

Horticulture Innovation Australia

Final Report

Avocado Data Management and Quality Innovation Extension Program

John Tyas
Avocados Australia Limited (AAL)

Project Number: AV15004

AV15004

This project has been funded by Horticulture Innovation Australia Limited with co-investment from Avocado (R&D Levy) and funds from the Australian Government.

Horticulture Innovation Australia Limited (Hort Innovation) makes no representations and expressly disclaims all warranties (to the extent permitted by law) about the accuracy, completeness, or currency of information in *Avocado Data Management and Quality Innovation Extension Program*.

Reliance on any information provided by Hort Innovation is entirely at your own risk. Hort Innovation is not responsible for, and will not be liable for, any loss, damage, claim, expense, cost (including legal costs) or other liability arising in any way (including from Hort Innovation or any other person's negligence or otherwise) from your use or non-use of *Avocado Data Management and Quality Innovation Extension Program*, or from reliance on information contained in the material or that Hort Innovation provides to you by any other means.

ISBN 978 0 7341 3969 6

Published and distributed by:
Horticulture Innovation Australia Limited
Level 8, 1 Chifley Square
Sydney NSW 2000
Tel: (02) 8295 2300
Fax: (02) 8295 2399

© Copyright 2016

Content

Summary	3
1 Introduction	6
2 Methodology	7
2.1 Infocado	7
2.2 OrchardInfo	8
2.3 Other data related activities	9
2.4 Maintain the Best Practice Resource (BPR)	10
2.5 Qualicado – Quality Improvement and Extension Program	11
3 Outputs	14
4 Outcomes	17
5 Evaluation and discussion	21
5.1 Infocado	21
5.2 OrchardInfo	21
5.3 Best Practice Resource	22
5.4 Qualicado	22
5.5 Future Industry Engagement	23
6 Recommendations	24
7 Scientific refereed publications	25
8 Intellectual property/commercialisation	25
9 Acknowledgements	25
10 Appendices	26

Summary

Avocados Australia, in collaboration with other industry service providers, has successfully facilitated and delivered a program to support quality improvement across the Australian avocado industry. This has entailed provision of robust industry data to underpin effective supply chain management as well as hosting an industry extension program comprising electronic resources, workshops and expert support for supply chain businesses.

Over the life of the project (December 2015 – May 2017), the following components have been delivered:

- The delivery of Weekly and Quarterly Infocado reports
- The delivery of Annual OrchardInfo reports
- Maintenance of the avocado industry Best Practice Resource (BPR)
- Qualicado workshops in eight regional and five metropolitan centres
- Facilities checks with packers, ripeners and wholesalers.

Weekly Infocado Reports (including Weekly Retail Price Reports) and Quarterly Infocado Reports have been completed and disseminated to industry in line with project and industry requirements. Results from Quarterly Infocado Reports have also been communicated in *Talking Avocados*. The Annual OrchardInfo Report for 2016 has been collated and distributed to industry and a summary report will be provided in *Talking Avocados* (Winter edition 2017).

As a result of an internal review of Infocado and OrchardInfo, changes were made to the data collection processes and forms to achieve a higher level of industry contribution and information accuracy.

The Best Practice Resource (BPR) has been maintained and the portal has been migrated to a new and more flexible platform as part of the upgrade of the Avocados Australia website. With this migration, the structure of the content was updated and the content was reviewed. As a result, there is a significant improvement in layout and usability of the BPR.

Additional resources have been added to the BPR including Qualicado workshop presentations, study group presentations, plus other written and video content. Two new videos related to ripening and retail handling of avocados, which were developed as part of this project by Department of Agriculture and Fisheries Queensland (DAFQ), have also been uploaded to the portal.

To increase uptake and usage a number of short training videos were developed to show users how to access and navigate the BPR. These videos were shown at the Qualicado workshops and feedback from the evaluation process showed they were valued by workshop participants. One of the videos now features on the BPR homepage so that new users can gain an understanding of “how to use” and “what is inside” the BPR.

In total, eight regional Qualicado workshops for growers covering the main production regions were held. Five metropolitan Qualicado workshops targeting supply chain businesses (ripeners and wholesalers) in each of the major capital cities were also held. These workshops attracted record numbers with more than 627 attendees at the regional workshops and 73 attendees at the metropolitan workshops. Evaluation results of these events were excellent. More than 94% of survey respondents at each Qualicado Regional Workshop indicated they gained value from attending. Likewise, more than 80% of survey respondents at each Qualicado Metropolitan Workshop indicated they gained value from attending. In addition, indications are that a high percentage of attendees at the regional forums are likely to use the information gained during the workshops to improve/change some of their practices.

Four facility checks were conducted and three whole-of-supply chain checks were conducted by DAFQ with relevant parties receiving feedback on the performance of their operations. A summary of findings from these activities indicated there was scope for improved operations to enhance fruit quality and reduce temperature variability in and across supply chains.

Through this project, a stakeholder engagement plan to inform future approaches to industry engagement and extensions has been developed. It is hoped this can inform the industry’s future approach to R&D extension and industry development.

Overall the suite of services delivered through this project have delivered information, skills and knowledge to growers and other supply chain partners to build capacity and enable change to support quality and productivity improvement across the sector.

Recommendations on future research, development and extension activities and possible approaches are provided in Section 6 of this document.

Keywords

Avocado; quality; Qualicado; Infocado; OrchardInfo; extension; data

1 Introduction

As the Australian avocado industry continues to grow and mature, one of the major on-going challenges for the industry is to consistently deliver a high quality product for consumers. This desired industry outcome is a feature of the current Horticulture Innovation Avocado Industry Strategic Investment Plan (SIP), as it was in the previous two industry SIPs. To achieve this requires all growers and supply chain parties to adopt a continuous improvement approach to production and supply chain management practices. Aligned to this achievement is the requirement for robust production and supply chain data to support effective supply chain management and to facilitate longer term planning, which in turn will also support improved quality outcomes.

Avocados Australia has historically played an important facilitation role in the extension of industry R&D and know-how to the avocado production and supply chain sector. Prior to this project Avocados Australia, in collaboration with other industry service providers, has successfully delivered Horticulture Australia and Hort Innovation industry projects (AV12012 Coordination of Data Management and Avocado Quality Improvement and Extension Program; and AV09001 National Avocado Quality & Information Management System) which together:

- Maintained Infocado, the avocado industry's crop forecasting system,
- Maintained OrchardInfo, the avocado industry's system used to collect production and productivity information.
- Developed and maintained the avocado industry's Best Practice Resource (BPR) portal
- Scoped, developed and established a quality improvement and extension program (Qualicado) incorporating Qualicado workshops aimed at increasing awareness of quality issues and providing solutions to address these.

This project has built on the success of previous projects, and has delivered a multi-faceted project to meet industry needs. This includes the on-going delivery of Weekly Infocado, Quarterly Infocado and Annual OrchardInfo Reports; maintenance of the Avocado Industry Best Practice Resource; delivery of Qualicado workshops; facilities checks with individual packers, ripeners and wholesalers, and whole-of-supply chain checks.

Throughout the project there has been collaboration with many industry service providers to ensure the quality of information provided is relevant, up-to-date and of the highest quality. This included:

- Australian growers, packers, consolidators and wholesalers; the New Zealand Avocado Industry and the Australian Bureau of Statistics - to ensure that industry planting and supply chain data is as accurate and comprehensive as possible
- Avocado researchers and supply chain and extension specialists from universities and research agencies including the Department of Agriculture & Fisheries Queensland (DAFQ), the Queensland Alliance for Agriculture and Food Innovation (QAAFI), University of New England and Plant & Food Research New Zealand – as presenters at the Qualicado workshops and other related activities.
- Technical specialists and consultants from a range of commercial companies covering industry benchmarking, agronomy, nutrition, irrigation and pest & disease management - as presenters at the Qualicado workshops and other related activities.
- Avocado supply chain businesses - to assist in extension of information in regard to ripening and retailing of product.

In addition, a stakeholder engagement plan, based on consultation with key industry stakeholders, which considers the future requirements of industry has been prepared. Without knowing the future funding allocations or intent of Hort Innovations, this plan is an aspirational plan which is hoped will be used to guide the industry's approach to R&D extension and industry development.

Details and an evaluation of each of the project components is provided below. Recommendations for future approaches and activities for each of these components, including the provision of industry information and R&D extension more broadly, is also provided.

2 Methodology

The methodology for each of the components of the project listed below are provided separately.

- Infocado: the delivery of Weekly and Quarterly Infocado Reports
- OrchardInfo: the delivery of Annual OrchardInfo Reports
- BPR: maintenance of the Avocado Industry Best Practice Resource
- Qualicado: promoting quality improvement across the Australian avocado industry through hosting Qualicado workshops in eight regional and five metropolitan centres
- Other: update of instructions, stakeholder engagement plan and communication activities.

2.1 Infocado

Weekly Infocado Report.

The Weekly Infocado Report is to report: weekly dispatches from packers by variety, source region and destination market; projected weekly dispatches for the next four weeks; pre-season and updated seasonal forecasts from New Zealand; import volumes received from New Zealand; harvest progression by region; supply chain information (supermarket sales, non-supermarket sales, export and stock-on-hand in the wholesale sector) and retail pricing.

The data collection process and report generation and distribution process used on a weekly basis entailed:

- Reminders sent to all contributors (packers, consolidators and wholesalers) to enter data each Friday and Monday
- Packers reminded to begin contributing as their season commenced
- Grower data entry finalised by Monday afternoon and wholesaler data entry finalised by Tuesday morning*
- New Zealand export and Australian import data sourced via relevant government agencies (when applicable)
- Weekly Infocado report generated and distributed to contributors by Tuesday afternoon*. This included commentary, marketing update (adapted from Hort Innovation) and previous week's Weekly Retail Price Report.
- Report provided to Communications Manager for later upload to Avocados Australia website.

* - this timetable was appropriately adjusted for weeks with public holidays.

Weekly Retail Price Report

The Weekly Retail Price Report captures weekly online pricing and specials of fresh avocado products (single unit, multi-buys, multi-packs and organic) in Coles and Woolworths as well as specials (catalogue prices) of Aldi, IGA and Foodworks. Prices are collected for Brisbane, Sydney, Melbourne and Perth markets.

A review of this data and related collection processes were undertaken to refine the data being collected and improve collection efficiency based on industry need.

The data collection process and report generation and distribution process used on a weekly basis entailed:

- Weekly retail pricing report data collected from relevant websites by Wednesday morning*
- Weekly Retail Price Report finalised and posted to Avocados Australia website by Wednesday afternoon*
- Notification email sent to weekly Infocado contributors that weekly retail pricing report was available online

* - this timetable was appropriately adjusted for weeks with public holidays.

Quarterly Infocado Reports

The Quarterly Infocado Report is to report: Australian and NZ dispatches and forecasts for 12 months past and forward by month, source region and key variety.

The data collection process and report generation and distribution process used on a quarterly basis entailed:

- Data collected from all packers that were not contributing weekly Infocado data at the end of the quarter – this was done predominantly by phone because of sensitivity of information and reluctance for this stakeholder group to engage via other means.
- Retail pricing data collated for previous quarter to inform report.
- Report generated and commentary provided by end of month following the end of the quarter.
- Report distributed to weekly Infocado contributors.
- Report provided to Communications Manager for later upload to Avocados Australia website. Reports posted to the Avocados Australia website on a delayed basis to provide incentive for contributors.

Infocado data continues to be improved and monitored through a number of processes:

- There is regular contact with relevant industry stakeholders to maintain / improve participation levels
- Avocados Australia has dedicated processes to engage all new growers with industry data collection processes
- The industry self-monitors reports (if there is any questionable data in reports there is usually immediate feedback from industry stakeholder asking for explanation or validation of any unexpected data)
- Quarterly reports are closely monitored by the Avocados Australia board for accuracy (based on each board members understanding of what production is expected in each region and general feedback from other industry supply chain parties)
- Infocado data is cross referenced to levy collection data. At the end of 2016, the Infocado data was within the $\pm 10\%$ of levy collection figures.

2.2 OrchardInfo

OrchardInfo is a mechanism to collect, collate and report number of trees, number of hectares, plant density, varieties, rootstocks and yield grown in each region on an annual basis.

There have been on-going challenges to gain high levels of contribution of OrchardInfo data. Hence a review was undertaken to determine:

- What information was required and of most value to the avocado industry?
- Was there data being collected that was not being used?
- How could the required data be collected in the most effective and efficient way (and be simplified so that more growers were willing to participate)?
- How should the data be reported?

Following this review, a new approach to the data collect process was developed. This new approach separated the collection of planting data and the collection of yield data. A new form, the OrchardInfo Tree Census form, was developed to collect a simplified set of tree planting data from all growers. This new form did not include request for rootstock information or yield data (see Appendix 1).

In addition, due to the difficulty in obtaining yield data, a survey of selected growers (stratified sample) across each of the major production regions was developed to collect data to understand regional performance of Hass and Shepard avocados. The intent is to track their yield performance over time as an indicator of regional performance. The survey is included in Appendix 2.

OrchardInfo Tree Census

The data collection process and report generation and distribution process used for the 2016 OrchardInfo Tree Census (based on the new data collection form and to be used on an annual basis) entailed:

- An annual Avocado Census Day was established – 1st August
- All growers in the Avocados Australia database were requested to complete the simplified OrchardInfo Tree Census form
- An incentive was provided for those growers that submitted their data by the required date
- Follow up via email and phone was conducted to increase the contribution levels
- The report was collated in conjunction with the productivity sampling data collected (see below)
- The report findings were communicated directly to contributing growers and through *Talking Avocados* (yet to be published, expected Winter edition 2017).

Productivity Survey

The data collection process and report generation and distribution process used for the 2016 OrchardInfo Productivity Survey (based on the new data collection method and to be used on an annual basis) entailed:

- Selected growers from each region were emailed information about the productivity survey intent and approach and were requested to complete the online survey
- Follow up via email and phone was conducted to increase the contribution levels
- The report was collated in conjunction with the Annual OrchardInfo Tree Census data collected (see above).

2.3 Other data related activities

Instructions related to Infocado and OrchardInfo systems

Instructions related to the collection, collation and reporting of information related to Infocado Reports, Weekly Retail Pricing Reports and OrchardInfo systems were updated to reflect changes in the systems, data collection processes and reporting changes.

Longer term production forecasts

- Using Infocado data, OrchardInfo data and New Zealand industry data, longer term product and supply forecasts for the Australian market were developed.
- This information has been communicated to industry via *Talking Avocados* (Summer edition 2016, pp. 36-37) and at all Qualicado workshops held in 2016.
- The data was also used to inform the development of the new Avocado Industry Strategic Investment Plan.

Participation in project 'ST15008 - Multi-scale monitoring tools for managing Australian Tree Crops: Industry meets innovation'.

Avocados Australia continues to participate in this project at a steering committee level, as and when required. These meetings are attended by John Tyas.

The project has also been extended through:

- At the request of Avocados Australia, Assoc. Prof Andrew Robson developed a 15 minute video presentation explaining the project and the potential outcomes for industry and production businesses. This was presented at 3 regional Qualicado workshops (North Queensland, Tri-State and Central Queensland) and is available on the BPR.
- Andrew also presented in person at the Western Australian Qualicado workshop in Pemberton (23 June 2016).
- Mr Chad Simpson (Simpson Farms, Bundaberg) and Mr Chris Searle (consultant), as contributors to ST15008, also provided commentary at the Central Queensland Qualicado workshop in Bundaberg (11 August 2016) about local research being undertaken as part of the project.
- An update of the project was provided in *Talking Avocados* (Summer edition 2016, pp. 44-47)
- Through *Guacamole* (28 April & 12 May 2017) and *Talking Avocados* (Winter edition, 2017, yet to be published) growers have also been encouraged to enter data through the new app that is supporting the development of a web map of Australian avocado, macadamia and mango orchards, which is part of project ST15008.

Scope the development of a tool to assist small packers participate in the Infocado system

One of the short comings of the Infocado system has been the difficulty to get small grower-packer businesses to be active contributors of data to the system on a weekly basis. To address this deficiency, the concept of an electronic tool for small grower-packer businesses was developed and costed with the Infocado database developer, Graeme Forsythe & Associates.

Review of Infocado system (Infocado Refresh)

Avocados Australia has continuously strived to get higher levels of contribution from packers, consolidators and wholesalers to ensure that the reporting of Infocado information is of the highest possible order.

In 2016, Avocados Australia undertook an exercise, separate to this project, to review the future requirements of the Infocado system in light of the changes in industry supply chains over the last decade and expected ongoing change in the future.

As a result of the review and consultation with key stakeholders a new approach to data collection has been developed. This new approach will provide a higher level of data accuracy and increase engagement of smaller packers in the industry. The aim of the new system is to have all grower-packers contributing to the system rather than the current process that involves consolidators contributing aggregated weekly dispatch and forecast data for many of the smaller packers. It is the intention of Avocados Australia to roll this new system out over the 2017/18 season.

2.4 Maintain the Best Practice Resource (BPR)

The Australian avocado industry Best Practice Resource (BPR) is an online one-stop-shop of extensive resources providing information on best recommended practices for all sectors of the avocado supply chain. Information is presented in various formats to improve usability including text, images, videos, downloadable documents and online training modules. Information has been sourced from industry experts and is updated as required.

To maintain the Best Practice Resource (BPR), the activities included:

- Maintenance of the Growing, Packhouse, Transport, Wholesale, Ripening, Retail modules and adding / amending content as and when necessary.
- Addition of Qualicado presentation material and Study Group Notes (DAFQ technical extension project) after the completion of each event.
- Development of two new videos for ripening and retail handling to facilitate a greater understanding of supply chain quality issues and how these can be addressed. (Note: videos were also made available through YouTube to improve accessibility to the information and sent directly to major retailer category managers).
- Training in how to use the BPR included the development of a short video to show users how to access and navigate the BPR – delivered at all Qualicado workshops and a modified version has been made available on the homepage of the BPR.
- Migration of all BPR content to the new platform as part of the upgrade of the Avocados Australia website. See new site at www.avocado.org.au.
- Improved functionality to monitor and evaluate usage of the BPR. Due to the new platform only being recently launched (soft launch in March 2017 and full launch May 2017), evaluation of the new system has not yet been undertaken, however this will be an on-going process.

Ripening and Retailing videos

Two new videos related to ripening and retail handling of avocados were developed as part of this project. The approach involved:

- Scoping content for each of the videos (Avocados Australia/ DAFQ)
- Scripting each of the videos based on avocado industry best practice guidelines (DAFQ)
- Arranging suitable parties to participate in each of the videos (Avocados Australia)
- Shooting, editing and narrating the videos (DAFQ)
- Sign-off by all involved parties
- Uploading to the BPR and YouTube
- Promotion of the videos via multiple communications channels including *Talking Avocados* and *Guacamole*.

Export module

A new module on export has been developed to familiarize growers, packers and the wider industry with the opportunities, requirements and limitations in developing and servicing export markets. The module provides avocado specific information on ‘what you need to know if you are planning to export’, different export markets available to

Australian exporters and related opportunities, market access issues, export processes. It also provides links to key resources that businesses can access to support them in export related activities.

Growing Editorials – Avo Alerts

A series of 'growing editorials' which outlines key practices that growers should undertake throughout the year for each region and key varieties (Hass and Shepard) was developed with DAFQ (project AV14000). Targeted e-newsletters (called *Avo Alerts*) are sent to all growers each month by Avocados Australia which include hyperlinks to the relevant sections of the Best Practice Resource for more detailed information.

2.5 Qualicado – Quality Improvement and Extension Program

The Quality Improvement and Extension Program, known as Qualicado, is a suite of activities aimed at continuous improvement in product quality across the production and supply chain sectors of the industry. Activities undertaken in this part of the project included:

- 13 Qualicado workshops delivered: 8 regional extension workshops (1 per major production region) and 5 metropolitan workshops (1 per major capital city) were facilitated during 2016.
- 4 facilities and 3 whole-of-supply chain checks were undertaken
- Stakeholder engagement plan developed.

Regional Qualicado workshops

The following approach was adopted to facilitate the delivery of the Qualicado Regional Workshops:

- A timetable of regional and metropolitan events was developed for 2016 (see Appendix 3 for schedule of Qualicado workshops), then
- For each regional workshop:
 - A suitable venue was identified (ideally a farm with some elements of innovation related to improved productivity and quality outcomes).
 - A workshop agenda to address productivity, quality and supply chain management topics was developed through consultation with the hosting grower, the local Avocados Australia board director, other leading local growers, local service providers and DAFQ (see Appendix 4 for Qualicado workshop agendas)
 - Appropriate (expert) speakers were identified and organised to present on the day. (Note: DAFQ through Simon Newett and Noel Ainsworth were significant contributors to the events held)
 - Logistics of the event was organised by Avocados Australia including catering, chairs, footbaths, signage, audio visual equipment, travel arrangements for speakers etc.
 - Invitations were developed and sent to all growers electronically. Invitations were also sent by post to all growers in the region where the workshop was being held. RSVP were required for all events.
 - A broader invitation was sent to avocado industry stakeholders through *Talking Avocados*, *Guacamole* and *Grower Updates*. Growers were invited to attend workshops in other regions, if they had an interest.
 - All events were held as per schedule.
 - Evaluations (survey of attendees) were completed for each workshop to measure the effectiveness of the workshop
 - Presentations from each event were posted to the BPR.

Metropolitan Qualicado workshops

Due to lower than optimal attendance numbers in 2015, a review of the content and format of 2015 Metropolitan Qualicado workshops was undertaken. As a result, it was decided to shorten each workshop to 2 x 1 hour sessions. The first session targeted all avocado industry stakeholders, and specifically managers and sales staff. It addressed higher level industry trends and initiatives such as short and long term supply projections, R&D outcomes and impacts (with a focus on R&D impacting 'quality' outcomes), market development activities and future industry (Hort Innovation)

promotions. The second session was targeted at staff involved in quality and technical roles and focused on postharvest and supply chain quality management.

The following approach was adopted to facilitate the delivery of the metropolitan Qualicado workshops.

- A timetable of regional and metropolitan events was developed for 2016 (see Appendix 3 for schedule of Qualicado workshops), then
- For each metropolitan workshop
 - A suitable venue was identified
 - The workshop agenda was refined to meet the specific market interests (see Appendix 5 for example Qualicado metropolitan workshop agenda)
 - Event logistics including catering, travel arrangement for speakers etc. was organised by Avocados Australia
 - Invitations were developed and sent to all known avocado supply chain parties (wholesalers and consolidators) in the market where the event was being held. Invitations were sent by both post and targeted Wholesaler Updates (electronic invitations). RSVP were required for all events.
 - The broader industry was made aware of the events through *Talking Avocados* and *Guacamole*. A number of growers attended workshops as well.
 - The workshops were delivered by John Tyas (Avocados Australia) and Noel Ainsworth (DAFQ)
 - Evaluations (survey of attendees) were completed for each workshop.

Facilities checks

The facility checks, which were conducted in the previous avocado quality project (AV12012) and aimed at identifying practice change to improve avocado quality for the end consumer, were extended into this project. These checks focused on the packing, wholesaling and ripening sectors of the supply chain with volunteer participants. The checks were undertaken by a supply chain expert (Noel Ainsworth) from Department of Agriculture & Fisheries Queensland (DAFQ).

The approach taken involved:

- Avocados Australia contacted potential participants to determine their interest in participating in a facility check
- Those that indicated interest were then contacted by DAFQ to arrange a suitable appointment time and to provide written information on the process
- Facility check were undertaken (with the owner or appropriate staff member)
- Feedback was provided during the facility check process
- The business received a report which outlined areas where improvements could be made
- Lessons from all facilities checks were distilled and have been reported at Qualicado workshops and in *Talking Avocados* (Autumn edition 2017).

Whole-of-supply chain checks

Three whole-of-supply chain checks were undertaken to identify where fruit quality impacts occur. These checks were conducted by DAFQ. The intent was to gain a snapshot to see if temperature management was in line with best practice or whether sufficient variation existed to prompt more detailed studies of supply chains across Australia. The three selected were:

- Bundaberg to Melbourne (North-South)
- Bundaberg to Perth (East-West), and
- Manjimup to Brisbane (West-East).

The cool chain monitoring set out to examine three main risks or aspects of the supply chain;

- Whether there was adequate cooling (time and capacity) to cater for the volume and original temperature of the fruit at packing,
- Whether there was any difference in fruit temperatures on the top and middle of pallets to scan for risks of chilling top fruit and warming (initiating ripening) of fruit deep inside pallets, and

- Changes during transshipping between different carriers and different forms of transport (i.e. road and rail).
- Results from each of the whole-of-supply chain checks were documented as case studies.
- This information can be extended at future industry extension events.

Stakeholder Engagement Plan

The development of a stakeholder engagement plan was undertaken to inform future approaches to extension to meet the needs of different grower sub-groups, supply chain partners and other key stakeholders.

The following approach was taken:

- A briefing document was developed that addressed the objectives of the stakeholder plan, segmentation of the industry and outlined current and possible engagement strategies.
- The development of the plan was outsourced to Coutts J&R, a company with expertise in this area.
- A series of phone interviews and consultation was undertaken with a range of industry stakeholders. This consultation process was shared between P2P Business Solutions and JR Coutts.
- The final report, drawing on all stakeholder feedback, incorporates an aspirational plan (as the intent and future funding allocations Horticulture Innovation are unknown) and delivery framework for extension in the Australian avocado industry was developed and submitted by Coutts J&R.

3 Outputs

The following external outputs were delivered as part of the project:

- **Weekly Infocado Reports** were produced and delivered each week for the duration of the project. The exception to this was 2 reports over the 2016 Christmas New Year period. Due to the timing of the public holidays over this period and the likelihood of receiving contribution from packers, consolidators and wholesalers, it was decided not to publish these reports. Data was still collected and used to inform the first report of 2017.

The Weekly Infocado Report provides information on weekly dispatches from packers, by variety, source region and destination market; projected weekly dispatches from (4x1 week period); pre-season and updated seasonal forecasts from New Zealand; import volumes from New Zealand; harvest progression by region; supply chain information (supermarket sales, non-supermarket sales, export and stock-on-hand in wholesale sector) and retail pricing. An example of one of the Weekly Infocado Reports is provided in Appendix 6. Reports for other weeks are available on the Avocados Australia website.

- **Weekly Retail Price Reports** were produced and delivered each week for the duration of the project. Exceptions apply as above.

The Weekly Retail Price Report captures weekly online pricing and specials of fresh avocado products (single unit, multi-buys, multi-packs and organic) in Coles and Woolworths as well as specials (catalogue prices) of Aldi, IGA and Foodworks. Prices are collected for Brisbane, Sydney, Melbourne and Perth markets. An example of one of the Weekly Retail Price Reports is provided in Appendix 7. Reports for other weeks are available on the Avocados Australia website.

- **Quarterly Infocado Reports** were produced and delivered each quarter for the duration of the project.

The Quarterly Infocado report provides information on Australian and NZ dispatches and forecasts for 12 months past and forward by month, source region and key variety. An example of one of the Quarterly Infocado Reports is provided in Appendix 8. Reports for other quarters are available on the Avocados Australia website.

- The **Annual OrchardInfo Reports** were produced and have been distributed to growers. Summary details will be reported in the next edition of *Talking Avocados* (Winter edition 2017, yet to be published).

OrchardInfo is a mechanism to collect, collate and report number of trees, number of hectares, plant density, varieties, rootstocks and yield grown in each region on an annual basis.

- The updated **Best Practice Resource (BPR)** is available at www.avocado.org.au (login details required).

The Australian Avocado Best Practice Resource (BPR) is an online one-stop-shop of extensive resources providing information on best recommended practices for all sectors of the avocado supply chain. Information is presented in various formats to improve usability including text, images, videos, downloadable documents and online training modules. Information has been sourced from industry experts and is updated as new material is developed or becomes available (see below). A snapshot of the main page of the Best Practice Resource is provided in Appendix 9.

- **Avocado Ripening video and Avocado Retailing videos** were completed and promoted throughout industry.

These short videos (approximately 5 minutes each) provide an outline of the best practice approach and issues to consider when ripening and retailing avocado respectively. The videos can be accessed via the BPR or from Avocados Australia on request.

- An **Export module** has been completed and made available on the BPR.

The module provides avocado specific information on 'what you need to know if you are planning to export', different export markets available to Australian exporters and related opportunities, market access issues, and export processes. It also provides links to key resources that businesses can access to support them in export related activities.

- **'Avo Alerts'** (Growing Editorials) developed with DAFQ (Simon Newett/project AV14000) and distributed by Avocados Australia via an e-newsletter. In total 8 *Avo Alert* e-newsletters covering 64 discrete regionally based editorials have so far been sent out to all growers. Further *Avo Alerts* will be sent out as material is provided from AV14000.

Avo Alerts outline key practices that growers should undertake throughout the year for each region and key varieties (Hass and Shepard). An example of the *Avo Alert* content for North Queensland Hass for October/November is available in Appendix 10.

- **Eight Qualicado regional (growers) workshops and 5 metropolitan (ripening and wholesaler) workshops** were held through 2016. In total 700 industry stakeholders attended these workshops. Details of their attendance and evaluation of the workshops is provided in Section 4 below.

Qualicado workshops were conducted as part of the Quality Improvement and Extension Program, known as Qualicado and aim to support continuous improvement in product quality across the production and supply chain sectors of the industry.

- **Four facility checks and three whole-of-supply chain checks** were completed. Reports were provided to each of the businesses where facilities checks were undertaken and a summary report outlining the learnings from the work undertaken in this project and the preceding project (AV12012) is reported in *Talking Avocados* (Autumn edition, 2017 pp. 35-37). Case studies were documented for the three whole-of-chain checks. DAFQ submitted a final report to Avocados Australia (see Appendix 11).

The facility checks aim to identify practice change to improve avocado quality for the end consumer, were extended into this project. These checks focused on the packing, wholesaling and ripening sectors of the supply chain with volunteer participants. The whole-of-supply chain checks were undertaken as a snapshot to see if temperature management is in line with best practice or whether sufficient variation existed to prompt more detailed studies of supply chains across Australia.

- **Extensive communication throughout industry to promote this project.**

Communication to all industry stakeholders through a range of media was extensive. The aim was to:

- Raise awareness of the need for all growers and supply chain partners to focus on best practice to improve product quality
- Raise awareness of the need for robust industry data
- To highlight the different resources (Industry data reports, BPR, Qualicado workshops etc.) are available to industry to support quality improvement
- To improve contribution to industry data collection processes.

As a summary:

- Topics included:
 - Industry data collection – Infocado report summaries and analysis, OrchardInfo summaries, long term projections and related analysis
 - Qualicado workshops (regional and metropolitan) – invitations, content and feedback from participants
 - BPR – how to access, what's available, new content
 - BPR – new videos – ripening, retailing and boron in avocados
 - Key production practices for each region by month.
- Media included:
 - Directed emails

- Multiple Grower and Wholesaler e-Updates including *Grower Updates*, *Avo Alerts*, *Wholesaler Updates*
- *Guacamole* e-newsletter articles
- *Talking Avocados* articles
- Posts to the Avocados Australia website specifically related to the project and its activities.

An example of Talking Avocados articles related to Industry data (*Talking Avocados* Winter edition 2016, pp. 15 & 16, Spring edition 2016, pp. pp.19), Qualicado workshops (*Talking Avocados*, Autumn edition pp. 32-33) and BPR new videos (*Talking Avocados* Summer edition 2017, pp. 47) is provided in Appendix 12. Copies of communications material related to specific topics or media type are available from Avocados Australia on request.

- An **Avocado Industry Stakeholder Engagement and Extension Plan** was completed by Coutts J&R. The document is provided in Appendix 13.

The Plan is to inform future approaches to extension to meet the needs different grower sub-groups, supply chain partners and other key stakeholders.

The following internal outputs were delivered as part of the program:

- Updated instructions related to new processes and forms for entering and/or reporting data in the Infocado and OrchardInfo systems.
- A costed electronic tool (online product dispatch advice system) for small grower-packer businesses to enable more efficient data entry into the current Infocado system.

4 Outcomes

Infocado

Weekly and Quarterly Infocado and Weekly Retail Price Reports continue to be compiled and distributed to support supply chain management and broader industry planning.

Planned changes to the Infocado system will enhance data contribution and accuracy, further cementing this tool as one of the key sources of information for decision-making.

OrchardInfo and longer term production projections

OrchardInfo Reports continue to be compiled and distributed to support industry planning. The new simplified format has significantly increased contribution and therefore data accuracy. In the 2016 OrchardInfo Report, 480 production business contributed data compared with 306 for the previous reported period - an increase of 60% of contributors.

OrchardInfo data is critical to evaluate the performance of the industry, as an information source for third party analysis work and to underpin long term production projections.

Long term data projections, developed by Avocados Australia, have been communicated to the avocado industry via Qualicado workshops. The projections have highlighted the expected increase in production volumes over the coming years and have been used as the basis for discussions about how the industry and businesses within the industry should be responding to expected changes in the market.

Best Practice Resource

The BPR continues to be promoted, via multiple channels, as the key source for avocado industry educational resources and technical information for growers and the supply chain. Development of new content, especially videos and *Avo Alerts*, is making the BPR a richer learning environment for users and encouraging users to revisit the portal. In addition to this the new platform on which the BPR is now hosted has significantly improved useability.

Registrations on the system continue to increase. In November 2014 there were 350 registrants. At the commencement of this project (December 2015) there were 530 registrants. Currently (May 2017) there are 702 uses registered on the system.

Qualicado workshops

In total 700 industry stakeholders attended the 8 regional and 5 metropolitan Qualicado workshops. Details of attendance are provided in Table 1 and evaluations of the workshops are provided in Tables 2 and 3 below.

All presentations from the Qualicado regional workshops have been posted to the BPR.

The regional workshops achieved excellent attendance and both anecdotal feedback and formal evaluations show that these events have successfully met a need in the sector.

Table 1: Details of Qualicado workshops showing attendance numbers

Date	Region	Venue	Attendees
28/4/16	Sunshine Coast	Donovan (Bellthorpe)	44
5/5/16	Tamborine Northern Rivers	Williams (Tamborine)	80
26/5/16	Central NSW	Debrecey (Comboyne)	65
9/6/16	South Queensland	Dugdell (Kumbia)	64
22/6/16	Perth metropolitan	City Markets (Perth)	10
23/6/16	Western Australia	Bendotti (Pemberton)	102
14/7/16	North Queensland	Foyster (Arriga)	108
28/7/16	Tri-State	Marr (Mildura)	82
11/8/16	Central Queensland	DAFQ Research Station (Bundaberg)	82
30/8/16	Brisbane metropolitan	Brisbane Markets	20
17/8/16	Sydney metropolitan	Sydney Markets	15
16/8/16	Adelaide metropolitan	Adelaide Markets	16
18/8/16	Melbourne metropolitan	Melbourne Markets	12
8 regional Qualicado workshops attended by 627 people			700
5 metropolitan Qualicado workshops attended by 73 people			

Note: Metropolitan workshops are highlighted in grey.

Below is a summary of the evaluation of each of the workshops.

Qualicado Regional Workshops: A summary of key evaluation questions for the regional workshops is provided in the table below. In total 321 attendees or 51.2% of attendees at regional workshops provided feedback through the formal evaluation process. Of these 77% of these were growers.

Table 2: Summary of Qualicado regional workshops evaluations showing response rate and responses to selected questions

Question	Response		Q1 (Attendee categories)				Q2*	Q4*	Q5*		Q6*	Q8*
Event	Total Responses	Percentage of Attendees	Growers	Suppliers	Researchers	Other	Usefulness / 5	Average speaker quality / 10	Yes %	No %	Average / 10	Avg location rating / 10
Sunshine Coast	32	72.7	21	1	3	7	4.3	8.5	100	0	8.2	8.2
Tamborine Nth Rivers	46	57.5	36	1	2	7	4.1	8.7	95.7	4.3	8.1	9.3
Central NSW	47	72.3	39	0	3	5	4.3	8.4	97.9	2.1	8.3	9
South QLD	28	43.8	20	0	3	5	4.1	8.3	96.4	3.6	7.7	8.5
WA	52	51.0	45	3	1	3	3.8	8.0	94.2	5.8	7.3	8.5
NQ	41	38.0	28	1	2	9	3.9	8.2	100	0	8	8.5
TriState	41	50.0	34	1	2	4	4	8.6	97.6	2.4	8.6	7.4
Central Qld	34	41.5	24	3	7	0	4.0	8.2	100	0	7.2	8.7

* Note: Related questions are provided below:

- Q2. Has this Qualicado workshop provided you with useful information? *Tick a number from 1 to 5 with 1 being not useful and 5 being extremely useful.*
- Q4. How would you rate the quality of speakers? *Circle a number between 1 and 10 with 1 being poor and 10 being excellent*
- Q5. Overall would you say that you gained value from attending this event? *Yes / No*
- Q6. 'I will use the information gained during this workshop to improve/change some of my practices'. How strongly do you agree or disagree with this statement? *Please circle a number between 1 and 10 with 1 being 'strongly disagree' and 10 being 'strongly agree'.*
- Q8. How would you rate the location for this event? *Circle a number between 1 and 10 with 1 being poor and 10 being excellent*

Qualicado Metropolitan Workshops: A summary of key evaluation questions for the metropolitan workshops is provided in the table and commentary below. In total 42 attendees or 57.5% of attendees at metropolitan workshops provided feedback through the formal evaluation process.

In 2016 a new format was tried, where the metropolitan workshops were divided into two shorter sessions. The first session was approximately 1 hour and provided an Industry Update. All stakeholders were encouraged to attend, especially Sales and Management staff. The second session was about 45 minutes to 1 hour and provided a Technical Update. All stakeholders were encouraged to attend, especially Technical and Quality Management staff.

There was a significant improvement in attendance levels at the metropolitan workshops compared to similar events in previous projects. This is attributed in part to a change in workshop format, with 40 of 41 respondents to the evaluation question indicating that the new shorter format for workshops that was adopted in 2016 was preferred.

One hundred percent (100%) of respondents indicated that the venues chosen were appropriate.

The respondents also provided comments on whether these events should continue to be held and what their format should be, as well as region-specific details about what topics should be covered in the future, what improvements should be made and other comments.

Table 3: Summary of Qualicado metropolitan workshops evaluations showing response rate and responses to selected questions

	Response		Q1 (Attendee categories)			Overall			Industry Update (%)			Technical Update (%)		
						Q3*	Q4*	Q9*		Q6*	Q6a*		Q7*	Q7a*
Event	Total Respondents	% of Attendees	No.- GM/ Sales	No.- Technical	Other	Overall Usefulness (% respondents)	Avg speaker quality / 10	Logged on to BPR (% of responses)	Attendees (% respondents)	'Yes', of value (% responses)	% of responses to change practices	Attendees (% respondents)	of value (% responses)	% of responses to change practices
Perth	8	80	5	1	2	100	NA**	40	88	100	33	100	100	40
Bris	8	40	7	1		100	8.9	10	88	86	33	90	100	80
Syd	10	67	5	4	1	90	8.5	30	80	100	33	100	100	60
Adel	8	50	7	1		100	8.8	40	100	75	57	100	90	100
Melb	8	67	7	1		100	8.5	40	88	100	14	80	100	100

* Note: Related questions are provided below:

Q3. Has this Qualicado workshop provided you with useful information? *Yes / No*

Q4. How would you rate the quality of speakers? *Circle a number between 1 and 10 with 1 being poor and 10 being excellent*

Q5. Overall would you say that you gained value from attending this event? *Yes / No*

Q6. If you attended the "Industry Update" section, did you find this of value?

Q6a. If you answered yes to the above question, as a result of attending this workshop do you believe you will make any changes in your business? *Yes/No*

Q7. If you attended the "Technical Update" section did you find this of value? *Yes/No/Not applicable*

Q7a. If you answered yes to the above question, as a result of attending this workshop do you believe you will make

Facilities and whole-of-supply chain checks

In reference to the facility checks (packhouse), areas for improvement focused on:

- Dry matter testing of fruit for first six weeks of harvest and at fruit receipt at the pack house,
- Pre cooling and transport processes driven by temperature logging results
- Pre cooling processes driven by temperature results for each cool room and pallet position and room load
- Detailed feedback on ripening performance of each block using retention samples.

- Ensuring that Sportak® is used as a run to waste system to ensure optimal active ingredient is in contact with fruit, and
- Improved communication in the supply chain.

These improvements, if adopted are likely to reduce bruising and rot development that emerge late in the supply chain. It was noted that many grower-packers monitor the effectiveness of their operations through differing approaches and there is increasing use of loggers for monitoring temperature en-route to market.

In relation to whole-of-supply chain checks, the benchmark against which this cool chain management study was conducted was that all Hass avocado fruit in the pallet are cooled to 5-7°C before dispatch from the packing shed and then held at that temperature irrespective of what combination of transport options are used, until it arrives at the ripener. This would ensure maximum quality and uniformity is maintained whilst offering the greatest flexibility in storage options before ripening, to maximise sale price under potentially fluctuating supply and demand conditions.

The temperature logging of consignments showed considerable variation between consignments. None of the three adhered to best practices. It is likely that the consignments with the least consistency in temperature management were those

- Where there was insufficient time between packing and when that fruit had to be on a truck for dispatch,
- Where an order only involved a couple of pallets of avocados in a truck that was probably carrying other produce, and
- Where repeated transhipping between trucks and between truck and rail was occurring.

Each of the packing shed managers took the view that there was room for improvement in better adherence to best practice storage conditions of 5-7°C. Despite this, temperatures remained below 10°C during transport and given that fruit were to be ripened for immediate domestic sale in each case, the risk of impacting on fruit quality was considered low by the packing sheds involved.

Stakeholder engagement plan

The stakeholder engagement plan, developed by Coutts J&R, recommended that many of the current stakeholder engagement / extension activities continue in much the same way as the formula is generally working. It does however recommend some minor modifications be made.

It indicated that growers feel that they are receiving useful services and value for their levies, noting that the industry has been growing with increased production and the quality of produce has also improved. It found that Avocados Australia is highly valued and viewed as an industry focal point, a source of grower support, a provider of best practice information and industry knowledge (including R&D) and a forum/conduit for sharing information.

The Plan draws on the five Hort Innovation investment priorities (outlined in the DRAFT Avocado SIP 2017-2021) to provide guidance to the industry's engagement principles. The priorities are:

- Support – Industry efficiency and sustainability
- Improve – productivity of the supply chain through innovative technologies
- Grow – the horticulture value chain capacity
- Drive – long term domestic and export growth
- Lead – strategically to enhance the development of the Australian horticulture industry through operational excellence.

The Plan proposes an aspirational stakeholder planning framework, which includes a range of activities and methods - from those which should be considered core and of ongoing importance to those which would require more resources and time to implement. Methods are categorised as: core ongoing engagement methods; should be included but needs a little extra investment; and nice to have with more investment and support. It highlights the desire for new information about production and supply chain management to improve productivity and quality. It also confirms the appropriateness of the delivery mechanisms used in the current project and offers potential new approaches including stratified workshops, international study tours, and regional two day events that would highly valued by industry stakeholders, particularly growers.

5 Evaluation and discussion

5.1 Infocado

The Infocado system continues to provide valuable information and benefit to contributing businesses and the broader Australian avocado industry. Delivery of reports is consistent on a week-to-week and a quarter-to-quarter basis and is supported by commentary (articles) in *Talking Avocados* to raise awareness of the need for and benefit of accurate industry data. Infocado data continues to be improved and monitored through a number of processes outlined in the method section.

Although the data collection, collating and reporting process has been streamlined over time and within this project, there is still a considerable time investment required to maintain and improve data contribution levels and accuracy. One of the short comings of the current Infocado system has been the difficulty to get smaller grower-packer businesses to be active contributors of data to the system on a weekly basis. A concept (and related costing) for a tool to assist these businesses was developed. This involved the development of an electronic Product Dispatch Advice system from which weekly data for the Infocado system could be automatically extracted and aggregated. The business could then forward the aggregated dispatch data to the Infocado system and would then only need to check and/or provide a simple supply estimate (incorporated in the process design) for each of the next four weeks to complete the weekly Infocado data collection process. There were multiple benefits to the business with this approach including improving internal administrative processes for the participating business, improved supply chain transparency and application for other crop types. However a parallel review of the Infocado system undertaken by Avocados Australia and subsequent recommendations to the Avocados Australia board has superseded the requirement for this to be progressed.

There is also a requirement to maintain an open dialogue with the New Zealand industry to ensure that any data collection and reporting changes made by either country do not have unintended consequences for the other. There have been a number of issues that have had to be managed over the life of the project including changes to the reporting times of Australian Customs data and the preferred methodology for the allocation of weeks in any given year.

Packers and other supply chain businesses value both Weekly and Quarterly Reports as key information sources for decisions related to harvest and stock management and subsequently fruit quality.

5.2 OrchardInfo

The OrchardInfo system continues to provide valuable data for the avocado industry however the level of contribution to the system is sub-optimal and there is a substantial time investment required to ensure the data is adequate and reflective of industry conditions. Over many years, Avocados Australia has tried many approaches to improve the level of contribution and accuracy of data provided to the system. The latest changes, including simplifying the data required, has resulted in a significant increase in the number of growers participating in the data collection exercise, from 306 in the previous collection period to 480 in the 2016 period. Initially this has been because it has been possible to capture the required data over the phone, which was not possible using the old format, due to the extent of detail required. It is hoped that the new contributors (growers) will, in future years, be more likely to validate and update their own data through the online system, as they are now engaged with the process.

Validating the broader sets of OrchardInfo data (at a regional level) remains problematic because of the reluctance of some growers and nurseries to share information, particularly on new plantings. Outcomes from the project 'ST15008 - Multi-scale monitoring tools for managing Australian Tree Crops: Industry meets innovation' may provide a complementary mechanism to improve the collection and validation processes, especially in regard to planting and possibly productivity data.

Given the on-going increase in avocado plantings across the country, it is critical that the industry continues to collect (and improve the accuracy of) planting and productivity data, foremost to inform future industry planning in relation to supply, market development and competitiveness, infrastructure development and logistics planning.

5.3 Best Practice Resource

As outlined above the BPR is a key resource for avocado industry stakeholders. The on-going investment in new content, upgrading of the online platform through which it is delivered, and the continuous promotion of the resource has seen registration figures increase.

Inbuilt metrics in the new platform will allow Avocados Australia to better monitor the usage of the BPR, beyond the number of registrants. This will provide the opportunity to identify usage patterns to ascertain areas of particular interest to growers and other industry stakeholders, to help shape further communication.

5.4 Qualicado

Qualicado workshops

The Qualicado workshops continue to be extremely well supported and the evaluations show that they are well targeted and valued by attendees. Apart from providing a platform for extension of R&D, they also provide the industry the opportunity to network with and learn from other growers. This is an important aspect of these functions.

More than 94% of survey respondents at each Qualicado Regional Workshop indicated they gained value from attending. Likewise more than 80% of survey respondents at each Qualicado Metropolitan Workshop indicated they gained value from attending.

Increasingly staff of production and supply chain businesses are attending these events as business owners and managers realise they provide a learning opportunity. In future years there should be a targeted effort to increase staff participation in these events.

At the same time, there was (verbal) feedback from more innovative growers that they are looking for more substance in the content of the Qualicado Regional Workshops (and also the Study Groups). This was supported by findings from the stakeholder consultation as part of the development of the Stakeholder Engagement Plan.

One of the challenges for the regional events is that there is a cross-section of growers with varying skills and knowledge, particularly in regard to the more technical aspects of growing. Hence there is a need to pitch information at the mid-level of industry. At the same time the 2016 Qualicado Regional Workshops were deliberately pitched to provide a broad range of information related to quality and productivity in short format presentations, rather than going in-depth on one topic (as is the case with the Study Groups). The feedback provided by growers became one of drivers for the development of the Stakeholder Engagement and Extension Plan (Appendix 14), which in part addresses this issue.

Facility and whole-of-supply chain checks

The findings of projects AV12012 and AV15004, which both completed facilities checks with packers, wholesalers and ripeners indicated that there are common issues across many businesses. This indicates that there is a need to raise awareness of fruit quality issues and for a continuous focus on operations to maintain quality levels.

Problems identified in the research ranged from the impact of mixed loads, poor communication (sharing of data and information) along the supply resulting in inefficiencies and poor handling.

In the final report for the whole-of supply chain checks it stated, "Given the variation within and between the case studies, further monitoring is recommended to build more confidence in the amount of storage/transport temperature variation in moving avocados around Australia, particularly where extended storage in the supply chain is likely or where fruit is destined for export markets. In addition to knowing what are the ideal storage/transport conditions, controlled trials would be of significant value to the industry to identify the impact of different levels of temperature departure from best practice transport conditions i.e. whether you need a minimum of say 24hrs of temperature above 10°C to see a tipping point impact on fruit ripening and quality."

The report also emphasised the need to focus on and improve 'connections' between each of the supply chain parties in terms of communication as this would assist in overcoming inefficiencies that compound fruit quality issues. In addition it highlighted the interplay of a range of factors that result in sub-optimal supply chain management conditions.

Facility and whole-of-supply chain checks raise awareness of issues with supply chain parties and although it is hoped that this awareness will bring about change this is not always the case. On-going research is needed to better

understand the contributing factors that reduce fruit quality and how these might be overcome, so that producers and supply chain parties can be better informed and can respond effectively and efficiently to the challenge. This R&D and the resultant solutions are more likely to bring about practices change in the future.

5.5 Future Industry Engagement

The Stakeholder Engagement Plan developed by Coutts J&R proposes an aspirational stakeholder planning framework, which includes a range of activities and methods, which can underpin the delivery of extension for the industry.

The Plan provides the opportunity to inform industry discussion and guide future approaches to the delivery of extension. Given the changing nature of the industry and feedback from stakeholders it is important that careful consideration is given to topic. The Plan provides the opportunity to deliver extension in a more nuanced way to better meet stakeholders' needs and levy payers expectations and subsequently delivering improved outcomes from R&D investment.

6 Recommendations

The following recommendations are provided:

- Industry data continues to be collected and the resultant reports – the Weekly Infocado Reports, Quarterly Infocado Reports and Annual OrchardInfo Reports continue to be developed and distributed appropriately to industry.
- Long term production projections continue to be developed to inform industry planning.
- Data collection and reporting processes continue to be refined in acknowledgment of the changing profile of the industry, changing information needs and to improve data accuracy.
- The industry continues to seek other sources of information to validate all data reported. In particular, it should seek to influence Horticulture Innovation project ST15008 - Multi-scale monitoring tools for managing Australian Tree Crops: Industry meets innovation, to achieve meaningful outcomes to support the industry.
- The industry continues to build content in the Best Practice Resource, whilst ensuring that its content is up-to-date, relevant, engaging and easily accessible.
- The Best Practice Resource continues to be promoted as the go-to location for industry educational resources and technical information on production and supply chain practices.
- Qualicado workshops (or similar) are undertaken, at least on an annual basis in each region, to extend R&D, support productivity and quality improvement and industry development more broadly.
- Further understanding (and monitoring) of factors that influence quality at all stages of the avocado lifecycle need to be a priority. This includes factors that impact at the field level as well as throughout the supply chain. As greater understanding is achieved through research, this knowledge needs to be embedded in best practice guidelines and extended to industry. This is consistent with priorities in the current Avocado Industry Strategic Investment Plan.
- Serious consideration is given to the adoption of the extension framework proposed in the stakeholder engagement report. This will allow industry service providers to engage in a considered, structured and efficient way with growers and supply chain parties.

7 Scientific refereed publications

None to report.

8 Intellectual property/commercialisation

No commercial IP generated.

9 Acknowledgements

Avocados Australia would like to acknowledge the support of the following parties:

- Department of Agriculture and Fisheries Queensland and in particular Noel Ainsworth and Simon Newett (production and supply chain expertise and extension)
- Jenny Margetts (P2P Business Solutions) and Joanna Embry (project delivery support)
- Graeme Forsythe & Associates (data management and development activities)
- Freshmax and in particular Patti Cooper-Harrison (avocado ripening video)
- Premier La Manna (avocado ripening video)
- Indooroopilly Fruit and in particular Joseph Guardala (avocado retailing video)
- The staff of Avocados Australia, in particular Amanda Madden for her ongoing commitment to delivering accurate industry information.

10 Appendices

Appendix 1: New OrchardInfo planting data collection form

Appendix 2: New OrchardInfo productivity survey form

Appendix 3: Schedule of Qualicado workshops

Appendix 4: Qualicado regional workshop agendas

Appendix 5: Qualicado metropolitan workshop agenda (example)

Appendix 6: Weekly Infocado Report (example)

Appendix 7: Weekly Retail Price Report (example)

Appendix 8: Quarterly Infocado Report (example)

Appendix 9: Best Practice Resource – main page

Appendix 10: Avo Alert - North Queensland Hass for October/November (example)

Appendix 11: Facility and whole-of supply chain checks – final report (DAFQ)

Appendix 12: Communications related to project activities (*Talking Avocados*)

Appendix 13: Avocado Industry Stakeholder Engagement Plan

Appendix 1: New OrchardInfo Planting Data Collection Form

OrchardInfo Avocado Tree Census							Census Date	01/10/17	Ref No	BPA160907
		Avocado Tree Census 2016								
Block Name	Variety	Plant Year	Tree Space	Row Space	No Trees	Ha	Comments (Optional)	Remove Block		
								┐		
								┐		
								┐		
								┐		
								┐		
								┐		
								┐		
								┐		
								┐		
								┐		
								┐		
								┐		
								┐		
								┐		
								┐		
								┐		
								┐		
								┐		
Page Total										

Appendix 2: New OrchardInfo Productivity Survey Form



2016 Avocado Regional Productivity Survey

Avocados Australia has recently adopted a new approach to the collection of orchard data. A simplified annual tree census is being used to collect planting data from all growers. To collect productivity data, we are seeking a representative sample of production businesses in each region to participate in a long term study to track average marketable yield (marketable tonnes/hectare) for each region over time.

All data collected will be used in aggregated form. Individual data will not be identifiable. The same confidentiality conditions will apply to this data as that which applies to Infocado data.

We appreciate you taking the time to complete this survey. If you have any questions please contact Avocados Australia on 07 38466566 or infocado@avocado.org.au

(Please note if you are converting trays per hectare a conversion rate of 5.5kg fruit per tray is industry standard . Hence if you are producing 2,000 tray per hectare this is equivalent to 11,000kg (2,000x5.5kg) / ha or 11 tonnes / ha).

* 1. What is the location of your production property? *(Please choose only one growing region. If you have properties in different regions please choose your largest operation)*

- ☐ North Queensland
- ☐ Central Queensland
- ☐ South Queensland
- ☐ Sunshine Coast
- ☐ Tamborine/ Northern Rivers
- ☐ Central NSW
- ☐ Tri State
- ☐ Western Australia

* 2. What is your business name?



☐ Western Australia

* 2. What is your business name?

* 3. Please provide your name - *just in case we need to talk to you about your data :*

4. What was the total hectares of mature (6+yrs) **Hass** grown on your property as at 1 August 2016?

5. What was the average marketable tonnes of fruit per hectare (t/ha) from all mature (6+yrs) **Hass** trees on your property during your 2015/2016 season? *(note for clarity: Sunshine Coast, South Queensland, Tambourine/NNSW, CNSW please provide data for crop harvested in 2015)*

6. What was the total hectares of mature (6+yrs) **Shepard** grown on your property as at 1 August 2016?

7. What was the average marketable tonnes of fruit per hectare (t/ha) from all mature (6+yrs) **Shepard** trees on your property during your 2016 season?

Thankyou for your contribution - Please Click Here to Submit

Powered by



See how easy it is to [create a survey](#).

Appendix 3: Schedule of Qualicado workshops

Date	Region	Venue
28/4/16	Sunshine Coast	Donovan (Bellthorpe)
5/5/16	Tamborine Northern Rivers	Williams (Tamborine)
26/5/16	Central NSW	Debreceeny (Comboyne)
9/6/16	South Queensland	Dugdell (Kumbia)
22/6/16	Perth metropolitan	City Markets (Perth)
23/6/16	Western Australia	Bendotti (Pemberton)
14/7/16	North Queensland	Foyster (Arriga)
28/7/16	Tri-State	Marr (Mildura)
11/8/16	Central Queensland	DAFQ Research Station (Bundaberg)
	Brisbane metropolitan	Brisbane Markets
	Sydney metropolitan	Sydney Markets
	Adelaide metropolitan	Adelaide Markets
	Melbourne metropolitan	Melbourne Markets

Note: Metropolitan workshops are highlighted in grey.

Appendix 4: Qualicado Regional Workshop Programs

Sunshine Coast Qualicado Workshop

28th April 2016

Venue: Neil & Jocelyn Donovan

08.30am Tea and coffee on arrival

09.00am Welcome by Robert Price, Avocados Australia Director – Sunshine Coast

09.05am Program and Industry Update - John Tyas, Avocados Australia

09.50am Production Management – Phytophthora re-visited – Simon Newett, QDAF

10.20am Using the Best Practice Resource (BPR) – Jenny Margetts, Avocados Australia

10.30am Morning Tea (30 mins)

11.00am Avocado Nutrition – Lisa Martin, Ripe Horticulture

11.40am Production Management – Pollination – Simon Newett, QDAF

12.10pm Export Development – John Tyas, Avocados Australia

12.20pm – Update on organic inputs – Jason Vella – Organic Crop Protectants

12.30pm Lunch (45mins)

01.15pm South American Avocado Industry – Simon Newett, QDAF

1.45pm Industry Marketing Update – John Tyas, Avocados Australia

2.00pm Making your supply chain work – Noel Ainsworth, QDAF

02.35pm Wrap up of day – John Tyas, Avocados Australia

02.45pm Orchard Walk - Lisa Martin & Simon Newett & Noel Ainsworth

03.30pm Wrap Up & Finish

Northern Rivers Tamborine Qualicado Workshop

5th May 2016

Venue: John & Lindy Williams

08.30am Tea and coffee on arrival

09.00am Welcome by Tom Silver, Avocados Australia Director – Northern Rivers Tamborine

09.05am Program and Industry Update - John Tyas, Avocados Australia

09.45am Avocado Nutrition – Simon Newett, QDAF

10.20am Using the Best Practice Resource (BPR) – Jenny Margetts, Avocados Australia

10.30am Morning Tea (30 mins)

11.00am Managing 'organically' – Jason Vella – Organic Crop Protectants

11.30pm Export Development – John Tyas, Avocados Australia

11.40am Making your supply chain work – Noel Ainsworth, QDAF

12.10pm Industry Marketing Update – John Tyas, Avocados Australia

12.25pm Avocados on Tamborine

12.35pm Lunch (45mins)

1.20pm South American Avocado Industry – Simon Newett, QDAF

1.50pm Production Management – Managing Disease for Productivity and Quality – Liz Dann, QAAFI

2.30pm Wrap up of day – John Tyas, Avocados Australia

02.45pm Orchard Walk – Liz Dann, Simon Newett & Noel Ainsworth

03.30pm Wrap Up & Finish

Central New South Wales Growers' QUALICADO WORKSHOP

When & Where: 8.30am start (arrive 8.15am) to 3.00pm, **Thursday 26th May, 2016**

Venue: **Address:** **Kevin & Robyn Debreceeny**
Comboyne Avocados, 2123 Comboyne Road, Comboyne

PROGRAM

08.15am Tea and coffee on arrival
08.30am **Welcome** by Ian Tolson, Avocados Australia Director, Central NSW
08.35am **Avocado Program and Industry Update** - John Tyas, Avocados Australia
09.15am **Managing Disease for Productivity & Quality**- Simon Newett, DAFQ
10.00am Morning Tea (30mins)
10.30am **Export Development** - John Tyas, Avocados Australia
10.45am **Making your Supply Chain Work** - Noel Ainsworth, DAFQ
11.15am **Organics for Healthy Avocados** - Denis Roe, Subtropical Fruit Farm Consultancy
Services
11.55am **Best Practice Resource & Industry Data** - John Tyas, Avocados Australia
12.15pm Lunch (45mins)
01.00pm **Avocado Nutrition** - Simon Newett, DAFQ
01.45pm **Industry Marketing Update** - John Tyas, Avocados Australia
02.00pm **Wrap up of day** - John Tyas, Avocados Australia
02.15pm **Orchard Walk** - John Tyas, Simon Newett, Noel Ainsworth & Denis Roe
03.00pm Wrap Up & Finish

Western Australia Growers' QUALICADO WORKSHOP

When & Where: 9.00am start (arrive 8.30am) to 3.15pm, **Thursday 23rd June, 2016**

Venue: **Address:** **Joe & Shane Bendotti**
Bendotti Orchards, 243 Golf Links Road, Pemberton

PROGRAM

08.30am Tea and coffee on arrival
09.00am **Welcome** by Neil Shenton, Avocados Australia Director, Western Australia
09.05am **Avocado Program and Industry Update** - John Tyas, Avocados Australia
09.45am **Making your Supply Chain Work**- Noel Ainsworth, DAFQ
10.20am **Using the Best Practice Resource (BPR)**
10.30am Morning Tea (30mins)
11.00am **Managing for Productivity and Quality** - Simon Newett, DAFQ
11.45am **Crop Nutrition: Calcium - the essential element** - Ross Milne, Nutrian
12.15am **A different perspective on pollination** - Dr Brad Howlett, Plant & Food Research
12.30pm Lunch (45mins)
01.15pm **Export Development** - John Tyas, Avocados Australia
01.30pm **Using imagery and robotics technologies to improve productivity**
Assoc. Prof. Andrew Robson, University of New England
02.10pm **Marketing Update** - TBA
02.30pm **Orchard Walk** - John Tyas, Joe & Shane Bendotti, Simon Newett & Noel Ainsworth
03.15pm **Wrap Up & Close** - John Tyas, Avocados Australia

South Queensland Growers' QUALICADO WORKSHOP

When & Where: 9.00am start (arrive 8.30am) to 3.15pm, Thursday 9th June, 2016

Venue: Address: **Lorraine & Dennis Dugdell and Mia & Tony Dugdell**
K-Sun Fruit, 8131 Bunya Highway, Kumbia

PROGRAM

08.30am Tea and coffee on arrival
09.00am **Welcome** by Daryl Boardman, Avocados Australia Director, South QLD
09.10am **Program and Industry Update** - John Tyas, Avocados Australia
09.50am **Managing Disease for Productivity and Quality** - Liz Dann, QAAFI
10.30am Morning Tea (30mins)
11.00am **Review of flowering season 2015** - Simon Newett, DAFQ
11.20am **Irrigation** - Neil Mungall, BGA AgriServices
11.45am **Orchard Walk** - John Tyas, Neil Mungall, Liz Dann, Simon Newett & Noel Ainsworth
12.30pm Lunch (45mins)
01.15pm **Organic options** - Jason Vella, Organic Crop Protectants
01.45pm **Export Development** - John Tyas, Avocados Australia
02.00pm **Making your Supply Chain Work** - Noel Ainsworth, DAFQ
02.30pm **Using the Best Practice Resource (BPR), New Information & Products**
- John Tyas, Avocados Australia
02.50pm **Industry Marketing Update** - TBA
03.05pm **Wrap up of day** - John Tyas, Avocados Australia
03.15pm Finish

North Queensland Growers' QUALICADO WORKSHOP

When : 9.00am start (arrive 8.30am) to 4.00pm, Thursday 14th July, 2016

Hosts: Foyster family, Aussie Orchards Growers & Packers

Address: 1463 Mareeba-Dimbulah Road, Arriga (Mareeba)

PROGRAM

08.30am Tea and coffee on arrival
09.00am **Welcome** by Jim Kochi, Avocados Australia Chair
09.10am **Avocado Program and Industry Update** - John Tyas, Avocados Australia
09.45am **Maximising Profits in Avocados** - Howard Hall, Pinnacle Agribusiness
10.30am Morning Tea (30mins)
11.00am **Managing Nutrition in your Orchard** - Lisa Martin, Ripe Horticulture
11.45am **Ambrosia Beetles -Assessing the Threat** - Kaila Ridgway & Dr Ian Newton, DAFQ
12.15am **Using the Best Practice Resource (BPR)**
12.30pm Lunch (45mins)
01.15pm **Update on the latest Production Management issues** - Simon Newett, DAFQ
01.45pm **Export Development** - John Tyas, Avocados Australia
02.00pm **Making your Supply Chain work** - Noel Ainsworth, DAFQ
02.30pm **Using Imagery and Robotic Technologies to Improve Productivity**
- video presentation by Assoc. Prof. Andrew Robson
02.45pm **Marketing Update** TBA
03.00pm **Orchard Walk** - Colin Foyster & Qualicado presenters
04.00pm **Wrap up of day & Close** - John Tyas, Avocados Australia

Tri-State Growers' QUALICADO WORKSHOP

When : 9.00am start (arrive 8.30am) to 3.30pm, Thursday 28th July, 2016

Hosts: Marr Family, Marrbiz Pty Ltd

Address: 87 Alfred Elms Road, Trentham Cliffs NSW 2738

PROGRAM

08.30am Tea and coffee on arrival

09.00am **Welcome** - Kym Thiel, Avocados Australia Director - Tri-State

09.10am **Program and Industry Update** - John Tyas, Avocados Australia

09.45am **Managing for Maximum Productivity**- Simon Newett, DAFQ

10.30am Morning Tea (30mins)

11.00am **Pollination - A Different Perspective** - video presentation - Dr Brad Howlett,
Plant & Food Research

11.15am **Managing High Carbonate Soils** - Tim Brown, Brokit Agronomy

11.45am **Using Imagery Technologies to Improve Productivity** - video presentation
- Assoc. Prof. Andrew Robson

12.00pm **Update on the Small Tree High Productivity Trials** - Simon Newett, DAFQ (TBC)

12.15am **Avocados Australia Order of Merit Award Presentation**

12.30pm Lunch (45 min)

01.15pm **Export Development** - John Tyas, Avocados Australia

01.45pm **Making your Supply Chain Work** - Noel Ainsworth, DAFQ

02.15am **Using the Best Practice Resource (BPR)**

02.30pm **Marketing Update** (TBA)

02.45pm **Orchard Walk** - Ryan Marr + Qualicado presenters

03.30pm Wrap up of day and Close - John Tyas, Avocados Australia

Central Queensland Growers' QUALICADO WORKSHOP

When : 9.00am start (arrive 8.30am) to 3.30pm, Thursday 11th August, 2016
Hosts: Department Agriculture & Fisheries Queensland (DAFQ)
Address: DAFQ Bundaberg Research Facility
49 Ashfield Road, Kalkie (Bundaberg)

PROGRAM

08.30am Tea and coffee on arrival
09.00am **Welcome** by Lachlan Donovan, AAL Director - Central Queensland
09.10am **Program and Industry Update** - John Tyas, Avocados Australia
09.45am **Field Walk - Small Tree High Productivity Program presentation** -
Dr John Wilkie, DAFQ
10.30am Morning Tea (30mins) - Proudly sponsored by Katek Fertilizers Australia
11.00am **Managing for Maximum Productivity** - Simon Newett, DAFQ
11.40am **Using Imagery Technologies to Improve Productivity** - Chad Simpson,
Simpson Farms; Dr Chris Searle, Consultant; & A/Prof. Andrew Robson,
UNE (video presentation)
12.00pm **Improving Crop Load in Avocados - Results of trial work** - Helen Hofman, DAFQ
12.15am **Ambrosia Beetles -Assessing the Threat** - Kaila Ridgway, DAFQ
12.30pm Lunch (45 min)
01.15pm **Pollination a Different Perspective** - Dr Brad Howlett, Plant & Food Research
01.40pm **Export Development** - John Tyas, Avocados Australia
02.10pm **Making your Supply Chain Work** - Noel Ainsworth, DAFQ
02.30am **Using the Best Practice Resource (BPR)**
02.45pm **HIA Marketing Update** (TBA)
03.00pm **Field Walk** - Trial of avocado rootstocks for high density systems (Helen Hofman)
and macadamia high density trial (Dr John Wilkie)
03.30pm **Wrap Up of Day and Close** - John Tyas, Avocados Australia

Appendix 5: Qualicado Metropolitan Workshop Agenda (example)

Brisbane Wholesalers' QUALICADO UPDATE

PROGRAM

When: Tuesday, 30th August 2016
Session 1: Industry Update - 8.15am for 8.30am start to 9.30am
Session 2: Technical Update - 9.30am for 9.45 am start to 10.30am

Where: Training Room 2, Ground Floor, Fresh Plaza
Brisbane Markets, 385 Sherwood Rd, Rocklea

RSVP: Contact Amanda Madden on 07 3846 6566 or admin2@avocado.org.au
by Friday 26th August 2016

Qualicado Update Program

This year the program has been split into two one-hour sessions.

The first session 'Industry Update' is for those that are interested in getting a higher level snapshot of what is happening in the industry, in regard to production trends, supply issues, future export opportunities, relevant industry R&D etc.

The second session 'Technical Update' is a more detailed look at technical issues related to avocado supply chain management, including the latest research findings regarding fruit management to maximise quality, future research and industry support.

Who should attend?

Session 1: Industry Update: Anyone involved in avocado marketing, sales and handling, including CEOs, business managers, sales people and technical managers.

Session 2: Technical Update: Anyone involved in the technical aspects of avocado handling and ripening including technical /QA managers, ripeners and other technical staff.

We encourage attendance both sessions as this will give you a good overview of everything happening in industry.

Purpose of the Qualicado Update:

The Qualicado Update is part of a broader program to engage industry participants and foster better business outcomes driven by improved product quality for the end consumer. To find out more about the Qualicado program select the 'Services' tab at the Avocados Australia website (<http://industry.avocado.org.au>). .

Agenda:

08.15am

Coffee / tea on arrival

08.30am

Session 1: Industry Update - John Tyas, CEO, Avocados Australia

- Industry trends (plantings, regional volumes, pricing etc.)
- A new approach to industry data collection – Infocado Refresh
- Export development initiatives
- New research programs to support product demand
- Industry marketing update & support

09.30am

Close – Session 1

Morning tea break

09.45am

Session 2: Technical Update

- Noel Ainsworth, Principal Supply Chain Horticulturist, DAFQ
- John Tyas, CEO, Avocados Australia
 - Latest findings from industry research
 - Identifying and addressing quality issues
 - Current industry research & support
 - Using the Best Practice Resource

10.30am

Close

Appendix 6: Weekly Infocado Report (example)



INFOCADO WEEKLY REPORT: 15th — 21st April 2017 (Week 16)

Horticulture
Innovation
Australia

Comments

- North Queensland, Central Queensland, South Queensland & Sunshine Coast packers who are planning to start harvest in the next four weeks, could you please enter your weekly forecast data.
- In total the weekly dispatch volume of 139,500 trays was significantly less than the forecast of 185,764 trays. This report shows that 57% of last weeks dispatches were Shepard.
- New season Hass is beginning to trickle into the market from North Queensland. As with early season Shepard it is an important time to remind any of your growers to make sure all fruit is mature (at least 21% dm for Shepard and 23% for Hass) before picking to ensure high quality fruit in the market.
- Online Weekly Retail Prices are provided for Week 16 (Wed, 19th April —Tues, 25th April).
- We encourage you to check out the new [Avocados Australia website](http://www.avocado.org.au) which is now up and running with plenty of new features, including the revamped BPR. You can download the [Crop Forecasting Case Studies](http://www.avocado.org.au/our-programs/supply-chain-data/infocado/) (<http://www.avocado.org.au/our-programs/supply-chain-data/infocado/>) to help with your Infocado data input. Our new social media platforms have also been launched so please follow us on [Facebook](#) and [Twitter](#).

[Click here to learn How to conduct Dry Matter tests at home](#)

[Click here for a refresher on how to contribute to Infocado](#)

[Click here for tips on using and interpreting Infocado Reports](#)

[Click here to download avocado supply chain education materials](#)

Marketing Update: Digital Avocado Advertising

Avocados will have a digital advertising presence at the Sydney Royal Easter Show via television commercials, static ads on the big screen and banner boards in the stadium and 52 plasma screens around the ground. In total: TVCs: 112 x 15 sec, Static slides: 350 x 15 sec, BannerBoard: 350 x 20 sec, Plasma TVCs: 112 x 15 sec to an audience of 800,000 people. Facebook is continuing with an “always on” approach meaning avocados are part of the daily conversation with consumers. Instagram is continuing to generate likes and inspire consumers with “Another word for Avo inspiration”.

Upcoming Holidays

Labour Day (Qld) : 1st May | Queen’s Birthday (NZ) & WA Day: 5th June | Queen’s Birthday (ACT,VIC,NSW&SA): 12th June |

Report Index

P2: 4 Weekly Forecasts and Import Data | P3: Dispatches | P4: Dispatches by Region and Contributors | P5: Wholesale Data | P6&7 Retail Price Data

IMPORTANT and PLEASE NOTE:

The monthly forecast and dispatch figures

in the Quarterly Infocado Report incorporate an allowance (which varies by region) to allow for the production forecasts and dispatches that are not inputted into the Infocado system. This production (dispatch and forecast) data is not inputted for various reasons including some packhouse’s unwillingness to engage with industry and/or lack of computer access. For this reason it is not possible to extrapolate the figures from the Weekly Infocado Report to come up with either the dispatch and/or forecast figures in the Quarterly Infocado Report. At any time the Weekly Infocado Report incorporates around 85% of total production and forecasts however this does vary depending on time of year (as a result of the fruit coming from different regions with different levels of packhouse input). It is not functionally possible to incorporate allowances for missing data into the Weekly Infocado Report hence the variance between it and the Quarterly Infocado Report.

This message is intended only for the use of the addressee, is confidential and may also be legally privileged. If you are not the intended recipient, please notify us immediately. You should not copy it or use it for any purpose, nor disclose its contents to any other person. If you have already received this transmission in error, please notify us immediately by telephone and delete all copies of this transmission together with any attachments. The views and opinions expressed in this e-mail message are the author’s own and may not reflect the views and opinions of Avocados Australia Limited.

This project has been funded by Horticulture Innovation Australia Limited (HIA) using the avocado industry levy and funds from the Australian Government.

Yellow shading indicates forecast data

Forecast Data (Week 16 - 20)						
Variety	Trays - Total	Bulk	P/Pk	Proc	Other	All - Total
	5.5Kg Eqv	10Kg	Kg	Kg	Kg	5.5Kg Eqv

Week 16 - begin 15/04/2017

Hass	103,200	6,250	2,000	1,450		115,192
Shepard	66,300	2,350				70,573
Week Total	169,500	8,600	2,000	1,450		185,764

Week 17 - begin 22/04/2017

Hass	118,000	8,000	2,000	1,000		133,091
Shepard	29,800	520				30,745
Wurtz	2,000					2,000
Week Total	149,800	8,520	2,000	1,000		165,837

Week 18 - begin 29/04/2017

Hass	147,000	10,100	2,000	1,000	1,000	166,092
Shepard	21,800	300				22,345
Wurtz	2,000					2,000
Week Total	170,800	10,400	2,000	1,000	1,000	190,437

Week 19 - begin 06/05/2017

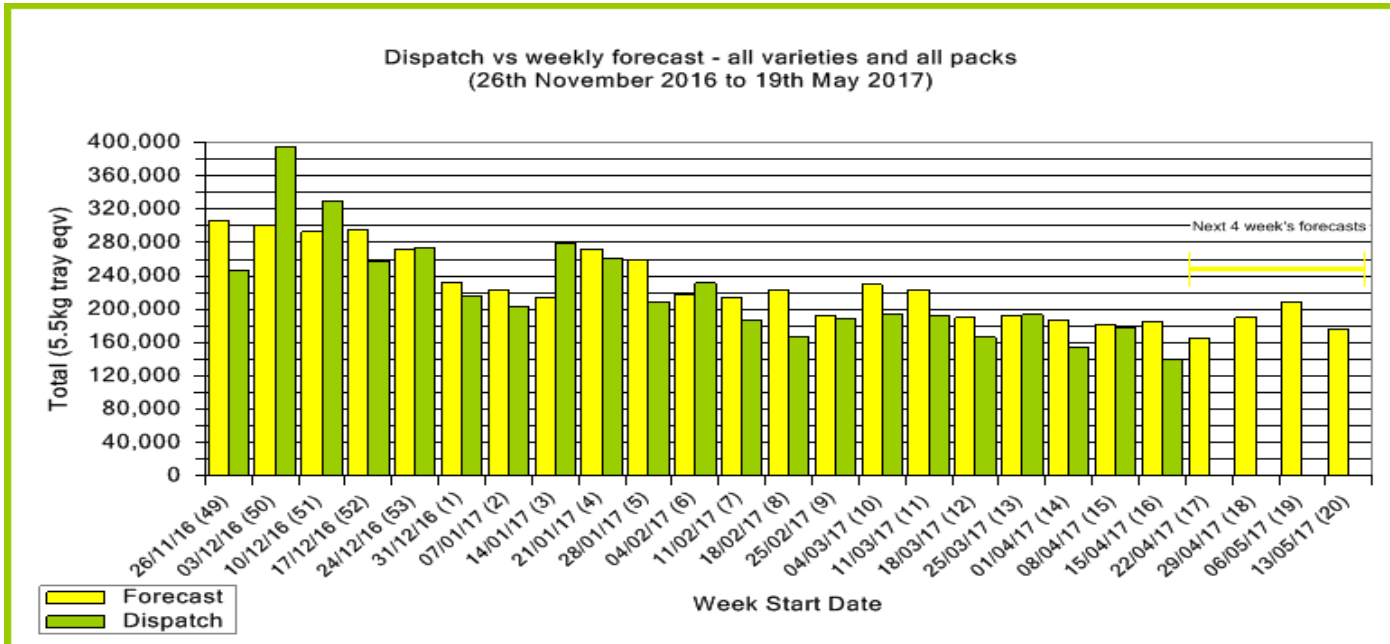
Hass	175,000	11,370	2,000	2,000	1,000	196,583
Shepard	10,000					10,000
Wurtz	2,000					2,000
Week Total	187,000	11,370	2,000	2,000	1,000	208,583

Week 20 - begin 13/05/2017

Hass	132,000	23,150	2,000	2,000		174,819
Wurtz	2,000					2,000
Week Total	134,000	23,150	2,000	2,000		176,819

Green shading indicates dispatch data

Dispatch Data (Week 16 - begin 15/04/2017)					
Variety	Trays 5.5Kg Eqv	Bulk 10Kg	P/PK Kg	Proc Kg	5.5Kg Eqv Total Trays
Fuerte	59	8			74
Hass	53,183	2,153	1,880	1,760	57,760
Pinkerton	239	3			244
Sharwil	902	42	8		979
Shepard	70,374	4,755	83		79,034
Wurtz	1,105	167			1,409
Total	125,862	7,128	1,971	1,760	139,500



New Zealand Avocado Exports—Forecast v Actual Infocado/Export Statistics (5.5kg eqv trays) July 2016 – April 2017											
Export Destination	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	April	Total
NZ-Aus-Pre Season Forecast ¹	20,936	146,782	593,173	608,847	661,481	744,263	844,138	837,098	56,375	1,980	4,515,073
NZ-Aus-Season Forecast Updated (Dec 2016) ²	0	98,497	393,930	422,869	683,373	1,058,295	711,639	562,826	25,057	0	3,956,486
NZ-Aust-Infocado Dispatches ³	0	98,497	393,930	422,869	683,373	1,058,295	711,639	562,826	25,057	0	3,956,486
NZ Imports (from ABS)	0	146,755	368,741	483,657	836,227	1,077,553	839,955	477,272	NA ^{ac}	NA ^{ac}	4,230,160
NZ-USA ⁴	0	0	0	0	15	5	0	0	0	0	20
NZ-Japan ⁴	0	0	46,379	143,597	112,178	32,086	4,057	360	0	0	338,657
NZ-Other Asia ⁴	180	35,855	80,442	230,728	147,138	71,156	45,729	23,359	4,380 ^{bc}	0	638,967
Total Dispatch (3+4)	180	134,352	520,751	797,194	942,704	1,161,542	761,425	586,545	29,437^c	0	4,934,130

1 Source: Infocado data, Seasonal Forecast provided by NZ at start of season

2 Source: Infocado data, Actual Dispatch Data & Updated Seasonal Forecast Data provided by NZ at time indicated in brackets

3 Source: Infocado data, Aggregated weekly dispatch data provided by NZ. Data for current month shows volume to date of current report

(a) Import data not yet available from ABS. (b) Export data not yet available from Infoshare NZ (NZ Govt) (c) Data not complete for month

4 Source: Infoshare New Zealand

Industry Dispatches By Origin Region and Count Size : 15th April - 21st April 2017 (Wk 16)

Origin Region	5.5kg	5.5kg	5.5kg	5.5kg	5.5kg	5.5kg	5.5kg	5.5kg	5.5kg	Trays - Total	Bulk	P/PK	Proc	5.5Kg Eqv Trays All
	<16	16	18	20	22	23	25	28	28+	5.5Kg Eqv	10Kg	Kg	Kg	Total
Central Qld		316	5,230	16,044		11,233	19,718	9,397	2,079	64,017	4,129			71,524
North Qld		549	6,532	13,225		12,833	12,969	7,007	303	53,418	930	1,971	1,760	55,787
Sunshine Coast	21	98	486	1,315	31	1,634	1,876	1,956	1,010	8,427	2,069			12,189
	21	963	12,248	30,584	31	25,700	34,563	18,360	3,392	125,862	7,128	1,971	1,760	139,500

Origin of Avocado



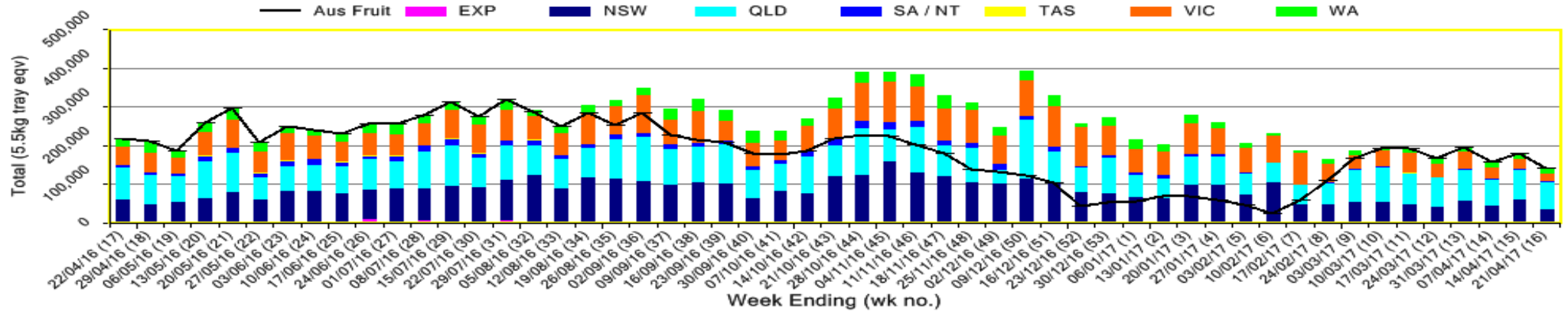
Destination of Avocado



Industry Dispatches By Destination State and Count Size : 15th April - 21st April 2017 (Wk 16)

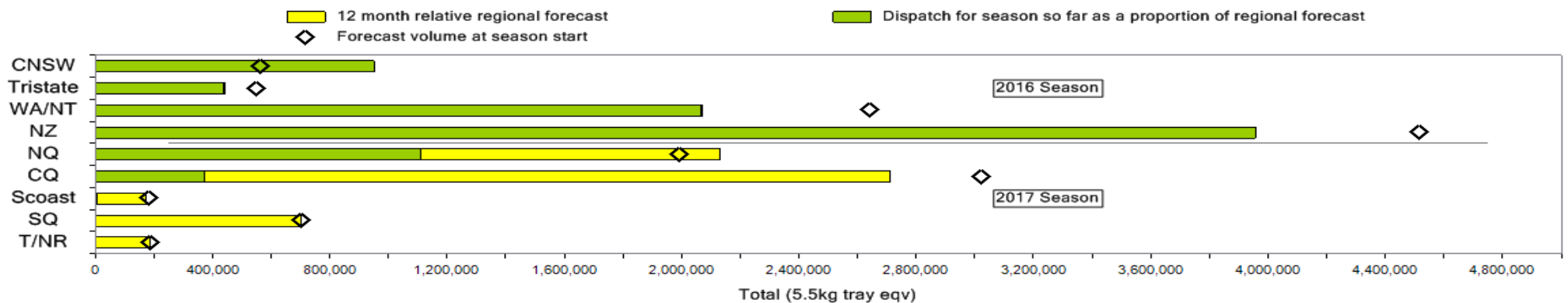
Dest. State	5.5kg	5.5kg	5.5kg	5.5kg	5.5kg	5.5kg	5.5kg	5.5kg	5.5kg	Trays - Total	Bulk	P/PK	Proc	5.5Kg Eqv Trays All
	<16	16	18	20	22	23	25	28	28+	5.5Kg Eqv	10Kg	Kg	Kg	Total
EXP			3						1,700	1,703	194			2,056
NSW		779	3,039	8,668		5,653	8,600	1,440	160	28,339	2,852			33,524
QLD	21	109	5,891	14,523	31	15,430	16,501	11,466	1,338	65,310	2,061	91	1,760	69,394
SA / NT			63	257				1,970	42	2,332	523			3,283
VIC		75	3,101	5,740		3,584	4,351	921	144	17,916	1,176	1,880		20,396
WA			151	1,396		1,033	5,111	2,563	8	10,262	322			10,847
Total	21	963	12,248	30,584	31	25,700	34,563	18,360	3,392	125,862	7,128	1,971	1,760	139,500

Throughput Australian & NZ avocados by destination state Throughput 1st January 2017 to date = 3,160,349 5.5kg tray eqv



NB: The graph below utilises the seasonal forecast data (without adjustment). The total of each bar is the graph below is a result of; Total Monthly Dispatches to date plus the remaining Seasonal Forecast which can be updated monthly by contributors.

Percentage dispatched by region (Based on seasonal forecast - 2017)



Week 16 Contributors - Packhouses

Green Skin Avocados (Consolidator)	Donovan Family Investment Trust (CQ)
Mackays Banana Marketing Co (Consolidator)	Costa Avocados/SuperPak (CQ)
Natures Fruit Company (Consolidator)	Sunny Bluff Produce Pty Ltd (CQ)
Simpson Farms Pty Ltd (Consolidator)	Sunnyspot Packhouse Pty Ltd (CQ)
Sunfresh (Consolidator)	NQ: Less than 3 Packhouse Contributors
The Avolution (Consolidator)	

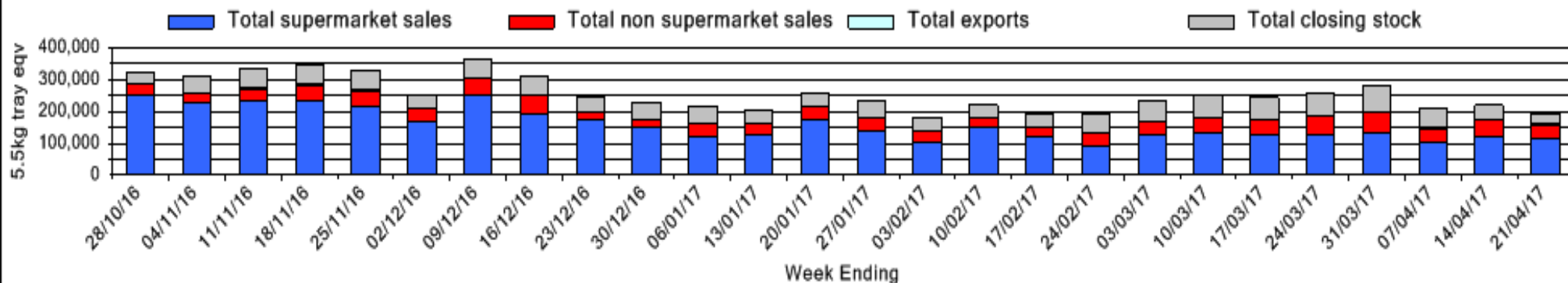
Week 16 Contributors - Wholesalers

Allcrops Pty Ltd (Sydney)	Murray Bros (Brisbane)
Costa Farms (Adelaide)	Sinclair & Antico (Aust) Pty Ltd (Sydney)
Costa Farms (Melbourne)	The LaManna Group (Adelaide)
De Luca Banana Marketing Pty Ltd (Brisbane)	The LaManna Group (Brisbane)
Etherington (Perth)	The LaManna Group (Sydney)
Favco Queensland Pty Ltd (Brisbane)	United Fresh (Adelaide)
Fresh Choice WA Pty Ltd (Perth)	VB Sculli (Melbourne)
LaManna Premier Group (Melbourne)	WA Farm Direct (Perth)

Sales Report including Direct Sales from Packhouses, Wholesale Sales and Stock on Hand at Wholesale Level

	Trays 5.5kg eqv (incl. Mod6 & P84)				Bulk 10Kg Cartons					Pre-Pack Kg					Total (5.5Kg Eqv)			
	Hass	Shepard	Other	Total	Hass	Shepard	Other	Total	5.5Kg Eqv	Hass	Shepard	Other	Total	5.5Kg Eqv	Hass	Shepard	Other	Total
NSW																		
Total supermarket sales	960	21,851	681	23,492											960	21,851	681	23,492
Total non supermarket sales	42	4,472		4,514		1,682		1,682	3,058						42	7,530		7,572
Total exports																		
Total sales	1,002	26,323	681	28,006		1,682		1,682	3,058						1,002	29,381	681	31,064
Total Stock on Hand	1,704	990		2,694		386		386	702						1,704	1,692		3,396
QLD																		
Total supermarket sales	45,922	14,287		60,209											45,922	14,287		60,209
Total non supermarket sales	640	3,985		4,625											640	3,985		4,625
Total exports		1,703		1,703		194		194	353							2,056		2,056
Total sales	46,562	19,975		66,537		194		194	353						46,562	20,328		66,890
Total Stock on Hand	18,918	7		18,925											18,918	7		18,925
SA & TAS																		
Total supermarket sales	608	7,363		7,971											608	7,363		7,971
Total non supermarket sales	2,449	2,042		4,491	738	359		1,097	1,995						3,791	2,695		6,486
Total exports					7			7	13						13			13
Total sales	3,057	9,405		12,462	745	359		1,104	2,007						4,412	10,058		14,469
Total Stock on Hand	2,723	1,453		4,176	219	130		349	635						3,121	1,689		4,811
VIC																		
Total supermarket sales	960	16,030		16,990						1,880			1,880	342	1,302	16,030		17,332
Total non supermarket sales	6,503	4,374	112	10,989	2,462	408	24	2,894	5,262						10,979	5,116	156	16,251
Total exports																		
Total sales	7,463	20,404	112	27,979	2,462	408	24	2,894	5,262	1,880			1,880	342	12,281	21,146	156	33,583
Total Stock on Hand	1,339	1,478		2,817	106			106	193						1,532	1,478		3,010
WA																		
Total supermarket sales		9,124		9,124		22		22	40							9,164		9,164
Total non supermarket sales	2,471	670		3,141	910	281		1,191	2,165						4,126	1,181		5,306
Total exports																		
Total sales	2,471	9,794		12,265	910	303		1,213	2,205						4,126	10,345		14,470
Total Stock on Hand	1,910	335		2,245	788	265		1,053	1,915						3,343	817		4,160
Total																		
Total supermarket sales	48,450	68,655	681	117,786		22		22	40	1,880			1,880	342	48,792	68,695	681	118,168
Total non supermarket sales	12,105	15,543	112	27,760	4,110	2,730	24	6,864	12,480						19,578	20,507	156	40,240
Total exports		1,703		1,703	7	194		201	365						13	2,056		2,068
Total sales	60,555	85,901	793	147,249	4,117	2,946	24	7,087	12,885	1,880			1,880	342	68,382	91,257	837	160,476
Total Stock on Hand	26,594	4,263		30,857	1,113	781		1,894	3,444						28,618	5,683		34,301

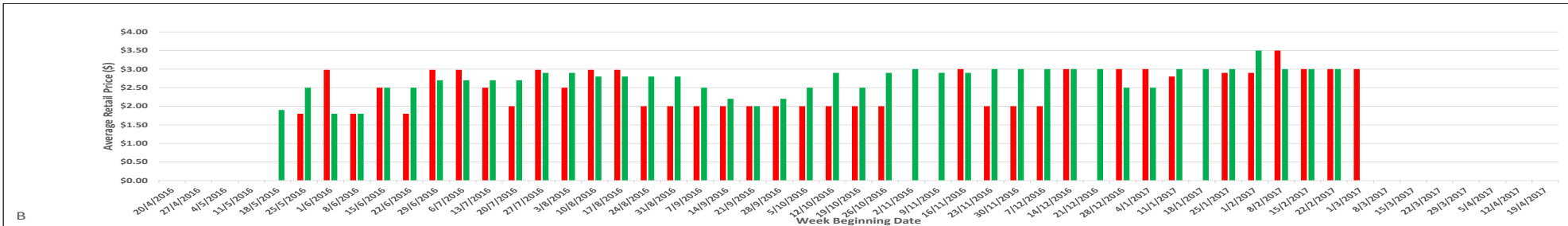
Weekly National Sales



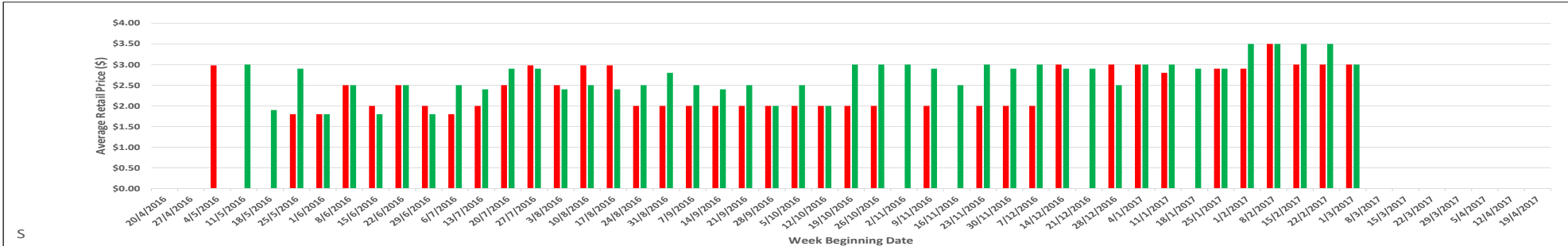
Online Retail Pricing Report for Single Hass Fruit for Week Beginning Wednesday, 19th April 2017 (Week 16)

Key: ■ Coles online ■ Woolworths online

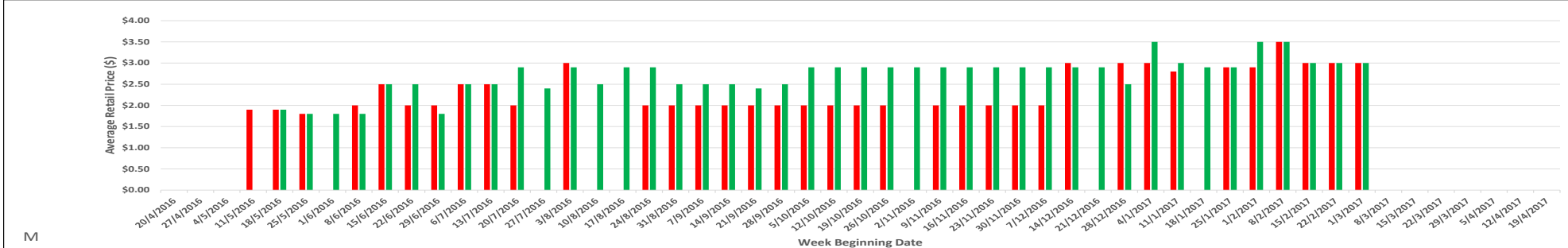
Brisbane



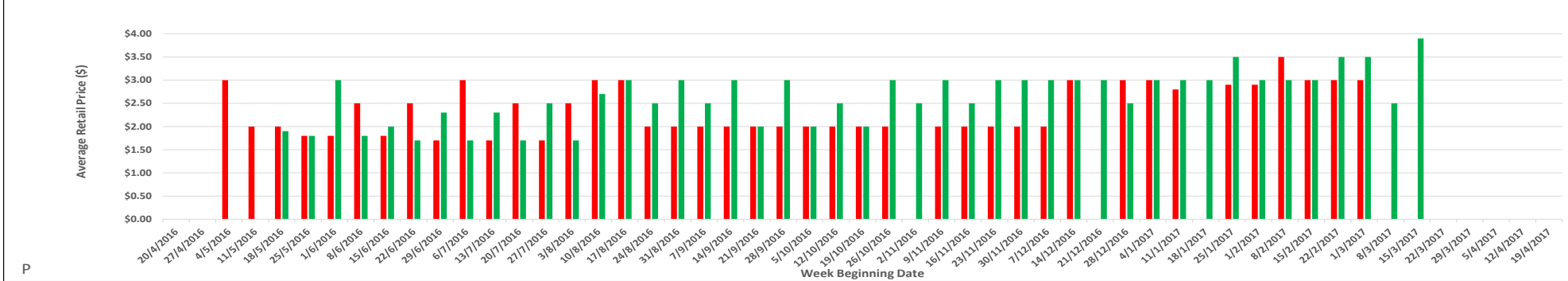
Sydney



Melbourne



Perth



Single Fruit, Multi-buy and Pack Pricing for Week Beginning - Wed, 19th April 2017 (Week 16)

Coles	Variety	Pack Type	Description	Brisbane	Sydney	Melbourne	Perth
	Hass	Single Fruit		-	-	-	-
	Hass	Multi-buy		-	-	-	-
	Shepard	Single Fruit		-	-	-	-
	Shepard	Multi-buy		-	-	-	-
	Unknown**	Single Fruit	Organic	-	-	-	-
	Unknown**	2 Pack	Organic	-	-	-	-
	Hass	3 Pack		-	-	-	-
Woolworths	Variety	Pack Type	Description	Brisbane	Sydney	Melbourne	Perth
	Hass	Single Fruit		-	-	-	-
	Hass	Multi-buy	3 for \$x	-	-	-	-
	Shepard	Single Fruit		↑\$2.90	\$3.00	\$2.90	↑\$2.90
	Shepard	Multi-buy	2 for \$x	2 for \$5*	2 for \$5*	2 for \$5*	2 for \$5
	Unknown**	Single Fruit	Organic	-	-	-	-
	Hass	2 Pack	Organic	\$8.00	-	-	-
	Unknown**	2 Pack	Ripe	-	-	-	-
	Unknown**	3 Pack		\$5.90	\$3.90	↓\$5.50	↑\$6.90
	Unknown**	5 Pack	Mini Disney	\$5.90	\$5.00	\$5.90	\$5.90
	Unknown**	1kg Bag	Odd Bunch	↓\$5.70	\$6.90	\$7.90	↑\$8.90

*denotes offer was advertised as a weekly and/or catalogue special

**denotes variety not indicated in online shopping offer

(Green) + ↑ = increase in price from previous week

(Yellow) = same price as previous week

(Red) + ↓ = decrease in price from previous week

Catalogue Offers

Aldi - National - No catalogue offers found

Coles - No catalogue offers found

Woolworths - No catalogue offers found

Foodworks - Perth - Australian Shepard - 3 Pack - \$5.00

IGA - No catalogue offers found

Availability of Retail Price Data:

19/04/17 (Wk16)

Please note that online prices for Hass single fruit purchase in all states were unavailable for Coles and Woolworths for week 16.

12/04/17 (Wk15)

Please note that online prices for Hass single fruit purchase in all states were unavailable for Coles and Woolworths for week 15.

05/04/17 (Wk14)

Please note that online prices for Hass single fruit purchase in all states were unavailable for Coles and Woolworths for week 14.

29/03/17 (Wk13)

Please note that online prices for Hass single fruit purchases in all states were unavailable for Coles and Woolworths for week 13.

22/03/17 (Wk12)

Please note that online prices for Hass single fruit purchases in all states were unavailable for Coles and Woolworths for week 12.

15/03/17 (Wk11)

Please note for week 11 Coles online prices for Hass single fruit purchases in all states were unavailable and for Woolworths online prices were only available for Hass single fruit purchases in Perth.

08/03/17 (Wk10)

Please note for week 10 Coles online prices for Hass single fruit purchases in all states were unavailable and for Woolworths online prices were only available for Hass single fruit purchases in Perth.

01/03/17 (Wk9)

Please note that Woolworths online prices for Hass single fruit purchases in Brisbane were unavailable for week 9

18/01/17 (Wk3)

Please note that Coles online prices for Hass single fruit purchases in all states were unavailable for week 3.

28/12/16 (Wk53) & 04/01/17 (Wk1)

Please note that due to Christmas holidays, only single-unit prices were collected.

21/12/16 (Wk52)

Please note that Coles online prices for Hass single fruit purchases in all states were unavailable for week 52.

Other Information:

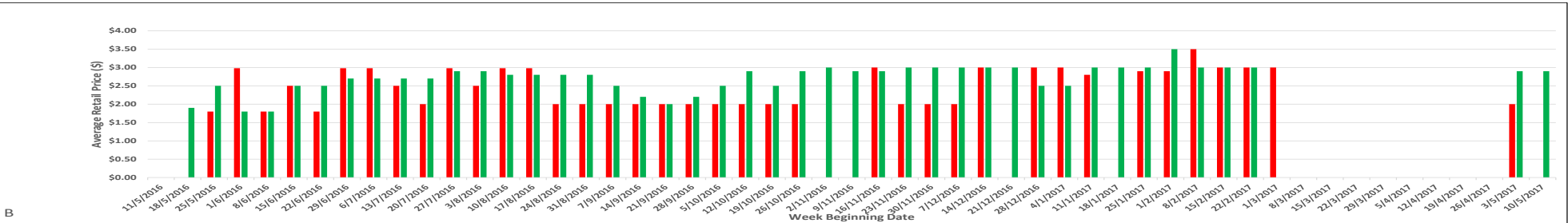
Note: Online catalogues are published by major retailers each Wednesday. Prices published in this report are reflective of online shopping and catalogue prices from Wednesday to Tuesday

Appendix 7: Weekly Retail Price Report (example)

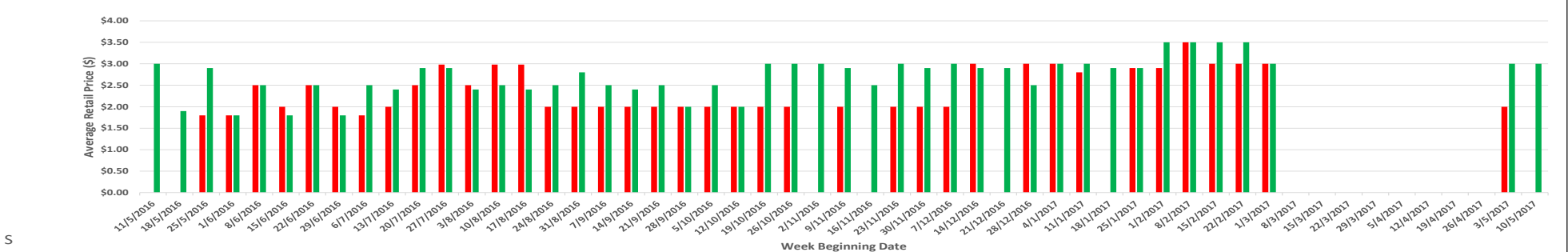
Online Retail Pricing Report for Single Hass Fruit for Week Beginning Wednesday 10th May 2017 (Week 19)

Key: ■ Coles online ■ Woolworths online

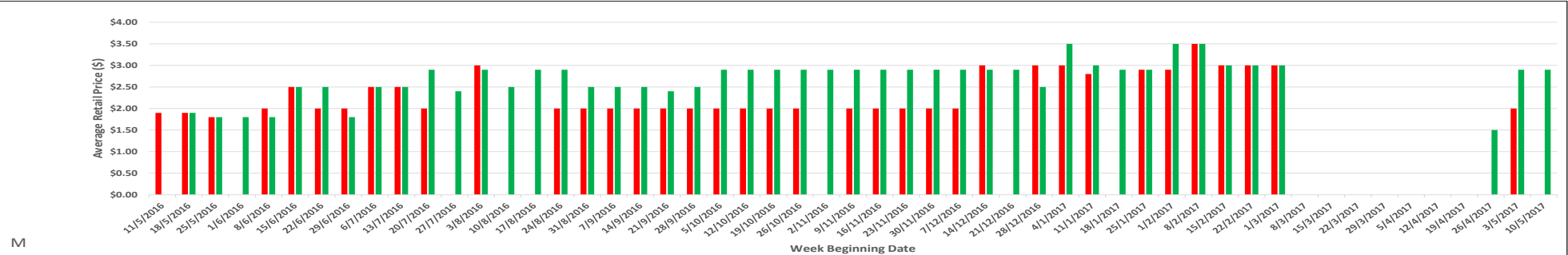
Brisbane



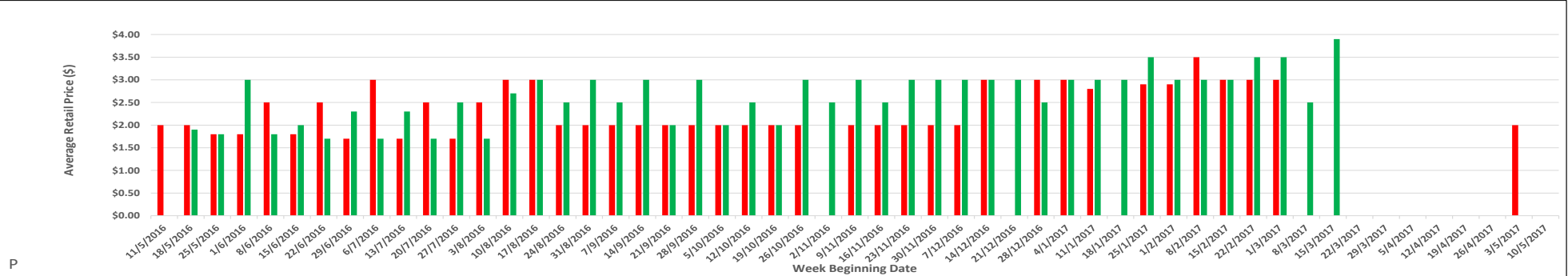
Sydney



Melbourne



Perth



Single Fruit, Multi-buy and Pack Pricing for Week Beginning - Wed, 10th May 2017 (Week 19)

Coles	Variety	Pack Type	Description	Brisbane	Sydney	Melbourne	Perth
	Hass	Single Fruit		-	-	-	-
	Hass	Multi-buy		-	-	-	-
	Shepard	Single Fruit		-	-	-	-
	Shepard	Multi-buy		-	-	-	-
	Unknown**	Single Fruit	Organic	-	-	-	-
	Unknown**	2 Pack	Organic	-	-	-	-
	Hass	3 Pack		-	-	-	-
Woolworths	Hass	Single Fruit		\$2.90*	\$3.00	\$2.90	-
	Hass	Multi-buy	3 for \$x	-	-	2 for \$5*	-
	Shepard	Single Fruit		-	-	-	↑\$3.00
	Shepard	Multi-buy	2 for \$x	-	-	-	-
	Unknown**	Single Fruit	Organic	-	-	-	-
	Hass	2 Pack	Organic	-	-	-	-
	Unknown**	2 Pack	Ripe	-	-	-	-
	Unknown**	3 Pack		-	\$5.90	↓\$5.50	↑\$7.90
	Unknown**	5 Pack	Mini Disney	-	↓\$5.00	\$5.90	\$5.90
	Unknown**	1kg Bag	Odd Bunch	-	-	\$7.90	↓\$6.90

*denotes offer was advertised as a weekly and/or catalogue special

**denotes variety not indicated in online shopping offer

(Green) + ↑ = increase in price from previous week

(Yellow) = same price as previous week

(Red) + ↓ = decrease in price from previous week

Catalogue Offers

Aldi - National - No catalogue offers found

Coles - No catalogue offers found

Woolworths - Perth - Australian Unknown - The Odd Bunch 1kg Bag - \$6.90

Foodworks - Sydney - Australian Hass - Single fruit - \$2.59

IGA - No catalogue offers found

Availability of Retail Price Data:

10/03/17 (Wk19)

Please note that for week 19 Coles online prices for Hass single fruit purchases in all states were unavailable and for Woolworths online prices for Hass single fruit were available in all states except Perth.

03/05/17 (Wk18)

Please note that Woolworths online prices for Hass single fruit purchases in Perth were unavailable for week 18.

26/04/17 (Wk17)

Please note for week 17 Coles online prices for Hass single fruit purchases in all states were unavailable and for Woolworths online prices were only available for Hass single fruit purchases in Melbourne.

19/04/17 (Wk16)

Please note that online prices for Hass single fruit purchase in all states were unavailable for Coles and Woolworths for week 16.

12/04/17 (Wk15)

Please note that online prices for Hass single fruit purchase in all states were unavailable for Coles and Woolworths for week 15.

05/04/17 (Wk14)

Please note that online prices for Hass single fruit purchase in all states were unavailable for Coles and Woolworths for week 14.

29/03/17 (Wk13)

Please note that online prices for Hass single fruit purchases in all states were unavailable for Coles and Woolworths for week 13.

22/03/17 (Wk12)

Please note that online prices for Hass single fruit purchases in all states were unavailable for Coles and Woolworths for week 12.

15/03/17 (Wk11)

Please note for week 11 Coles online prices for Hass single fruit purchases in all states were unavailable and for Woolworths online prices were only available for Hass single fruit purchases in Perth.

08/03/17 (Wk10)

Please note for week 10 Coles online prices for Hass single fruit purchases in all states were unavailable and for Woolworths online prices were only available for Hass single fruit purchases in Perth.

01/03/17 (Wk9)

Please note that Woolworths online prices for Hass single fruit purchases in Brisbane were unavailable for week 9

Other Information:

Note: Online catalogues are published by major retailers each Wednesday. Prices published in this report are reflective of online shopping and catalogue prices from Wednesday to Tuesday

Appendix 8: Quarterly Infocado Report (example)



QUARTERLY INFOCADO REPORT

Crop Forecast — October 2016

Horticulture
Innovation
Australia

Welcome to the Quarterly Infocado Report. This report is released in the months January, April, July and October. Each report shows the previous 12 month's dispatch figures and the future 12 month's forecast figures including both Australian and New Zealand data.

Australian Avocados Forecast Oct 15 to Sep 16 (5.5 kg eqv trays)

	Oct 15	Nov 15	Dec 15	Jan 16	Feb 16	Mar 16	Apr 16	May 16	Jun 16	Jul 16	Aug 16	Sep 16	12 M Total
Hass	955,240	908,715	767,765	685,434	261,708	55,037	418,184	1,196,027	1,295,136	1,189,791	1,209,175	1,008,122	9,950,334
Shepard	0	0	0	1,000	143,476	755,912	699,551	107,498	0	0	0	0	1,707,437
Other	23,154	11,531	10,102	14,300	5,601	6,263	48,146	61,780	34,776	55,639	39,499	70,125	380,916
Total	978,394	920,246	777,867	700,734	410,785	817,212	1,165,881	1,365,305	1,329,912	1,245,430	1,248,674	1,078,247	12,038,687

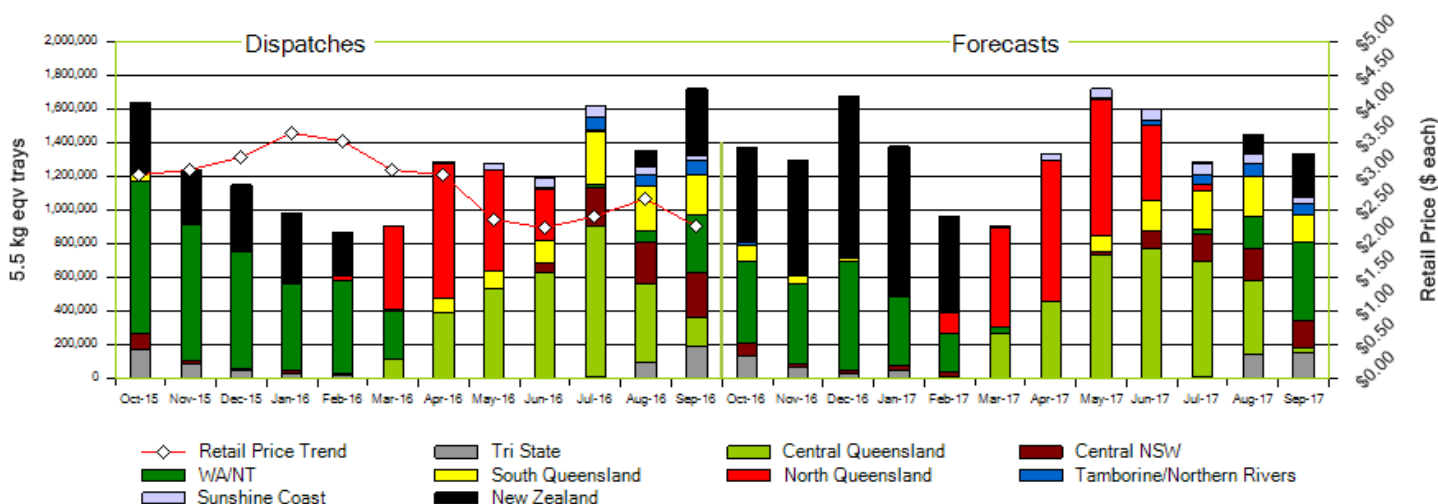
Australian Avocados Dispatches Oct 15 to Sep 16 (5.5 kg eqv trays)

Hass	1,197,729	892,709	718,881	497,674	544,514	279,276	225,718	1,051,559	1,144,202	1,602,409	1,210,754	1,268,292	10,633,717
Shepard	0	0	0	0	24,219	613,293	1,052,030	178,187	1,589	0	0	0	1,869,318
Other	21,066	20,915	39,482	61,120	37,990	7,863	11,534	50,133	41,199	12,561	43,662	58,116	405,641
Total	1,218,795	913,624	758,363	558,794	606,723	900,432	1,289,282	1,279,879	1,186,990	1,614,970	1,254,416	1,326,408	12,908,676

Australian Avocados Forecast Oct 16 to Sep 17 (5.5 kg eqv trays)

	Oct 16	Nov 16	Dec 16	Jan 17	Feb 17	Mar 17	Apr 17	May 17	Jun 17	Jul 17	Aug 17	Sep 17	12 M Total
Hass	808,123	594,829	688,634	440,709	249,750	44,203	414,854	1,503,231	1,565,349	1,226,080	1,292,489	1,069,026	9,897,277
Shepard	0	0	0	0	123,189	832,809	892,584	163,590	0	0	0	0	2,012,172
Other	8,030	23,292	25,757	41,991	13,000	26,005	27,721	51,735	33,426	50,629	41,339	4,836	347,761
Total	816,153	618,121	714,391	482,700	385,939	903,017	1,335,159	1,718,556	1,598,775	1,276,709	1,333,828	1,073,862	12,257,210

Australian & New Zealand Avocados : Oct 15 to Sep 16 Dispatch / Oct 16 to Sep 17 Forecast



Oct 15 to Sep 16 Dispatches & Oct 16 to Sep 17 Avocado Production Estimates 5.5kg eqv trays

Region	Oct15 to Sep16	Oct16 to Sep17
North Queensland	2,224,580	2,857,226
Central Queensland	3,194,609	3,373,055
Sunshine Coast	257,531	338,892
Southern Queensland	1,202,556	1,040,673
Tamb/Northern Rivers	234,010	283,680
Central NSW	956,815	820,689
Tri State	632,989	586,473
WA	4,205,586	2,956,522
New Zealand	2,300,839	4,038,754
Total	15,209,515	16,295,964

Please Note: The monthly forecast and dispatch figures in the Quarterly Infocado Report incorporate an allowance (which varies by region) to allow for the production forecasts and dispatches that are not inputted into the Infocado system. This production (dispatch and forecast) data is not inputted for various reasons including some packhouse's unwillingness to engage with industry and/or lack of computer access. For this reason it is not possible to extrapolate the figures from the

Comments from the Infocado Team

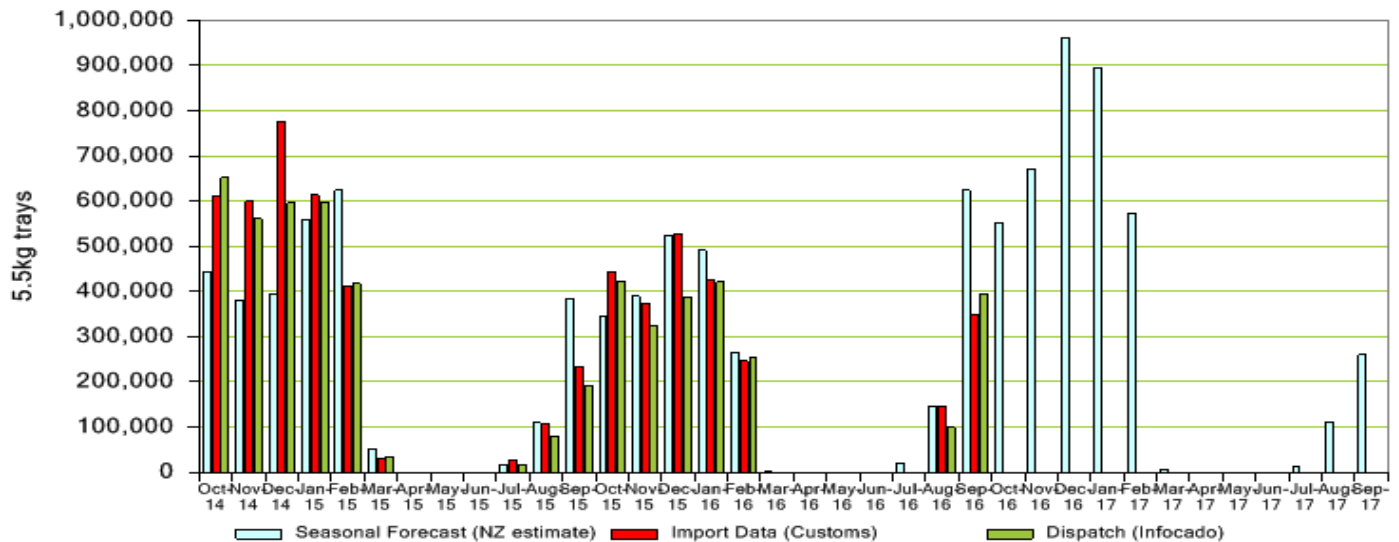
The report shows supply over the recent Sept. quarter was 4.2million trays, an increase of 17% on the same period last year. It also indicates that lighter supply of Australian fruit is expected over the coming Summer period compared to last year. However overall supply for the period should remain strong with the increased projected supply from NZ. In total, NZ imports are expected to reach 4 million trays, a 75% increase on the same period in 2015/16.

In the graph at the top of page 2 of this report NZ Customs data, instead of Australian data, has been used for Sept. 2016 due to a delay in the publishing of ABS figures.

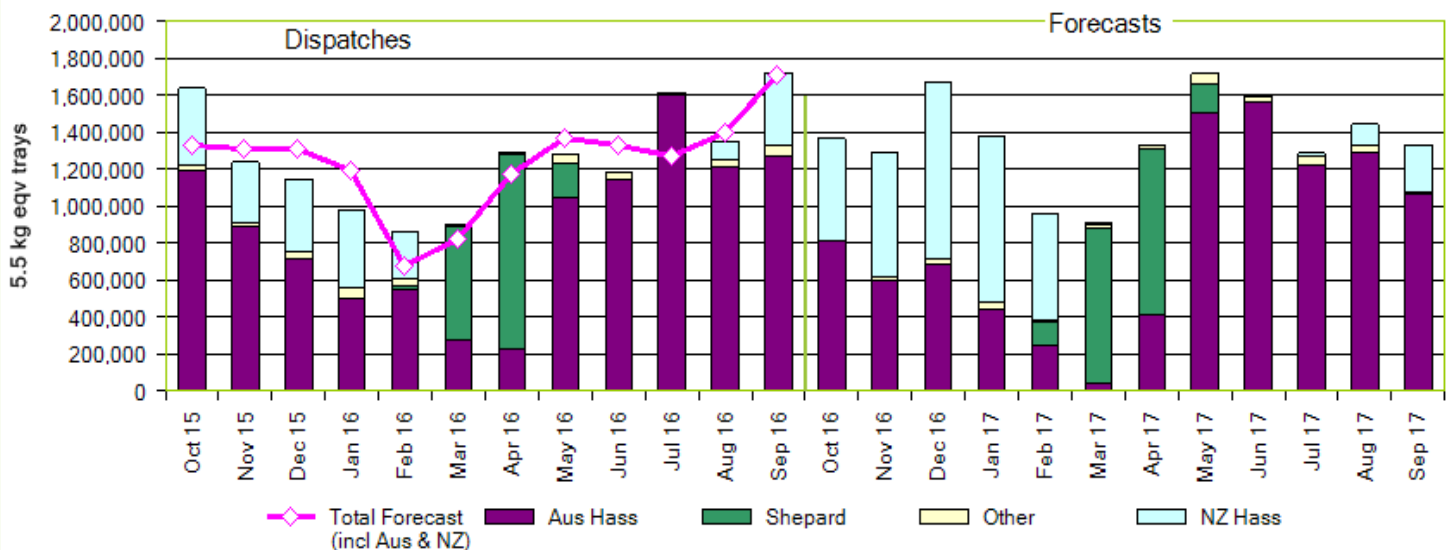
Overall the projection for the 2017 North Qld crop is strong, up nearly 30% on this year's crop. This includes a predicted increase of nearly 8% in Shepard supply to more than 2 million trays.

This Quarterly Infocado Report, along with the Weekly Infocado Report and the OrchardInfo Tree Census Report, are provided to support businesses in the industry. In the next week, growers will receive a request via email to provide plantings data for 2016. This process has been simplified with the aim to increase contributions. Having good industry data is also essential for future industry planning—to inform R&D and marketing investment decisions, as well as supporting the industry's response to issues such as the potential impact of Mexican avocado imports or biosecurity matters. If you are a grower we encourage you to provide your information. If you deal with growers, it would be helpful if you could impress upon them the importance of responding to the request from Avocados Australia. Thank you for your support.

New Zealand Avocados - Dispatch and Forecast



Oct 15 to Sep 16 Dispatches & Oct 16 to Sep 17 Forecasts Avocados by Variety



NB: NZ Dispatch figures in this graph are from Infocado and Customs data, the total forecast line (pink line) above displays the most up to date forecasts.

Seasonal Forecast Contributors

Central NSW

Coastal Avocados
I & A Tolson
Midcoast Avocados

Central Qld

BT & RG Pegg
Donovan Family Investment Trust
Lava Valley Produce
Simpson Farms Pty Ltd
Sunny Bluff Produce Pty Ltd
SuperPak/Avocado Ridge

New Zealand

Avocado Industry Council (NZAGA)

North Qld

Aussie Orchards Growers & Packers
Avocado Estates
Avocados with Altitude
Battistin Orchards Pty Ltd

Cobra Hill Orchards

Golden Triangle Avocados
Green Skin Avocados
Gunnado Farm
Hilltop Mareeba
Koci Avocado's
Rockridge Farming Pty Ltd
Tinaroo Falls Avocado Trust
Tropicado Avocados

South Qld

Balmoral Orchard
Googa Farms
Green Nugget Orchards
G & J Krenske
Mountain Fresh
Perseverance Farming Co
Sunnyspot Packhouse Pty Ltd
Touchwood Farming

Wodonga Park Fruit and Nuts

Sunshine Coast

G & C Christensen
Natures Fruit Company
Sunfresh

Tamborine / Northern Rivers

Aussie Orchards Growers & Packers
JB & CM Culross
Jirel Holdings
T W Silver
WJ Row
Tristate
Barham Avocados
Chinoola Orchards
Chislett Farms Pty Ltd
Golden Hill Packing Pty Ltd
Klingbiel Family Trust

KV & JM Lehmann

Marrbiz Pty Ltd
Mildura Fruit Company
Schirripa Orchards
Sunvale Produce Pty Ltd

Western Australia

Advance Packing & Marketing Services P/L
Avonova
Avowest
Delroy Orchards
Golden Hill Avocados
Green Pear Avocado
J.G. Loffler / Mariners Rest
Mariners Rest
The Avocado Grove
VP & EA Farrell
West Aussie Avos
Willow Creek

For more detailed reports please go to www.avocado.org.au and login to Infocado. Instructions on accessing reports are available at www.avocado.org.au by clicking on the Industry tab and then looking under services.

For further assistance please contact: Jenny Margetts, Ph: 07 3846 6566, Email: infocado@avocado.org.au

Appendix 9: Best Practice Resource – main page



[back to Avocados Australia Homepage](#)

[ABOUT](#)
[LIBRARY](#)
[LEARNING](#)
[DIRECTORY LISTING](#)

[GROWING](#)
[PACKHOUSE](#)
[TRANSPORT](#)
[WHOLESALE](#)
[RIPENING](#)
[RETAIL](#)
[WHIS](#)
[EXPORT](#)

Best Practice Resource

Home / BPR

☒ I have an existing account
 ☐ I am a new member

[Lost Password?](#)

☒ Remember Me

Welcome

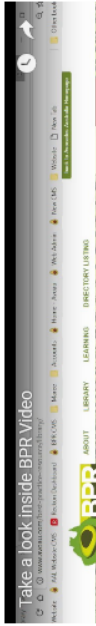
Welcome to the Australian Avocado Best Practice Resource (BPR).

The BPR is an online one-stop-shop focusing on best practice to improve the quality of avocados provided to consumers.

Avocados Australia welcomes new applications for the Best Practice Resource from all businesses that are part of the Australian avocado industry. This includes, growers, packers, wholesalers, ripeners, transporters, retailers, exporters, researchers, consultants, input suppliers and other relevant stakeholders. Information has been sourced from the latest research, development and industry investment, checked by industry experts and carefully structured to allow quick and easy access to information. Information and resources are updated as new content becomes available.

Take a look inside...

If you haven't yet registered for the BPR and would like to see the extent of information you are missing out on, take a quick look inside by playing the video below.





***Appendix 10: Avo Alert - North Queensland Shepard for
October/November (example)***

Avo Alert: NQ Shepard – October and November 2016

October

Test phosphorous acid levels in roots – Test roots for phosphorous acid level 2 weeks before spring leaf flush hardens.
Irrigation – Closely monitor soil moisture and respond immediately to needs in order to keep soil moisture between ‘Full’ and ‘Refill’ points. Apply lower rates to sick and replant trees.
Anthrachnose & other fruit rots – Apply copper fungicide sprays from shortly after fruit set till harvest at least every 28 days during dry weather, every 21 days with rain or heavy dews and every 14 days during wet weather. If a spray is missed apply an azoxystrobin spray (e.g. Amistar®). Use an azoxystrobin as the last fungicide spray at least 7 days before harvest. Be aware that if phosphorous acid is sprayed on trees covered in copper residues that burn can occur at times.
Fruit quality – Ensure that soil levels of calcium, boron and moisture are optimum in order to achieve high calcium in fruit.
Nitrogen – Apply about 25% of annual nitrogen rate in split applications over spring period once first fruit shedding event has finished for fruit development and spring flush.
Nitrogen for fruit load – Assess fruitset after first fruit thinning event and adjust nitrogen rates to match crop load. If rates are to be increased (due to heavy crop load) split extra applications into several small amounts spread over the next 2 or 3 months
Boron – Apply regular small amounts of boron fertiliser calculated for your situation.
Spotting bug – Monitor hotspots and spray as necessary.
Monolepta (red shouldered leaf beetle) and Rhyparida (swarming leaf beetle) – Look out for invading swarms especially in orchard ‘hot spots’ after rain in spring. Spot spray swarms as soon as detected.
Loopers including Ectropis looper – Monitor fruit and leaves for early signs of chewing; only spray in the absence of beneficial insects and use insect growth regulator (IGR) insecticides rather than broad spectrum chemicals.
Leaf rollers – Monitor activity mainly in autumn and spray if necessary.
Tea mosquito bug – Monitor newly set fruit for damage, spray if damage is detected.
Scale insects – Monitor for presence during warmer months. If control is needed use oil sprays when conditions are suitable (page 149 in Problem Solver Field Guide). Try to avoid using broad spectrum insecticides as they are disruptive to beneficial insects.
Tea red spider mite – Usually a problem resulting from use of broad spectrum insecticides. Spray if more than 20% of foliage is affected.

November

Phytophthora root rot – As soon as spring leaf flush has hardened apply phosphorous acid to all trees. The application window is only about 4 weeks long. Sick trees must be injected; healthy trees can be treated with two sprays or one injection.
Irrigation – Closely monitor soil moisture and respond immediately to needs in order to keep soil moisture between ‘Full’ and ‘Refill’ points. Apply lower rates to sick trees and to smaller trees.
Anthrachnose & other fruit rots – Apply copper fungicide sprays from shortly after fruit set till harvest, at least every 28 days during dry weather, every 21 days with rain or heavy dews and every 14 days during wet weather. If a spray is missed apply an azoxystrobin spray (e.g. Amistar®). Warning: be aware that if phosphorous acid is sprayed on trees covered in copper residues that burn can occur. Burn is less likely if copper oxides are used.
Leaf testing – Sample the most recently hardened spring flush to check nutrition progress, only take leaves from shoots without fruit.
Nitrogen – Apply about 30% of annual nitrogen rate in split applications over summer period, this is needed for summer leaf flush and to improve fruit size.
Boron – Apply regular small amounts of boron fertiliser calculated for your situation.
Spotting bug – Monitor hotspots and spray as necessary. Rotate pesticides used. For trichlorfon (e.g. Lepidex, Dipterex) to be effective the tank mix pH must be between pH 4 and 5.
Qld fruit fly – Deploy monitoring traps. If numbers build up, apply bait sprays at 7 – 14 day intervals.
Monolepta (red shouldered leaf beetle) and Rhyparida (swarming leaf beetle) – Look out for invading swarms especially in orchard ‘hot spots’ after rain in spring. Spot spray swarms as soon as detected.
Ambrosia beetle/pinhole borer – Monitor for increased rates of branch death, examine affected branches for pinholes and if found email Kaila Ridgway at DAF Mareeba who is researching this pest. Remove affected limbs and burn.
Leaf rollers – Monitor activity mainly in autumn and spray if necessary.
Loopers including Ectropis looper – Monitor fruit and leaves for early signs of chewing; only spray in the absence of beneficial insects and use insect growth regulator (IGR) insecticides rather than broad spectrum chemicals.
Avocado fruit borer – Monitor for fruit damage and presence of fruit borer eggs, pay particular attention to trees along orchard boundaries especially on side exposed to prevailing wind or in other hotspots. Spray when damage or eggs are detected
Tea mosquito bug – Monitor newly set fruit for damage, spray if damage is detected.
Scale insects – Monitor for presence during warmer months. If control is needed use oil sprays when conditions are suitable (page 149 in Problem Solver Field Guide). Try to avoid using broad spectrum insecticides as they are disruptive to beneficial insects.
Tea red spider mite – Usually a problem resulting from use of broad spectrum insecticides. Spray if more than 20% of foliage is affected.



Appendix 11: Facility and whole-of supply chain checks (DAFQ)

Appendix 11: Facility and whole-of supply chain checks (DAFQ)

Final Report

Project: AV15004 Avocado data management and quality innovation and extension program

Prepared by Noel Ainsworth, Principal Supply Chain Horticulturist, QDAF.

Due date: 15/12/2016

The subcontract for the project between AAL and DAF supported the development and delivery of the following outputs;

1. Maintaining best practice resource (BPR)
 - a. Script input into development of Ripening and Retail handling videos,
 - b. Two new videos will be developed for Ripening and Retail handling.
2. Facilitating adoption of industry data management & quality improvement (Qualicado)
 - a. Project management and administration,
 - b. Presentations at eight regional workshops for growers/pack sheds and five capital city workshops for wholesalers,
 - c. Undertake a limited number of (up to 10) facility checks arranged by AAL, depending on the demand for this service, and
 - d. Undertake a minimum of three whole of supply chain checks to identify where fruit quality impacts occur. Resultant case studies focused on temperature and storage time will encourage practice change to optimise quality.

Progress against deliverables

Milestone element	Final Report: 15/12/16 planned	Final Report: 15/12/16 delivered
Maintaining best practice resource (BPR)		
Script input into development of Ripening and Retail handling videos	Yes	Yes
Two new videos will be developed for Ripening and Retail handling	2	2
Facilitating adoption of industry data management & quality improvement (Qualicado)		
Presentations at eight regional workshops for growers/pack sheds and five capital city workshops for wholesalers,	8/5	8/5
Undertake a limited number of (up to 10) facility checks arranged by AAL, depending on the demand for this service,	Up to 10	4
Undertake a minimum of three whole of supply chain checks to identify where fruit quality impacts occur. Resultant case studies focused on temperature and storage time will encourage practice change to optimise quality.	3	3 (in process of publication)

Despite the late sub-contracting of this project, all planned outputs were delivered and on time. All system checks requested and scheduled by AAL were completed by QDAF.

In this six month phase of the Qualicado project

QDAF recognises the difficult conditions under which this project has proceeded mainly due to the following reasons

- HIA has developed an era of competition for funding for projects such as this one. This has led to a loss of collaboration across the service providers and a loss of staff, continuity and knowledge. Along with the potential for increased efficiency has come lowest price service focused on short term gains at the expense of long term outcomes.
- This point is illustrated by the fact that the leader of the AV15010 project have not even consulted QDAF on what it was doing in AV15004 to capitalise on emerging opportunities or to avoid known dead ends. This least cost approach will cost the industry in the long term.
- It is now clear that there will be no building on past R&D, no serious engagement and no rigorous change program under AV15010. This means the likelihood of change in the industry is minimal until more rigorous projects are funded and approved. This is disappointing from a professional service provider's perspective which will see expertise applied to other horticultural industries and projects.

Grower workshops

A further three workshops were planned and delivered in this reporting period

- Mareeba, North Queensland, 14th July 2016
- Mildura Tri-state, 28th July 2016
- Bundaberg, Central Queensland, 11th August 2016

Wholesaler training presentations

A further four presentations was planned and delivered in this reporting period

- Pooraka, Adelaide, 16th August 2016
- Flemington, Sydney, 17th August 2016
- Epping, Melbourne, 18th August 2016
- Rocklea, Brisbane, 30th August 2016

Checks and confidential reports developed for participating businesses

A further three (3) system health checks were undertaken during this period (3 packers) and the results summarised in an attached excel sheet.

Pack shed checks

- Three (3) in Qld

In reference to the pack-house check, areas for improvement focused upon;

- Dry matter testing of fruit for first six weeks of harvest and at fruit receipt at the pack house,
- Pre cooling and transport processes driven by temperature logging results
- Pre cooling processes driven by temperature results for each cool room and pallet position and room load
- Detailed feedback on ripening performance of each block using retention samples.
- Ensuring that Sportak® is used as a run to waste system to ensure optimal active ingredient is in contact with fruit, and
- Improved communication in the supply chain.

The improvements in sheds have focused on improvements likely to reduce bruising and rot development that emerge late in the supply chain. Many grower packers continue to monitor the effectiveness of their operations through differing approaches to library tray records and there is increasing use of loggers for monitoring temperature en-route to market.

Wholesaler facility checks

- None during this reporting period

Whole of supply chain checks

Three whole of supply chain checks were undertaken in this period to identify where fruit quality impacts occur. The three checks were intended as a snapshot to see if temperature management could be described as in line with best practice or whether sufficient variation existed to prompt more detailed studies of supply chains across Australia. The three selected were Bundaberg to Melbourne (North-South), Bundaberg to Perth (East-West) and Manjimup to Brisbane (West-East). The resultant case studies focused on temperature and storage time to encourage practice change to optimise quality.

The cool chain monitoring set out to examine three main risks or aspects of the supply chain;

- Whether there was adequate cooling (time and capacity) to cater for the volume and original temperature of the fruit at packing,
- Whether there was any difference in fruit temperatures on the top and middle of pallets to scan for risks of chilling top fruit and warming (initiating ripening) of fruit deep inside pallets, and
- Transitions between transshipping between different carriers and different forms of transport (i.e. road and rail).

The benchmark against which this cool chain management study is being conducted is that all Hass avocado fruit in the pallet are cooled to 5-7°C before dispatch from the packing shed and then held at that temperature irrespective of what combination of transport options are used, until it arrives at the ripener. This would ensure maximum quality and uniformity is maintained whilst offering the greatest flexibility in storage options before ripening, to maximise sale price under potentially fluctuating supply and demand conditions.

The temperature logging of consignments showed considerable variation between consignments. None of the three adhered to best practices which are well known in the industry. It is likely that the consignments with the least consistency in temperature management were those

- Where there was insufficient time between packing and when that fruit had to be on a truck for dispatch,
- Where an order only involved a couple of pallets of avocados in a truck that was probably carrying other produce, and
- Where repeated transshipping between trucks and between truck and rail was occurring.

Each of the packing shed managers took the view that there was room for improvement in better adherence to best practice storage conditions of 5-7°C.

Despite this, temperatures remained below 10°C during transport and given that fruit were to be ripened for immediate domestic sale in each case, the risk of impacting on fruit quality was considered low by the packing sheds involved.

Results from each whole of supply chain check was developed into a case study for consideration by the avocado industry stakeholders.

Recommendations

Given the variation within and between the case studies, further monitoring is recommended to build more confidence in the amount of storage/transport temperature variation in moving avocados around Australia, particularly where extended storage in the supply chain is likely or where fruit is destined for export markets.

In addition to knowing what are the ideal storage/transport conditions, controlled trials would be of significant value to the industry to identify the impact of different levels of temperature departure from best practice transport conditions i.e. whether you need a minimum of say 24hrs of temperature above 10°C to see a tipping point impact on fruit ripening and quality.

DAF commitment to the project in this reporting period

The DAF staffing resources budgeted into the project were based on anticipated workload to deliver the facility checks and associated report cards and training workshop outputs. The project delivered the anticipated number of workshops and videos, but less facility audits were requested and delivered. The resourcing was appropriate as more time was required to support the development of the training videos than anticipated.

Ripening and Retail handling videos

The two six minute videos were completed and loaded to youtube in Dec 2016. The links are as follows

- Avocado ripening and storage. A video guide for wholesalers:
<https://www.youtube.com/watch?v=2vxpu-fuF6M>
- Avocado ripening and handling. A video guide for retailers:
https://www.youtube.com/watch?v=_u6hycZ3jlY

These short you-tube style videos are aimed at improving the quality of avocados at point of purchase and have been developed to support industry's best practice resource. Designed as a training tool for businesses, the videos provide wholesale and retail staff with an overview of the ripening, storage and handling requirements of avocados. It is anticipated that increased awareness and education of these requirements will result in better fruit quality at point of purchase.

Online video content was considered by the project team as a highly suitable medium and would complement existing resource materials. The highly visual nature of videos was a key benefit, providing a visual learning tool that can be easily utilised by businesses to assist in training new staff.

The production process included script development, engagement with wholesalers and retailer, shooting footage at three commercial locations, editing and production according to AAL requirements and DAF corporate standards. All content has been verified and approved by those participating, with the videos now available through Avocados Australia's Best Practice Resource. Alternatively they can be streamed publically via the Queensland Agriculture YouTube channel.

Overall Qualicado project comments

Outputs

The project team delivered on the project outputs in line with industry expectations. The vast majority of the industry participants have demonstrated through their attendance at workshops (ranging from 60-110 attendees per workshop) their continued interest to the content and their commitment to continuous improvement. This, in no doubt, is supported by the high industry prices for avocados over the past year. The content of presentations delivered by DAF continued to evolve and respond to grower, packer, wholesaler and ripener interests and feedback.

Outcomes

There continues to be a focus on operations that could be improved to improve fruit quality and reduce variability in the supply chain.

Lessons Learnt

While this project addressed weaknesses within growers', pack houses', wholesalers' and ripeners' businesses to improve effectiveness and efficiency of their individual operations, it's focus on the connections and hence the effectiveness, efficiency and communication and relationships of the supply chains requires further improvement. The nature of the distribution system ensures it is not often a perfect world. The interplay of a range of factors results in mixed loads of fruit from different blocks or different age fruit through the supply chain. Pickers don't pick exactly the quantity to keep a packshed at peak efficiency while exactly filling a truck which is matched to the size and quantity of the orders for each destination.

The whole of supply chain checks highlighted that temperature log data is recorded by trucking companies to defend disputes, but it is not standard practice to responsively make the data available to fruit and vegetable suppliers unless there is a claim pending. This presents an opportunity for trucking companies to provide this data as a standard service for those trucking companies keen to demonstrate best practice in the service that they offer.

Many of the cheaper temperature loggers in use by avocado suppliers are difficult to locate on arrival in-market, and it would be useful to set an industry standard incentive to cover the cost of logger retrieval, generation of the reports and emailing those reports to the supplier. Expecting market agents to do this for free is probably a good reason that around 50% of loggers currently go missing. A set price of \$20 per logger paid by the supplier to the retriever would be a good starting point to drive efficient and effective use of loggers that do not provide real time data.

Many of the cheaper temperature loggers in use by avocado suppliers work by generating a pdf graphed report. These have limited use when one of the most valuable aspects of these temperature reports is being able to overlay multiple logger results from different parts of the consignment. This can be overcome by either choosing those loggers that also generate an excel file or ensuring access to PDF software that can export/convert PDF reports into excel files.

Future Opportunities

Increasing focus on whole of supply chain checks, combining the facility checks with value chain analysis of a number of supply chains could add significant value to the next (AV15004) iteration of this project. This would also drive gains particularly in the communications and relationships and hence opportunity for innovation on the Australian avocado industry supply chains.

Attachments to this report

- Summary of pack shed check findings to date
- List of pack sheds and wholesaler/ripeners checked to date

***Appendix 12: Communications related to project activities
(Talking Avocados)***

OrchardInfo... requesting 2016 data soon

In the coming weeks all growers will receive a request to submit their 2016 Orchard data for the Annual OrchardInfo Report.

Since OrchardInfo started it has always been a challenge to collect the required data, however now more than ever, the need for a high level of contribution is required so the industry has the most accurate data possible.

This report provides an annual snapshot of trees in the ground (by variety, age and region) and in the past has also collected related production figures.

However to achieve a greater level of contribution we are simplifying the 2016 data collection form and as a result we are no longer requesting as much data.

The Annual OrchardInfo Report provides important information for medium to long term planning both at an industry level and for business enterprises in the industry. Having industry information that closely reflects the actual on-the-ground position is essential, particularly as we are in a period of increased planting and production.

The information in the Annual OrchardInfo Report assists industry service providers, such as Avocados Australia and Hort Innovation, in planning future market development activities. These activities include supporting the case for prioritisation

of market access in international markets, planning export development initiatives and developing domestic marketing campaigns.

At a business level this information can also assist with decision-making around future production goals and marketing programs as it provides an insight into future market conditions.

So if you are growing avocados we strongly encourage you to respond to the email request to provide data when it is received.

The Avocados Australia team can provide support if you are having difficulty accessing or completing the online forms which the OrchardInfo Report email links to.

The 2014 OrchardInfo report below shows a modest increase in plantings and area planted, however it is known that these figures do not fully represent the extent of new planting that has occurred over the 2013/14 period.

When analysing these figures in the table below, it is important to take into account that the report is based on well less than 100% industry participation. The figures provided are an aggregation of the data received; they are not moderated to account for those businesses that do not provide data. Hence this is only representative of a percentage of the industry.

2014 Annual OrchardInfo National Summary – Yield Contributors Only

Table 4: National Summary Report Yield Contributors Only *										
Variety	Mkt Yield (t)				Mkt Yield/Ha (t)			Mkt Yield/Tree (kg)		
	0 to 5 yrs	6 yrs+	Total	%	0 to 5 yrs	6 yrs+	Wt Ave.	0 to 5 yrs	6 yrs+	Wt Ave.
Bacon	-	1.7	1.7	0%	-	21.3	21.3	-	77.3	77.3
Fuerte	-	15.1	15.1	0%	-	15.0	15.0	-	84.4	84.4
Gem	24.0	-	24.0	0%	3.4	-	3.4	9.6	-	9.6
Gwen	-	27.6	27.6	0%	-	18.9	18.9	-	47.2	47.2
Hass	864.4	11,219.1	12,083.5	85%	5.6	10.1	9.5	32.6	45.1	43.9
Lamb Hass	1.2	110.8	112.0	1%	6.3	4.9	4.9	12.0	23.0	22.8
Other	159.0	3.9	162.9	1%	5.5	10.5	5.6	15.4	33.1	15.6
Pinkerton	4.7	18.8	23.5	0%	5.0	23.5	13.5	23.5	129.7	68.1
Reed	-	303.9	303.9	2%	-	6.4	6.4	-	32.7	32.7
Ryan	-	1.6	1.6	0%	-	1.3	1.3	-	3.7	3.7
Sharwil	-	5.9	5.9	0%	-	6.7	6.7	-	27.6	27.6
Shepard	276.6	1,000.2	1,276.8	9%	3.9	7.7	6.4	22.8	44.4	36.8
Turner Hass	62.1	-	62.1	0%	2.1	-	2.1	13.6	-	13.6
Wurtz	-	145.5	145.5	1%	-	7.0	7.0	-	33.1	33.1
Zutano	-	-	-	0%	-	-	-	-	-	-
Grand Total	1,392.0	12,854.1	14,246.1	100%						
(a) Est. prod'n based on ave yield	6,094.6	36,531.8	44,033.3							
(b) Infocado Production 2013			55,524.8							
(a) as prop'n of (b)			79%							
ABS Stats 2012-13			52,982.4							
ABS Stats 2013-14			43,969.2							

* Yield data based on extrapolation from yield contributors 32.35% of trees!

* The very small sample size should be taken into account when considering the reliability of this extrapolation.

2014 Annual OrchardInfo National Summary - All Contributors

Table 3: National Summary Report - All Contributors

Variety	Tree numbers				Hectares			Trees/ha		
	0 to 5 yrs	6 yrs+	Total	%	0 to 5 yrs	6 yrs+	Total	0 to 5 yrs	6 yrs+	Wt Ave.
Bacon	24	392	416	0.04%	0.0	1.5	1.5	800	268	279
Fuerte	542	4,246	4,788	0.45%	2.0	25.7	27.7	272	165	173
Gem	5,895	-	5,895	0.55%	21.3	-	21.3	277	-	277
Gwen	80	4,693	4,773	0.44%	0.1	13.5	13.6	727	348	351
Hass	166,369	641,494	807,863	75.13%	807.1	2,924.0	3,731.0	206	219	217
Lamb Hass	2,428	15,564	17,992	1.67%	5.8	68.0	73.9	416	229	244
Other	14,718	1,059	15,777	1.47%	47.0	5.4	52.4	313	196	301
Pinkerton	200	1,806	2,006	0.19%	0.9	8.6	9.6	213	210	210
Reed	15,979	27,752	43,731	4.07%	35.6	111.8	147.4	449	248	297
Ryan	15	668	683	0.06%	0.1	2.2	2.3	300	301	301
Sharwil	1,298	3,678	4,976	0.46%	8.5	19.2	27.6	153	192	180
Shepard	28,095	119,394	147,489	13.72%	167.2	706.2	873.4	168	169	169
Turner Hass	7,421	-	7,421	0.69%	49.4	-	49.4	150	-	150
Wurtz	3,639	7,732	11,371	1.06%	13.9	35.6	49.4	263	217	230
Zutano	33	50	83	0.01%	0.1	0.3	0.4	275	161	193
Grand Total	246,736	828,528	1,075,264	100.00%	1,158.9	3,921.9	5,080.8			
Yield Contributors	56,354	291,526	347,880	32.35%						
ABS Stats 2012-13	345,156	1,137,387	1,482,543							
ABS Stats 2013-14	296,875	1,195,884	1,492,759							
OrchardInfo as a % of ABS	77%	71%	72%							



SPREADCO AUSTRALIA

ROTATIVE SPREADERS FOR MANURE MULCH & COMPOST

Precise row spreading 0.5-5m
Models from 2m² to 10m²

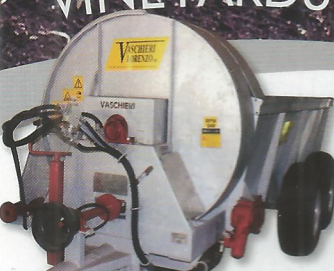
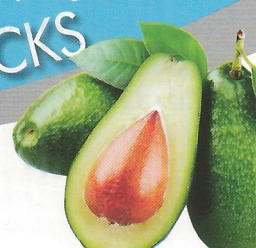
L40 SPREADER
\$19500+GST

VINEYARDS • ORCHARDS • OPEN PADDOCKS

Distributed from one grower to another
Malcolm Smith 0419 216 458 • Comboyne NSW Australia
www.spreadcoaustralia.com.au

HAVE YOU TICKED ALL THE BOXES?

- ✓ Bi-directional floor
- ✓ Hydraulic brakes
- ✓ Galvanising option
- ✓ 6 Months parts warranty
- ✓ Australia wide delivery
- ✓ Best price guaranteed

OrchardInfo Tree Census...

it's now easier to enter your data

**Be in the draw to win
one of four cash prizes of \$250**

The request for 2016 OrchardInfo Tree Census data will be sent to all growers.

If you have not received an email please contact Avocados Australia as soon as possible.

Having accurate industry information is essential, particularly as the industry is in a period of increased planting and production.

The new 2016 form is easier to complete, requesting only the variety, year planted, row and tree spacing and number of trees or hectares planted as at 1 August 2016.

For businesses that have previously submitted OrchardInfo data, forms will be auto-populated with data from previous years. If there is no change in the plantings on your property, it is now as simple as ticking the relevant box on the 2016 form.

Businesses that provide completed forms will also go in the draw to win one of four cash prizes.

The information collected from the annual OrchardInfo Tree Census is critical to inform industry planning for activities such as domestic and export market development.

An insight into future market conditions also assists businesses in their investment decisions around production, infrastructure and other business development activities.

Having accurate industry information is essential, particularly as the industry is in a period of increased planting and production.

So if you are growing avocados, we strongly encourage you to

Example of new OrchardInfo Tree Census form

respond to the email request to provide data.

All contributors will receive a report showing aggregated data for their region and all regions combined.

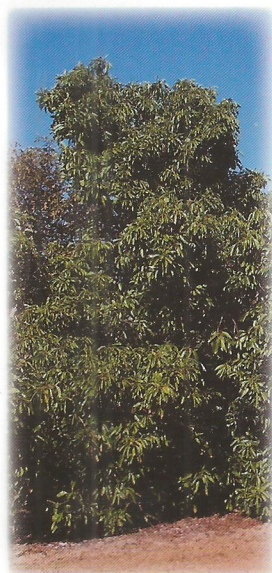
If you are having difficulty retrieving or completing forms, which are accessed by the link in the email, Avocados Australia is able to provide support.

Details are provided in the OrchardInfo Tree Census email sent to growers.

Below: 2014 annual OrchardInfo National Summary - All Contributors

Table 3: National Summary Report - All Contributors										
Variety	Tree numbers				Hectares			Trees/ha		
	0 to 5 yrs	6 yrs+	Total	%	0 to 5 yrs	6 yrs+	Total	0 to 5 yrs	6 yrs+	Wt Ave.
Bacon	24	392	416	0.04%	0.0	1.5	1.5	800	268	279
Fuerte	542	4,246	4,788	0.45%	2.0	25.7	27.7	272	165	173
Gem	5,895	-	5,895	0.55%	21.3	-	21.3	277	-	277
Gwen	80	4,693	4,773	0.44%	0.1	13.5	13.6	727	348	351
Hass	166,369	641,494	807,863	75.13%	807.1	2,924.0	3,731.0	206	219	217
Lamb Hass	2,428	15,564	17,992	1.67%	5.8	68.0	73.9	416	229	244
Other	14,718	1,059	15,777	1.47%	47.0	5.4	52.4	313	196	301
Pinkerton	200	1,806	2,006	0.19%	0.9	8.6	9.6	213	210	210
Reed	15,979	27,752	43,731	4.07%	35.6	111.8	147.4	449	248	297
Ryan	15	668	683	0.06%	0.1	2.2	2.3	300	301	301
Sharwil	1,298	3,678	4,976	0.46%	8.5	19.2	27.6	153	192	180
Shepard	28,095	119,394	147,489	13.72%	167.2	706.2	873.4	168	169	169
Turner Hass	7,421	-	7,421	0.69%	49.4	-	49.4	150	-	150
Wurtz	3,639	7,732	11,371	1.06%	13.9	35.6	49.4	263	217	230
Zutano	33	50	83	0.01%	0.1	0.3	0.4	275	161	193
Grand Total	246,736	828,528	1,075,264	100.00%	1,158.9	3,921.9	5,080.8			
Yield Contributors	56,354	291,526	347,880	32.35%						
ABS Stats 2012-13	345,156	1,137,387	1,482,543							
ABS Stats 2013-14	296,875	1,195,884	1,492,759							
OrchardInfo as a % of ABS	77%	71%	72%							

More detailed 2014 Annual OrchardInfo regional reports will soon be emailed to contributing growers.



Strong turnouts for both Sunshine Coast and Mt Tamborine/Northern Rivers Qualicado events

The first of the 2016 Qualicado Growers Workshops was held on 28 April at **Joss and Neil Donovan's Bellthorpe farm** with more than 40 people attended the event – a very strong turnout for this region.

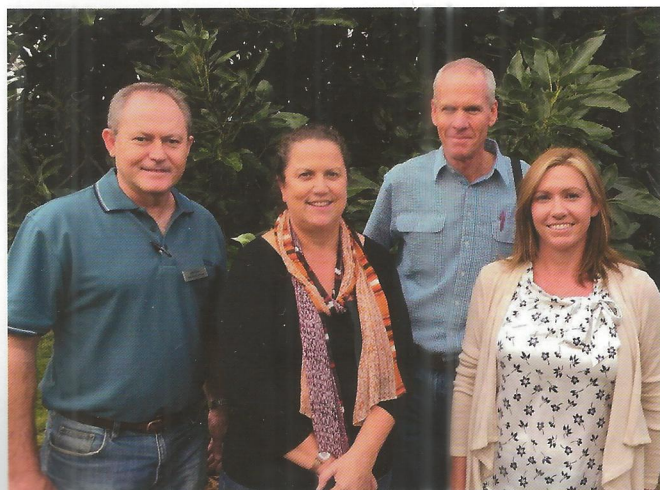


The day featured interesting and informative sessions including an industry update, phytophthora, an update on how to use the Best Practice Resource, avocado nutrition, pollination, export development and organic inputs as well as a marketing update, and a discussion about what's happening in the South American industry, followed by a supply chain update and an orchard walk.

Special thanks must go to Joss and Neil Donovan for hosting the event.

More than double the usual number of attendees participated in this year's **Mt Tamborine Qualicado** on Thursday 5 May at **Lindy and John Williams' Merrinee Farms**, one of the oldest commercial avocado farms in the country.

Avocados Australia's CEO John Tyas said more than 80 people attended – compared to an average of 31 attendees from the same area in the past.



Sunshine Coast Qualicado speakers (from left to right) John Tyas, Jenny Margetts, Simon Newitt and Lisa Martin.



One of the oldest trees on the Williams' Merrinee Farms property is more than 80 years old.

"The Williams' farm is a lovely property to start with and is historical to the industry in its own right, which might have been one of the drawbacks," he said.

"It was originally planted by Alec Kidd and some of the trees are quite old – one in particular is over 80 years old and still fruiting. This tree I understand Alec had planted as a youngster."

During his early years of avocado farming, Mr Kidd planted a range of varieties include Hass, Reed and Fuerte, as well as some more unusual varieties like the Choquette, experimenting to see which were best suited to the climate and conditions at Mt Tamborine.

Attendees came from as far as Northern New South Wales and the Sunshine Coast and presenters discussed a range of topics including nutrition, pests and disease control (both organic and non-organic) and production management.

The current state of the industry and export potential was discussed, as well as insights from the South American avocado industry.



*John and Lindy Williams, Liz Dann, Simon Newett,
John Tyas and Tom Silver*

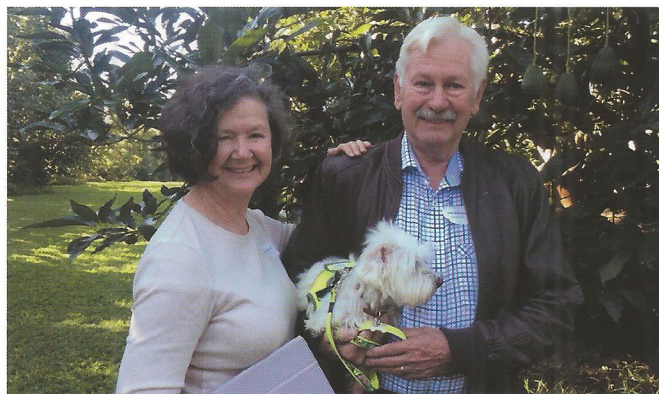
Lindy Williams also provided a brief history of the property just prior to the orchard walk which provided extra historic context for the group.

"We'd like to thank the Williams for opening their gates to us," Mr Tyas said.

"It was a fabulous day and everyone attending indicated they had learned a lot from the sessions."



More than 80 people attended the event



*Mt Tamborine Qualicado event at Lindy and John Williams'
Merrinee Farms*



SIDEWINDER

TREE INJECTORS

Have moved again

Same phone

07 5447 1621

New address

19 Carramar Street

Tewantin Qld 4565

Email

geoff@treeinjectors.com

www.treeinjectors.com



New avocado videos for ripeners, wholesalers and retailers

Avocados Australia recently worked with DAF Queensland and a number of commercial players, including Freshmax, LaManna and Indooroopilly Fruit, to develop two new educational videos.

Both videos are short, five-minute introductions to best practice handling and are aimed at improving avocado quality in the supply chain.

The first video,

"Ripening: Avocado ripening and storage - A video guide for wholesalers"

is aimed at wholesaling and ripening staff and looks at ripening and storage of avocados. It highlights the complexity of the avocado ripening and considers the many variables that can have an effect on fruit quality. Providing an overview of best practice handling processes, it details how these different variables, such as fruit maturity, time since picking and the temperature at which fruit has been held, should be addressed. In addition it also looks at how to handle the fruit before and after ripening as this is just as critical to ensure the final quality of the fruit.

The second video

"Retail handling: Avocado ripening and handling - A video guide for retailers"

is designed to help retailing staff improve their handling and management practices to deliver the best quality avocados to consumers. This video was filmed at Indooroopilly Fruit, one of Brisbane's leading independent fruit retailers.

Drawing on industry research and insights, the video provides simple tips on handling and presentation that can make significant differences to the quality of the fruit.

Ultimately this impacts the profitability of the category for retailers. The video also outlines the different resources that are available from Avocados Australia to support retailers with their staff training.



Patti Cooper-Harrison, Quality Manager – De Luca Banana Marketing/freshmax demonstrating quality assessment procedures in the video



Joseph Guardala, owner – Indooroopilly Fruit, assists with filming of the retail handling video.

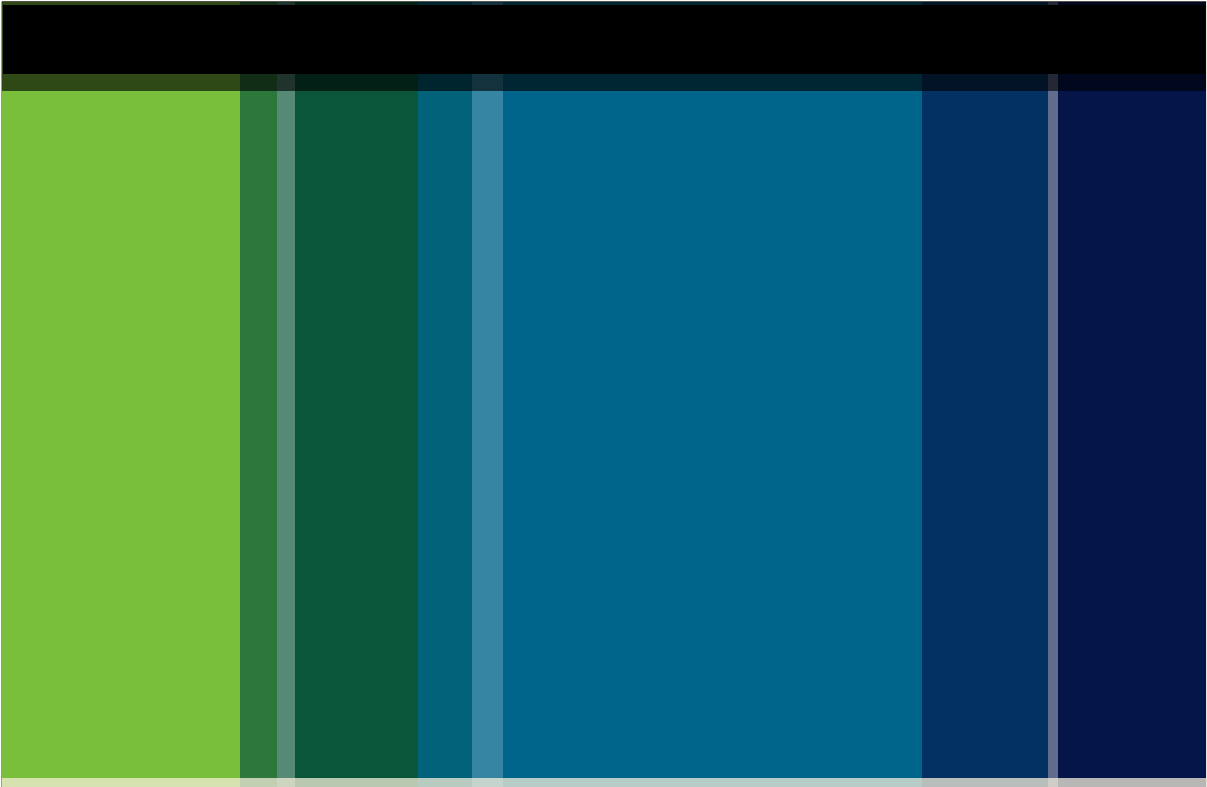
The videos will be available on the online Best Practice Resource (via the new Avocados Australia website).

Retailers, wholesalers and ripeners that are looking for access to staff education materials are encouraged to contact Avocados Australia to discuss the wide array of resources that are available.

The videos have been provided to the avocado category managers at Coles, Woolworths and Aldi and have been or will be made available to relevant staff within these chains.

The wholesaling and retailing videos were developed in collaboration with Queensland DAF as part of project AV15004 which is funded by Hort Innovation using the avocado research and development levy and funds from the Australian Government.

Appendix 13: Avocado Industry Stakeholder Engagement Plan



Industry Stakeholder Engagement Plan

AV15004 - Avocado Data
Management and Quality
Innovation Extension Program

March 2017



ACKNOWLEDGEMENTS

Coutts J&R would like to thank the stakeholders who provided feedback as a part of this process. Their views have helped immensely in the development of this engagement planning framework. Jenny Margetts also provided valuable support and industry knowledge undertaking surveys and giving feedback to the emerging plan.

Amy Samson
Principal Consultant

Dr Jeff Coutts
Director

Liesel Rennie
Lead Researcher

Coutts J&R
www.couttsjr.com.au

March 2017

SUMMARY

Current engagement activities are valued

It is recommended that many of the current activities of Avocados Australia Limited (AAL) continue in much the same way with some tweaks as the formula is generally working. Growers feel that AAL is providing useful services and that they are receiving value for their levies. The industry has been growing with increased production and the quality of produce has also improved.

AAL is highly valued and viewed as an industry focal point, a source of grower support, a provider of best practice information and industry knowledge (including R&D) and a forum/conduit for sharing information. It is also seen as representative of the avocado industry (or its voice) furthering its interests and improving quality as well as links throughout the supply chain.

Proposing an aspirational stakeholder planning framework, this document includes a range of activities and methods - from those which should be considered core and of ongoing importance to those which would require more resources and time to implement. Methods are categorised as: core ongoing engagement methods; should be included but needs a little extra investment; and nice to have with more investment and support.

AAL are the leaders and drivers for industry. They are the centre-point and contact for all aspects of avocado production... (Stakeholder, 2016 survey)

It is proposed that the following current industry engagement methods are considered **core** and continued:

- Guacamole e-newsletter
- Talking Avocados
- Posters
- Avocados Australia Industry Website
- Best Practice Resource (BPR)
- Video
- Infocado and OrchardInfo
- Social media (newly launched)
- Workshops (Qualicado style)
- Industry conference
- Use of consultants

There is some evidence of stakeholder engagement activities impacting on productivity and quality

Qualicado workshops have had a high level of engagement and were rated by attendees as valuable and likely to have an impact on improved practices. Indicative data showed some change in regard to production practices (between phases) including improved uptake of phytophthora, irrigation management and nutrition management practices and an overall improvement in pre-harvest and post-harvest crop management activities.

Over half of growers surveyed (2014) said that as a result of the BPR they had either implemented new changes or modified existing practices based on the information provided. Financial benefits quoted ranged from \$1k to \$300k per year and were attributed to better yields and fruit quality.

Engagement with the Qualicado program has been high and the evaluation reports show that information provided through these workshops has the ability to trigger practice change with a high percentage of participants... (AV12012 Final Report)

Implementation of a coordinated evaluation framework guiding systematic data collection across activities would better provide the information needed to assess the impact of stakeholder engagement activities and their ongoing effectiveness.

Access to new information is important

The importance of stakeholders having access to new R&D information and ongoing updates of technical information has emerged as a key engagement issue.

Additionally, larger more experienced growers are keen to be challenged and are looking for more advanced information to take them to the next level.

[AAL's role is] Providing up to date information across the total supply chain with regards to all avocado related matters from growing to retail. (Stakeholder, 2016 survey)

The avocado industry needs to be seen to be making new information available to the industry and highlighting it through its engagement activities and information provision.

If there is little new material coming through, particularly in the higher level technical and marketing areas, effort should be made to procure such information (potentially cross industry) or develop these areas further.

It is proposed that in addition to Qualicado style workshops, Master Class workshops should be implemented. These would be:

- Aimed at a targeted group of growers, researchers and key influencers covering advanced knowledge and techniques
- Smaller groups facilitating peer discussion
- Developing the capacity of industry leaders

Cross industry collaboration

There is room for more cross-industry collaboration/networking/information sharing (e.g. with mangoes, macadamias) particularly at a regional level. One example could be including relevant cross-industry activities (at the regional level) and technical information in The Guacamole e-newsletter.

There may also be scope to develop a regionally based cross- industry network of younger growers (e.g. mango and macadamia industries).

A younger growers network could:

- Be cross industry (e.g. macadamia, mangoes) and focus on areas of common learning opportunities
- Use social media to facilitate growth of online networking

Some growers are prepared to invest in industry activities

Some growers have indicated that they are prepared to spend their own money on industry development activities including topic driven workshops and international study tours. The driver behind this is a belief that levy money could be better spent on R&D.

AAL's role could be to provide administrative support and frameworks for stakeholders who are interested in setting up these activities. For example, while an experts list is available, actively linking experts and researchers to these groups would help provide momentum.

Another example could be international study tours. Funding (project applications) and co-ordination could be organised through AAL and participating growers could directly contribute to the costs. Findings from the tours should then be reported back to industry through Talking Avocados, Guacamole, and hosting field days/farm walks. This would help foster increased knowledge of international developments and potential on farm change.

To further develop industry networks, broaden extension delivery options, and increase grower access to the latest R&D the avocado industry could nurture a network of consultants. Consultants may include private sector individuals/companies and technical experts within agrichemical and other input supply businesses. This network could:

- Regularly invite consultants to participate in grower activities as attendees/expert panel participants/presenters
- Develop an avocado industry register of consultants
- Ensure consultants are actively targeted and updated with the latest R&D and a trusted information source for growers

CONTENTS

Acknowledgements	2
Summary	3
Contents.....	6
Overview	7
Introduction.....	7
Underpinning priorities	7
Approach	8
The stakeholders.....	10
Engagement principles.....	11
Current engagement of industry stakeholders and extension of information	12
Stakeholder areas of interest and how they like to be engaged	19
Preferred approaches	19
Stakeholder Engagement Planning Framework	25
Appendix 1	35

OVERVIEW

Introduction

Avocados Australia Limited (AAL) recognises that developing the skills and capabilities of its stakeholders is a cornerstone of the industry's growth and its positioning as a *leader amongst the horticultural industries*. As a result, it has been rewarded with strong membership and stakeholder support¹.

This industry stakeholder engagement framework supports AAL's vision:

A growing, progressive, sustainable and profitable Australian avocado industry

It also aligns with the industry outcomes specified in the Draft Avocado Strategic Investment Plan (SIP) 2017-2021:

Outcome 1: *By 2021, domestic demand for Australian avocados has increased by at least 20%.*

Outcome 2: *By 2021, over 90 per cent of avocados received by consumers will meet or exceed their expectations of quality.*

Outcome 3: *By 2021, over 10 per cent of production will be exported to markets where customers have a willingness and capacity to pay a premium for Australian avocados.*

Outcome 4: *By 2021 productivity (marketable yield per hectare) has improved by 15 per cent on average, without increased production costs per kilogram².*

Underpinning priorities

While a stakeholder engagement framework could be applied at some level across all four outcomes stated in the SIP, it best speaks to Outcome 2 and Outcome 4 in particular:

Outcome 2: *By 2021, over 90 per cent of avocados received by consumers will meet or exceed their expectations of quality.*

The strategies to reach this are given as:

- *Establish objective evidence and understanding of the primary sources of continued quality issues.*
- *Quantify the levels of quality variability between farms and across value chains to consumers.*
- *Develop targeted programs to implement best practice in those areas identified as being the highest risk/lowest performance.*

¹ Australian Avocado Industry Strategic Plan 2011-2016

² DRAFT Avocado Strategic Investment Plan 2017-2021

- *Collection and sharing of information on performance in the supply of consistent quality avocados at point of sale³.*

Outcome 4: By 2021 productivity (marketable yield per hectare) has improved by 15 per cent on average, without increased production costs per kilogram.

The strategies to reach this are given as:

- *Establish and sharing of baseline and time series information on farm productivity by production region*
- *Uptake of established on farm good practices tailored to variety/region*
- *Facilitating access to crop protectants and regulants of high value to growers*
- *Accessing technology and innovations to improve farm production and efficiency*
- *Prioritising the main constraints to increasing farm productivity and putting R&D plans in place to address those priorities - Maintaining and improving biosecurity.*

This industry stakeholder engagement planning framework is aspirational and outlines the preferred methods of engagement for different target groups and how this might manifest at a practical industry level including: possible themes or topics of interest that should be pursued; administration and marketing of stakeholder engagement initiatives; and any other issues.

Approach

To develop the stakeholder engagement plan, the following activities were undertaken.

Survey

AAL developed a survey in consultation with Coutts J&R which was then undertaken over the phone by Jenny Margetts (P2P Business Solutions). There were 17 respondents including: nine (52.9%) growers or grower/packers; three (17.6%) consultant/service provider/input companies; two (11.8%) younger grower or grower/packers (under 40); two (11.8%) consolidators; and one (5.9%) respondent representing a nursery.

There was also feedback provided by Jenny Margetts regarding a number of discussions held with industry stakeholders without the time or desire to participate in a formal survey. They were however willing to provide high-level comments about industry extension activities. This feedback is provided in Appendix 2.

Consultation with the Board of Directors

The Avocado Australia Board of Directors were provided with an opportunity to comment on the current and future stakeholder engagement process. An email was sent around (including a document with a draft stakeholder engagement framework and tables detailing current engagement activities and how stakeholders want to be engaged) advising of three ways to provide feedback – via a web survey, phone call or return email.

³ DRAFT Avocado Strategic Investment Plan 2017-2021

Review of documents

The following documents were provided by Avocados Australia or accessed by Coutts J&R and contributed to the development of the industry stakeholder engagement framework.

- Approach to Stakeholder Review – Jenny Margetts
- AV12012: Coordination of data management and avocado quality improvement and extension program
- AV12005: Evaluation of short video as a tool to communicate project outcomes in Avocados
- AV1002: Avocado best management practices and internet based information delivery
- Avocados Australia's Industry Communication Survey, April-May 2015
- External Stakeholder Survey Report 2016
- Australian Avocado Industry Strategic Plan 2011-2016
- Draft Avocado Strategic Investment Plan 2017-2021 – Hort Innovation

THE STAKEHOLDERS

As the peak industry body, Avocados Australia has *provided strong industry stewardship, positioned the industry as a leader amongst the horticultural industries and... as a result the organisation has been rewarded with strong membership and stakeholder support*⁴. In its 2011-2016 Strategic Plan, Avocados Australia noted its stakeholders to include:

- Growers
- Supply chain partners
- Service providers
- Consumers
- Government
- Community

In developing an aspirational industry stakeholder engagement plan, it is important to define the industry level stakeholder groups being targeted by Avocados Australia. For this plan, these are defined as:

- Growers or grower/packers
 - *Larger and innovative growers* – top 20% that would benefit and action extra support in regard to production and supply chain management.
 - *midsize growers* – some will have a capacity to grow, some will have a niche that ensures viability while others that may struggle to remain profitable in the future.
 - *new entrants/lifestyle* – need another level of support.
 - Next generation grower/packer (under 40) – needs to be supported and developed.
- Supply chain partners
 - Wholesaler/ripeners
 - Consolidators
 - Retailers
 - Exporter
- Service providers
 - Consultant/service provider/input company
- Researchers
- Government

⁴ Australian Avocado Industry Strategic Plan 2011-2016

ENGAGEMENT PRINCIPLES

There is a strong commitment from the avocado industry to continuous improvement and achieving optimal outcomes for its stakeholders. It follows then that the five Hort Innovation investment priorities (outlined in the DRAFT Avocado SIP 2017-2021), can provide guidance to the industry's engagement principles. The priorities are:

- **Support** – Industry efficiency and sustainability
- **Improve** – productivity of the supply chain through innovative technologies
- **Grow** – the horticulture value chain capacity
- **Drive** – long term domestic and export growth
- **Lead** – strategically to enhance the development of the Australian horticulture industry through operational excellence

CURRENT ENGAGEMENT OF INDUSTRY STAKEHOLDERS AND EXTENSION OF INFORMATION

A stakeholder survey conducted by Avocados Australia in 2016 found that stakeholders highly valued AAL's communications with the majority (> 96%) identifying AAL as effective or very effective in sharing industry related knowledge. Nearly all respondents (98%) were satisfied or highly satisfied with AAL's communications.

Additionally, most stakeholders (more than 83%) felt that AAL was effective or very effective in building relationships and alliances with strategic partners as well as building industry leadership, capacity and resilience (more than 80%). The information most valued included R&D activities, industry events, industry issues and innovations. The quarterly Talking Avocados magazine is highly regarded as is AAL's face to face approach with workshops.

[AAL's role is the]

Go to point for all my avocado related information and communications ...⁵

AAL is highly valued by stakeholders and viewed as an industry focal point, a source of grower support, a provider of best practice information and industry knowledge (including R&D) and a forum/conduit for sharing information. It is also seen as a representative of the avocado industry (or its voice) furthering its interests and improving quality as well as links throughout the supply chain.

AAL are the leaders and drivers for industry. They are the centre-point and contact for all aspects of avocado production...

A need for new information

There is a lot of support and positivity for AAL and its engagement activities amongst stakeholders, and growers are generally happy with how their levy money is being used. However, there were some stakeholders (2017) who commented about a need for new information – particularly production focused to be presented in the workshops. A board member noted that there was a gap in higher level technical and marketing information available while another was more specific noting particular topics including *plant physiology- flower induction/ timing/ weather influences/ nutrition influences. Crop nutrition to improve fruit internal quality and nutrition effects on flowering. In marketing, what is the main driver to increase frequency of purchase.*

One board member provided some insight around potential information gaps commenting that Horticulture Innovation Australia (HIA) *does not provide reliable access to project reports which have to be reported back to the growers in a timely manner.* It was said by another board member that there had been a loss of funding for avocado projects which supported industry engagement through grower consultation. It was also raised that there could be future issues if growers were *questioning why they should continue to contribute levies to research if the type of research and outcomes [were] not beneficial to them.*

Another board member said that AAL is still trying to find its role after HIA *annexed its position promoting the industry in marketing and development for the levy payer.*

⁵ All enlarged quotes on the page are from the External Stakeholder Survey Report 2016

The table below provides further details around AAL's current engagement activities with industry stakeholders. It was sourced from available reports (as noted earlier) and survey results. Please note that *italicised* text in the table below are direct quotes from contributing documents (see footnote).

Table 1: Avocado industry current engagement activities⁶

Engagement and extension activities	Stakeholders targeted	Details	Outcomes/impact	Contribution to industry stakeholder engagement process
Information access (one way communication of industry information via AAL and other service providers)				
Industry E-newsletter <i>Guacamole</i>	All stakeholders	Most stakeholders receive this.	Fortnightly communication of more timely information	Second most used and preferred information channel as ranked by stakeholders to find out about AAL activities. ⁷
Quarterly magazine – Talking Avocados	Growers, packers	Most stakeholders receive this	<i>A library of information for looking up at any time</i> (2014 Stakeholder).	Most used and most preferred information channel ranked by stakeholders to find out about AAL activities. ⁸ R&D, best practice articles, industry matters and marketing updates information ranked as most useful. ⁹ <i>Described as an important part of the overall communication / extension package</i> (Stakeholder 2017). A couple of stakeholders (2017) suggested that more technical information could be included.
Avocado Problem Solver Field Guide (Developed by DAFF)	All stakeholders	One or more copies distributed to every known commercial avocado grower in Australia (via the Avocados Australia Ltd grower database). First print run was 850.	Benefits will manifest more in the long term. Over half growers on email (53% in 2014) had registered for BPR . There are 530 registered users. Growers generally indicated that they found the information useful and regularly used it to identify and manage problems.	This resource has been well received and thought to be useful. The industry's funding of this field guide is viewed positively in terms of its potential impact on productivity and quality. It has been recommended to continue supplying new growers with this field guide.
Online Best Practice Resource (BPR) (Recently upgraded as part of website redevelopment)	Growers, packers, Transporters, wholesalers, ripeners, retailers	Extensive best practice materials for all sectors of the supply chain focused on improving quality. Includes documents, videos articles. Growing module developed to accommodate all information related to growing avocados.	Over half of growers surveyed (2014) said that they had either implemented new changes or modified existing practices based on the information provided and quoted benefits	Keeping the BPR updated with new materials should keep growers returning on a regular basis. There are suggestions from some stakeholders (2017) that information on the portal needs updating.

⁶ Table sources: AV1202 Final Report; Australian Avocado Industry Strategic Plan 2011-2016; AV10002 Best Management Practices Internet Based Information Delivery; AV12005 Evaluation of Short Video as Tool to Communicate Project Outcome; Avocado Industry; AAL Industry Communication Survey: Summary of Results 2015

⁷ AAL Industry Communication Survey: Summary of Results 2015

⁸ AAL Industry Communication Survey: Summary of Results 2015

⁹ AAL Industry Communication Survey: Summary of Results 2015

Engagement and extension activities	Stakeholders targeted	Details	Outcomes/impact	Contribution to industry stakeholder engagement process
Self-assessment questionnaire	Growers	Rolled out through Qualicado (315 overall phase 1 – 176 & phase 2 – 139) Available on BPR.	ranging from \$1k to \$300k per year. These were attributed to better yields and fruit quality. Examples of actual changes made included mulching, timing of irrigation, frequency of fertilising and root sampling and analysis.	Provides information to help growers check they are on track with management practices. As noted earlier, those filled out at Qualicado workshops provided information about education/improvements needed in particular areas.
Poster - Phytophthora root rot management	Growers	Developed by DAFQ to help improve adoption of measures to manage Phytophthora root rot. Distributed to every known commercial avocado grower in Australia	No evaluation of impact on growers.	Effective information dissemination. Recommended to continue to supply copies to new growers.
Electronic Grower Updates	Growers	Dissemination of targeted, timely information for growers		Third most used and preferred information channel as ranked by stakeholders to find out about AAL activities. Most rate it as effective or very effective (85.8%) ¹⁰
AAL website (recently upgraded – launching in March 2017)	All stakeholders	Includes public section, BPR, AAL Members section, Supply Chain Directory	Library of relevant easy-to-access industry online information	Fifth most used and preferred information channel as ranked by stakeholders to find out about AAL activities. ¹¹ Almost two thirds of stakeholders (64%) accessed the website either daily, weekly or monthly. Of those who accessed it, most (75%) found it effective. Growers pages were ranked as the most useful, followed by news, services and events. ¹²
Media releases	Growers, trade, general public	Important for wider dissemination of information. Important for maintaining industry reputation and profile	Greater public awareness of the avocado industry and its performance	Least used and preferred method of information for finding out about AAL activities. ¹³
3 instruction videos on	Growers, on-farm employees	These were developed by DAFQ.	The videos were rated by those who had	The project team recommended that video be used (with a direct

¹⁰ AAL Industry Communication Survey: Summary of Results 2015

¹¹ AAL Industry Communication Survey: Summary of Results 2015

¹² AAL Industry Communication Survey: Summary of Results 2015

¹³ AAL Industry Communication Survey: Summary of Results 2015

Engagement and extension activities	Stakeholders targeted	Details	Outcomes/impact	Contribution to industry stakeholder engagement process
important orchard practices	(including pickers), researchers, retailers and consumers	The topics were chosen in consultation with AAL, the wider industry and individual researchers. They were: avocado bruising; avocado picking; and reject bin analysis. Available via DVD, YouTube and Vimeo Each video was produced in a different style to assess its effectiveness.	seen them as an <i>effective and suitable means of communication</i> ¹⁴ .	presentation style) as a communication tool to growers and the wider industry. It was noted in the project's final report that <i>more publicity is needed for the videos</i>. Consultation with industry in video production helps ensure relevancy.
Information sharing (two-way engagement)				
Infocado weekly, quarterly and annual report	All stakeholders (contributors receive reports in advance of other industry stakeholders)	Collects historical production data and forecasts supply data to help with decision making. Weekly –retail prices and the Dry Matter Report monthly; Quarterly – seasonal forecast; Annual – report for each participating packhouse. Also produced information articles for 'Talking Avocados', reports uploaded to the Avocados Australia website, and a study detailing established grower and packhouse forecasting practices and techniques to help improve contributor data accuracy.	Businesses can make better informed tactical and strategic decisions in regard to marketing and business investment. Assists more consistent supply which provides better quality outturns and better returns to growers Industry can use the data across a range of areas including monitoring industry investment, improving the focus of industry promotional activities, and monitoring the impacts of major weather events in local regions	Provides intelligence to both individual businesses and the industry collectively to assist in effective market planning. Highly valued by packhouse and wholesaling sectors. Proactive communication and reporting to ensure relevance to contributors.
Orchardinfo - Distributed annually to contributors.	Growers	<i>Designed to collect tree census data and provide a productivity analysis at an enterprise, regional,</i>	The AV12012 final report notes that <i>reports from OrchardInfo provide the necessary</i>	Considerable effort has been made to increase data contribution to OrchardInfo from growers. The level of detail required from growers was simplified following a 2012 stakeholder

¹⁴ AV12005 Evaluation of Short Video as Tool to Communicate Project Outcome

Engagement and extension activities	Stakeholders targeted	Details	Outcomes/impact	Contribution to industry stakeholder engagement process
		<i>State and whole of industry level¹⁵.</i>	<i>baseline information for long term production modelling and industry long term planning.</i>	workshop and recommendations made in AV11013. Incentives were also applied to increase participation.
Group facilitation (Multiway engagement with learning on all sides)				
24 Qualicado grower workshops (8 major production regions) and 15 wholesaler Qualicado workshops (5 capital cities) (integrated with AV14000 * workshops when appropriate)	Growers, packers, local consultants, rural merchandisers Wholesalers, ripeners	Designed to enable the supply chain to improve quality and so the consumer experience. Industry experts including the Department of Agriculture & Fisheries Queensland and relevant consultants were engaged as needed. Workshops tailored for each specific group. Well attended (732 attended in first phase – 2013/14, 488 in second phase – 2014/15 and 700 in phase 3 2016-17). The AV12012 final report stated - <i>holding grower workshops on farm, presenting information on current quality and productivity issues, and ensuring material is delivered by knowledgeable and quality speakers has achieved strong attendance at workshops.</i>	High level of engagement and rated by attendees as valuable and likely to have an impact on improved practices. The AV12012 final report says that Indicative data from comparisons between phase 1 and 2 scorecards (NB scorecards were not used in phase 3) <i>show some change in regard to production practices. These included improved uptake of phytophthora, irrigation management and nutrition management practices and an overall improvement in pre-harvest and post-harvest crop management activities.</i>	The grower self-assessment scorecards distributed at the workshops helped target the education/improvement needs for an area (315 were completed and submitted). Key stakeholders also consulted on content. Avocado Australia staff contacted key supply chain parties to discuss targeted quality issues in the development of the workshops as well as the BPR and extension articles. Avocado Australia's flexible and responsive approach to the workshops was noted by an independent mid-term review to have <i>provided the best chance to maintain engagement with the various sectors of the supply chain and to be able to influence practice change and quality outcomes (AV12012 Final Report).</i> Large growers attended with key staff. In a bid for consistent dissemination of key messages through the industry, local consultants and rural merchandise personnel were also encouraged to attend. Businesses attending who choose to be recognised are listed on the (old) BPR site. Certificates of attendance also available. Growers surveyed (2017) said the workshops are valuable and worthwhile for learning and networking, although there is room for more updated information to be included. Rated as quite useful overall (7/10) by those personally attending and those who had staff attending (7.6/10).
DAFQ study groups (Simon Newett)	Growers	Providing longer and more technical details than Qualicado workshops.		Rated as quite useful by those personally attended (7.3/10) and had staff attend (7/10). The longer format and more technical details with a production focus were appreciated by attendees.

¹⁵ AV1202 Final Report

Engagement and extension activities	Stakeholders targeted	Details	Outcomes/impact	Contribution to industry stakeholder engagement process
Australia/NZ avocado conference (previously every 4 years)	All stakeholders	Needs to be affordable. Should focus on all aspects of the supply chain.	High level information from global experts. Industry networks and relationship developed and strengthened.	Thought to be worthwhile by stakeholders (2017) for networking opportunities and access to international speakers. <i>A national conference is a unique opportunity to engage the whole supply chain. The avocado industry needs to do this. it is a good opportunity to inspire and address issues across the chain (consolidator, 2017)</i>
Annual R&D forum (no longer held due to funding changes, last held in 2014)	Industry researchers Key decision makers	Short presentations provided by researchers on current projects and discussion.	Opportunity for R&D peer review by researchers and industry practical feedback. Improved awareness of current R&D by industry leaders and other researchers.	Opportunity to improve collaboration amongst researchers and with industry.
Retailer training program (completed 2015)	Retailers	Working to ensure that retail staff are better educated about storing and handling avocados. Included development of a retailer training manual.	Measurable improvement achieved at participating stores.	<i>As confirmed through recent bruising research (project AV12009), education and training at the retail end of the supply chain is essential for the industry to continue to improve the quality of fruit available to consumers.</i>
Stakeholder meetings (when necessary to ensure industry informed)	All stakeholders			
Empowerment (self-mobilisation where independent decisions are made and actions taken)				
One on one/mentoring				
Facility checks and report cards	Packers, ripeners and wholesalers	Forty six (46) facility checks (and related report cards and action plans), covering 33 packhouses and 13 ripener/wholesaler facilities, were completed. A summary report is available on the BPR.	Recommendations about improvements were provided along with an expert review of quality management practices and infrastructure. It is not possible at this stage to assess practice changes made as a result.	Targeted one-on-one engagement with focus on specific enterprises.
Expert support	All stakeholders	Expert industry personnel in areas related to quality	Credible and valuable information provided to industry to support	Expert input and delivery viewed positively by participants.

Engagement and extension activities	Stakeholders targeted	Details	Outcomes/impact	Contribution to industry stakeholder engagement process
		improvement engaged as part of Qualicado program. Listing has been maintained for future reference by Avocados Australia.	increased productivity and quality.	

* Achieving more consistent yields of quality fruit in the Australian avocado industry productivity

**This information was also presented at the June 2014 Irrigation Australia Conference and Exhibition

STAKEHOLDER AREAS OF INTEREST AND HOW THEY LIKE TO BE ENGAGED

Preferred approaches

Communication channels

Almost all stakeholders use the internet daily (99%) and email is the preferred communication channel they want AAL to use. Phone, internet and face to face, SMS and mail are the next preferred (in that order). While it is not likely that the majority of stakeholders will use social media for industry information (70.6%) a quarter (25%) indicated that they were likely or very likely to use it¹⁶.

Current engagement approaches

Stakeholders surveyed as a part of this reporting process were given a selection of current and potential approaches and asked to rate their preference for receiving information about R&D and new technology and other skills to help improve their business – or clients' businesses. The current approaches given were: workshops (like Qualicado); online (BPR); hardcopy manuals and Talking Avocados magazine.

Grower and grower/packers rated Talking Avocado's magazine as their most preferred approach (8.7/10) while **younger growers** indicated workshops as their most preferred. The **consolidators** surveyed indicated their preference for online (10/10), hardcopy manuals (9.5/10) and Talking Avocados (9/10). They were less enthusiastic about workshops (5/10). **Consultant/service provider/input** companies also indicated a preference for online (9/10) with Talking Avocados their least preferred method.

Table 2: A list of stakeholder preferences for current approaches (2017 survey where 0=lowest and 10=highest)

Approach	Respondent type	Average Rating	Range of ratings
Workshops (like Qualicado)	Consolidators	5	5(CQ)
	Consultant/service provider/input company	8	6(SQ)-10(TRI)
	Grower or grower/packer	7.4	3.5(TRI)-10(CNSW)
	Other	8	8(SC)
	Younger grower or grower/packer (under 40)	9	8(CNSW)-10(CQ)
Online (BPR)	Consolidators	10	10(NQ)
	Consultant/service provider/input company	9	8(SQ)-10(TRI)
	Grower or grower/packer	6.8	5(WA)-10(CNSW)
	Other	8	8(SC)
	Younger grower or grower/packer (under 40)	8	6(CNSW)-10(CQ)
Hardcopy Manuals	Consolidators	9.5	9(CQ)-10(NQ)
	Consultant/service provider/input company	8	6(SQ)-10(TRI)
	Grower or grower/packer	6.7	1.5(TRI) - 10(CNSW)
	Other	10	10(SC)
	Younger grower or grower/packer (under 40)	7	5(CQ)-9(CNSW)
	Consolidators	9	8(CQ)-10(NQ)
	Consultant/service provider/input company	6	6(SQ)-10(TRI)

¹⁶ AAL Industry Communication Survey: Summary of Results 2015

Talking	Grower or grower/packer	8.7	7(CQ)-10(CNSW)
Avocados	Other	7	7(SC)
Magazine	Younger grower or grower/packer (under 40)	7.5	7(CNSW)-8(CQ)

Potential approaches

There was a list of eleven potential approaches given to stakeholders surveyed for this report which they were asked to rate in terms of their preferred way to receive information. The three approaches with the most support are discussed below.

Stratified workshops

There is strong support for a *stratified workshop approach* where Master Classes (or targeted classes as suggested by one consolidator) are run for experienced and larger growers and How-to classes for smaller and new growers. A younger grower commented about splitting workshop related engagement into two levels – so new growers are handled differently and knowledgeable growers can have more in-depth conversations.

Suggestions around Master Classes were:

- It would be good to have a *qualified* group together (Consolidator).
- Good presenters are important (Grower).

Suggestions around How-to classes were:

- For smaller growers (Grower/packer)
- Good for our managers (Grower/packer)
- Could be handled by consultants (grower/packer)

International study tours (with a selection process)

Consolidators and growers (younger growers particularly) were interested in international study tours (ratings ranged from 0 in WA to 10 in NQ). One grower suggested that this could be paid for by the attendees themselves or potentially researchers/Simon Newett could go and report back to industry. A consolidator commented that the tours would need to be targeted and it would be *best to go and look with those involved in the supply chain*. They also felt that there could an opportunity to look at how other industries do things.

Regional two-day events

Regional two-day events were rated quite well by stakeholders as a potential engagement tool. There was little further discussion around it, but potentially these could be events run in between a national conference as there were some growers and consultants mentioning a preference for regional workshops over a national conference. It was thought that this would be a more *cost effective* option where there is more opportunity to visit farms and make contacts.

Other engagement methods

Other engagement methods mentioned included:

- **Engagement with other production sectors** in Australia (e.g. Growers mentioned the usefulness of engagement they had had with the mango and macadamia industries).
- A day that could be aimed at managers and **specific business management issues** (could potentially go through Growcom).
- **Social media** for developing the industry community. Consolidators and younger growers were most interested in this.
- **Topic specific groups** on specific issues in a region had some interest from growers.
- **Webinars** had some support as an efficient way of getting to a large group of people although a consultant felt that while they were a good idea they did not work in practice. Growers did not really rate webinars as a highly preferred way of engagement.
- **Hard copy manuals** should be made available online.
- Growers also mentioned **direct engagement with researchers** and access to a **stronger network of consultants**.
- A formal **mentoring program** for younger growers.

Potential themes

Stakeholders (2017) were asked about the areas where they were most looking for assistance to develop or improve performance. **Improved productivity** (100%) and **improved quality** (88.2%) were clearly the areas of most interest across all stakeholder groups. **New research/applications across the industry** (52.9%) were also noted as useful by all. Other specific areas of assistance indicated by stakeholders included:

- Growers and grower/packers - **OH&S** (4 mentions) *AAL's OH&S material is good but safety culture needs to be more embedded in industry, therefore important to keep it on the agenda and give growers the tools and skills to implement.*
- Consultant/service providers/input - **markets** and **industry trends** (3 mentions each)

See Appendix 1 for a full table listing areas of assistance by stakeholder type by region.

Engagement methods and areas of interest

The following table was assembled through information found in reports and further details stakeholders' areas of interest/learning related to ways they like to be engaged.

Table 3: Stakeholder feedback related to engagement methods

<i>Stakeholders</i>	<i>Engagement methods specifically mentioned</i>	<i>Areas of interest/value</i>	<i>Further comments</i>
Across all stakeholders	• Infocado reports¹⁷	• Information highly valued by stakeholders	• Continue Infocado reports on the basis used in AV12012.

¹⁷ AV12012 Final Report

Stakeholders	Engagement methods specifically mentioned	Areas of interest/value	Further comments
<i>(Note: contributors to Infocado reports receive report in advance of other industry stakeholders)</i>	Orchardinfo¹⁸		measurement tool – should continue
	Guacamole eNewsletter	- In depth analysis and grower direct information - Consumption data - Latest effective herbicides, fungicides and insecticides¹⁹	
	Talking Avocados magazine	- More technical updates - More R&D articles - More best practice (e.g. pruning, nutrition, water management) - More up to date - More localised information including growers and distributors	
	Industry conference²⁰	- Information across the supply chain from growing and marketing - New research and content must be presented	- Most stakeholders agreed (2017) that a national industry conference is worthwhile and valuable (every 2-8 years). - Some preferred a potentially more cost effective option of regional workshops with more opportunity to visit local farms and make contacts.
	Workshops (like Qualicado)	- All researchers should be present so everyone is getting the best information. - International speakers would be good. - Clear objectives - what the industry is trying to achieve (Consolidator)	- Valued across stakeholder groups. - Not too big - a chance to ask questions - Large numbers attending can be an issue as it is hard to get engagement at the right level. - Promote peer-to-peer learning; <i>workshops should promote more discussion amongst growers.</i> - One day per region (including Qualicado and Simon Newett) - location is important. Good to see a property and hear from a grower who is innovative and doing new things. - more accessible for groups from other regions.
	Communication/ Promotion of information available	BPR, irrigation reports, videos	

¹⁸ AV12012 Final Report

¹⁹ AAL Industry Communication Survey: Summary of Results 2015

²⁰ Stakeholder survey 2017

Stakeholders	Engagement methods specifically mentioned	Areas of interest/value	Further comments
Growers²¹	BPR²²	- Packing - Available chemicals - Soil management - Updated gross margins - More detailed nutrition specific to the growth cycle - Current information on quality and productivity issues	
	On farm activities including workshops/field days²³	- Targeted information related to production, packing, supply chain and quality issues delivered by subject matter experts - See how other growers farm and how they manage activities - Knowledgeable and quality speakers	
	Infocado Reports²⁴		- Continual encouragement to provide data - Of non-contributors, larger packers and supply chain businesses should be prioritised
	Master class Workshop (potential approach)²⁵	- Irrigation - Water monitoring - Marketing research	Needs good expert presenters
	Technical Workshops²⁶	Best management practices	regular face-to-face contact with growers at regular technical workshops in the regions
	Website²⁷		Inclusion of a blog for grower discussion online
Supply Chain - Key wholesale staff/wholesalers	Infocado Reports²⁸	Inclusion of more informed comment on market conditions and specific quality issues when they arise	- Encourage greater exchange of information - Non-contributing wholesalers should continually be asked to provide data to improve accuracy within the wholesale sector and greater transparency of fruit movement
Supply Chain – Retailers: independent and chain	- Video²⁹ - Meetings with supermarket executives	Handling at store level	Important to maintain relationship with retailers in regard to industry issues, trends, initiatives, R&D (HIA) and Marketing (HIA)
Supply Chain – Packhouses	Infocado		Non contributing packhouses should continually be asked to provide data to improve accuracy and reduce Avocados Australia time to

²¹ AV10002 Best Management Practices Internet Based Information Delivery

²² AV12012 Final Report

²³ AV12012 Final Report

²⁴ AV12012 Final Report

²⁵ Stakeholder survey 2017

²⁶ AV12012 Final Report

²⁷ Grower suggestion in AV10002 Best Management Practices Internet Based Information Delivery

²⁸ AV12012 Final Report

²⁹ AV12012 Final Report - feedback from bruised avocado video grower evaluation

Stakeholders	Engagement methods specifically mentioned	Areas of interest/value	Further comments
			manage the overall system ³⁰
Transport sector ³¹	•	•	• Consideration of new approach needed

Input engagement from the commercial sectors

Most stakeholders (2017) indicated that they were open to input/engagement with the commercial sector if they are *presenting things of value* but were not too keen if they were being sold something.

There was agreement among some growers that the input and engagement from the commercial sector should be kept *neutral*, unless technical data is being presented. Others acknowledged the value of the commercial sector, noting they are an *important source of information; provide solutions* to growers; and that it is *good to know what is available*. One grower commented that *it is healthy to have them involved as part of the industry*.

Another suggested profiles or interviews with consultants and technical providers being delivered via Talking Avocados. One grower discussed the need to develop a consultant base in the avocado industry, suggesting that HIA resources could help facilitate this. A board member agreed suggesting that the industry has relied too heavily on state departments in the past and now that that support is dwindling, there is a need to develop relationships with consultants in a *more formal way*.

There was however feedback from consultants and technical people in the commercial sector that they were not sure how to engage with the industry. Often they were unaware of local events (workshops and field days) until after they had been held. Some of those that did attend events commented that they were unsure whether they were welcome or not³².

Facilitating industry development

It was thought by a number of stakeholders (2017) that to maintain a level of *credibility*, development initiatives should be industry driven. When looking at AAL as a facilitator, a consultant noted that development *should be driven by industry and supported by HIA or other funding mechanisms*. One grower commented that the development role should be a partnership, noting that *QLD DAF is the only one with technical capacity left*. Another grower commented that *AAL does have a role with TA and Infocado and [should] possibly be directing traffic in regard to industry extension*.

³⁰ AV12012 Final Report

³¹ AV12012 Final Report

³² Discussions with industry stakeholders by Jenny Margetts (P2P Business Solutions)

STAKEHOLDER ENGAGEMENT PLANNING FRAMEWORK

The following table is proposed as the Avocado Industry's stakeholder engagement planning framework. Based on the above findings, it outlines methods of engagement for different target groups and proposes details as to how they could work at an industry level. It also draws down topics that could be further explored as well as including some practical comments around any administration, marketing and evaluation.

As an aspirational framework, this includes a range of activities and methods - from those which should be considered core and of ongoing importance to those which would require more resources and time to implement. To denote which engagement methods fall under which category a colour coding system is used in the table below.

Green = core ongoing engagement methods

Blue = should be included but needs a little extra investment (time and money). May need scheduling around/instead of relevant core activity/ies.

Orange = nice to have with more investment and support (potentially from Hort Innovation, cross industry, commercial sector, consultants/advisers)

Table 5: Stakeholder engagement planning framework

Type of stakeholder engagement	Engagement methods	Stakeholders targeted	Details (including themes/topics)	Timing	Expected outcomes	Other comments / administration / evaluation
Information access (one- way communication of AAL information)	Guacamole e-newsletter	All stakeholders	Topics to include: - AAL Activities - In depth analysis - Grower direct information (e.g. organic experience) - Consumption data - Latest pest control information - Latest marketing and marketing trends - Industry and global news Could include information about cross industry	Fortnightly	Improving knowledge leading to action	- Email is the preferred communication channel for stakeholders. - Potentially make news stories more accessible/visible on AAL website. Shows turnover of new information. Evaluate – subscribers, click throughs, survey questions, feedback from workshops/industry interactions

Type of stakeholder engagement	Engagement methods	Stakeholders targeted	Details (including themes/topics)	Timing	Expected outcomes	Other comments / administration / evaluation
			activities at the regional level and relevant technical information.			
	Industry magazine – Talking Avocados	All stakeholders	- Use to promote/market engagement activities and for reporting back purposes. Topics should include: - Up to date R&D - More technical information - Best practice (e.g. pruning, nutrition, water management) - Industry matters - Market updates - profiles or interviews with consultants and technical providers - More localised information (growers and distributors) - Relevant cross industry information	Quarterly	- A repository of trusted information - Improving knowledge leading to action	- Highly valued by stakeholders - Most preferred current approach Evaluate – Survey questions, feedback from workshops/industry interactions
	Posters	All stakeholders	- Provide to new growers - Ensure relevant posters are distributed to all industry stakeholders - Update as new research released	Always accessible	Improving knowledge leading to action	Evaluate – No. distributed, Survey questions feedback from workshops/industry interactions
	Website	All stakeholders	New R&D, technical and productivity information should be highlighted	Always accessible	Encourages growers to access BPR to obtain more detail. Highlighting areas for change as a result of BPR.	- Requires ongoing maintenance and updates - New website being launched in March 2017

Type of stakeholder engagement	Engagement methods	Stakeholders targeted	Details (including themes/topics)	Timing	Expected outcomes	Other comments / administration / evaluation
					Repository of knowledge	Evaluate – No. of visits, can relate visit spikes to industry events or regular activities, most downloaded resources and when, stakeholder surveys
	Best Practice Resource (BPR)	All stakeholders	- Hard copy manuals should be made available for download Potential topics noted by stakeholders: - Packing - Available chemicals - Soil management - Updated gross margins - More detailed nutrition specific to the growth cycle - Current information on quality and productivity issues	Always accessible	A library of information/self-assessments available for any to access allowing stakeholders to improve their knowledge.	- Needs to be kept up to date with latest information - Should be marketed ongoing through e-newsletter and industry magazine. Case studies could be made of those who have used it and what changes they made. Also a useful evaluation tool. A smaller case study (i.e. narrative) could be powerful in sharing benefits of BPR to stakeholders. Evaluate– number of self assessments/facility checks undertaken, stakeholder survey on impact, website visits/downloads, most popular pages visited online
	Videos	All stakeholders	Available via DVD, AAL website and YouTube channel	Always accessible	Good way to disseminate information in an easily digestible format. Also a way to facilitate industry engagement/interaction during video production.	Evaluate – number of visits, length of time on page, type of comments and interactions, stakeholder survey

Type of stakeholder engagement	Engagement methods	Stakeholders targeted	Details (including themes/topics)	Timing	Expected outcomes	Other comments / administration / evaluation
Information sharing (two-way engagement)	Hard copy manuals e.g. Problem solver Field Guide.	All stakeholders	Continue distribution	Always accessible	Repository of information, building knowledge and skills leading to practice change.	Evaluate – number distributed, stakeholder survey
	Infocado	- All packers, consolidators and wholesalers - Other industry stakeholders	Higher level information for industry planning.	Weekly, quarterly, annually	Businesses making better informed tactical and strategic market planning decisions.	- Communication needs to be proactive to ensure relevance to contributors. - Non contributing packhouses need to provide data to improve accuracy. Of those the largest should be targeted first. Evaluate – number subscribers / % volume contributing/accessed online, stakeholder survey,
	Orchardinfo Tree Census and Productivity survey	All growers		Annually	Improved longer term business and industry planning.	Evaluation – % planted hectares contributing/ stakeholder survey
	Social media including Facebook, Instagram and Twitter	- Consultants - Growers - Consolidators	- It is noted that a new social media strategy has just been launched including Facebook and Twitter as the key channels. - There is potential to start exploring possibilities through closed groups including Facetime live – cost effective opportunity to live stream field days, new R&D direct from researchers, different aspects of supply chain. If a specific live stream	As required	Community building within the industry facilitating sharing of up to date information direct from different stakeholder groups.	- Social media activity and channels could advertised/referenced in Talking Avocados and Guacamole. Play up its benefits including access to new information, other growers on farm and supply chain. It would be a slow burn that could snowball once participants see benefits. - Could include social media highlights in Talking Avocados – e.g. instagrams of the quarter, top tweets, advertise

Type of stakeholder engagement	Engagement methods	Stakeholders targeted	Details (including themes/topics)	Timing	Expected outcomes	Other comments / administration / evaluation
			only for Facebook, users can interact through comments which can be answered live. No special logins to webinar software required. In the future, Instagram could be considered to be used to share technical information with imagery.			upcoming Facebook live streams Consultants / extension officers / younger growers in particular could each have a part to play in developing an online industry community. Evaluate – growth of social media use amongst stakeholders, type and frequency of interactions and users reached, reactions to posts, influencers reached, stakeholder survey
Group facilitation (Multiway engagement with learning on all sides)	Qualicado style workshops	All stakeholders	- Potentially segment days allowing attendees to attend all or part of a day e.g. industry update (could include panel of stakeholders across the supply chain providing updates and news in their areas and facilitating peer discussion); field walk; in depth session on a topic/s. - AAL could host the morning with another agency (e.g. DAFQ in Qld) in the afternoon. - Include researchers and experts (consultants /technical staff) where possible for learning on both sides and direct access to research.	Once a year across 8 growing regions	- Expanding the knowledge of the supply chain fostering innovation and industry growth. - Improving quality and production across the supply chain. - Helping develop industry networks.	- There is interest from growers to see what is happening in different regions – could consider livestreaming parts of the workshop on Facebook Live (using a closed group). Could also live tweet and post photos to Instagram. - Additionally, growers or any stakeholder undertaking innovative programs could attend other regional workshops to share information (AAL could cover expenses of time and travel) Evaluate - Observation on the day, feedback sheets, attendance, stakeholder survey

Type of stakeholder engagement	Engagement methods	Stakeholders targeted	Details (including themes/topics)	Timing	Expected outcomes	Other comments / administration / evaluation
			Potentially include OH&S information			
	Master Class workshops	- Larger/more experienced growers - Researchers - Consultants	- Aimed at a targeted group of growers, researchers and key influencers covering more advanced knowledge and techniques. - Keep groups smaller and facilitate peer discussion. - Location is important and farm walks should be included (if appropriate). - Potentially include OH&S information.	A rolling program of one to two per year across different regions – although regionally based workshops may not be an issue.	- Challenging and expanding the knowledge of experienced growers. - Improving quality and production. - Developing capacity of industry leaders.	Would need to be directly marketed to targeted/qualified stakeholders – email, phone follow Evaluate – Observation on the day, feedback sheets, attendance
	How-To workshops	- New, lifestyle, smaller growers - On farm Managers	- Covering the base practical knowledge and skills as well as recent updates. - Could potentially be run by consultants or state departments in partnership with AAL. - More experienced growers could be invited as a peer panel for Q&A. In addition to the benefits of networking and visiting other operations, a sitting fee could be offered. - Should include farm walks on larger farms. - Could potentially look at having 'Avocado 101'	One to two a year	Developing the newer and smaller growers and providing training for farm managers to improve production and quality.	Could be broadly marketed in industry publications, AAL website, emails to relevant stakeholders Evaluate – Observation on the day, feedback sheets, attendance

Type of stakeholder engagement	Engagement methods	Stakeholders targeted	Details (including themes/topics)	Timing	Expected outcomes	Other comments / administration / evaluation
			course covering all aspects of growing, packing and marketing fundamentals for new growers and managers. This could be a fee for service two-day course. which could be run based on demand.			
	Field trips/farm walks	All stakeholders should be invited	- It is noted that field trips/ farm walks are generally a part of workshops. - Standalone field trips/farm walks could be arranged around demonstrating new technologies and information as needed. - There could be potential to look at other industry operations.	As required	Peer to peer learning resulting in practice change	- An important avenue for disseminating new technical information in particular. - Report back on experience in publications/website. - Could use social media as an avenue to share 'live and immediate' information. Evaluation – attendance, observations on the day, on site evaluation surveys, stakeholder survey
	Industry conference	All stakeholders	- Information included across the supply chain - New information must be presented - International research should be included	Once every four years	Whole of supply chain learning and networking opportunity for industry building.	- General agreement across stakeholders that this was worthwhile. - Follow-up should include case studies/narratives on attendees and any outcomes as a result of attending. Evaluation – attendance, feedback forms, observation, stakeholder survey

Type of stakeholder engagement	Engagement methods	Stakeholders targeted	Details (including themes/topics)	Timing	Expected outcomes	Other comments / administration / evaluation
Empowerment (self-mobilisation where independent decisions are made and actions taken)	Regional two-day events	All stakeholders	- Regionally based events providing peer to peer learning and opportunities to visit farms and make contacts. - Opportunity to involve range of stakeholders across the supply chain at a regional level – developing contacts and relationships. - Could include structured farm walks, peer discussion panels, in depth technical presentations, consultant run sessions, new R&D and access to researchers.	Plan for events every 2 years across 3 regions. It could be that the year this is run, Qualicado style workshops be suspended or worked in to be a part of the event.	Whole of supply chain learning and networking opportunity for industry building.	- Rated quite well by stakeholders as a potential engagement tool. - Potentially run in between a national conference. Evaluate - Could run a trial event in one region to evaluate effectiveness and worth for implementation across regions. Event feedback sheets, observation, attendance
	R&D Forum	- Researchers - Consultants - Key influencers across the supply chain - HIA	Could invite the commercial sector to participate	Annually	Maintain momentum developing new research and technologies	Share the outcomes of the forum in industry publications and with key stakeholders. Evaluate – attendance, event feedback sheets, observation, follow through of decisions made
	Topic specific study groups	Growers	- Growers suggest emerging topics of interest with Extension Officer/consultants facilitating a study group with support from AAL - Regionally based	As needed	A more active set of growers who increase knowledge and skills in relevant areas leading to increased levels of practice change.	AAL could provide some level of organisational support, potentially a framework for the day and access to experts. Evaluate – stakeholder survey

Type of stakeholder engagement	Engagement methods	Stakeholders targeted	Details (including themes/topics)	Timing	Expected outcomes	Other comments / administration / evaluation
One on one/mentoring			Could be an offshoot of Simon Newett led study groups			
	International study tours	- Growers - Supply chain	- AAL could organise the tour with participants paying their own way. - Potential to visit other industries to observe and learn - Another suggestion could be for a researcher/Simon Newett to attend and report back to the industry.	As needed	Increased knowledge of international developments leading to a potential on farm change.	- Would require administrative support for travel organisation. - Attendees should report findings back – through Talking Avocados, Guacamole, hosting field days/farm walks to share new knowledge. Evaluate – feedback sheets, interviews, case studies, stakeholder survey
	Younger growers network	Younger Growers	- Could be cross industry (e.g. macadamia, mangoes) and focus on areas of common learning opportunities. - Networking driven - Investigate NQ group already doing this run by DAFQ extension officer. Would this be a useful approach for other regions? - Use social media to facilitate growth of online networking – will probably need champions to start it and keep momentum.	Ongoing (e.g. social media)	Developing the aspirations and skills of future industry leaders.	- Potential to profile younger growers in industry publications - Could be some administrative support required from AAL to help implement. Evaluate – younger grower survey, attendance numbers, use of social media and interaction
	Growers using consultancy	- Growers - Consultants	Nurture a network of consultants for growers to access. Ideas to facilitate this include:	Ongoing	Development of industry networks	Will require some facilitation from AAL.

Type of stakeholder engagement	Engagement methods	Stakeholders targeted	Details (including themes/topics)	Timing	Expected outcomes	Other comments / administration / evaluation
			regular invitation of consultants to participate in grower activities as attendees/expert panel participants/presenters; develop an avocado industry register of consultants; ensure consultants are actively targeted and updated with the latest R&D and a trusted information source for growers.		Increased access to latest research and industry knowledge. Broaden extension delivery options.	Potentially make someone central contact point and actively working to ensure consultants are kept in the engagement loop and accessible for growers. Evaluate – consultant/grower feedback, event feedback where consultants actively participating, change in number of growers accessing consultant services and trust levels
	Informal mentoring for younger growers	Younger growers	- Younger growers can learn from one another, especially in regard to new technologies. - Older growers across regions could nominate themselves as being available to mentor younger growers in an informal arrangement – or simply to just be at the end of the phone if needed for a quick chat.	As needed	Developing future industry leaders.	- Some administrative support from AAL. - Potentially initial set up and advertising existence of informal mentoring network Evaluate – numbers involved, interviews with participants as to worth. Could set up trial in one region to see if worth broader implementation.

APPENDIX 1

Summary of stakeholder areas where assistance is needed. Note that the numbers in the table indicate the number of respondents from the 17 stakeholders surveyed for this report indicating their need for support in a particular area.

	Area of support																		
	Costs of production	Benchmarking	Improved productivity	Improved quality	Post production technologies	Value chain/supply chain	Export trends/opportunities/development:	Markets	Industry trends	New research/applications relevant to the industry	Staff management	Succession Planning	OH&S	Marketing	Business models	Business management skills	Innovation Management	Social media	Other
Grower or grower/packer																			
CNSW	1	1	1	1									1						
CQ			1	1									1			1			
SC			1	1				1	1				1						
SQ			1	1						1									
TNR			2	1			1			1									1
TRI			2	1				1	1	2			1						
WA			1	1	1	1													
Total	1	1	9	7	1	1	1	2	2	4			4			1			1
Consultant/service provider/input company																			
NQ	1	1	1	1			1	1	1	1									
SQ			1	1				1	1										
TRI	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Total	2	1	3	3	1	1	2	3	3	2	1	1	1	1	1	1	1	1	
Younger grower or grower/packer (under 40)																			
CNSW			1	1			1	1	1				1						
CQ	1	1	1	1						1							1		
Total	1	1	2	2			1	1	1	1			1				1		
Consolidators																			
CQ			1	1						1						1			
NQ	1	1	1	1	1	1													1
Total	1	1	2	2	1	1				1						1			1
Other:																			
SC			1	1					1	1									
Total			1	1					1	1									
Total	5	4	17	15	3	3	4	6	7	9	1	1	6	1	1	3	2	1	2

APPENDIX 2

The following summary of informal discussions with industry stakeholders who did not have the time or desire to participate in a formal survey was provided by Jenny Margetts (P2P Business Solutions). Their high-level comments regarding industry extension activities are summarised below:

- Most of the industry stakeholders who participated in industry activities commented that they thought Qualicado workshops were worthwhile and a good opportunity for growers and others to network and get an update on industry issues. There was a strong preference for having events on farm as *“it’s good to see how others do things”*.
- In discussion, there was sometimes confusion between which workshops were Qualicado workshops and which were Study Group meetings. (This is to be expected because of the overlap in content and presenters).
- There was also frustration that often valuable time at industry workshop was spent on addressing very basic production issues that reasonable growers should already be aware of and addressing on their farms.
- There were a number of growers commenting that the content of both the Qualicado workshops and Study Groups was too repetitive and that there was no new R&D or information they could use to achieve better outcomes in their business. The growers making these comments tended to be the more innovative ones who had been in the industry for a reasonable period of time.
- The same growers believed that the Qualicado workshops and Study Group meetings were of value for their staff, especially new staff – so they could gain greater knowledge.
- In light of the above comments they wanted more R&D content delivered by ‘experts’ in the subject and cited R&D happening in other parts of the world (e.g. Chile with high density plantings etc. and South Africa with shade netting).
- Asked if it was appropriate that ‘commercial’ companies should be more involved in providing technical information there was a mix of feedback from growers - some saying that they didn’t think it was appropriate and others saying it was important as they provided real solutions for growers. There was however agreement that they didn’t want someone who was just ‘selling’ their product/service but rather information on the technical research that sat behind the product/service.
- Wholesalers commented that they preferred the shorter format for the Qualicado workshops held in the market.
- Feedback from those in the commercial sector (e.g. farm input reseller businesses and agronomic service businesses/consultants) was that they were not sure how to engage with the industry. Often they were unaware of local events (workshops and field days) until after they had been held. Some of those who did attend events were not always sure if they were welcome or not.
- A number of representatives of (regional) farm input companies with agronomists/sales people in the field indicated that they would like to have greater engagement with industry events. They saw Qualicado workshops as an opportunity for their staff to learn and also to network with growers. One staff member from a farm input reseller business commented that it would be great to see the same level of engagement with the avocado industry as they had in the macadamia industry. They commented on the learning and professional networking

opportunities that was afforded to them through the Australian macadamia industry's Consultants workshop that was held every year.

- Consultants and agronomic service providers also commented that although they may have been approached to present at regional events that this was sometimes difficult as their clients (growers) did not want them sharing information that had some proprietary value.