

Final Report

Avocado industry and market data capture and analysis

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Avocado industry and market data capture and analysis AV16006

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Summary

Avocados Australia has successfully facilitated and delivered *Avocado industry and market data capture and analysis*, a program conceived to support both short- and long-term business-level and industry-level planning and decision making across the Australian avocado industry. This has entailed provision of robust industry data to underpin effective supply chain management.

Much of the data that has been collected, collated, analysed and reported through this project has been dependent on the contribution of data from individual businesses. One of the criteria for assessing the success of the project is the level of data contribution, which has continued to increase over time.

Over the life of the project (April 2017 – July 2020), the following components have been delivered:

- The delivery of Weekly and Quarterly Infocado Reports
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. The Weekly Infocado Reports show weekly dispatches from packers by variety, source region and destination market; projected weekly dispatches for the following four weeks; pre-season and updated seasonal forecasts from New Zealand; import volumes received from New Zealand; harvest progression by region; sales and inventory data (supermarket sales, non-supermarket sales, export and stock-on-hand in the wholesale sector) and retail pricing. The Quarterly Infocado reports on Australian and NZ dispatches and forecasts for twelve months past and forward by month, source region and variety. Results from Quarterly Infocado Reports have also been communicated in the industry magazine *Talking Avocados*.
- The delivery of Annual OrchardInfo reports
The Annual OrchardInfo Report has been collated and distributed to all contributors each year around October. The reports indicate Australia's production capacity, number of trees and area planted, year planted, variety and tree density.
Growers have been well engaged with the OrchardInfo tree census, and response levels have been increasing. The data capture has been streamlined to improve ease of use and has facilitated a higher participation rate from industry. The OrchardInfo report has been distributed to all contributing growers each year directly via email.
- The delivery of Annual Statistics Snapshot 'Facts-at-a-Glance' report
The statistics snapshot 'Facts at a Glance' report has been published annually around September on the Avocados Australia website at <http://www.avocado.org.au/news-publications/statistics/>. This is a comprehensive document for both public and industry, providing the latest statistics relating to the Australian avocado industry. The report draws heavily on the Infocado-derived data, along with other data sources to provide a status report of the industry in volume and value, as well as providing projections of future growth.
- Capture and reporting of global avocado production and trade data
Specifically targeting current and potential exporters, a global trade data analysis framework was developed in Q2 of 2018. This framework provided the foundation for a series of reports that have been developed and provided to exporters and the broader industry to assist with developing export markets and understanding global competitors.

The suite of reports and insights that have been developed throughout this project have been provided to industry on a regular basis to assist with business and industry planning and management. For individual

businesses, the data has provided:

- Information on current plantings and therefore likely future production levels by region/time of year
- Average productivity levels by variety by region as a benchmark for comparison
- A rolling twelve month forecast of supply of avocados into the Australian market to assist with planning harvest, logistics and marketing
- Weekly reports which show volumes of avocados supplied into the domestic market in the past week and the forecast volumes to be supplied in the next four weeks. This data has assisted suppliers and traders to monitor and moderate the flow of avocados through the supply chain to minimize the risk of over or under supply, therefore optimizing quality at retail level and value back through the supply chain.
- Insights into export market opportunities and an understanding of global competitors

For the broader industry, the data has provided:

- long term production forecasts to guide industry strategic plans, R&D and marketing investments
- Data to monitor industry performance and progress over time
- Seasonal crop forecasts to assist with timing marketing and promotion activities

Keywords

Avocado, growers, packhouses, traders, data, reporting, dispatch, forecast, Infocado, OrchardInfo.

Introduction

High quality industry data is essential for business and industry planning. Avocados Australia has long provided a service to industry to collect, analyse and report industry data to assist with such planning.

Avocado is a unique crop that only begins to ripen once harvested. It is precisely this trait that enables the industry to utilise data to moderate the flow of fruit volumes through the supply chain. This creates great opportunities for the industry and consumers to benefit from consistent product quality due to more stable supply, and consistent prices which supports demand and optimises returns for growers.

The Australian avocado industry is continuing to experience rapid expansion which presents both opportunities and challenges. While domestic and global demand for avocados also continues to grow, Australian producers will continue to respond to this opportunity. However, the industry understands the important role that good data can play and has played in the industry's development thus far. The industry recognizes the value of both short term and long-term forecast information in terms of supply to the Australian domestic market but, increasingly, the importance of good data as the industry plays a greater role in the global avocado market.

The industry has long recognized the importance of having access to timely and robust supply chain data. This project was built on the highly successful programs developed and implemented by Avocados Australia over the past 15 years and ensured the provision of industry data continued to remain relevant and front of mind for stakeholders.

With this project, Avocados Australia has sought to increase participation levels and data accuracy from suppliers and vendors, by devising and introducing improved means and instruments that capture industry data more effectively, and reporting that better portrays the dynamics of the Australian avocado supply chain. This project has also given closer consideration to global trade dynamics and to support the burgeoning Australian avocado sector.

Details and an evaluation of each of the project components, as well as recommendations for future approaches and activities for each of these components, are provided in this report.

Methodology

This project has continued to collect, analyse and report industry and market data for the benefit of the Australian avocado industry, building on previous projects that have been delivered over many years. Through this project, the scope of data collection, analysis and reporting has been significantly expanded. Also, improvements to the existing systems have been made on an ongoing basis to improve the accuracy, usability and usefulness of the data reported. The main components that were delivered through this project are set out below.

1. Seasonal avocado throughput collection and forecast system

1a. Maintain Infocado – Weekly Infocado Reports for short term data

During the life of the project, 171 Weekly Infocado Reports were produced from 09/05/2017 until 11/08/2020.

Forecast and dispatch data was provided by participating packhouses (including NZ Avocado Ltd, on behalf of NZ exporters) supplying the Australian market on a weekly basis and captured in the Infocado system using a secure online platform. Each week, individual contributors logged into the system to access and update their data during a specified time window. Packhouses provided data on the volume of avocados dispatched in the previous week and forecast volumes to be dispatched each week for the next four weeks.

Regular follow up reminders and remote support for data entry was provided by Avocados Australia as required over the course of the project on a weekly basis. Personal engagement with participants has been essential to maintain high participation levels.

The Weekly Infocado Report has reported on:

- Weekly dispatch volumes from packers by variety, source region, destination market, fruit size, and pack types.
- Projected weekly dispatch volumes for the next four weeks by variety and pack type.
- Pre-season and updated seasonal forecasts and import volumes received from New Zealand.
- Harvest progression by region showing the cumulative volumes dispatched across the season each week, compared with the total forecast for the season.
- Weekly sales data and inventory levels (supermarket sales, non-supermarket sales, export, and stock-on-hand in the wholesale sector).
- Retail pricing, showing the average retail prices each week across the major retailers.

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

- Weekly reminders to enter data sent each Friday and Monday to all contributors (packhouses, consolidators, and wholesalers).
- Packhouses reminded to begin contributing data as their individual season commenced.
- Packhouse 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 (during the New Zealand season).
- Weekly Infocado Report generated and distributed to contributors by Tuesday afternoon*. This included commentary, a marketing update, and the previous week's Weekly Retail Price Report.
- Report uploaded to Avocados Australia website 6 weeks after its production.

* This timetable was appropriately adjusted for weeks with public holidays.

During the course of the project, weekly forecast, dispatch and sales data was contributed directly into the on-line platform from 90 businesses (packhouses, consolidators, and wholesalers) + NZ industry.

Copies of past reports can be found at <https://avocado.org.au/our-programs/supply-chain-data/infocado/#WeeklyReports>

Weekly Retail Price Report

During the life of the project, 171 Weekly Retail Price Reports were produced from 09/05/2017 to 11/08/2020

The Weekly Retail Price Report was published each week with data captured from online sources. This included weekly pricing and specials of fresh avocado products (single unit, multibuy, multi-packs and organic) in Coles and Woolworths as well as specials (catalogue prices) of Aldi, IGA and Foodworks. Prices were collected for a sample of different localities in Brisbane, Sydney, Melbourne, and Perth to account for a range of demographics.

The data collection process, report generation, and distribution process that was used each week entailed:

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

* This timetable was appropriately adjusted for weeks with public holidays.

Copies of past reports can be found at <https://avocado.org.au/our-programs/supply-chain-data/retail-pricing/>

1b. Maintain Infocado – Quarterly Infocado Reports for medium term data

During the life of the project, 13 Quarterly Infocado Reports were produced from 28/07/2017 to 23/07/2020

Every three months all avocado packhouses (including NZ industry) were requested to provide seasonal forecast data for the following twelve months through our online platform. This frequency of updating is deemed appropriate due to the wide range of growing regions and cropping cycles. Individual contributors were emailed a link on the 10th of every month (except the end of the quarter month) that prompted them to complete a seasonal forecast form that fed their figures into the Avocados Australia database.

To ensure the Quarterly Infocado Reports presented comprehensive forecast data for the following twelve months, those packhouses that do not contribute directly to the online platform were contacted via telephone to access their data. Attempts were made to contact all known packhouses in all regions across Australia each quarter, with the aim to obtain volumes dispatched by these packhouses in the past twelve months, and their estimate for the next twelve months. These amounts were then combined with the directly contributed data in the Quarterly Infocado Reports, to provide a more complete picture of the volumes dispatched and forecast.

Regular follow up reminders and remote support for data entry was provided by Avocados Australia as required.

The Quarterly Infocado Report reported Australian and NZ volumes dispatched in the past twelve months and forecasts for the following twelve months by month, source region and key variety. The data collection process and report generation and distribution process used on a quarterly basis entailed:

- Contributing packhouses were emailed a link to complete a seasonal forecast form that fed their figures into the Avocados Australia database.
- Data collection from packhouses that were not contributing weekly Infocado data was obtained via telephone as 'indirectly contributed' data.

- Retail pricing data collected during the previous quarter was collated and an average price per month was included in the report.
- Report was generated and commentary provided by the end of the month following the end of the quarter.
- Report was distributed to weekly Infocado contributors.
- Report was uploaded to the Avocados Australia website on a six-month delayed basis to provide an incentive for direct contributors.

Copies of past reports can be found at <https://avocado.org.au/our-programs/supply-chain-data/infocado/#QuarterlyReports>

1c. Stakeholder engagement drive

Stakeholder engagement has been important to maintain and increase participation levels. As part of this engagement, presentations were delivered to growers, packhouses, consolidators and wholesalers at relevant forums in the main production regions and at capital city markets. These presentations demonstrated the value of this data, how it can be used to inform business and industry decisions, sought feedback from stakeholders regarding possible improvements and encouraged non-contributing stakeholders to participate.

During the course of the project, presentations about the Infocado program were delivered at the following forums:

Date	Regional Forum/Wholesaler Workshop	Attendees
May 1, 2018	South Qld (Crows Nest)	64
May 2, 2018	Sunshine Coast (Coolum Beach)	49
May 15, 2018	Western Australia (Bunbury)	83
May 21, 2018	Tristate (Renmark)	42
May 31, 2018	North Qld (Mareeba)	73
June 5, 2018	Central NSW (Stuarts Point)	76
June 7, 2018	Central Qld (Isis Central)	81
May 15, 2019	Central NSW (Stuarts Point)	66
June 6, 2019	Western Australia (Pemberton)	97
August 14, 2019	Tristate (Renmark)	66
August 28, 2019	North Qld (Mareeba)	79
November 13, 2019	Tamborine /Northernm Rivers (Casuarina)	68
October 14, 2019	Brisbane Markets (wholesaler workshop)	15
October 16, 2019	Sydney Markets (wholesaler workshop)	10
October 17, 2019	Melbourne Markets (wholesaler workshop)	12
October 18, 2019	Adelaide Markets (wholesaler workshop)	2
November 27, 2019	Central Qld (Isis Central)	101
February 11, 2020	South Qld (Blackbutt)	92
February 26, 2020	Sunshine Coast (Bellthorpe)	82
March 12, 2020	Western Australia (Manjimup)	94

April 29, 2020	Central NSW (Webinar)	55
May 27, 2020	Tristate (Webinar)	89
July 29, 2020	North Qld (Webinar)	66

Stakeholder engagement was limited during the last few months of the project due to restrictions in relation to the management of COVID-19.

The level of industry participation in this project is considered to be very high, with approximately 85% of actual supply volume directly captured in the Infocado system on a weekly basis and (on average) 96% on a seasonal basis. The project captured orchard data from around 86% of all known avocado growers in the OrchardInfo Tree Census, representing the vast majority of all known plantings. The project also captured a reasonable measure of orchard productivity as compared with four years of benchmarking data from project AV13003.

The project team strived to achieve participation as close as possible to 100% as the greater the participation levels, the greater the accuracy of the data. Avocados Australia encouraged packhouses, and traders to raise awareness of the need for more data-contributors. The importance of the data and how to participate has been communicated to industry through industry forums, articles in the industry magazine *Talking Avocados* and regional visits.

Changes to the Weekly Infocado Report system that are currently being implemented will require a greater number of individual packhouses to contribute data directly. However, the amount of data required from each packhouse has been significantly reduced. This aims to bring about an increase in participation from a larger number of smaller packhouses, that do not currently contribute on a weekly basis due to time and resource constraints.

Avocados Australia is working with consolidators to identify these smaller packhouses and then provide one-on-one support to the packhouses to assist them in becoming regular contributors and therefore recipients of the reports.

Also, changes that have been made to the software (undertaken separately by Avocados Australia), and the reduced level of data input now required, now provides a good foundation to bring on board new contributors.

To maximise the efficient utilization of the project's resources, it was proposed to undertake intensive stakeholder engagement with current and potential new participants during the final 'promotional' stage of the new data system release.

For this phase, we will promote the new system's features and characteristics by means of presentations, one-on-one and/or group workshops aligned with regional forums. In this way we will maximise promotional exposure and enabling support to users that may require further assistance. This is now scheduled to take place between the second half of 2020 and the first half of 2021, pending access to ongoing project resources.

1d. Infocado system review and improvement

While participation levels in the Infocado system have been very high, Avocados Australia has continuously strived to maximise the number of contributing businesses (packhouses, consolidators, and wholesalers) to ensure that the reporting of Infocado information is as complete and accurate as possible. In 2016, Avocados Australia undertook an exercise, separate to this project, to review the future requirements of the Infocado system considering 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 was conceived. This new approach will provide a higher level of data accuracy and is expected to lead to increased participation by smaller packhouses in the industry.

As part of the new software, participants will be able to access data on line and generate their own individual reports on-line, tailored to their specific needs. The technology will be suitable for use across

both desktop and mobile devices, on both apple and Microsoft platforms.

Avocados Australia had expected to roll out this new system earlier during the life of this project, but due to unforeseen circumstances the development process, and ultimately the release of this new system, was substantially delayed. At the time of writing this report however, most of the software development work has now been completed, and Avocados Australia plans to introduce the new system to industry in the second half of 2020.

2. Avocado industry strategic information system

The avocado industry is in a rapid growth phase. High quality information about future production levels is imperative to assist industry planning as well as informing business decisions. Knowing the number of trees or hectares planted, their age and variety enables long term forecasts to be modelled. Through the course of this project, Avocados Australia collected this base level data from all known growers across Australia to produce annual reports showing planting data across all regions. Efforts to increase the levels of participation were successful with the last report (2019) including data from 665 growers representing 3,778 individual block records.

Orchard productivity performance is another measure that is strategically important for the industry. It provides a data set from which to assess industry progress in one of its strategic priorities – improving productivity. Through this project, Avocados Australia monitored orchard productivity via an online survey of growers each year.

2a. Maintain OrchardInfo – Annual Tree Census for medium to long term data

Each year, a tree census form was distributed to all known avocado growers in Australia to collect core data – year planted, variety, area planted, number of trees planted.

Data was collected using a web form. The project team undertook follow up reminders and remote support for data entry as required.

Annual summary reports were developed showing tree census data for each region and nationally and distributed to all contributing growers and Hort Innovation. These reports also contributed towards the development of annual medium- and long-term forecasts.

OrchardInfo reported on number of trees, number of hectares, plant density, varieties, tree age and average productivity levels in each of the main growing regions on an annual basis. The annual data collection process and report generation and distribution process used for the OrchardInfo Tree Census entailed:

- An annual Avocado Census Day was established – 1st August.
- All growers in the Avocados Australia database were sent an email linked to the OrchardInfo Tree Census form.
- An incentive was offered for those growers that submitted their data by the required date.
- Follow-ups via email and phone were conducted to increase the contribution levels.
- The reports were collated including the productivity sample data collected (see below).
- The report findings were emailed directly to contributing growers and a summary was published in the *Talking Avocados* magazine each year.

An example of the OrchardInfo Annual Report and the Tree Census Form are provided in appendices A and B.

2b. Monitor productivity change over time in different regions for medium- to long-term data

An electronic survey was sent to all growers in the Avocados Australia database each year to collect basic productivity data. Follow up reminders and remote support for data entry were provided by Avocados Australia as required. Incentives in the form of prizes were used to encourage productivity survey responses as well. Annual summary reports showing productivity levels for each region were distributed to

participating growers as part of the OrchardInfo reports. It should be noted that the number of survey respondents only provides a small sample of total orchard productivity.

The data collection process, report generation, and distribution process used for the OrchardInfo Productivity Survey entailed:

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

An example of the survey can be referred to in appendix C.

3. Industry Data Analysis

Economic analyses

As part of the project, several economic analyses were undertaken using the data generated from the project combined with other sources. A list of potential analyses that were considered useful for industry was developed and prioritized in consultation with Avocados Australia directors. These analyses were commissioned to an agribusiness economics specialist.

The analysis deemed to be the highest priority was to evaluate the relationship between supply and wholesale price, using the dispatch data from Infocado and wholesale market price data purchased from Ausmarket Consultants.

Among the variables evaluated were: Wholesale Price, Quantity, Variety, Pack type, Size, Origin country, Week, Quantity of other varieties to traders, Quantity of all varieties direct, Avocado consumption per head, and Consumer confidence.

The analysis was not able to demonstrate a relationship with an acceptable degree of reliability. The major and persistent difficulty in this analysis suggested that there was a relevant variable or several variables missing from the regression function evaluated, or that there were factors influencing price or quantity that were external to the data used in the analysis.

Another study of interest was to understand how fruit size can influence wholesale price, with the premise that the supply of off-sized fruit, pricing, and retailer response to different fruit sizes all impact on the profitability of the avocado category. This causes some challenges for the avocado industry. The hypothesis was: with the likely volumes of small fruit to come onto the market in the future based on crop forecasts, this fruit will need to be exported to keep domestic prices up.

The initial results from this investigation indicated that larger avocados no longer attract the same price premium at wholesale markets as they did years ago, and equally, smaller fruit is no longer being discounted as heavily. The analysis did not support the hypothesis, the price gap between different sizes has, in fact, reduced in recent years, and this finding was supported by industry stakeholders involved in the trade.

In early 2020 a new study was commissioned to evaluate the price/ demand elasticity of the avocado in the Australian market. This study aimed to shed light on the influence that retail price variation can have on the willingness of Australian consumers to purchase avocados, ultimately to demonstrate that the market can absorb larger volumes without drastically lowering retail price. This study is currently underway, and its completion is expected within the second half of 2020.

Other data analysis and reports

Other tailored reports have been prepared on request for governments. The content of these reports was prepared to inform departmental updates, such as Queensland's Department of Agriculture and Fisheries 'AgTrends' and The Horticulture Coalition of SA PIRSA Primary Industries / Food and Wine Scorecards which are published once a year. The reports included data captured through this project relevant to the particular States such as production volumes, Gross Value Product, average farmgate price, among other

variables as was required.

4. Global trade data analysis

A global trade data analysis framework was developed and considered by the Project Reference Group for project AV17000 (*Avocado export readiness and market access*) in 2018. The framework was to support the export project with the analysis of global avocado trade data relevant to the Australian export and import markets. Once the framework was agreed, a consultant was commissioned to produce the reports in the format and frequency required.

The data types that the reports produced under this framework consisted of:

- Maximum residue limits (MRLs): this annual report included an alphabetical list of compounds with maximum residue limits for avocados, and a comparison grid of each of Australia's key market country's limits. The purpose of this report was to enable Australian avocado exporters to understand the MRL requirements of export countries.
- Australian avocado exports and imports: created twice yearly, delivered in Feb/March and Aug/Sept, this report included data tables, graphs and relevant commentary on Australian avocados exported in the previous 12 months (YTD). Comparisons to previous years' data were provided as well as statistics on exports by state. Australian imports of avocados were reported for the previous financial year, as well as comparisons to prior years.
- Global Market Report - Avocado Producers and Market Suppliers: This market profile report covered each of the leading 10 producing countries production and export trade by volume, price and consumption.
- Global Market Report - Import Markets: This market profile report covered each of the top 5 importing countries and the 10 countries listed in the export review AV16011 showing 5-year import / export trade by volume, price and consumption, with analytics and commentary.

These reports were published in the Best Practice Resource library and were promoted to industry via the weekly newsletter *Guacamole*. They were also provided directly to the Project Reference Group for AV17000. The content was used to prepare update articles for the industry magazine *Talking Avocados* and industry update presentations.

Copies of these reports can be found in the best practice resource at <https://avocado.org.au/best-practice-resource/export/>

5. Annual report of industry statistics

An annual industry status report (Facts at a Glance) was produced each year using the data collected through this project and other sources. Each annual Avocados Australia Facts at a Glance document was updated on the Avocados Australia website and promoted through the weekly newsletter *Guacamole*. The content was also used to prepare update articles for the industry magazine *Talking Avocados* and industry update presentations.

This report can be viewed at https://www.avocado.org.au/wp-content/uploads/2019/10/2018-19_AAL-Facts-at-a-glance.pdf.

6. Support for ST15006 Multi-scale monitoring tools for managing Australian Tree Crops: Industry meets innovation

Prescribed meetings were attended as per the ST15006 schedule. Participation requests were logged, considered, and actioned as appropriate. Participation at these meetings provided an industry perspective on project activities. In particular, staff involved in AV16006 provided significant support and data to assist with developing the national avocado map.

7. ABS Collaboration

The project proposed to collaborate with ABS to consider the suitability and availability of data from this project for inclusion in their investigation into administrative data sources. However, after further discussions further collaboration was determined as not feasible because ABS was seeking business-specific data that could not be disclosed by Avocados Australia.

8. Data verification

As part of this project, a data verification schedule was developed to cross check and verify collected data obtained through each system with suitable alternative information sources.

The schedule was used throughout the project to ensure that the data collected was within the thresholds established, and in alignment with other relevant sources.

Dispatch data was verified against quarterly levy receipts provided by the Department of Agriculture, Water and Energy. The target was for Infocado dispatch data to represent at least 85% of the volumes attributed to levy receipts each quarter. During the life of the project this benchmark was consistently achieved.

Seasonal forecast data by region was verified against the end of season regional dispatch totals. The target was for variations to be less than 20%. During the life of the project this benchmark was achieved with some exceptions that have been justified, usually unfavorable weather conditions in a production region during its season.

Orchard planting data was verified against data from the Australian Bureau of Statistics. During the life of the project the benchmark was consistently achieved.

For reference, the data verification schedule and schemas showing evidence that these benchmarks have been met, can be referred to in appendices D and E.

Outputs

At the inception of the project, a program logic, a monitoring and evaluation plan, a project risk register, a stakeholder engagement/communication plan, and a data verification schedule with linkage to Hort Innovation and industry/fund objectives were developed.

For the duration of the project, Weekly Infocado Reports were produced and delivered to participants each Tuesday, apart from public holidays, when the data collection was carried out and reports were published on the following day. The Weekly Infocado Report was made available publicly on the Avocados Australia website with a 6-week lag with the aim of maintaining and increasing industry participation in the program. The Weekly Infocado Report was provided weekly to Hort Innovation upon circulation. An example of one of the Weekly Infocado Reports is provided in Appendix F. Reports for other weeks are available on the Avocados Australia website <https://avocado.org.au/our-programs/supply-chain-data/infocado/#WeeklyReports>

Weekly Retail Price Reports were produced and delivered each week for the duration of the project. Exceptions took place during COVID-19 as data necessary to compile the reports was insufficient at the time and publication of the report was suspended between week 12 and 17 of 2020. An example of one of the Weekly Retail Price Reports is provided in the Appendix G. Reports for other weeks are available on the Avocados Australia website at <https://avocado.org.au/our-programs/supply-chain-data/retail-pricing/>.

Quarterly Infocado Reports were produced and delivered each quarter for the duration of the project. The Quarterly Infocado Reports provided information on Australian and NZ supply data, representing well over 85% of market supply by volume. When compared with levy receipts data, the average variation over the life of the project was -4.48% of levied volumes. These reports include data from direct contributors, plus those not currently participating directly in the program. The Quarterly Infocado Report was made available publicly on the Avocados Australia website with a 6-month lag with the aim of increasing industry participation in the program. The Quarterly Infocado Report was provided to Hort Innovation upon circulation. An example of one of the Quarterly Infocado Reports is provided in the Appendix H. Reports for other quarters are available on the Avocados Australia website at <https://avocado.org.au/our-programs/supply-chain-data/infocado/#QuarterlyReports>

The Annual OrchardInfo Reports were produced and distributed to growers throughout the duration of the project. In the latest edition of the report (2019) data from 86% of all known growers was included. However, the percentage of all area planted is expected to much higher as most of the non-contributors (14%) are smaller growers. Verification using ABS data shows that Avocados Australia's 2019 orchard planting data represents 28% more avocado plantings (2.54 million trees) than ABS have recorded (1.99 million trees) at the time of reporting. Each year the report was emailed to all contributors and provided to Hort Innovation.

Avocados Australia's data collection and reporting capacity continued to be refined in response to the changing profile of the industry, information needs and to improve data accuracy. Separately to this project, Avocados Australia has been investing in new software and improved systems for more effective data collection, and ultimately a more accurate representation of the Australian avocado supply chain.

A independent mid-term evaluation was satisfactorily carried out by an independent consultant in the second quarter of 2019, in which project activities, outputs and their relevance were reviewed, the benefits of the project based on outputs and interviews with industry stakeholders were assessed, and opportunities for improvement were identified. Avocados Australia has addressed the recommendations from this review.

A set of global trade reports showing global avocado production and trade were produced each year in line with the global trade data analysis framework, and regularly updated as new data became available. This included traded volumes and price information by market. Over time these reports show trends and indicate opportunities and risks for Australian growers and exporters. These reports can be accessed through the Avocados Australia Best Practice Resource at <https://avocado.org.au/best-practice-resource/export/selecting-an-export-market/#key>

The statistics snapshot 'Facts at a Glance' report has been published annually around September on the Avocados Australia website at <http://www.avocado.org.au/news-publications/statistics/>.

Avocados Australia was actively involved in providing industry input to ST15016: multi-scale monitoring

tools for managing Australian Tree Crops in its duration.

Regular articles have been disseminated through the Avocado Communication Program (AV15002/AV18003) informing its audience about results.

6-monthly milestone status reports MS102 – MS107 have been satisfactorily delivered.

For more details on the outputs delivered by AV16006, please refer to the table 'AV16006 Outputs' in appendix J.

Outcomes

The level of industry participation in all components of this project has been high throughout its life, with approximately 85% of actual supply volume directly captured in the Infocado system, with an additional 10-15% indirectly captured and reported quarterly. Around 86% of growers known to Avocados Australia are represented in the data that is captured and reported in the OrchardInfo Tree Census – tree number and hectares, by variety by age by region. Compared with the recent mapping data by Applied Agricultural Remote Sensing Centre, it can be observed that the number of production hectares captured in our system is closely aligned with the hectares of avocado detected in their mapping work, noting the difference in timing of data capture. Our latest OrchardInfo report is from nearly a year prior to the latest mapping study, and we estimate that the number of hectares in our upcoming edition of OrchardInfo will be even closer.

According to the latest data from ABS (28 May 2020) there are 2,202,008 avocado trees in Australia. As per our latest OrchardInfo report there is a total of 2,542,080 trees (1 August 2019), representing 115% of ABS data. We are expecting that the number of trees recorded in our upcoming 2020 edition of OrchardInfo will be higher, taking account of new plantings since our last census.

The actionable insights of the reports produced under AV16006 are a direct result of an industry that is engaged and coordinated, and the higher the level of contribution, the more complete and better the data. Conversely, the better the data, the higher the level of contribution. Moreover, data collection and delivery mechanisms that maximise participation levels and data quality, have been devised and are being implemented. The aim is to maintain and further improve the confidence in the data reported.

The level of participation in the project is testimony to the general attitude of the industry towards data sharing that has been central to the Australian avocado industry's planning over the years.

Key findings from the independent mid-term evaluation state that *“The Market Data Capture and Analysis project has provided the avocado industry with various supply chain data to create a more stable market, and to ensure the market is supplied with consistent, high-quality fruit. Project initiatives such as Infocado and OrchardInfo have collected industry data which has supported short term decision making in the supply chain as well as medium to longer term industry strategic planning.”*

The midterm review carried out interviews with industry, identifying the following as key achievements of the project to date:

- Infocado: having data to understand supply and manage peaks and troughs.
- OrchardInfo: having tree census data to highlight production by region and what is happening in the industry e.g. number of trees in the ground with the prospect of medium-term production forecasting.
- Trade data: is essential to have to understand how our competitors are performing.
- Continuity of data: so that a time series is potentially available, and trends can be identified.
- Engaging with the supply chain: e.g. packers and marketers enables a whole of supply chain response to consumers' needs.

The report indicated as well that: *“there was strong evidence that packers, consolidators and wholesalers were using the data to create a more stable market”, that “there was strong evidence that (the weekly Infocado) was used to support business decisions” and that “All wholesalers (100% of coded interviews) used the weekly report for decision-making.”*

The ability to plan activities on both ends of the supply chain based on anticipated knowledge of fruit volumes, has permitted the Australian avocado industry to moderate its supply of fruit to market, ultimately resulting in better quality fruit with prices remaining stable. A remarkable observation is that through the last 10 years, despite significant increases in volumes of avocado supplied to the Australian market, the price of avocados in Australia has also increased, a phenomenon not commonly experienced in fresh produce markets. While many factors have contributed to this result, industry's use of the data provided through this project has most certainly played a positive role.

The data that is collected, analysed, and reported through Avocados Australia's data system, supports planning at a tactical level by enabling supply chain parties to make better informed decisions in the short term based on weekly and seasonal (monthly) industry forecasts. Our models which combine historical production data and data on existing and new plantings, helps to build a picture of the industry's long-term trajectory and in turn informing the industry's strategic decisions.

Equally important is the volume data for parties along the supply chain to manage the logistics for their harvesting and marketing decisions.

The data which monitors the orchard productivity levels enables growers across the regions to assess their own performance against industry averages across the regions and internationally. At an industry level, the orchard productivity data provides a measure of productivity change over time which can provide some insights into the effectiveness of R&D investments aimed at improving orchard productivity.

The growth trajectory of the Australian avocado industry that has been elucidated from our models have indicated that growth in production could outpace the growth in Australian consumption relatively soon. This is causing a shift in focus to the imperative for export market development. The information that has been provided by this project to industry about our export market opportunities and our global competitors, coupled with our supply forecasts, has provided valuable insights to inform our export development strategies.

Monitoring and evaluation

A copy of the Monitoring and Evaluation Plan can be referred to in appendix I. Whilst much of the M&E elements have been covered in detail in other parts of this report, the key evaluation questions are listed and responded to below.

Effectiveness

1. *To what extent has the project achieved its expected outcomes?*

- The Outcomes section above confirms that the project has achieved the expected outcomes. This has been supported by feedback gathered through the independent mid-term evaluation of the project.
- The data collected, analysed and reported through the Avocados Australia data system has been a primary resource for the Australian avocado industry to inform their supply chain decisions and in general to form long term projections to elucidate what the industry could potentially look like in the years and decades ahead.
- The data has helped to support industry and business planning to enable a balance in supply and demand. This has been achieved by providing data which allows businesses to self-moderate the volume of fruit that is harvested to avoid excessive peaks or troughs in the market. These estimations are essential on which to base decisions about how much fruit should be dispatched to market to maintain a regular supply, thereby avoiding gluts or shortfalls that can disrupt pricing and cause quality to suffer. This in turn is key to optimising returns for growers and delivering high quality avocados for consumers.
- Planting data has been equally relevant on which to base long-term industry development decisions.
- The project has also maintained very high levels of participation and increased participation in some areas such as the Tree Census data.
- The targets of Infocado participation levels to directly capture at least 85% of supply to the Australian market and OrchardInfo Tree Census data to capture at least 80% of all Australian avocado plantings have been achieved.
- The level of participation in the project is testimony to the general attitude of the industry towards data sharing that has been central for the Australian avocado industry's planning over the years.

Relevance

2. *How relevant was the project to the needs of intended beneficiaries? To what extent has the project met the needs of avocado growers, packers, wholesalers and marketers?*

- The independent mid-term evaluation of the project demonstrated that the project was very relevant and met the needs of industry. The project provided valuable data and insights on a short, medium and longer-term basis that were actively used by the intended beneficiaries.
- However, some concerns were raised by some intended beneficiaries about the accuracy of some data sets and this can be attributed to voluntary participation levels in some regions. Nevertheless, the data validation process has confirmed that the data is robust. New software development is also well advanced which will underpin ongoing improvements to the system and increased participation levels.

Process appropriateness

3. *How well have intended beneficiaries been engaged in the project? To what extent were the target engagement levels achieved for industry data contributors? Have regular project updates been provided through linkage with the industry communication project?*

- The intended beneficiaries have been very engaged in the project at various levels. As direct contributors, the growers, packers, consolidators and wholesalers have been actively involved in providing data and receiving the reports on either a weekly, quarterly or annual basis.
- The target engagement levels for data contribution have been achieved and, in many cases, exceeded. Ongoing efforts are underway to further increase participation rates as close as possible to 100%.
- Regular updates on the project outputs as well as insights from the data analysis have been provided to industry through the industry communication project, particularly through the *Talking Avocados* magazine, but also through the website, Best Practice Resource and *Guacamole* e-newsletter.

Consultation during the project's independent evaluation confirmed that industry is satisfied with this process.

4. To what extent were engagement processes appropriate to the target audience/s of the project? Did the project engage contributors successfully? How accessible were channels of feedback; training documentation; and/or workshops to contributors?

- The project required engagement with individual data contributors on a weekly and quarterly basis and this occurred successfully throughout the project. Broader industry engagement was achieved through regional forums and wholesaler workshops as described in the project methodology section above. This provided an avenue for direct feedback on the suite of project outputs.
- The level of engagement at regional events was satisfactory throughout the life of the project. Information about the data systems was presented at every Regional Forum, as well as meetings with avocado wholesalers, that were undertaken in each major capital city market, to highlighting the benefits of industry participation, and presenting useful insights that have been drawn from the data. Where possible, the Data Analyst attended these events to build relationships with growers, packhouses and wholesalers to seek feedback and input about the system. The Data Analyst has been participating in these meetings, presenting relevant information, building relationships with these businesses and encourage greater participation.
- It was intended that more in depth engagement would be delivered in conjunction with the rollout of the new software and data collection system. Unfortunately, as the software was delayed, this more in-depth engagement was also delayed. The independent evaluation also highlighted that there was a strong call for more regionally based in-person engagement, so this will be implemented as planned later in 2020.

Efficiency

5. What efforts did the project make to improve efficiency? What efforts did the project make to improve ease and accuracy of data collection?

- Opportunities to improve project efficiency and to improve the ease and accuracy of data collection were ongoing priorities and considered throughout all aspects of the project.
- The establishment of the data validation framework has been a very useful addition to assess the reliability of the data. The methodology used is now well embedded and easy to implement.
- One of the most significant changes to improve efficiency is the redevelopment of the software and data collections system which is being delivered through a separate project. While these changes were conceived in 2016, unforeseen circumstances have meant that these changes have been delayed. Changes to the software and data collection system are fundamental precursors to improved efficiency, ease and accuracy. In fact, these three elements are precisely what the new system delivers.
- While the new system has not been available during the life of this project, it is now in the final stages of development and will be rolled out to industry in the latter part of 2020.

Recommendations

A number of recommendations were provided as part of the independent mid-term evaluation. Many of these recommendations were in train or have since been addressed.

Based on the remaining recommendations and our experience through this project, we make the following recommendations.

1. Continue the collection, analysis and reporting of industry and market data to build on the success of the work completed through AV16006.
2. Increase engagement with industry via regional events. Due to the restrictions since COVID-19, face-to-face engagement has been constrained. Once restrictions are lifted, these activities should recommence, and the engagement activities continue as planned.
3. Provide confidence to growers on how data is used and how it benefits them. Providing information to industry about how the data is used and how it benefits them has been a high priority for the project. This should continue to be pursued through articles in written communications (*Talking Avocados* in particular), as well as the face-to-face presentations and conversations at Regional Forums and Wholesaler Meetings. Additional engagement should occur through the rollout of the new software with group and one-on-one education and training.
4. Implement new data collection and reporting system to better reflect the increasingly consolidated supply chain. This has been a high priority for Avocados Australia since 2016 and should continue to be a high priority. As explained earlier, due to unforeseen circumstances, the completion of this was significantly delayed. There are many changes that have been fully scoped that will improve the system in terms of accuracy, functionality, and usability. It is recommended that this software development be completed as soon as possible, and that extensive industry engagement be undertaken to ensure it is adopted by current and new participants.
5. Continue to improve the reliability of data collection through greater participation in the Weekly Infocado Report. While the participation level in the Weekly Infocado Report is currently very high (with the exception of the North Queensland region of which approximately 65% is captured directly), greater participation should remain as a high priority. Implementation of the new software and system change is fundamental to achieving greater levels of participation in the Weekly Infocado Report and this should be implemented as soon as possible.
6. Investigate how to incorporate and capture data from other potential importers. As Chile now has formal access to the Australian market, changes to the current system should be considered in order to collate and report data in relation to avocado supplies to Australia from Chile.
7. Utilise data to support the business case for export market development. Data collection, analysis and reporting should continue to be used to demonstrate to the broader industry and other stakeholders the need for export development (tree plantings, future supply forecasts, NZ supply volumes, consumption growth, Global dynamics)
8. Once updated, the data captured in the OrchardInfo census should be compared with the orchard mapping data supplied by the Applied Agricultural Remote Sensing Centre. A comparison of data collected in both systems can help to identify possible gaps or omissions in either system.

Refereed scientific publications

None to report.

References

None to report.

Intellectual property, commercialisation and confidentiality

IP and confidentiality arrangements remain as per the executed research agreement; there are no issues or developments to report.

Acknowledgements

This project was possible thanks to the continued participation of: Advance Packing & Marketing Services P/L, Applewood Orchard, Aussie Orchards Growers & Packers, Avocados with Altitude, AvoNorth, Avonova, Avorama Pty Ltd, Avowest, Balmoral Orchard, Barham Avocados, Battistin Orchards Pty Ltd, Bellview Orchards Pty Ltd, Chinoola Orchards, Cobra Hill Orchards, Costa Avocado, Costa Farms, Cutri Fruit, Delroy Orchards, Deluca Banana Marketing, Donovan Family Investment Trust, Etherington, Exotic Fruit Traders, Favco Queensland Pty Ltd, Fresh Choice WA Pty Ltd, Fresh Express Produce Pty Ltd, G & J Krenske, Golden Hill Avocados, Golden Hill Packing Pty Ltd, Googa Farms, Green Nugget Orchards, Green Skin Avocados, Gunnado Farming Pty Ltd, J.G. Loffler, J.H. Leavy & Co, Jirel Holdings, Joe Bendotti & Co, Kingston Avocado, Kureen Farming, LaManna Premier Group, Lava Valley Produce, MacKays Marketing, Manbulloo Ltd, Mariners Rest, Marrbiz Pty Ltd, Merrinee Farm, Midcoast Avocados, Mildura Fruit Company, Murray Bros, N & A Fruit Distributors Pty Ltd, Natures Fruit Company, NJ & JK Donovan, Nutrano Produce Group, NZ Avocado Ltd, Paradise Orchards, Primo Produce Pty Ltd, R & S Bamess, RG Pegg, Rock Ridge Farming Pty Ltd, Rock Ridge Fresh, Rocky Creek Orchards Pty Ltd, Simpson Farms Pty Ltd, Sinclair & Antico (Aust) Pty Ltd, Summerland Farm, Sunny Bluff Produce Pty Ltd, Sunnyspot Packhouse Pty Ltd, Sunvale Produce Pty Ltd, T W Silver, The Avocado Grove, Tinaroo Falls Avocado Trust, Touchwood Farming, TS & HT Lehmann, United Fresh, VB Sculli, VP & EA Farrell, WA Farm Direct, West Aussie Avos, Willow Creek, WJ Row, Wodonga Park Fruit and Nuts, and Zhong Sheng Pty Ltd.

We also acknowledge all of the growers who provided Tree Census data and contributed to the Productivity Surveys.

The OrchardInfo report is compiled using data contributed annually by avocado growers from all Australian growing regions

Contents

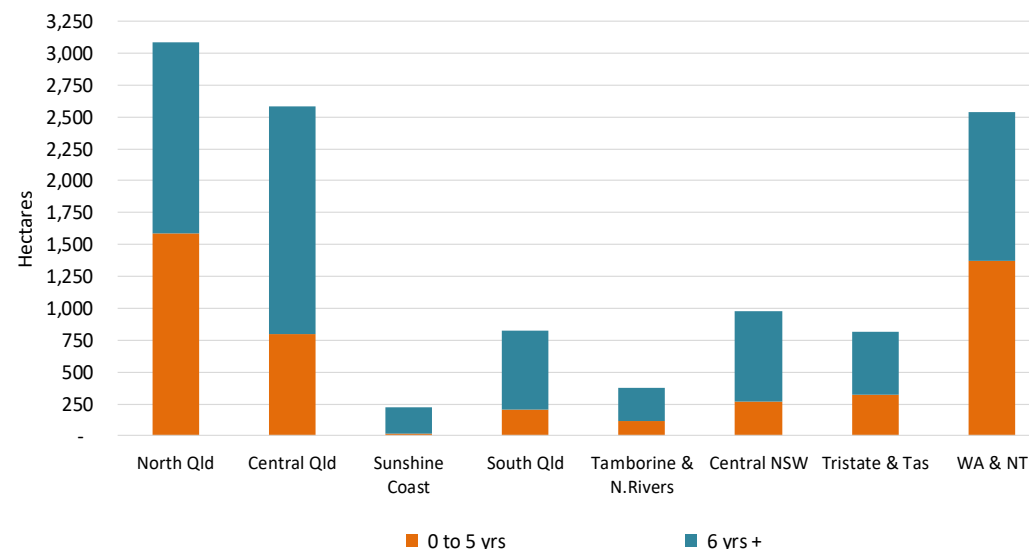
Page National report

- 1 Overview
- 2 Orchard maturity, varieties & regions
- 3 National varieties table
- 4 National varieties graphs
- 5 Region maturity
- 6 Orchard productivity

Regional reports	Updated 2019	All Contributors	Known Growers	% Represented
7 North Queensland (NQ)	44	84	93	90%
8 Central Queensland (CQ)	34	47	53	89%
9 Sunshine Coast (SC)	16	34	43	79%
10 South Queensland (SQ)	31	56	69	81%
11 Tamborine & N. Rivers (TNR)	23	69	80	86%
12 Central New South Wales (CNSW)	30	85	101	84%
13 Tristate & Tasmania (Tri)	38	69	80	86%
14 Western Australia & Northern Territory (WA&NT)	99	169	187	90%

Overview

Australian hectares of avocado plantings by maturity at 1/8/2019



REPORT NOTES:

The source of data is Infocado, via the OrchardInfo tree census and productivity survey unless noted. This report is provided to OrchardInfo contributors and is confidential. The report is based on data provided voluntarily by at least 80% of all known avocado orchards.

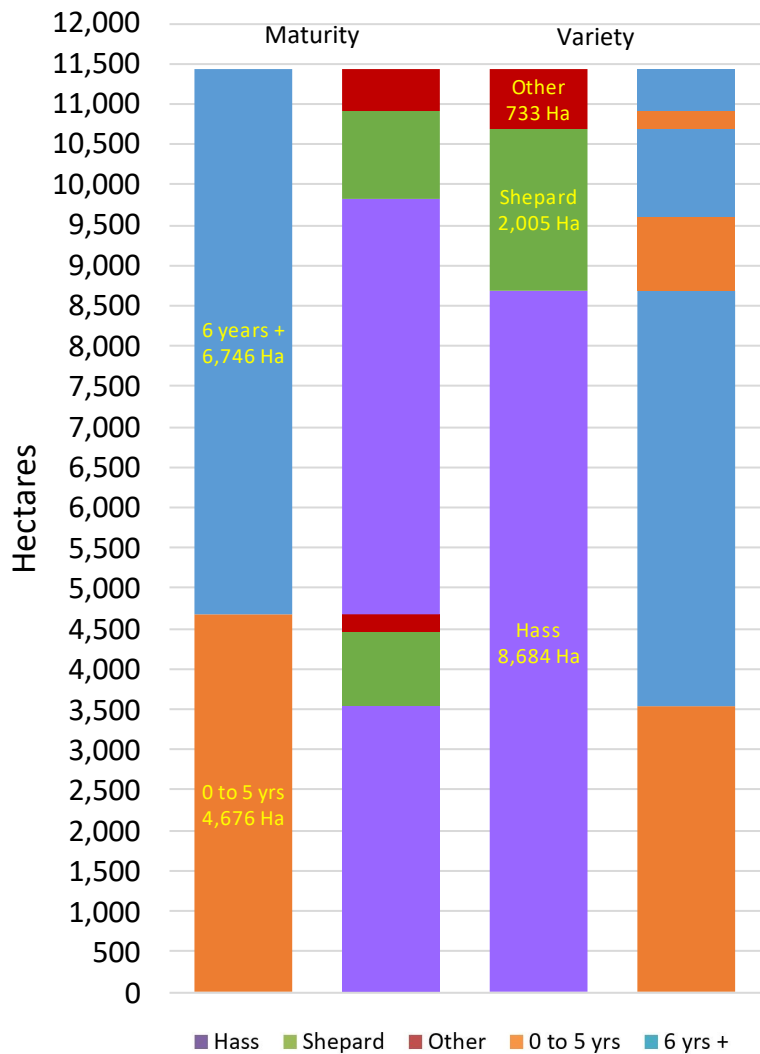
This report has been produced by project *Avocado industry and market data capture and analysis* (AV16006), funded by Hort Innovation, using the avocado research and development levy and contributions from the Australian Government. Hort Innovation is the grower-owned, not-for-profit research and development corporation for Australian horticulture.

2019 OrchardInfo: Australian avocado regions at 1/8/2019

Region	Number of trees				Planted hectares				Average trees/ha		
	0 to 5 yrs	6 yrs +	Total trees	%	0 to 5 yrs	6 yrs +	Total Ha	%	0 to 5 yrs	6 yrs +	Weighted Average
North Qld	282,040	233,393	515,433	20%	1,591	1,491	3,082	27%	177	157	167
Central Qld	198,349	341,332	539,681	21%	794	1,791	2,585	27%	250	191	209
Sunshine Coast	2,851	45,461	48,312	2%	14	210	223	2%	211	217	216
South Qld	39,698	94,022	133,720	5%	202	620	822	7%	197	152	163
Tamborine & N. Rivers	22,516	50,962	73,478	3%	112	267	379	3%	200	191	194
Central NSW	58,952	147,079	206,031	8%	270	703	974	9%	218	209	212
Tristate & Tas	84,795	116,704	201,499	8%	318	502	819	7%	267	233	246
WA & NT	465,927	357,999	823,926	32%	1,375	1,160	2,538	22%	339	308	325
National total	1,155,128	1,386,952	2,542,080	100%	4,676	6,746	11,422	100%			
All trees/ha weighted average:									247	206	223

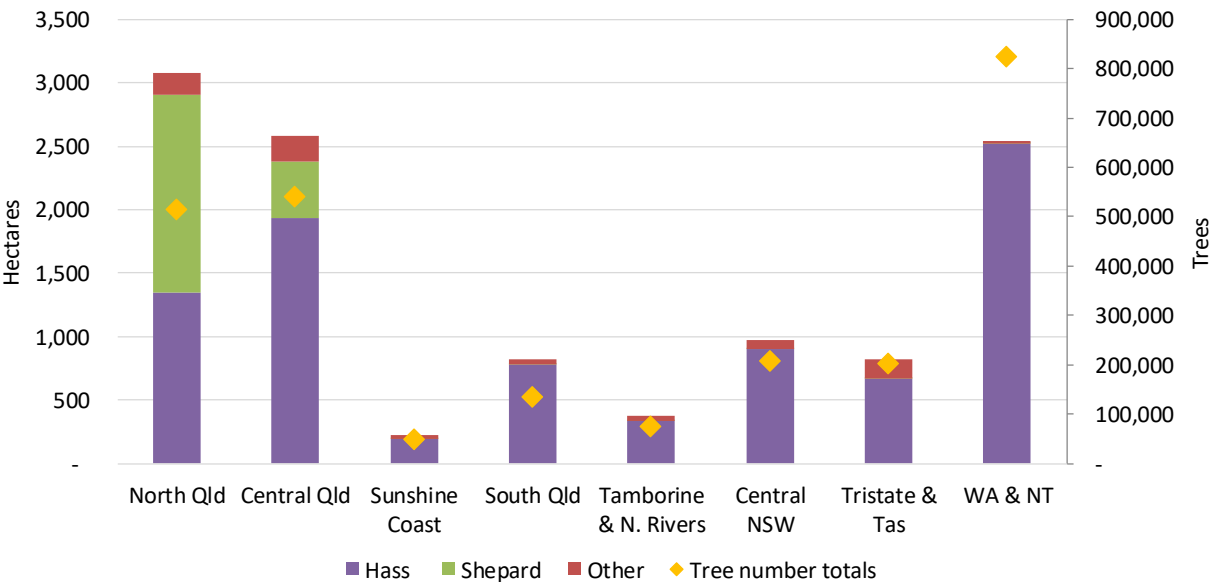
2019 OrchardInfo: Avocado orchard maturity, varieties and regions

Hectares of Australian avocado plantings at 01/08/2019

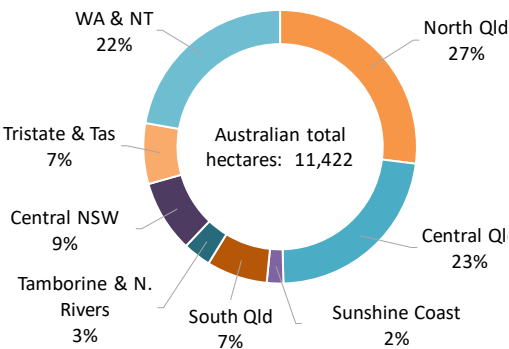


Across Australia, approximately 41% of hectares are planted with younger trees (0-5 years) and 59% with mature trees (6+ years).

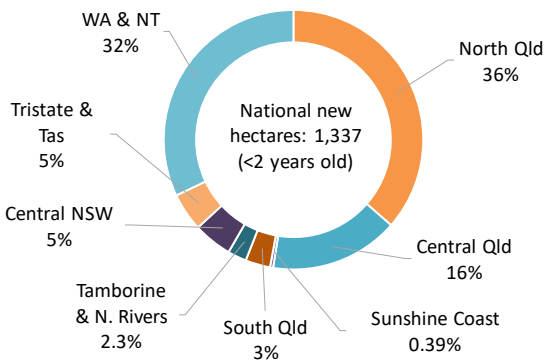
Australian hectares of avocado plantings by variety and tree numbers (yellow box) at 1/8/2019



Proportions of all Australian avocado hectares (at 1/8/2019)



Proportions of Australian avocado hectares planted since 2018 (at 1/8/2019)



2019 OrchardInfo: Avocado varieties table

2019 OrchardInfo: Australian avocado varieties

Variety (all)	Number of trees				Planted hectares				Average trees/ha		
	Trees aged 0 to 5 yrs	Trees aged 6 yrs +	Total trees	% of total trees	Trees aged 0 to 5 yrs	Trees aged 6 yrs +	Total hectares	% of total hectares	Trees/ha 0 to 5 yrs	Trees/ha 6 yrs +	Weighted average
Hass	911,539	1,074,290	1,985,406	78.90%	3,546.5	5,137.9	8,684.3	76.03%	259	210	229
Shepard	148,084	183,798	331,882	13.19%	905.0	1,100.0	2,005.0	17.55%	169	170	166
Avozilla	440	-	440	0.02%	1.6	-	1.6	0.01%	277	-	277
Bacon	309	574	883	0.03%	1.2	1.9	3.1	0.03%	258	296	281
Carmen	5,562	2,215	7,777	0.31%	31.5	13.4	44.9	0.39%	280	1,517	365
Edrinol	2,023	294	2,317	0.09%	7.6	1.1	8.7	0.08%	265	280	267
Ettinger	232	172	404	0.02%	0.6	0.8	1.3	0.01%	414	226	306
Fuerte	394	7,539	7,933	0.32%	1.4	44.2	45.6	0.40%	276	171	174
Gem	7,761	6,440	14,201	0.52%	14.6	24.1	38.7	0.34%	532	267	367
Gwen	-	5,701	5,701	0.23%	-	16.2	16.2	0.14%	-	351	351
Hazzard	-	156	156	0.01%	-	0.7	0.7	0.01%	-	229	229
Lamb Hass	2,303	19,316	21,619	0.86%	10.6	79.8	90.4	0.79%	217	242	239
Llanos	-	100	100	0.00%	-	0.4	0.4	0.00%	-	270	270
Maluma Hass	62,908	13,171	76,079	2.06%	104.6	41.3	145.8	1.28%	602	319	522
Pinkerton	62	2,543	2,605	0.10%	0.3	10.7	10.9	0.10%	248	239	239
Reed	2,759	40,681	43,440	1.72%	12.1	121.5	133.6	1.17%	230	335	325
Ryan	-	643	643	0.03%	-	2.1	2.1	0.02%	-	312	312
Sharwil	339	6,245	6,584	0.26%	1.5	35.1	36.5	0.32%	229	178	180
Sir Prize	-	160	160	0.01%	-	1.0	1.0	0.01%	-	158	158
Turner Hass	-	6,890	6,890	0.27%	-	41.2	41.2	0.36%	-	167	167
Wurtz	1,147	13,541	14,688	0.58%	3.3	62.4	65.7	0.58%	347	217	224
Zutano	128	158	286	0.01%	0.4	0.7	1.1	0.01%	305	236	262
Other	9,138	2,325	11,463	0.45%	33.0	10.0	43.0	0.37%	276	236	267
National totals	1,129,337	1,386,952	2,542,080	100.00%	4,675.7	6,746.1	11,421.8	100.00%			
All trees/Ha weighted average:									247	206	223

	Trees not yet of bearing age (no.)	Trees of bearing age (no.)	Total trees
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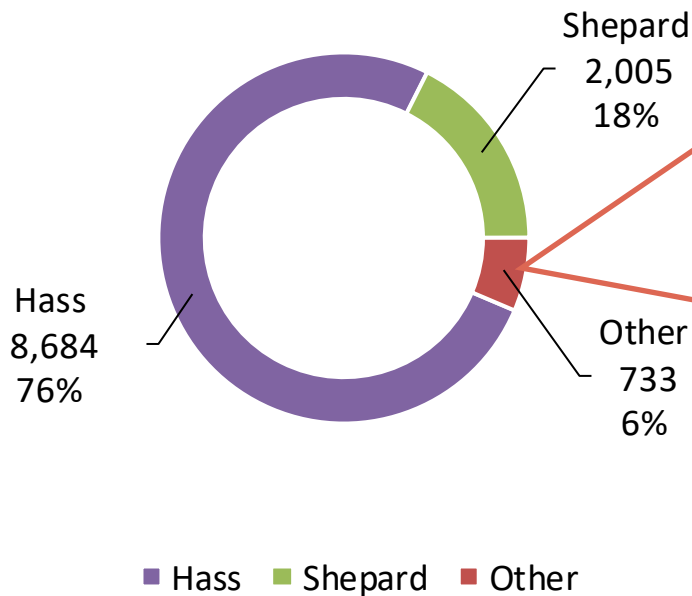
ABS Stats 2017-18	549,214	1,442,055	1,991,269
ABS Stats 2016-17	406,825	1,371,496	1,778,321
ABS Stats 2015-16	346,674	1,322,487	1,669,161
ABS Stats 2014-15	274,077	1,251,162	1,525,239

Sources: Infocado (OrchardInfo Tree Census); ABS as noted

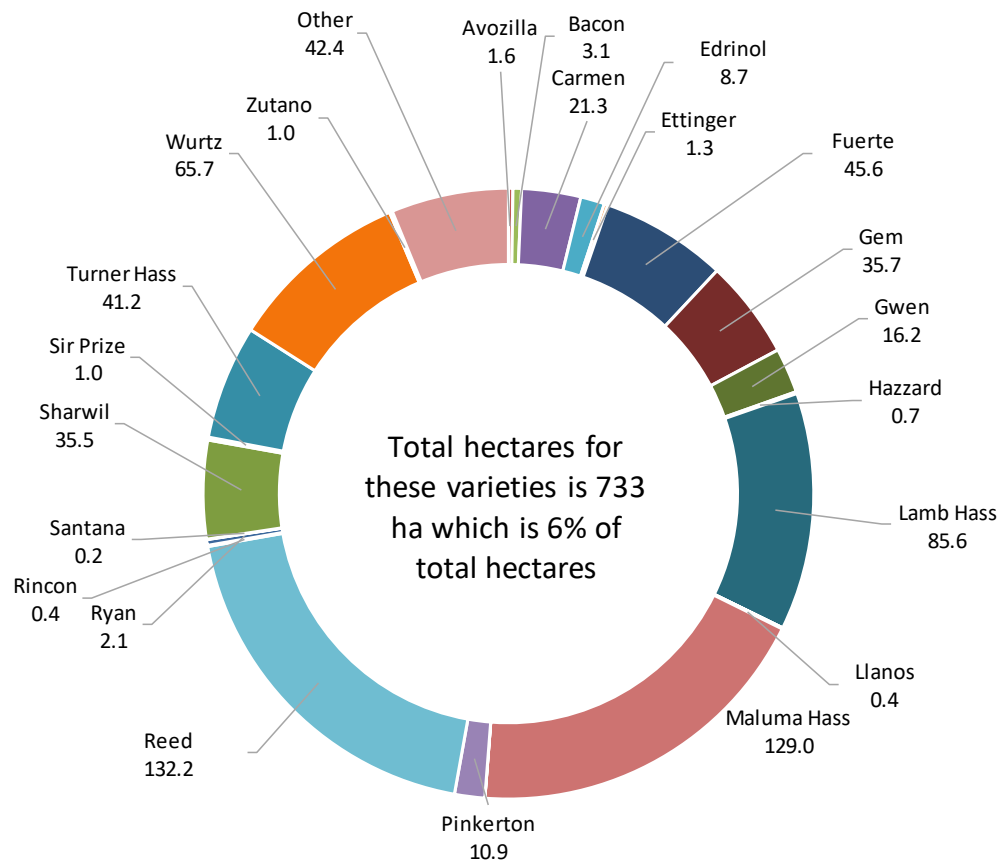
Note: trees/ha is reported per variety where more than 1 ha is planted; however, all trees are included in the "All trees/ha weighted average".

2019 OrchardInfo: Avocado varieties graphs

Hectares of avocado varieties as of 01/08/2019
(Hass, Shepard & Others)



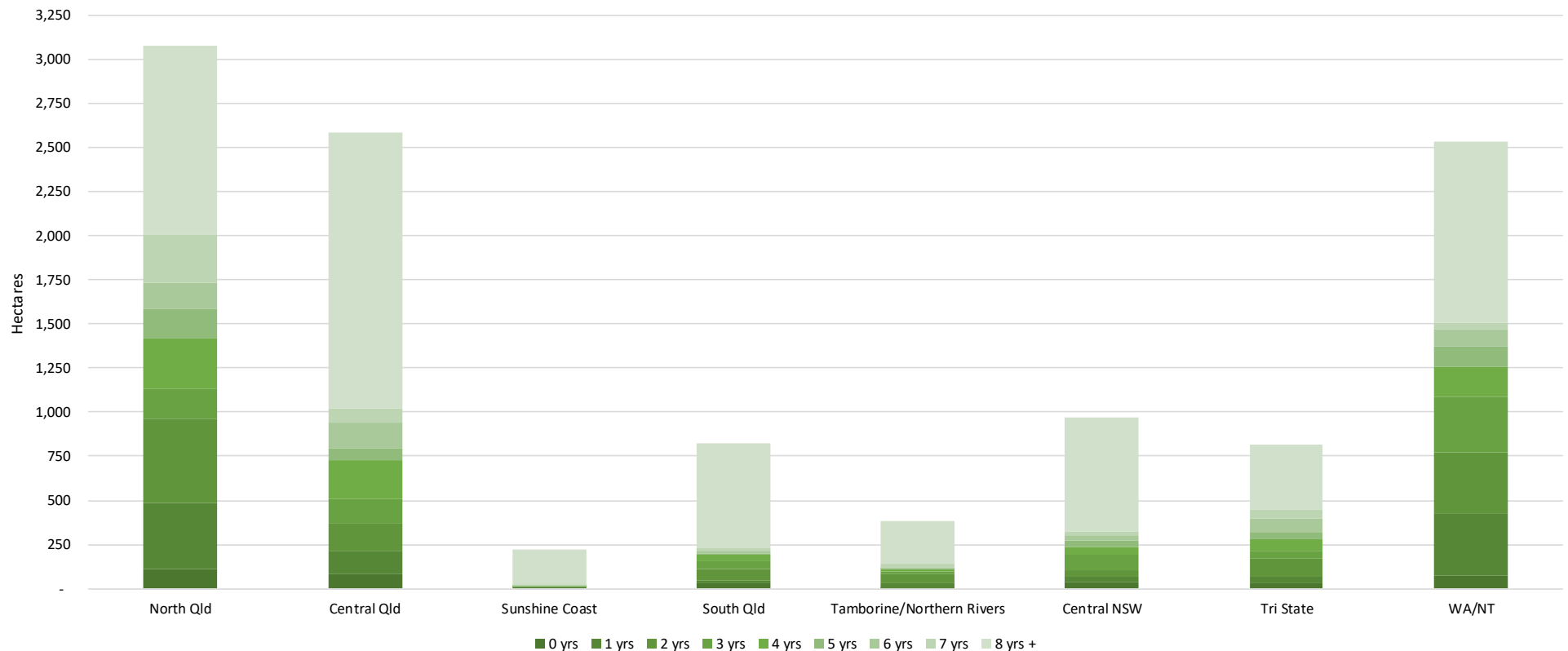
Hectares of avocado varieties as of 01/08/2019
(Within category 'Other')



2019 OrchardInfo: Avocado region hectares of tree maturity

2019 Australian avocado region hectares by tree maturity at 01/08/2019

Region	0 yrs	1 yrs	2 yrs	3 yrs	4 yrs	5 yrs	6 yrs	7 yrs	8 yrs +	Grand Total
North Qld	109	378	476	170	287	170	140	275	1,075	3,082
Central Qld	80	135	154	141	222	63	147	84	1,560	2,585
Sunshine Coast	4	1	2	3	0	3	3	3	204	223
South Qld	26	15	68	45	40	7	10	16	594	822
Tamborine/Northern Rivers	1	30	53	14	13	1	3	24	240	379
Central NSW	37	28	36	91	42	36	32	23	649	974
Tri State	31	32	104	45	70	35	83	50	369	819
WA/NT	76	353	346	311	174	115	95	38	1,029	2,538
	365	949	1,224	788	848	430	513	513	5,720	11,422



2019 Avocado orchard productivity

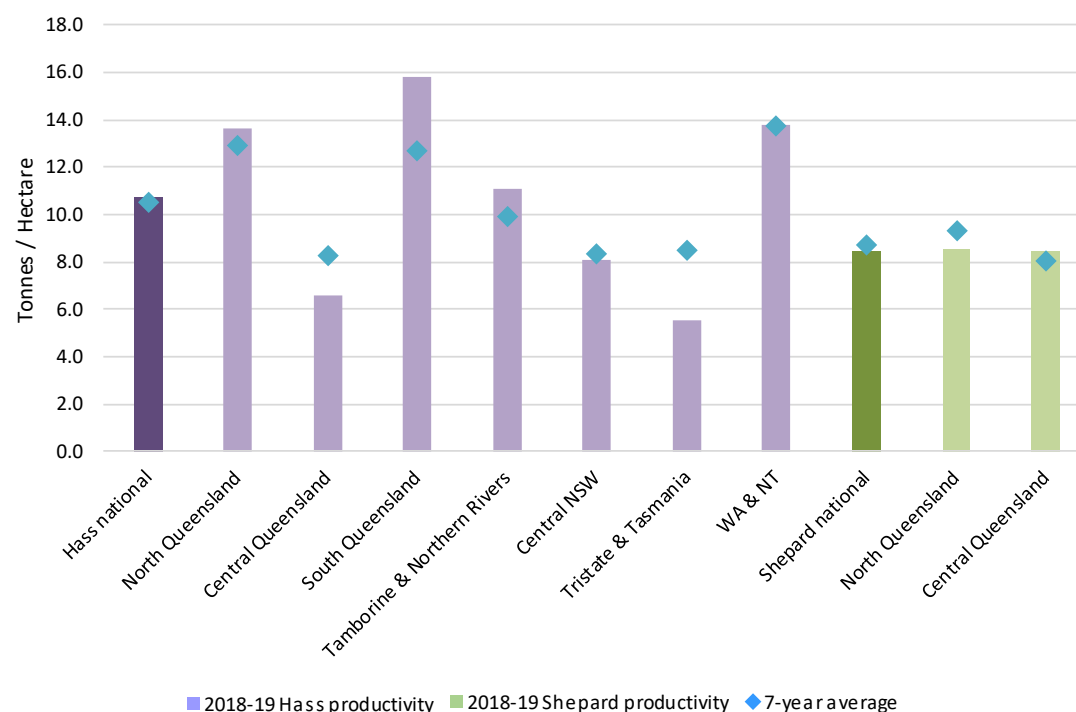
Australian avocado orchard productivity			
Region and variety	Tonnes/hectare		
	2018-19 productivity	7 year average*	Benchmark: 4 year average 2011-12 to 2014-15
Hass national	10.7	10.5	9.2
North Queensland	13.7	12.9	11.9
Central Queensland	6.6	8.3	8.6
South Queensland	15.8	12.7	9.2
Tamborine & Northern Rivers	11.1	9.8	5.6
Central NSW	8.1	8.3	7.8
Tristate & Tasmania	5.5	8.5	10.3
WA & NT	13.8	13.7	12.1
Shepard national	8.5	8.7	
North Queensland	8.6	9.3	
Central Queensland	8.4	8.0	

* 7 year average includes FY2011-12, FY2012-13, FY2013-14, FY2015-16, FY2016-17, FY2017-18, FY2018-19 (excl. FY 2014-15 as productivity survey was not undertaken that year)

Due to a small number of responses, the Sunshine Coast region has been excluded from this report.

Benchmarking data is from AV13003 report

2018-19 Regional avocado orchard productivity and 7-year average (Tonnes / Ha)



The productivity data is collected as part of the Infocado program, via an annual productivity survey of growers. The survey records the volume of marketable avocados produced in the last complete season from mature Hass and Shepard trees.

2019 OrchardInfo: North Queensland avocado varieties

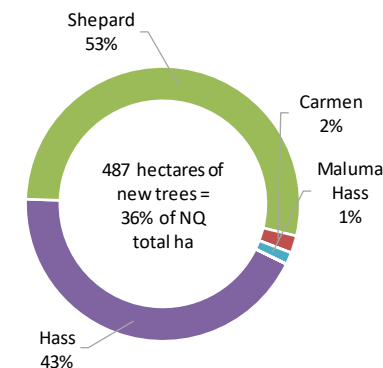
Variety	Number of trees				Hectares				Trees/hectare		
	0 to 5 yrs	6 yrs +	Total	%	0 to 5 yrs	6 yrs +	Total	%	0 to 5 yrs	6 yrs +	Weighted average
Hass	119,696	92,639	212,335	41.91%	717.7	634.1	1,351.8	44.53%	167	146	157
Shepard	117,923	121,615	239,538	47.28%	770.6	778.8	1,549.4	50.82%	153	156	155
Carmen	3,074	2,015	5,089	1.00%	18.8	12.1	30.9	0.25%	164	167	165
Gem	-	435	435	0.09%	-	2.6	2.6	0.00%	-	167	167
Lamb Hass	11	1,041	1,052	0.21%	0.1	6.2	6.3	0.05%	157	167	167
Maluma Hass	41,169	13,171	54,340	8.98%	82.5	41.3	123.8	3.85%	499	319	439
Pinkerton	-	392	392	0.08%	-	2.4	2.4	0.08%	-	166	166
Reed	56	205	261	0.05%	0.4	1.2	1.6	0.01%	160	171	168
Sharwil	76	434	510	0.10%	0.5	2.6	3.1	0.07%	158	170	168
Turner Hass	-	1,042	1,042	0.21%	-	7.5	7.5	0.26%	-	138	138
Other	35	404	439	0.09%	0.2	2.2	2.2	0.08%	146	183	179
NQ totals	282,040	233,393	515,433	100.00%	1,590.7	1,491.0	3,081.7	100.00%			

All trees/Ha weighted average:

177 157 167

Note: trees/ha is reported per variety where more than 1 ha is planted; however, all trees are included in the "All trees/ha weighted average".

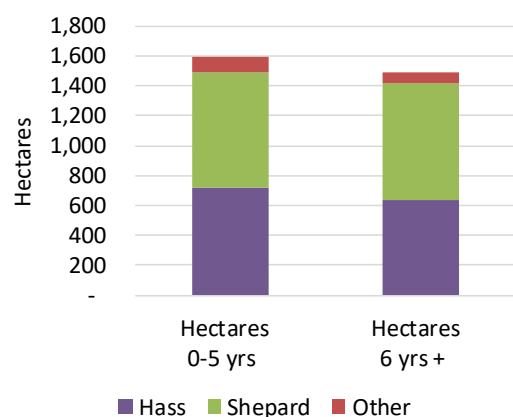
NQ new plantings in 2018 & 2019
(at 1/8/2019)



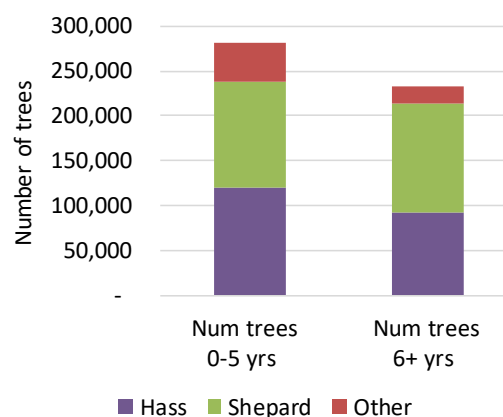
NQ tree maturity (Ha)

Varieties	0-5 yrs	6 yrs +
Hass	53%	47%
Shepard	50%	50%
Other	57%	43%
All trees	52%	48%

NQ avocado hectares
at 1/8/2019



NQ avocado tree numbers
at 1/8/2019



North Queensland Summary

With 3,081 hectares, NQ has 27% of Australian total hectares of avocado plantings, and making it the largest region in Australia by area. The number of trees in NQ is 515,433 representing 20% of all Australian trees, making it the third largest producing region by number of trees.

In 2018 & 2019 NQ growers report planting 92,264 new trees across 487 hectares, which represents 16% of all NQ hectares, and 36% of new hectares planted nationally.

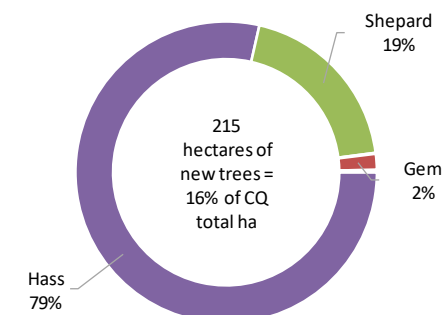
In total, 52% of all NQ hectares were planted in the last six years, compared to the national proportion of 41%.

2019 OrchardInfo: Central Queensland avocado varieties

Variety	Number of trees				Hectares				Trees/hectare		
	0 to 5 yrs	6 yrs +	Total	%	0 to 5 yrs	6 yrs +	Total	%	0 to 5 yrs	6 yrs +	Weighted average
Hass	139,867	246,896	386,763	73.92%	610.2	1,318.7	1,928.8	74.83%	229	187	201
Shepard	28,802	61,300	90,102	17.22%	128.9	318.0	446.8	17.33%	224	193	202
Carmen	2,218	-	2,218	0.42%	11.1	-	11.1	0.43%	200	-	200
Fuerte	-	768	768	0.15%	-	5.9	5.9	0.23%	-	130	130
Gem	2,342	3,850	6,192	0.99%	4.1	10.8	14.9	0.56%	567	357	415
Lamb Hass	-	5,399	5,399	1.03%	-	22.2	22.2	0.86%	-	243	243
Maluma Hass	20,616	-	20,616	0.99%	19.3	-	19.3	0.48%	1,069	-	1,069
Pinkerton	-	283	283	0.05%	-	0.8	0.8	0.03%	-	372	372
Reed	1,276	4,900	6,176	1.18%	7.3	25.3	32.6	1.26%	175	194	190
Sharwil	-	2,915	2,915	0.56%	-	15.5	15.5	0.60%	-	188	188
Turner Hass	-	5,848	5,848	1.12%	-	33.7	33.7	1.31%	-	174	174
Wurtz	838	8,917	9,755	1.86%	2.2	38.9	41.1	1.60%	374	229	237
Other	1,950	256	2,206	0.41%	9.8	1.1	10.9	0.40%	200	233	203
CQ totals	198,349	341,332	539,681	100.00%	794.4	1,790.7	2,585.1	100.00%			
All trees/Ha weighted average:									250	191	209

Note: trees/ha is reported per variety where more than 1 ha is planted; however, all trees are included in the "All trees/ha weighted average".

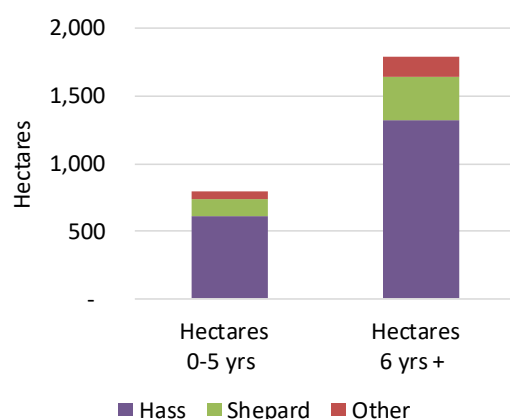
CQ new plantings in 2018 & 2019
(at 1/8/2019)



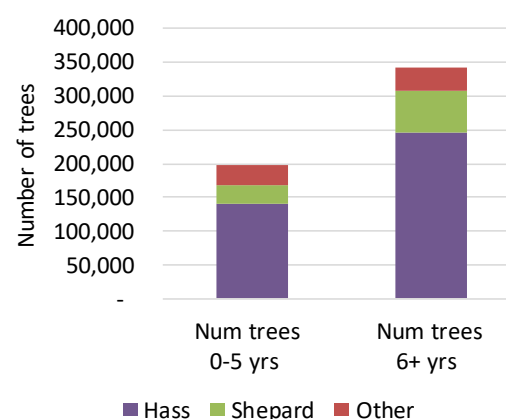
CQ tree maturity (Ha)

Varieties	0-5 yrs	6 yrs +
Hass	32%	68%
Shepard	29%	71%
Other	26%	74%
All trees	31%	69%

CQ avocado hectares
at 1/8/2019



CQ avocado tree numbers
at 1/8/2019



Central Queensland Summary

CQ has 2,585 hectares planted, making it the second largest region in Australia by area, at 27% of total hectares. The number of trees in CQ is 539,681 representing 21% of all Australian trees, making it the second largest producing region by number of trees.

In 2018 & 2019, CQ growers report planting 54,906 new trees across 215 hectares, which represents 8% of all CQ hectares, and 16% of new hectares planted nationally.

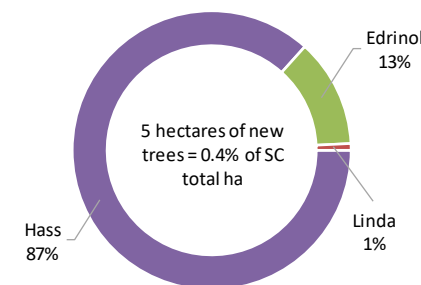
In total, 31% of CQ hectares were planted in the last six years, compared to the national proportion of 41%.

2019 OrchardInfo: **Sunshine Coast** avocado varieties

Variety	Number of trees				Hectares				Trees/hectare		
	0-5 yrs	6 yrs +	Total	%	0-5 yrs	6 yrs +	Total	%	0-5 yrs	6 yrs +	Weighted average
Hass	2,391	38,648	41,039	84.95%	11.5	182.3	193.7	86.77%	208	212	212
Shepard	-	803	803	1.66%	-	3.0	3.0	1.33%	-	271	271
Fuerte	-	514	514	1.06%	-	1.8	1.8	0.81%	-	284	284
Gem	350	510	860	1.78%	1.3	1.9	3.2	1.41%	278	270	273
Lamb Hass	-	810	810	1.68%	-	3.6	3.6	1.60%	-	227	227
Pinkerton	-	1,345	1,345	2.78%	-	5.1	5.1	2.28%	-	264	264
Reed	-	205	205	0.42%	-	0.8	0.8	0.35%	-	263	263
Sharwil	30	587	617	1.28%	0.1	3.2	3.2	1.45%	333	186	190
Wurtz	-	2,020	2,020	4.18%	-	8.1	8.1	3.65%	-	248	248
Other	80	29	109	0.23	0.7	0.1	0.8	0.37%	116	207	131
SC totals	2,851	45,461	48,312	100.00%	13.5	209.7	223.3	100.00%			
All trees/Ha weighted average:									211	217	216

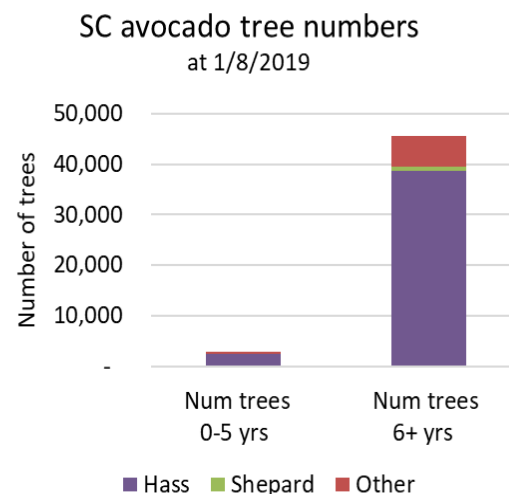
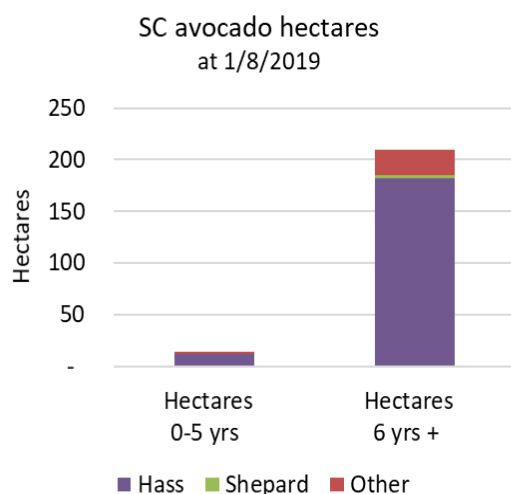
Note: trees/ha is reported per variety where more than 1 ha is planted; however, all trees are included in the "All trees/ha weighted average".

SC new plantings in 2018 & 2019
(at 1/8/2019)



SC tree maturity (Ha)

Varieties	0-5 yrs	6 yrs +
Hass	6%	94%
Shepard	0%	100%
Other	8%	92%
All trees	6%	94%



Sunshine Coast Summary

The Sunshine Coast has 223 hectares planted, currently the smallest region in Australia, at 2% of total hectares.

In 2018 & 2019, SC growers report planting 872 new trees across 5 hectares, which represents 2% of SC total hectares, and 0.4% of new hectares planted nationally.

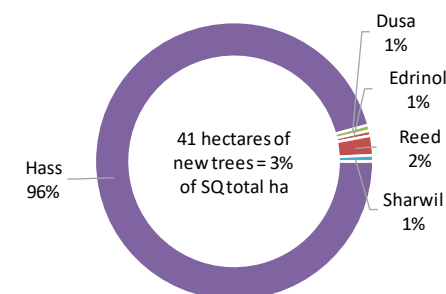
In total, 6% of SC hectares were planted in the last six years, compared to the national proportion of 41%.

2019 OrchardInfo: South Queensland avocado varieties

Variety	Number of trees				Hectares				Trees/hectare		
	0 to 5 yrs	6 yrs +	Total	%	0 to 5 yrs	6 yrs +	Total	%	0 to 5 yrs	6 yrs +	Weighted average
Hass	38,105	87,997	126,102	94.30%	194.3	586.0	780.3	94.95%	196	150	162
Shepard	504	-	504	0.38%	3.2	-	3.2	0.38%	159	-	159
Carmen	250	200	450	0.34%	1.6	1.3	2.8	0.35%	158	159	158
Fuerte	16	371	387	0.29%	0.1	3.5	3.6	0.44%	123	107	107
Lamb Hass	6	1,644	1,650	1.23%	0.0	12.5	12.6	1.53%	200	131	131
Pinkerton	43	201	244	0.18%	0.2	1.1	1.3	0.16%	195	188	189
Reed	511	2,109	2,620	1.96%	1.0	6.4	7.4	0.90%	521	329	354
Sharwil	98	735	833	0.62%	0.4	6.1	6.4	0.78%	280	121	129
Sir Prize	-	160	160	0.12%	-	1.0	1.0	0.12%	-	158	158
Wurtz	53	545	598	0.45%	0.3	2.2	2.4	0.29%	204	252	247
Other	57	60	117	0.09%	0.3	0.2	0.5	0.06%	190	273	225
SQ totals	39,698	94,022	133,720	100.00%	201.6	620.2	821.8	100.00%			
All trees/Ha weighted average:									197	152	163

Note: trees/ha is reported per variety where more than 1 ha is planted; however, all trees are included in the "All trees/ha weighted average".

SQ new plantings in 2018 & 2019
(at 1/8/2019)

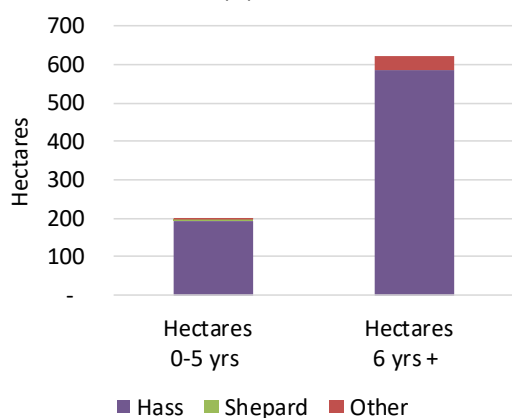


SQ tree maturity (Ha)

Varieties	0-5 yrs	6 yrs +
Hass	25%	75%
Shepard	100%	0%
Other	11%	89%
All trees	25%	75%

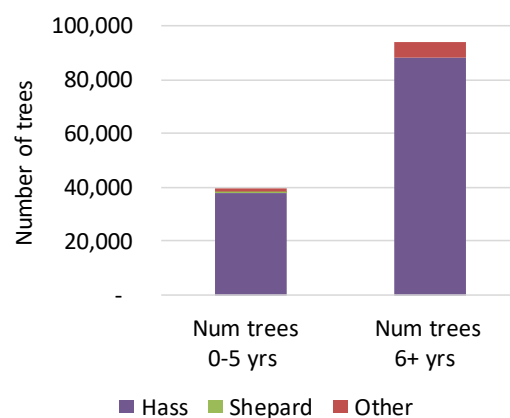
SQ avocado hectares

at 1/8/2019



SQ avocado tree numbers

at 1/8/2019



South Queensland Summary

South Queensland has 822 hectares planted, which represents 7% of total Australian hectares.

In 2018 & 2019, SQ growers report planting 7,650 new trees across 41 hectares, which is 5% of all SQ hectares, and 3% of new hectares planted nationally.

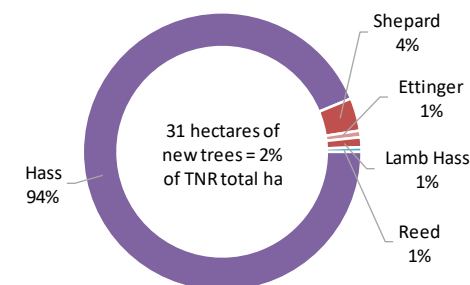
In total, 25% of SQ hectares were planted in the last six years, compared to the national proportion of 41%.

2019 OrchardInfo: Tamborine and Northern Rivers avocado varieties

Variety	Number of trees				Hectares				Trees/hectare		
	0 to 5 yrs	6 yrs +	Total	%	0 to 5 yrs	6 yrs +	Total	%	0 to 5 yrs	6 yrs +	Weighted average
Hass	19,900	43,811	63,711	86.71%	106.2	228.1	334.3	88.16%	187	192	191
Shepard	795	22	817	1.11%	2.3	0.1	2.4	0.63%	353	169	343
Ettinger	232		232	0.32%	0.6		0.6	0.15%	414	-	414
Fuerte	12	1,672	1,684	2.29%	0.1	9.8	9.9	2.62%	109	170	170
Lamb Hass	200	1,273	1,473	2.00%	0.4	8.8	9.2	2.41%	556	145	161
Maluma Hass	303		303	0.41%	0.4		0.4	0.10%	797	-	797
Pinkerton		268	268	0.36%		1.2	1.2	0.32%	-	223	223
Reed	143	1,513	1,656	2.25%	0.9	6.5	7.4	1.96%	155	232	223
Sharwil	75	536	611	0.83%	0.4	2.9	3.2	0.85%	197	187	189
Wurtz	43	566	609	0.83%	0.3	3.4	3.7	0.98%	139	167	165
Other	813	1,301	2,114	2.88%	1.1	5.9	6.9	1.83%	774	222	305
TNR totals	22,516	50,962	73,478	100.00%	112.5	266.7	379.2	100.00%			
All trees/Ha weighted average:									200	191	194

Note: trees/ha is reported per variety where more than 1 ha is planted; however, all trees are included in the "All trees/ha weighted average".

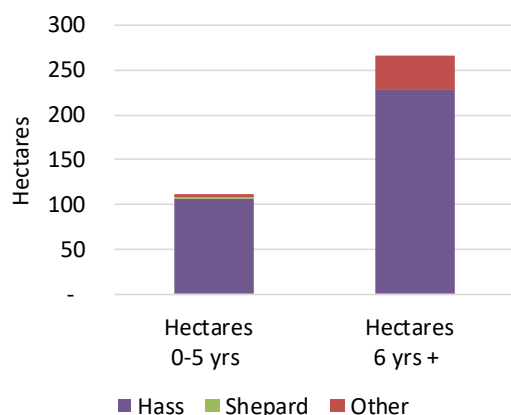
TNR new plantings in 2018 & 2019
(at 1/8/2019)



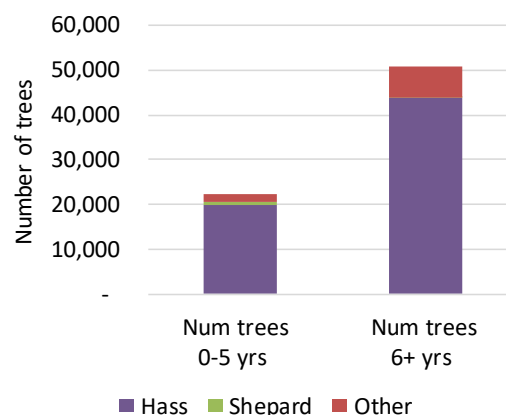
TNR tree maturity (Ha)

Varieties	0-5 yrs	6 yrs +
Hass	32%	68%
Shepard	95%	5%
Other	10%	90%
All trees	30%	70%

TNR avocado hectares
at 1/8/2019



TNR avocado tree numbers
at 1/8/2019



Tamborine & Northern Rivers Summary

With 379 hectares planted, the Tamborine & Northern Rivers region represents 3% of total hectares nationally.

In 2018 & 2019, TNR growers report planting 7,455 new trees across 31 hectares, which is 8% of all TNR hectares, and represents 2% of new hectares planted nationally.

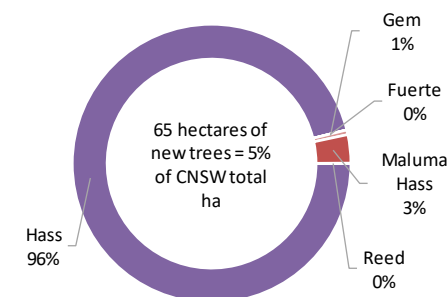
In total, 30% of TNR hectares were planted in the last six years, compared to the national proportion of 41%.

2019 OrchardInfo: **Central NSW** avocado varieties

Variety	Number of trees				Hectares				Trees/hectare		
	0 to 5 yrs	6 yrs +	Total	%	0 to 5 yrs	6 yrs +	Total	%	0 to 5 yrs	6 yrs +	Weighted average
Hass	57,337	121,992	179,329	87.04%	265.7	639.6	905.4	92.99%	216	191	198
Fuerte	70	910	980	0.48%	0.4	5.4	5.8	0.60%	194	167	169
Gem	294	-	294	0.14%	0.4	-	0.4	0.04%	840	-	840
Lamb Hass	335	1,167	1,502	0.73%	0.8	5.4	6.2	0.64%	409	216	241
Maluma Hass	700	-	700	0.34%	2.1	-	2.1	0.22%	329	-	329
Reed	175	22,385	22,560	10.95%	0.6	49.5	50.1	5.15%	297	452	450
Sharwil	20	501	521	0.25%	0.1	3.0	3.1	0.32%	222	165	166
Other	24	129	153	0.07%	0.1	0.4	0.5	0.05%	240	307	294
CNSW totals	58,952	147,079	206,031	100.00%	270.2	703.4	973.6	100.00%			
All trees/Ha weighted average:									218	209	212

Note: trees/ha is reported per variety where more than 1 ha is planted; however, all trees are included in the "All trees/ha weighted average".

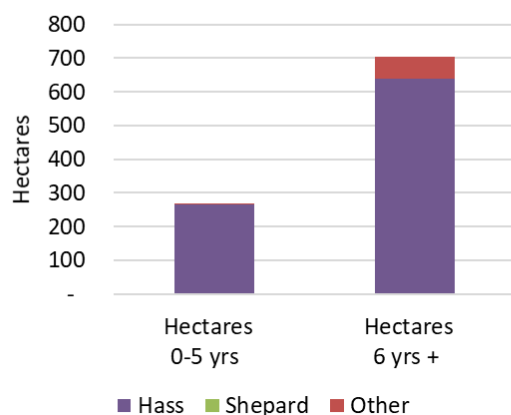
CNSW new plantings in 2018 & 2019
(at 1/8/2019)



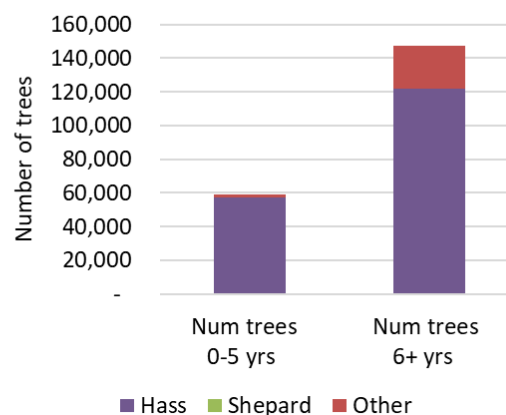
CNSW tree maturity (Ha)

Varieties	0-5 yrs	6 yrs +
Hass	29%	71%
Shepard	0%	100%
Other	6%	94%
All trees	28%	72%

CNSW avocado hectares
at 1/8/2019



CNSW avocado tree numbers
at 1/8/2019



Central New South Wales Summary

With 974 hectares planted, CNSW represents 9% of total hectares nationally.

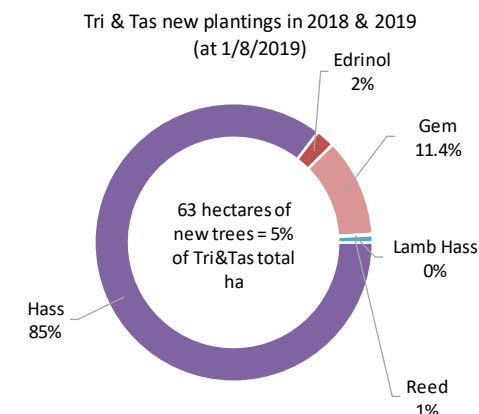
In 2018 & 2019, CNSW growers report planting 15,340 new trees across 65 hectares, which is 7% of total CNSW hectares, and 5% of all new hectares planted nationally.

In total, 28% of CNSW hectares were planted in the last six years, compared to the national proportion of 41%.

2019 OrchardInfo: Tri-state & Tasmania avocado varieties

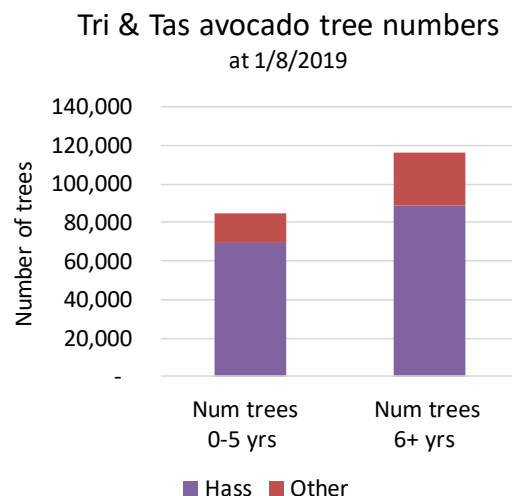
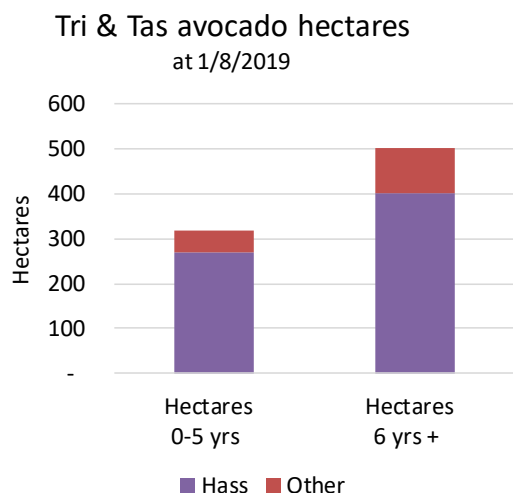
Variety	Number of trees				Hectares				Trees/hectare		
	0 to 5 yrs	6 yrs +	Total	%	0 to 5 yrs	6 yrs +	Total	%	0 to 5 yrs	6 yrs +	Weighted average
Hass	69,608	88,947	158,555	78.73%	263.4	400.4	669.7	81.76%	258	222	237
Bacon	136	445	581	0.28%	0.4	1.5	1.9	0.22%	349	299	309
Edrinol	1,569	144	1,713	0.85%	5.6	0.6	6.2	0.75%	280	262	278
Fuerte	208	2,862	3,070	1.52%	0.6	15.7	16.3	1.99%	330	183	188
Gem	4,745	1,645	6,390	3.18%	8.8	8.8	17.7	2.16%	539	186	362
Gwen	-	5,531	5,531	2.75%	-	15.7	15.7	1.92%	-	351	351
Lamb Hass	1,748	5,620	7,368	3.66%	9.3	13.6	23.0	2.80%	187	413	321
Reed	359	8,057	8,416	4.16%	1.2	28.8	30.0	3.64%	312	279	281
Ryan	-	643	643	0.32%	-	2.1	2.1	0.25%	-	312	312
Sharwil	10	378	388	0.19%	0.0	1.4	1.5	0.17%	500	264	268
Wurtz	20	1,482	1,502	0.74%	0.1	9.8	9.8	1.20%	400	151	153
Zutano	30	148	178	0.07%	0.1	0.7	0.7	0.08%	429	228	247
Other	6,362	802	7,164	3.56%	22.3	2.7	25.0	3.05%	286	296	287
Tri totals	84,465	116,704	201,499	100.00%	317.7	501.7	819.4	100.00%			
All trees/Ha weighted average:									267	233	246

Note: trees/ha is reported per variety where more than 1 ha is planted; however, all trees are included in the "All trees/ha weighted average".



Tri-state tree maturity (Ha)

Varieties	0-5 yrs	6 yrs +
Hass	40%	60%
Other	32%	68%
All trees	39%	61%



Tristate and Tasmania Summary

Tristate (incl. Tas) region has 819 hectares planted, which represents 7% of national hectares.

In 2018 & 2019, Tri State growers report planting 20,962 new trees across 63 hectares, which is 8% of Tristate's total area, and represents 5% of new hectares planted nationally.

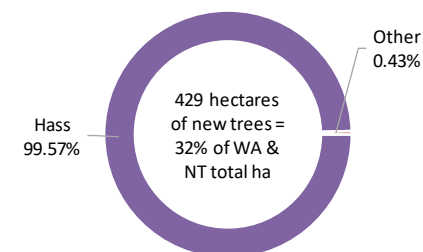
In total, 39% of Tristate hectares were planted in the last six years, compared to the national proportion of 41%.

2019 OrchardInfo: Western Australia & Northern Territory avocado varieties

Variety	Number of trees				Hectares				Trees/hectare		
	0 to 5 yrs	6 yrs +	Total	%	0 to 5 yrs	6 yrs +	Total	%	0 to 5 yrs	6 yrs +	Weighted average
Hass	464,580	353,360	817,940	99.27%	1,371.2	1,148.8	2,519.4	99.30%	339	308	325
Shepard	50	55	105	0.01%	0.1	0.1	0.2	0.01%	417	611	500
Bacon	155	51	206	0.03%	0.7	0.2	0.9	0.04%	212	319	231
Edrinol	326	95	421	0.05%	1.1	0.3	1.4	0.05%	308	306	307
Fuerte	88	376	464	0.06%	0.2	1.7	1.9	0.07%	440	224	247
Lamb Hass	3	2,362	2,365	0.29%	0.0	7.5	7.5	0.30%	300	316	316
Maluma Hass	120	-	120	0.01%	0.3	-	0.3	0.01%	414	-	414
Reed	239	1,307	1,546	0.19%	0.7	3.0	3.7	0.15%	327	434	413
Sharwil	30	159	189	0.02%	0.1	0.4	0.5	0.02%	429	398	402
Wurtz	160	6	166	0.02%	0.2	0.0	0.3	0.01%	667	600	664
Zutano	98	10	108	0.01%	0.4	0.0	0.4	0.01%	280	500	292
Other	90	230	320	0.04%	0.2	0.7	0.9	0.03%	600	319	368
WA totals	465,927	357,999	823,926	100.00%	1,375.2	1,162.7	2,537.9	100.00%	339	308	325
All trees/Ha weighted average:									339	308	325

Note: trees/ha is reported per variety where more than 1 ha is planted; however, all trees are included in the "All trees/ha weighted average".

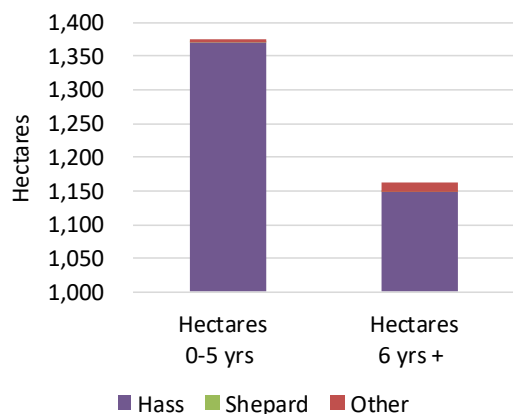
WA & NT new plantings in 2018 & 2019
(at 1/8/2019)



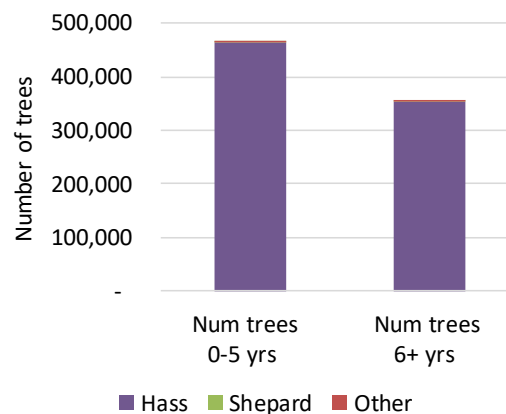
WA & NT tree maturity (Ha)

Varieties	0-5 yrs	6 yrs +
Hass	54%	46%
Shepard	57%	43%
Other	22%	78%
All trees	54%	46%

WA & NT avocado hectares
at 1/8/2019



WA & NT avocado tree numbers
at 1/8/2019



Western Australia & Northern Territory Summary

WA & NT region has 2,538 hectares planted, which represents at 22% of total national hectares, and makes WA & NT the third largest producer region by area planted. The number of trees in WA is 823,926 representing 33% of all Australian trees, making it the largest producing region by number of trees.

In 2018 & 2019, WA & NT growers report planting 159,429 new trees across 428 hectares, which is 17% of all WA & NT hectares, and represents 32% of new hectares planted nationally.

In total, 54% of WA & NT hectares were planted in the last six years, compared to the national proportion of 41%..

Send



Appendix C: 2019 Australian Avocado orchard productivity survey

Please complete and submit as soon as possible

Welcome to the annual avocado productivity survey.

Your answers will remain confidential, and will be aggregated by region for use in the 2019 OrchardInfo report. Individual businesses' data will not be identifiable.

If you need any help please contact **Daniel Martins** or **Amanda Madden** at Avocados Australia on **07 3846 6566**, mobile: **0458 004 198** or email: infocado@avocado.org.au

- * **1. Trading name:** what is the trading name of your avocado business?

This will remain confidential.

- * **2. Contact name:** please provide your name in case we need to contact you regarding your responses.

This will remain confidential.

- * **3. Region:** what is the main region of production for the avocado business you listed above?

Choose one region from the below list.

- ☐ North Queensland
- ☐ Central Queensland
- ☐ Sunshine Coast
- ☐ South Queensland
- ☐ Tamborine & Northern Rivers
- ☐ Central NSW

- ☐ Tri State & Tasmania
- ☐ Western Australia & Northern Territory

* **4. Hectares of commercially producing Hass and Shepard trees:**

Please enter separately into the boxes below the number of hectares of commercially producing **Hass** trees and **Shepard** trees planted on your property (at 1 August 2019). Enter zero if you don't have any of that variety.

How to calculate hectares: number of trees x tree spacing (m) x row spacing (m) / 10,000 (square m)

e.g. 200 producing trees x 8.0 m tree space x 10.0 m row space / 10,000 = 1.6 ha

Hectares of commercially producing **Hass** trees

Hectares of commercially producing **Shepard** trees

* **5. Marketable tonnes of avocados last season**

Please enter separately into the boxes below, the marketable tonnes of **Hass and Hass-type*** and **Shepard** avocados you harvested in your last **complete season**.

How to calculate marketable tonnes:

Total avocados harvested last season (tonnes) **minus** total rejected avocados last season (tonnes)

e.g. 1.6 tonnes harvested minus 0.3 tonnes rejected = 1.3 marketable tonnes

Note 1: **if you count in kilograms**, do the same calculation in kg then divide the result by 1,000 to convert to tonnes.

e.g. (1,600 kg harvested minus 300 kg rejected) / 1,000 = 1.3 marketable tonnes

Note 2: **if you count in trays**, do the same calculation using trays, then multiply the result by 0.0055 (which is the same as multiplying the tray count by 5.5 [standard kg weight of a tray] and dividing by 1,000 to convert to tonnes).

e.g. (291 trays harvested **minus** 55 trays rejected) x 0.0055 =
1.3 marketable tonnes

Marketable tonnes of **Hass** and Hass-type* avocados last season

Marketable tonnes of **Shepard** avocados last season

6. Do you have any comments or feedback you'd like to add here?

For example, you could note here if weather, farm management, disease or other factors influenced your productivity last season.

If not, please just hit the submit button below.

Thankyou for your contribution - Please Click Here to Submit

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

[Privacy & Cookie Policy](#)

Appendix D: Data verification schedule

AV16006 – Avocado industry and market data capture and analysis

Introduction

The data verification aspect of this project will cross check and verify collected data with suitable sources and/or techniques in a timely manner to ensure accurate, valid, consistent and reliable reporting. This is a key to maintaining the trust and participation of our stakeholders, and the wider public with regard to avocado industry and market data.

The data verification schedule will provide a framework and methodology for verification activities appropriate to the data sets collected by Avocados Australia through this project. The schedule outlines the data sets to be verified, the appropriate verification source/s or techniques, the frequency and timing, and any verification reporting needs. Verification activities through this project are limited to the existing resources available within the project.

Data verification will be a rolling and ongoing initiative. This initial schedule is divided into two areas: firstly, the current data verification activities being undertaken are described in detail within three sections, one for each of the three key data sets of the project. This makes up the main body of the schedule. Finally, the medium-term schedule is presented noting the project deadlines for strategic assessment of additional opportunities to improve data quality through the results of current verification activities.

Current state of data verification

This project collects the following three types of data which are verified under this schedule:

1. avocado supply volumes into the Australian market;
2. seasonal crop forecasts; and
3. annual avocado orchard tree count.

The three data sets each have their own opportunities and challenges to verification. Each is examined in turn using the following structure:

- A summary table outlining verification activities, processes and evaluation benchmarks;
- Detailed explanation of the verification opportunities and challenges; followed by
- A schema to record and report the activities and results of verification. The reporting schemas will be delivered to Hort Innovation in each milestone report as below.

Overview of the data verification schedule and reporting:

Data to verify	Verification frequency and timing	Report delivery
Australian avocado supply volumes into the Australian market	Annually in approx. August If quarterly verification is possible (where date ranges align with verification resource) it will be undertaken as follows: Q3, Q4 data in Feb/Mar (Q1, Q2 are covered in the annual verification)	Verification activities at left will be reported to Hort Innovation via the following milestone reports, using the reporting schema in this document: MS103 (Mar 2018): 2017 Q3, Q4 if quarterly verification is possible MS104 (Oct 2018): 2017-18 annual verification MS105 (Mar 2019): 2018 Q3, Q4 if quarterly verification is possible MS106 (Oct 2019): 2018-19 annual verification MS107 (Mar 2020): 2019 Q3, Q4 if quarterly verification is possible
NZ avocado supply volumes into the Australian market	Monthly, when the verification resource/s become available, reported weekly. Quarterly, as reported in quarterly reports: January, April, July, October. Annually in August/September.	Monthly verification activity will be reported to Hort Innovation via the weekly Infocado reports (NZ Avocado Exports table) during NZ's export season. Quarterly and annual verification activity will be reported to Hort Innovation via the quarterly Infocado reports (NZ Avocado Exports graphs), and annually also reported publicly in the AAL annual industry Facts at a Glance document. Milestone reporting for these verification activities is not required.
Seasonal crop forecasts	Weekly, monthly, quarterly and at end of each region's season.	Weekly verification activity will be reported to Hort Innovation via the weekly Infocado reports (Seasonal progress graph by region), this includes changes to seasonal forecasts during season where updated monthly. Quarterly verification activity will be reported to Hort Innovation via the quarterly Infocado reports. End of season verification activities will be reported to Hort Innovation via the following milestone reports, using the reporting schema in this document: MS103 (Mar 2018): 2017 season end report for regions: NQ, CQ, SC, SQ, TNR and NSW. MS104 (Oct 2018): 2017 season end report for regions: Tristate, WA, NZ. MS105 (Mar 2019): 2018 season end report for regions: NQ, CQ, SC, SQ, TNR and NSW. MS106 (Oct 2019): 2018 season end report for regions: Tristate, WA, NZ. MS107 (Mar 2020): 2019 season end report for regions: NQ, CQ, SC, SQ, TNR and NSW.
Annual avocado orchard tree count	Available verification resource is used at the time of creating the annual OrchardInfo report, usually produced in Nov/Dec each year.	Annual verification activity will be reported to Hort Innovation via the OrchardInfo Tree Census report, as per MS103, 105, 107.

1. Avocado supply volumes into the Australian market (Infocado)

1.1 Summary of verification activities

Data collected	Avocado supply volumes into the Australian market
System	Infocado
Activity	Verify accuracy of avocado supply volumes reported
Verification resource	For Aust. production: Australian avocado levy receipts For NZ imports to Aust.: ABS or IHS GTA, or Infoshare (NZ) if necessary
Confidence in verification resource	High: both data sets are from mandatory reporting sources, however reporting periods don't align between the two sources, investigation in how to overcome this will be undertaken.
Verification technique	Comparison of avocado market supply volumes from Infocado with the verification resource
Verification frequency	Annually against verification resource; and quarterly where date ranges align (both Levy and export data can be reported with differing timing to the recorded Infocado weekly supply).
Timing	On release of annual levy receipts: Annually in approx. August; and in Feb/Mar for Q3 and Q4 where timing above aligns.
Verification benchmark	85% of industry supply is captured in Infocado quarterly reporting
Confidence in achieving benchmark	Moderate to high; largely dependent on maintaining honest contributions from a large proportion of avocado packhouses.
Outcome / Response if benchmark not achieved	Increase and/or improve stakeholder participation and training activities and/or incentives
Current performance	The above approach currently indicates that 89% of industry supply data is captured in quarterly reporting.
Current improvement activities	Redesign of data collection forms, ensuring the correct data is being requested; this will also entail retraining of contributors.

1.2 Description of the approach and challenges to verification

Overview

- Verification enhances weekly and quarterly reporting reliability, and short and long-term supply chain planning.
- Likelihood of inaccuracies in the actual data collected is relatively low. Australian supply volumes are verified using avocado levy receipts which are an excellent, albeit aggregated, source of supply volume for this purpose. Imported fruit volumes are verified with ABS and/or IHS GTA data (same source, sometimes one is available earlier than the other). Infoshare (NZ) govt export data may also be used as a comparison.
- Potential to increase reliability is moderate to high where participation can be increased. The project has KPIs of very high participation rates for quarterly reporting (85%) which are being achieved currently. It is accepted that a voluntary contribution arrangement will have non-participants.
- In order to verify more granular aspects of the data, in particular regional production, the project considered using both transport operators and carton manufacturers as sources of supply information, however, on investigation, these activities were considered time and resource expensive for limited added value to the current verification.

Approach

Australian avocado levy receipts are used to verify production quantities of Australian fruit on an annual basis. As the vast majority of fruit is recorded through the levy system, this is a decisive verification of the Australian supply data being collected through the Infocado program. The project team invests a great deal into engagement to increase and maintain very high levels of participation. This includes personal engagement throughout each region's season, a thorough system of reminders, office support to enter data where required, incentivised participation through the initial distribution of reports to contributors only, communication of the value and importance of contributing, plus reports and articles in avocado publications.

In order to verify import volumes, ABS data is purchased monthly, which is corroborated with GTA data (same source of ABS) and Infoshare which is the New Zealand government's statistics site from which NZ export volumes can be sourced.

Challenges

ABS, Infoshare (NZ) and GTA data are all aggregated to a high degree and thus don't offer granularity of verification. Additionally, the data can take up to three months to become final.

Methodologies excluded from further investigation

Verification of regional volumes through the use of transport operator data is very challenging, with the likelihood of only certain areas of states being possible to verify, although not definitively. Using transport operators as a source of data (e.g. pallets delivered from x to y each week of season) is only useful where few transport companies dominates in a region, which is not the case across all regions. Additionally, the data is difficult to access, timing of the data is most likely post-season which does not assist the weekly supply chain planning, and mixed consignments may complicate the reporting. Considering the cost/benefit analysis, this avenue is unlikely to be pursued.

The use of carton manufacturers' data (e.g. number of cartons sold per season to whom/which region) would potentially provide state granularity to verify collected data. Again, access to this data in a useful format could be difficult: in particular the data would need to be defined as supply of cartons to Australian avocado packers only, and within specific seasonal (and regional) time frames. Additionally, if avocado growers are ordering cartons using the same pre-season crop forecasts as provided to Infocado, and the number of carryover cartons at the start of season are unknown, the use of this data to verify our production data is relatively circular, and quite possibly too unreliable for verification purposes.

1.3 Reporting schema

Activity 1	Verify supply volumes of Australian produced avocado as reported in Infocado quarterly reports.
Method	Compare avocado dispatched supply recorded in Infocado to Australian avocado levy receipts.
Timing	1. Quarterly: After completion of quarterly Infocado reports: - October & January reports (Q3 & Q4) to be verified in Feb/Mar - April & July reports (Q1 & Q2) to be verified in annual verification below. Dependent on: - Timing and availability of quarterly levy statistics; and - Being able to match levy data to the appropriate supply periods. If this is unachievable, annual verification will be done in place. 2. Annual: After completion of July quarterly Infocado report to be verified by end August Dependent on timing and availability of annual levy statistics
Verification benchmark	Infocado quarterly reported volumes total 85% or more of the verified supply volume.
Reporting schema for project milestone reports	
Date of verification	<i>e.g. 18 May 2018 (for Quarter 1, 2018)</i>
Data set verified	<i>e.g. Total dispatch volume for Australian produced avocados for Quarter 1, 2018 using April Infocado Quarterly report 2018</i>
Verification resource used	<i>e.g. DAWR Australian avocado levy receipts, from [date to date]</i>
Method and result	<i>e.g. Volumes compared in tonnes Quarter 1 Infocado supply volume: 20,000 Quarter 1 Levy receipt volume: 22,000 Levy receipts indicate 2,000 tonnes more supply than Infocado. Infocado volume was 91% of Levy receipt volume.</i>
Benchmark evaluation	<i>e.g. Benchmark of minimum of 85% was exceeded</i>
Notes / Issues	

Activity 2	Compare data sources for supply volumes of New Zealand avocados imported into Australia.
Method	Compare NZ avocado market supply recorded in Infocado to ABS or IHS GTA* import volumes, as well as to Infoshare (NZ) export data of NZ avocados to Australia; and report the comparisons in: -Infocado weekly report – table “New Zealand avocado exports” -Quarterly Infocado report – table “New Zealand Avocados – Dispatch and Forecast” -Annual industry statistics The NZ Avocado Industry Council are the sole contributor of NZ supply data to Infocado and their contribution is undertaken in the spirit of sharing current data more quickly and granularly than the respective government authorities enable. Variances are expected between these data sets due to differences in data collection methods between import, export and avocado industry authorities, as well as timing differences between Infocado reporting periods and timing of import arrivals and reporting. Therefore, comparisons of all data sources are reported where appropriate. ABS data is used as the authoritative source for annual industry reporting. * IHS GTA uses ABS data but is sometimes released earlier.
Timing	1. Monthly: Comparison of each data source is reported by month in the weekly Infocado reports when ABS and Infoshare data become available (typically a 4-6 week lag). 2. Quarterly: Comparison of Infocado supply data with ABS or Infoshare data is reported in each quarterly report. ABS data is used when it is available in time for reporting deadlines, otherwise Infoshare data is used. 3. Annual: After completion of July quarterly Infocado report, published in August/September dependent on timing and availability of annual ABS import statistics. ABS data is used for annual industry reporting.
Verification benchmark	By understanding the historical variances between data sources, we will be able to identify if major or anomalous variances occur.
Reporting schema	
Date of verification	<i>e.g. 11 May 2018 (for Quarter 1 2018)</i>
Data set	<i>e.g. Total dispatch volume for NZ imported avocados for Quarter 1, 2018 using April Infocado Quarterly report 2018</i>
Verification resource	<i>e.g. ABS import data for Avocados from NZ from [date to date]</i>
Method and result	<i>Volumes compared in tonnes</i> <i>Quarter 1 Infocado supply volume of NZ fruit: 5,000</i> <i>Quarter 1 ABS NZ import volume of NZ fruit: 6,000</i> <i>ABS indicate 1,000 tonnes more supply than Infocado. Infocado volume was 83% of ABS volume.</i>
Benchmark evaluation	<i>N/A</i>
Notes / Issues	

2. Australian avocado seasonal crop forecast of supply for the Australian market (Infocado)

2.1 Summary of verification activities

Data collected	Avocado seasonal forecast of supply for the Australian market
System	Infocado
Data description	Data is collected monthly, via the Infocado seasonal forecast form on a voluntary basis from all packhouse contributors. Packhouses enter the expected volume of avocados in number of equivalent 5.5kg trays by variety for each month for the next 12-15 months. For reporting, volumes are aggregated by region and reported by variety.
Activity	Verify accuracy of reported forecasts
Verification resource	Infocado supply volumes reported by region weekly; and Infocado rolling four-weekly forecasts contributed by packhouses each week in conjunction with the above supply volumes; and Regional descriptions of pre- and post-season expectations.
Confidence in verification resource	High confidence
Verification technique	- Compare avocado seasonal forecast recorded in Infocado to dispatched avocado supply also recorded in Infocado. - Gauge likelihood of regions achieving forecast through industry contacts, and use rolling four-weekly forecasts as a preliminary indicator to request updated seasonal forecasts. - Take note of contributor's descriptions of expectations before and during the season, and assess these at region level. At the end of season, again assess these at region level along with the reported reasons for differences between forecast and supply. Consider the validity of the reasons in light of large variances.
Verification frequency	Weekly, monthly, quarterly and at end of each region's season
Timing	According to weekly and quarterly report schedule, and then at the end of each region's season.
Verification benchmark	By region and season, the pre-season forecast should vary less than 20% to reported supply volumes unless weather or other reasonable factors have been reported as influencing the variation.
Confidence in achieving benchmark	Moderate. Forecasts are at worst not provided, and at best well-educated estimates, with the majority somewhere in the middle.
Outcome / Response if benchmark not achieved	Targeted engagement to identify issues and potential training in more effective forecast techniques
Current performance	To be measured at the end of current season.
Current improvement activities	Redesign of forecast reporting form, retraining of how to contribute forecasts, improving internal reporting to compare Infocado data.

2.2 Description of the approach and challenges to verification

Overview

- Verification enhances quarterly reporting reliability and industry planning; this is vital data to AAL's reporting.
- Likelihood of inaccuracies is relatively high given that crop forecasting is a difficult task with a variety of methods, and a range of experience among data contributors.
- Potential to increase accuracy is moderate to high where orchard inaccuracies can be identified and resolved.

Approach

Data verification of seasonal crop forecasting is enabled by the collection of weekly supply volumes over each region's season. This is reported per region's season in Graph C: "Percentage dispatched by region" of the Infocado weekly reports, and reported in volumes by variety in each quarterly report. As data contributors can update their seasonal forecasts monthly, the above reports are updated accordingly, thus at the end of each region's season, final crop production, original and updated forecasts are compared.

Additionally, when in season, packhouses enter a forecast for the next four weeks' expected supply when entering their weekly dispatch data. This is used to gauge forecast to dispatch on a weekly basis and contributors are contacted to check data when forecast and dispatch volumes vary by 20% or more in a week. Where appropriate, packhouses are asked to update their monthly seasonal forecast.

The project team also use information provided by packhouse contributors to gauge the effects of weather and other factors on forecast changes within the season.

Challenges

For large packhouses seasonal forecasts and 4-weekly forecasts may be completed by different people, and a comparison between the two in the current Infocado system is prohibitively resource intensive on a weekly basis. Efforts are being made to enhance this capability, and increase communication with contributors where variances and anomalies occur.

Methodologies excluded from further investigation

Although of interest, forecast ground-truthing by way of pre-season on-orchard assessments done by an independent party is excluded from proposed methodologies. This process is too cost prohibitive for this project, and would require considerable resources to plan and execute in an appropriate manner. Where the verification activities of the current project identify specific areas or orchards where independent verification would be advantageous to all growers, this concept could be put forward as a separate project. However, qualitative assessments of regional forecasts will be undertaken.

Where technologies are developed to enable accurate and cost-effective ground-truthing activities, these will be considered.

2.3 Reporting schema

Activities	Verify Australian seasonal forecast of fresh avocado supply for the Australian market
Methods	-Compare seasonal crop forecasts with supply volumes reported in Infocado – report this in Graph C of Infocado weekly report and the tables and graphs in quarterly Infocado reports. -Use anecdotal information from industry contacts to gauge likelihood of achieving forecast as season progresses. Also use four-weekly forecasts as a preliminary indicator of required changes to forecast supply; and contact contributors where indicated to request updated seasonal forecast. -Take note of contributor's descriptions of expectations before and during the season, and assess these at region level. At the end of season, again assess these at regional level along with the reported reasons for differences between forecast and supply. Consider the strength of the reasons with respect to large variances.
Timing	1. Weekly Comparison of forecast to supply is reported in the weekly Infocado reports. 2. Monthly: Updated seasonal forecasts is reported by region in the weekly Infocado reports (Graph C). 3. Quarterly: Seasonal forecasts for previous 12 months and actual dispatch for that period are reported, as well as seasonal forecasts by variety and region for next 12 months. 4. End of season: Use the reporting schema below to summarise the region's level of success at achieving the volume forecast for the season.
Verification benchmark	By region and season, the pre-season forecast should vary less than 20% to reported supply volumes unless weather or other reasonable factors have been reported as influencing the variation.
Reporting schema for regional end of season assessment	
Date of verification	<i>e.g. 01 March 2018</i>
Data set verified	<i>e.g. Tristate regional pre-season forecast, updated seasonal forecast and final dispatch volume for 2017/2018 season. Infocado data used.</i>
Verification resource used	<i>e.g. Infocado records for Tristate season 2017/2018 (as above)</i>
Method and result	<i>e.g. Volumes compared in 5.5kg trays, all data from Infocado. Tristate season length was 5 months, August 2017 to January 2018.</i> <i>Pre-season forecast (set on [date]): 500,000 trays</i> <i>Updated seasonal forecast volume (total of each month, set 3-4 weeks prior to each month's beginning): 480,000 trays</i> <i>Final season dispatch volume (dated xxxx): 485,000 trays</i> <i>Difference pre-season forecast to dispatch = 15,000 trays (3%)</i> <i>Difference updated seasonal forecast to dispatch = 5,000 trays (1%)</i> <i>Both forecasts were well within the benchmarks of desired accuracy.</i>
Benchmark evaluation	<i>e.g. Benchmark was exceeded</i>
Notes / Issues	

3. Australian avocado orchard tree count (OrchardInfo Tree Census)

3.1 Summary of verification activities

Data collected	Australian avocado orchard tree count (OrchardInfo Tree Census)
System	OrchardInfo Tree Census
Data description	Data is collected annually from orchards, via the OrchardInfo Tree Census form on a voluntary basis. Orchards enter their orchard block data by tree variety, entering: year planted; number of trees; tree and row spacing; and hectares. For reporting, volumes are aggregated by region.
Activity	Verify tree planting data collected and reported in OrchardInfo Tree Census
Verification resource	ABS Agricultural Commodities data, specifically, the report: <i>Agricultural Commodities, Australia and state/territory 7121.0</i> .
Confidence in verification resource	Moderate confidence in ABS data. Further data sources, or data collection techniques to be considered throughout this project.
Verification technique	Compare the tree planting data in OrchardInfo to the data published by ABS agricultural census. Where major discrepancies are found, try to identify if variance is balanced across all states or if specific states have larger variances. Consider reasons why this could be the case.
Verification frequency	Annually
Timing	After completion of the annual OrchardInfo Tree Census (usually completed between Nov or Dec), verification can take place on release of ABS agricultural census data, usually in July the following year.
Verification benchmark	Avocado orchard planting data representing at least 80% of all plantings
Confidence in achieving benchmark	Currently high
Outcome / Response if benchmark not achieved	Consider alternative sources of verification, or justifiable reasons for the results obtained.
Current performance	Verification using ABS data shows that Avocados Australia's 2016 orchard planting data represents more avocado plantings than ABS have recorded.
Current improvement activities	Improvements to Tree Census data capture, instructions, and internal reporting to compare data.

3.2 Description of the approach and challenges to verification

Overview

- Verification enhances long-term industry planning and annual tree census reporting.
- ABS is used for verification of tree census data. The likelihood of data inaccuracies in the tree count is relatively low, although work is being undertaken to ensure the design of data collection forms enables accurate reporting of orchard information by contributors.
- The main source of reporting inaccuracy is more likely to be the missing data where orchards are unknown or do not participate in the tree census. Thus, the highest potential to increase reliability of the data is to increase participation rates in tree census.
- Potentially, mapping technologies (available through ST15001 if extended) could also be used to verify total planting area calculations and locations, as well as to identify unknown orchards and potential contributors; however, a budget for purchasing mapping technologies beyond ST15001 is not included in this project.
- Productivity data continues to be collected via survey from a representative sample group of growers who participate across multiple years (a minimum of 20% of respondents to the tree census are surveyed). Responses are monitored and vetted, with orchards followed up closely to ensure the largest sample size possible. A comparison with four years of benchmarking data (AV13003 - Australian Avocado Industry Benchmarking Program) indicates similar productivity values to OrchardInfo surveys.

Approach

ABS data reporting prior years' agricultural census information will continue to be used to verify tree census data regarding tree count (bearing and non-bearing age), planted area, and regions.

Proposed changes to the Avocado Nursery Voluntary Accreditation Scheme (ANVAS) administered by Avocados Australia aim to assist with collection of planting data from the nursery sector, by implementing mandatory reporting of nursery tree numbers sold and or planned each year. If implemented, this will provide an information source for monitoring new plantings.

The project continues to invest a great deal into engagement and promotion activities to increase and maintain very high levels of grower participation. This is continued from the previous decade's projects and includes personal grower engagement throughout the year, incentivised participation through the distribution of contributor-only reporting, communication of the value and importance of contributing and the resulting reports to industry involvement and planning, articles and reminders in avocado publications, a rigorous reminder schedule, office support to enter data, and prize incentives for on-time responses.

An investigation into the use of new mapping technologies to collect, maintain and verify tree census data will be undertaken. This technology is newly developed and its uses for verification have not yet been scoped.

Challenges

The ABS data is naturally deidentified and aggregated by state, thus unable to assist in identifying specific orchards or regions which have been missed, or where potential large variances between the data sets occur from the OrchardInfo Tree Census. Additionally, this data is released a full

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financial year behind the current year. Anecdotal evidence also suggests that the ABS census is difficult to complete thus some growers question the accuracy of reporting due to confusion over how to answer census questions. The ABS data is therefore used as a guide for assessing participation rates in the OrchardInfo Tree Census.

Nursery data is currently voluntary, and number of trees reported is directly tied to the amount of fees paid for ANVAS accreditation, thus providing an incentive to underreport nursery tree numbers. The use of this data to verify new plantings in the tree census in a meaningful way depends on the aforementioned changes to the current system being accepted and implemented. Due to the schedule of the ANVAS restructure project, this data may not be available until the latter stages of the project.

It is widely acknowledged that increasing and maintaining very high levels of grower participation is difficult due in large part to grower time constraints, and occasionally lack of access to technology, however, this and the preceding data projects invest heavily to overcome these challenges as described above.

The use of new mapping technologies to verify tree census data has not be budgeted for in this project, thus financial constraints may challenge the use of this technology beyond the life of project ST15001.

Activity	Verify tree planting data collected and reported in OrchardInfo Tree Census
Method	Compare number of trees and planted hectares reported nationally in OrchardInfo Tree Census with the data reported for that year in the ABS agricultural census; specifically the report: <i>Agricultural Commodities, Australia and state/territory</i>
Timing	Annually: The OrchardInfo annual report is produced in Nov or Dec, these results will be compared to ABS data the following March or July. ABS Census results (every 5 years) are released in July. For other years, the commodities data is released in March.
Evaluation benchmark	Avocado orchard planting data representing at least 80% of all plantings
Reporting schema for regional end of season assessment	
Date of verification	<i>e.g. 17 July 2018</i>
Data set verified	<i>e.g. OrchardInfo Tree Census report 2017 (tree data from 01 Aug 2017).</i>
Verification source used	<i>e.g. ABS agricultural census 2016/17 report: Agricultural Commodities, Australia and state/territory - 2016-17</i>
Method and result	<i>e.g. Tree counts compared.</i> <i>2016-17 OrchardInfo reported tree plantings: 1,716,378</i> <i>2016-17 ABS agriculture census tree planting data; released 28/07/2018: 1,669,161</i> <i>Verification using ABS data shows that Avocados Australia's 2017 orchard planting data represents more avocado plantings than ABS have recorded.</i>
Benchmark evaluation	<i>e.g. Benchmark was exceeded</i>
Notes / Issues	<i>e.g. The following factor may have contributed to the ABS tree numbers being lower than those collected for OrchardInfo:</i> <i>Growers are highly engaged with Avocados Australia Ltd and participating in the OrchardInfo census; and we have significantly streamlined the OrchardInfo census to improve ease of use, and to encourage participation among growers.</i>

Medium term activities for Infocado and OrchardInfo data verification.

The following medium-term goals regard the project's need to strategically assess further opportunities for data verification and data quality improvements which come about through the current data verification activities being undertaken.

Activity	Outcome	Timing
Document disparities for forecast vs actual volumes	Report for each region comparing the previous three completed seasons forecasts to actual volumes	Completed by MS104 (29/10/2018) i.e. prior to mid-term review
Integrate forecasting best practise to regional visits	Determine forecasting best practice and develop training material to be integrated into regional visits	Developed for MS106
Through the current data verification activities identify and assess other potential approaches for verification.	Summary of assessed approaches to be provided in milestone report for MS104	By MS104

Appendix E: Data verification schemas

Data verification update

Table 1: Dispatch volume verification for Q1 and Q2 FY2017-18

Data verification reporting schema		
Date of verification	7-Mar-18	
Data set verified	Dispatch volume of Australian produced avocados for the following financial quarters:	
	2017-18 Q1 volume from Infocado Quarterly report Oct 2017	2017-18 Q2 volume from Infocado Quarterly report Jan 2018
Verification resource used	DAWR Australian avocado levy receipt notification (16 Feb 2018)	
	Levied volumes from Jul to Sep 2017	Levied volumes from Sep to Dec 2017
Method and result	Volumes compared in kilograms	
	2017-18 Quarter 1 Infocado supply volume: 20,897,954 kg	2017-18 Quarter 1 Infocado supply volume: 15,397,602kg
	Quarter 1 Levy receipt volume: 23,267,343kg	Quarter 1 Levy receipt volume: 15,462,023kg
	Infocado volume was 90% of Levy receipt volume	Infocado volume was 100% of Levy receipt volume
Benchmark evaluation	Benchmark of minimum of 85% was exceeded	
Notes	Quarterly verification of supply data using levies is indicative only, due to variances between timing of dispatch and levy data being recorded. Annual verification done at end of financial year is the more definitive measurement.	
	Levy data appears to increase for reported quarters as growers lodge their receipts. For instance, the initial Q1 data provided in November 2017 by DAWR totaled 1.1 million kg less than the above Q1 total reported in February 2018. The annual verification rate is thus likely to indicate a lower value than each quarter would indicate, depending on when the verification is done.	

Table 2: Season end verification of seasonal forecasts for regions ending their 2017 season prior to mid-March 2018.

Data verification reporting schema				
Date of verification	7-Mar-18			
Data set verified	Regional pre-season forecast volumes for the 2017 seasons for the regions having completed their seasons by report date (regions listed below). Infocado data used. Pre-season forecasts are set in the month prior to the season start month.			
Verification resource used	Infocado final dispatch volumes for the above regions' 2017 seasons. Infocado data used.			
Method and result	Volumes compared in tonnes.			
	Region	Pre-season forecast volume	Final season dispatch volume	Difference % (updated forecast)
	North Queensland	10,972	10,522	4% underestimated
	Central Queensland	16,626	12,056	27% overestimated
	South Qld & Sunshine Coast	4,890	3,947	19% overestimated
	Tamborine & Northern Rivers	1,034	657	36% overestimated
	Central NSW	4,928	6,261	27% underestimated
	Supply on average	38,450	33,443	13% overestimated
Benchmark evaluation	Supply on average achieved the benchmark of estimate being within 20% of final dispatch, with Central Queensland, South Qld and Sunshine Coast, Tamborine & Northern Rivers and Central NSW underachieving on the benchmark.			

Data verification update

Table 1: Dispatch volume verification for Q3 and Q4 FY2017-18

Data verification reporting schema		
Date of verification	27-Sep-2018	
Data set verified	Dispatch volume of Australian produced avocados for the following financial quarters:	
	2017-18 Q3 volume from Infocado Quarterly report Apr 2017	2017-18 Q4 volume from Infocado Quarterly report Jul 2018
Verification resource used	DAWR Australian avocado levy receipt notification (16 Aug 2018)	
	Levied volumes from Jan to Mar 2018	Levied volumes from Apr to Jun 2018
Method and result	Quarterly volumes compared in kilograms (does not include annually paid levy volumes)	
	2017-18 Quarter 3 Infocado supply volume: 15,819,430 kg	2017-18 Quarter 4 Infocado supply volume: 24,916,661 kg
	Quarter 3 Levy receipt volume: 15,921,861 kg	Quarter 4 Levy receipt volume: 29,858,969 kg
	Infocado volume was 99% of Levy receipt volume	Infocado volume was 83% of Levy receipt volume
Benchmark evaluation	Benchmark of minimum of 85% was exceeded on average	
Notes	Quarterly verification of supply data using levies is indicative only, due to variances between timing of dispatch and levy data being recorded. Annual verification done at end of financial year is the more definitive measurement, which is supplied below.	

Table 2: Dispatch volume verification for FY2017-18

Data verification reporting schema	
Date of verification	27-Sep-2018
Data set verified	Dispatch volume of Australian produced avocados for the financial year 2017/18
	2017-18 volume from Infocado Quarterly report Jul 2018
Verification resource used	DAWR Australian avocado levy receipt notification (16 Aug 2018)
	Levied volumes from Jul 2017 – Jun 2018
Method and result	Annual volumes compared in kilograms (includes all levied volumes)
	2017-18 annual Infocado supply volume: 77,031,647 kg
	2017-18 annual levy receipt volume: 84,616,050 kg
	Infocado volume was 91% of Levy receipt volume
Benchmark evaluation	Benchmark of minimum of 85% was exceeded

Table 3: Season end verification of seasonal forecasts for regions ending their 2017/18 season prior to July 2018

Data verification reporting schema				
Date of verification	27-Sep-18			
Data set verified	Regional pre-season forecast volumes for the 2017/18 seasons for the regions having completed their seasons by the most recent quarterly report date (regions listed below). Infocado quarterly report data used. Pre-season forecasts are set in the month prior to the season start month.			
Verification resource used	Infocado final dispatch volumes for the above regions' 2017/18 seasons. Infocado data used.			
Method and result	Volumes compared in tonnes.			
	Region	Pre-season forecast volume	Final season dispatch volume	Difference % (updated forecast)
	WA	23,682	20,180	15% overestimated
	Tristate	3,646	4,450	22% underestimated
	Supply on average	13,664	12,315	10% underestimated
Benchmark evaluation	Supply on average achieved the benchmark of estimate being within 20% of final dispatch, with Western Australia underachieving the benchmark.			

Table 4: Avocado orchard data verification for 2017

Data verification reporting schema	
Date of verification	27-Sep-18
Data set verified	OrchardInfo Tree Census report 2017 (tree data from 01 Aug 2017).
Verification resource used	ABS agricultural census 2016/17 report: Agricultural Commodities, Australia - 2016-17, released 21 May 2018
Method and result	Counts of national numbers of avocado trees are compared: 2016-17 OrchardInfo reported tree plantings: 2,027,803 2016-17 ABS agriculture census tree planting data: 1,778,321 Verification using ABS data shows that Avocados Australia's 2017 orchard planting data represents more avocado plantings than ABS have recorded.
Benchmark evaluation	Benchmark of AAL's avocado orchard planting data representing at least 80% of all plantings was exceeded
Notes / Issues	Growers are highly engaged with AAL's OrchardInfo tree census; and we have significantly streamlined the OrchardInfo census to improve ease of use, and to encourage participation. This may have contributed to the OrchardInfo numbers being higher than ABS'.

Data verification update

Table 1: Dispatch volume verification for Q3 and Q4 FY2018-19

Data verification reporting schema		
Date of verification	February 2019	
Data set verified	Dispatch volume of Australian produced avocados for the following financial quarters:	
	2018 Q3 volume from Infocado Quarterly report October	2019 Q4 volume from Infocado Quarterly report January
Verification resource used	DAWR Australian avocado levy receipt notification (18 Feb 2019)	
	Levied volumes from Jul to Sep 2018	Levied volumes from Oct to Dec 2018
Method and result	Quarterly volumes compared in kilograms (does not include annually paid levy volumes)	
	2018 Q3 Infocado supply volume: 23,789,777 kg	2017-18 Quarter 4 Infocado supply volume: 19,240,914 kg
	Quarter 3 Levy receipt volume: 24,606,238 kg	Quarter 4 Levy receipt volume: 18,076,601 kg
	Infocado volume was 97% of Levy receipt volume	Infocado volume was 106% of Levy receipt volume
Benchmark evaluation	Benchmark of minimum of 85% was exceeded.	
Notes	Quarterly verification of supply data using levies is indicative only, due to variances that may occur between time of dispatch and time of levy data being recorded. Annual verification done at end of financial year is a more accurate measurement.	

Table 2: Season end verification of seasonal forecasts for regions ending their 2018 season prior to January 2019

Data verification reporting schema				
Date of verification	February 2019			
Data set verified	Regional pre-season forecast volumes for the 2018 seasons for the regions having completed their seasons by the most recent quarterly report date (regions listed below). Infocado quarterly report data used. Pre-season forecasts are set in the month prior to the season first month.			
Verification resource used	Infocado final dispatch volumes for the below regions' 2018 season (calendar year). Infocado data used.			
Method and result	Volumes compared in 5.5Kg trays.			
	Region	Pre-season forecast volume	Final season dispatch volume	Difference % (updated forecast)
	NQ	3,831,312	4,382,808	13%
	CQ	3,227,036	3,483,743	7%
	SC	267,542	252,273	-6%
	SQ	849,657	867,547	2%
	TNR	318,206	289,823	-10%
	CNSW	945,374	1,516,944	38%
	Supply on average	1,573,188	1,798,856	7%
Benchmark evaluation	Supply on average (7%) achieved the variation benchmark of 20% in relation to pre-season forecasted dispatch figures, except for Central NSW which was underestimated by 38%.			

Data verification update

Table 1: Quarterly dispatch volume verification for Q1 and Q2 FY2018-19

Data verification reporting schema		
Date of verification	September 2019	
Data set verified	Dispatch volume of Australian produced avocados for the following financial quarters:	
	2019 Q1 volume from Infocado Quarterly report April	2019 Q2 volume from Infocado Quarterly report July
Verification resource used	DAWR Australian avocado levy receipt notification (19 August 2019)	
	Levied volumes from Jan to Mar 2019	Levied volumes from Apr to Jun 2019
Method and result	Quarterly volumes compared in kilograms (does not include annually paid levy volumes)	
	2019 Q1 Infocado supply volume: 18,961,629 kg	2019 Quarter 2 Infocado supply volume: 23,553,653 kg
	Quarter 1 Levy receipt volume: 20,659,495 kg	Quarter 2 Levy receipt volume: 26,126,376 kg
	Infocado volume was 92% of Levy receipt volume	Infocado volume was 90% of Levy receipt volume
Benchmark evaluation	Benchmark of minimum of 85% was exceeded.	
Notes	Quarterly verification of supply data using levies is indicative only, due to variances that may occur between time of dispatch and time of levy data being recorded. Annual verification done at end of financial year is a more accurate measurement.	

Table 2: Annual dispatch volume verification for FY2018-19

Data verification reporting schema	
Date of verification	September 2019
Data set verified	Dispatch volume of Australian produced avocados for the financial year 2018-19
	2018-19 volume from Infocado Quarterly report Jul 2019
Verification resource used	DAWR Australian avocado levy receipt notification (19 August 2019)
	Levied volumes from Jul 2018 – Jun 2019
Method and result	Annual volumes compared in kilograms (includes all levied volumes)
	2018-19 annual Infocado supply volume: 85,545,944 Kgs.
	2018-19 annual levy receipt volume: 89,839,823 Kgs.
	Infocado volume was 95% of Levy receipt volume
Benchmark evaluation	Benchmark of minimum of 85% was exceeded.

Table 3: Season end verification of seasonal forecasts for regions ending their 2018-19 season prior to July 2019

Data verification reporting schema				
Date of verification	September 2019			
Data set verified	Regional pre-season forecast volumes for the 2018-19 seasons for the regions having completed their seasons by the most recent quarterly report date (regions listed below). Infocado quarterly report data used. Pre-season forecasts are set in the month prior to the season first month.			
Verification resource used	Infocado final dispatch volumes for the below regions' 2018-19 season (calendar year). Infocado data used.			
Method and result	Volumes compared in 5.5Kg trays.			
	Region	Pre-season forecast volume	Final season dispatch volume	Difference % (updated forecast)
	WA	3,778,423	4,657,681	23%
	NZ	2,938,774	2,326,467	-21%
	Supply on average	3,358,599	3,492,074	4%
Benchmark evaluation	Supply on average (4%) achieved the variation benchmark of 20% in relation to pre-season forecasted dispatch figures.			

Data verification update

Table 1: Quarterly dispatch volume verification for Q1 and Q2 FY2019-20

Data verification reporting schema		
Date of verification	March 2020	
Data set verified	Dispatch volume of Australian produced avocados for the following financial quarters:	
	2019 Q1 volume from Infocado Quarterly report October	2020 Q2 volume from Infocado Quarterly report January
Verification resource used	DAWR Australian avocado levy receipt notification (24 February 2020).	
	Levied volumes from Jul to Sep 2019	Levied volumes from Oct to Dec 2019
Method and result	Quarterly volumes compared in kilograms (does not include annually paid levy volumes).	
	2019 Q1 Infocado supply volume: 24,974,708 kg	2019 Quarter 2 Infocado supply volume: 21,521,605 kg
	Quarter 1 Levy receipt volume: 25,338,661 kg	Quarter 2 Levy receipt volume: 21,617,588 kg
	Infocado volume was 99% of Levy receipt volume.	Infocado volume was 99% of Levy receipt volume.
Benchmark evaluation	Benchmark of minimum of 85% was exceeded.	
Notes	Quarterly verification of supply data using levies is indicative only, due to variances that may occur between time of dispatch and time of levy data being recorded. Annual verification done at end of financial year is a more accurate measurement.	

Table 2: Season end verification of seasonal forecasts for regions ending their 2019-20 season prior to January 2020

Data verification reporting schema				
Date of verification	March 2020			
Data set verified	Regional pre-season forecast volumes for the 2019-20 seasons for the regions having completed their seasons by the most recent quarterly report date (regions listed below). Infocado quarterly report data used. Pre-season forecasts are set in the month prior to the season first month.			
Verification resource used	Infocado final dispatch volumes for the below regions' 2019-20 season (calendar year). Infocado data used.			
Method and result	Volumes compared in 5.5Kg trays.			
	Region	Pre-season forecast volume	Final season dispatch volume	Difference % (updated forecast)
	NQ	4,174,592	4,199,506	1%
	CQ	3,454,576	3,367,353	-3%
	SC	217,145	154,226	-29%
	SQ	689,865	601,507	-13%
	TNR	436,301	185,136	-58%
	CNSW	1,004,363	1,139,272	13%
	Supply on average	1,662,807	1,607,833	-3%
Benchmark evaluation	Supply on average achieved the variation benchmark of 20% in relation to pre-season forecasted dispatch figures (-3%).			

Table 3: Avocado orchard data verification for 2019

Data verification reporting schema	
Date of verification	March 2020
Data set verified	OrchardInfo Tree Census report 2019 (tree data from 01 Aug 2019).
Verification resource used	ABS agricultural census 2017/18 report: Agricultural Commodities, Australia - 2017-18, released 30 April 2019 (latest publication).
Method and result	Counts of national numbers of avocado trees are compared: 2019 OrchardInfo reported tree plantings: 2,540,080 2017-18 ABS agriculture census tree planting data: 1,991,269 Verification using ABS data shows that Avocados Australia's 2019 orchard planting data represents more avocado plantings than ABS have recorded.
Benchmark evaluation	The benchmark of AAL's avocado orchard planting data representing at least 80% of all plantings was exceeded.
Notes / Issues	Growers are highly engaged with AAL's OrchardInfo tree census; we have significantly streamlined the OrchardInfo census to improve ease of use, and to encourage participation. This may have contributed to the OrchardInfo numbers being higher than ABS'. ABS reported plantings have not been updated since the 2017-18 agricultural census.



Appendix F: Infocado weekly report

Week 33 - 2020 (08 - 14 August 2020)



Comments:

Please remember to enter and update your four-weekly forecast each week, you can update all future weeks of your forecast, only the current week is unable to be updated.

Week 33 - 2020 summary:

- Tristate & Western Australia: please start entering your 4week forecasts if your season is about to start in August or September. For quality assurance, please remind growers before picking to ensure dry matter of at least 23% for Hass & 21% for Shepard.
- Total dispatch was 259,647 trays, an increase of 4% on the previous week (250,847 trays) and 13% lower than the forecasted 298,145 trays.
- Central NSW supplied the majority of fruit at 32%, followed by Central QLD at 26%, Western Australia at 20% and South Qld at 11%. The remaining 11% of fruit was supplied by New Zealand, Sunshine Coast and Tamborine/Northern Rivers.

Marketing Update: My Market Kitchen

As part of Hort Innovation's partnership with Channel Ten's *My Market Kitchen*, avocados were featured as part of the 10 August episode. Growers Katrina and Tim Myers, NSW, showcased their operation, and Hort Innovation nutritionist Jemma O'Hanlon made an avocado chocolate mousse. [Click here](#) to watch the segments. Read more about the Australian Avocados marketing activity [here](#). The industry's marketing activity is helping Aussie consumers connect with (and eat!) Australian avocados. This marketing activity is managed by Hort Innovation and funded by the avocado marketing levy.

Upcoming public holidays:

Mon 28 September - Queen's Birthday in WA: enter data by 11am Tue 29 September, report will be distributed on Wed instead of Tue.

Mon 05 October - Queen's Birthday in Qld & Labour Day in NSW, ACT & SA: enter data by 11am Tue 06 October, report will be distributed on Wed instead of Tue.

Report Index: p.2: 4week forecast; import data | p.3: dispatches | p.4: dispatches by region; contributors | p.5: wholesale data | p.6-7 retail pricing report

[Conduct dry matter tests at home](#)

[What is Infocado?](#)

[Using and interpreting Infocado reports](#)

[Avocado supply chain education materials](#)

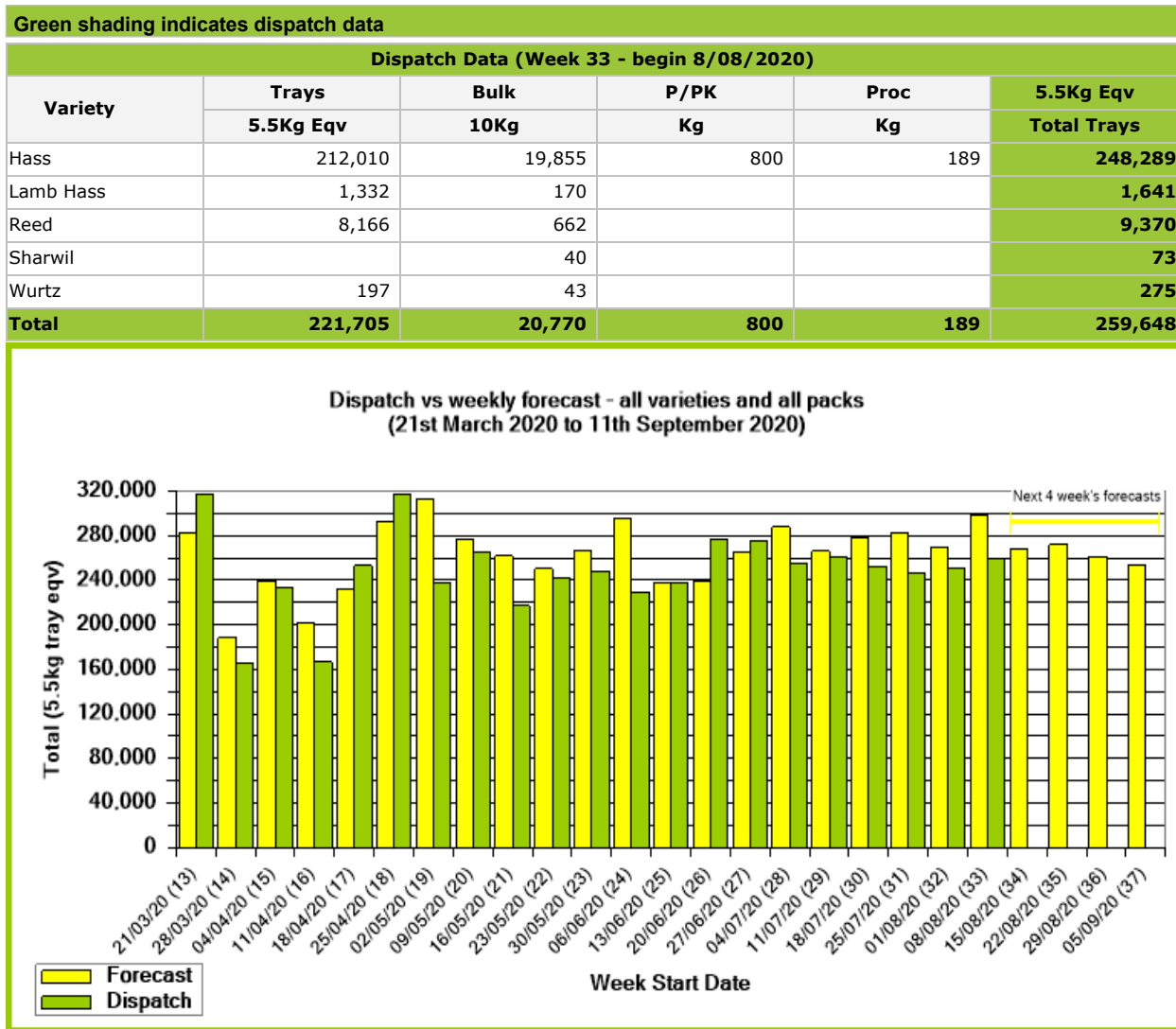
REPORT NOTES:

The **Weekly Infocado** report is compiled using data contributed by avocado packhouses, consolidators and wholesalers through the Infocado system. We estimate that 85% of industry is represented in this report. Please note that **Quarterly Infocado** reports incorporate an allowance (by region) for the data which is not contributed to the Infocado system. It is thus, not possible to extrapolate the figures from **Weekly Infocado** reports to those in **Quarterly Infocado** reports.

Initially, this report is provided to Infocado contributors only, then publicly released six weeks later. Until public release, the report is confidential.

This report has been funded by Hort Innovation, using the avocado research and development levy and contributions from the Australian Government. Hort Innovation is the grower-owned, not-for-profit research and development corporation for Australian horticulture.

Yellow shading indicates forecast data					
Forecast Data (Week 33 - 37)					
Variety	Trays - Total	Bulk	P/Pk	Proc	All - Total
	5.5Kg Eqv	10Kg	Kg	Kg	5.5Kg Eqv
Week 33 - begin 08/08/2020					
Hass	249,924	20,772	800	500	287,927
Reed	10,000				10,000
Wurtz	200	10			218
Week Total	260,124	20,782	800	500	298,145
Week 34 - begin 15/08/2020					
Hass	225,470	19,982	800	50	261,955
Lamb Hass	1,000	100			1,182
Reed	5,000				5,000
Wurtz	100	5			109
Week Total	231,570	20,087	800	50	268,246
Week 35 - begin 22/08/2020					
Hass	234,142	19,352	800		269,472
Lamb Hass	450	250			905
Reed	2,000				2,000
Week Total	236,592	19,602	800		272,377
Week 36 - begin 29/08/2020					
Hass	226,710	18,282	800		260,095
Lamb Hass	450	250			905
Week Total	227,160	18,532	800		261,000
Week 37 - begin 05/09/2020					
Hass	222,628	16,627	800		253,004
Lamb Hass	450	250			905
Week Total	223,078	16,877	800		253,908



New Zealand avocado exports: forecast v dispatch (5.5kg eqv trays) August 2020 - March 2021

NZ export to Australia	Aug 2020	Sep 2020	Oct 2020	Nov 2020	Dec 2020	Jan 2021	Feb 2021	Mar 2021	Total
Pre-Season Forecast [1] at 08/07/2020	55,598	360,863	475,835	609,236	791,423	553,460	368,322	15,811	3,230,548
Updated Season Forecast [1]									N/A - these forecasts are updated monthly
Dispatch volume Infocado [1]	15,353								15,353
Customs Data of NZ avocado exports [2]									

[1] Source: Infocado [2] Source: GTIS - Global Trade Atlas

red text = Data not yet complete for the month / season

Yellow cell = Forecast can still be updated

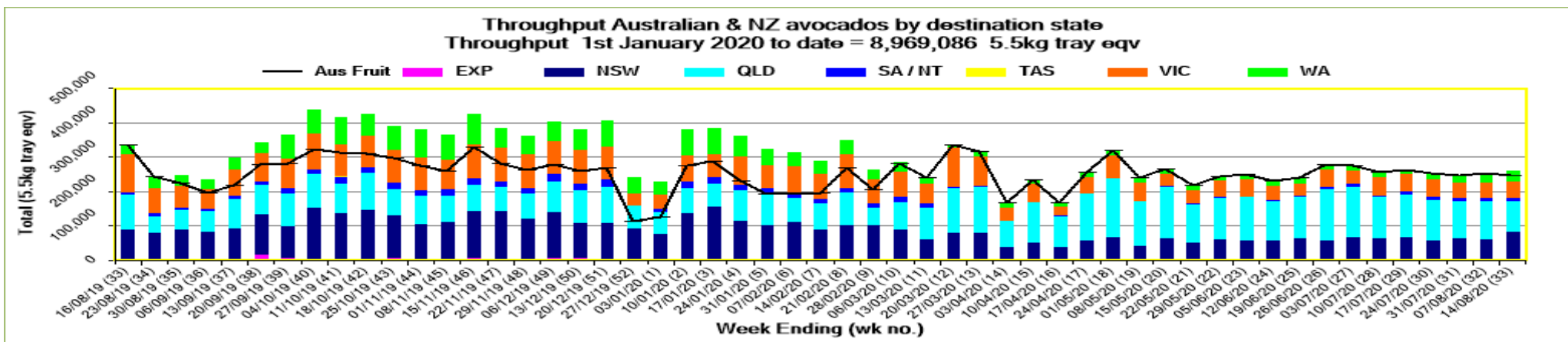
Grey cell = Forecast is set and can no longer be updated

Origin of dispatched avocados

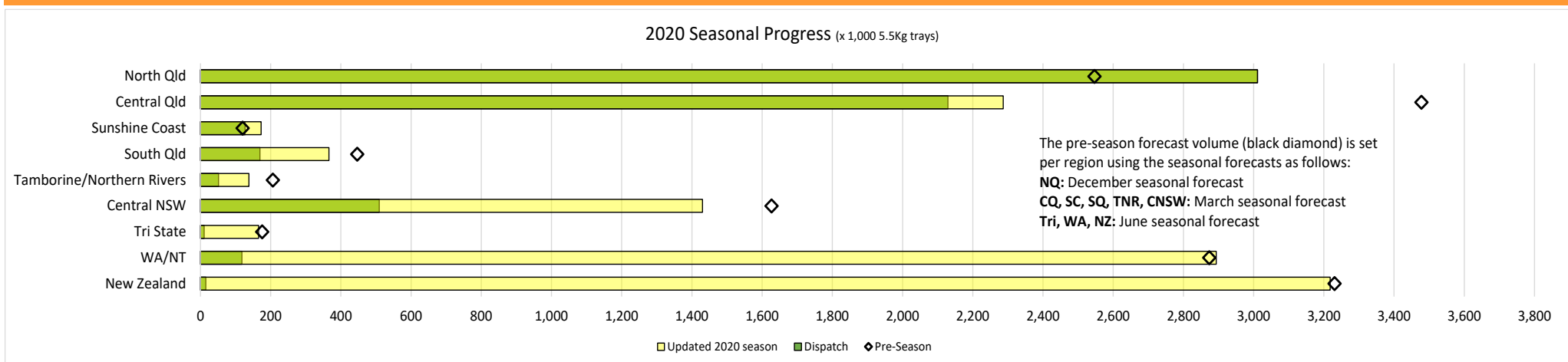
Industry Dispatches By Origin Region and Count Size : 8th August - 14th August 2020 (Wk 33)														
Origin Region	5.5kg	5.5kg	5.5kg	5.5kg	5.5kg	5.5kg	5.5kg	5.5kg	5.5kg	Trays - Total	Bulk	P/PK	Proc	5.5Kg Eqv Trays All
	<16	16	18	20	22	23	25	28	28+	5.5Kg Eqv	10Kg	Kg	Kg	Total
Central NSW		969	2,993	16,417		12,666	11,649	11,613	9,127	65,434	9,267			82,283
Central Qld	3,154	4,420	8,010	16,161		11,218	12,133	8,742	823	64,661	1,962		189	68,262
New Zealand		798	1,443	3,102		2,702	3,531	1,781	1,996	15,353				15,353
South Qld	207	310	3,024	4,018		3,241	5,368	3,563	1,786	21,517	3,981			28,755
Sunshine Coast	1	21	177	326	6	508	1,000	895	137	3,071	2,108			6,904
Tamborine/ Northern Rivers			115	305	90	574	671	632	470	2,857	829	800		4,509
Tri State		60	100	480	160		160	80	30	1,070				1,070
WA/NT	48	558	3,914	14,999		13,918	9,088	5,057	160	47,742	2,623			52,511
	3,410	7,136	19,776	55,808	256	44,827	43,600	32,363	14,529	221,705	20,770	800	189	259,648

Destination of dispatched avocados

Industry Dispatches By Destination State and Count Size : 8th August - 14th August 2020 (Wk 33)														
Dest. State	5.5kg	5.5kg	5.5kg	5.5kg	5.5kg	5.5kg	5.5kg	5.5kg	5.5kg	Trays -	Bulk	P/PK	Proc	5.5Kg Eqv
	<16	16	18	20	22	23	25	28	28+	5.5Kg Eqv	10Kg	Kg	Kg	Total
NSW	447	2,682	3,723	11,058	234	12,905	15,583	8,263	11,483	66,378	8,616	800		82,188
QLD	2,617	2,603	10,837	22,822	22	14,418	14,631	11,477	2,856	82,283	4,977		189	91,366
SA / NT		12	34	391		363	800	4,183	160	5,943	662			7,147
VIC	298	1,282	3,828	17,418		10,103	7,018	2,903	30	42,880	3,583			49,395
WA	48	558	1,354	4,119		7,038	5,568	5,537		24,222	2,932			29,553
Total	3,410	7,137	19,776	55,808	256	44,827	43,600	32,363	14,529	221,706	20,770	800	189	259,649



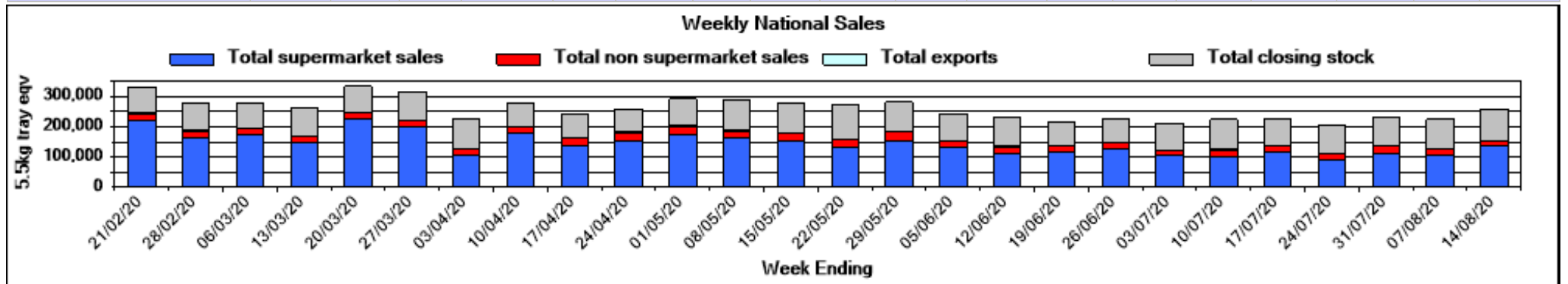
The **seasonal progress graph** below uses seasonal forecast data from direct contributors, it does not consider extrapolated figures that compensate for non-contributing packhouses, thus these figures may be lower than those shown on the seasonal (quarterly) report. The total of each bar in the graph below is a result of total monthly dispatches to date plus the remaining seasonal forecast which can be updated monthly.



Week 33 - 2020 Contributors - Packhouses			Week 33 - 2020 Contributors - Wholesalers	
NZ Avocado Ltd (New Zealand)	Jirel Holdings (Tamborine/Northern Rivers)	The Avocado Grove (WA/NT)	Costa Farms [Adelaide]	LaManna Premier Group [Sydney]
Balmoral Orchard (South Qld)	Merrinee Farm (Tamborine/Northern Rivers)	CNSW: Less than 3 packhouse contributors	Costa Farms [Melbourne]	Murray Bros [Brisbane]
Googa Farms (South Qld)	Summerland Farm (Tamborine/Northern Rivers)	CQ: Less than 3 packhouse contributors	Etherington [Perth]	N & A Fruit Distributors Pty Ltd [Sydney]
Green Nugget Orchards (South Qld)	T W Silver (Tamborine/Northern Rivers)	SC: Less than 3 packhouse contributors	Fresh Choice WA Pty Ltd [Perth]	Nutrano Produce Group [Brisbane]
Sunnyspot Packhouse Pty Ltd (South Qld)	Avowest (WA/NT)	Tristate: Less than 3 packhouse contributors	J.H.Leavy & Co [Brisbane]	Sinclair & Antico (Aust) Pty Ltd [Sydney]
Wodonga Park Fruit and Nuts (South Qld)	Delroy Orchards (WA/NT)		LaManna Premier Group [Adelaide]	United Fresh [Adelaide]
			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	36,921		2,819	39,740	20			20	36	9,116			9,116	1,657	38,615		2,819	41,434
Total non supermarket sales	23			23	10			10	18						41			41
Total exports	114			114											114			114
Total sales	37,058		2,819	39,877	30			30	55	9,116			9,116	1,657	38,770		2,819	41,589
Total Stock on Hand	540			540	692			692	1,258						1,798			1,798
QLD																		
Total supermarket sales	47,412		2,225	49,637	173			173	315						47,727		2,225	49,952
Total non supermarket sales	1,307			1,307	140			140	255						1,562			1,562
Total exports																		
Total sales	48,719		2,225	50,944	313			313	569						49,288		2,225	51,514
Total Stock on Hand	28,673			28,673	22			22	40						28,713			28,713
SA & TAS																		
Total supermarket sales	2,877			2,877	81			81	147						3,024			3,024
Total non supermarket sales	2,660			2,660	2,211			2,211	4,020						6,680			6,680
Total exports																		
Total sales	5,537			5,537	2,292			2,292	4,167						9,704			9,704
Total Stock on Hand	9,046			9,046	2,160			2,160	3,927						12,973			12,973
VIC																		
Total supermarket sales																		
Total non supermarket sales																		
Total exports																		
Total sales	24,611		2,077	26,688	286			286	520	4,493			4,493	817	25,948		2,077	28,025
Total Stock on Hand																		
WA																		
Total supermarket sales	15,295			15,295	1,273			1,273	2,315	192			192	35	17,644			17,644
Total non supermarket sales	4,877			4,877	848		130	978	1,778						6,419		236	6,655
Total exports																		
Total sales	20,172			20,172	2,121		130	2,251	4,093	192			192	35	24,063		236	24,300
Total Stock on Hand	21,152			21,152	1,540			1,540	2,800						23,952			23,952
Total																		
Total supermarket sales	123,625		7,121	130,746	1,547			1,547	2,813	13,801			13,801	2,509	128,947		7,121	136,068
Total non supermarket sales	12,358			12,358	3,495		130	3,625	6,591						18,713		236	18,949
Total exports	114			114											114			114
Total sales	136,097		7,121	143,218	5,042		130	5,172	9,404	13,801			13,801	2,509	147,774		7,358	155,131
Total Stock on Hand	88,150			88,150	7,257			7,257	13,195						101,345			101,345



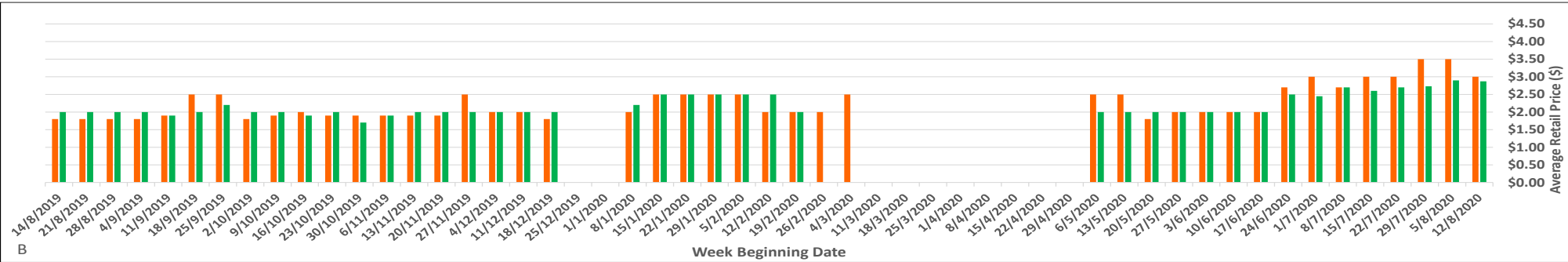
Avocados Australia online retail pricing report

Reporting period: week 33-2020 (Wed 12/08/20 – Tue 18/08/20)

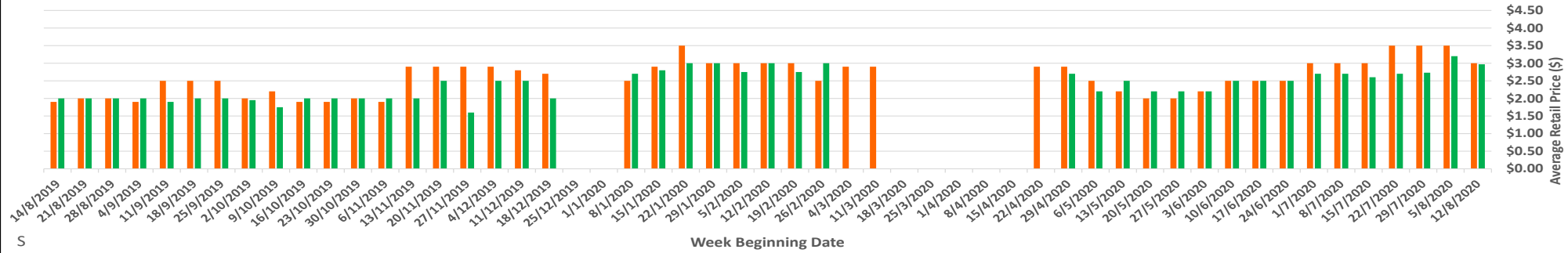
Hass avocado single fruit online retail pricing over 12 months: Coles and Woolworths

Key: Coles online Woolworths online

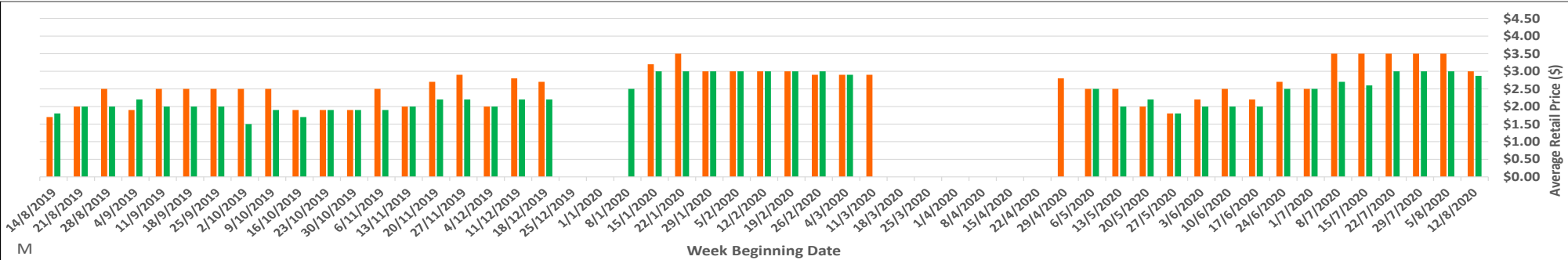
Brisbane



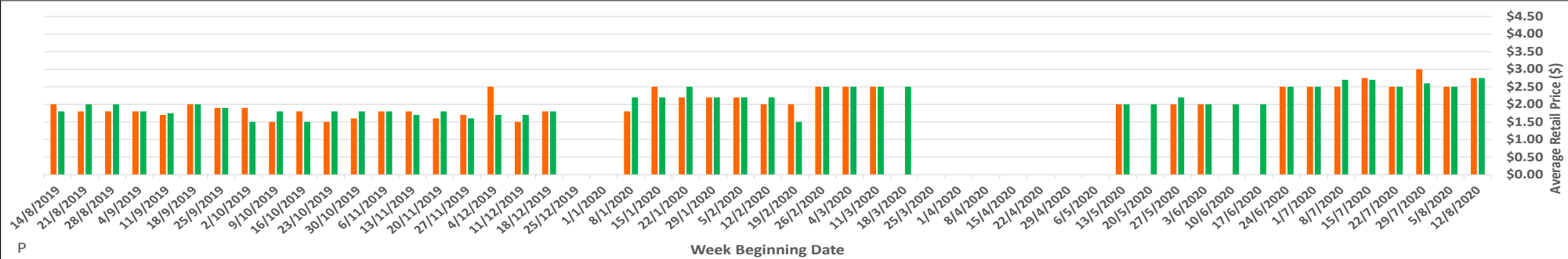
Sydney



Melbourne



Perth



Avocado online retail pricing for Coles and Woolworths

Reporting period: week 33-2020 (Wed 12/08/20 - Tue 18/08/20)

	Pack Type	Variety	Description	Brisbane	Sydney	Melbourne	Perth
Coles	Single fruit	Hass		\$3.00 ↓	\$3.00 ↓	\$3.00 ↓	\$2.75 ↑
	Single fruit	Reed		\$2.70	\$2.70	\$2.50	
	5 pack	not indicated		\$8.90	\$8.90 ↑	\$8.90 ↑	
	550g punnet	not indicated					
	1kg bag	not indicated	I'm Perfect	\$9.90	\$9.90		
	Organic Single fruit	not indicated					
Woolworths	Single fruit	Hass		\$2.87 ↓	\$2.97 ↓	\$2.87 ↓	\$2.75 ↑
	3 pack	Hass					
	5 pack	not indicated		\$8.50 ↑	\$8.50 ↑	\$8.50	\$8.50
	1kg Prepacked	not indicated	Odd Bunch	\$9.50 ↑	\$9.50 ↑	\$9.50 ↑	
	Organic Single fruit	not indicated					
	550g Organic mini fruit	not indicated			\$9.90	\$9.00	
	Bundle of 20	Hass					
Single fruit average by city (all varieties, excluding organic)				\$2.86 ↓	\$2.89 ↓	\$2.79 ↓	\$2.75 ↑
Single fruit average (all varieties, excluding organic)			\$2.83 ↓				

Catalogue offers on avocados:

Coles - Perth: Australian unspecified variety 5 pack \$6.90 each

Woolworths - National: No catalogue offers

Aldi - National: No catalogue offers

Foodworks - National: No catalogue offers

IGA - National: No catalogue offers

Key:

*	advertised as a weekly and/or catalogue special
↑ (green)	increase in price from previous week
(yellow)	same price as previous week
↓ (red)	decrease in price from previous week

Notes for graphs on previous page:

Online retail pricing for Hass & Shepard single fruit

08/07/20 (Week 28 onwards)

No Shepard prices - season has finished

01/07/20 (Week 27)

Coles single Shepard price not available in all states.
WW single Shepard price not available in all states.

24/06/20 (Week 26)

Coles single Shepard price not available in all states.
WW single Shepard price not available in all states.

17/06/20 (Week 25)

Coles single Shepard price not available in all states.
WW single Shepard price not available in all states.
WW single Hass price not available in Perth.

10/06/20 (Week 24)

Coles single Shepard price only available in Bris & Syd.
WW single Hass price not available in Perth
WW single Shepard price not available in all states.

03/06/20 (Week 23)

Coles single Shepard price not available in all states.
WW single Shepard price not available in all states.

27/05/20 (Week 22)

Coles single Shepard price not available in all states.
WW single Shepard price not available in all states.

20/05/20 (Week 21)

Coles single Shepard price available in Perth only.
WW single Shepard price not available in all states.

13/05/20 (Week 20)

Coles single Shepard price not available in all states.
WW single Shepard price not available in all states.

06/05/20 (Week 19)

Coles single Hass price not available in Perth.
Coles single Shepard price not available in Syd & Melb.
WW single Hass price not available in Perth.



Avocados Australia research the online shopping and catalogue prices for avocados on Wednesdays when major supermarkets usually publish their weekly prices. Advertised weekly, prices are valid for seven days, Wednesday to Tuesday.

**Hort
Innovation**
Strategic levy investment

**AVOCADO
FUND**

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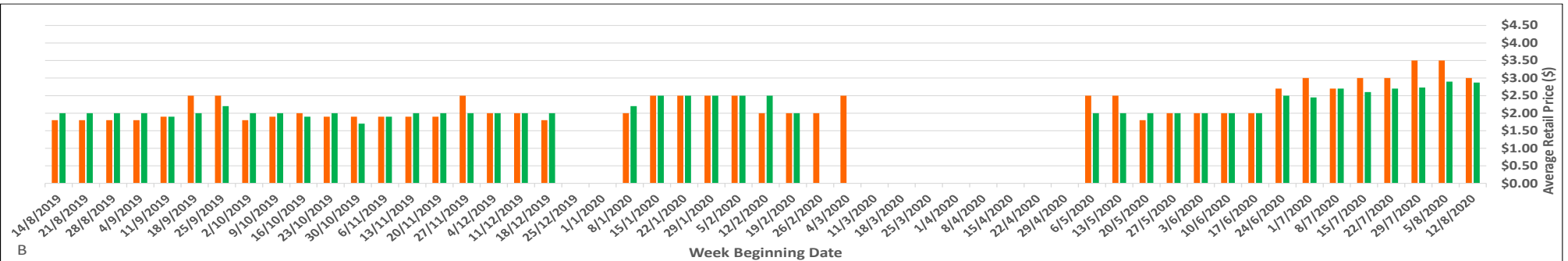
Appendix G: Avocados Australia retail pricing report

Reporting period: week 33-2020 (Wed 12/08/20 – Tue 18/08/20)

Hass avocado single fruit online retail pricing over 12 months: Coles and Woolworths

Key: ■ Coles online ■ Woolworths online

Brisbane



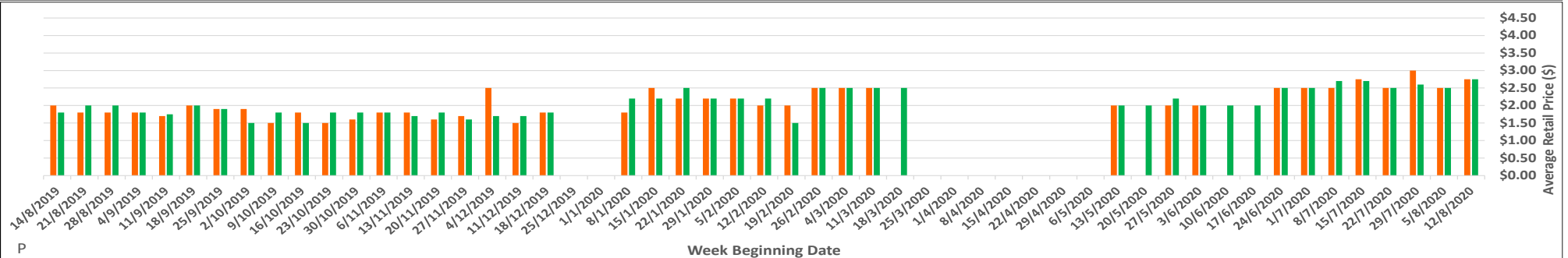
Sydney



Melbourne



Perth



Avocado online retail pricing for Coles and Woolworths

Reporting period: week 33-2020 (Wed 12/08/20 - Tue 18/08/20)

	Pack Type	Variety	Description	Brisbane	Sydney	Melbourne	Perth
Coles	Single fruit	Hass		\$3.00 ↓	\$3.00 ↓	\$3.00 ↓	\$2.75 ↑
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	5 pack	not indicated		\$8.90	\$8.90 ↑	\$8.90 ↑	
	550g punnet	not indicated					
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	Organic Single fruit	not indicated					
Woolworths	Single fruit	Hass		\$2.87 ↓	\$2.97 ↓	\$2.87 ↓	\$2.75 ↑
	3 pack	Hass					
	5 pack	not indicated		\$8.50 ↑	\$8.50 ↑	\$8.50	\$8.50
	1kg Prepacked	not indicated	Odd Bunch	\$9.50 ↑	\$9.50 ↑	\$9.50 ↑	
	Organic Single fruit	not indicated					
	550g Organic mini fruit	not indicated			\$9.90	\$9.00	
	Bundle of 20	Hass					
Single fruit average by city (all varieties, excluding organic)				\$2.86 ↓	\$2.89 ↓	\$2.79 ↓	\$2.75 ↑
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Catalogue offers on avocados:

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Key:

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Online retail pricing for Hass & Shepard single fruit

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03/06/20 (Week 23)

Coles single Shepard price not available in all states.
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27/05/20 (Week 22)

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20/05/20 (Week 21)

Coles single Shepard price available in Perth only.
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13/05/20 (Week 20)

Coles single Shepard price not available in all states.
WW single Shepard price not available in all states.

06/05/20 (Week 19)

Coles single Hass price not available in Perth.
Coles single Shepard price not available in Syd & Melb.
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Strategic levy investment

**AVOCADO
FUND**

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Appendix H: Quarterly Infocado report Crop Forecast - July 2020

Avocados Australia releases four quarterly Infocado crop forecast reports per year, in the months January, April, July and October.

**Hort
Innovation**
Strategic levy investment

**AVOCADO
FUND**

Australian Avocados Forecast Jul 19 to Jun 20 (5.5 kg eqv trays) - from quarterly report July 19

	Jul 19	Aug 19	Sep 19	Oct 19	Nov 19	Dec 19	Jan 20	Feb 20	Mar 20	Apr 20	May 20	Jun 20	12 Mth Total
Hass	1,272,141	1,162,957	676,574	1,322,920	1,319,947	1,085,647	1,154,748	686,408	320,233	440,616	1,393,216	1,370,748	12,206,155
Shepard	0	0	0	0	0	0	11,934	436,312	1,199,656	755,681	90,420	0	2,494,003
Other	47,992	68,993	23,811	9,445	20,015	36,638	66,473	38,255	34,329	3,313	33,591	29,150	412,005
Total	1,320,133	1,231,950	700,385	1,332,365	1,339,962	1,122,285	1,233,155	1,160,975	1,554,218	1,199,610	1,517,227	1,399,898	15,112,163

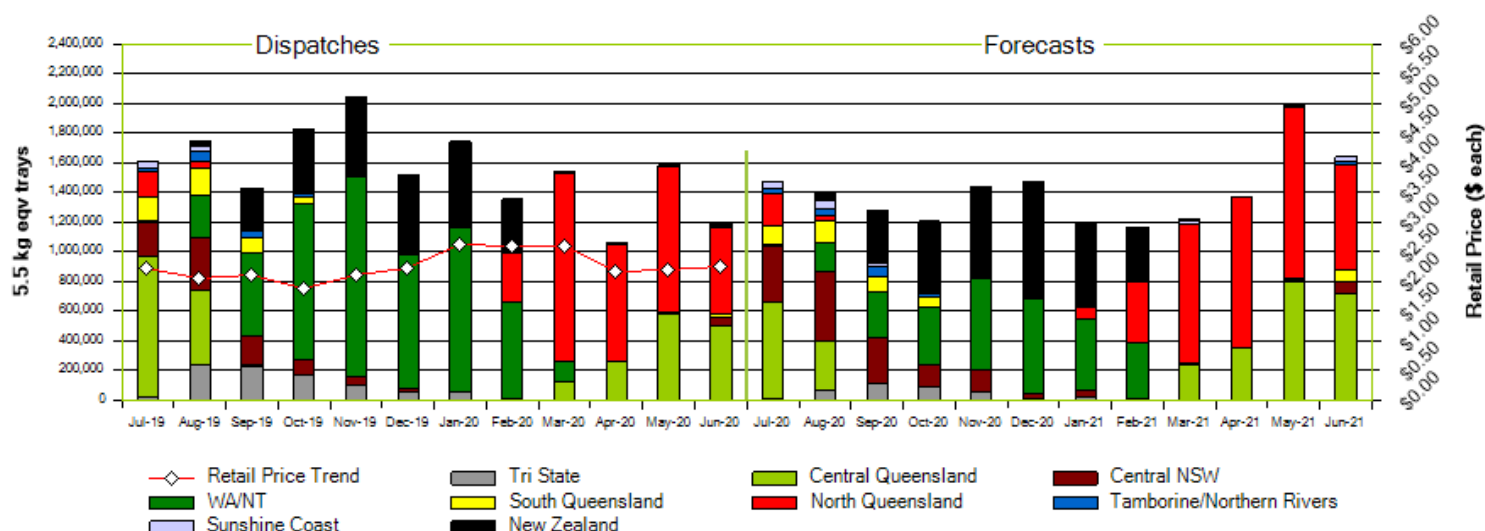
Australian Avocados Dispatches Jul 19 to Jun 20 (5.5 kg eqv trays)

	Jul 19	Aug 19	Sep 19	Oct 19	Nov 19	Dec 19	Jan 20	Feb 20	Mar 20	Apr 20	May 20	Jun 20	12 Mth Total
Hass	1,601,252	1,698,706	1,145,466	1,371,803	1,421,105	927,440	1,122,135	653,572	169,738	167,069	1,329,555	1,122,337	12,730,178
Shepard	0	0	0	0	0	0	0	329,425	1,313,504	874,563	165,367	21,732	2,704,591
Other	9,330	15,214	9,195	26,274	102,976	63,421	43,429	11,876	46,707	16,960	90,171	47,155	482,708
Total	1,610,582	1,713,920	1,154,661	1,398,077	1,524,081	990,861	1,165,564	994,873	1,529,949	1,058,592	1,585,093	1,191,224	15,917,477

Australian Avocados Forecast Jul 20 to Jun 21 (5.5 kg eqv trays)

	Jul 20	Aug 20	Sep 20	Oct 20	Nov 20	Dec 20	Jan 21	Feb 21	Mar 21	Apr 21	May 21	Jun 21	12 Mth Total
Hass	1,452,576	1,300,216	903,120	727,695	818,968	669,559	499,082	383,295	45,526	634,194	1,818,636	1,518,904	10,771,771
Shepard	0	0	0	0	0	0	80,213	413,222	1,157,003	707,315	0	0	2,357,753
Other	20,572	43,381	19,203	4,518	13,338	13,313	50,446	3,196	2,948	26,738	167,827	124,860	490,340
Total	1,473,148	1,343,597	922,323	732,213	832,306	682,872	629,741	799,713	1,205,477	1,368,247	1,986,463	1,643,764	13,619,864

Australian & New Zealand Avocados : Jul 19 to Jun 20 Dispatch / Jul 20 to Jun 21 Forecast



Jul 19 to Jun 20 Dispatches & Jul 20 to Jun 21 Avocado Production Estimates 5.5kg eqv trays

Region	Jul19 to Jun20	Jul20 to Jun21
North Queensland	4,164,028	4,546,237
Central Queensland	2,918,048	3,092,108
Sunshine Coast	141,456	203,640
Southern Queensland	532,466	552,178
Tamborine/Northern Rivers	194,674	210,411
Central NSW	1,045,058	1,635,849
Tri State	878,224	378,636
WA	6,043,523	3,000,805
New Zealand	2,731,629	3,230,548
Total	18,649,106	16,850,412

Comments

Australian avocado supply for April, May, & June (Q2) of 2020 was 7% lower than the forecast for the same period published back in April, with 3,834,909 5.5Kg trays dispatched compared with 4,116,735 5.5 kg trays forecast for the three months. When compared with the same period last year, supply decreased by 10%.

The revised forecast for the subsequent quarter (Q3) of July, August, & September is expected to be 4,155,529 5.5 Kg trays, a decrease of 13% compared with the same period last year. This decrease is largely due to Central QLD's recently updated forecast. Central QLD accounts for 24 % of total forecasted volume for the 3-month period.

Compared with last year, the total volume for the 12 months between July'20 and June'21 is expected to decrease by 2,297,613 trays (14%) for Australian fruit and increase by 498,919 trays (18%) for New Zealand fruit, for a combined expected decline of 1,798,694 trays (10%).

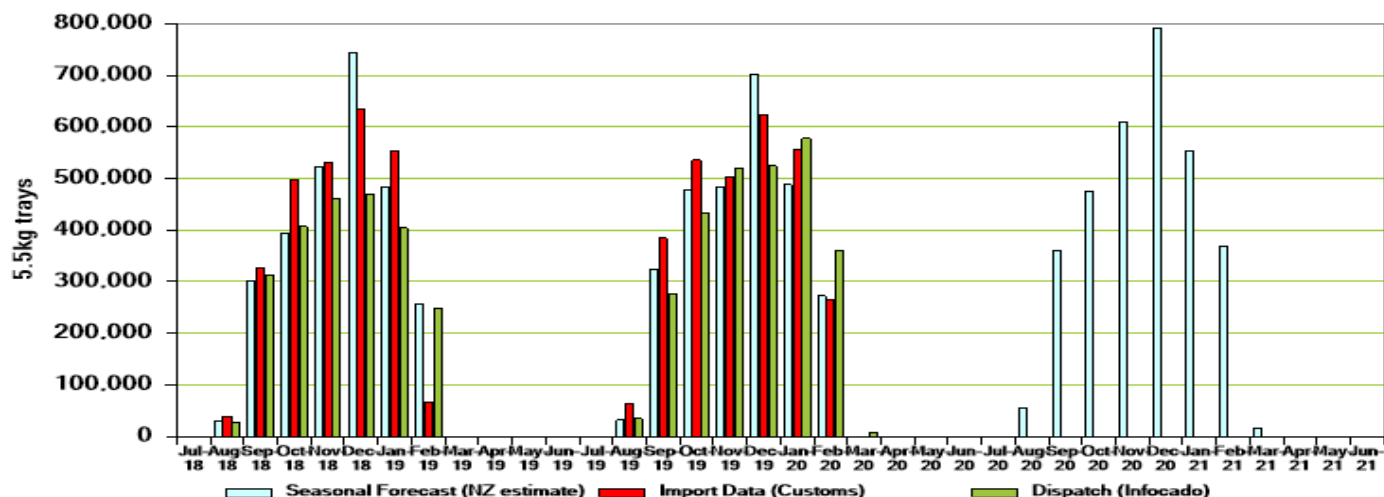
WA & Tri State account for the largest part of this reduction, as they have reported estimated decreases of 50%, and 57% respectively, in comparison with volumes dispatched in the past 12 months. Unfavourable weather conditions at flowering in southern WA resulted in a poor fruit set and further reductions were due to periods of hot conditions late last year and some strong winds earlier this year. Tri State had a poor flowering last year resulting in a lighter crop.

However, Central NSW is expecting to harvest 1,635,849 trays, 57% more than their previous season.

Report notes:

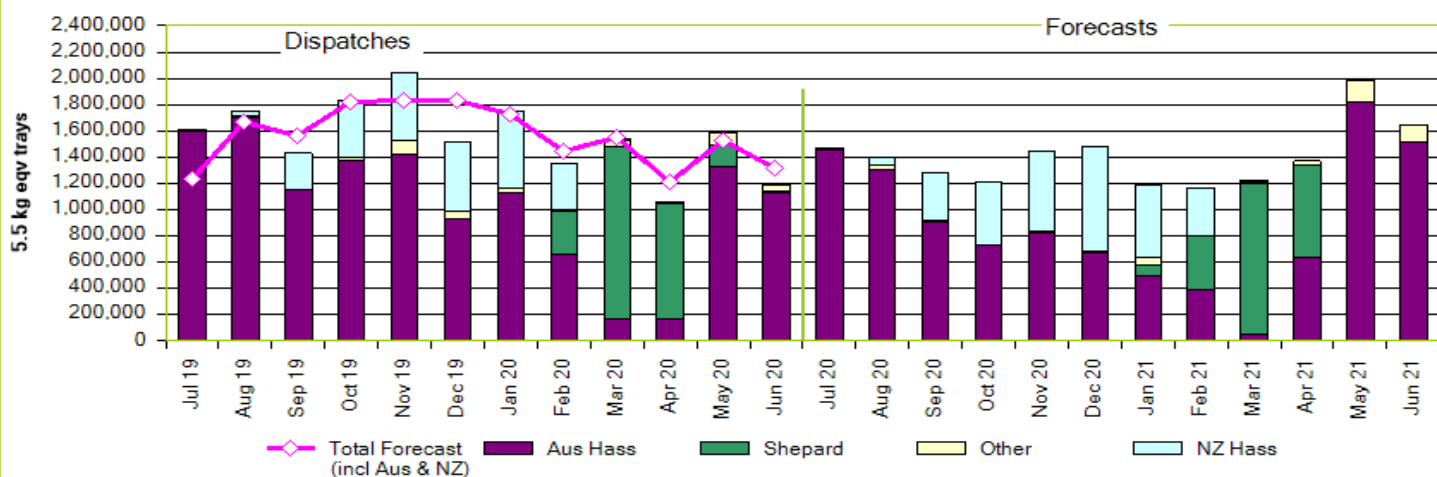
The Quarterly Infocado report is compiled using data collected through the Infocado system from an estimated 85+ % of industry packhouses, consolidators and wholesalers. This report incorporates an allowance (by region) for the data which is not contributed directly to the Infocado system. It is thus, not possible to extrapolate the figures from Weekly Infocado reports (which use unadjusted data) to those in Quarterly Infocado reports. This report is provided initially to Infocado contributors only. Until public release, the report is confidential

New Zealand Avocados - Dispatch and Forecast



Note: Source of import data is ABS and/or NZ Infoshare (NZ govt customs data) depending on availability.

Jul 19 to Jun 20 Dispatches & Jul 20 to Jun 21 Forecasts Avocados by Variety



Note: NZ dispatch figures in the above graph are from Infocado, the total forecast line (pink) indicates the most up to date forecasts.

Seasonal forecast contributors

Central NSW

Avoroma Pty Ltd
Costa Avocado/Coastal Avocados
Midcoast Avocados

Central Qld

Costa Avocado/SuperPak
Donovan Family Investment Trust
Lava Valley Produce
Natures Fruit Company
RG Pegg
Simpson Farms Pty Ltd
Sunny Bluff Produce Pty Ltd
Sunnyspot Packhouse Pty Ltd

New Zealand

NZ Avocado Ltd

North Qld

Aussie Orchards Growers & Packers
Avocados with Altitude
AvoNorth
Battistin Orchards Pty Ltd

Bellview Orchards Pty Ltd

Cobra Hill Orchards
Costa Avocado/Avocado Estates
Green Skin Avocados
Gunnado Farming Pty Ltd
Kureen Farming
Manbulloo Ltd
Natures Fruit Company
Paradise Orchards
Primo Produce Pty Ltd
Rock Ridge Farming Pty Ltd
Rocky Creek Orchards Pty Ltd
Tinaroo Falls Avocado Trust

South Qld

Balmoral Orchard
Googa Farms
Green Nugget Orchards
Natures Fruit Company
Sunnyspot Packhouse Pty Ltd
Touchwood Farming

Wodonga Park Fruit and Nuts

Sunshine Coast

Natures Fruit Company
NJ & JK Donovan
Sunnyspot Packhouse Pty Ltd
Tamborine/Northern Rivers
Aussie Orchards Growers & Packers
Jirel Holdings
Merrinee Farm
Natures Fruit Company
Summerland Farm
T W Silver
WJ Row

Tri State

Zhong Sheng Pty Ltd
Barham Avocados
Chinoola Orchards
Cutri Fruit
Golden Hill Packing Pty Ltd
J.G. Loffler

Kingston Avocado

KV & JM Lehmann
Mildura Fruit Company
Natures Fruit Company
Sunvale Produce Pty Ltd

WA/NT

Advance Packing & Marketing Services P/L
Applewood Orchard
Avonova
Avowest
Delroy Orchards
Golden Hill Avocados
Joe Bendotti & Co
Mariners Rest
Natures Fruit Company
R & S Bameess
The Avocado Grove
VP & EA Farrell
West Aussie Avos
Willow Creek

Infocado information is available at www.avocado.org.au/our-programs/supply-chain-data/infocado/ or contact us at infocado@avocado.org.au

This report has been funded by Hort Innovation, using the avocado research and development levy and contributions from the Australian Government. Hort Innovation is the grower-owned, not-for-profit research and development corporation for Australian horticulture.

Project monitoring & evaluation planning - AV16006 – Avocado industry and market data capture and analysis

1. Program logic

Figure 1 Logic model for project

Relevant outcomes from the <i>Avocado Strategic Investment Plan 2017-2021</i>	By 2021, increase domestic demand for Australian avocados by 20 percent	By 2021, over 90 percent of avocados received by consumers will meet or exceed their expectations of quality	By 2021, over 10 percent of production will be exported to markets where customers have a willingness and a capacity to pay a premium for Australian avocados	By 2021, productivity (marketable yield per hectare) has improved by 15 percent on average, without increased production costs per kilogram
End of project outcomes	Provide data which helps to support industry and business planning to enable a balance in supply and demand. This in turn will help to optimise returns for growers and deliver high quality avocados for consumers.			
Intermediate Outcomes	Data collection and delivery mechanisms are implemented which optimise data collection and reporting capacity, and which encourage a culture of data-driven decision making in the avocado industry			
Outputs	Avocado supply data capture representing at least 85% of market supply by volume	Avocado orchard planting data representing at least 80% of all plantings	Industry input to ST15008 and consideration of its final report outputs and outcomes	
Activities	Deliver supply chain data reports to a weekly and quarterly schedule	Collect seasonal forecast data and report with analysis and commentary to contributing producers	Undertake annual tree census and circulate report to contributing growers	Produce annual industry report showing production performance and outlook
	Communicate project information and results through the Avocado Communication Program		Develop data capture and reporting of global avocado production and trade	
Foundational Outputs	Enhanced data collection and analysis protocols		Data verification protocols	
Foundational Activities	Plan and manage project and budget		Form project team	

2. Project M&E scope

a) Audience

Table 1 M&E audience and their information needs

Primary	
Project team	Data collected through Infocado & OrchardInfo; Contributor lists Data collected from other sources (ABS, Infoshare, GTA, retail and market prices) for both reporting and verification purposes
Hort Innovation & Avocados Australia Board of Directors	Number and timing of distributed reports Extent of participation by industry data contributors Extent of industry acceptance of outputs Number and timing of communication and engagement efforts
Secondary	
Avocado growers, packers, wholesalers, marketers	Industry reports Project communications

b) Key evaluation questions

Table 2 Project key evaluation questions

Key evaluation questions	Relevant?	Project-specific questions
Effectiveness		
1. To what extent has the project achieved its expected outcomes?	yes	To what extent has the project improved knowledge, awareness and use of avocado supply chain and orchard data? To what extent has the project increased or maintained the % of industry represented in its reporting?
Relevance		
2. How relevant was the project to the needs of intended beneficiaries?	yes	To what extent has the project met the needs of avocado growers, packers, wholesalers and marketers?
Process appropriateness		
3. How well have intended beneficiaries been engaged in the project?	yes	To what extent were the target engagement levels achieved for of industry data contributors achieved? Have regular project updates been provided through linkage with the industry communication project?
4. To what extent were engagement processes appropriate to the target audience/s of the project?	yes	Did the project engage contributors successfully? How accessible were channels of feedback; training documentation; and/or workshops to contributors?
Efficiency		
5. What efforts did the project make to improve efficiency?	yes	What efforts did the project make to improve ease and accuracy of data collection?

c) M&E budget

As this project is a data and analysis program, a great deal of the monitoring and evaluation of the project is integral to project outcomes and activities, which is reflected in the budget. A mid-term review will be undertaken, funded directly by Hort Innovation.

3. Performance expectations, data collection and analysis

Table 3 Project monitoring plan

Logic level	What to monitor	Performance expectation and/or monitoring questions	Data collection – method and source	Timing of, and responsibility for, data collection
Foundational activities	Form project team	Data analyst is employed and admin assistant hours are confirmed	Record keeping	Initially (project lead)
	Plan and manage project and budget	Project planning docs completed and sent to Hort; milestone deadlines are met, budget is adhered to	Record keeping	At MS102, and quarterly (project lead and data analyst)
Project activities and outputs		Continued weekly, seasonal. quarterly and annual engagement, including reminders, to ensure continued or increased participation in the Infocado and OrchardInfo programs.	Record engagement feedback	Engagement activities are continual and ongoing (data analyst)
		Complete one visit to each major production region annually, with an additional visit where indicated to larger producing areas.	Keep records of information gathered from growers and data contributors in the visits	Regional visits: Intermittent (data analyst)
	Implement engagement plan Percentage of industry representation improves or remains at milestone KPIs	Regional visit schedules provide an opportunity for all local Infocado contributors to meet with project team; and at least one on-orchard visit per region where practical. Complete one visit per year to each of four central markets in major avocado trading cities Has industry stakeholder participation and engagement in the Infocado and OrchardInfo programs been maintained or increased above the milestone requirements? (Avocado supply data represents at least 85% of market & orchard planting data represents at least 80% of all plantings)	Verify participation rates via ABS and levy receipts	Verification: annual (data analyst)

	Delivery of industry reporting	Avocado industry reporting delivered on schedule to contributors and industry stakeholders as below: Infocado weekly reports distributed via email to contributors each working week, and published to the AAL website on a six-week delay. Infocado quarterly reports distributed via email to contributors each quarter, and published to the AAL website on a six-month delay. OrchardInfo Tree Census is distributed annually via email to contributors only. Annual industry statistics are published to the AAL website each year for the previous year.	Record keeping, and AAL website	Data analyst is responsible; monitoring to occur quarterly, or annually depending on timings at left
	Data verification	Infocado annual Australian market supply volumes are verified using levy receipts. Infocado seasonal forecasts are verified using Infocado supply volumes recorded for the season. OrchardInfo Tree Census is annually verified against ABS data. Medium-term strategic assessments of further verification activities are reported against the data verification schedule. Prescribed meetings are attended as per ST15008 schedule (e.g. R&D day and annual stakeholder meeting as determined by Hort Innovation) and participation requests were logged, considered and actioned as appropriate	Record keeping against the data verification schedule	Data analyst is responsible; monitoring to occur annually
	Industry input to ST15008		Record keeping, milestone reports for ST15008	Intermittent (data analyst)
	Project communication to stakeholders	Project information and results are communicated through the Avocado Communication Program and	Communication outputs can be	Data analyst is responsible; monitoring

		increase stakeholder awareness of project value and outcomes: A minimum of two project relate articles are published in each quarter in the avocado industry magazine <i>Talking Avocados</i>, at least one of these will be a report of industry data, the other will be ad hoc, or relating to project results or upcoming activities. Reminders and notification about project activities will be published in the fortnightly newsletter <i>Guacamole</i>, expected to be at least once a month.	tracked in <i>Guacamole</i> and <i>Talking Avocado</i> editions	to occur quarterly, or annually depending on timings at left
	Development of global avocado trade reporting	Global trade data analysis framework developed by Q2 2018. Global trade statistics available to AAL for analysis and reporting, with an AAL template for future recording and reporting of global trade data	Record keeping	Data analyst is responsible; monitoring to occur annually in years 2 and 3 of project
Intermediate outcomes	Data collection and delivery mechanisms are implemented which optimise data collection and reporting capacity, and which encourage a culture of data-driven decision making in the avocado industry Provide data which helps to support industry and business planning to enable a balance in supply and demand. This in turn will help to optimise returns for growers and deliver high quality avocados for consumers.	Efficient data capture and reporting processes are implemented Engagement and training is provided to contributors, who indicate satisfaction with data program via feedback through mid-term evaluation	Record keeping Feedback from mid-term project evaluation	After completion of mid-term milestones (project lead, data analyst, independent reviewers)
End-of-project outcomes		Industry participants indicate satisfaction with data program via feedback survey at end of project Analysis of supply and demand balance to monitor price stability over time.	Industry trend analysis; Results from feedback survey (data program participants)	At end of project (project lead, data analyst)

4. Evaluation (refer to Section B - Guide; part 5)

Table 4 Additional evaluation data requirements

KEQ	Data collection required	Source and method
	<i>No additional requirements from those listed at table 2</i>	

Table 5 Independent evaluation studies (as required by Hort Innovation)

Type of evaluation	When (start and finish)
Independent mid-term review	Mid project between MS 104 (29/10/2018) and MS105 (25/03/2019)

5. Reporting, learning and improvement

Table 6 Project progress reporting

Report Type	To whom	Timing
Six Milestone Reports	Hort Innovation	Six monthly
Final Report	Hort Innovation	End of project
Project related articles in industry newsletter and magazine. Articles will be a combination of reporting on research results and outputs, as well as industry updates on project activities	All industry stakeholders	Quarterly

Table 7 Project continuous improvement activities

Continuous improvement process	Details	Timing
Team meetings	Project team (and Avocados Australia team) meetings to discuss progress and contributor feedback	Fortnightly
Data contributor engagement	Meetings between project team members and industry representatives to gain feedback on project activities and refine methodology	Six times a year

Appendix J: Outputs table

Output	Issue	Content	Delivered on	Available at
Infocado weekly	Week 18 of 2017 until week 32 of 2020	Weekly dispatch & forecast figures	09/05/2017 until 11/08/2020	https://avocado.org.au/our-programs/supply-chain-data/
Infocado quarterly	2017 Q2 (July 2017)	Seasonal figures July 2016 - June 2018	28/07/2017	https://avocado.org.au/our-programs/supply-chain-data/
	2017 Q3 (October 2017)	Seasonal figures October 2016 - September 2018	3/10/2017	
	2017 Q4 (January 2018)	Seasonal figures January 2017 - December 2018	5/02/2018	
	2018 Q1 (April 2018)	Seasonal figures April 2017 - March 2019	30/04/2018 (reissued 25/07/2018)	
	2018 Q2 (July 2018)	Seasonal figures July 2017 - June 2019	25/07/2018	
	2018 Q3 (October 2018)	Seasonal figures October 2017 - September 2019	12/10/2018	
	2018 Q4 (January 2019)	Seasonal figures January 2018 - December 2019	24/01/2019	
	2019 Q1 (April 2019)	Seasonal figures April 2018 - March 2020	26/04/2019	
	2019 Q2 (July 2019)	Seasonal figures July 2018 - June 2020	22/07/2019	
	2019 Q3 (October 2019)	Seasonal figures October 2018 - September 2020	30/10/2019	
	2019 Q4 (January 2020)	Seasonal figures January 2019 - December 2020	28/01/2020	
	2020 Q1 (April 2020)	Seasonal figures April 2018 - March 2021	24/07/2020	
	2020 Q2 (July 2020)	Seasonal figures July 2019 - June 2021	23/07/2020	
OrchardInfo	2017	Plantings data up until August 1 2017	28/02/2018	Distributed to contributing growers and Hort Innovation
	2018	Plantings data up until August 1 2018	15/10/2018 (reissued 11/02/2019)	
	2019	Plantings data up until August 1 2019	8/11/2019	
Facts at a glance	2017	Figures for the financial year 2016-17	24/04/2018	https://avocado.org.au/news-publications/statistics/
	2018	Figures for the financial year 2017-18	18/10/2018	
	2019	Figures for the financial year 2018-19	10/10/2018	
Talking Avocados	2017 01 Autumn	<i>Infocado – Still going strong 10 Years on</i>	Autumn 2017	Distributed to members, all growers, other stakeholders and Hort Innovation
	2017 02 Winter	<i>2016 OrchardInfo annual report released</i> <i>Filling in the data gaps</i>	Winter 2017	
	2017 03 Spring	<i>Australian Avocado state of play: 2016/17</i> <i>Heading: OrchardInfo Tree Census opens on 15 October 2017</i>	Spring 2017	
	2017 04 Summer	<i>2017 OrchardInfo – initial observations</i> <i>Project update: Avocado Industry and Market Data Capture and Analysis (AV16006)</i>	Summer 2017	
	2018 01 Autumn	<i>Plantings Increase in NQ and WA</i>	Autumn 2018	
	2018 02 Winter	<i>Infocado and OrchardInfo: a successful case study in industry collaboration</i> <i>OrchardInfo Tree Census open till 8 September 2018</i>	Winter 2018	
	2018 03 Spring	<i>Consumer market value reaches nearly \$1 billion</i> <i>2018 OrchardInfo annual report released</i>	Spring 2018	
	2019 01 Autumn	<i>How reliable is our avocado data?</i> <i>Errata: October'18 edition of Orchardinfo</i> <i>Shepard 2018-19 season summary</i>	Autumn 2019	
	2019 02 Winter	<i>April '19 Quarterly Infocado Report: the distinction between directly and indirectly contributed data</i> <i>CNSW 2018-19 season summary</i>	Winter 2019	
	2019 03 Spring	<i>Facts at a Glance</i> <i>2019 OrchardInfo Tree Census: Prize draw winners</i>	Spring 2019	
	2020 01 Autumn	<i>Avocados Australia new Infocado data system</i> <i>2020 OrchardInfo Tree Census & Productivity Survey</i>	Autumn 2020	
	2020 02 Winter	<i>2019-20 Facts at a Glance</i> <i>Data System Refresh: a brief update</i>	Winter 2020	