, AV17005 produced and uploaded to the BPR:

- The literature reviews, domestic and international survey results, presentations and final report for each of the three Advanced Management Workshops on irrigation, canopy management and soil health. This information provides a substantial up-to-date resource of knowledge collected from Australia and overseas on these three major production topics and includes live recordings from international experts recruited as keynote speakers from Israel, South Africa, Chile, USA and Australia.
- Comprehensive minutes, presentations and recordings from all 19 Regional Forums and 8 Avo Grow webinars which include live recordings from guest presenters from Spain, Israel, Chile, USA and Australia.
- 59 presentations (average of 12 per event) from the 5 Avo Skills training courses prepared and presented by a wide range of experts that were recruited as guest presenters relevant for the region where these courses took place.
- Report on the avocado tour of California in 2019
- Reports on the field trips in Colombia in 2019
- Report from the 'Avocado Brainstorming' conference and associated field trips held in South Africa in 2018
- 3 new videos produced by the project
- Electronic copies of the 2 new posters
- Copies of the monthly Avo Alerts
- A 'What if' spreadsheet for growers to see how their income can be increased by improving packout
- The new crop cycle for Maluma®

#### **Avo Alerts**

DAF and AAL collaborated in the preparation and distribution respectively of 45 sets of monthly Avo Alerts (March 2019 – December 2022). These were regionally tailored, monthly prompts for key best practice considerations and included hyperlinks to relevant sections in the BPR for further detail. They were developed for all production regions and two varieties (Hass and Shepard) and were distributed to 1884 growers and relevant input suppliers.

#### **Videos**

Three new YouTube videos were produced on topics that were determined by AV14000 final evaluation feedback, PRG discussions and project activity outputs (e.g. canopy management summit) and these were distributed to industry through project activities and the avocado communications project. These included:

['Protecting your avocado trees from Phytophthora root rot: effective application of phosphorous acid'](#)

['Principles of avocado canopy management'](#)

['Options for avocado canopy management'](#) - (temporary link – please visit [Queensland Agriculture YouTube channel](#) for final published video)

#### **Posters**

Two new technical posters were produced on topics that were determined by AV14000 final evaluation feedback, PRG discussions and other project activity outputs (e.g. the six-spotted mite project AV19002). These were printed and made available to industry at events, copies can also be ordered through DAF or AAL. They are also digitally available through the BPR. The posters were:

['Managing Spotting Bugs in avocado'](#)

['Managing Six-spotted mite in avocado'](#)

The poster 'Manage Phytophthora root rot' developed in an earlier avocado extension project was updated and reprinted for a third time in November 2020 and continues to be a popular resource.

## Maluma® Crop Calendar

Project team member Ebony Faichney (DAF) worked with several collaborative growers and recorded weekly observations to gain a better understanding of Maluma® phenology in North Queensland. This information was used to generate the [Maluma® crop calendar](#) for the North Queensland growing region and this has been published on the BPR alongside the regional Hass and Shepard crop calendars.

## Regional Forums

Nineteen Regional Forums were delivered that were built off the success of the ‘Study Group Workshops’ and ‘Qualicado’ meetings delivered in previous projects. A point of difference between these Regional Forums and the previous meetings was a stronger focus on attracting participation of re-sellers and consultants to provide them with the latest sound and consistent information so this information could be leveraged to their clients.

The one-day Regional Forums targeted all growers and sought closer engagement with the emerging corporate producers, consultants, and re-sellers to maximise impact and uptake through the leverage that these groups have with growers. The primary aim of these forums was to impart well proven Best Management Practice that leads to high productivity and quality. Outputs included copies of presentations and key points from the day, these were made available via the BPR following the event. DAF and AAL worked together to plan and deliver the Regional Forums.

The 19 Regional Forums were held in

- North Queensland (Aug 2019, Aug 2021)
- Central Queensland (Nov 2019, Oct 2021)
- Sunshine Coast (Feb 2020)
- South Queensland (Feb 2020, March 2021, Feb 2022)
- Tamborine/Northern New South Wales (Nov 2019, June 2022)
- Central New South Wales (May 2019, June 2022)
- Tristate (Aug 2019, May 2021)
- South West Western Australia (June 2019, March 2020, June 2021)
- Perth region Western Australia (June 2019, June 2021)

The content was separated into three sessions so that attendees could choose what sessions to attend if they chose not to attend the whole day – Industry Update, Best Practice, and Field Walk.

The Industry Update session was delivered primarily by AAL staff and was targeted at all industry stakeholders especially growers. These sessions provided an update on current industry statistics, trends and future outlook; updates on the avocado R&D and marketing program; presentations on key issues; and AAL sought industry feedback on potential R&D to provide to Hort Innovation and others.

The Best Practice session aimed to increase knowledge and adoption and further promote the BPR. The project team consulted with growers and other stakeholders prior to each event to determine priority topics. This was done through a regional survey and by liaising with key regional contacts including the local AAL Director. The project team aimed to increase adoption of both past and current R&D and to help achieve this they consulted with Hort Innovation and other delivery partners to ensure that they had information from other relevant R&D projects currently underway as well as those already completed. The session was targeted at growers, farm managers, agronomists, crop consultants and input suppliers. It provided targeted, leading-edge presentations on technical production practices aimed at improving fruit quality and productivity. Content was delivered mainly by DAF staff, other research organisations and specialists from the private sector. There were a number of consultants who provided valuable input to these forums due to their particular areas of expertise. A new feature introduced mid-way through the project was to recruit two or three local growers, consultants or knowledgeable resellers to provide five minute ‘Grower Experiences’ talks to recount their experiences related

to the topic of the day, these proved to be a popular component.

The Farm Walk session was targeted towards growers, farm managers, agronomists, crop consultants, input suppliers and aimed to demonstrate key principles discussed in the Best Practice session and other relevant observations. It was structured to encourage questions and discussion around key topics and reinforce the messages from the Best Practice session. This session is very popular amongst growers who like to see other farms, find out how things are done and to get tips and practicalities of how farm practices are carried out. However, it can be difficult to find a willing host for the farm walk.

An evaluation process was conducted for each Regional Forum. The presentations and comprehensive minutes were amalgamated and loaded into the BPR library with appropriate tagging to enable search returns. Availability of the presentations was promoted through the communications project.

Eight Avo Grow webinars were delivered as a replacement for Regional Forums during the COVID-19 restrictions (see below)

### **Avo Grow webinars**

The Avo Grow webinars enabled the project team a unique opportunity to host international guest speakers on behalf of industry. On receipt of the positive feedback from the mid-term review and event evaluations, the Avo Grow webinars continued post the resumption of Regional Forums.

1. [Fruit spotting bug management](#) – Craig Maddox and Ruth Huwer (NSW entomologists) (29/4/2020) -
2. [‘Where have all the flowers gone?’](#) – Inaki Hormaza (International guest speaker from Spanish National Research Council) (27/05/2020)
3. [Irrigation, nutrition and PGRs](#) – Francisco Mena (International guest speaker from GAMA, Chile) (29/07/2020)
4. [Avocado nutrition under Californian conditions](#) – Ben Faber (International guest speaker from University of California Cooperative Extension) (28/10/2020)
5. [Exploring soil microbiology in avocado production](#) – Neil Wilson (Metagen research scientist) (25/11/2020) -
6. [Avocado Irrigation in Israel](#) – Udi Gafni (International guest speaker from Avocado Granot, Israel) (19/05/2021) -
7. [‘Research Update’](#) – DAF & AAL (07/08/2021)
8. [‘Shaping Healthy Soils: The Importance of Soil Management Practices for Promoting Root Health and High Fruit Yields of Avocado’](#) L– David Crowley (Emeritus Professor from the University of California) 9/11/2022

### **Foundation Workshops (Avo Skills)**

Five Foundation Workshops (Avo Skills) were delivered by DAF with AAL promoting the events and managing registrations. Avocado is not an easy crop to grow but high avocado prices have been attracting many new growers (estimated 465 new growers since 2015) unfamiliar with the crop, as well as reseller sales-staff with little knowledge of the crop that are providing advice and often peddling products of questionable value. Fruit quality and cost of production (closely linked to productivity) is becoming increasingly important for the Australian industry as the rate of production starts to exceed the rate of consumption and the likelihood of cheaper avocados being imported from overseas increases.

This situation provided a compelling case for conducting science-based training sessions to deliver fundamental and consistent avocado management information targeted at new growers, re-sellers and emerging consultants. Re-sellers often have more direct contact with growers than with the handful of extension staff so good leverage of the information was achieved by training this sector. New consultants were also targeted for this training and engagement.

The aim of the Avo Skills workshops was to provide a thorough grounding in Best Management Practice. Critical areas of avocado culture to be covered included pest and disease control, irrigation and nutrition. This was achieved through a combination of theory sessions with a variety of delivery methods including presentations, videos and games, and then field visits to familiarise participants with the application of key principles.

Interaction with successful, experienced farm managers during field sessions was an important strategy for promoting learning and positive practice change. Workshops were delivered in a two-day format and held in five locations, namely North Queensland, Central Queensland, Central NSW, the Tristate and Western Australia. The morning of each day was conducted indoors whilst the afternoon of each day was conducted in the field and for this reason the Foundation Workshops were held in production regions.

DAF prepared a package of resources for attendees at these workshops. These resources were also made available to all via the BPR.

### **On-line forum**

The aim of this component was to provide support to new growers and other less experienced stakeholders. It was targeted towards participants attending the Avo Skills workshops and was promoted at these workshops as a mechanism for ongoing interaction amongst the cohort of new growers.

AAL established the on-line forum module within the BPR which provided a secure, closed on-line platform. This was intended as a 'Community of Practice'. Access is controlled by AAL. One of the benefits of housing this within the BPR is that participants can easily be directed to parts of the BPR through hyperlinks. Rules for users were established and AAL administered the site and DAF assisted with technical support.

### **Advanced Management Workshops**

The intention of these events was to actively review current practices, share experiences, identify knowledge gaps and highlight regional extension needs on behalf of the Australian avocado industry. Although attendees were likely to improve their knowledge via participation in these activities, their primary focus was to help develop new guidelines for industry-wide use.

DAF and AAL worked closely to plan and organise these events. DAF and AAL's IDM managed and delivered the technical part of these events which for each review entailed a comprehensive literature review, a survey of Australian growers to get a snap shot of current practices, a survey of international experts through our networks to gain an appreciation of trends overseas, selection of guest presenters, planning and facilitating a 'summit' that considered all the information gathered and came up with research and extension opportunities and finally preparation of a final report and making this, the literature review, survey results and presentations available to all via the BPR. AAL managed the expressions of interest process and all the logistics around venue hire, travel, accommodation and catering.

The three topics addressed were chosen for their importance in avocado production and for the current high level of interest amongst producers (nutrition was reviewed in the previous avocado extension project):

- Irrigation
- Canopy management
- Soil health

All three Advanced Management Workshops were held in Brisbane. A small group of 11 to 13 delegates were chosen to attend following the submission of an expression of interest from interested attendees. An expert (most commonly an international researcher) on the chosen topic was arranged to give a keynote address at each event. Expressions of interest were advertised for growers and consultants to participate with travel and accommodation covered by the project. Preparation for delegates attending included reviewing a literature review and international and domestic survey summaries before attending the summit. Outputs included copies of presentations, a literature review, survey summaries, and a final summit report. Where possible summaries were presented at Regional Forums. All outputs are available via the BPR. Identifying where research and extension is needed on each topic was an important part of these events.

### **Dissemination of scientific articles to growers**

The project team planned on developing a list of advanced growers, consultants and leading re-sellers and sending these members advanced information, links and information on topical issues. As planning commenced on how to deliver this activity, DAF and AAL decided the best way of disseminating this information was for AAL to source relevant research abstracts and publish these in each 'Talking Avocados' magazine. It was agreed that

this method was more democratic and avoided possible exclusion of individuals with the development of an exclusive list of recipients for this information.

### Wholesaler activities

Mr Noel Ainsworth (DAF) managed these events with support from other project staff and post-harvest specialists. The main objective was to maintain contact with wholesalers, ripeners and consolidators and to build and maintain their awareness and understanding of industry best practice and technical developments in the correct post-harvest handling of avocado to achieve the best fruit quality outcomes. A breakfast or lunchtime meeting was planned at the fresh fruit markets in each of the five capital cities (Brisbane, Sydney, Melbourne, Adelaide and Perth) in both Year 1 and Year 3 of the project, thus 10 events were to be held in total and appropriate post-harvest information resources will be distributed.

Due to COVID-19 restrictions this resulted in delivery of seven face-to-face events and one webinar that targeted wholesalers at three capital city markets. These events linked with AV18000 (Implementing best practice of avocado fruit management and handling practices from farm to ripening DC) by sharing results from the audits of avocado wholesalers and ripeners (AV18000) (together with cool chain and library tray data) at both the capital city wholesaler events and also at the AV17005 regional forums.

### Avocado Extension Strategy

In the final year of the project, members of the project team from both DAF and AAL undertook an extensive consultative exercise to investigate the extension needs of the avocado supply chain from the nursery through to the export market which was used to produce the Australian Avocado Industry Extension Strategy to inform future extension projects.

The project team consulted with an extensive range of industry sectors including nurserypersons, growers, consultants, resellers, packers, ripeners, wholesalers and exporters from across the major production regions.

## Outputs

Table 1. Output summary

Output	Description	Detail
Californian study tour and report	Organisation and delivery of Californian avocado industry study tour on the 17 – 19 September 2019, attended by 38 people (35 avocado growers)	<a href="#">Tour Report - Californian Avocado Industry 2019</a> – available on the Best Practice Resource  California Avocado Tour Feedback was positive with the majority of participants indicating they would attend another international Avocado tour ( <b>Appendix 1</b> )  Final project evaluation found 30.5% of survey participants were aware of/used/attended the study tour report and outcomes ( <b>Appendix 2</b> )
2019 World Avocado Congress and report	Attendance and reporting on the 24-26 September 2019 World Avocado Congress in Colombia as well as associated field tours	<a href="#">Notes from 9<sup>th</sup> World Avocado Congress</a> – available on the Best Practice Resource  <a href="#">Rio Negro</a> and <a href="#">Sonson</a> associated study tour reports – available on the Best Practice Resource  Final project evaluation found 28.4% of survey participants were aware of/used/attended the WAC report and outcomes ( <b>Appendix 2</b> )
Updates to BPR	Review and updates of technical content on various BPR growing section topics	BPR survey conducted in November 2019 ( <b>Appendix 3</b> )  Final project evaluation found 88.4% of survey participants were aware of/use the BPR updates ( <b>Appendix 2</b> )  Monthly averages – 20 September 2020 to 13 Dec 2022

		<p>Total visits to all BPR pages = 2,477 visits per month</p> <p>Total visits to BPR that start on Growing landing page = 487 visits per month</p> <p>Total downloads events from the BPR Library = 134 downloads per month</p>
3 new educational videos provided to industry	Video topics were directed by AV14000 final evaluation data, PRG advice and outputs from the advanced management workshops.	<p><a href="#">‘Protecting your avocado trees from Phytophthora root rot: effective application of phosphorous acid’</a> (11K views)</p> <p><a href="#">‘Principles of avocado canopy management’</a> (55K views)</p> <p><a href="#">‘Options for avocado canopy management’</a> (<i>temporary link – please visit <a href="#">Queensland Agriculture YouTube channel</a> for final published video</i>)</p> <p>Final project evaluation found 71.6% of survey participants were aware of/used the video/s, 49.7% of survey participants found the videos assisted with improving their business (quality, productivity, or profitability) (<b>Appendix 2</b>)</p>
2 educational posters, electronically distributed to every commercial grower	Poster topics were directed by AV14000 final evaluation data, PRG advice and outputs from AV19002. Technical information was sound boarded by industry experts to ensure correct messaging and key points were addressed.	<p><a href="#">‘Managing Spotting Bugs in avocado’</a></p> <p><a href="#">‘Managing Six-spotted mite in avocado’</a> (recently released)</p> <p>Final project evaluation found that 58.9% of survey participants were aware of/had a copy of the Spotting Bug poster, 43.2% of survey participants found the Spotting Bug poster assisted with improving their business (quality, productivity, or profitability) (<b>Appendix 2</b>)</p>
45 sets of Monthly ‘Avo Alerts’ for all production regions and two varieties distributed to all growers and relevant input suppliers	Monthly reminders of important orchard tasks prepared by DAF and distributed by AAL (completed from March 2019 – December 2022)	<p>BPR survey conducted in November 2019 (<b>Appendix 3</b>)</p> <p>1884 growers and industry stakeholders receive the Avo Alerts and they are stored within the ‘Australian Agronomy’ section within the library on the BPR.</p> <p>Final project evaluation found 95.8% of survey participants were aware of/use ‘Avo Alerts’, 66.3% of survey participants found ‘Avo Alerts’ assisted them with improving quality, productivity, or profitability within their business (<b>Appendix 2</b>)</p>
19 Regional Forums conducted	Face-to-face regional forums held across nine regions consisting of 3 sessions: ‘Industry Update’, ‘Best Practice’ and ‘Farm Walk’.	<ul style="list-style-type: none"> <li>• North Queensland - (<a href="#">Aug 2019</a> – 82 attendees, <a href="#">Aug 2021</a> – 104 attendees)</li> <li>• Central Queensland (<a href="#">Nov 2019</a> – 101 attendees, <a href="#">Oct 2021</a> 99 attendees)</li> <li>• Sunshine Coast (<a href="#">Feb 2020</a> – 83 attendees)</li> <li>• South Queensland (<a href="#">Feb 2020</a> – 93 attendees, <a href="#">March 2021</a> – 113 attendees, <a href="#">Feb 2022</a> – 100 attendees)</li> <li>• Tamborine/Northern New South Wales (<a href="#">Nov 2019</a> – 67 attendees, <a href="#">June 2022</a> – 57 attendees)</li> <li>• Central New South Wales (<a href="#">May 2019</a> – 65 attendees, <a href="#">June 2022</a> – 51 attendees)</li> </ul>

		<ul style="list-style-type: none"> <li>• Tristate (<a href="#">Aug 2019</a> – 66 attendees, <a href="#">May 2021</a> – 79 attendees)</li> <li>• South West Western Australia (<a href="#">June 2019</a> – 64 attendees, <a href="#">March 2020</a> – 97 attendees, <a href="#">June 2021</a> – 103 attendees)</li> <li>• Perth region Western Australia (<a href="#">June 2019</a> – 46 attendees, <a href="#">June 2021</a> – 42 attendees)</li> </ul> <p>627 growers and 365 non-growers attended at least one regional forum over the life of the project.</p> <p>840 completed Regional Forum event evaluations were collected from a total sum of 1545 attendees (response rate of 54%). 95% found the Regional Forums useful to extremely useful, 59% intend making changes to their business as a result of attending a Regional Forum (<b>Appendix 4</b>)</p> <p>Final project evaluation found 80% of survey participants were aware of/attended a Regional Forum, 68.4% of survey participants found Regional forums assisted them with improving quality, productivity, or profitability within their business (<b>Appendix 2</b>)</p>
8 Avo Grow webinars conducted	8 Avo Grow webinars were held to supplement grower engagement during the COVID-19 pandemic. These included:	<p><a href="#">‘Fruit spotting bug management’</a> – Craig Maddox and Ruth Huwer (NSW entomologists) (29/4/2020)</p> <p><a href="#">‘Where have all the flowers gone?’</a> – Inaki Hormaza (International guest speaker from Spanish National Research Council) (27/05/2020) -</p> <p><a href="#">‘Irrigation, nutrition and PGRs’</a> – Francisco Mena (International guest speaker from GAMA, Chile) (29/07/2020) -</p> <p><a href="#">‘Avocado nutrition under Californian conditions’</a> – Ben Faber (International guest speaker from University of California Cooperative Extension) (28/10/2020)-</p> <p><a href="#">‘Exploring soil microbiology in avocado production’</a> – Neil Wilson (Metagen research scientist) (25/11/2020) -</p> <p><a href="#">‘Avocado Irrigation in Israel’</a> – Udi Gafni (International guest speaker from Avocado Granot, Israel) (19/05/2021) -</p> <p><a href="#">‘Research Update’</a> – DAF &amp; AAL (07/08/2021)</p> <p><a href="#">‘Shaping Healthy Soils: The Importance of Soil Management Practices for Promoting Root Health and High Fruit Yields of Avocado’</a> – David Crowley 9/11/2022</p> <p>All recordings, minutes and presentations were made available in the ‘Event Proceedings’ within the library on the BPR. These were also marketed through AAL communications.</p> <p>264 growers and 285 non-growers attended a live ‘Avo Grow’ webinar (<b>Appendix 4</b>)</p> <p>171 completed event evaluations were collected from a total sum of 549 attendees (response rate of 31%), 98% found participating useful to extremely useful, 57% intend on making changes to their business as a result of participating (<b>Appendix 4</b>)</p>

		Final project evaluation found 53.7% of survey participants were aware of/attended an Avo Grow webinar, 33.7% the webinars assisted them with improving quality, productivity, or profitability within their business <b>(Appendix 2)</b>
5 two-day Foundation Workshops delivered with online forum established	Avo Skills workshops delivered to give new growers and resellers a thorough grounding in avocado agronomy best practice.	North Queensland (July 2019 – 40 attendees*) Western Australia (March 2020 – 60 attendees*) Central Queensland (September 2021 – 40 attendees*) Central New South Wales (June 2022 – 26 attendees) Tristate (May 2022 – 20 attendees) 186 new growers and resellers attended an Avo Skills event 156 completed event evaluations were collected (83.9% response rate), 100% found Avo Skills useful to extremely useful, 80% intend on making changes to their business as a result of participating <b>(Appendix 4 and 5)</b> <i>* . . . . full house</i>
3 Advanced Management Workshops completed	3 Advanced Management Workshop ‘summits’ held in Brisbane on irrigation, canopy management and soil health to discuss the information collected and presented via the literature review, domestic and international surveys and guest speakers. Key outcomes were to reassess current best practice and identify research and extension gaps on behalf of the Australian industry.	<a href="#">Irrigation</a> - (12 delegates held on 19-20 May 2021) <a href="#">Canopy management</a> – (13 delegates held on 13-14 September 2022) <a href="#">Soil health</a> (11 delegates held on 8-9 November 2022) All event resources have been updated and made available on the BPR – these include literature reviews, domestic and international survey reports, final summit reports and guest presentations Attendance was restricted to a small number of delegates chosen from expressions of interest based on their potential to contribute to the topic. A total of 36 delegates attended the summits. Positive post event survey feedback from delegates was received from all three summit events. 100% of all survey respondents (27 in total) felt they had sufficient opportunities to contribute <b>(Appendix 4 and 6)</b> Final project evaluation found 67.4% of survey participants were aware of/used the resources (literature review, domestic & international survey reports, guest presentations and final report) <b>(Appendix 2)</b>
7 wholesaler meetings held at each of the 5 capital cities and 1 webinar	Wholesaler workshops to maintain contact with wholesalers, ripeners and consolidators and build awareness of best practice	Face to face workshops were conducted in Perth (7/6/19 and 25/6/21), Brisbane (14/10/19, 18/10/21), Sydney (16/10/19), Melbourne (17/10/19) and Adelaide (18/10/19). A national wholesaler webinar was held on 20/10/21 targeting engagement with wholesalers and ripeners in NSW, Vic and SA 90% of those who attended found the workshop useful, 95% learnt something new while 86% of participants made new contacts during the events <b>(Appendix 7)</b> 100% of webinar attendees found the session useful and 88% of attendees were likely to make changes as a result of attending and



		participating in the webinar <b>(Appendix 7)</b>
Quarterly summary of avocado research abstracts in 'Talking Avocados' magazine	Relevant research abstracts were sourced and published in each edition of the industry magazine "Talking Avocados"	Relevant final evaluation data found 84.2% of survey participants were aware of/read the quarterly summary of research abstracts <b>(Appendix 2)</b>
Maluma® crop calendar for North Queensland	Phenological cycle study conducted in North Queensland on the new industry variety Maluma®	<a href="#">Maluma® Crop Calendar</a> Relevant final evaluation data found 15.9% of survey participants were aware of/used the resource. This new variety is currently only grown by a small number of producers. <b>(Appendix 2)</b> .
Six Project Reference Group meetings and minutes	A total of six PRG meeting with minutes produced and distributed to members post meeting	Comprehensive minutes were recorded for each meeting and reported in the relevant milestone reports. An annual work plan was also developed in consultation with the PRG and agreed on each calendar year.
The Avocado Extension Strategy	Delivery of an extensive consultative investigation into the extension needs of the avocado supply chain to help inform future extension projects	<a href="#">Transition to 2027 – Australian Avocado Industry Extension Strategy</a>

## Outcomes

Key outcomes from this project include the following:

1. Improve Australian avocado orchard productivity, fruit quality and profitability through the promotion of best practice
2. Promote adoption of best practice by growers, nurseries, consultants, advisors, and resellers
3. Expand national and international networks

AV17005 has been successful in improving Australian avocado orchard productivity, fruit quality and profitability through the promotion and adoption of best practice by growers, nurseries, consultants, advisors and resellers. This has also been achieved by the successful expansion and engagement of national and international networks. The project success in each of these outcomes has been measured by monitoring and evaluation data that has been collected throughout the life of the project from the various events as well as the final evaluation survey which targeted questions around project activities, delivery and outputs on improving productivity, quality, and profitability.

Performance expectations outlined in the monitoring and evaluation plan at the beginning of the project included:

- 80% of all growers attending at least one project event
- 100% of avocado consultants attend at least one project event
- 90% of avocado researchers attend at least one project event
- 95% of growers will be registered for the Best Practice Resource by the end of the project
- 80% of growers to make positive changes to their production practices as a result of project activities and outputs

End of project analysis has confirmed:

- 45% of all grower entities (representing 73% of industry production) have attended at least one project event
- 92% of avocado consultants have attended at least one project event
- 96% of avocado researchers have attended at least one project event
- 100% of growers on the AAL database are registered on the Best Practice Resource
- 65% of industry have found that the project has contributed to positive improvements in productivity, quality and profitability in their business

Overall, 91% of industry found the project met the needs of industry

**Table 2. Outcome summary**

Outcome	Alignment to fund outcome, strategy and KPI	Description	Evidence
Improve Australian avocado orchard productivity, fruit quality and profitability through the promotion of best practice	2017-2021 SIP Outcome 2 & 4 2022-2025 SIP - Outcome 3, strategy 1 -3	<i>Refer methodology section</i>	End of project survey results found ( <b>Appendix 2</b> ):  68% of industry believed that project services contributed to savings in production costs in key areas of their business  65% of industry believed that project services contributed to improvements in fruit sales due to improved quality  72% of industry believed that project services contributed to improvements in their orchard productivity (t/ha)  71% of industry believed that project services have made improvements to fruit quality across industry and supported market performance
Promote adoption of best practice by growers, nurseries, consultants, advisors, and resellers	2017-2021 SIP Outcome 2 & 4 2022-2025 SIP - Outcome 3, strategy 1 -3	<i>Refer methodology section</i>	45% of all grower entities (representing 73% of industry production) and 92% of avocado consultants attended at least one project event  100% of all growers on the AAL database have access to the BPR  Event survey results found 61% of all participants across Regional Forums, Avo Skills and Avo Grow webinars intended making changes to their business as a result of participating ( <b>Appendix 4</b> )  Final survey results found 78% of participants use the BPR ( <b>Appendix 2</b> )
Expand national and	2017-2021 SIP	<i>Refer methodology</i>	92% of national avocado consultants, and 96% of national researchers attended at least one

international networks	Outcome 2 & 4 2022-2025 SIP - Outcome 3, strategy 1 -3	<i>section</i>	<p>project event</p> <p>The project team substantially expanded and strengthened their domestic and international networks through organising and recruiting speakers for Regional Forums, AvoGrow webinars, Advanced Management Workshops and AvoSkills events, attending the World Avocado Congress in Colombia and conducting the tour of the Californian avocado industry, and also through the process of developing resources such as posters, videos and the BPR updates.</p> <p>Avo Grow webinars (<i>international speakers</i>): 59% intend on making changes to their business as a result of participating a live Avo Grow webinar (<b>Appendix 4</b>)</p> <p>End of project survey results found 54% were aware of/attended an Avo Grow webinar, 34% claimed the webinars assisted them with improving quality, productivity, or profitability within their business (<b>Appendix 2</b>)</p> <p>Advanced Management Workshop outputs: End of project survey results found 67% were aware of/used the resources (literature review, domestic &amp; international survey reports, guest presentations and final report) (<b>Appendix 2</b>)</p>
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## Monitoring and evaluation

Table 3. Key Evaluation Questions

Key Evaluation Question	Project performance	Continuous improvement opportunities
Has the project improved orchard productivity, fruit quality and profitability of the Australian avocado industry?	65% of industry finding the project contributed to improvements in the areas of productivity, quality and profitability in their business	<p>Continued extension efforts in promoting best practice of fruit quality is vital for the healthy and sustainable growth of export markets which are inevitably needed to absorb and support the high volume of expected fruit volumes</p> <p>It is predicted many smaller growers in years to come will not be able to cover costs of production with the forecasted returns. Industry thought is needed on how best to support this demographic during tough periods, transitioning or exiting the industry.</p>

<p>Has the project met the needs of the Australian avocado industry?</p>	<p>91% of industry found the project had met the needs of growers and advisors by providing access to best practice industry knowledge</p>	<p>Feedback and future direction from the extensive consultative extension strategy will be used in formulating the new extension project and what activities and areas will be of focus e.g., export readiness</p> <p>The co-design development of the next project will also ensure that industry needs and expectations are met.</p>
<p>Were the methods of interaction and dissemination of information appropriate?</p>	<p>90% of industry finding the project had provided a range of suitable learning formats</p> <p>91% of industry found project services provided the required level of detail</p> <p>93% of surveyed attendees found project events useful to extremely useful</p>	<p>An industry app is being looked into as possible future industry engagement tool. In the final evaluation survey 74% of participants were interested in the idea of an industry app.</p> <p>The development of the extension strategy has highlighted some alternative workshop formats which will be considered as part of the co-design process</p> <p>The online forum was not a successful engagement or support tool for new growers. Effort was made to market the platform at the Avo Skills workshops but has had poor engagement success. The possible reasons behind this is that growers are time poor, and growers found it was easier to reach out directly to project staff for information rather than post an enquiry.</p>
<p>Did the number of workshops, locations and platforms effectively engage the Australian avocado industry?</p>	<p>45% of all grower entities (representing 73% of industry production), 92% of avocado consultants, and 96% of researchers attended at least one project event</p> <p>89% of growers and industry stakeholders found project services were accessible (e.g., location and timing)</p> <p>90% of industry finding the project had provided a range of suitable learning formats</p>	<p>The development of the extension strategy has highlighted some alternative workshop formats which will be considered as part of the co-design process</p>
<p>Have project efficiencies been made as a result of feedback received during the course of the project?</p>	<p>The project was receptive to positive feedback from industry and the mid-term review in support of the continuation of 'Avo Grow' webinars post the resumption of Regional</p>	<p>Comments have been received by industry around the BPR and website needing to be updated and easier to navigate. Though technical content has and is being updated the</p>

	Forums and lifting of COVID-19 restrictions	mechanics of the website could be improved to make it more user friendly and easier to navigate.
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## Recommendations

### Australian Avocado Industry Extension Strategy

The recommendations of the [Australian Avocado Industry Extension Strategy 2023-2027: Transition to 2027](#) include the application of documented extension strategies, in addition to an operational framework that will improve the capacity for strategy outcomes will be achieved. Extensive industry consultation and co-development has determined 20 priority practice change areas, and over 50 practice change strategies, to address the priority extension needs and challenges and deliver on four key extension objectives by the end of 2027 – improved domestic consumption, increased export consignments, improved productivity and quality, and increased business management capabilities. Key success factors for the strategy development and delivery have been determined as necessary to realise the extension outcomes in the next 5 years. The breadth and pace of practice change will require the strategy to be targeted, with amplified engagement, singular coordination, strategic resourcing, and increased project agility and project alignment.

To deliver on these success factors it is recommended that an operational framework is established to provide the support required for:

1. Extension strategy development
2. Practice change pathways
3. Project and extension service design and management

To facilitate this framework, the mechanisms proposed to be adopted include:

- A National Avocado Extension Committee (NAEC)
- Use of an extension services model
- Guidelines for project and extension service design and management

It is recommended that the NAEC convenes early in 2023, with their first responsibility the development of a concise set of guidelines for project and service design and management. A component of these guidelines will be an alignment to the extension services model created as part of the extension strategy development. It provides a structured approach to the development of extension service priorities based on stakeholder needs. The model will facilitate an increased focus on critical practice change points, and the opportunity for the prioritisation of resourcing within and between projects.

The extension strategy has implications for the principal extension project, the communications project, and for other projects that involve extending information and training to industry stakeholders. It is recommended that five key steps are taken to manage project transitions under the next extension strategy:

- New Hort Innovation projects will need to refer to the content of the extension strategy and prepare an extension plan as part of the preparation of their project submissions.
- The new principal extension project needs to be designed with built-in flexibility and the ability to take on extra resources to provide additional support when needed. Guidance from the NAEC and the proposed R&D coordinator will be needed to ensure the best process for the new project development in line with the strategy.
- All NAEC members will need to communicate the intention and application of the extension strategy to Non-Hort Innovation delivery partners who provide other industry extension and training.
- It will be necessary for the existing communications project team to work with the NAEC, the R&D coordinator and the team developing the principal extension project to determine how new and emerging communications needs can be resourced and aligned satisfactorily.

It is recommended that the extension strategy be actively managed, with the NAEC re-visiting the strategy annually and

adjusting where appropriate to keep up with changing needs.

### **Recommendation generated by the Advanced Management Workshops**

Research and extension recommendations were discussed for each topic as part of each Advanced Management Workshop summit. These ideas and recommendations are reported in each of the final reports on irrigation (Page 41), canopy management (Page 37) and soil health (Page 33).

## **Intellectual property**

No project IP or commercialisation to report

## **Acknowledgements**

The AV17005 project team would like to acknowledge the kind support offered by the many levy payers that opened their orchards to the industry in hosting Regional Forum and Avo Skills Farm Walks. Acknowledgement also for the support of all relevant R&D delivery partners with presenting their findings at the various events. We also acknowledge the Project Reference Group for their input and advice on work plans, and feedback and direction on various project activities.

## **Appendices**

**Appendix 1** – California avocado study tour feedback report

**Appendix 2** – Final project evaluation report

**Appendix 3** – BPR survey report

**Appendix 4** – Event evaluation summary report

**Appendix 5** – Avo Skills evaluations

**Appendix 6** – Wholesaler Workshop report

**Appendix 7** – Advanced Management Workshop evaluations



# California Avocado Tour Feedback

## Project

AV17005 Avocado Industry development & extension

## Summary

A tour of the Californian Avocado Industry was conducted in September 2019 as part of the project AV17005 Avocado Industry development and extension.

A survey was sent to tour participants to seek their feedback on tour relevance, enjoyment and benefits.

Results of the survey are detailed in this report.

Overall the tour was a great success with interest in future tours of the International Avocado Industry welcomed by participants.



*This report is part of the strategic levy investment project, Avocado industry development and extension (AV17005).*

*This project has been funded by Hort Innovation, using the Hort Innovation avocado research and development levy, co-investment from the Queensland Department of Agriculture and Fisheries, and contributions from the Australian Government. Hort Innovation is the grower-owned, not-for-profit research and development corporation for Australian horticulture.*

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# California Avocado Tour Feedback

## *Introduction*

Between September 17-19 2019, as part of the Hort Innovation funded project - AV17005 Avocado industry development & extension, three (3) project staff together with thirty five (35) Avocado growers and industry members participated in a tour of the Californian Avocado Industry.

The tour visited Brokaw Nursery, Sal Dominguez's Gem avocado orchard, the California Avocado Commission's Pine Tree Ranch research plantings, Associate Insectary, Dan Pinkerton's young Gem avocado planting, Mission Packhouse, UC South Coast Field Station and Irvine Ranch.

This report details participant tour feedback.

## *Method*

A survey conducted with Google forms was sent to California Avocado tour participants by Avocados Australia in December 2019.

The survey was sent some time after the tour completion to give participants time to digest the information they had learnt during the trip.

Eight questions were developed to assess the relevance, enjoyment and benefits of the tour.

The survey was closed in early February 2020.

## *Results*

The final participation number was 13 (38%) however many responses were from couples that attended the tour indicating a response rate of 65%.

Participants indicated that the tour met their expectations (Figure 1) and provided a good view of the Californian Avocado Industry (Figure 2).

Generally, participants agreed that there was the right amount of visits during the tour while some wanted more (Figure 3). Brokaw Nursery and Associate Insectary were the two highest rating visits during the tour, though most visits were rated above average and excellent (Figure 4).

The majority of participants indicated they would attend another international Avocado tour (Figure 5) and gave feedback on what could have been done better on the tour (Table 1).

Participants were asked to write a few lines describing the visit they considered to be the tour highlight and what information they learnt there. This information is detailed below in Table 2.

<b>Participant</b>	<b>Comment</b>
<b>James Howe</b>	The Californian shift to Gem variety to differentiate from Mexican Hass I thought was interesting and just getting together with other growers discussing our different farming practices revealed a lot.
<b>Judy &amp; Andy Veal</b>	Brokaw Nursery to see the planning and efficient management of growing good quality plants on a large scale. Some of these methods could be used on a small scale farm with its own nursery.
<b>Marie Piccone &amp; Jeffery Giddens</b>	Mission Produce and visit to Sal's Gem plantation were highlights – Information on automation of packing lines and Gem characteristics.
<b>Jess &amp; Dainis</b>	Dainis and I thoroughly enjoyed our time on the tour. Very hard to pick the highlight. Irvine Ranch really blew us away!
<b>Matt Gallace</b>	Probably more information gained from other growers than learnt from the visits, all very informative.
<b>David &amp; Dee Anne Beutel</b>	Highlights were the farms and packing shed tours. All these people were great with their time and seem to be honest with their answers. Growing techniques and irrigation information brought back is already in use on our farm and look forward to those results. All of the tours were of great interest.
<b>Alison &amp; Ian Tolson</b>	Mission because we run a packing facility.
<b>Clayton Lynch</b>	Got something out of every visit.
<b>Lisa Martin</b>	Insectary, so different, self-sufficient and an excellent resource for growers. Also Sal Dominguez gem property was great to see, mature trees at higher density plantings.
<b>Izhar &amp; Maayan Adar</b>	We know it might be a bit awkward, but the getting together with the Australian NZ growers / DPI etc. from all around and sharing more practical information and knowledge.  From the tour itself, we actually enjoyed the unplanned farm visit with the Pinkerton and the variety bank at the University Research Centre.
<b>Kathy &amp; Ross Woods</b>	Fascinated by the insectary and their IPM.
<b>Susan &amp; Greg Chislett</b>	The scale of the Insectary was amazing and impressive, but most of all our visit to Brokaw showed us another side to how they grow Nursery Avocado trees and how little technology/machinery they used. As a direct result of the trip and the contacts we made, we revisited Brokaw Nursery and looked at their process of doing clonal propagation. The whole trip emphasised the importance of getting ANVAS accreditation.

<b>John Dawson</b>	High quality organisation from AAL and hosting and guidance from CAC. Tour highlight Associate Insectary.
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*Table 2 – Please write a few lines describing the visit you considered to be the tour highlight and what information you learnt there?*

### *Conclusion*

Overall participants enjoyed the California Avocado tour and took observations from the tour home with them into their own orchards to try. An international tour provides the opportunity to compare the management, technology and success of the Australian Avocado Industry with others globally and to learn the next steps to maintaining or improving future directions for the Australian Industry.

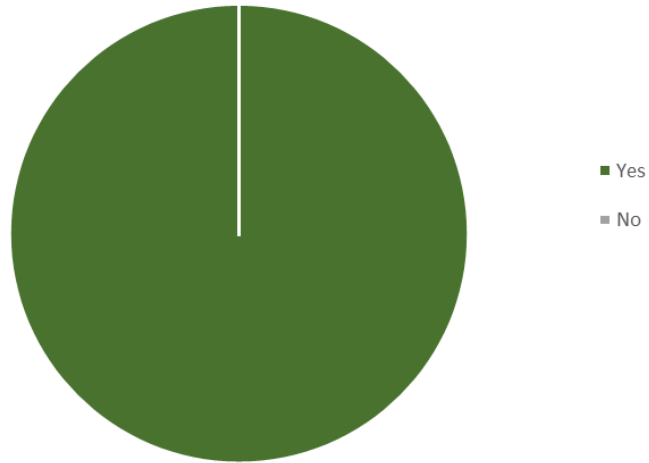
Future opportunities to investigate the International Avocado Industry would be welcomed by Australian growers and industry members.

END

APPENDIX

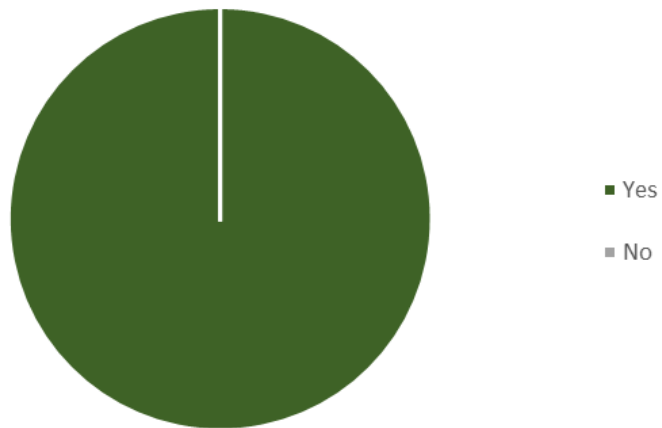
**Figures**

Did the tour meet your expectations?



*Figure 1 – Did the tour meet your expectations?*

Did the tour provide a good view of the Californian Avocado Industry?



*Figure 2 – Did the tour provide a good view of the Californian Avocado Industry?*

Was there too many, not enough or the right amount of visits during the tour?

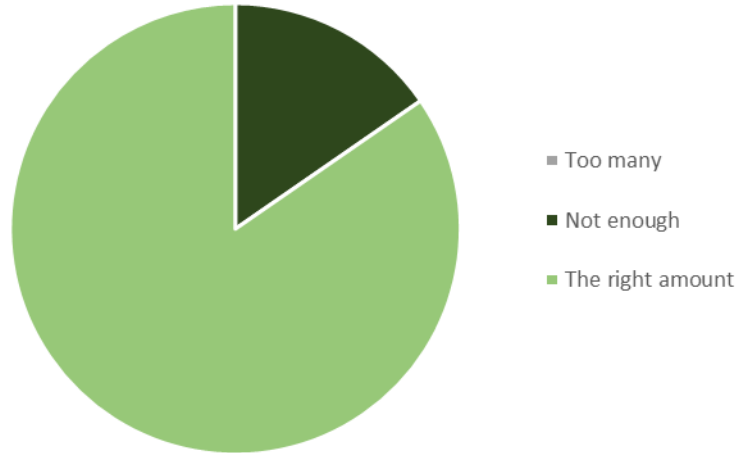


Figure 3 – Was there too many, not enough or the right amount of visits during the tour?

Please rate the quality of the information presented at each visit during the tour?

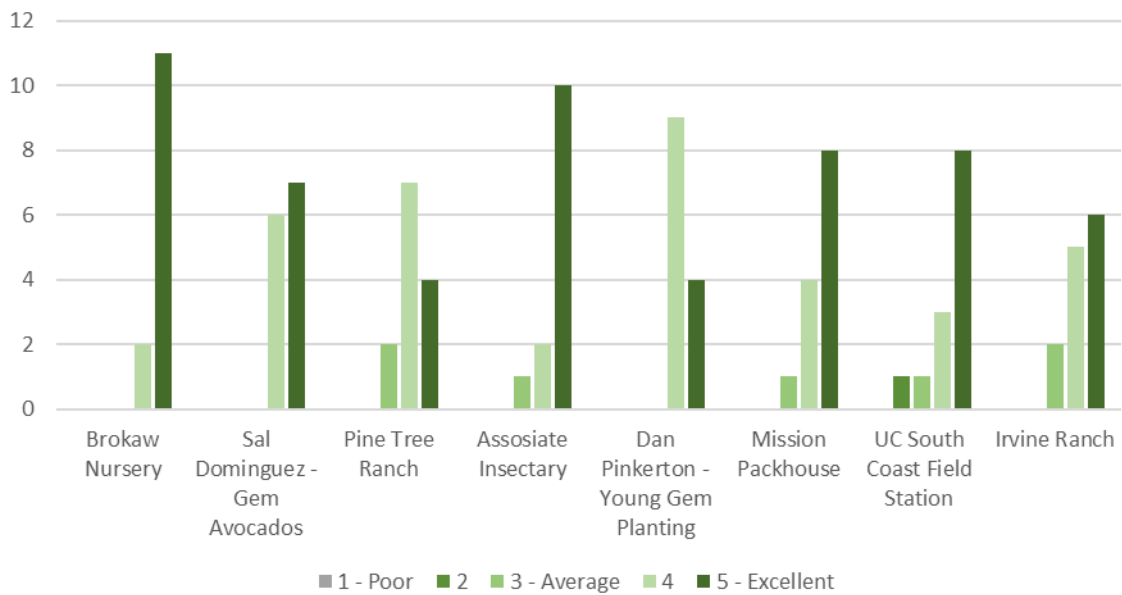
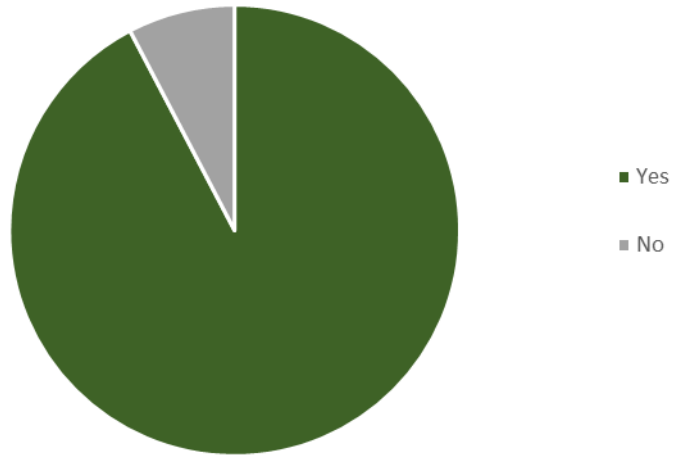


Figure 4 – Please rate the quality of the information presented at each visit during the tour?

Would you consider attending another international Avocado tour?



*Figure 5 – Would you consider attending another international Avocado tour?*

## Tables

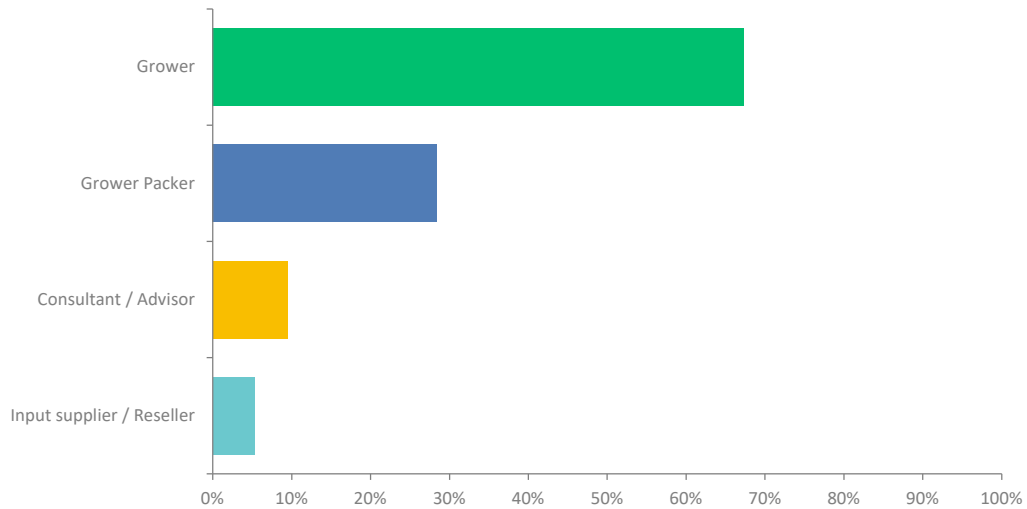
Comments
Ended excursion earlier to avoid the LA traffic and the US South Coast Field Station were not interested in questions that differed from their project's agenda which I felt was not really relevant to us.
The whole tour was excellent and enjoyable and well thought out
Keen to see more innovation examples
Perhaps better accommodation options
Was a bit rushed
Maybe only a couple of catering issues but difficult to organize these things.
Nothing really
Nothing
Very well organised, from meals to accommodation it was great. Probably the only disappointing thing was when advertised it included a whole lot more high density avocado farm visits, which were then dropped from the schedule and was one of the main reasons I wanted to attend.
Early morning tour in the market .
When I compare this tour to others it was well organised, well executed and kept to time without feeling herded- great job
Hard to know what else is available but if too much information and visits the trip goes into overload
Visit to the research facilities at UC Irvine campus

Table 1 – What could have been done better on the tour?

### Q1: How are you involved in the Australian avocado industry?

Answered: 95 Skipped: 0

[LINK TO FINAL SURVEY DASHBOARD - https://www.surveymonkey.com/stories/SM-VNTDcvCRVjpwnebH1jcW\\_2Bq\\_3D\\_3D/](https://www.surveymonkey.com/stories/SM-VNTDcvCRVjpwnebH1jcW_2Bq_3D_3D/)



### Q1: How are you involved in the Australian avocado industry?

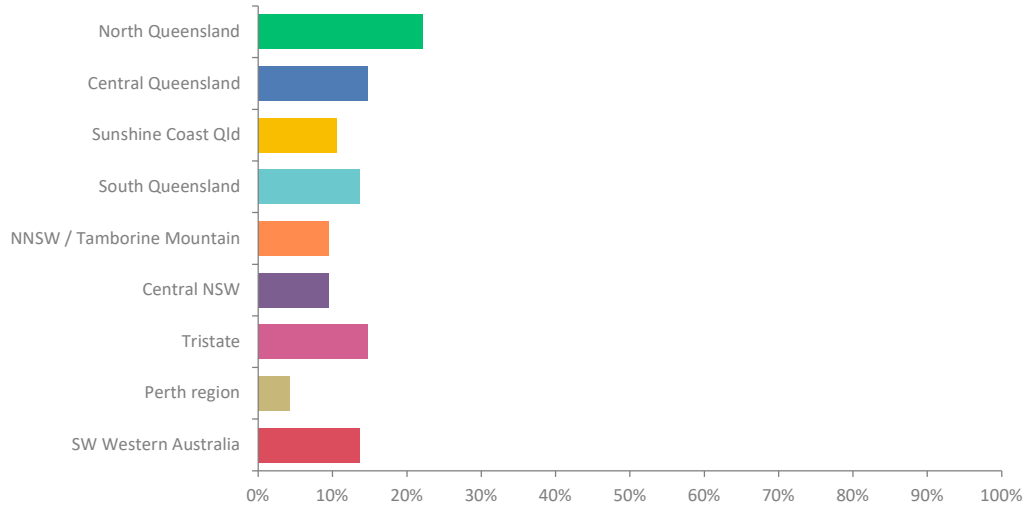
Answered: 95 Skipped: 0

ANSWER CHOICES	RESPONSES	
Grower	67.37%	64
Grower Packer	28.42%	27
Consultant / Advisor	9.47%	9
Input supplier / Reseller	5.26%	5
<b>TOTAL</b>		<b>105</b>



### Q2: What is the region (or regions) where you mainly operate?

Answered: 95 Skipped: 0



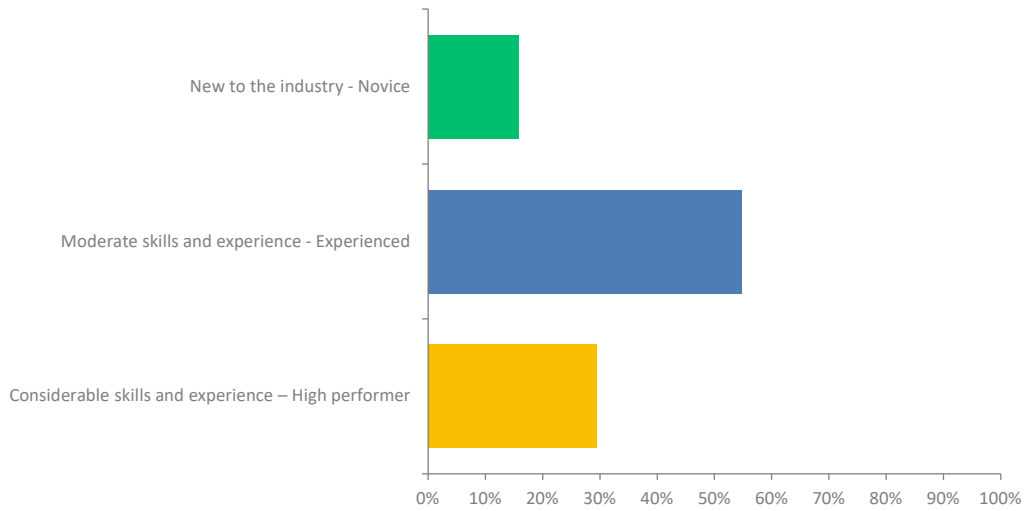
### Q2: What is the region (or regions) where you mainly operate?

Answered: 95 Skipped: 0

ANSWER CHOICES	RESPONSES	
North Queensland	22.11%	21
Central Queensland	14.74%	14
Sunshine Coast Qld	10.53%	10
South Queensland	13.68%	13
NNSW / Tamborine Mountain	9.47%	9
Central NSW	9.47%	9
Tristate	14.74%	14
Perth region	4.21%	4
SW Western Australia	13.68%	13
<b>TOTAL</b>		<b>107</b>

**Q3: How would you describe your skill and experience in the avocado industry?**

Answered: 95 Skipped: 0



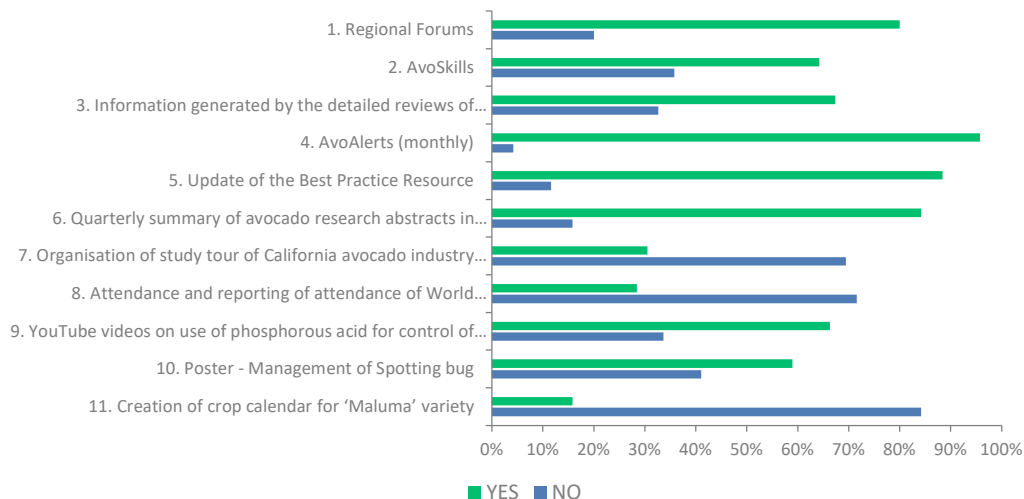
**Q3: How would you describe your skill and experience in the avocado industry?**

Answered: 95 Skipped: 0

ANSWER CHOICES	RESPONSES	
New to the industry - Novice	15.79%	15
Moderate skills and experience - Experienced	54.74%	52
Considerable skills and experience - High performer	29.47%	28
<b>TOTAL</b>		<b>95</b>

#### Q4: Which of the following services provided by the AV17005 project have you been aware of and/or have used or attended:

Answered: 95 Skipped: 0



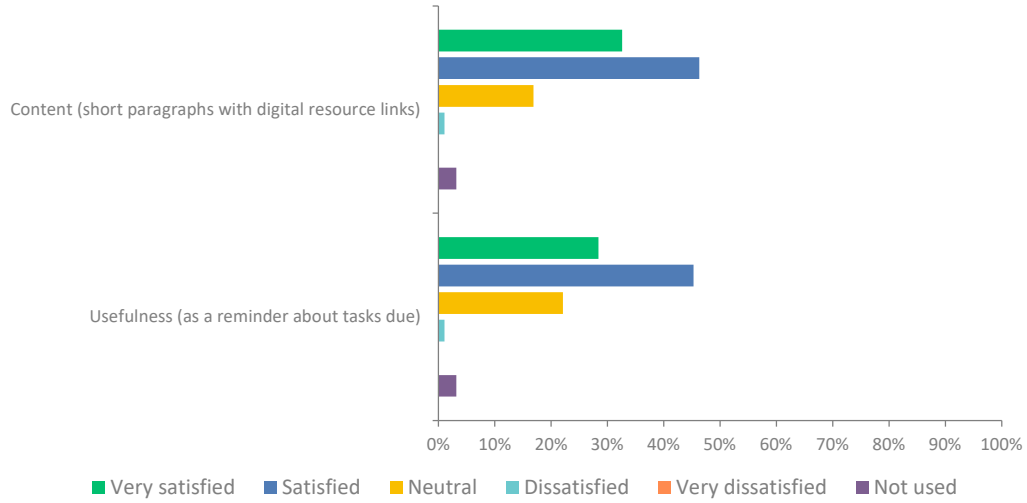
#### Q4: Which of the following services provided by the AV17005 project have you been aware of and/or have used or attended:

Answered: 95 Skipped: 0

	YES	NO	TOTAL	WEIGHTED AVERAGE
1. Regional Forums	80.0% 76	20.0% 19	95	1.2
2. AvoSkills	64.21% 61	35.79% 34	95	1.36
3. Information generated by the detailed reviews of irrigation and canopy management industry practice (each entailed literature review, domestic and international surveys, international speakers, summit)	67.37% 64	32.63% 31	95	1.33
4. AvoAlerts (monthly)	95.79% 91	4.21% 4	95	1.04
5. Update of the Best Practice Resource	88.42% 84	11.58% 11	95	1.12
6. Quarterly summary of avocado research abstracts in 'Talking Avocados' magazine	84.21% 80	15.79% 15	95	1.16
7. Organisation of study tour of California avocado industry and reporting	30.53% 29	69.47% 66	95	1.69
8. Attendance and reporting of attendance of World Avocado Congress in Colombia	28.42% 27	71.58% 68	95	1.72
9. YouTube videos on use of phosphorous acid for control of Phytophthora root rot, and Principles of canopy management	66.32% 63	33.68% 32	95	1.34
10. Poster - Management of Spotting bug	58.95% 56	41.05% 39	95	1.41
11. Creation of crop calendar for 'Maluma' variety	15.79% 15	84.21% 80	95	1.84

**Q5: What do you think about the way that the monthly AvoAlerts are prepared and delivered to you?**

Answered: 95 Skipped: 0



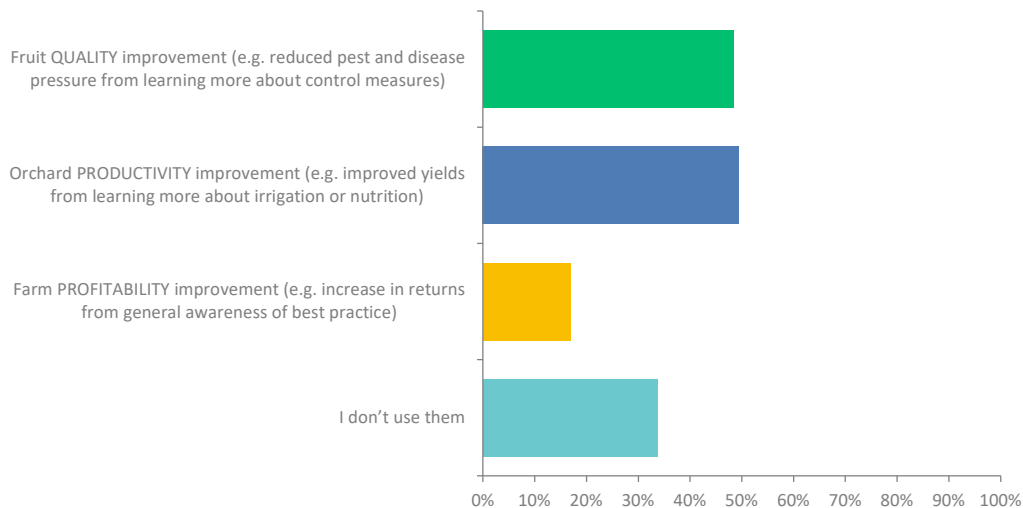
**Q5: What do you think about the way that the monthly AvoAlerts are prepared and delivered to you?**

Answered: 95 Skipped: 0

	VERY SATISFIED	SATISFIED	NEUTRAL	DISSATISFIED	VERY DISSATISFIED	NOT USED	TOTAL	WEIGHTED AVERAGE
Content (short paragraphs with digital resource links)	32.63% 31	46.32% 44	16.84% 16	1.05% 1	0% 0	3.16% 3	95	1.99
Usefulness (as a reminder about tasks due)	28.42% 27	45.26% 43	22.11% 21	1.05% 1	0% 0	3.16% 3	95	2.08

**Q6: Have AvoAlerts assisted you with improving managing your business? If yes, in which ways?(You may select more than one answer)**

Answered: 95 Skipped: 0



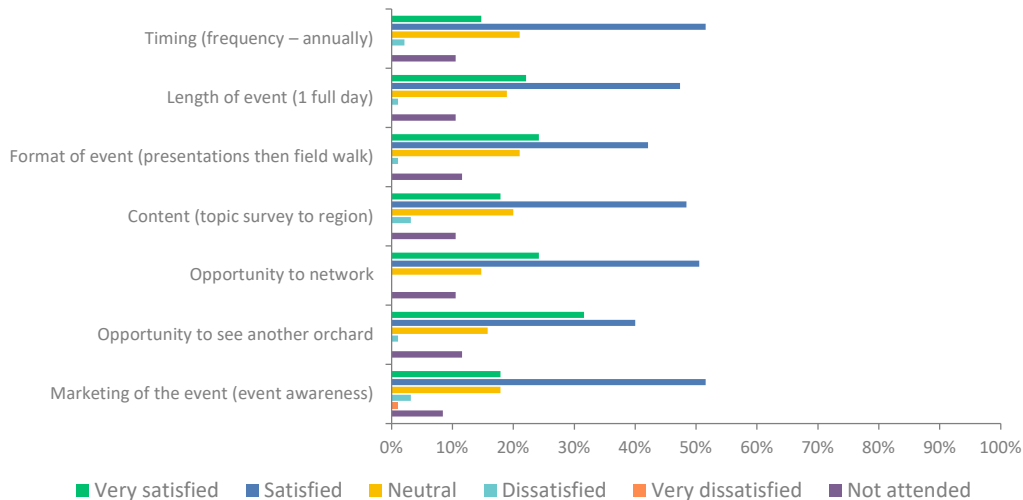
**Q6: Have AvoAlerts assisted you with improving managing your business? If yes, in which ways?(You may select more than one answer)**

Answered: 95 Skipped: 0

ANSWER CHOICES	RESPONSES	
Fruit QUALITY improvement (e.g. reduced pest and disease pressure from learning more about control measures)	48.42%	46
Orchard PRODUCTIVITY improvement (e.g. improved yields from learning more about irrigation or nutrition)	49.47%	47
Farm PROFITABILITY improvement (e.g. increase in returns from general awareness of best practice)	16.84%	16
I don't use them	33.68%	32
<b>TOTAL</b>		<b>141</b>

### Q8: What do you think about the way that regional forums are prepared and delivered to you?

Answered: 95 Skipped: 0



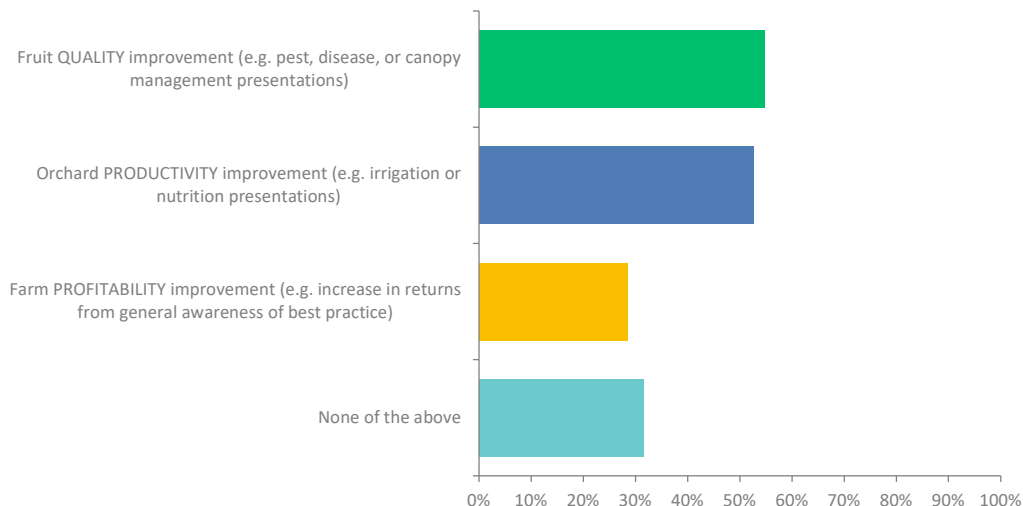
### Q8: What do you think about the way that regional forums are prepared and delivered to you?

Answered: 95 Skipped: 0

	VERY SATISFIED	SATISFIED	NEUTRAL	DISSATISFIED	VERY DISSATISFIED	NOT ATTENDED	TOTAL	WEIGHTED AVERAGE
Timing (frequency – annually)	14.74% 14	51.58% 49	21.05% 20	2.11% 2	0% 0	10.53% 10	95	2.53
Length of event (1 full day)	22.11% 21	47.37% 45	18.95% 18	1.05% 1	0% 0	10.53% 10	95	2.41
Format of event (presentations then field walk)	24.21% 23	42.11% 40	21.05% 20	1.05% 1	0% 0	11.58% 11	95	2.45
Content (topic survey to region)	17.89% 17	48.42% 46	20.0% 19	3.16% 3	0% 0	10.53% 10	95	2.51
Opportunity to network	24.21% 23	50.53% 48	14.74% 14	0% 0	0% 0	10.53% 10	95	2.33
Opportunity to see another orchard	31.58% 30	40.0% 38	15.79% 15	1.05% 1	0% 0	11.58% 11	95	2.33
Marketing of the event (event awareness)	17.89% 17	51.58% 49	17.89% 17	3.16% 3	1.05% 1	8.42% 8	95	2.43

**Q9: Have regional forums (attending, or the use of event proceedings) assisted you with improving managing your business? If yes, in which ways? \*Event proceedings include forum presentations and forum minutes.(You may select more than one answer)**

Answered: 95 Skipped: 0



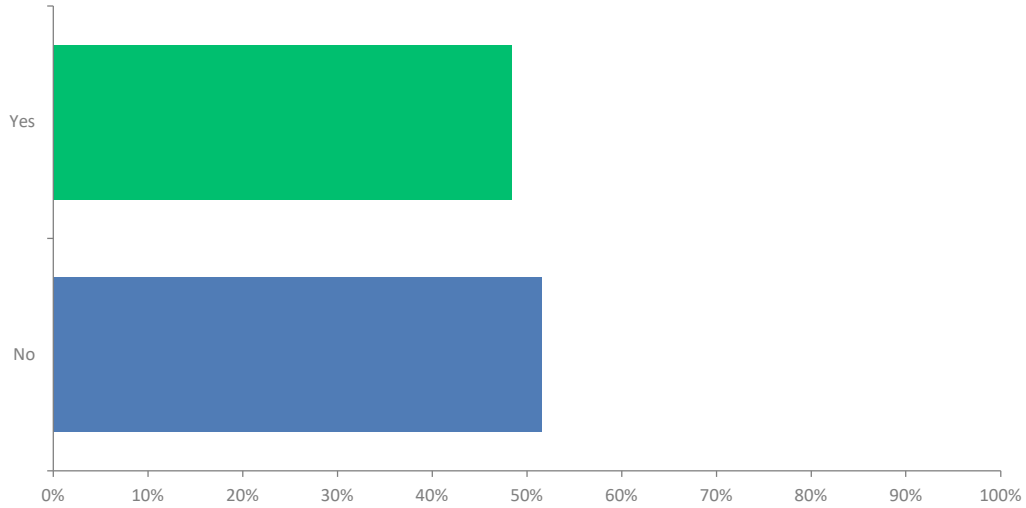
**Q9: Have regional forums (attending, or the use of event proceedings) assisted you with improving managing your business? If yes, in which ways? \*Event proceedings include forum presentations and forum minutes.(You may select more than one answer)**

Answered: 95 Skipped: 0

ANSWER CHOICES	RESPONSES	
Fruit QUALITY improvement (e.g. pest, disease, or canopy management presentations)	54.74%	52
Orchard PRODUCTIVITY improvement (e.g. irrigation or nutrition presentations)	52.63%	50
Farm PROFITABILITY improvement (e.g. increase in returns from general awareness of best practice)	28.42%	27
None of the above	31.58%	30
<b>TOTAL</b>		<b>159</b>

**Q11: Are you aware of this poster and/or have a copy?**

Answered: 95 Skipped: 0



**Q11: Are you aware of this poster and/or have a copy?**

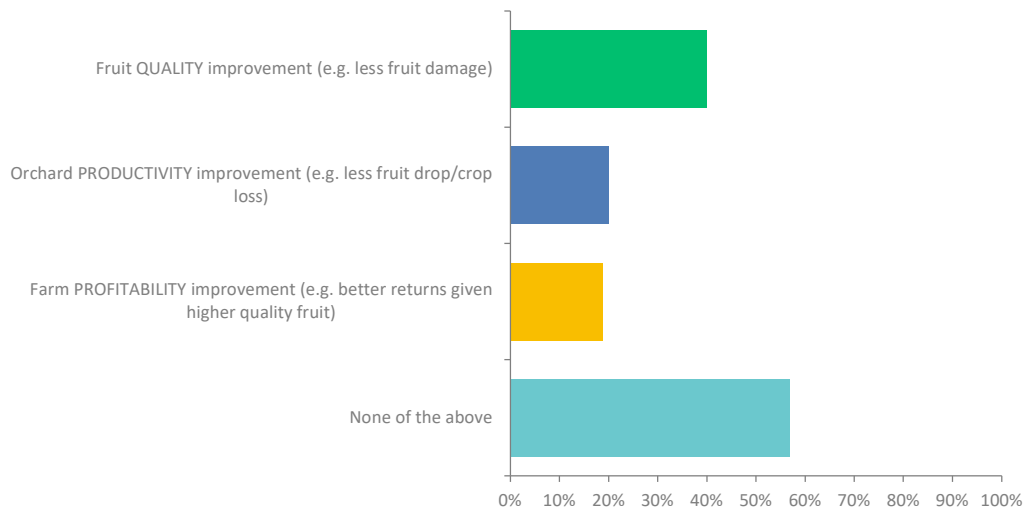
Answered: 95 Skipped: 0

ANSWER CHOICES	RESPONSES	
Yes	48.42%	46
No	51.58%	49
<b>TOTAL</b>		<b>95</b>



**Q12: Has this poster assisted you with improving managing spotting bugs in your business? If yes, in which ways?(You may select more than one answer)**

Answered: 95 Skipped: 0



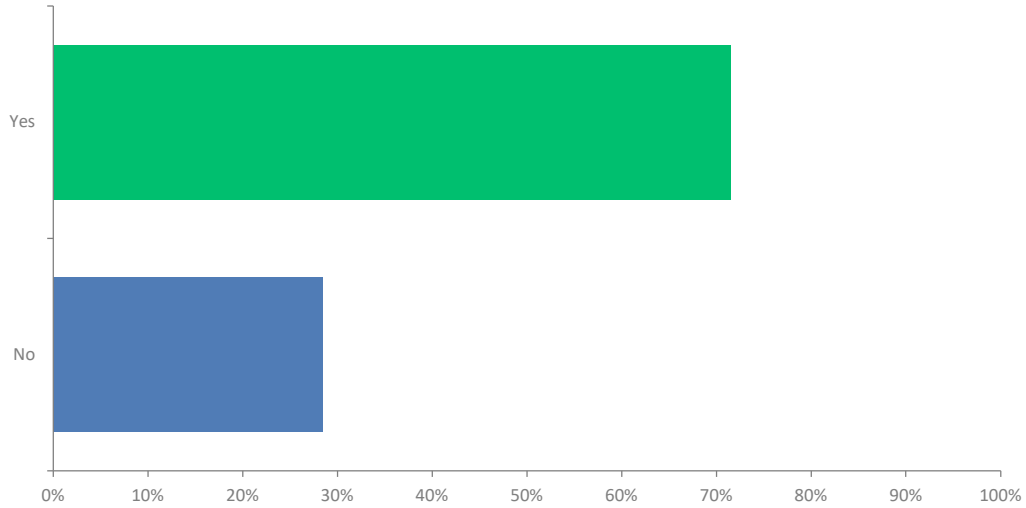
**Q12: Has this poster assisted you with improving managing spotting bugs in your business? If yes, in which ways?(You may select more than one answer)**

Answered: 95 Skipped: 0

ANSWER CHOICES	RESPONSES	
Fruit QUALITY improvement (e.g. less fruit damage)	40.0%	38
Orchard PRODUCTIVITY improvement (e.g. less fruit drop/crop loss)	20.0%	19
Farm PROFITABILITY improvement (e.g. better returns given higher quality fruit)	18.95%	18
None of the above	56.84%	54
<b>TOTAL</b>		<b>129</b>

**Q14: Are you aware of these videos?**

Answered: 95 Skipped: 0



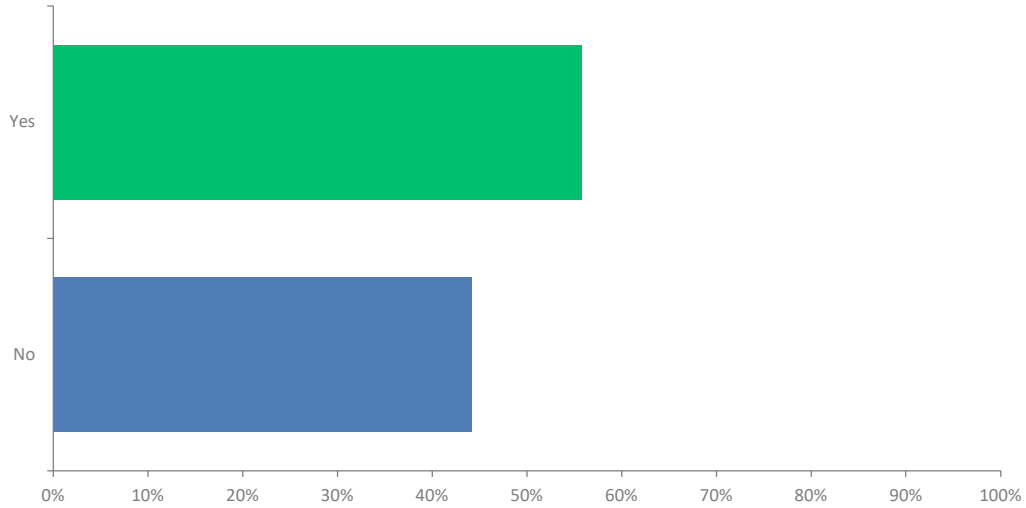
**Q14: Are you aware of these videos?**

Answered: 95 Skipped: 0

ANSWER CHOICES	RESPONSES	
Yes	71.58%	68
No	28.42%	27
<b>TOTAL</b>		<b>95</b>

### Q15: Have you watched these videos?

Answered: 95 Skipped: 0



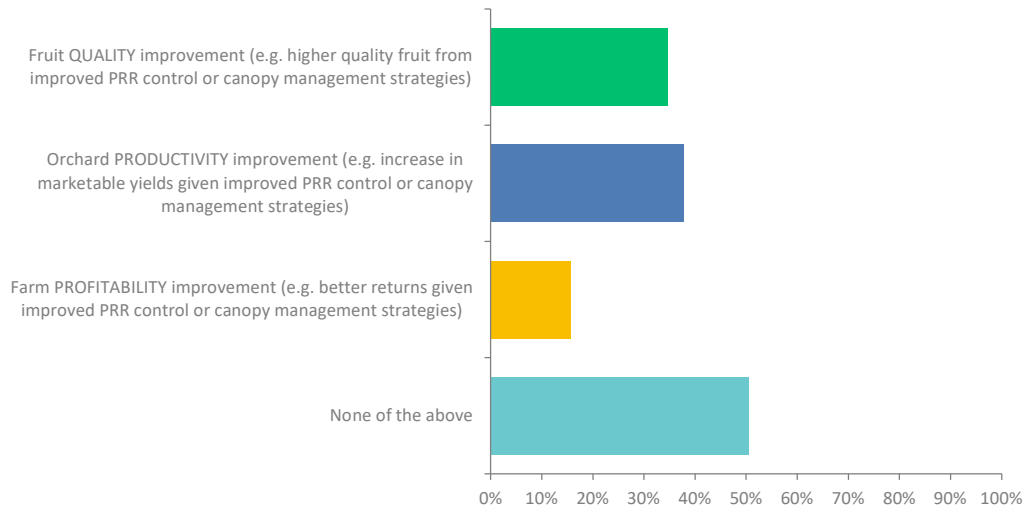
### Q15: Have you watched these videos?

Answered: 95 Skipped: 0

ANSWER CHOICES	RESPONSES	
Yes	55.79%	53
No	44.21%	42
<b>TOTAL</b>		<b>95</b>

**Q16: Have the videos assisted you with improving your business? If yes, in which ways? (You may select more than one answer)**

Answered: 95 Skipped: 0



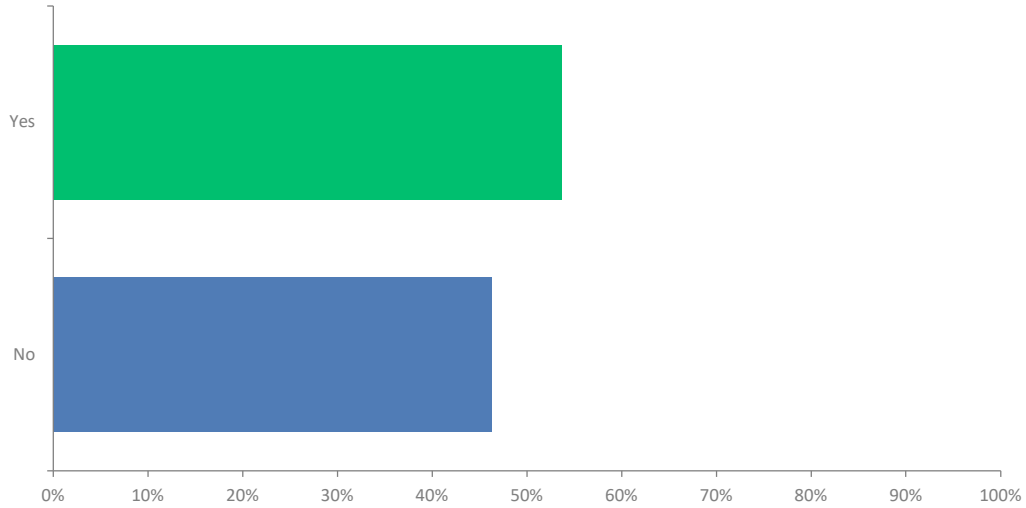
**Q16: Have the videos assisted you with improving your business? If yes, in which ways? (You may select more than one answer)**

Answered: 95 Skipped: 0

ANSWER CHOICES	RESPONSES	
Fruit QUALITY improvement (e.g. higher quality fruit from improved PRR control or canopy management strategies)	34.74%	33
Orchard PRODUCTIVITY improvement (e.g. increase in marketable yields given improved PRR control or canopy management strategies)	37.89%	36
Farm PROFITABILITY improvement (e.g. better returns given improved PRR control or canopy management strategies)	15.79%	15
None of the above	50.53%	48
<b>TOTAL</b>		<b>132</b>

**Q18: Are you aware of the Avogrow webinars?**

Answered: 95 Skipped: 0



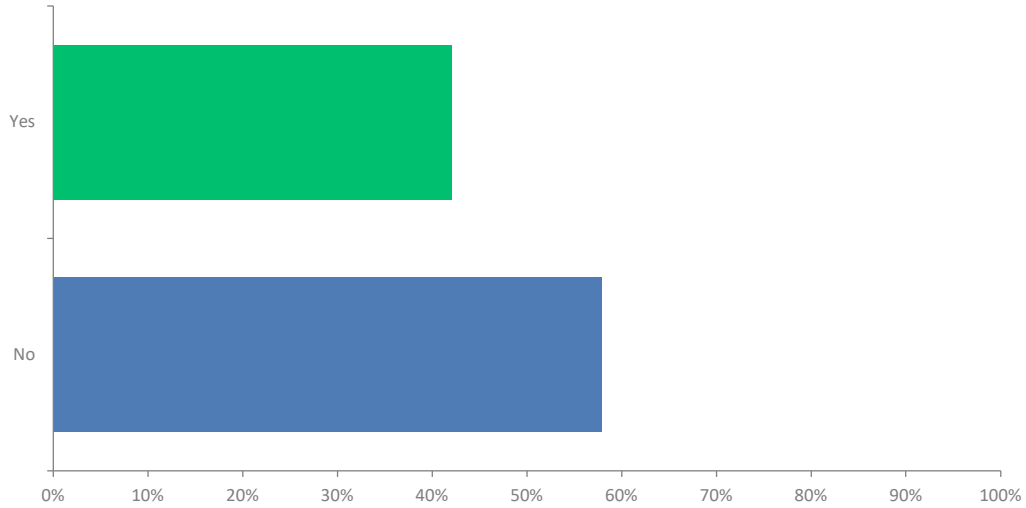
**Q18: Are you aware of the Avogrow webinars?**

Answered: 95 Skipped: 0

ANSWER CHOICES	RESPONSES	
Yes	53.68%	51
No	46.32%	44
<b>TOTAL</b>		<b>95</b>

**Q19: Are you aware of how to watch the recordings?**

Answered: 95 Skipped: 0



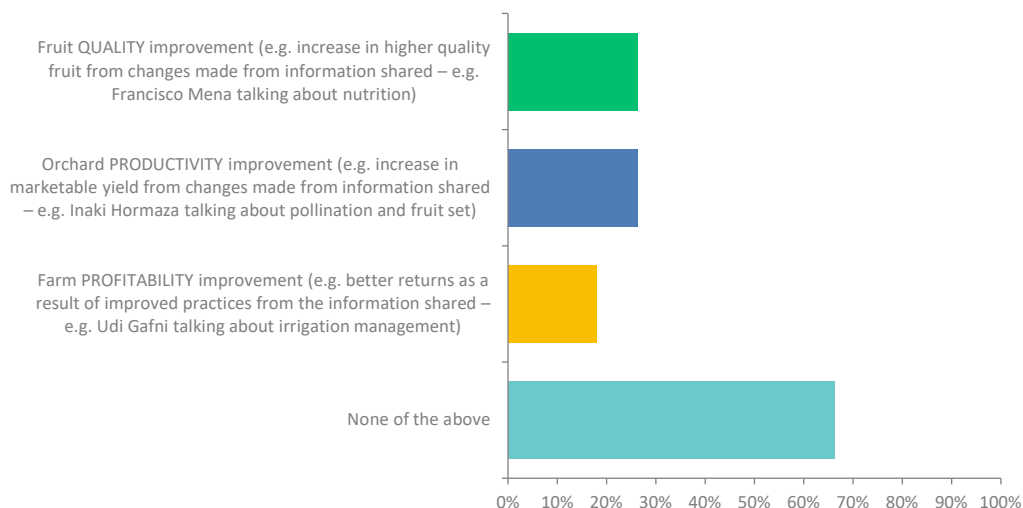
**Q19: Are you aware of how to watch the recordings?**

Answered: 95 Skipped: 0

ANSWER CHOICES	RESPONSES	
Yes	42.11%	40
No	57.89%	55
<b>TOTAL</b>		<b>95</b>

**Q20: Has watching the Avogrow webinars, either live or via the recordings, assisted you with improving your business? If yes, in which ways? (You may select more than one answer)**

Answered: 95 Skipped: 0



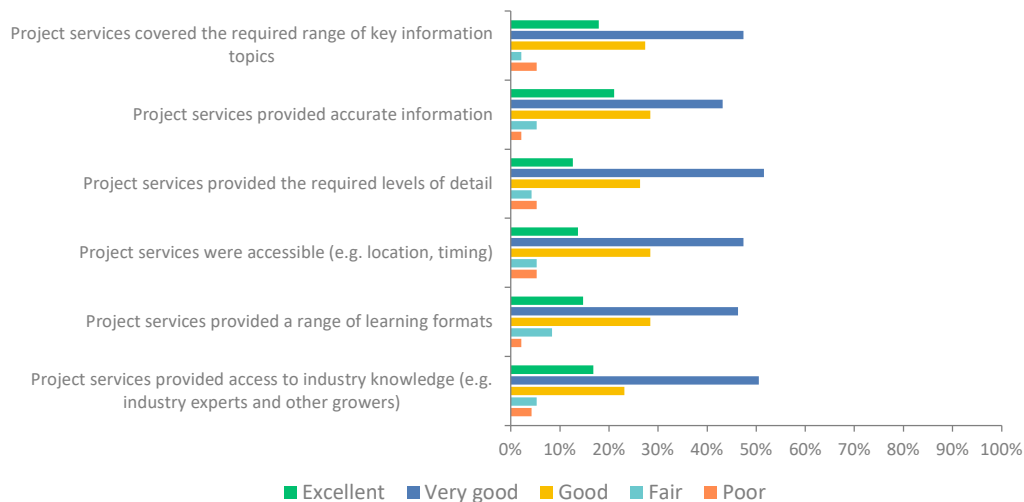
**Q20: Has watching the Avogrow webinars, either live or via the recordings, assisted you with improving your business? If yes, in which ways? (You may select more than one answer)**

Answered: 95 Skipped: 0

ANSWER CHOICES	RESPONSES	
Fruit QUALITY improvement (e.g. increase in higher quality fruit from changes made from information shared – e.g. Francisco Mena talking about nutrition)	26.32%	25
Orchard PRODUCTIVITY improvement (e.g. increase in marketable yield from changes made from information shared – e.g. Inaki Hormaza talking about pollination and fruit set)	26.32%	25
Farm PROFITABILITY improvement (e.g. better returns as a result of improved practices from the information shared – e.g. Udi Gafni talking about irrigation management)	17.89%	17
None of the above	66.32%	63
<b>TOTAL</b>		<b>130</b>

## Q22: Thinking of all project services, how would you rate how well the project has met the needs of growers and advisors?

Answered: 95 Skipped: 0



## Q22: Thinking of all project services, how would you rate how well the project has met the needs of growers and advisors?

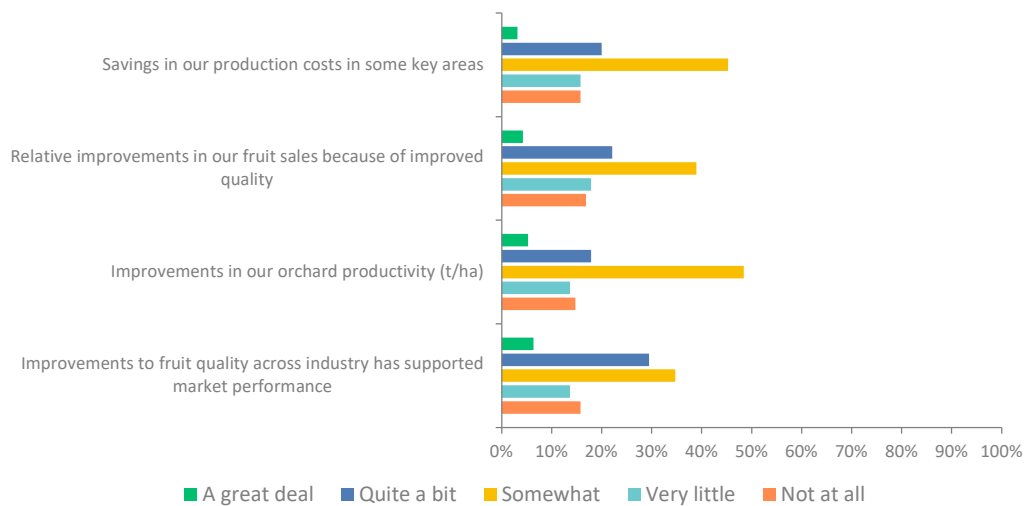
Answered: 95 Skipped: 0

	EXCELLENT	VERY GOOD	GOOD	FAIR	POOR	TOTAL	WEIGHTED AVERAGE
Project services covered the required range of key information topics	17.89% 17	47.37% 45	27.37% 26	2.11% 2	5.26% 5	95	2.29
Project services provided accurate information	21.05% 20	43.16% 41	28.42% 27	5.26% 5	2.11% 2	95	2.24
Project services provided the required levels of detail	12.63% 12	51.58% 49	26.32% 25	4.21% 4	5.26% 5	95	2.38
Project services were accessible (e.g. location, timing)	13.68% 13	47.37% 45	28.42% 27	5.26% 5	5.26% 5	95	2.41
Project services provided a range of learning formats	14.74% 14	46.32% 44	28.42% 27	8.42% 8	2.11% 2	95	2.37
Project services provided access to industry knowledge (e.g. industry experts and other growers)	16.84% 16	50.53% 48	23.16% 22	5.26% 5	4.21% 4	95	2.29



### Q23: How much has all of the AV17005 project services and advice added value to your business?

Answered: 95 Skipped: 0



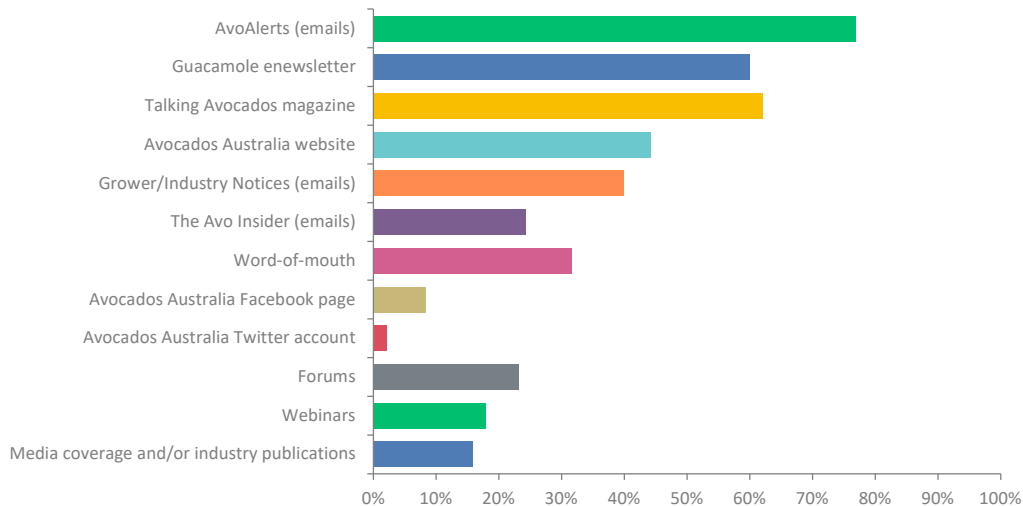
### Q23: How much has all of the AV17005 project services and advice added value to your business?

Answered: 95 Skipped: 0

	A GREAT DEAL	QUITE A BIT	SOMEWHAT	VERY LITTLE	NOT AT ALL	TOTAL	WEIGHTED AVERAGE
Savings in our production costs in some key areas	3.16% 3	20.0% 19	45.26% 43	15.79% 15	15.79% 15	95	3.21
Relative improvements in our fruit sales because of improved quality	4.21% 4	22.11% 21	38.95% 37	17.89% 17	16.84% 16	95	3.21
Improvements in our orchard productivity (t/ha)	5.26% 5	17.89% 17	48.42% 46	13.68% 13	14.74% 14	95	3.15
Improvements to fruit quality across industry has supported market performance	6.32% 6	29.47% 28	34.74% 33	13.68% 13	15.79% 15	95	3.03

**Q24: How do you find out about Australian avocado industry activities? Please select those you use the most...**

Answered: 95 Skipped: 0



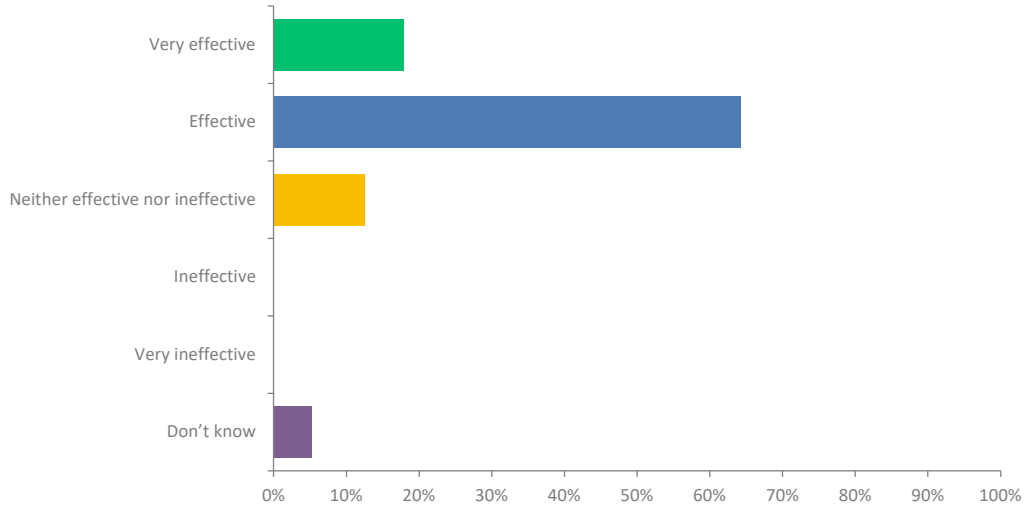
**Q24: How do you find out about Australian avocado industry activities? Please select those you use the most...**

Answered: 95 Skipped: 0

ANSWER CHOICES	RESPONSES	
AvoAlerts (emails)	76.84%	73
Guacamole enewsletter	60.0%	57
Talking Avocados magazine	62.11%	59
Avocados Australia website	44.21%	42
Grower/Industry Notices (emails)	40.0%	38
The Avo Insider (emails)	24.21%	23
Word-of-mouth	31.58%	30
Avocados Australia Facebook page	8.42%	8
Avocados Australia Twitter account	2.11%	2
Forums	23.16%	22
Webinars	17.89%	17

**Q26: How effective is the Avocados Australia website for your needs?**

Answered: 95 Skipped: 0



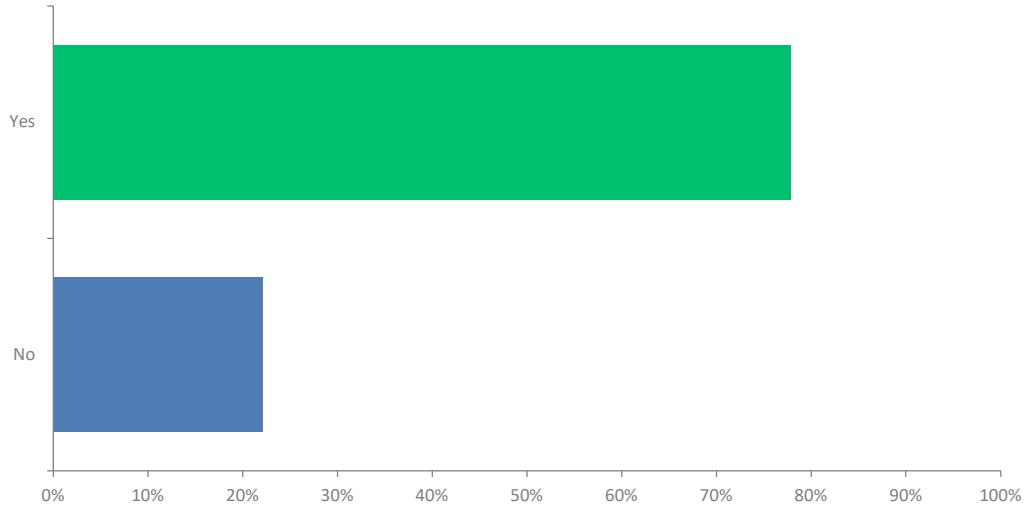
**Q26: How effective is the Avocados Australia website for your needs?**

Answered: 95 Skipped: 0

ANSWER CHOICES	RESPONSES	
Very effective	17.89%	17
Effective	64.21%	61
Neither effective nor ineffective	12.63%	12
Ineffective	0%	0
Very ineffective	0%	0
Don't know	5.26%	5
<b>TOTAL</b>		<b>95</b>

**Q28: Do you use the Best Practice Resource (BPR) part of the website?**

Answered: 95 Skipped: 0



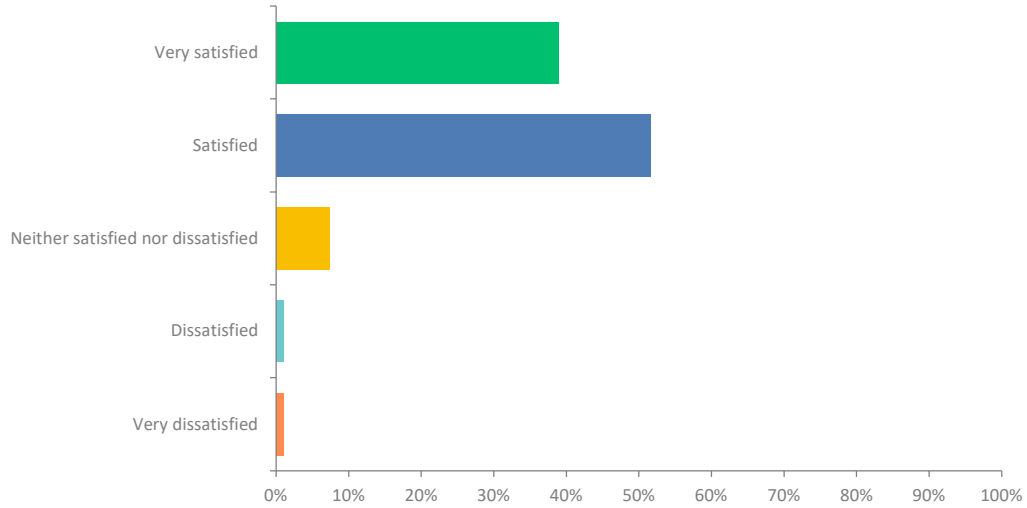
**Q28: Do you use the Best Practice Resource (BPR) part of the website?**

Answered: 95 Skipped: 0

ANSWER CHOICES	RESPONSES	
Yes	77.89%	74
No	22.11%	21
<b>TOTAL</b>		<b>95</b>

**Q30: Overall how satisfied are you with Australian avocado industry communications?**

Answered: 95 Skipped: 0



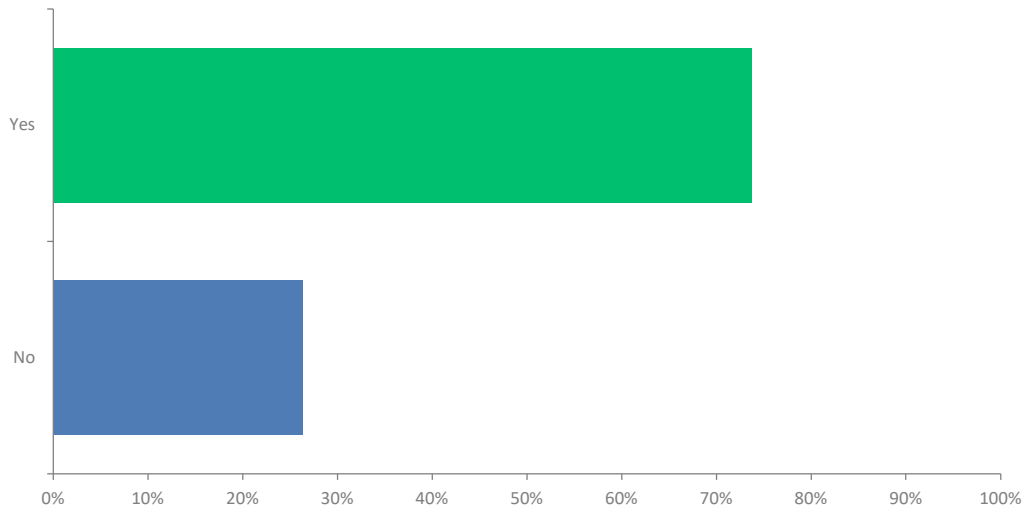
**Q30: Overall how satisfied are you with Australian avocado industry communications?**

Answered: 95 Skipped: 0

ANSWER CHOICES	RESPONSES	
Very satisfied	38.95%	37
Satisfied	51.58%	49
Neither satisfied nor dissatisfied	7.37%	7
Dissatisfied	1.05%	1
Very dissatisfied	1.05%	1
<b>TOTAL</b>		<b>95</b>

**Q32: Would you be interested in an industry app that you could set to notify you of new information or events that you are interested in?**

Answered: 95 Skipped: 0



**Q32: Would you be interested in an industry app that you could set to notify you of new information or events that you are interested in?**

Answered: 95 Skipped: 0

ANSWER CHOICES	RESPONSES	
Yes	73.68%	70
No	26.32%	25
<b>TOTAL</b>		<b>95</b>



# BPR Survey Results 2019

## Project

AV17005 Avocado Industry development & extension

## Summary

A survey was sent to 1700 registered users of the Avocado Best Practice (BPR) resource in late November 2019.

The survey was designed to assess and identify areas for improvement for the growing section of the BPR, Avo Alerts and the Regional Forum materials developed as part of the project AV17005 Avocado Industry development & extension.

The survey received 180 responses with 76% of responses from growers and the remainder from supporting industry members.

The survey collected information on whether growers and industry members used the resources, when they used them and why, to determine the value of the resources.

Overall it was determined that the BPR, Avo Alerts and Regional Forum materials are valuable resources to growers and industry members.

The survey prompted future questions relating to “why” different categories of growers and industry members use the resources in certain ways and outlined areas to improve the type of information delivered and how to strengthen the delivery of information to the Australian Avocado Industry.



*This report is part of the strategic levy investment project, Avocado industry development and extension (AV17005).*

*This project has been funded by Hort Innovation, using the Hort Innovation avocado research and development levy, co-investment from the Queensland Department of Agriculture and Fisheries, and contributions from the Australian Government. Hort Innovation is the grower-owned, not-for-profit research and development corporation for Australian horticulture.*

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<b>18</b>	How useful do you find the Avo Alerts?	20
<b>19</b>	Do you think changes need to be made to the Avo Alerts?	20
<b>20</b>	Do you know that the Regional Forum presentations and minutes are uploaded to the BPR library after the event?	21
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<b>22</b>	Growers – When will you access the Regional Forum presentations and minutes?	22
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# Best Practice Resource (BPR) Survey Results 2019

## *Introduction*

The Best Practice Resource (BPR) is an electronic library located on the Avocados Australia (AAL) website and maintained by the Department of Agriculture and Fisheries (DAF). The information contained within the library is targeted at Australian avocado growers and industry members and examines topics related to the growing and production of avocados e.g. canopy management, soils, water use.

The BPR is a big part of industry extension and is maintained through the project - AV17005 Avocado Industry development and extension. To ensure that the resource is relevant and valued by growers and determining areas for review, change and improvement, a survey was conducted targeting all BPR users.

The survey also examined the activities of Avo Alerts and reporting for the Avocado Regional Forums, both objectives of AV17005 Avocado Industry development and extension. The outcomes of the survey are detail below.

## *Method*

The survey was conducted through Google Forms, sent by Avocados Australia, with questions developed to examine the use and value of the BPR, Avo Alerts and Regional Forum minutes and presentations.

The survey was sent to all BPR users which include Avocado growers and supporting industry members, 1700 total.

Avocado grower and industry member responses were separated with responses from avocado growers categorised into time growing avocados:

- **NYP** - Not yet planted;
- **<2 yrs** - Less than 2 years;
- **3-5 yrs** - 3-5 years;
- **6-10 yrs** - 6-10 years;
- **10+ yrs** -10 + years.

Industry member responses were categorised into region of operation:

- **WA Sth** - Western Australia SW (e.g. Pemberton / Manjimup and surrounding areas);
- **WA Perth** - Western Australia Perth (e.g. Gingin / Wanerie);
- **TRI** - Tri State (VIC / SA / TAS / Murray Darling);
- **CNSW** - Central NSW (e.g. Comboyne / Stuarts Point / Sydney);
- **TNR** - Tamborine Northern Rivers;
- **SC** - Sunshine Coast QLD;
- **SQ** - South Queensland (e.g. Blackbutt);

- **CQ** - Central Queensland (e.g. Bundaberg);
- **NQ** - North Queensland (e.g. Mareeba / Atherton Tablelands).

The survey was open for a three-week period in November - December 2019.

Reminders were sent via email once a week for three weeks. The final participation number was 180 (10.6%).

## *Results*

The final participation number was 180 (10.6%). 76% of total responses came from avocado growers (Figure 1) which were categorised into the period of time in the industry growing avocados (Figure 2)(see methods for categories). The largest proportion of growers to response to the survey were those that have been in the industry growing avocados for 10 years or more. In all categories the largest proportion of responses came from growers with 10 Ha or less though the 10+ years category had a large proportion in the 10-50 Ha (Figure 3 – Note – The NYP category is an estimate on area too be planted). Responses were collected from the majority of growing regions (Figure 4), though there were no responses from growers in the Tamborine Northern Rivers region for the < 2 years category, South Queensland in the 3-5 years category and Western Australia Perth for the 6-10 years category. Western Australia South rank highly in responses for the <2 years, 3-5 years and 10+ years categories and the Tristate responses were particularly high in the 10+ years category.

A variety of supporting industry members also responded to the survey (Figure 1) and their responses have been categorised into the regions in which they nominated as their main work region (Figure 5). All growing regions were represented by an industry member in one of the roles outlined in Figure 1.

## *Best Practice Resource (BPR)*

The survey affirmed that the BPR in general (Figure 6) and the growing section of the BPR (Figure 7) are used by growers and industry members. Approximately 19% of the 10+ years indicated that they did not use the BPR in general.

An increased number of respondents indicated they do not use the library section of the BPR (Figure 8) as detailed below in Table 1. The negative responses were greatly outweighed by the respondents using the library but unfortunately we have no understanding of why the below respondents are not using the library section of the BPR, it may just be a matter of not knowing it is available or the location of the library tab on the website.

Category	Percentage of respondents that do not use library section
3-5 yrs	19%
6-10 yrs	7%
10+ yrs	26%

Table 1 – Percentage of grower respondents that do not use the library section.

The majority of respondents found the BPR easy to use (Figure 9) with responses as to why the BPR is “not” easy to use being listed in Table 2.

Category	Reason
<2 yrs	Logging in is a bit “clunky” otherwise good
3-5 yrs	It's clunky. Not very intuitive.
6-10 yrs	Hard to navigate
10+ yrs	I always have a prob with password
	keep forgetting my log in details
CNSW	Some of the key bits of info are hidden away in tabs on the side
NQ	Don't use it enough

Table 2 – Reasons for the BPR not being easy to use. Note – Only responses are listed.

There was a lack of knowledge about the search function (Figure 10) and experimentation by the IDM illustrated that more key phrases need to be added to documents to ensure users access the information they are seeking.

Generally the BPR is used on a monthly basis (Figure 11) and the technical nature of the material is considered as “About right”, though there some early indicators that there are growers and industry members looking for information that has a more technical nature (Figure 12). This was supported by “Further comments” made at the end of the survey (Table 6).

The information contained within the BPR is considered to be useful (Figure 13), though there is a trend indicating that the information is “only sometimes useful” maybe highlighting the need for different information. Only four comments were left to indicate why the information is “not” useful:

1. <2 yrs – BPR is very useful but up to a point...
2. 3-5 yrs – Very little organic information;
3. WA Sth – More technical information possibly needed;
4. SC – Would love in some sections to see more detailed information but a great resource.

There was a mixed response to topics missing from the BPR (Figure 14). Table 3 details the types of topics that respondents believe are missing from the BPR, though many of the topics listed are an extension of existing BPR topics.

Category	Topics missing
<b>NYP</b>	Organic methods
<b>&lt; 2yrs</b>	Up to date research and manuals
	More detailed topics on nutrition (i.e. as per discussion on Boron)
	New plantings ground prep detail
	Information regarding planting Example fertiliser programs
	Growing seedlings/rootstock from seeds.
	Like to know more on disease and pest etc.
<b>3-5 yrs</b>	Organic practices.
<b>6-10 yrs</b>	Soil moisture monitoring system reviews
	There should be more information on soil health and biology
<b>10+ yrs</b>	Could be more info on planting densities around Australia/world, yields, pros and cons, management of different densities etc.
	More detail around PGR use and foliar fertilisers
	Access or research papers on new or different methods of growing Avos we are yet to know of or adapt to in Australia
	Not all diseases get a mention, can be hard to find info anywhere sometimes though.
	It would be useful to provide a physical index of growing areas around Australia particularly relating to major soil characteristics and over-riding weather patterns. Information about growing conditions on Western Australian sands, for instance, could have limited application or need to have modified comment if a grower is on North Queensland duplex soils or Tamborine red Kraznozems.
	Pollinators, other than bees
	Pruning case studies - as different regions have different growth habits requiring different strategies
	Items related to growing on the South Coast of WA. Longer season than Manjimup
	There isn't enough detail to the information provided e.g. setting up new orchards shelter belts, types of trees to be used etc.
	Best type of windbreak
	More detail on pollination and fruit set; and on use of PGRs
	Would be nice to see farmers experience/results in the changes (different practices) they make to their orchard (e.g. effects of pruning or irrigation changes etc...)
<b>WA Sth</b>	More emphasis on irrigation management
	Can never be enough information
	Would like to hear more about what regenerative practices work in Avos, if any
<b>WA Perth</b>	Introduction of Allergen in growing and packing of avocados
<b>TRI</b>	Soil microbiology
	MRLs
	Case studies
	Soil conditioning
<b>TNR</b>	The best type of wind break
	Talking avocados should be scraped and replaced by these types of online info releases so it's all the very latest data
<b>SC</b>	More details for growers on rootstocks or links to information about rootstock trials completed to assist growers to make independent decisions on what suits them best.
<b>CQ</b>	More specific research information, e.g. published Journal articles that are based on industry research. It would be easier to build new research on the older research of it could be easily located on BPR.
	Growing in nursery/requirements for newly planted trees
	Quality Organic Inputs - Quality outcomes.

	Some crop summary stats would be useful - tree numbers etc.
	More information on the newer varieties such as Gem and Maluma - growth cycles, different management requirements etc.
<b>NQ</b>	More on marketing would be helpful please

Table 3 – Topics missing from BPR

Overall the response to the BPR is very positive and indicates its value to growers and industry members. Further comments about the BPR are listed in the Appendix. From the comments made here it seems that growers really value the BPR resource but are looking for information that is more detailed.

### Avo Alerts

The majority of respondents receive the monthly Avo Alerts, detailing production options to consider (Figure 15). Those that answered “no” to this question were given the option to leave their contact details to be added to the mailing list.

Growers indicated that they use the Avo Alerts as a “quick check” guide or to help the “reinforce” their own management strategies (Figure 16). Industry members indicated that they use them as a “quick check” guide, as reference material or in some regions as material to assist avocado clients in the management of their orchards (see NQ) (Figure 17). The Avo Alerts are considered to be useful by both growers and industry members (Figure 18) Suggestions of why Avo Alert information is “not” useful are detailed in Table 4.

Category	Why “not” useful?
<b>&lt;2 yrs</b>	Not suitable for my style of production
<b>6 - 10 yrs</b>	Too simple, we are always doing that stuff routinely anyway
<b>10+ yrs</b>	Not detailed enough
	I know most of it all
	The information is too broad
	To general i.e. apply 30 % of annual nitrogen rate ...
<b>TRI</b>	To vague
	To general
	Mostly not relevant to me

Table 4 – Why Avo Alert information is “not” useful

An indicator for “change” in the Avo Alerts is illustrated in Figure 19 increasing with the number of years growers have been growing avocados. Reasons for change are detailed in Table 5.

Category	Reason for changing Avo Alerts?
< 2 yrs	Little bit more specific, otherwise good
3-5 yrs	To include a summary of how things are looking in my areas and other areas. Flowering-fruitset-fruit thinning-disease new products
6-10 yrs	More technical detailed explanations of management practices and also chemicals /fertilisers available and how they work , timing etc. Need to be more precise
10+ yrs	They are too vague and general. More detail required. Make sure they get kept up to date and don't get too generic More specific recommendations Reflect more closely our region climate/season etc. More detail please on fertilizer recommendations Updated to reflect recent research or international/national practices
TRI	More detail and specific information for the region
NQ	More details but in brief about fertilizers would be usually recommended

Table 5 – Reasons for changing Avo Alerts

### Regional Forums

There was a mixed answer from respondents about knowing the Regional Forum minutes and presentations are uploaded to the BPR library after each event with more than half of responses in most categories answering “no” (Figure 20).

While a large proportion of the respondents did not know the Regional Forum minutes and presentations were available after each event, it was generally agreed that access to this information would be useful (Figure 21). The two categories to prompt use of this information for growers was “when I remember” and “If I am looking for information about a topic” (Figure 22).

Industry members also indicated that the information would be used as reference materials “If I am looking for information about a topic” but there was a larger proportion for CQ, NQ, WA Sth and CNSW that indicated that a reminder would see more use of this resource and the Industry members in the TRI indicated they would be looking for the information within a month of the event for review (Figure 23).

There were a variety of reasons “why” growers will access the Regional Forum minutes and presentations; for growers growing avocados for less than 2 years the main reason was to “gain insight into topics presented at forums not in my region”, for the 3-5 years and 6-10 years growing brackets they wanted to use the resource to “gather information on a specific topic”. The 10+ years category was a mixed response with the top result also to “gather information on a specific topic” (Figure 24).

Industry members in WA Sth and WA Perth indicated that they would use the information to “gain insight into topics presented at forums not in my region”. The TRI indicated a high use of the resource to “gather information on a specific topic”, while CQ wanted to “review information I heard in the forum” as well as to “gather information on a specific topic” and NQ equally weighted gaining insight into topics from other Regional Forums and gathering information on a specific topic (Figure 25).

## *Conclusion*

The BPR, Avo Alerts and Regional Forum minutes and presentations are valuable resources to growers and industry members. Overall the survey has shown that the work done in these areas are in line with industry requirements though this survey has prompted some future questions and has provided the opportunity for improvements. Future questions and suggested opportunities are detailed below:

- Is the use of the BPR decreasing the longer growers are in the industry (Figure 6 - result from 10+ years BPR use)? Does this indicate the need for different information?
- The longer growers spend in the industry the higher the indication for change required for the Avo Alerts (Figure 19). Does this indicate the need for different information?
- Promote the presence of the library location on the website and the information contained within to increase the use of this resource.
- Promote the BPR search function to improve its use to find topics quickly and easily on the BPR. Some work maybe needed to link key terms to pages in the BPR Growing section and the BPR library (e.g. nutrition) to ensure that users get the information they are looking for.
- Consider adding a section on each BPR topic that is a bit more technical in nature for those looking for this type of information.
- Review the generic nature of the Avo Alerts. If Industry members are using the Avo Alert information to assist their avocado clients to grow avocados, is there a liability issue here?
- Promote the availability of Regional Forum minutes and presentations when they are uploaded to the BPR library to increase the use of these resources.

The results from the 2019 Best Practice Resource (BPR) survey provide the project AV17005 Avocado Industry development & extension opportunities to deliver change management resources for the benefit of the Australian Avocado Industry. Thank you to all growers and industry members that participated and provided their feedback. Your input is greatly appreciated.

END



## APPENDIX

<b>Category</b>	<b>Further BPR comments</b>
<b>&lt;2 yrs</b>	Would be great to have a bit more in the fertiliser section. Example of a bare minimum fertiliser program. I know we all have the program that our agronomist gives us, but most growers also have a basic brew that they feed out every “other” week in fertigation. Also other info like dripper vs under tree sprinkler irrigation, that’s a hot topic last couple of years.
	Only new to industry so not yet sure on some answers
	The BPR is an extremely useful tool for growers who otherwise wouldn’t have a clue what to do. Thank you so much for all your hard work. It has meant that we could keep growing the fruit on our inherited farm. Otherwise we would have given up by now.
	Keep it up
	Is there misinformation? In the BPR is says that the tensiometers for Avo need to be between 20-10 cb. My agronomist says 20 is too high
<b>3-5 yrs</b>	I don't know if it's already in BPR and if it is excuse my ignorance, but I find the Avo Alerts extremely helpful and maybe have complied into a calendar set up in the BPR as well as being sent out every month.
<b>6-10 yrs</b>	It's a great resource and I can't think of anything that it is missing from my point of view
	Could go into more detail - when we refer we need as much as possible on a narrow question - maybe a clearer process to drill deeper is needed (maybe already there and we just need training in how to use?)
	I think it's great, just needs continued improvement and more tech reports
	Topics good - but need more details and info base on new research
<b>10+ yrs</b>	Keep up the good work
	Please keep adding to it as research becomes available
	Find it very handy as a back up tool.
	Good work it's a great resource, not many other fruit or vegetable crops have this kind of resource available for growers.
	The scope of BPR increases as topics arise during the regional workshops/orchard tours which are extremely beneficial. That is good. In the light of the previous comment, it would increase the relevance of content in BPR if any caveats applicable to soil characteristics particularly were included as a matter of course to alert growers to read or research further.
	All good
	I personally feel there needs to be more detail
	Very useful resource - just needs ongoing updating
Not BPR'S fault I am too busy.	
<b>CNSW</b>	Needs updating based on the new resources produced in AV15010
	There is no reason for me to regularly check the BPR. More stories in Guacamole should have hot links into the BPR and the BPR password function should be removed.
<b>SC</b>	Some sections like diseases might be able to have more information and photographs added to assist growers when needed. Also, it would be great to have more of the Problem Solver loaded on-line or better still as an App on our phones if possible.
<b>CQ</b>	Keep going with it, it's a valuable resource
<b>NQ</b>	No topics missing that I've needed so far

Table 6 – BPR Further comments

Figures

**BPR**

Best describe your role in the avocado industry

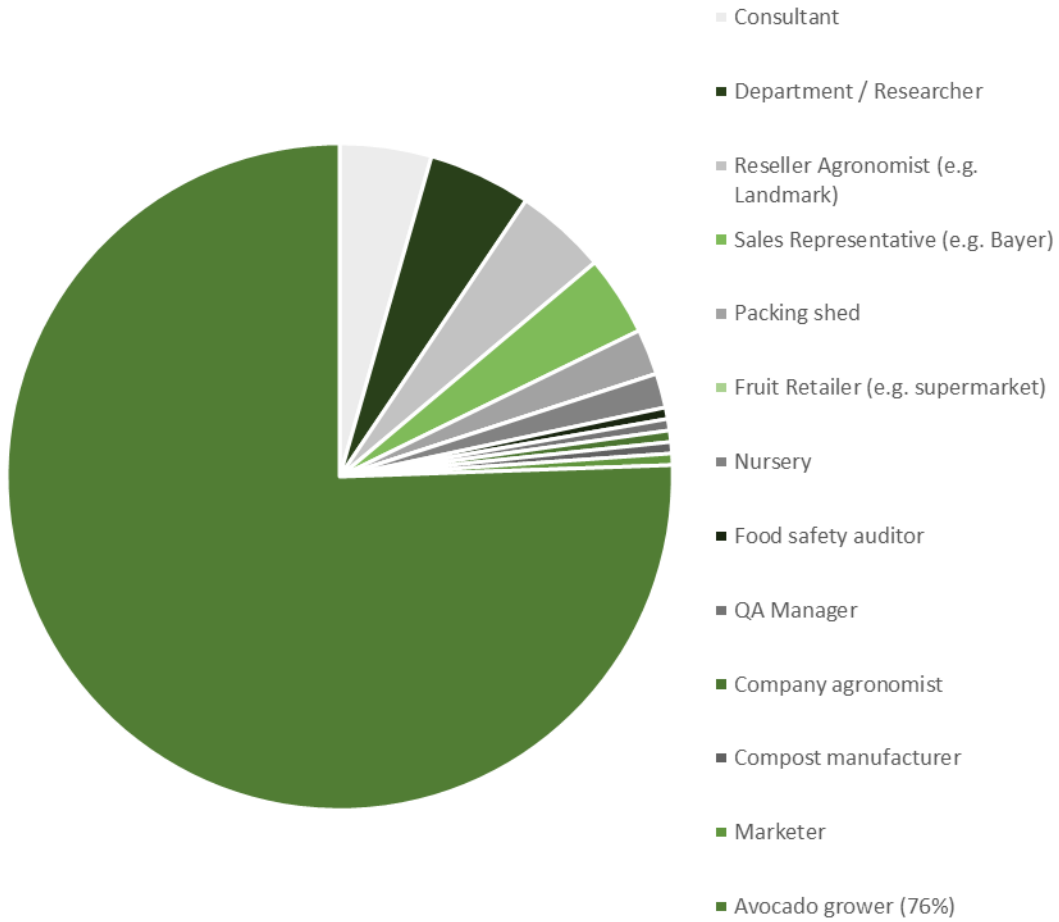


Figure 1 – Best describe your role in the avocado industry.

### How long have you been growing avocados for?

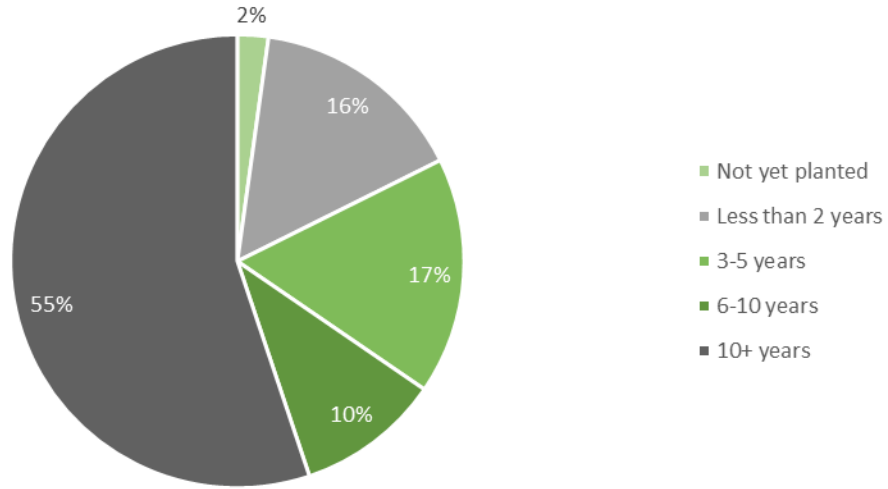


Figure 2 – Avocado grower categories – How long have you been growing avocados for?

### Area planted to Avocados (Ha)

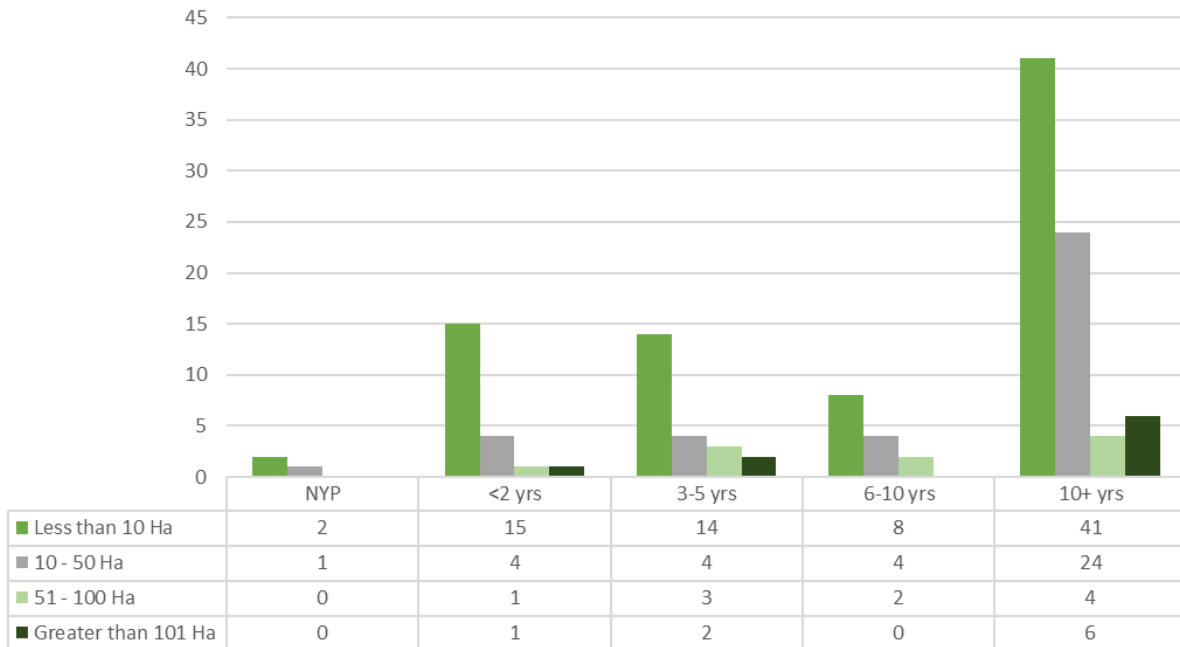


Figure 3 – Areas planted to Avocados for the different grower categories or in the case of the “NYP – Not yet planted” category, an estimate of the area to be planted.

Growers - Which region do you mainly grow avocados in?

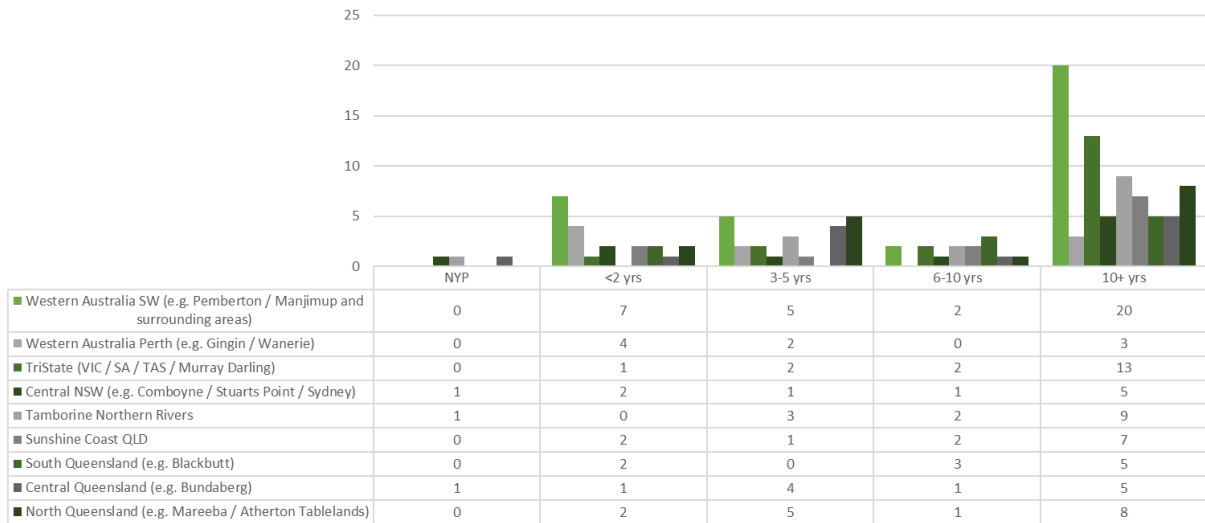


Figure 4 – Growers – Which region do you mainly grow avocados in?

Industry members - Which region do you mainly operate in?

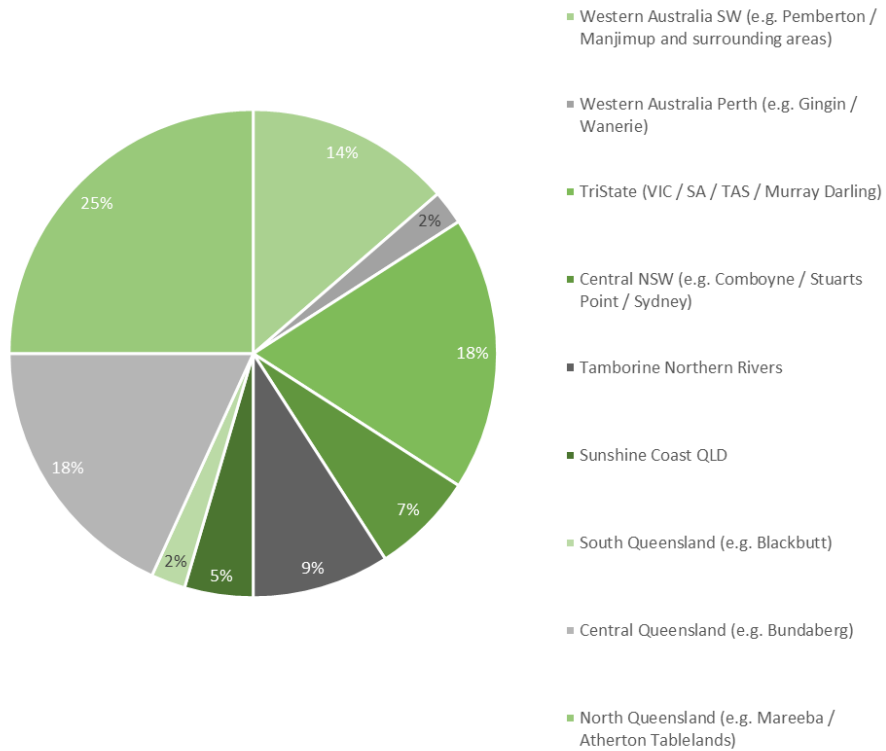


Figure 5 – Industry member categories – Which region do you mainly operate in?

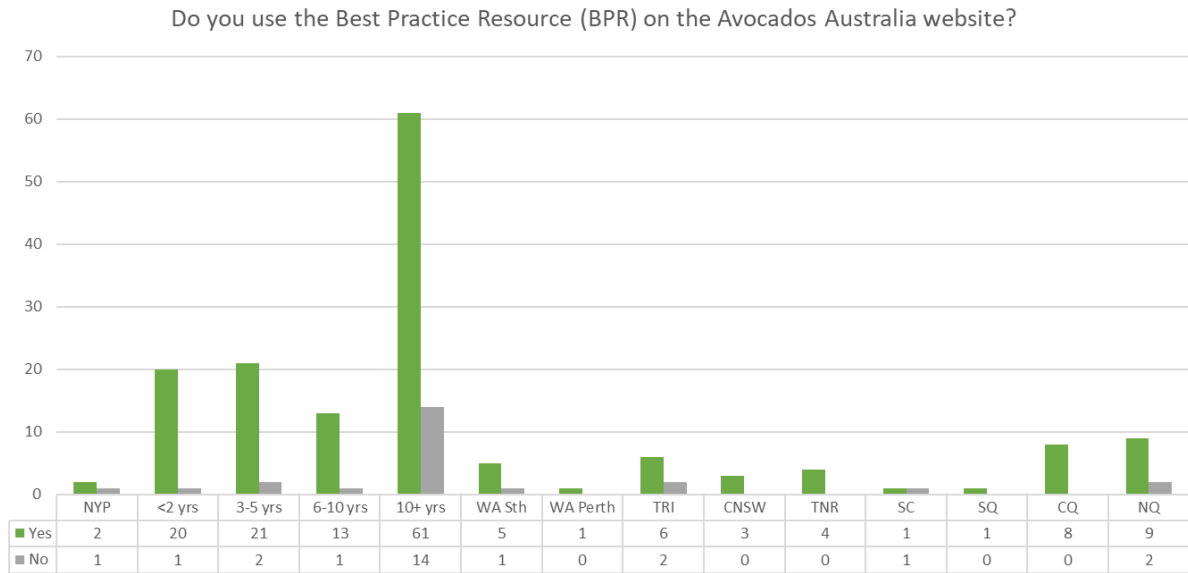


Figure 6 – Do you use the Best Practice Resource (BPR) on the Avocados Australia website?

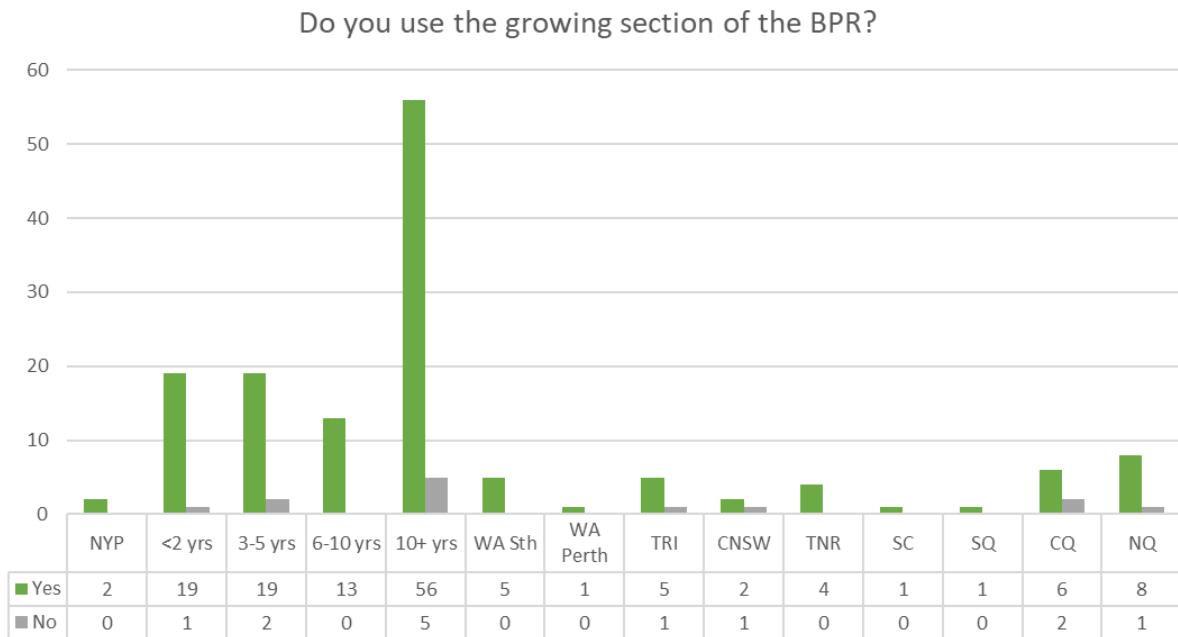


Figure 7 – Do you use the growing section of the BPR?

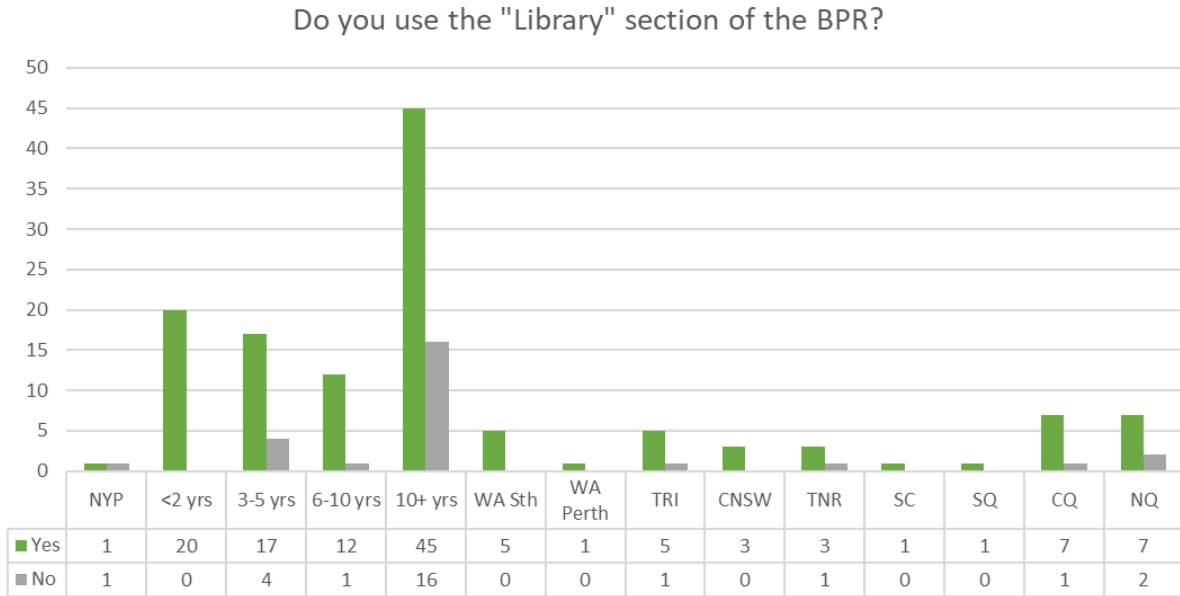


Figure 8 – Do you use the “Library” section of the BPR?

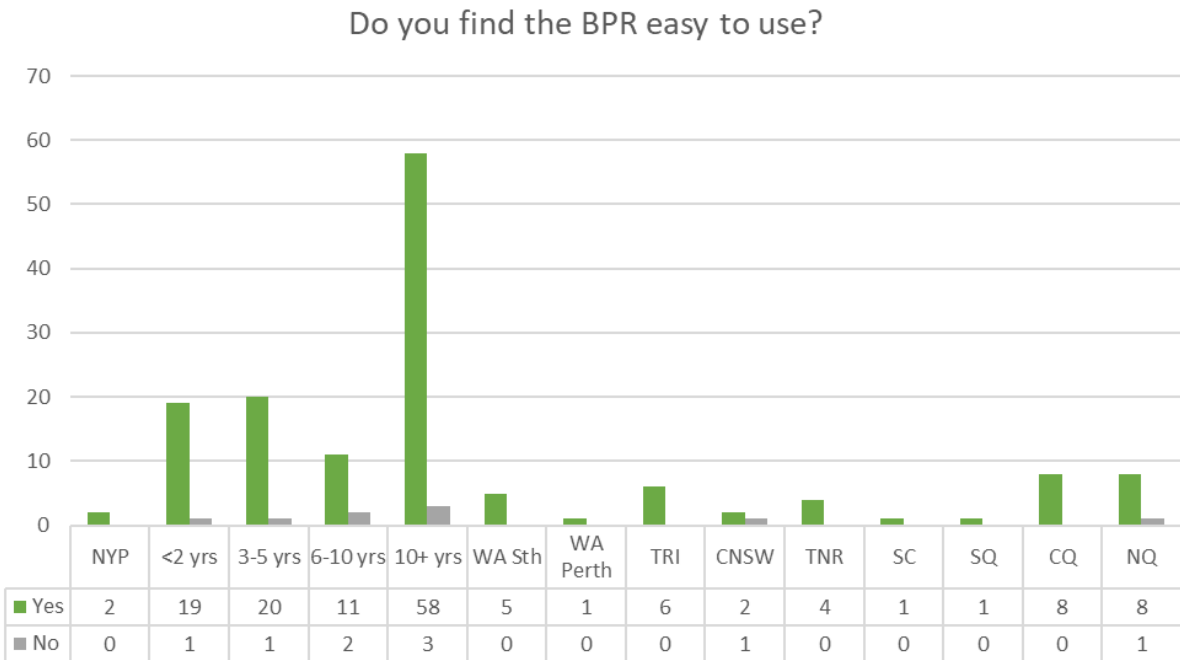


Figure 9 – Do you find the BPR easy to use?

### Do you know the BPR has a search function?

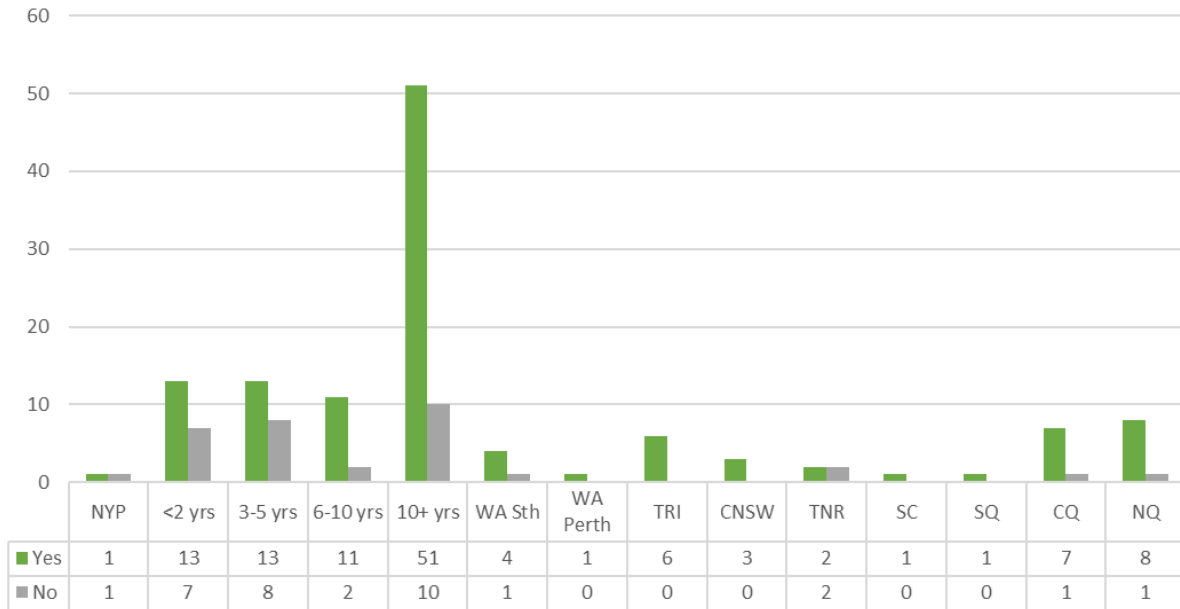


Figure 10 – Do you know that the BPR has a search function?

### How often do you use the BPR?

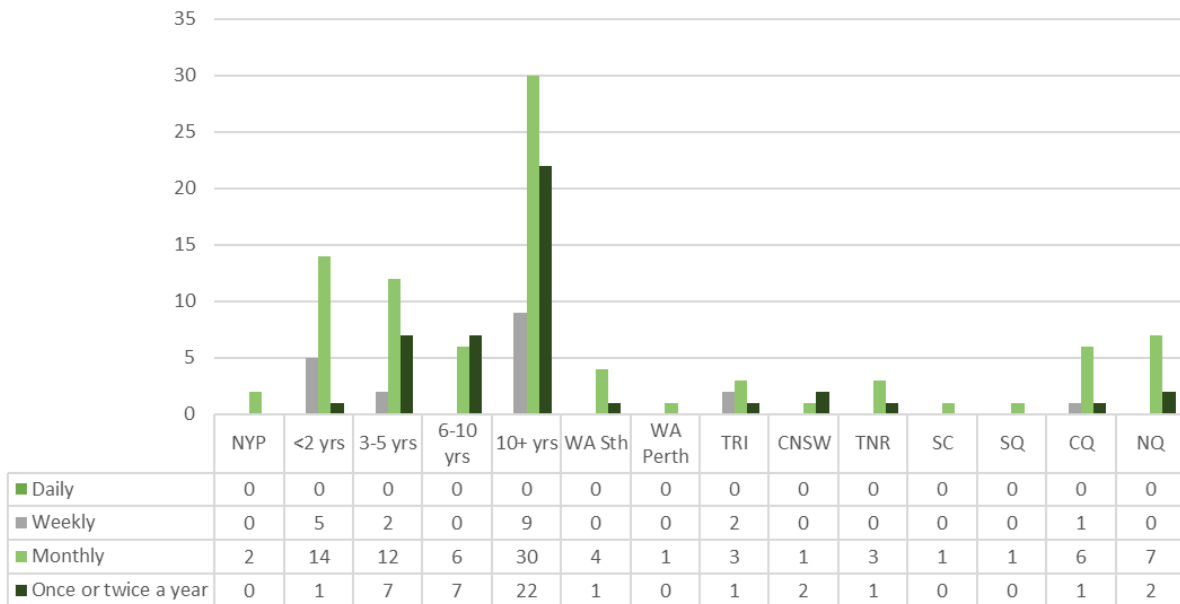


Figure 11 – How often do you use the BPR?

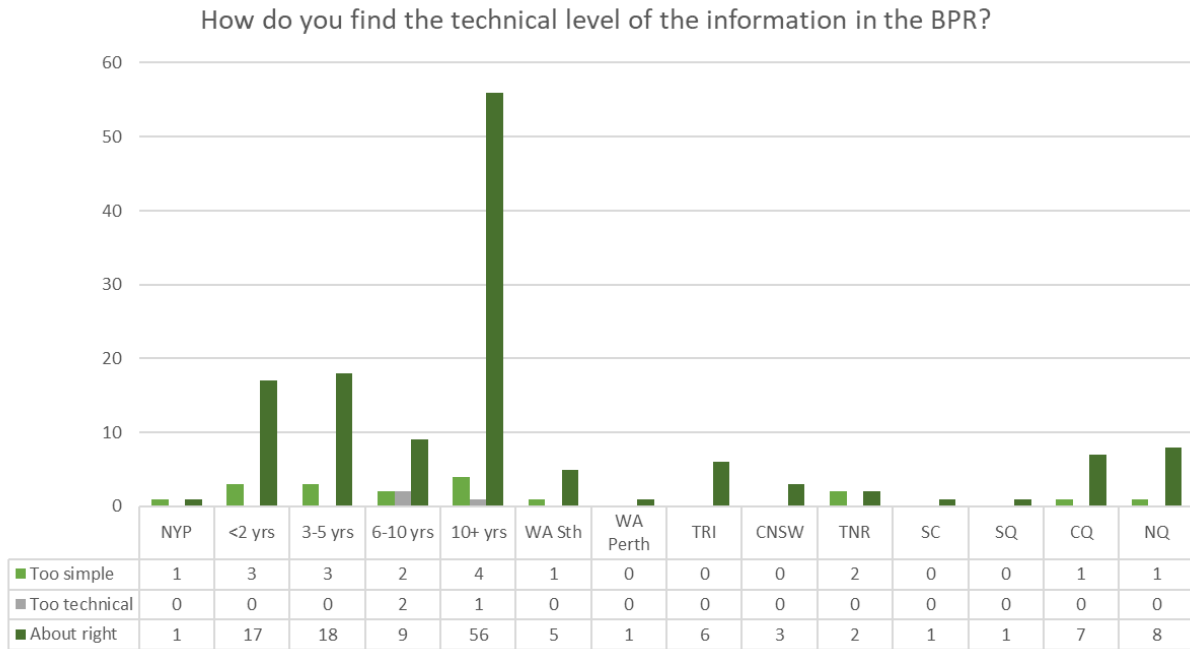


Figure 12 – How do you find the technical level of the information in the BPR?

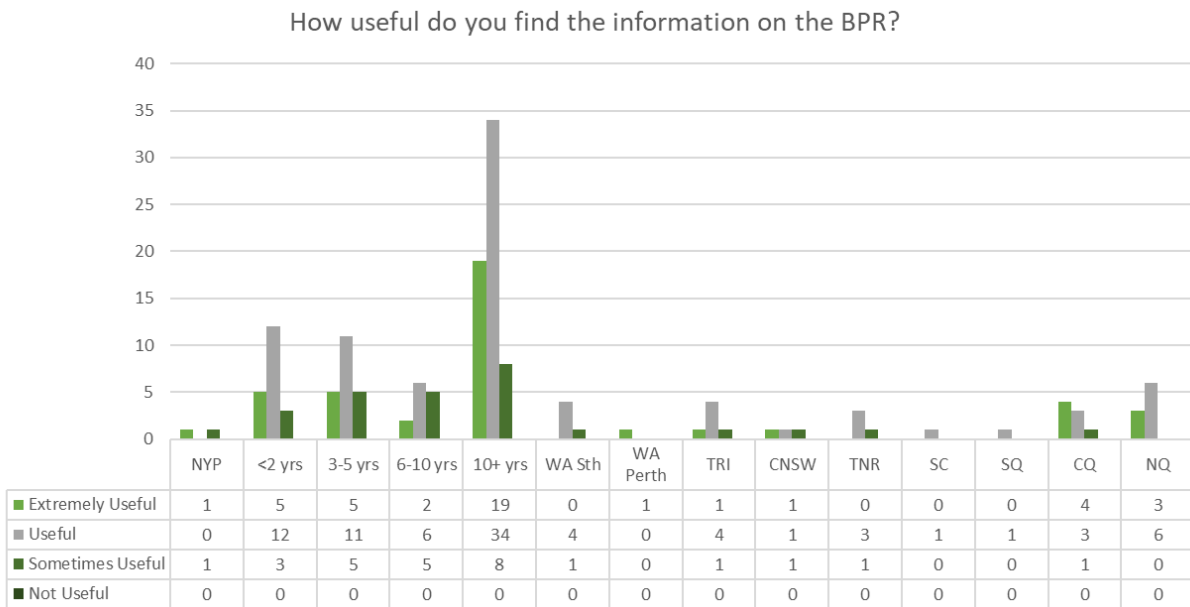


Figure 13 – How useful do you find the information on the BPR?



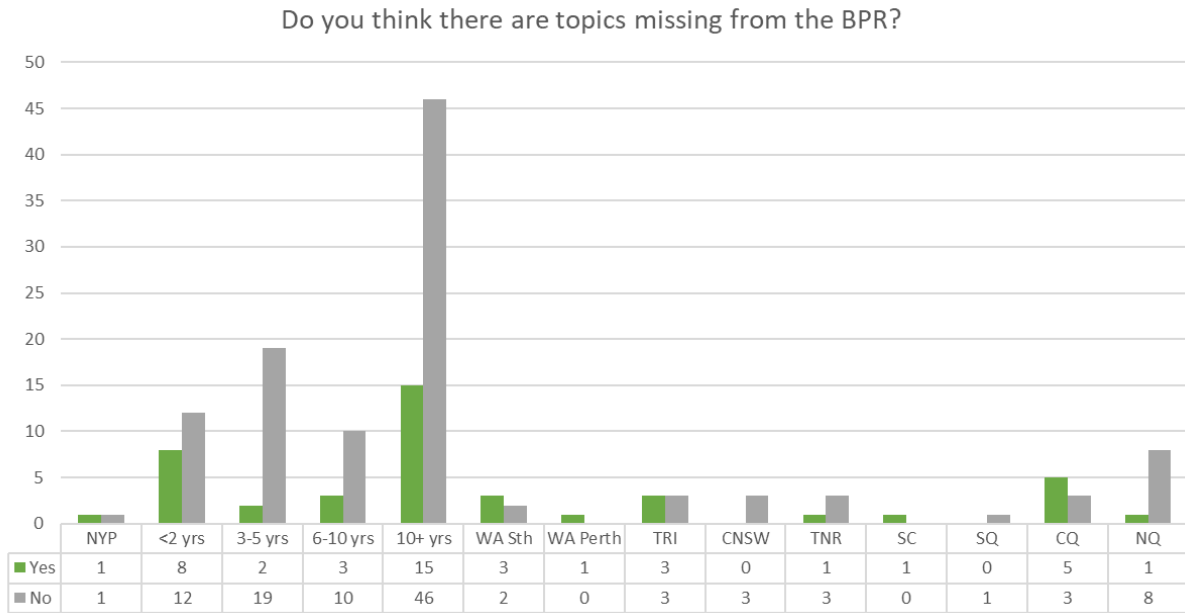


Figure 14 – Do you think there are topics missing from the BPR?

### Avo Alerts

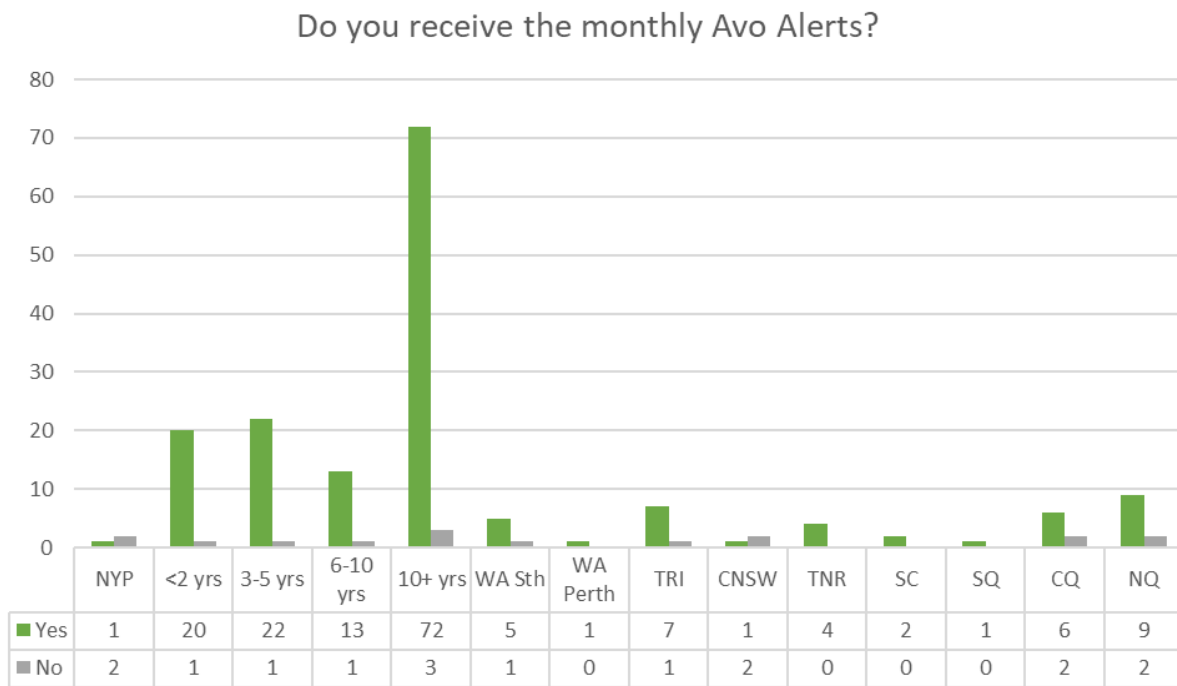


Figure 15 – Do you receive the monthly Avo Alerts?

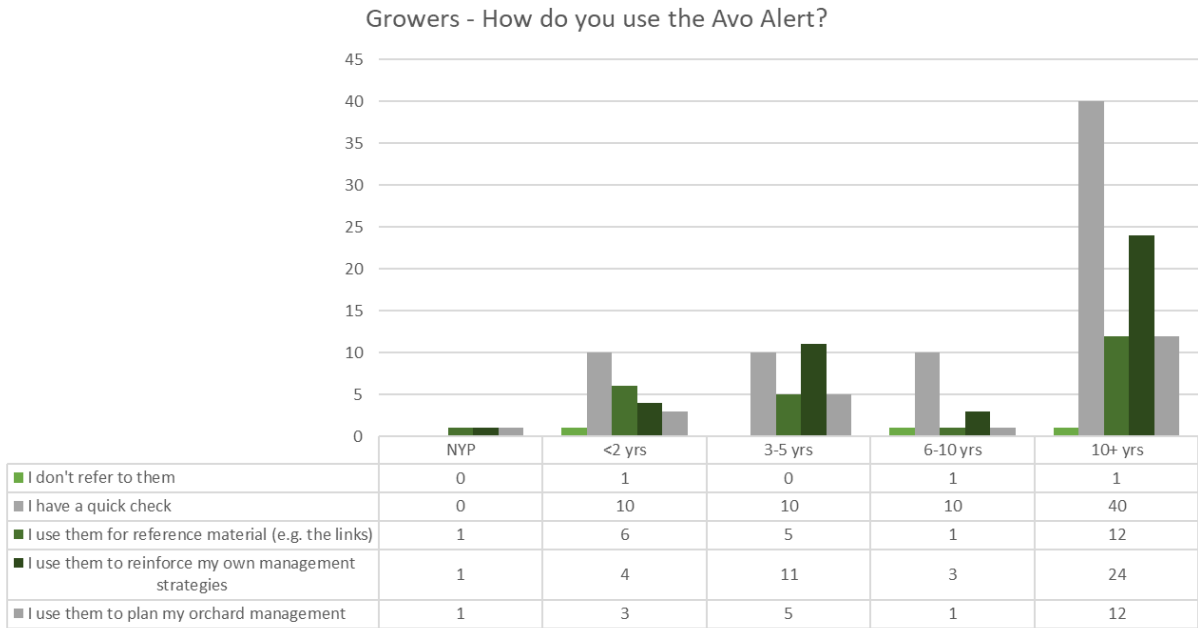


Figure 16 – Growers – How do you use the Avo Alerts?

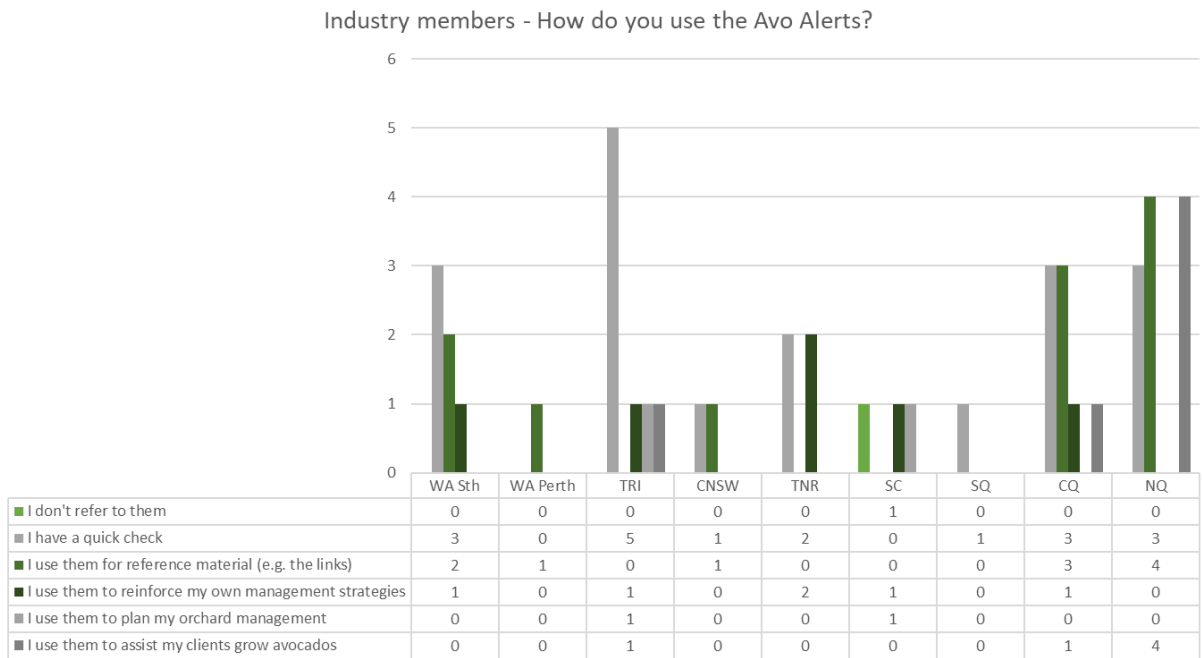


Figure 17 – Industry members – How do you use the Avo Alerts?

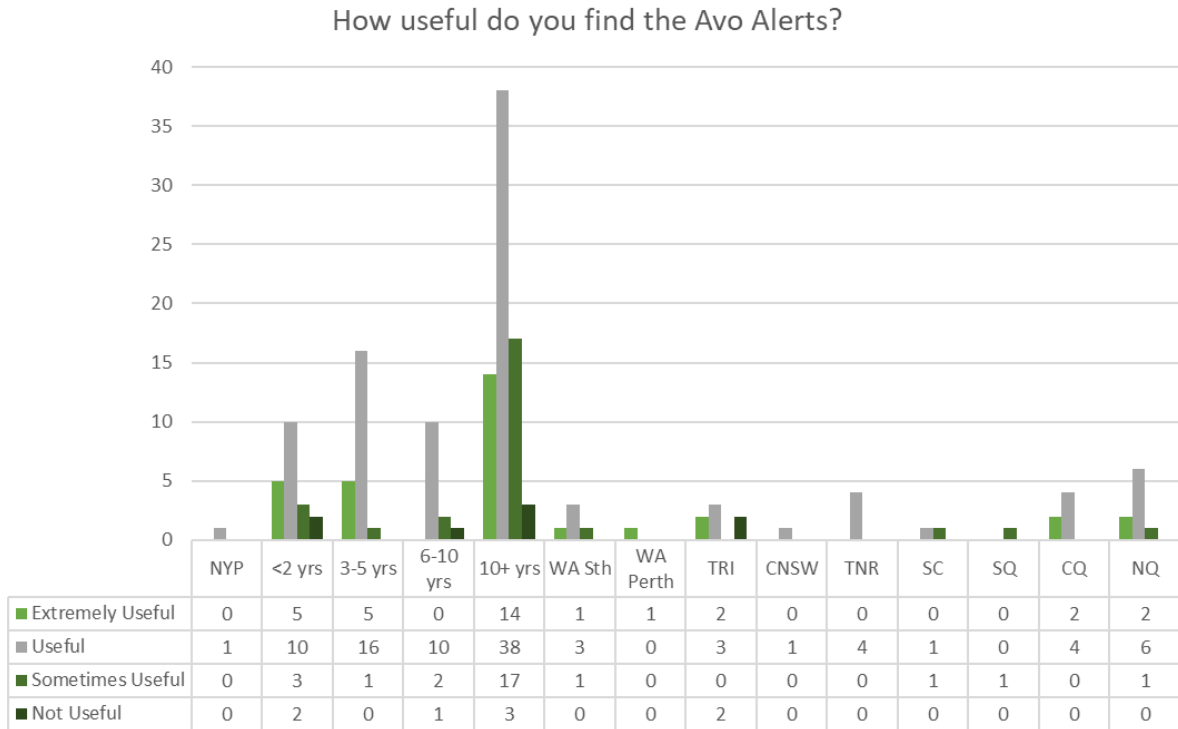


Figure 18 – How useful do you find the Avo Alerts?

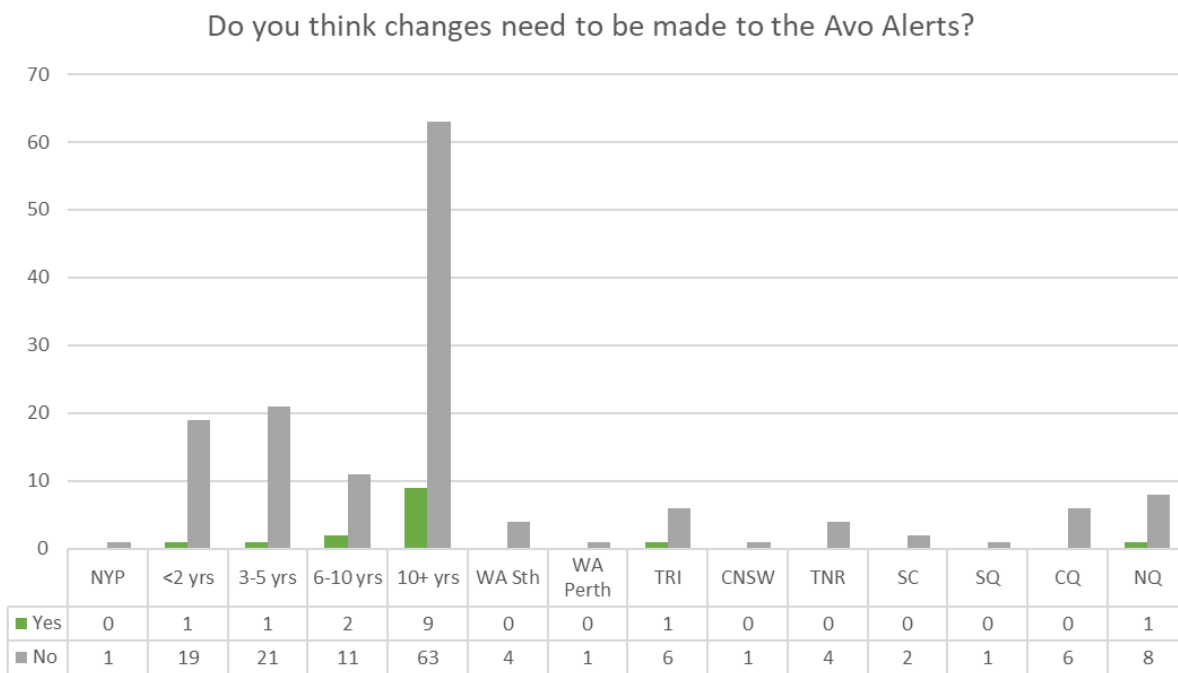


Figure 19 – Do you think changes need to be made to the Avo Alerts?

**Regional Forums**

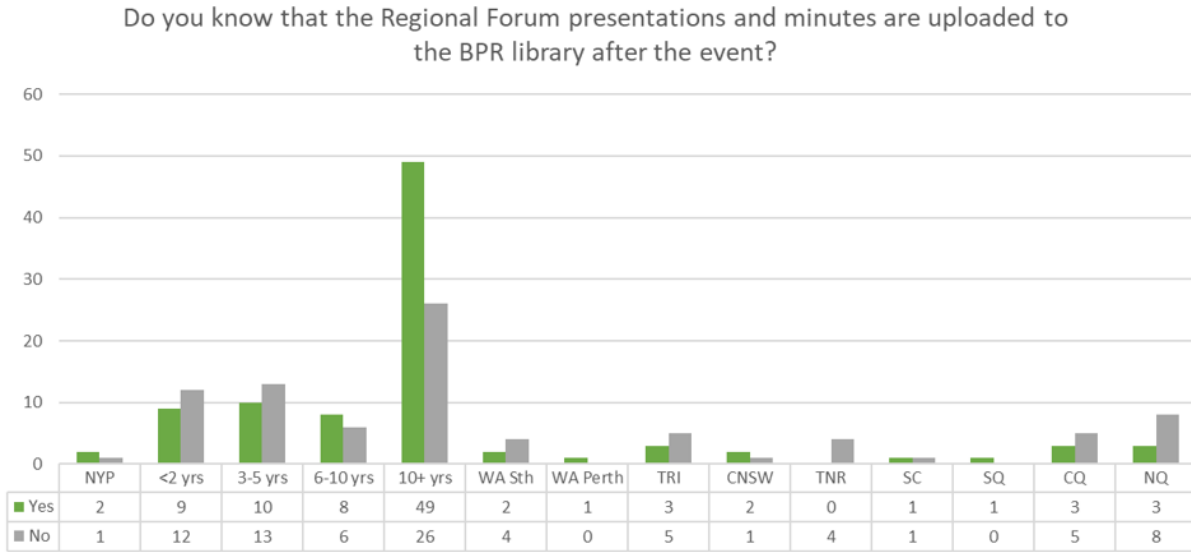


Figure 20 – Do you know that the Regional Forum presentations and minutes are uploaded to the BPR library after the event?

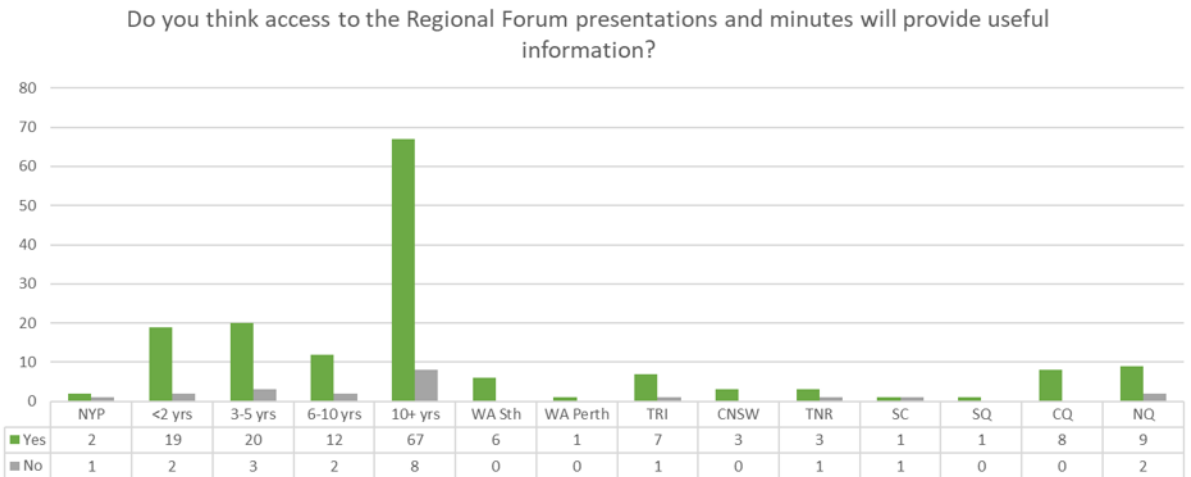


Figure 21 – Do you think access to the Regional Forum presentations and minutes will provide useful information?

Growers - When will you access the Regional Forum presentations and minutes?

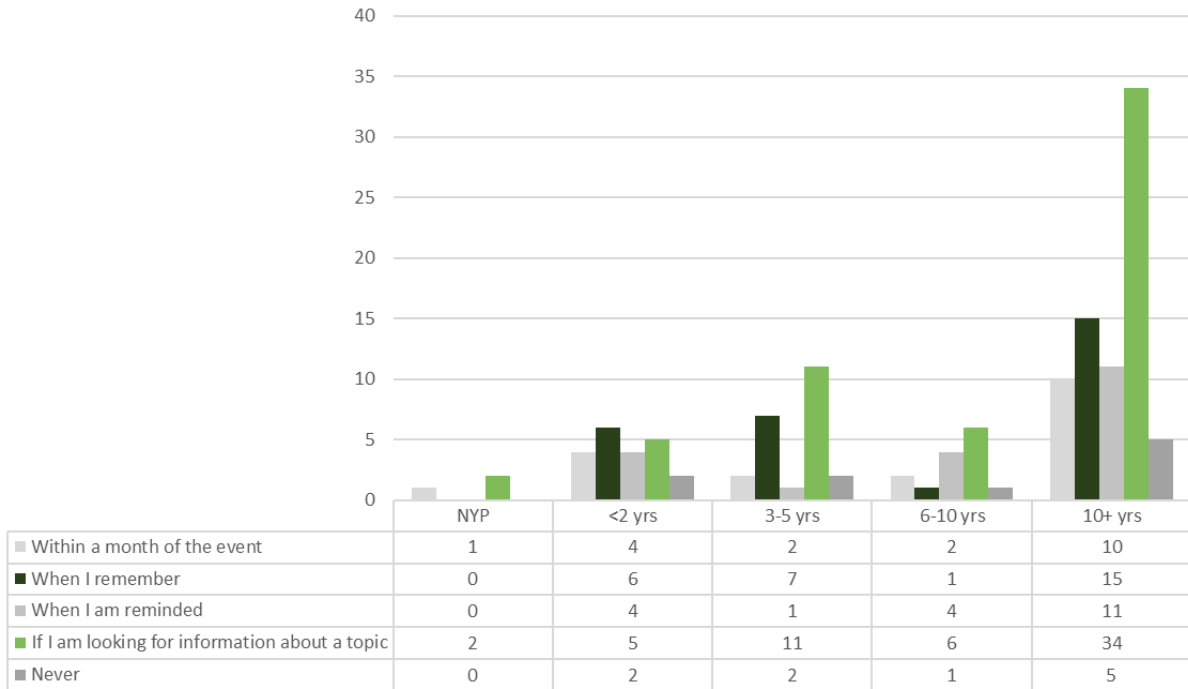


Figure 22 – Growers – When will you access the Regional Forum presentations and minutes?

Industry members - When will you access the Regional Forum presentations and minutes?

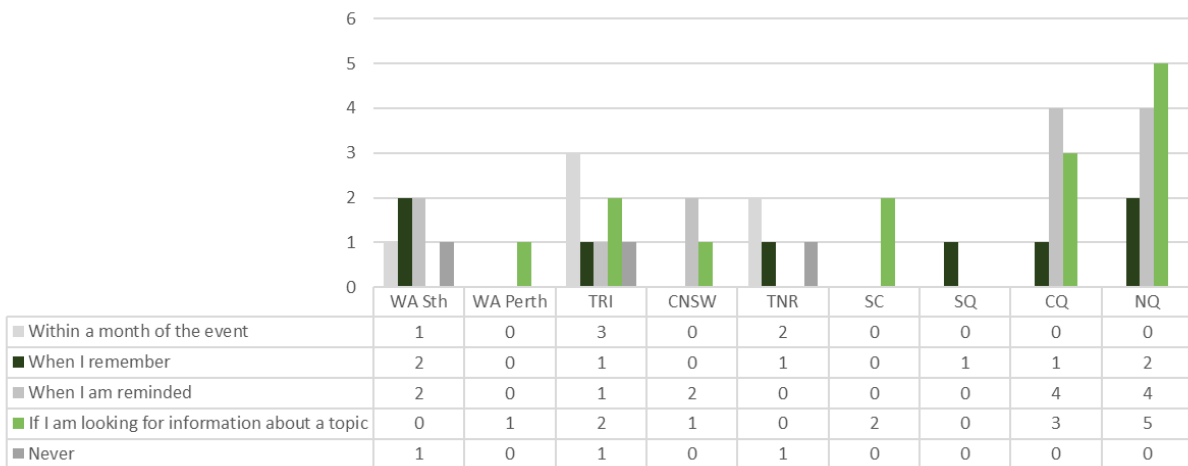


Figure 23 – Industry members – When will you access the Regional Forum presentations and minutes?

Growers - Why will you access the Regional Forum presentations and minutes?

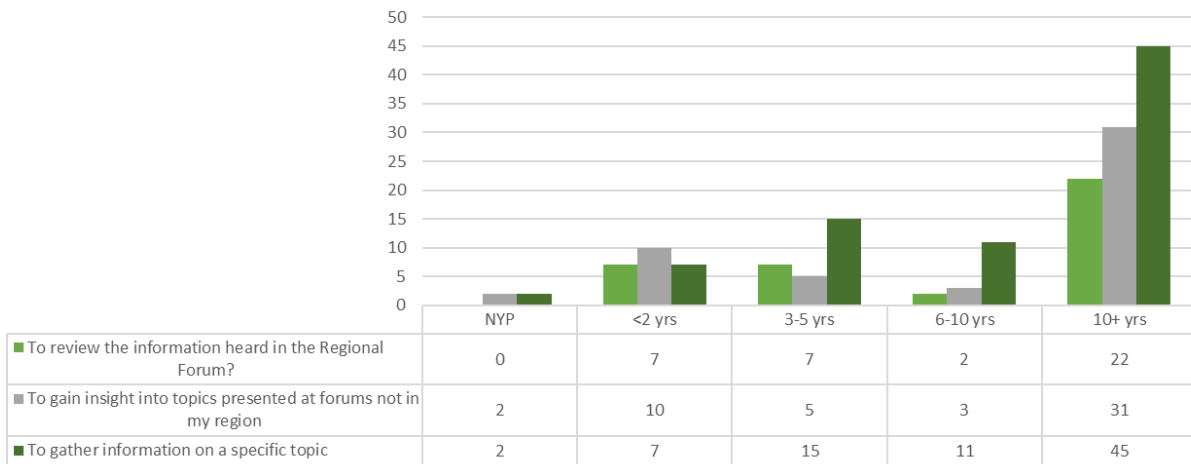


Figure 24 – Growers – Why will you access the Regional Forum presentations and minutes?

Industry members - Why will you access the Regional Forum presentations and minutes?

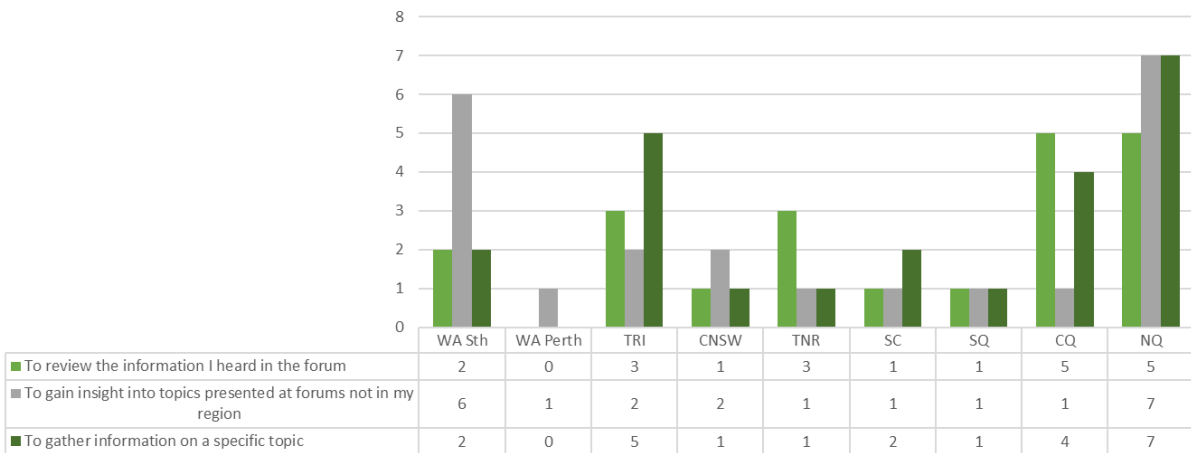


Figure 25 – Industry members – Why will you access the Regional Forum presentations and minutes?

## AV17005 Regional Forums

All events have detailed minutes which contain a copy of the agenda, detailed summary of information presented, and the evaluation summary

Date	Region	Venue	Main topics ( <i>event minutes as hyperlink</i> )	Attendance			Evaluations	
				Growers	Non-growers	TOTAL	Found attending useful to extremely useful	Intend making changes as a result of participation
15/05/2019	CNSW	Stuarts Point, Heather's orchard	<a href="#">Soil Health</a>	45	20	65	33/40 (83%)	24/40 (60%)
4/06/2019	WA	Pemberton, Bendotti's	<a href="#">Canopy Management</a>	76	21	97	56/58 (97%)	46/58 (79%)
6/06/2019	WA	Wanerie, Morcombe and Inkster's orchard	<a href="#">Irrigation and Nutrition</a>	28	18	46	20/21 (95%)	13/21 (62%)
4/08/2019	Tristate	Renmark, Chinoola orchards	<a href="#">Plant Growth Regulators</a>	33	33	66	37/40 (93%)	27/40 (68%)
28/08/2019	NQ	Mareeba, Jennings' orchard	<a href="#">Soil Health</a>	46	36	82	38/43 (88%)	19/43 (44%)
13/11/2019	Tamborine/NNSW	Casuarina, Tropical Fruit World	<a href="#">Managing Phytophthora root rot during climate extremes, nutrition</a>	35	32	67	38/40 (95%)	22/40 (55%)
27/11/2019	CQ	Childers, Philpott	<a href="#">Irrigation &amp; tree water requirements</a>	51	50	101	44/46 (96%)	32/46 (70%)
11/02/2020	SQ	Blackbutt, Veal	<a href="#">Nutrition, managing avocados in heat &amp; drought</a>	61	32	93	52/58 (90%)	30/58 (52%)
26/02/2020	Sunshine Coast	Bellthorpe, Annand	<a href="#">Soil health &amp; nutrition, managing avocados in heat &amp; drought</a>	32	51	83	22/24 (92%)	12/24 (50%)
12/03/2020	WA	Manjimup, Grozotis	<a href="#">Flowering, pollination, fruit set &amp; fruit retention</a>	76	21	97	48/53 (91%)	26/53 (49%)
24/03/2021	SQ	Hampton, AvosRUs	<a href="#">Nutrition</a>	70	43	113	69/73 (95%)	37/73 (51%)
5/05/2021	Tristate	Mildura, Gill Farms	<a href="#">Nutrition</a>	47	32	79	42/43 (98%)	34/43 (79%)
22/06/2021	WA	Pemberton, Skoss, Luzny and Rodgers	<a href="#">Canopy management and pollination</a>	69	34	103	54/57 (95%)	29/57 (51%)
24/06/2021	WA	Perth, Avowest	<a href="#">Pollination, IPM, irrigation and</a>	20	22	42	24/27 (89%)	16/27 (59%)

			<a href="#">fruit robustness</a>					
25/08/2021	NQ	Atherton, Rock Ridge Farming	<a href="#">Fruit set and fruit abscission</a>	55	49	104	46/48 (96%)	21/48 (44%)
27/10/2021	CQ	Bundaberg, Joe Lyons	<a href="#">Water management</a>	47	52	99	48/52 (92%)	30/52 (58%)
23/02/2022	SQ	Crows Nest, Kereczko	<a href="#">Flowering, pollination and fruit set</a>	48	52	100	43/48 (90%)	21/48 (44%)
1/6/2022	Tamborine/NNSW	Alstonville, Summerland Farm	<a href="#">Managing pest and diseases</a>	35	22	57	30/35 (86%)	28/35 (80%)
16/06/2022	CNSW	Comboyne, Watershed Avocados	<a href="#">Disease, pest, weed and quality management</a>	31	20	51	32/34 (94%)	30/34 (88%)
				<b>905</b>	<b>640</b>	<b>1545</b>	<b>800/840 (95%)</b>	<b>497/840 (59%)</b>

**Sample of general feedback and comments from Regional Forum evaluations (see minutes for full list from each event)**

- Thank you very much, you have done a marvellous job!
- Informative and well run
- The day was well presented
- Thanks for a good presentation on a wide variety of topics!
- Ran very well with lots of information
- Great mix of topics and presenters
- Well organised – credit to all involved in this forum
- Good balance of information/class work and field work.
- Even if no one stood up and offered information topics, just being in a room with other growers is SO beneficial – comparing stories and practice
- Was very interesting a good mix of speakers
- Interesting and well worth attending.
- A very good workshop, the very technical aspect was first class – Harley Smith, Amnon Haberman and Liz Dann doing great work, all were excellent presentations.
- Well conducted as usual
- Great to hear research information being presented
- There is an opportunity to talk informally to other growers and very experienced researchers which is invaluable.
- Thanks for cooperative attitude and resources online
- Well paced and informative
- Very well run
- Well organised and attended. Good balance with presentations & farm visits
- Great speakers, forum right length, food excellent
- Thanks for running these workshops
- Thanks for cooperative attitude and resources online
- Great industry with a deep purpose!!
- Great day – very knowledgeable speakers. Good mix of farmers providing practical feedback
- Factual information and results
- Everything was very informative and a good length
- Very informative, well structured day, jam packed with valuable information to take back to the farm, good mix of research and practical advice
- Overall a good workshop. Great turn out re-participants.
- Excellent forum – well done
- Continue having events like these as they provide a good platform for grower, supplier, consultants, and researchers to interact.



### Sample of comments on growers practice change from Regional Forums (see minutes for full list from each event)

- Better understanding of the soil composition and breakdown of mulch
- Look more into soil health and consider compost
- Trials of PGR. Modify pruning regime
- Will look into interrow planting in more depth
- More aware of the need to step up best practices in all areas – specifically have a goal to improve monitoring of water – evaporative and general monitoring
- It gave me a great insight into where to go as a new grower
- Check sick trees for overwatering, using gypsum monthly, further reading to understand starch accumulation.
- Apply more compost and mulch, possible 2nd leaf and soil in Nov
- N/Ca ratio and timing of calcium for fruit
- The importance of not mixing fertilisers and their compatibility in the soil
- Will continue to improve use of technology to learn to irrigate WHEN needed
- Pest control management and how I can help trees have more fruitset
- Will be reviewing our pesticide spray program to put gentle sprays earlier
- Soil tests, use a consultant. Probably start using more soil testing rather than just leaf analysis
- Visual assessment of trees in autumn
- Start building up carbohydrates earlier
- Ridging, mulching, fruit picking techniques
- Change interrow mowing to help beneficial insects
- Look more closely at my strategy for pruning/dieback control/nitrogen application
- Timing of calcium and understanding of root system
- More regular irrigation, new plantings technique, chicken manure dolomite etc
- Clarity regarding soil biota, Phytophthora, mulch etc
- Canopy management – future canopy management to improve my orchard – for access & production
- Better water budgeting and planning
- Agronomic advice – get help. Look at soil analysis from a micro nutrient point of view (essential elements) and water quality
- More knowledge & slightly more confidence in canopy management
- Always learning something on soil health and nutrition
- We are new to industry – everything helped
- More accurate timing for fertiliser application. Awareness of N/Ca ratio
- About to start our first major prune after harvest this year, so really helpful
- Closer monitoring irrigating around fruit drop (Dec/Jan), dig holes to manually check
- More careful thought on canopy pruning in relation to maintaining carbohydrate reserves
- Better mulching, weed & pest control programme esp calcium
- I will consider changes to nutrition and fungus control regimes
- Increases mulching and focus on canopy management
- Review fertiliser program and timing

## AV17005 Avo Grow webinars

Date	Region	Topic (includes link to recording)	Attendance at live event			Evaluations	
			Growers	Non-growers	TOTAL	Found attending useful to extremely useful	Intend making changes as a result of participation
29/04/2020	<a href="#">CNSW</a>	<a href="#">Fruit Spotting Bugs</a> - Dr Ruth Huwer and Craig Maddox, NSW DPI	33	45	78	14/14 (100%)	7/14 (50%)
27/05/2020	<a href="#">Tristate</a>	<a href="#">Flowering and fruit set</a> - Dr Iñaki Hormaza, Spain	54	43	97	33/33 (100%)	22/33 (67%)
29/07/2020	<a href="#">NQ</a>	<a href="#">Irrigation, nutrition and PGRs</a> - Dr Francisco Mena, Chile	25	41	67	22/22 (100%)	12/22 (55%)
28/10/2020	<a href="#">CQ</a>	<a href="#">Nutrition</a> – Dr Ben Faber, University of California Cooperatuv Extension	56	51	107	31/32 (97%)	16/32 (50%)
25/11/2020	Tamborine/NNSW	<a href="#">Soil Health</a> – Dr Neil Wilson, Metagen	60	65	125	26/27 (96%)	18/27 (67%)
19/05/2021	<a href="#">Irrigation summit</a>	<a href="#">Avocado irrigation in Israel</a> – Udi Gafni (part of the Irrigation Advanced Management Workshop summit)	n/a	n/a	70	14/14 (100%)	9/14 (64%)
12/08/2021	General	<a href="#">Research update</a>	36	40	76	22/23 (96%)	9/23 (39%)
6/11/2022	<a href="#">Soil Health summit</a>	<a href="#">Shaping Healthy Soils: The Importance of Soil Management Practices for Promoting Root Health and High Fruit Yields of Avocado</a> - Dr David Crowley, University of California	n/a	n/a	66	6/6 (100%)	4/6 (67%)
			<b>264</b>	<b>285</b>	<b>549</b>	<b>168/171 (98%)</b>	<b>97/171 (57%)</b>

### Sample of general feedback and comments from Avo Grow webinar evaluations

- I enjoy these webinars, better than the travel in time, expense and time away from home and farm. Bonus is the recorded version, for later referral.
- Easier to attend a 1.5hr webinar than spend most of a day driving somewhere and attending a forum.
- Love this form of information dissemination. Quick, easy, no travel involved and being recorded for review later is the most important part of all. Also need to discourage "commercial" intrusions into the webinars.
- The webinar series is very helpful and I think will help to improve our knowledge on growing practices and the industry status.
- Very well organised and participation was extremely easy. Thanks so much
- Webinar was easy to access through the app on my phone so I could still carry on with what I needed to do (new born and toddler) as well as participating in the event. Less stressful way to tap into valuable information that I otherwise wouldn't of had access too.
- Please keep running avocado webinars even after COVID because it is very efficient
- Continue to run these even after Covid and invite international speakers - so good to hear these researchers ideas and work.
- Well done. I appreciate it is difficult to get informative presenters, but those presentations are very beneficial.
- Was informative, easy to access and enjoyable. Much appreciated insight into how other countries operate and overcome local challenges. Was further confirmation of our directive for cultivation of Avo's into the future.
- LOVE the webinars and online forums. It's such a better way to information share instead of whole day seminars. I'm sure it's much more cost effective too. Keep them coming because they are great and I've learnt more during COVID this year than in previous years! Thanks so much!
- Good initiative in trying conditions thought this was ran well with good presentations
- A good concept for specific discussions. Easy to do from home and minimum time wasted and to have a recording as a backup reference is a double bonus. We should do more of these because it opens up the information to anyone from any region and sometimes knowing what happens in other regions is very valuable information too
- These types of webinars are the best way to learn. No travel, great speakers, informative and professionally delivered presentations and opportunities to ask questions and learn from others' questions. Well done!

### Sample of comments on growers practice change from Avo Grow webinar evaluations

- Pay more attention to irrigation and phenology stages
- Find an agronomist with knowledge of a holistic approach to microbial management
- Changes will be essential because of the water insecurity of the Bundaberg/Childers irrigation scheme. This information will be used in conjunction with other available assistance. Will try to grow flies in some blocks to see if it makes a difference. Bees are difficult to source and expensive when you can get them
- Yes, I will put the irrigation consideration in my priority list but from different aspect when checking the crop.
- Yes. I am going to look into planting indicator hedges for fruit spotting bugs
- Yes, working on creating a good environment to encourage microbials
- Monitor for FSB in Moringa screens
- Continue to develop a better understanding of nutrient interactions between soil and plant
- Think more about soil and water influence on nutrition
- Investigate more on the use of PGR's
- Yes, small tweaks to the way we use PGR in our orchard.

## AV17005 Avo Skills workshops

See appendix 5 for full evaluation summaries from each event

Date	Region	Location	Attendance/registered	Evaluations	
				Found attending useful to extremely useful	Intend making changes as a result of participation
17-18 July 2019	NQ	<a href="#">Mareeba</a>	40	34/34 (100%)	23/34 (68%)
10-11 March 2020	WA	<a href="#">Manjimup</a>	60	49/49 (100%)	39/49 (80%)
21-22 September 2021	CQ	<a href="#">Bundaberg</a>	40	30/30 (100%)	23/30 (77%)
12-13 May 2022	Tristate	<a href="#">Mildura</a>	20	17/17 (100%)	16/17 (94%)
14-15 June 2022	CNSW	<a href="#">Port Macquarie</a>	26	26/26 (100%)	24/40 (60%)
			<b>186 (170 growers, 16 resellers)</b>	<b>156/156 (100%)</b>	<b>125/156 (80%)</b>

### Sample of general feedback and comments from Avo Skills evaluations

- Thank you for a great two day workshop, highly recommended and very useful. Well done to all presenters. I would invite more of our people next time. Very good format - info in mornings - field walk in arvo, info presented well with engagement games/quiz, well done. Very happy, well done. Food was good.
- Well done! Fantastic workshop!. Very professional workshop. Thank you for all your wealth of knowledge
- Congratulations Bridie, Ebony and Simon for a very informative, sharply focussed forum on the core issues of successfully growing quality avocados. Thank you – these last 2 days will be very beneficial in improving my business practices
- Thanks for the time & effort put into doing this. It was a lot of work.
- I thought it was great. The games broke the day up, but also reinforced the information.
- Most of the talks were really good and clearly delivered by people who knew what they were talking about
- Definitely learned a lot and enjoyed myself too. Great workshop and great chance to get such information in a single session, thank you for that!
- Very informative – well worth attending. Thank you for running workshops like this!
- I have been growing for 34 years and this was the BEST EVER. Inspires me to put more into being a successful and happy avocado grower. Many many thanks to you all – Doug.
- I found the workshop highly informative and engaging. I appreciate your time to broaden our knowledge – thank you.
- Very helpful overall to me. Very informative 2 days, thank you all very much! Would like to thank all of the DPI for an excellent seminar, very very worthwhile for me, was surprised at the amount of farm managers and new growers, great to see. Thanks for your information.
- Super excited to roll out improvements on my existing orchard, thank you so much.
- I think it was run great and it made people not only listen but try and pay attention to what was being conveyed.
- Great couple of days. It was also great to network with other growers and industry people. Absolutely fabulous course, it was exactly what we needed. Thank you. Thank you!
- Number of people participating is about right to allow useful interaction and mingling in the breaks. Great venue and food – plenty of space to facilitate discussions and informal interactions. Well done.
- Well thought out and well run. Having large handout/booklet is very useful in case things are missed and helps with revisiting it later – very good!

### Sample of comments on growers practice change from Avo Grow webinar evaluations

- Going into drip system, more of an understanding of Phytophthora root rot. Better nutrient and moisture management & Phytophthora control. Pollination. Re-focus & prioritise a few things from a planning management view. Being more vigilant in paddock checks & in all areas of operation. Better understanding of nutrition, canopy management & irrigation, more emphasis on phos acid spraying schedule, I will be accessing the BPR regularly.
- Irrigation monitoring, nutrition, tree monitoring. Reduce canopy size, introduce pollinisers, reinforce root rot management. My irrigation system needs looking at, phos acid tests in roots. Mainly phos acid applications - timing & injection rates etc. Especially nutrition. Root rot management extra sprays in late spring/early summer.
- Re-think a lot. Use of dripline irrigation vs microsprinklers, more leaf analysis testing, closer monitoring of RAW (water) and introduction of new water monitoring methods.
- Looking at drip lines, clearer idea on my canopy management (young trees so ideal starting point), will need further advice/assistance with Phytophthora management and potential risks/pests & diseases from other crop (olives) on farm & someone to visit orchard to identify issues pests & disease that we are currently dealing with or likely to experience.
- The workshop has reinforced my knowledge on Phytophthora management – so I am encouraged to keep up with all the management tasks. Also the importance of pruning in regards to overall tree health & production has been refreshed and again I am encouraged to take on this task!
- Being able to inform clients where and how to find information that is available (reseller)
- Investigating whether phos acid has to be buffered, my advice on injecting trees, information regarding calcium and boron will help me explain to growers importance of timing. Talk more about the basics, getting them right, even as simple as the 'Right exact timing' of Agrifos. Try to have an integrated approach towards avocado farms. Making sure that we focus on timing of all activities correctly (reseller)
- Increased knowledge – recognition of boron deficiency. Management practices – decimal point is important. PRR management front and centre at all times. Rootstock – information to inform decision making processes for new plants. Holistic approach to PRR.
- Making a water budget. Using more beneficials throughout the orchard and look at more ways to get better light
- Yearly program for ensuring tree health and good yields so not to miss critical times/processes
- I have a newly planted orchard, and this will help me with all my decisions moving forward
- I have identified phytophthora damage in my orchard and will take steps to correct this based on the advice. I will improve general nutrition and put out mulch quickly!
- More accurate fertiliser recommendations specific to avocados. Better advice to help soil and orchard health and disease management (reseller)
- Irrigation distribution, more mulching, open canopy up and harass tutors for more information
- Changes to irrigation practices, re-calibrate sprayer.
- Yes, given me more confidence talking to growers being a rep (reseller)
- I intend to analyse the pruning techniques and nutrient management provided by this course and will try to execute as much of it as I can
- More monitoring, pulse irrigation and a 12 month plan

AV17005 Regional Forums, Avo Grow webinars, Avo Skills workshops

Event	Attendees		Total	Evaluations	
	Growers	Non-growers		Found attending useful to extremely useful	Intend making changes as a result of participation
Regional Forums	905	640	1545	800/840 (95%)	497/840 (59%)
Avo Grow webinars	264	285	549	168/171 (98%)	97/171 (57%)
Avo Skills	170	16	186	156/156 (100%)	125/156 (80%)
<b>TOTAL</b>	<b>1355 (55%)</b>	<b>1095 (45%)</b>	<b>2450</b>	<b>1124/1167 (96%)</b>	<b>719/1167 (62%)</b>

## AV17005 Advanced Management Workshops (summit)

*See appendix 7 for full evaluation summaries from each event*

Irrigation summit = (12 delegates - 8 responses) **67% response rate**

Canopy management = (13 delegates – 11 responses) = **85% response rate**

Soil health = (11 delegates – 8 responses) = **73% response rate**

### **Sample of general feedback and comments from Advanced Management Workshop summit evaluations**

- I think the summit was great! The only thing that I think could make it better is if there was a section in the summit that was a field walk. This way everyone could talk through their ideas at the physical tree. I think this would have helped really understand the pruning process everyone was speaking about.
- I found it a good exercise to bring industry knowledge to one venue to thrash a few things out
- I am glad we all sit there and think about the same issue no matter where we are, we all have similar problems. And it's not a one solution fixes all problems when it comes to management.
- Trying to get people to understand the benefits of canopy management is hard. As once you have a big tree it is very hard to get them to take the first step as it is a big job. We personally have realised tree's get something taken out of them each year no matter what. But we also live in a area where we need our canopy strong once winter comes again. So It is a juggling act as to take enough out to keep flowers and leaf strong enough while still getting a strong canopy back.
- The event was very well run. Everyone was happy to open up and share their knowledge.
- Canopy management needs to be looked at as a part of fruit bearing issues.
- I found it excellent. It was a really good group. Very well organised and flowed well over the two days. Participation was valuable, open and respectful from the members and the facilitation helped guide the discussion well. I felt lucky to have attended and had the chance to discuss a complex process with people with such varied experience and high capability. The member presentations added a lot of value too.
- the session gathering ideas for future extension was good, hope some of those ideas can be incorporated into next project
- I was very pleased with the discussions around soil health. They were topical and up to date with current research
- It was very successful. It was well run and I have been doing a lot of thinking and research since the summit to implement what I learnt
- I think some of the finding should be put in practice i.e. rejuvenating older orchards and column pruning. The old high density trial site at BRF would provide an excellent demonstration plot for this to happen and it would provide a focus for filed days.
- It was a great mix of people, opinions, growing regions. I thought the group dynamics worked well.
- Only as above and how we could develop some of these ideas into our processes. The event was very well delivered and I think should have added value to all present and the wider industry.
- The summit was great. Excellent mix of people with great knowledge
- For me personally. I walked away with great satisfaction. We changed little idea's as soon as we got home. I believe certain practices work better for different people.
- I think the summit could of gone for two whole days. Which would of allowed a bit more unscripted conversation. But also understand time restraints.
- Happy with discussions and positive attitudes towards driving industry forward and sharing information
- I think the focus on management of water quality is something we need to get a better understanding of and make sure our processes include this. Overall I thought the summit was well planned, well executed and will add value to anyone who attended as well as the broader industry.

# AVOSKILLS FEEDBACK MAREEBA 17 - 18 JULY 2019

Table 1: Avoskills score from the participants

Usefulness	Not	Fairly	Useful	Very	Extremely	
Commercial grower	7			4	3	
Supervisor/manager	10			7	3	
Farm staff	3		1	2		
New/prospective grower	4			2	2	
Reseller/agronomist/rep	7			1	6	
Growcom & DAF	3			2	1	
	34	0	0	1	18	15

Table 2: Did the participants feel that they had the opportunity to participate during the events?

Able to participate	No	Some chances	Many chances	
Commercial grower	7	3	4	
Supervisor/manager	10	5	3	
Farm staff	3	2	1	
New/prospective grower	4	3	1	
Reseller/agronomist/rep	7	2	4	
Growcom & DAF	3		3	
	34	0	15	16

Table 3: Did the participation in the Avoskills improve your knowledge?

Improved your knowledge	None	A little	Some	Significantly	V significantly	
Commercial grower	7		3	4		
Supervisor/manager	10		1	5	4	
Farm staff	3		1	1	1	
New/prospective grower	4			3	1	
Reseller/agronomist/rep	7		1	2	4	
Growcom & DAF	3			2	1	
	34	0	0	6	17	11

Table 4: Was the farm visit valuable?

Value of farm visit	None	Fairly	Valuable	Very valuable	Ext valuable	NA	
Commercial grower	7	0.5	1.5	4		1	
Supervisor/manager	10		3	5	2		
Farm staff	3	1	1	1			
New/prospective grower	4			3	1		
Reseller/agronomist/rep	7		1	4	2		
Growcom & DAF	3			3			
	34	0	1.5	6.5	20	5	1



Table 5: How was the length of the courses?

Length of course		Too long	About right	Too short
Commercial grower	7		7	
Supervisor/manager	10		9	1
Farm staff	3		3	
New/prospective grower	4		4	
Reseller/agronomist/rep	7		6	1
Growcom & DAF	3		3	
	34	0	32	2

Table 6: How was the pitch of information presented?

Pitch of info		Too tech	About right	Not tech enough	Comments
Commercial grower	7		6	1	Not tech enough in nutrition.
Supervisor/manager	10		9	1	
Farm staff	3		3		
New/prospective grower	4		4		
Reseller/agronomist/rep	7		5	2	
Growcom & DAF	3		3		
	34	0	30	4	

Table 7: Did you enjoy the quizzes, games and other related activities?

Enjoy quizzes, games etc		Yes	Sort of	No
Commercial grower	7	4	2	1
Supervisor/manager	10	9	1	
Farm staff	3	1	2	
New/prospective grower	4	1	2	1
Reseller/agronomist/rep	7	4	3	
Growcom & DAF	3	3		
	34	22	10	2

Table 8: Did you find the resources provided were valuable?

Value of resources provided		Yes	Sort of	No
Commercial grower	7	7		
Supervisor/manager	10	9		
Farm staff	3	3		
New/prospective grower	4	4		
Reseller/agronomist/rep	7	7		
Growcom & DAF	3	2		
	34	32	0	0

Table 9: Avoskills presentation that generated the most interest from the participants

Presentation of most interest	Site			Use BPR	Hvst	Nutrition	Canopy	Info resources	Insects & mites	Soil health	Flower & set	Irrigation	Other diseases	Biosecurity	Other disorders
	TOT	PC	selection												
Commercial grower	7	7	1	1		5	3	2	3	6	3	6	2		
Supervisor/manager	10	10	3	2	1	8	6	1	6	6	6	9	5	2	2
Farm staff	3	2				3	2		2			1	2	1	
New/prospective grower	4	4	2	1	2	4	3	1	2	3	2	4	2	1	1
Reseller/agronomist/rep	7	6	4	3	2	6	4	5	5	5	7	6	6	3	3
Growcom & DAF	3	2	2			2	1	1	1	2		3	1	1	
	<b>34</b>	<b>31</b>	<b>12</b>	<b>7</b>	<b>5</b>	<b>28</b>	<b>19</b>	<b>10</b>	<b>19</b>	<b>22</b>	<b>18</b>	<b>29</b>	<b>18</b>	<b>8</b>	<b>6</b>

Table 10: Intention for changes after attending the Avoskills

Intend to make changes	Yes	No	Comments	
Commercial grower	7	6	1	Irrigation monitoring, nutrition, tree monitoring. Reduce canopy size, introduce pollinisers, reinforce root rot management. My irrigation system needs looking at, phos acid tests in roots. Mainly phos acid applications - timing & injection rates etc. Especially nutrition. Root rot management extra sprays in late spring/early summer.
Supervisor/manager	10	7	3	Going into drip system, more of an understanding of Phytophthora root rot. Better nutrient and moisture management & Phytophthora control. Pollination. Re-focus & prioritise a few things from a planning management view. Being more vigilant in paddock checks & in all areas of operation. Better understanding of nutrition, canopy management & irrigation, more emphasis on phos acid spraying schedule, I will be accessing the BPR regularly.
Farm staff	3	2		Some new things to try/think about. Changes to irrigation practices, re-calibrate sprayer.
New/prospective grower	4	2	2	Re-think a lot. Use of dripline irrigation vs microsprinklers, more leaf analysis testing, closer monitoring of RAW (water) and introduction of new water monitoring methods.
Reseller/agronomist/rep	7	5		Investigating whether phos acid has to be buffered, my advice on injecting trees, information regarding calcium and boron will help me explain to growers importance of timing. Talk more about the basics, getting them right, even as simple as the 'Right exact timing' of Agrifos. Try to have an integrated approach towards avocado farms. Making sure that we focus on timing of all activities correctly.
Growcom & DAF	3	1	1	More attention to frequency of irrigation. Different information too provide those working under Best Management Practice program.
	34	23	7	

Table 11: Do you have any suggestions for improving the Avoskills courses?

Improvements to course?		
Commercial grower	7	Q&A sessions, more region specific, variety specific info. Warmer classroom! Have a lot of info to soak in, needed more time to think about what questions we need to ask. Follow up with more technical sessions: possibly on (on line) forum? Everything was done to schedule & no improvements need to be made. Allocate a bit more time for each speaker. Give more time to explain the different subjects. Perfect! It was all good. Keep it as it is, "perfect". Awesome presentations & flow, bit more questions and answer sessions help dramatically.
Supervisor/manager	10	
Farm staff	3	Have time to play all visual aspects (videos etc). More Q&A.
New/prospective grower	4	Course was perfect, presentations were short, sweet and full of useful info, course was well run and on time. More of same. Put quiz questions on a slide (and answers), avocado on the lunch menu! Too much information in a short time, either run longer or cut subjects out so we can explore subjects in more depth. More physical symptoms to assess at orchard visit - could be difficult depending on timing. More questions & answer sessions (that I know can take up time), but it's worth it, listening to 'grower experiences' is brilliant. The running of the day ran smoothly, everything ran on time, it would be good to allocate more time to questions and maybe discussions between everyone that was present.
Reseller/agronomist/rep	7	
Growcom & DAF	3	For quizzes have questions on screen, take home messages/resources can be highlighted more and maybe less on detail.

Table 12: General comments about the Avoskills.

Other comments		
Commercial grower	7	Comments from the group should be restricted to relevancy & purpose of workshop. Thank you for the opportunity. Good work by all, tree planting/site selection probably a bit late for most as trees already planted but may help to explain the problems that will come out in the future. Not tech enough in nutrition.
Supervisor/manager	10	Thank you for a great two day workshop, highly recommended and very useful. Well done to all presenters. I would invite more of our people next time. Very good format - info in mornings - field walk in arvo, info presented well with engagement games/quiz, well done. Very happy, well done. Food was good.
Farm staff	3	
New/prospective grower	4	If only this happened in other industries. Course a credit to you all. Highlight was Matt's brief and direct discussion at the farm, identifying suitable persons like him for future workshops = invaluable.
Reseller/agronomist/rep	7	Very helpful overall to me. Very informative 2 days, thank you all very much! Would like to thank all of the DPI for an excellent seminar, very very worthwhile for me, was surprised at the amount of farm managers and new growers, great to see. Thanks for your information.
Growcom & DAF	3	Well done! Fantastic workshop!
		34

# FEEDBACK RESULTS

## AvoSkills workshop Manjimup – 10 & 11<sup>th</sup> March 2020

(49 responses from 60 participants = 82%)

### CATEGORY OF ATTENDEE?

New grower	(NG)	25
Existing commercial grower	(G)	10
Farm supervisor/farm staff	(SUP)	7
Re-seller/ chemical/ fertiliser representative	(RESELL)	4
Prospective grower	(PG)	3

### THE PRESENTATIONS OF MOST INTEREST?

TOPIC	PRESENTER	NG (25)	G (10)	SUP (7)	RESELL (4)	PG (3)	
<b>Phytophthora root rot</b>	<b>Liz Dann</b>	23 79%	9 90%	5 71%	4 100%	2 67%	<b>43</b>
<b>Site selection, spacing, main varieties, rootstocks, site prep, planting</b>	<b>Bridie Carr</b>	8 32%	5 50%	4 80%	3 75%	3 100%	<b>23</b>
<b>Using the Best Practice Resource, AvoAlerts, online forum, other resources</b>	<b>Ebony Faichney</b>	4 16%	1 10%	1 14%	2 50%	1 33%	<b>9</b>
<b>Harvesting and maturity testing</b>	<b>Ebony Faichney</b>	5 20%		1 14%	1 25%		<b>7</b>
<b>Nutrition</b>	<b>Simon Newett</b>	16 64%	6 60%	4 57%	4 100%	1 33%	<b>31</b>
<b>Industry overview &amp; Canopy management</b>	<b>Dudley Mitchell</b>	22 88%	8 80%	7 100%	2 50%	3 100%	<b>42</b>
<b>Awareness other resources</b>		8 32%			3 75%	1 33%	<b>12</b>
<b>Insects and mites</b>	<b>Alison Matthews</b>	10 40%	3 30%	3 43%	3 75%		<b>19</b>
<b>Soil health and mulching</b>	<b>Bridie Carr</b>	21 84%	8 80%	4 57%	4 100%	1 33%	<b>38</b>
<b>Flowering, fruitset &amp; irregular bearing</b>	<b>Ebony Faichney</b>	12 48%	8 80%	5 71%	3 75%		<b>28</b>
<b>Irrigation</b>	<b>Simon Newett</b>	17 68%	8 80%	6 86%	3 75%	3 100%	<b>37</b>
<b>Diseases other than Phytophthora</b>	<b>Liz Dann</b>	11 44%	4 40%	2 29%	3 75%		<b>20</b>
<b>Avocado quarantine issues</b>	<b>Declan McCauley</b>	2 8%		1 14%	1 25%		<b>4</b>
<b>Other disorders</b>	<b>Bridie Carr</b>	5 20%	1 10%	1 14%	1 25%		<b>8</b>

**HOW USEFUL DID YOU FIND THIS WORKSHOP?**

	<b>NG (25)</b>	<b>G (10)</b>	<b>SUP (7)</b>	<b>RESELL (4)</b>	<b>PG (3)</b>	
Extremely useful	11	3	1	3	1	<b>19 (40%)</b>
Very useful	9	4	5	1	2	<b>21 (44%)</b>
Useful	4	3	1			<b>8</b>
Fairly useful	1					
Not useful						

**DID YOU FEEL ABLE TO PARTICIPATE?**

	<b>NG (25)</b>	<b>G (10)</b>	<b>SUP (7)</b>	<b>RESELL (4)</b>	<b>PG (3)</b>	
<b>Yes, many chances</b>	13	3	5	2		<b>23</b>
<b>Yes, some chances</b>	12	7	2	2	3	<b>26</b>
<b>No</b>						

**DO YOU INTEND MAKING ANY CHANGES TO ANY ASPECTS OF HOW YOU OPERATE YOUR BUSINESS OR WORKPLACE AS A RESULT OF ATTENDING AND PARTICIPATING?**

	<b>NG (25)</b>	<b>G (10)</b>	<b>SUP (7)</b>	<b>RESELL (4)</b>	<b>PG (3)</b>	
<b>Yes</b>	19	10	5	3	2	<b>39 (93%)</b>
<b>No</b>	1		2			<b>3</b>

If yes briefly describe:

**NEW GROWER**

- I am a new grower with 30-40% of the orchard not up to scratch, there will be a harder focus on Phytophthora (root rot).
- More mulching and fertiliser monitoring.
- Checking on best practice, water control, mulching, nutrition, canopy management in future years.
- Canopy management, we are on the right track but need to focus on sick trees. Irrigation timing. Nutrition we need to work on.
- Increase mulching, closer monitoring of irrigation and soil moisture, start canopy management.
- Looking at drip lines, clearer idea on my canopy management (young trees so ideal starting point), will need further advice/assistance with Phytophthora management and potential risks/pests & diseases from other crop (olives) on farm & someone to visit orchard to identify issues pests & disease that we are currently dealing with or likely to experience.
- Mulching
- Change pruning technique
- Irrigation and Phytophthora management x2
- Soil microbe testing, more emphasis on mulching program, make modifications to irrigation for weaker trees

- Watering and pest control
- Trial drip line, early pruning plan
- Addition of soil measurement techniques
- Addition of soil management techniques
- Tree maintenance primarily as our orchard is very new. So pruning, soil health and disease prevention was very interesting.
- Maybe make a few improvements and 'hone' the craft.
- Being a new grower there is lots I have learnt and will adopt.
- Canopy management processes and soil health.
- Yes, first I will start by gathering more info on my nutrition & irrigation and making changes accordingly.
- Phytophthora management/ insect/ pest management & awareness, drip irrigation.

**EXISTING GROWER**

- Test one block with phos acid sprays
- Mulching & irrigation & Phytophthora
- More proactive with Phytophthora root rot
- Irrigation monitoring, Phytophthora management
- Looking at different canopy management and maybe drip irrigation on new plantings
- I would look more into salt burn problems, because of both aesthetic and production reasons
- Going to look into dripline irrigation and look into more mulching
- Better Phytophthora management, water management (drip?), canopy management in older trees, improved harvest methods
- Water supply & monitoring, canopy management practices, composting & mulching
- More mulching. More attention to Phytophthora & insects.

**FARM SUPERVISOR/FARM STAFF**

- Tree spacing, harvest, Best Practice Resource, resource use, collaboration & contribution etc
- The workshop has reinforced my knowledge on Phytophthora management – so I am encouraged to keep up with all the management tasks. Also the importance of pruning in regards to overall tree health & production has been refreshed and again I am encouraged to take on this task!
- Monitor soil health better
- More copper sprays. Looking at cool room storage prior to packing. Changing canopy management from staghorning to selective branch removal.
- Better understanding of what we do what we do.

**RESELLERS**

- Yes, been great to be able to learn more about the fruit and the take notes to be able to pass on to other growers down the track.
- Being able to inform clients where and how to find information that is available.
- Yes, given me more confidence talking to growers being a rep.

**PROSPECTIVE GROWERS**

- Irrigation, rootstocks, canopy management
- Has provided some answers to questions I had prior to planting

**HOW MUCH DO YOU FEEL THIS COURSE HAS IMPROVED YOUR KNOWLEDGE OF AVOCADO GROWING**

	<b>NG (25)</b>	<b>G (10)</b>	<b>SUP (7)</b>	<b>RESELL (4)</b>	<b>PG (3)</b>	
<b>Very significantly</b>	4	1	1	3		<b>9</b>
<b>Significantly</b>	12	3	3	1	3	<b>22</b>
<b>Some</b>		5	3			<b>8</b>
<b>A little</b>		1				<b>1</b>
<b>None</b>						



**HOW VALUABLE DID YOU FIND THE FARM VISIT? (Note: there were two farm visits but evaluation sheets were completed prior to the second farm visit - the last item on the agenda)**

	<b>NG (25)</b>	<b>G (10)</b>	<b>SUP (7)</b>	<b>RESELL (4)</b>	<b>PG (3)</b>	
<b>Extremely valuable</b>	7	1		2		<b>10</b>
<b>Very valuable</b>	9	3	2	2	2	<b>18</b>
<b>Valuable</b>	7	4	4		1	<b>16</b>
<b>Fairly</b>	1	2				<b>3</b>
<b>No value</b>						

**HOW DID YOU FIND THE LENGTH OF THE COURSE?**

	<b>NG (25)</b>	<b>G (10)</b>	<b>SUP (7)</b>	<b>RESELL (4)</b>	<b>PG (3)</b>	
<b>Just right</b>	21	6 ½	7	4	3	<b>41 ½</b>
<b>Too long</b>	2	3 ½				<b>5 ½</b>
<b>Too short</b>						

**WAS THE INFORMATION PITCHED AT THE RIGHT LEVEL?**

	<b>NG (25)</b>	<b>G (10)</b>	<b>SUP (7)</b>	<b>RESELL (4)</b>	<b>PG (3)</b>	
<b>Just right</b>	18 ½	7	5 ½	4	3	<b>38</b>
<b>Too technical</b>	½					<b>½</b>
<b>Not technical enough</b>	3	2	1 ½			<b>6 ½</b>

**DID YOU ENJOY THE QUIZZES AND EXERCISES (PICTURE GAMES etc)?**

	<b>NG (25)</b>	<b>G (10)</b>	<b>SUP (7)</b>	<b>RESELL (4)</b>	<b>PG (3)</b>	
<b>Yes</b>	12	6	4	4	3	<b>29</b>
<b>Sort of</b>	10	1	3			<b>14</b>
<b>No</b>	1	2				<b>3</b>

**WERE THE INFORMATION RESOURCES (HARDCOPY AND INTERNET) PROVIDED, OR THAT YOU WERE MADE AWARE OF, VALUABLE?**

	<b>NG (25)</b>	<b>G (10)</b>	<b>SUP (7)</b>	<b>RESELL (4)</b>	<b>PG (3)</b>	
<b>Yes</b>	22	8	7	4	3	<b>44</b>
<b>Sort of</b>	1	1				<b>2</b>
<b>No</b>						

**IN RUNNING THE DAY, HOW COULD WE IMPROVE IT?**

**NEW GROWER**

- It was spot on
- Coffee water sometimes too cold
- Better coffee
- More food
- Start earlier
- Start the day at 8:30am to allow for travellers (SN - we did)
- Change groups, break into smaller groups (SN - there were 6 to a group, 10 groups)
- Think it was well done
- Less repetition!! Talk/screen show same!
- Stronger focus on local issues/pests rather than ones not present in WA
- **Nothing. I think it was run great and it made people not only listen but try and pay attention to what was being conveyed.**
- N/A
- The pens were not very good
- Some of the terminology/acronyms used – it was assumed that all understood. More info on irrigation methodology.

**EXISTING GROWER**

- Perhaps less 'reading' of PowerPoints and more direct talk to participants – two presenters were good in this aspect
- Was good. I didn't know much about the course prior to getting here. Maybe more clear info prior.
- Not making it so long, talk more about the different subjects (SN ???)
- Constant snacks
- Only a minor comment – a better PA system would ensure that no points will be missed by the audience. The clarity was not very sharp in the back of the room
- Don't know. You guys did a great job.

**FARM SUPERVISOR/FARM STAFF**

- Repetition from slide shows were bit long to then be repeated by the speaker. Other than that I found the course very informative.
- Please protect audience from known infections – presenter – only minor cold but too busy to afford to catch!
- I thought it was a good mix of topics & knowledge levels

**RESELLERS**

- Keep researching so we can improve our business.
- More activities after each topic so we think of it as a group while it is still fresh to help remember for some.
- I was hoping to get more specific information about nutrition requirements and fertiliser regimes.

**PROSPECTIVE GROWERS**

- Maybe provide a glossary of terms for beginners
- First event for me so thought it was OK

## ANY OTHER COMMENTS?

### **NEW GROWER**

- Thank you x4
- Thank you for all your efforts & organisation, very much appreciated.
- Great couple of days
- It was also great to network with other growers and industry people
- Interested in salt tolerance
- Thanks, would love more courses like this, maybe more 'how to' courses
- Well done. Thanks for all your work.
- Excellent effort
- Very good
- Thanks! Hope you will run more of these in the future.

### **EXISTING GROWER**

- Needs to be more orchard trials on sprays and soil biology enhancement nutrition
- Salt burn
- No, all was great
- Super excited to roll out improvements on my existing orchard, thank you so much
- Congratulations Bridie, Ebony and Simon for a very informative, sharply focussed forum on the core issues of successfully growing quality avocados. Thank you – these last 2 days will be very beneficial in improving my business practices.
- Thanks for the time & effort put into doing this. It was a lot of work.

### **FARM SUPERVISOR/FARM STAFF**

- Great, great, many thanks to all.
- Thank you for the workshop!!
- Thanks for the opportunity & course

### **RESELLERS**

- Very informative couple of days
- Thought the mix of talks in morning and visits in the pm worked extremely well.
- Very knowledgeable speakers, thanks.

### **PROSPECTIVE GROWERS**

- Very informative – well worth attending

## **ADDITIONAL COMMENTS BY ORGANISING TEAM & PRESENTERS – please add your comments**

- *We need to include management of salty water & soil in regions affected (SN)*
- *Include a glossary of terms & acronyms (SN)*
- *Have hand sanitiser on each table (SN)*
- *Where possible tailor presentations more to local conditions (SN)*
- *Ditch the AAL pens! (SN)*
- *The comments from resellers show that we achieved our aim with this group justifying their inclusion (SN)*

## **ADDITION COMMENTS FROM DEBRIEF 25 MAR 2020, BC, EF & SN**

- *Need wider range of delivery e.g. some activities outside hall (may be determining soil texture, pH testing of soil, ID of actual samples such as deficiencies, disease damage, pests & pest damage etc)*
- *Perhaps combine some tables (teams) for particular exercises to allow more mixing of students*
- *Have snacks on tables*
- *Try not to read PPT slides*



# FEEDBACK RESULTS

## AvoSkills workshop – 21 & 22 Sep 2021 - Bundaberg

(30 responses from 40 participants (some DAF & presenters excluded to remove bias) = 88%)

### CATEGORY OF ATTENDEE?

New grower	(NG) 7
Existing commercial grower	(G) 7
Farm supervisor/farm staff	(SUP) 9
Re-seller/ chemical/ fertiliser representative	(RESELL) 6
Prospective grower	(PG) 1

### THE PRESENTATIONS OF MOST INTEREST?

TOPIC	PRESENTER	NG (7)	G (7)	SUP (9)	RESELL (6)	PG (1)	30
Phytophthora root rot	Liz Dann	7	5	7	6	1	<b>26 (87%)</b>
Rootstocks	Hanna Toegel	6	3	5	5	1	<b>20 (67%)</b>
Nutrition	Chris Searle	6	4	5	5	1	<b>21 (70%)</b>
Canopy management	Helen Hofman	5	4	4	4		<b>17 (57%)</b>
Preharvest effects on postharvest	Daryl Joyce	4	3	2	2	1	<b>12 (40%)</b>
Industry overview	Eric Carney	3	3	1	0		<b>7 (23%)</b>
Awareness other resources	<i>Throughout</i>	4	2	2	2		<b>10 (33%)</b>
Insect pests	Eddy Dunn	5	5	6	5	1	<b>22 (73%)</b>
Mulching	Chris Searle	4	2	6	3		<b>15 (50%)</b>
Flowering, fruitset & irregular bearing	Bridie Carr	4	4	5	4	1	<b>18 (60%)</b>
Irrigation	Simon Newett & Jamie Zapp	5	5	8	4	1	<b>23 (77%)</b>
Diseases other than Phytophthora	Liz Dann	3	3	4	4	1	<b>11 (37%)</b>

**HOW USEFUL DID YOU FIND THIS WORKSHOP?**

	<b>NG (7)</b>	<b>G (7)</b>	<b>SUP (9)</b>	<b>RESELL (6)</b>	<b>PG (1)</b>	<b>30</b>
Extremely useful	4	4	4	2		<b>14 (47%)</b>
Very useful	2	1	4	3	1	<b>11 (37%)</b>
Useful	1	2	1	1		<b>5 (17%)</b>
Fairly useful						
Not useful						

**DID YOU FEEL ABLE TO PARTICIPATE?**

	<b>NG (7)</b>	<b>G (7)</b>	<b>SUP (9)</b>	<b>RESELL (6)</b>	<b>PG (1)</b>	<b>29</b>
<b>Yes, many chances</b>	5	5	6	5	1	<b>22 (76%)</b>
<b>Yes, some chances</b>	1	2	3	1		<b>7 (24%)</b>
<b>No</b>						

**DO YOU INTEND MAKING ANY CHANGES TO ANY ASPECTS OF HOW YOU OPERATE YOUR BUSINESS OR WORKPLACE AS A RESULT OF ATTENDING AND PARTICIPATING?**

	<b>NG (7)</b>	<b>G (7)</b>	<b>SUP (9)</b>	<b>RESELL (6)</b>	<b>PG (1)</b>	<b>26</b>
<b>Yes</b>	4	7	6	5	1	<b>23 (88%)</b>
<b>No</b>			3			<b>3 (12%)</b>

If yes briefly describe:

**NEW GROWER**

- Pretty much all aspects, as we are very new to tree crops
- Interrow management
- Increased knowledge – recognition of boron deficiency. Management practices – decimal point is important. PRR management front and centre at all times. Rootstock – information to inform decision making processes for new plants. Holistic approach to PRR.
- I have a newly planted orchard and this will help me with all my decisions moving forward
- Changes in all aspects

**EXISTING GROWER**

- More monitoring, pulse irrigation and a 12 month plan
- Install tensiometers to validate capacitance probes

- Looking to refine some practices that are currently in place
- Monitoring application of chemicals as per fruit set timing to optimise fruit set
- Drainage, canopy control, nutrition and irrigation
- PRR management, canopy management and irrigation
- Closer monitoring of water

**FARM SUPERVISOR/FARM STAFF**

- Making a water budget. Using more beneficials throughout the orchard and look at more ways to get better light
- More mulching and better irrigation. Pest in avos – farm visits. Flowering and fruitset.
- Our whole knowledge base has increased so every aspect will have changes made
- Will be performing more day to day looking over the farm
- We will be applying phos acid sprays change a few of our nutrition levels with boron and look at applying beneficial insects
- Be more observant

**RESELLERS**

- Water management, mulch management, pest monitoring, disease monitoring
- Better able to speak with growers
- Help my growers with better nutrition information based around rootstock
- More accurate fertiliser recommendations specific to avocados. Better advice to help soil and orchard health and disease management
- Fertiliser application timing and mulching
- Continue to evolve avocado management skills

**PROSPECTIVE GROWERS**

- Keeping more of an eye out for things learnt in this course

**HOW MUCH DO YOU FEEL THIS COURSE HAS IMPROVED YOUR KNOWLEDGE OF AVOCADO GROWING**

	<b>NG (7)</b>	<b>G (7)</b>	<b>SUP (9)</b>	<b>RESELL (6)</b>	<b>PG (1)</b>	<b>30</b>
<b>Very significantly</b>	2	2	1	1		<b>6 (20%)</b>
<b>Significantly</b>	3	2	5	4	1	<b>15 (50%)</b>
<b>Some</b>	2	3	3	1		<b>9 (30%)</b>
<b>A little</b>						
<b>None</b>						

**HOW VALUABLE DID YOU FIND THE FARM VISIT? (Note: there were two farm visits but evaluation sheets were completed prior to the second farm visit - the last item on the agenda)**

	<b>NG (7)</b>	<b>G (7)</b>	<b>SUP (9)</b>	<b>RESELL (6)</b>	<b>PG (1)</b>	<b>29</b>
<b>Extremely valuable</b>	1	1	1			<b>3 (10%)</b>
<b>Very valuable</b>	3	2	4	1		<b>10 (34%)</b>
<b>Valuable</b>	1	4	4	5		<b>14 (48%)</b>
<b>Fairly</b>	2					<b>2 (7%)</b>
<b>No value</b>						

**HOW DID YOU FIND THE LENGTH OF THE COURSE?**

	<b>NG (7)</b>	<b>G (7)</b>	<b>SUP (9)</b>	<b>RESELL (6)</b>	<b>PG (1)</b>	<b>29</b>
<b>Just right</b>	7	6	8	5	1	<b>27 (93%)</b>
<b>Too long</b>				1		<b>1 (3%)</b>
<b>Too short</b>		1				<b>1 (3%)</b>

**WAS THE INFORMATION PITCHED AT THE RIGHT LEVEL?**

	<b>NG (7)</b>	<b>G (7)</b>	<b>SUP (9)</b>	<b>RESELL (6)</b>	<b>PG (1)</b>	<b>30</b>
<b>Just right</b>	7	7	8	6	1	<b>29 (97%)</b>
<b>Too technical</b>						<b>0</b>
<b>Not technical enough</b>						<b>1 (3%)</b>

**DID YOU ENJOY THE QUIZZES AND EXERCISES (PICTURE GAMES etc)?**

	<b>NG (7)</b>	<b>G (7)</b>	<b>SUP (7)</b>	<b>RESELL (6)</b>	<b>PG (1)</b>	<b>30</b>
<b>Yes</b>	4	6	8	5	1	<b>24 (80%)</b>
<b>Sort of</b>	3	1	1	1		<b>6 (20%)</b>
<b>No</b>						

**WERE THE INFORMATION RESOURCES (HARDCOPY AND INTERNET) PROVIDED, OR THAT YOU WERE MADE AWARE OF, VALUABLE?**

	<b>NG (7)</b>	<b>G (7)</b>	<b>SUP (7)</b>	<b>RESELL (6)</b>	<b>PG (1)</b>	<b>30</b>
<b>Yes</b>	7	7	8	6	1	<b>29 (97%)</b>
<b>Sort of</b>			1			<b>1 (3%)</b>
<b>No</b>						

**IN RUNNING THE DAY, HOW COULD WE IMPROVE IT?**

**NEW GROWER**

- All good
- Well organised and put together, thank you.

**EXISTING GROWER**

- Closer farm walk
- N/A
- Maybe three days? As there is a lot to cover. Nutrition missed out kind of and the sound was a bit off but oh well
- Speakers were a little rushed
- Beer at lunch time

**FARM SUPERVISOR/FARM STAFF**

- All good
- I found it perfect
- None required
- It was good
- None

**RESELLERS**

- Was run very well
- Less content
- Shorten up workshop to accommodate off work resource allocation/maybe more applicable to commercial operators?

**PROSPECTIVE GROWERS**

- Booklets more organised/in order but understandable due to date change



## ANY OTHER COMMENTS?

### **NEW GROWER**

- Great workshop – thank you to everyone involved
- Well done

### • **EXISTING GROWER**

- Well thought out and well run. Having large handout/booklet is very useful in case things are missed and helps with revisiting it later – very good!
- Thank you for running workshops like this!
- Very professional workshop. Thank you for all your wealth of knowledge

### **FARM SUPERVISOR/FARM STAFF**

- Lunch/morning tea was excellent
- Speakers informative
- No

### **RESELLERS**

- The booklet is a great resource
- Trivia is not my strong point

### **PROSPECTIVE GROWERS**

- Very informative – well worth attending

## ADDITIONAL COMMENTS BY ORGANISING TEAM & PRESENTERS –

*I thought it was great. The games broke the day up, but also reinforced the information.*

*Most of the talks were really good and clearly delivered by people who knew what they were talking about  
Definitely learned a lot and enjoyed myself too*

*Maybe more comprehensive page/pages of web links to more information*

*The games and quizzes really helped reinforce the information*

*Dedicated teams are good*

*Number of people participating is about right to allow useful interaction and mingling in the breaks*

*Great venue and food – plenty of space to facilitate discussions and informal interactions. Well done.*

*Starburst lollies were very difficult to unwrap*

*Facilitate greater interaction between individuals – people gravitate to friends/neighbours. The mix on tables was a good technique.*



## FEEDBACK RESULTS

### AvoSkills workshop – 12&13 May 2022 - Mildura

*(17 responses from 20 participants on DAY 2 = 85%)*

#### CATEGORY OF ATTENDEE?

New grower	(NG)	1
Existing commercial grower	(G)	10
Farm supervisor/farm staff	(SUP)	1
Re-seller/ chemical/ fertiliser representative	(RESELL)	2
Agronomist	(AG)	3

#### THE PRESENTATIONS OF MOST INTEREST?

TOPIC	NG (1)	G (10)	SUP (1)	RESELL (2)	AG (3)	17
Phytophthora root rot	1	7		1	3	<b>12 (71%)</b>
Rootstocks	1	5			1	<b>7 (41%)</b>
Nutrition	1	9		2	2	<b>14 (82%)</b>
Canopy management	1	7	1		1	<b>10 (59%)</b>
Managing climate extremes		3				<b>3 (18%)</b>
Awareness other resources		4			1	<b>5 (29%)</b>
The avocado		2				<b>2 (12%)</b>
Avocado water needs	1	6				<b>7 (41%)</b>
Soil health & mulching	1	9		1	2	<b>13 (76%)</b>
Flowering, fruitset & irregular bearing	1	7		1	3	<b>12 (71%)</b>
Irrigation	1	6			1	<b>8 (47%)</b>
Other diseases		3			1	<b>4 (24%)</b>

#### HOW USEFUL DID YOU FIND THIS WORKSHOP?

	NG (1)	G (10)	SUP (1)	RESELL (2)	AG (3)	17
Extremely useful	1	7	1	1	3	<b>13 (76%)</b>
Very useful		2		1		<b>3 (18%)</b>
Useful		1				<b>1 (6%)</b>
Fairly useful						
Not useful						

**DID YOU FEEL ABLE TO PARTICIPATE?**

	<b>NG (1)</b>	<b>G (10)</b>	<b>SUP (1)</b>	<b>RESELL (2)</b>	<b>AG (3)</b>	<b>17</b>
<b>Yes, many chances</b>	1	9	1	1	3	<b>15 (89%)</b>
<b>Yes, some chances</b>		1		1		<b>2 (11%)</b>
<b>No</b>						

**DO YOU INTEND MAKING ANY CHANGES TO ANY ASPECTS OF HOW YOU OPERATE YOUR BUSINESS OR WORKPLACE AS A RESULT OF ATTENDING AND PARTICIPATING?**

	<b>NG (1)</b>	<b>G (10)</b>	<b>SUP (1)</b>	<b>RESELL (2)</b>	<b>AG (3)</b>	<b>16</b>
<b>Yes</b>	1	10	1	2	2	<b>16 (100%)</b>
<b>No</b>						

If yes briefly describe:

**NEW GROWER**

- Watering, fertigation methods, more mulching and **more foliar spray**

**FARM SUPERVISOR**

- I think we have the mix very right at the moment except we need to increase pruning activities and one block probably has a little PRR. Additionally we will look at sprinkler outputs at top of block vs the bottom.

**EXISTING GROWER**

- One old block in particular needs changes as it has water issue in bottom corner so irrigation change, pruning, and addition of more mulch will help
- Canopy management, nutrition management and irrigation management
- Irrigation distribution, more mulching, open canopy up and harass tutors for more information
- Yearly program for ensuring tree health and good yields so not to miss critical times/processes
- Will do an overview of various aspects including pruning, mulching and irrigation timing
- Pruning my trees and nutrition
- Apply gypsum and grow more in the inner row and throw across as mulch
- Look at values to stop irrigation 'drain at'
- Look and feel as I walk through and be more conscious to requirements at critical times – nutritional and apply holistic approach to PRR
- All the above
- More attention to mulching mature trees on the farm
- Rededicate ourselves to canopy management through intensive pruning and follow up with regrowth management

**RESELLERS**

- The area or orchard prior what was grown
- Not major change just more consideration/awareness

**AGRONOMISTS**

- I intend to check our current practices and check what we are doing wrong. Possibly, focus more on soil health and conditioning (very high pH area)
- I intend to analyse the pruning techniques and nutrient management provided by this course and will try to execute as much of it as I can

**HOW MUCH DO YOU FEEL THIS COURSE HAS IMPROVED YOUR KNOWLEDGE OF AVOCADO GROWING**

	<b>NG (1)</b>	<b>G (8)</b>	<b>SUP (1)</b>	<b>RESELL (2)</b>	<b>AG (3)</b>	<b>12</b>
<b>Very significantly</b>		2		1	1	<b>4 (33%)</b>
<b>Significantly</b>		4			2	<b>6 (50%)</b>
<b>Some</b>		2				<b>2 (17%)</b>
<b>A little</b>						
<b>None</b>						

**HOW VALUABLE DID YOU FIND THE FARM VISIT?**

	<b>NG (1)</b>	<b>G (7)</b>	<b>SUP (1)</b>	<b>RESELL (2)</b>	<b>AG (3)</b>	<b>11</b>
<b>Extremely valuable</b>		2		1		<b>3 (27%)</b>
<b>Very valuable</b>		3			1	<b>4 (36%)</b>
<b>Valuable</b>		2			2	<b>4 (36%)</b>
<b>Fairly</b>						
<b>No value</b>						

**HOW DID YOU FIND THE LENGTH OF THE COURSE?**

	<b>NG (1)</b>	<b>G (8)</b>	<b>SUP (1)</b>	<b>RESELL (2)</b>	<b>AG (3)</b>	<b>13</b>
<b>Just right</b>		7		1	3	<b>11 (85%)</b>
<b>Too long</b>						<b>1 (8%)</b>
<b>Too short</b>		1				<b>1 (8%)</b>

**WAS THE INFORMATION PITCHED AT THE RIGHT LEVEL?**

	<b>NG (1)</b>	<b>G (7)</b>	<b>SUP (1)</b>	<b>RESELL (2)</b>	<b>AG (3)</b>	<b>11</b>
<b>Just right</b>		7		1	3	<b>11 (100%)</b>
<b>Too technical</b>						

**DID YOU ENJOY THE QUIZZES AND EXERCISES (PICTURE GAMES etc)?**

	NG (1)	G (8)	SUP (1)	RESELL (2)	AG (3)	12
Yes		4		1	3	8 (67%)
Sort of		4				4 (33%)
No						

**WERE THE INFORMATION RESOURCES (HARDCOPY AND INTERNET) PROVIDED, OR THAT YOU WERE MADE AWARE OF, VALUABLE?**

	NG (1)	G (7)	SUP (1)	RESELL (3)	AG (3)	16
Yes		7		6	3	16 (100%)
Sort of						
No						

**IN RUNNING THE DAY, HOW COULD WE IMPROVE IT?**

**AGRONOMISTS**

- It was great!

**EXISTING GROWER**

- Just keep it like this!!
- It was just right
- It was great!
- Done well



**ANY OTHER COMMENTS?**

**AGRONOMISTS**

- Thank you!
- Great workshop and great chance to get such information in a single session, thank you for that!

**FARM SUPERVISOR/FARM STAFF**

- Thank you for an interesting couple of days!!

**EXISTING GROWER**

- I have been growing for 34 years and this was the BEST EVER. Inspires me to put more into being a successful and happy avocado grower. Many many thanks to you all – Doug.

# AVOSKILLS FEEDBACK PORT MACQUARIE 14 - 15 JUNE 2022

Table 1: Avoskills participants representation

Participants	
Commercial grower	15
Supervisor/manager	5
Farm staff	5
New/prospective grower	0
Reseller/agronomist/rep	2
Growcom & DAF	4
	<u>31</u>

Table 2: Avoskills score from the participants

Usefulness	Not	Fairly	Useful	Very	Extremely
	0	0	2	8	16

Table 2: Did the participants feel that they had the opportunity to participate during the events?

Able to participate	No	Some chances	Many chances
	0	6	18

Table 3: Did the participation in the Avoskills improve your knowledge?

Improved your knowledge	None	A little	Some	Significantly	V significantly
	0	0	6	9	6

Table 4: Was the farm visit valuable?

Value of farm visit	None	Fairly	Valuable	Very valuable	Ext valuable
	0	1	3	7	5

Table 5: How was the length of the courses?

Length of course	Too long	About right	Too short
	1	17	2

Table 6: Was the information pitched at the right level?

Pitch of info	Too tech	About right	Not tech enough
		18	2

Table 7: Did you enjoy the quizzes, games and other related activities?

Enjoy quizzes, games etc	Yes	Sort of	No
	13	2	0

Table 8: Did you find the resources provided were valuables?

Value of resources provided	Yes	Sort of	No
	16	2	

Table 9: Avoskills presentation that generated the most interest from the participants

Presentation of most interest	PC	The avocado	Rootstocks	Soil health	Nutrition	Irrigation	Fruit diseases	Harvest	Fruit robust	Flower & set	General awareness resources
	22	5	6	18	21	11	14	4	4	9	6

## AV17005 Wholesaler Workshops

*Noel Ainsworth – Supply Chain Horticulturist*

The main objectives of the 'wholesaler workshops' were to make contact with wholesalers, ripeners and consolidators, to build and maintain awareness and understanding of industry best practice and technical developments in the correct post-harvest handling of avocado to achieve the best fruit quality outcomes and finally to share the results of the AV18000 project supply chain audits.

During the first year (2019) of the AV17005 project five wholesaler workshops were conducted to keep wholesalers, ripeners and market-based personnel aware of industry trends and the latest findings to improve fruit quality through avocado supply chains.

These workshops were conducted by Queensland Department of Agriculture and Fisheries and Avocados Australia staff in Perth (7/6/19), Brisbane (14/10/19), Sydney (16/10/19), Melbourne (17/10/19) and Adelaide (18/10/19).

Although the attendance rates at the workshops were low (22% of the 228 people invited), over 90% of those who attended rated the workshop as useful, very useful or extremely useful. All attendees suggested that they had some or many chances to participate in the workshop and interestingly 95% learnt something new while 86% of participants made new contacts during the events.

Participants were made up of wholesalers, ripeners, consultants and other service providers and 74% indicated an interest in the industry update and 63% interest in the technical update sessions. Seventy percent of participants said that they would make changes in their business as a result of the workshops, mainly focused around improving supply chain management but also looking into new export markets.

During the third year (2021) of the AV17005 project, three events were held to fit within covid travel restrictions. The first wholesaler meeting in this second round of capital city meetings took place as a face-to-face meeting at the Perth Markets in Canning Vale WA (25/6/21), the second face to face workshop at the Qld Wholesale markets in Rocklea, Brisbane (18/10/21) and the third as a national wholesaler webinar targeting engagement with wholesalers and ripeners in NSW, Vic and SA (20/10/21). Participants were invited by email, and then selectively by text and phone calls.

Again, the attendance rate of the workshops/webinar was low in WA (11% of the 38 invited), Qld (20% of the 90 invited) and the national webinar (5% of the 315 invited), polling found that all attendees found the session useful and 88% of attendees were likely to make changes as a result of attending and participating in the webinar.

The events were all run with a similar approach providing an overview of the industry including recent planting trends, regional production forecasts and recent regional trends in quality and findings from ripener audits. While 10 face to face events were planned, only seven face to face workshops and one webinar were delivered due to covid travel restrictions. The polling at events demonstrated their success in not only the delivery of emergent information on avocado industry and quality trends, but importantly they opened an opportunity to discuss issues of shared interest between wholesalers, ripeners, peak industry body personal and RD&E delivery partners. The interaction of this group simply would not have happened without these events due to the fact that the wholesalers and ripeners targeted are extremely busy people, often working shifts from 1am to 9am daily and working across 20 commodities. They also are responsible for a small but vulnerable specialised workforce heavily impacted and pressured by covid while often trying to maintain



operations in wholesale, ripening and retail businesses. Engaging with them in focused discussions about avocados even for 1-2 hours at a time was mutually invaluable. Given the multiple pressures, the engagement with those wholesalers in which avocados are a significant part of their business was high. Key to this success was using multiple communication channels to secure attention, especially text messaging. In comparison the engagement with those wholesalers who only occasionally deal with avocados was low.

The engagement with the 'avocado' wholesalers was not only of benefit to the AV17005 project in lifting awareness of industry, quality and handling issues, but also proved valuable for the ongoing collaboration in monitoring quality through national supply chains in project AV18000.

# Irrigation Summit survey

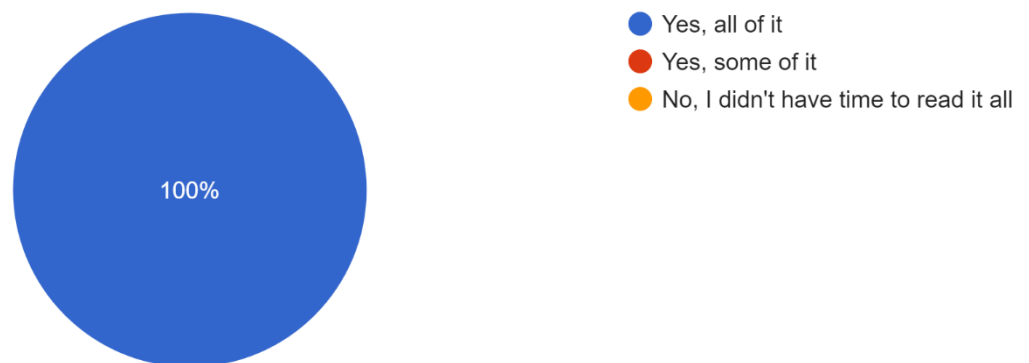
## Content

Q1: Did you read this material beforehand? .....	1
Q2: Do you have any general comments or suggestions regarding the pre-summit material?.....	1
Q3: How did you find the length of the summit? .....	2
Q4: Any comments or suggestions regarding the length or format of the summit? (how did you find starting at lunchtime on day 1 and ending at lunch on day 2?) .....	2
Q5: Do you feel you had sufficient opportunities and time to contribute? .....	3
Q6: How did you find the 'small group work' activity sessions?.....	3
Q7: How did you find the 'large group work' activity sessions? .....	3
Q8: How useful did you find Udi Gafni's presentation? .....	4
Q9: Any comments?.....	4
Q10: How useful did you find Michael Forster's presentation? .....	5
Q11: Any comments?.....	5
Q12: Overall, how did you find the summit? Did you leave happy with what the group had discussed/covered/achieved? .....	5
Q13: Have you had any further thoughts on irrigation since the summit or general comments about the event that you'd like to add?.....	6

## Pre-summit reading material and information

### Q1: Did you read this material beforehand?

8 responses



### Q2: Do you have any general comments or suggestions regarding the pre-summit material?

8 responses

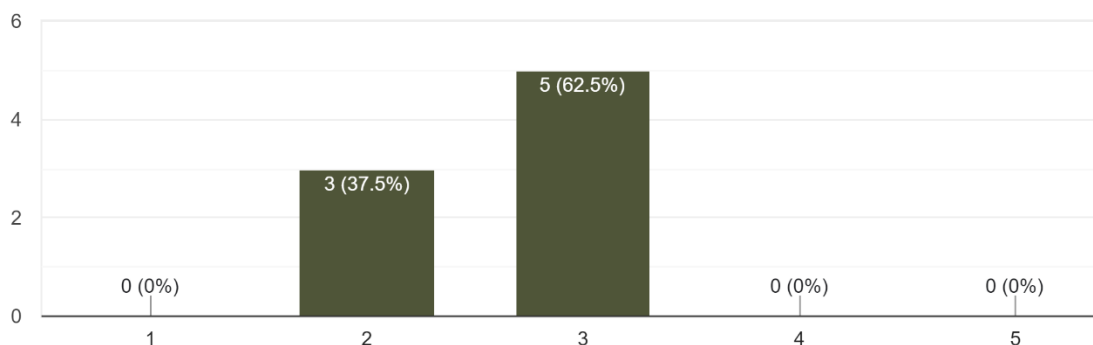
- Gave a good base for the discussion at the summit. I think most had read the materials and any conversations I had around the pre-summit material seemed to be well known by the attendees.
- Very comprehensive
- No it was very comprehensive
- The irrigation literature review was comprehensive and contained a wealth of information to help improve / change irrigation practices in the industry. More detail could have been collected from growers to further understand grower practices when it comes to irrigation. It would of been good to survey a larger number of growers. I am not convinced on the way growers were categorised into groups of advanced and experienced growers to summarise Australian practices.
- Would have been nice to have paper format posted to us before the course instead of giving it to us at the course
- All good. Setup the Summit
- Very comprehensive. I found it too technical in places for me, so the presentation summarising key points was personally beneficial
- As the literature review was only based on peer reviewed literature, there probably could have been a lot more recent information regarding technology available that may have been missed. I understand you have to draw the line somewhere. It was a good introduction. Some of the international surveys were a little limiting as only had 1 or 2 participants included.

## Summit format and sessions

### Q3: How did you find the length of the summit?

0 too short 5 too long

8 responses



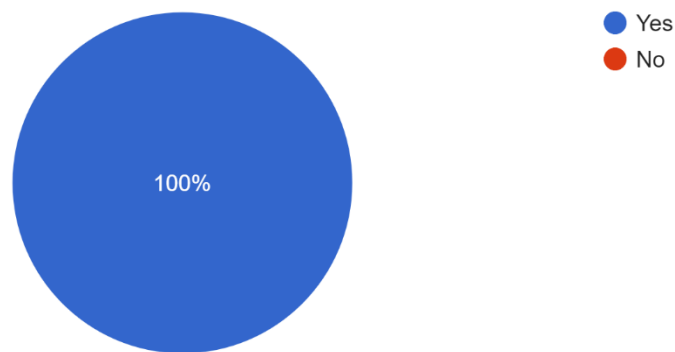
### Q4: Any comments or suggestions regarding the length or format of the summit? (how did you find starting at lunchtime on day 1 and ending at lunch on day 2?)

7 responses

- It worked in well with the travel and gave an opportunity for discussion either side of the summit as well as at the dinner. The hotel was organised for the early check-ins which made the format easier as well.
- Was really great. It felt let it could have gone on longer, but that balance is probably alright...but yeah, longer would have been ok
- Possibly needed more time to discuss various areas
- Lunch is good with travelling
- Good idea for managing travel and also allow social event overnight
- I thought it was long enough to be away from farm etc but it felt rushed during the sessions.
- There are pros and cons- To minimise losing 2 work days it might have been better to squeeze it all into a day, however breaking it up I think made it a little more relaxed, but required a little more energy to get going again in the morning

## Q5: Do you feel you had sufficient opportunities and time to contribute?

8 responses



## Q6: How did you find the 'small group work' activity sessions?

8 responses

- I think they worked fairly well. I would suggest maybe using the DAF/AAL staff as facilitators for the groups as I think this would have assisted these processes.
- Generally Good
- Good
- Working in small groups was good.
- Once we got the hang of it they were fine
- All ok although a little basic at times
- Good, but rushed.
- Small group worked well. However a lot of lost time as groups moved around and got organised, There was some confusion around topics and particulars initially.

## Q7: How did you find the 'large group work' activity sessions?

8 responses

- Very good. They were well facilitated and everyone got good opportunity to give their opinion. There was also good opportunity for small discussion around individual points as they were raised.

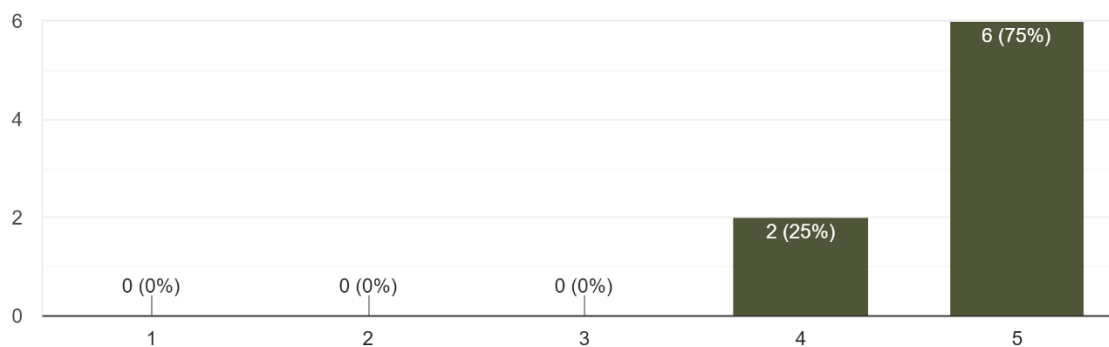
- Good
- Good
- Large group activities was more valuable then in smaller groups.
- The directive of some activity was unclear
- They were fine and everyone had the opportunity to speak
- Well facilitated. Everyone was given opportunity
- I liked the open forum and people throw their ideas/experiences out to the group.
- It works if you have a robust crowd, which I think most people were able to give their opinions- the WA guys it was difficult, due to not being in the room.
- Do you have any comments or suggestions regarding any of the sessions?
- 3 responses
- As the group was not overly large, I think that the large sessions were more beneficial than the small group work. I think we could have covered off all of the topics as a large group which would have given everyone a chance to be involved in all of the components. This would also have allowed better facilitation of the small group activities.
- The "rabbit paddock" idea was a good one and kept the summit moving and on task.
- First breakout session seemed short
- I think too much time was spent summarising the papers we were all meant to have read, maybe could have made everyone prepare a few questions each for interested topics?

## Guest speakers

### Q8: How useful did you find Udi Gafni's presentation?

0 not useful 5 extremely useful

8 responses



### Q9: Any comments?

7 responses

- Very useful and relevant to the summit. Excellent summaries of the history of their transition to drip as well as the evolution of their watering strategies. Also their management of poor water quality is something that I don't think we (in CQ) have fully engaged on and i think we need to. Would like to know whether they actually prefer drip or sprinkler and whether they

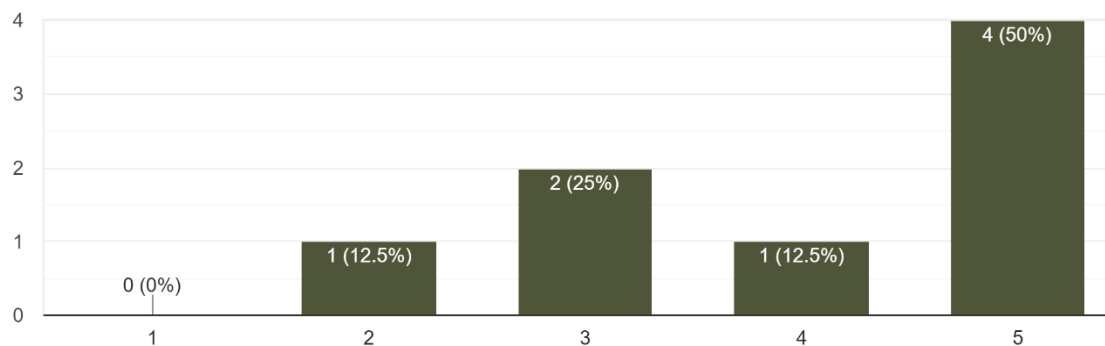
would have changed if they had the choice? Or equally are they glad that they were forced to change?

- Interesting how people were still reluctant to trust info on drip irrigation afterwards
- Good presentation set out clearly with a sound message
- Hard to do via zoom but there is no other option. The delay was annoying so maybe there is a better internet platform???
- Fitted in perfectly
- Very insightful. I found this very interesting.
- Was great to see a country so confident with drip Irrigation

### Q10: How useful did you find Michael Forster's presentation?

0 not useful 5 extremely useful

8 responses



### Q11: Any comments?

5 responses

- This is a very rapidly developing area. Need to do review this area every couple of years
- Was a very good presentation and was very factual. I was so impressed we are implementing his system on our farm.
- Useful in the point that it highlighted that some consultants are out of touch
- Very interesting. I'm still unsure of the reliability and practicality of this tech.
- For me, this technology is the way to answer a lot of tree physiology water use questions.

### Q12: Overall, how did you find the summit? Did you leave happy with what the group had discussed/covered/achieved?

8 responses

- I found it very useful. I think the focus points identified were relevant and can make a difference to our business and the industry. I am concerned that the prioritising process may limit the scope and opportunity of what was discussed.
- Happy...well controlled. More time for last 2 hours
- Yes very happy

- The summit went well but I am unsure how the outcomes will improve best practice for industry.
- The group interacted well and was a good collection of people from different parts of industry.
- Very happy with realising that there are systems out there to take the guess work out of irrigation. I've been actively looking for this and was very thankful to be invited to the summit.
- I am. Main issue is if AAL are happy
- I thought it was good. A little bit rushed. A lot of information to cover and then quickly pull together key points for industry action.
- Overall I was happy that we had a good discussion, put some things on the table- I felt we were a little rushed for the most important part, coming up with ideas for research and extension.

### **Q13. Have you had any further thoughts on irrigation since the summit or general comments about the event that you'd like to add?**

6 responses

- I think the focus on management of water quality is something we need to get a better understanding of and make sure our processes include this. Overall I thought the summit was well planned, well executed and will add value to anyone who attended as well as the broader industry.
- Yes, have had further thoughts on irrigation.
- Possibly need more discussion time
- The avocado industry can learn a lot from other industries that have to use irrigation.
- It was very successful. It was well run and I have been doing a lot of thinking and research since the summit to implement what I learnt.
- Not really, I think we covered most. I have a slight feeling of concern that there was a little too much focus on tensiometers and KC factors. Very old technology and in my experience lucky to work 50% of the time.

# Canopy Management Summit Survey

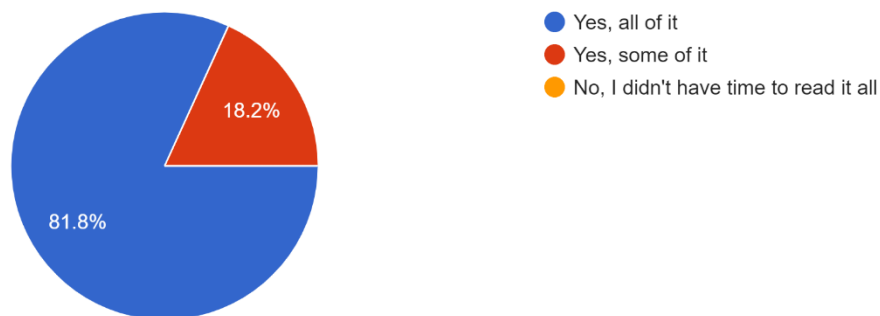
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Q5: Do you feel you had sufficient opportunities and time to contribute? .....	3
Q6: Do you have any comments or suggestions regarding any of the sessions? e.g. regional group work .....	3
Q7: How useful did you find Bram Sjnider's presentation?.....	4
Q8: Any comments? .....	4
Q9: How useful did you find Francisco Mena's presentation? .....	4
Q10: Any comments?.....	5
Q11: What (useful?) new messages or insights about canopy management did you get from the review as a whole?.....	5
Q12. Overall, how did you find the summit? Did you leave happy with what the group had discussed/covered/achieved? .....	6
Q13. Have you had any further thoughts on canopy management since the summit or general comments about the event that you'd like to add? .....	6

## Pre-summit reading material and information

### Q1: Did you read this material beforehand?

11 responses





## Q2: Do you have any general comments or suggestions regarding the pre-summit material?

11 responses

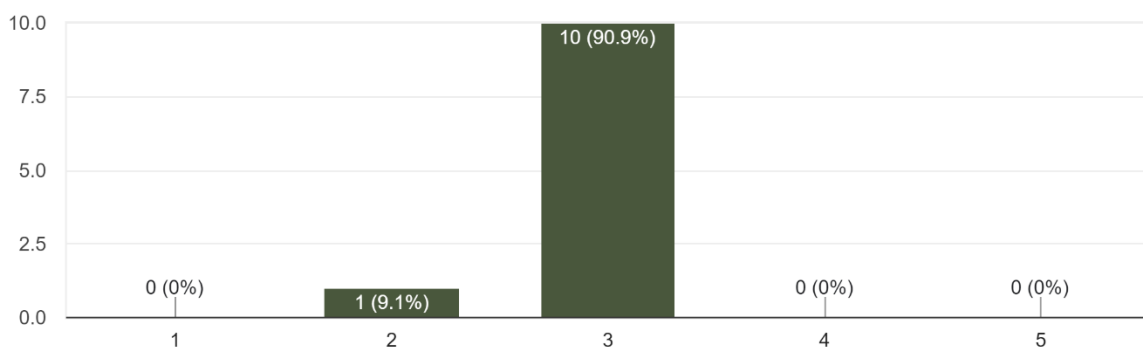
- The desk research was a very good job as was all the other information provided
- Material was very good. Good effort from everyone involved
- It felt a bit copy and paste? I felt the irrigation review was better done, if I had to rank the two.
- Thorough and well prepared
- Excellent literary reference review and New Zealand pruning techniques and approaches
- I appreciated the timeframe you gave for the reading material. It gave us enough time to read and digest before the summit.
- Very thorough
- No
- Good, concise, relevant
- No, I thought it was very well done
- It was well presented

## Summit format and sessions

### Q3: How did you find the length of the summit?

0 too short 5 too long

11 responses



### Q4: Any comments or suggestions regarding the length or format of the summit? (how did you find starting at lunchtime on day 1 and ending at lunch on day 2?)

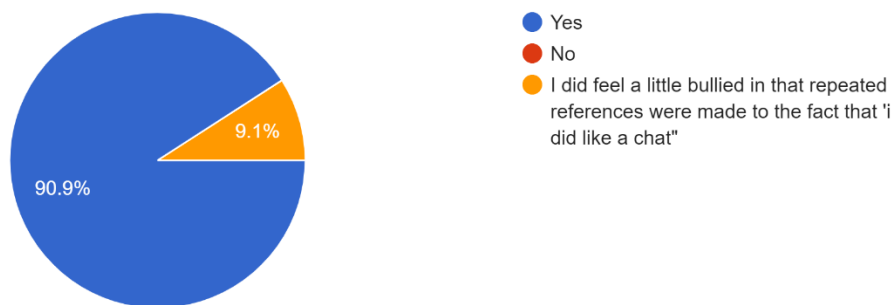
10 responses

- No problem
- I had no issues with it. Unfortunately with people travelling its hard to suit everyone.
- This worked well

- Was considerate for travel arrangements, thank you
- Good to start late so that travelling could be done the same day
- I thought it was a good way of doing it to get more people to come as they don't have a travel day either side of the summit. They can arrive in the morning and leave the next afternoon.
- Generally it was fine. The booked flights so close to start and finish times did add some pressure
- The format worked well for me. The length was sufficient and not too long. The start and finish times worked well with travel.
- No problems at all as it allowed for easy transport
- Length was fine, difficult to fit in with WA travel times

## Q5: Do you feel you had sufficient opportunities and time to contribute?

11 responses



## Q6: Do you have any comments or suggestions regarding any of the sessions? e.g. regional group work

6 responses

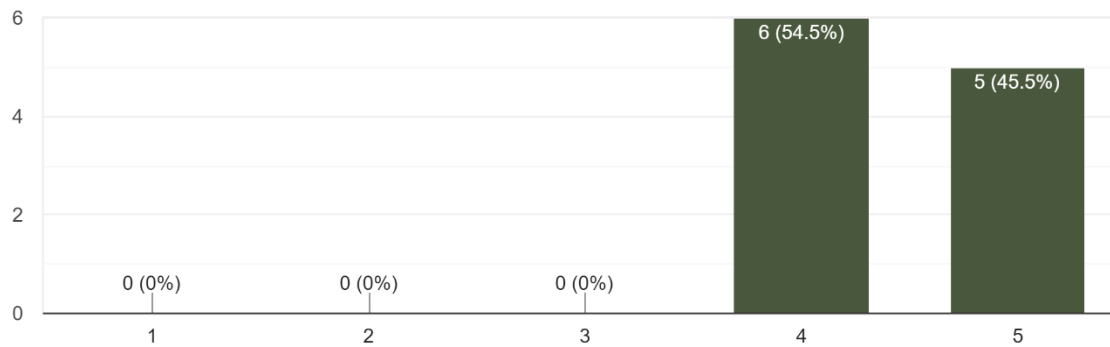
- A bit more down time when not in a group. (unstructured conversation) I just feel people can sometimes open up a little more with one on one or small groups. I like the personal experience learnings. But that is just me.
- Perhaps more time to discuss the group work together would have been beneficial
- The multitude of approaches to canopy management made it difficult to determine the best for every situation.
- I think setting up a group in each region to talk through different topics each time they meet will be of great benefit.
- No
- No I thought it was run very well

## Guest speakers

### Q7: How useful did you find Bram Sjnider's presentation?

0 not useful 5 extremely useful

11 responses



### Q8: Any comments?

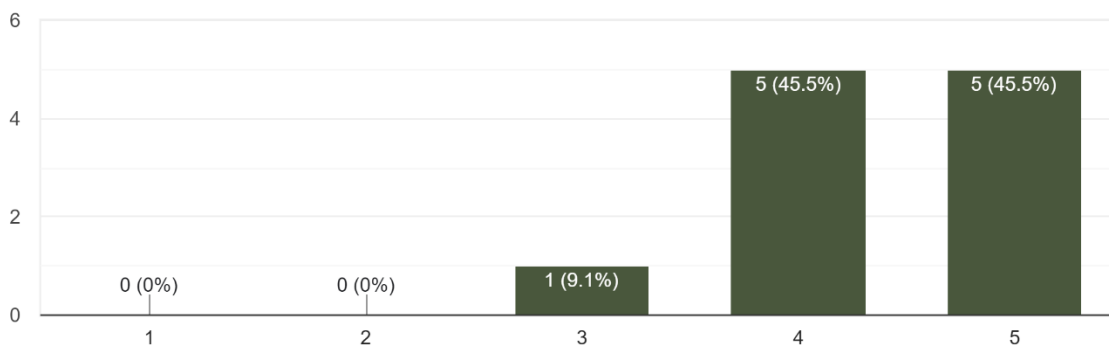
5 responses

- Well presented, good slides and great information. A difficult slot given he was talking after dinner
- Good scientific approach to canopy management
- Relevance was good to our region. His information around canopy size reduction I think will add value to our approach
- I think getting different perspectives from around the world allows one to put into perspective what we do in Australia.
- Probably the most relevant to WA conditions.

### Q9: How useful did you find Francisco Mena's presentation?

0 not useful 5 extremely useful

11 responses



## Q10: Any comments?

7 responses

- This talk was very interesting. Their work with PGR's. High density plantings. I truly believe there is a happy medium between the two practices. Wages is something that is a issue in Australia that has not seem to of impacted these other countries.
- I find it interesting how the same chemicals used in both countries have different use/approval in each respective country (major different approvals)
- well presented, very knowledgeable. After Francisco signed off the group discussed that headline yield figures (40-50) tonnes are not representative across the industry. I wasn't aware and had 'drunk the Chilean cool-aid' like others in DAF small tress (!!!) so this was quite a revelation. What are the other
- The conditions in Chile are so different from Australia that I found it difficult to match their approaches to ours.
- Very interesting to see how they do it in Chile with the high density and keeping the trees short.
- I had been through some of this before. His information around PGR use and residues was relevant to how our industry's might approach PGR work, especially for high density
- See above answer re Bram Sjniders presentation

## Q11: What (useful?) new messages or insights about canopy management did you get from the review as a whole?

8 responses

- That Australian growers are struggling with the same issues as NZ growers. That there is no one size fits all' approach to canopy management. We need more information on the use of PGR's.
- IT is never to early to start pruning.
- Each area is different and needs a different strategy depending on conditions.
- Each area has idea's that can be incorporated into each area.
- Soil applied paclo is better
- Columns may be something we could strive for. Otherwise confirmation of some of the other techniques. There is still a place for hedgerow pruning if managed well.
- It was very interesting to see how different the tree re-acts in each region and each region has their own way of trying to control their tree based on the growth habit in that region. I do not think that canopy management is a one size fits all in each region which was very obvious in the summit.
- Just how different the strategies and what worked were so different between regions
- Colin's trees on trees approach to pruning fits with our strategy and added a lot of weight to the build sept. It also build on descriptions of how to go about pruning. The insights around the way we reduce canopies and how long that can add to getting yield back was valuable. Maintaining the backbone of the tree (from Bram's presentation) is something that i think is

critical too and we will place further weight on. Alternative methods for tree height reduction was also interesting and worth investigating at our farm

- The need to take a holistic approach to C/M.

## **Q12. Overall, how did you find the summit? Did you leave happy with what the group had discussed/covered/achieved?**

10 responses

- Yes
- For me personally. I walked away with great satisfaction. We changed little idea's as soon as we got home. I believe certain practices work better for different people.
- I think the summit could of gone for two whole days. Which would of allowed a bit more unscripted conversation. But also understand time restraints.
- Yes, it was a good, balanced well run summit
- This was my most useful and in-depth opportunity to engage across the breadth of avocado industry since joining DAF Horticulture. The commonalities in canopy management issues and strategies were as striking as the differences between challenges of Australian production regions. I left very happy, was able to engage with a number of my CRG members as well as wider industry experts. Important feedback received on industry perception and buy-in for intensification of avocado.
- Summit was very well run and facilitated. Thank you.
- I found it useful to review our knowledge of canopy management, if only to confirm the many approaches available to growers
- Yes I thought we covered a lot of different topics.
- The summit was great. Excellent mix of people with great knowledge
- I found it excellent. It was a really good group. Very well organised and flowed well over the two days. Participation was valuable, open and respectful from the members and the facilitation helped guide the discussion well. I felt lucky to have attended and had the chance to discuss a complex process with people with such varied experience and high capability. The member presentations added a lot of value too.
- very useful
- Yes, apart from on farm visits everything was well covered

## **Q13. Have you had any further thoughts on canopy management since the summit or general comments about the event that you'd like to add?**

7 responses

- I am glad we all sit there and think about the same issue no matter where we are, we all have similar problems. And it's not a one solution fixes all problems when it comes to management.
- Trying to get people to understand the benefits of canopy management is hard. As once you have a big tree it is very hard to get them to take the first step as it is a big job. We personally have realised tree's get something taken out of them each year no matter what. But we also live in an area where we need our canopy strong once winter comes again. So It is a juggling act as to take enough out to keep flowers and leaf strong enough while still getting a strong canopy back.

- The event was very well run. Everyone was happy to open up and share their knowledge.
- Canopy management needs to be looked at as a part of fruit bearing issues.
- It was a great mix of people, opinions, growing regions. I thought the group dynamics worked well.
- The work in Chile seems like testing what is within the realms of possibility but I cannot see or envisage comparable environments for avocado in Australia. The labour costs of USD40 per day raise huge alarm bells for how relevant and attainable this system is or might ever be for Australia. Growers and advisors discussion indicated to me that there is no appetite for intensification or scion change in Australia. And in the room there was little support for rootstock breeding (!) how then does the industry propose to change?

# Soil Health Summit Survey

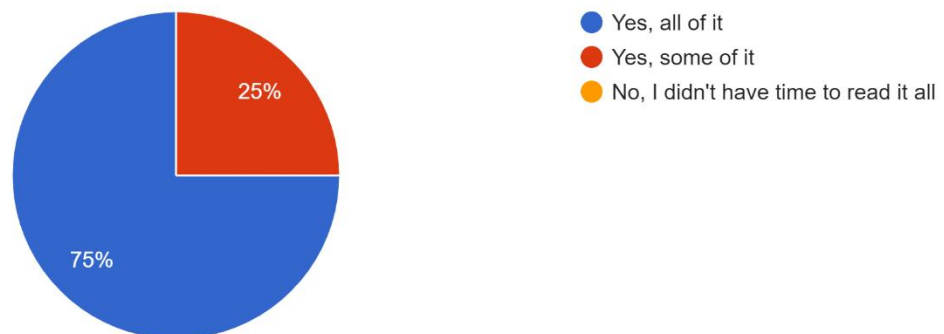
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## Pre-summit reading material and information

### Q1: Did you read this material beforehand?

8 responses



## Q2: Do you have any general comments or suggestions regarding the pre-summit material?

5 responses

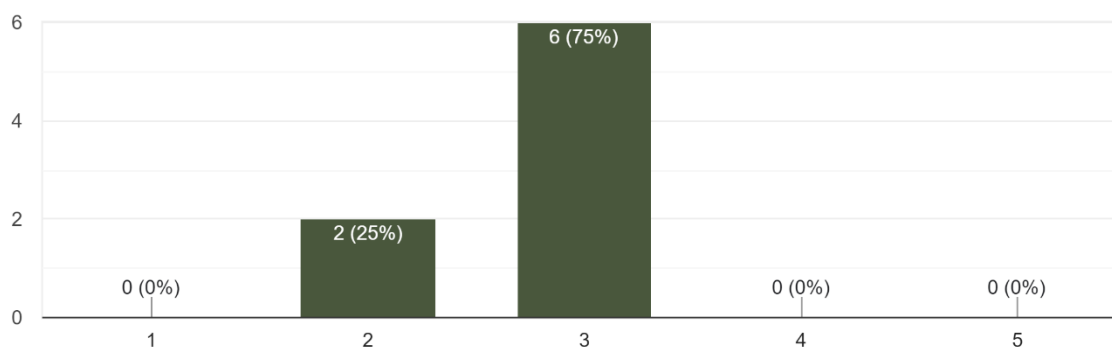
- Material was excellent
- An executive summary would have been nice 😊. It was all very good background to give context to the topic. It is a difficult one as there are so many factors and ways of looking at soil health. It helped me to determine strengths, weaknesses and interests before the meeting.
- Was very good and covered everything I believed was required. Enjoyed reviewing the survey results
- The lit review was excellent
- It was very extensive, detailed and interesting. Some of it more relevant than other, but then I guess our job was to have input on that!

## Summit format and sessions

### Q3: How did you find the length of the summit?

0 too short and 5 too long

8 responses



### Q4: Any comments or suggestions regarding the length or format of the summit? (how did you find starting at lunchtime on day 1 and ending at lunch on day 2?)

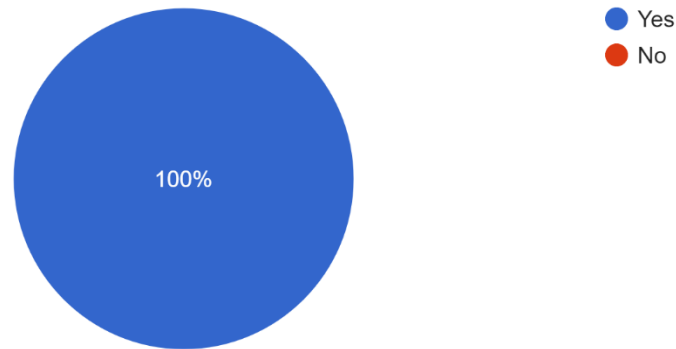
7 responses

- The timing worked well. Allowed people to travel to and from to keep it at 2 days. Would not have wanted to be any longer.
- Good. Would be nice coming from WA not to lose the day before getting there.
- This was a good format. Being able to break and reset helped keep energy levels high.
- The amount of time seemed short, I think we could of spent a bit more time on discussions
- This is good as it allows people to get there on the same day.
- Starting and ending at lunch was very convenient for me, it fitted well with my work



## Q5: Do you feel you had sufficient opportunities and time to contribute?

8 responses



## Q6: Do you have any comments or suggestions regarding any of the sessions?

3 responses

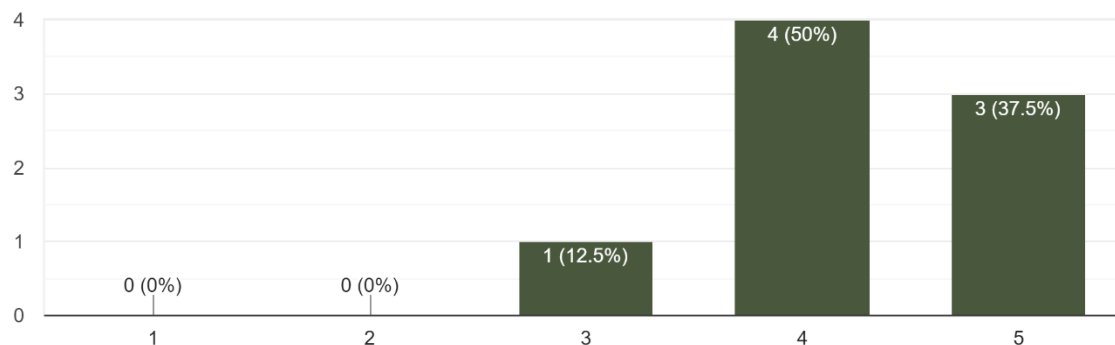
- It was all very relevant. A well-chosen audience that contributed ideas freely.
- I found them all interesting. Some controversial aspects regarding introduction of microbes vs encouraging the microbes present in a soil.
- More specialist/ expert input the better

## Guest speakers

### Q7: How useful did you find Tony Pattison's presentation?

0 not useful 5 extremely useful

8 responses



## Q8: Any comments?

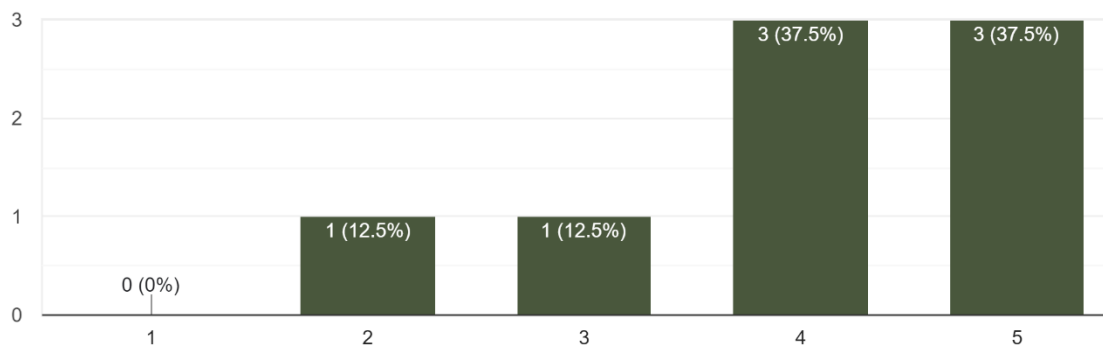
3 responses

- I can do better. It is knowing how to pitch the talk with some complex ideas
- Interesting/great presentation. Would of been great to have some more avocado references
- Determine the microbial genome for avocado soils

## Q9: How useful did you find David Crowley's presentation?

0 not useful 5 extremely useful

8 responses



## Q10: Any comments?

4 responses

- Have discussed this by email today. Will be interesting to see what other people thought. In hindsight, perhaps his content brief should have been limited to one or two topics. Maybe it was and he rambled into other areas and put up a lot of old and irrelevant info.
- A lot of it was just a review. Some very useful insights though.
- Nice reinforcement of ideas and specific to avocados
- Always beneficial to see what research is being done in other countries. Some parts not too relevant to us for soil health but still interesting.

## Q11: What (useful?) new messages or insights about soil health did you get from the review as a whole?

6 responses

- Reinforcement about use of mulching of avocados for soil benefit
- Incredibly complex. Future is understanding how to help existing beneficial microorganisms.
- There is no one answer, but there seems to be a lot of interest in the topic.
- Soil health is a very broad topic with many different ways of doing things. Very surprised about the variability in soil microbial lab testing. and look after and grow what microbes you have with in your current system!
- Feeding the microbes present vs introducing beneficial microbes in compost

- The comparison research done in bananas soil between healthy/ wild populations and intensive farming showing the large biological differences.

## **Q12. Overall, how did you find the summit? Did you leave happy with what the group had discussed/covered/achieved?**

8 responses

- Yes. its a big and complex topic.
- Happy with discussions and positive attitudes towards driving industry forward and sharing information
- Had to leave a bit early but was happy when I left
- Yes
- I enjoyed it and really got a lot out of the experience. I think there was some key issues identified from the group.
- Very useful but more questions than answers. Very complex subject
- I was very pleased with the discussions around soil health. They were topical and up to date with current research
- Yes I think we made a good contribution to the topic

## **Q13. Have you had any further thoughts on soil health since the summit or general comments about the event that you'd like to add?**

5 responses

- The session gathering ideas for future extension was good, hope some of those ideas can be incorporated into next project
- Yes. There are more recent publications on the topic of soil health that could be included but you need to draw the line somewhere. There may be a possibility to "push the boundaries" with some research trails. A lot of little bits to think about.
- Reasons for using compost
- I think about soil health all the time as it is my job! I am pleased that the avocado industry places significant emphasis on this
- I feel quite strongly I would like to know/rate/measure the most detrimental practices that damage soil health so they can be modified