



Avocado Fund

Annual Report 2018/19

Content



| | |
|-------------------------------------|----|
| The year at a glance | 2 |
| Welcome | 3 |
| Additional value in the year | 4 |
| Making investments in 2018/19 | 5 |
| R&D project list 2018/19 | 7 |
| R&D report | 9 |
| Minor use permits | 19 |
| Marketing report | 21 |
| Financial statement | 25 |

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The projects in this report have been funded by Hort Innovation using sources including the avocado levy, Australian Government contributions and, in some instances, co-contributions from a variety of sources.



Just some of the things your fund delivered in 2018/19:

- ✓ **Industry communication and extension programs**, delivering *Guacamole* and *Avo Alert* emails, *Talking Avocados* magazine, the Best Practice Resource online portal, forums and more – access and sign up direct at www.avocado.org.au
- ✓ **The avocado Harvest to Home dashboard** providing regular consumer behavioural data and insight reporting, at www.harvesttohome.net.au
- ✓ **Key insights into avocado quality** in store, with recommendations to control rots and prevent bruising (p11 and p13)
- ✓ **New diagnostics** to rapidly detect pathogens that are responsible for tree death early on in field establishment (p14)
- ✓ A highly visible and multi-pronged **domestic marketing campaign** (p21)
- ✓ The launch of new work to engage retailers in **export markets** (p11)
- ✓ **New final research reports and grower resources**, with 40+ now available from www.horticulture.com.au/avocado

2018/19 SNAPSHOT

\$2.69
MILLION

INVESTED
IN R&D

\$2.83
MILLION

INVESTED IN
MARKETING

42

ACTIVE R&D
INVESTMENTS

Welcome

Hort Innovation is the grower-owned, not-for-profit research and development corporation (RDC) for Australia's horticulture sector. It's our job to work with industry to invest the avocado R&D and marketing levies, together with Australian Government contributions, into key initiatives for growers.

The 2018/19 financial year was another great year of growing better, together, with strong investments, closer connections and critical collaborations being forged.

There was more than \$2.69 million invested into R&D through the Hort Innovation Avocado Fund across the year, to support the industry in being as productive and profitable as possible. This included the establishment of 17 new investments, including work allowing the avocado industry to join forces with other horticulture industries for maximum efficiency and impact across shared issues and opportunities.

Meanwhile in marketing, the Hort Innovation Avocado Fund saw some \$2.83 million invested in 2018/19 into a range of activities to raise the profile and consumption of Australian avocados.

Read on to learn more about all of this work, or take advantage of the Hort Innovation website at www.horticulture.com.au/avocado, where you can search and find information relating to investments, past and present, at any time. The new site and its Avocado Fund section were launched in 2018/19.

Finally, during the year there were many opportunities for Hort Innovation to connect with you, the growers. A big thank you in particular to everyone who came to our early-2019 regional roadshows to feed into the development of the new Hort Innovation Strategy 2019-2023 (read more at www.horticulture.com.au/strategy-2019-2023). Remember, you can reach out to us at any time to learn more about our work, to submit ideas for investments, or to simply have a chat about your industry. You'll find details of specific staff at www.horticulture.com.au/get-in-touch, or can otherwise email communications@horticulture.com.au or call our general line on 02 8295 2300.



Additional value in the year

During 2018/19, Hort Innovation was proud to deliver extra value to the avocado industry, outside of levy-funded initiatives within the Avocado Fund. Here's a quick look at just some examples.



The new Hort Innovation website, with dedicated Avocado Fund section

You can now visit www.horticulture.com.au/avocado to quickly search and find avocado investment information and updates, project resources, and growing tips and advice from Hort Innovation's R&D work. You can also download full final research reports direct from the site, access key contact information, share your ideas and feedback, and so much more.



The Australian Horticulture Statistics Handbook

Each year Hort Innovation delivers an *Australian Horticulture Statistics Handbook* packed with horticulture statistical information and analysis for use by specific industries and the wider sector. The handbook combines all available data on production, international trade, processing volumes and fresh market distribution for some 75 categories. The 2017/18 edition, released in early 2019, is available from www.horticulture.com.au/horticulture-statistics-handbook.



Hort Frontiers projects

With seven investment areas, Hort Innovation's Hort Frontiers strategic partnership initiative is about collaborative, cross-industry work to address longer-term, complex issues and opportunities identified as critical for the future of Australian horticulture. While the avocado levy has been co-invested into some Hort Frontiers projects, the bulk of funding continues to come from broad-reaching funding relationships secured by Hort Innovation, plus support from the Australian Government. Learn about all of the projects and what they're delivering for you at www.horticulture.com.au/hort-frontiers.



Grant funding

In 2018/19, Hort Innovation delivered \$6.7 million worth of investments involving grant funding across the horticulture sector. To do so, we applied for and secured a range of competitive grants on behalf of industry, including through the Australian Government's Rural R&D for Profit program, Improved Access to AgVet Chemicals initiative, and Agricultural Competitiveness White Paper. With projects across everything from biosecurity to pollination, there's plenty in there to directly and indirectly benefit the avocado industry.

Making investments in 2018/19

Hort Innovation is dedicated to making the right investments at the right time and in the right areas, in line with identified priorities for the industry.

Where the funding comes from

The avocado industry's grower-raised statutory R&D and marketing levies are collected by the Australian Government and entrusted to Hort Innovation as the RDC for Australian horticulture. It's then our responsibility to work with the industry to invest these levies – together with Australian Government contributions in the case of R&D – into strategic initiatives for the benefit of growers.

Additional funding streams can also come into play, such as co-investment dollars from sources including project partners, and grant funding that Hort Innovation secures on behalf of industry.

How decisions are made

Investment decisions in the Hort Innovation Avocado Fund are guided by the industry's Strategic Investment Plan (SIP). This document was developed through close consultation with growers and other industry stakeholders, and outlines specific investment priorities, strategies and themes. An at-a-glance version can be found at www.bit.ly/avocado-plan, or find the full version at www.horticulture.com.au/avocado.

The SIP is currently used like a 'roadmap' by the avocado Strategic Investment Advisory Panel (SIAP) – a skills-based panel made up of growers and other industry representatives that's tasked with providing advice to Hort Innovation on potential levy investments.

Turning ideas into investments

Great investments start with great ideas, and Hort Innovation encourages all growers and other industry participants to share their thoughts and suggestions for the work they want to see. Ideas can be submitted any time via Hort Innovation's investment idea form at www.bit.ly/concept-form.

Ideas that are selected for investment are worked into project proposals by Hort Innovation. These are then made public for potential delivery partners to submit responses. Current opportunities are always listed at www.horticulture.com.au/delivery-partners.

Responses are assessed, often with the assistance of industry, and the best delivery partner for the work is chosen. A contract is then issued and the work begins.

Keeping track of investments

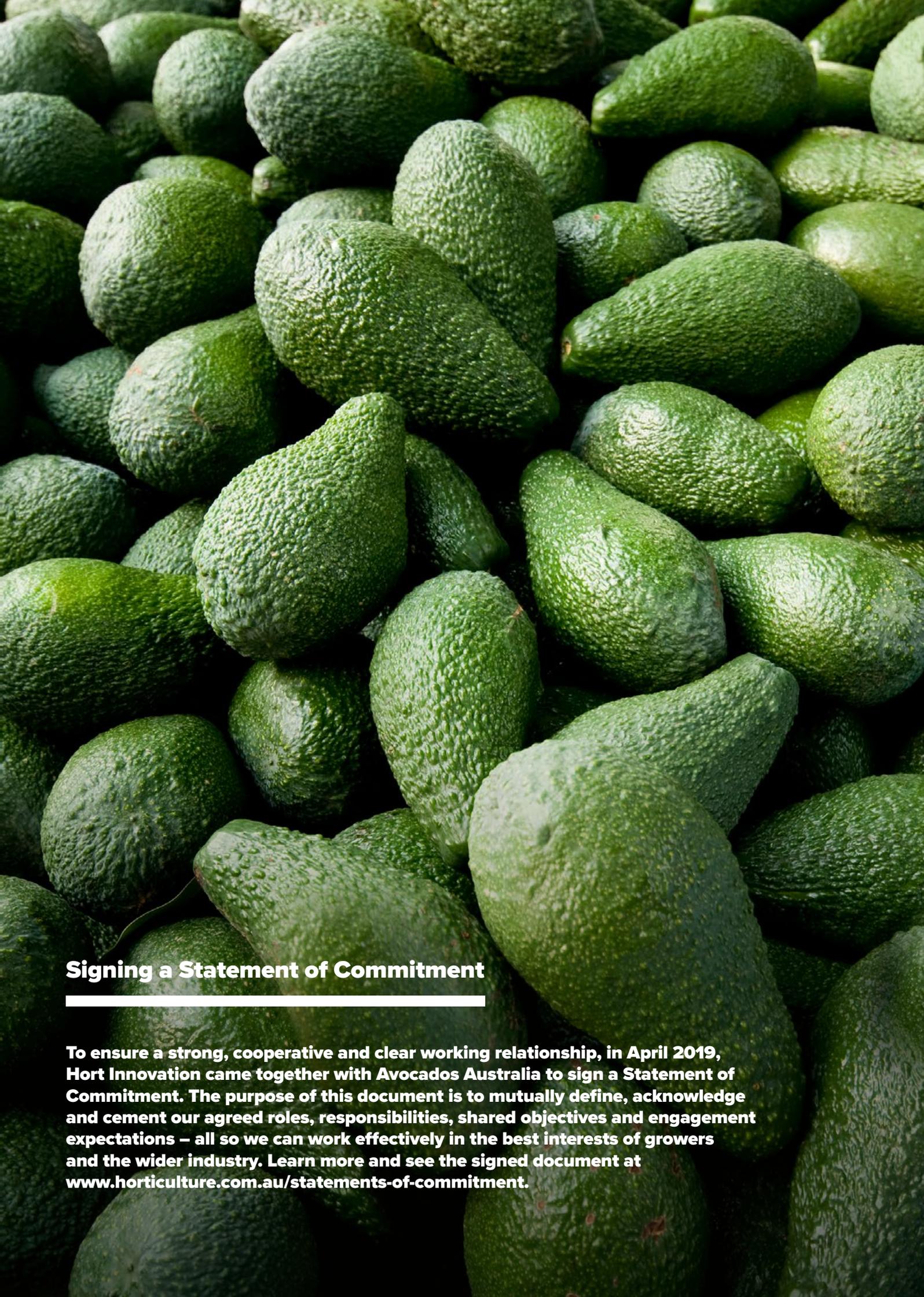
All investments in the Hort Innovation Avocado Fund are detailed on the 'Your investments' page at www.horticulture.com.au/avocado. We also send news and alerts to Hort Innovation members and contacts – if you haven't already, you can sign up for free at www.horticulture.com.au/sign-up.

Importantly, the industry's levy-funded extension and communication programs are tasked with providing growers with regular information on levy-related activity. See p10 and p11 for more.



New investment analysis

You can now clearly see how investments in the Hort Innovation Avocado Fund align to the industry's SIP, with new and interactive investment analysis information available from www.bit.ly/avocado-investment-analysis. The analysis currently shows the allocation of funding against each of the avocado SIP outcomes from the start of the SIP (2016/17) to the end of 2018/19, and gives an indication of the projects that are aligned to each outcome.



Signing a Statement of Commitment

To ensure a strong, cooperative and clear working relationship, in April 2019, Hort Innovation came together with Avocados Australia to sign a Statement of Commitment. The purpose of this document is to mutually define, acknowledge and cement our agreed roles, responsibilities, shared objectives and engagement expectations – all so we can work effectively in the best interests of growers and the wider industry. Learn more and see the signed document at www.horticulture.com.au/statements-of-commitment.

R&D project list 2018/19

| NEW INVESTMENTS IN 2018/19 | | ONGOING INVESTMENTS IN 2018/19 | |
|----------------------------|--|--------------------------------|--|
| AV17005 | Avocado industry development and extension | AV16002 | Avocado industry minor use program |
| AV18000 | Implementing best practice of avocado fruit management and handling practices from farm to ripening | AV16005 | Maximising yield and reducing seasonal variation |
| AV18002 | Implementing precision agriculture solutions in Australian avocado production systems | AV16006 | Avocado industry and market data capture and analysis |
| AV18003 | National avocado industry communications program | AV16007 | Improving avocado orchard productivity through disease management |
| AV18004 | Communicating the nutrition and health benefits of avocados* | AV16010 | Avocado industry biosecurity capacity building |
| AV18005 | Independent mid-term evaluation of AV16006* | AV17000 | Avocado export readiness and market access |
| AV18006 | Avocado retail sampling* | AV17006 | Avocado industry capacity building – Western Australia |
| AV18007 | Avocado sunblotch viroid survey | AM17010 | Taste Australia trade shows [^] |
| MT17006 | Xylella coordinator | MT14052 | Essential market access data packages |
| MT17006 | Improving preparedness of the Australian horticultural sector to the threat potentially posed by <i>Xylella fastidiosa</i> (a severe biosecurity risk) | MT16005 | Enhanced National Bee Pest Surveillance Program |
| MT18001 | Foodservice syndicated market reports | MT16010 | Horticultural trade data 2017-19 |
| MT18002 | Foodservice custom research reports* | MT17003 | Review of national biosecurity plans |
| MT18009 | Ex-post impact assessment – industry specific | MT17012 | Generation of data for permit pesticide applications in horticulture crops – Peracto |
| MT18011 | Ex-post impact assessment | MT17015 | Consumer behavioural and retail data for fresh produce |
| MT18017 | Taste Australia retail program | ST16006 | Generation of residue, efficacy and crop safety data for pesticide applications in horticulture crops 2017 |
| MT18019 | Development and implementation of protocols to enable importation of improved honey bee genetics to Australia | ST16008 | AgVet collaborative forum |
| PH16002 | Managing flies for crop pollination | ST17000 | Generation of data for pesticide applications in horticulture crops 2018 |

* These flagged projects both began and ended in 2018/19

[^] This investment is a parent program, under which further event-specific Taste Australia investments may sit

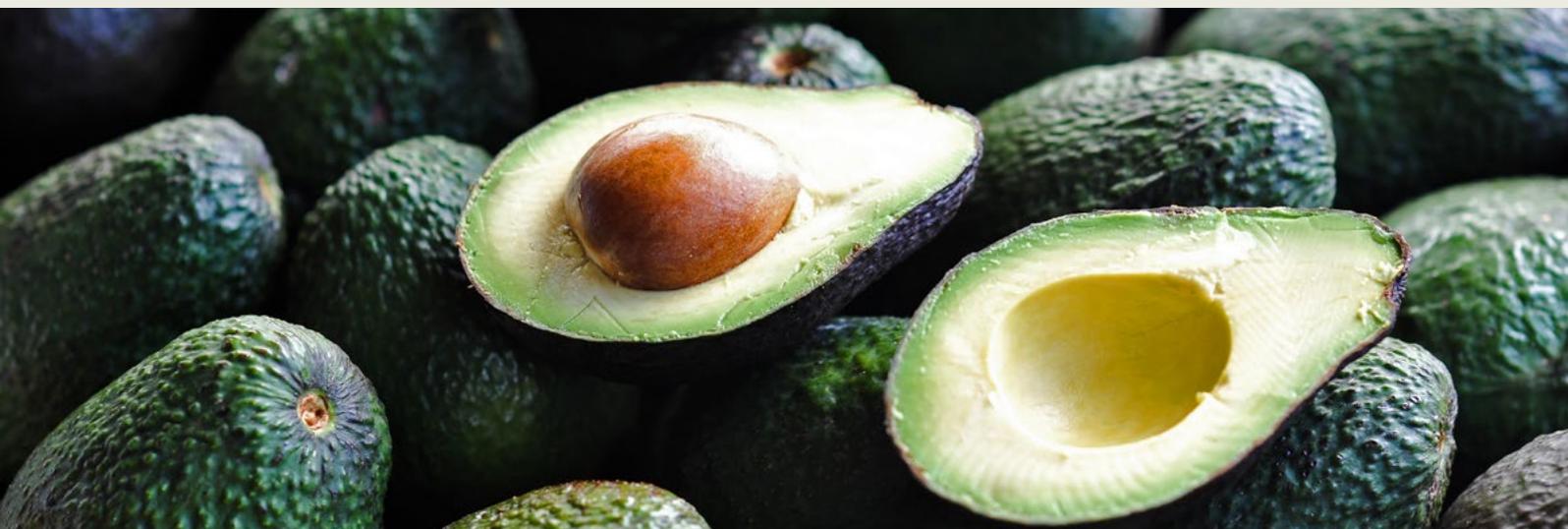
INVESTMENTS COMPLETED IN 2018/19

| | |
|---------|---|
| AV14012 | Investigating tree mortality during early field establishment |
| AV15002 | National avocado industry communications program |
| AV15005 | Avocado rootstock SHSR-04 commercialisation |
| AV15009 | Supply chain quality improvement – technologies and practices to reduce bruising |
| AV15012 | Pest status and management of six-spotted mite (<i>Eotetranychus sexmaculatus</i>) in WA avocado orchards |
| AV16013 | Implementation of recommendations from the Avocado Nursery Voluntary Accreditation Scheme review |
| AV17003 | Independent mid-term evaluation of the national avocado industry communications program |
| AV17004 | Potential impact of Chilean and Peruvian avocado imports for the Australian avocado industry |

During the 2018/19 financial year, all levy paying horticulture industries also contributed to a small selection of across-industry projects addressing issues that affect horticulture as a whole. Details of all investments that Hort Innovation manages can be found at www.horticulture.com.au.



But wait, there's more. To see what Hort Innovation delivered across the entire horticulture sector in 2018/19, download the full Hort Innovation Annual Report 2018/19 from www.horticulture.com.au/annual-report-portal.



R&D report

Take a closer look at some of the key investments in the Hort Innovation Avocado Fund during 2018/19. Any resources from these and other levy-funded projects – such as fact sheets, guides and more – are published on your grower page at www.horticulture.com.au/avocado as they become available.

Implementing precision agriculture solutions in Australian avocado production systems (AV18002)

NEW IN 2018/19

Key research provider: The University of New England

This investment is refining and working towards commercialising technologies and innovations to help the avocado industry improve production and efficiency. There is a particular focus on delivering solutions to help growers predict yield, look at yield variability and map factors such as disease, to in turn support on-farm decision making.

The work builds on the *Multi-scale monitoring tools for managing Australian tree crops* initiative, supported by Hort Innovation under the Australian Government's Rural R&D for Profit program.

Specific project activities include, but aren't limited to:

- » Keeping the Australian Tree Crop Rapid Response map (www.bit.ly/rapid-response-map) and its associated app (www.bit.ly/rapid-response-app) updated with information on commercial avocado orchards. This mapping tool was a key output of the multi-scale monitoring tools program. At a top level it's designed to assist with natural disaster recovery efforts and biosecurity work, but when combined with other innovations such as remote sensing and analytic technologies, it can be used to support on-farm decision making.
- » Developing a mobile app to provide avocado growers with up-to-date, high-resolution satellite imagery and other capabilities to support pre-harvest yield forecasts plus mapping of tree health and vigour, yield parameters including fruit size, and disease with a focus on Phytophthora.

Implementing best practice of avocado fruit management and handling practices from farm to ripening (AV18000)

NEW IN 2018/19

Key research provider: The Queensland Department of Agriculture and Fisheries

This project is helping the avocado industry achieve further improvements in fruit quality, by facilitating the adoption of better practices – from what happens on the farm through to dispatch from the ripener.

The project team are looking at the current level of quality-related best practice adoption in the industry and where improvements can be made, with a focus on those practices that are known to impact on fruit quality, as revealed by recent and earlier levy-funded R&D.

These insights are then being used to deliver knowledge and technical support to growers, packhouse operators, transporters and ripeners. This is occurring through workshops and training activities, as well as the development of two supply chain case studies. Here, the project team will be working with two chains to monitor current performance, implement improvements, and measure the benefits.

Avocado sunblotch viroid survey (AV18007)

NEW IN 2018/19

Key research provider: The University of Queensland

This investment is surveying for avocado sunblotch viroid in growing regions across Australia, to provide evidence to support declarations of regional or national freedom from the pathogen.

A declaration of 'pest freedom' – whether at a farm, region or national level – will facilitate export to countries that have their own domestic industry and may be concerned about the introduction of avocado sunblotch viroid, such as New Zealand.

Continued >>

Understanding any current distribution of the viroid will also allow a better assessment of the risk of importing avocados to Australia from countries where the pathogen is common.

Importantly, the work and protocols this investment is establishing – such as its use of databases, its surveillance approaches and its analytical techniques – will have broad applicability across a number of biosecurity threats relevant to the Australian avocado industry, now and into the future.

Xylella coordinator (MT17006)

NEW IN 2018/19

Key research provider: Wine Australia

Xylella fastidiosa is an exotic and potentially devastating bacteria that impedes the movement of rising sap in plants. While it hasn't yet appeared in Australia it has proven catastrophic overseas and, were it to enter the country, it could threaten more than 350 commercial, ornamental and native plant species.

This multi-industry and multi-sector investment supports the role and activities of a national coordinator as part of a three-year program to improve Australia's readiness for any potential incursion of the disease. This is a joint initiative between Hort Innovation and Wine Australia, through the Plant Biosecurity Research Initiative (PBRI). The PBRI is a collaboration between Australia's seven plant-focused Rural RDCs, Plant Health Australia, the Department of Agriculture and other contributors, to coordinate plant biosecurity RD&E funding and efforts. You can learn more at www.pbri.com.au.

Improving preparedness of the Australian horticultural sector to the threat potentially posed by Xylella fastidiosa (a severe biosecurity risk) (MT17006)

NEW IN 2018/19

Key research provider: The Victorian Department of Jobs, Precincts and Regions

Adding to the PBRI's *Xylella* work as described above, this multi-industry investment will review and allow Australia to adopt world's best practice methods for detecting and identifying strains of the *Xylella fastidiosa* bacteria, should it come to our shores. As well as developing state-of-the-art diagnostic tools, technologies and protocols to screen plant material entering the country and to support active surveillance programs, it will provide associated training to technical staff in diagnostic laboratories.

The project's work will ultimately allow for quick and effective detection of what is considered to be the number one plant biosecurity threat to Australia and New Zealand, to facilitate a swift and sure response.



Avocado industry development and extension (AV17005)

NEW IN 2018/19

Key research provider: The Queensland Department of Agriculture and Fisheries

This extension project is responsible for delivering a range of events and resources to help the avocado industry access, understand and implement best practice information. This includes information from current and previous Hort Innovation Avocado Fund R&D investments. The ultimate goal is to help improve orchard productivity, fruit quality and overall profitability.

Project activities include:

- » Delivery of face-to-face events, spanning regional forums, workshops for new growers and resellers, advanced management workshops, and study tours
- » Engagement with wholesalers to extend information on fruit handling best practice and other industry information
- » The supply of information to industry consultants, for further distribution to industry
- » Reviewing of key industry practices and scientific literature.

The project is also responsible for delivering hard copy and online resources for growers, including:

- » *Avo Alert* emails – monthly reminders sent to all growers, specific to each major production region, providing prompts about the orchard activities that should be considered in that particular month and the month ahead
- » An updated *Avocado Problem Solver Field Guide*
- » New and updated content for the industry's Best Practice Resource (BPR), as well as a new online forum for Q&As within the BPR
- » Instructional posters and videos
- » Information on phenological cycles for new varieties and production regions.

National avocado industry communications program (AV18003)

NEW IN 2018/19

Key research provider: Avocados Australia

Carrying on from the *National avocado industry communications program (AV15002)*, this investment ensures the Australian avocado industry remains up-to-date with the latest R&D and marketing, plus emerging information, trends and issues both in Australia and overseas. By providing a consistent flow of relevant information, it keeps growers and other industry stakeholders in a position to make informed business decisions and best-practices changes.

Like its predecessor, AV18003 produces and maintains a number of communication channels, including but not limited to:

- » The industry's quarterly *Talking Avocados* magazine, which is distributed in hard copy and uploaded to the Avocados Australia website, with editions available at www.bit.ly/talking-avocados
- » Fortnightly e-newsletter *Guacamole*, with editions available at www.bit.ly/guacamole-edm
- » The Avocados Australia website (www.avocado.org.au), including maintenance of the industry's Best Practice Resource (BPR), the online portal that includes training programs and other industry management content (www.avocado.org.au/best-practice-resource)
- » Industry social media channels
- » Video content highlighting levy-funded R&D and how it's being used on farm
- » Media releases and other industry articles.

Taste Australia retail program (MT18017)

NEW IN 2018/19

Key research provider: Produce Marketing Australia (PMA)

This multi-industry investment is targeting key international retailers with training and educational resources about selecting, storing, handling and displaying Australian fresh produce in store, including avocados.

This work is an R&D component of Hort Innovation's Taste Australia retailer engagement efforts in international markets. Other R&D work under the Taste Australia banner includes *Taste Australia trade shows (AM17010)* – a parent program that supports attendance at relevant international trade shows, to further develop export opportunities in key Asian and Middle Eastern markets.

Taste Australia is the whole-of-horticulture brand used to increase the profile, sales and consumption of premium Australian horticulture products in export markets, and is a central component of Hort Innovation's Hort Frontiers Asian Markets Fund. Learn more at www.horticulture.com.au/hort-frontiers.

Development and implementation of protocols to enable importation of improved honey bee genetics to Australia (MT18019)

NEW IN 2018/19

Key research provider: CSIRO

This investment is laying the groundwork to allow the first importation of desirable honey bee germplasm into Australia, with a focus on sourcing genetic material from bees with a tolerance to Varroa mite and its associated viruses.

Import of and access to this material for breeding purposes will allow both the honey bee and horticulture industries to prepare for the threat of Varroa, by pre-emptively establishing Varroa-tolerant genetics in Australia's honey bee population. See www.bit.ly/mt18019 for more.

Managing flies for crop pollination (PH16002)

NEW IN 2018/19

HORT FRONTIERS

Key research provider: Western Australian Agriculture Authority

This investment is looking into the potential of using flies as alternative crop pollinators, including looking at the effectiveness of specific species in pollinating avocado and other crops. The work is part of the Hort Frontiers Pollination Fund, and includes funding from a range of sources, including through the Hort Innovation Avocado Fund.

Potential benefits of flies as alternate pollinators to bees include:

- » Different fly species mean that flies can be present all year round
- » Flies have high sugar demand and naturally visit flowers for nectar
- » Flies are hairy and so can pick up and move pollen
- » Flies can be readily mass-reared with reasonable minimal inputs and do not sting workers.

Avocado retail sampling (AV18006)

NEW IN 2018/19 & NOW COMPLETE

Key research provider: Applied Horticultural Research

Improving avocado fruit quality is essential in order to continue to grow demand for Australian avocados, and so gaining a better understanding of where quality issues are occurring is important for the industry. This investment was tasked with investigating reports of declined fruit quality in late 2018. The project team assessed the quality of avocados available in Australian supermarkets over that summer, to help quantify the extent of the quality issues and identify the source of affected fruit.

Continued >>



Fruit was sampled at retail stores in Brisbane and Sydney in late December 2018 and in early January 2019. In total, 31 samples (representing 310 avocados) of New Zealand fruit from five suppliers/exporters and 32 samples (representing 320 avocados) of Australian fruit from six suppliers/packhouses were assessed for internal quality. Overall, 22 per cent of the New Zealand fruit had significant damage (mainly rots), compared to 10 per cent of Australian fruit (mainly bruising).

More specifically:

- » 20 per cent of New Zealand fruit had significant flesh rots (greater than 10 per cent of flesh volume), compared to 1.6 per cent of the Australian fruit sampled.
- » 54 per cent of the New Zealand fruit had some level of body rots, 36 per cent had some stem-end rot, and 17 per cent also had vascular browning. This compared to 10 per cent of Australian fruit having body rots, four per cent having stem-end rots, and six per cent having vascular browning.
- » Most of the damage in Australian fruit was due to bruising, with nearly eight per cent of the Australian fruit being bruised (greater than 10 per cent of flesh volume), compared to only one per cent of the New Zealand fruit.
- » Regarding fruit age, New Zealand fruit averaged 25 days from harvest to stage five ripe, compared to 22 days for Australian fruit. Four New Zealand and one Australian sample reached or exceeded 30 days from harvest. However, fruit age did not correlate well with the level of fruit rots, suggesting other factors were contributing to the rot problem.

The project team concluded that above-average rainfall and flooding events earlier in the New Zealand growing season were likely to be the underlying cause of the high incidence of rots in the New Zealand fruit. Delays during transport and ripening, due to quarantine intervals, may have also contributed.

They noted, however, that the severity of rots can be influenced by many other pre- and postharvest practices, and encouraged all growers and packers to follow postharvest best practice to try and minimise the issue. This includes:

- » Applying postharvest fungicides within 24 hours of harvest
- » Using sanitisers in bin dumps
- » Removing field heat as soon as possible after harvest
- » Keeping fruit at the recommended storage temperature (5°C) through the cold chain
- » Not exceeding maximum recommended storage times before ripening
- » Ripening fruit at 16 to 18°C, and maintaining air circulation through trays
- » Minimising the interval between ripening and retail.

The project team also noted that mature, late season fruit tends to be more susceptible to rots than earlier season fruit. If possible, they said, fruit which has a higher disease load should be harvested and ripened first. Fruit grown in the drier climate of south west Western Australia is likely to have a lower disease load than that from New Zealand, so could potentially be allowed to mature longer.

Full details can be found in the project's final research report, which can be downloaded from www.bit.ly/av18006.

Supply chain quality improvement – technologies and practices to reduce bruising (AV15009)

NOW COMPLETE

Key research provider: The Queensland Department of Agriculture and Fisheries

Avocado fruit quality in shops can be improved by identifying and adopting measures that lessen or, ideally, eliminate flesh bruising. This project, which ran from 2016 to 2018, investigated characteristics that can make fruit more or less likely to be damaged during handling. In addition, researchers tested tools that shoppers and retail staff could use to determine fruit ripeness without squeezing.

A key finding from the study was that fruit was found to be more resistant to bruising when it was cooled rapidly after harvest. Links were also found between greater bruising susceptibility and low dry matter content, advancing ripeness, post-harvest temperatures above 5°C, and post-harvest storage durations of one week or more.

Pre-harvest factors leading to differences in fruit robustness were evidently important contributors to both bruise susceptibility and body rot upon ripening. For example, one of the studies found that a high ratio of nitrogen to calcium in the fruit was linked to more body rots, although not bruise susceptibility. More work is needed to tease out the relationship between nutrition and poor quality at retail.

The project also confirmed that shoppers are major contributors to avocado bruising as they apply compression forces typically ranging from three to 30 Newtons (N) to firm-ripe avocados when assessing ripeness. A 'slight' thumb compression of

10N applied to a firm-ripe fruit is enough to cause bruising, expressed within 48 hours at 20°C. It's here where the use of in-store decision-aid technologies can come into play.

The team reviewed 16 tools for assessing avocado ripeness, with four then evaluated for reliability, ease of operation and maintenance. All were able to discriminate between different stages of ripeness for both Hass and Shepard fruit. The devices included a handheld FruitFirm meter, a bench top Sinclair IQ™ Firmness Tester, a Digital Firmness Meter, and a prototype decision-aid tool dubbed the 'Readycado' developed under earlier project *Understanding and managing avocado flesh bruising* (AV12009), which you can read more about at www.bit.ly/av12009. In-store consumer testing suggested that the Readycado device could be well-received by shoppers.

Grower recommendations from the project:

- » Cool fruit to 5-12°C and pack within 24 hours after harvest
- » Avoid impact damage during harvest and packing
- » Hass avocado fruit should be harvested at more than 23 per cent dry matter, which is the current industry recommendation
- » Fruit should pass through the supply chain as quickly as possible
- » Drop heights should be kept below 10cm for fruit at the rubbery to softening ripeness stages
- » Fruit should be handled carefully without dropping or excessive squeezing from firm-ripe stage onwards
- » Ripened Hass avocado fruit should be maintained at 5°C.

Continued >>



Further, regular monitoring of avocado fruit quality at retail should take place to gauge effectiveness of bruise-reduction measures.

Full details can be found in the project's final research report, which can be downloaded from www.bit.ly/av15009. Project findings have also been incorporated into the industry's Best Practice Resource (BPR), which includes links to presentations, fact sheets and articles produced by the project team – see www.avocado.org.au/best-practice-resource.

Communicating the nutrition and health benefits of avocados (AV18004)

NEW IN 2018/19 & NOW COMPLETE

Key research provider: Professional Nutrition Services

Running from late 2018 to early 2019, this investment brought together research relating to the key nutritional properties and health benefits of avocados. It substantiated the health and nutrition claims that the avocado industry is able to make for various uses, including consumer education and Hort Innovation Avocado Fund marketing activities. The information will also be able to be drawn upon to educate health professionals – arming them with accurate messaging around avocados when discussing health and nutrition claims with their clients, patients and the general community.

Full details of all the claims that can be made about avocados – and, importantly, how and why they can be made – are detailed in the full final research report, available via the Hort Innovation website at www.bit.ly/av18004. This information, and all of the related disclaimers, guidelines and legal information, is intended to be read together.

In brief, the permitted nutrient content claims range from “Avocado contains healthy monounsaturated fats” and “Avocados are naturally low in sugars, with less than 1g per serve”, to “Avocado is naturally low in sodium, with just 2mg per serve” and “Avocado contains colourful carotenoids – beta carotene, cryptoxanthin, lutein and zeaxanthin”.

The final research report also outlines all of the general health claims that can be made about avocados, including messaging such as “Avocado looks after your skin from within thanks to its healthy fats, niacin and vitamins C and E (as part of a healthy, varied diet)”, “Avocado is an energy booster/fatigue fighter (as part of a healthy, varied diet). It contains energy-boosting nutrients niacin, pantothenic acid, folate and vitamin C”, and “Avocado is a nutrient-booster – the healthy fats in avocado help absorb essential nutrients such as fat-soluble nutrients such as vitamin E and antioxidants”.

Lifestyle claims, such as avocados being paleo friendly, a nutrient-dense superfood and more are also detailed in the final research report, as are specific claims relating to babies and toddlers.

Foodservice custom research reports (MT18002)

NEW IN 2018/19 & NOW COMPLETE

Key research provider: Food Industry Foresight

This multi-industry market research investment delivered key insights around the foodservice industry for the avocado, mushroom and onion industries. It produced information such as the total foodservice market sizes for the products, along with details on trends and opportunities. The information will be available for use in any future levy-funded projects and programs targeting the foodservice sector, from commercial businesses and staff to related training institutes and their students.

Potential impact of Chilean and Peruvian avocado imports for the Australian avocado industry (AV17004)

NOW COMPLETE

Key research provider: Coriolis Australia

Beginning and ending in mid-2018, this short investment was tasked with delivering a fact-based assessment of the potential impact on the Australian avocado industry, should market access be granted for Chilean and Peruvian avocados into the country. The findings are designed to help Hort Innovation and Avocados Australia understand the potential effects of this access and to provide the insights needed to start planning strategically for the future.

Investigating tree mortality during early field establishment (AV14012)

NOW COMPLETE

Key research provider: University of Queensland

Black root rot, a severe disease of young avocado trees, is caused by soilborne fungal pathogens in the Nectriaceae family, with symptoms including black rotten roots, tree stunting and leaf wilt, often resulting in tree death within a year after transplanting into the orchard.

This project set out to investigate the species of fungi associated with black root rot and their relative ability to cause disease, with a view to developing a diagnostic test and some insights on how this disease may be managed.

The researchers began by collecting more than 120 fungal isolates from roots of avocado trees, and a further 30 from other trees including peanuts, blueberry, papaya and custard apple.

Six main types of fungi were found and further analysis established some species names as well. The varieties were assessed for the ability to cause disease.

Continued >>

The main findings were:

- » One species, *Calonectria illicicola*, was the most aggressive of the fungi tested
- » In addition to avocado, it was found to affect peanut, papaya and custard apple
- » Four species of *Dactylonectria* caused disease in avocado seedlings, although to a lesser extent.

The research team developed a diagnostic test that can detect the two damaging species in tree roots in around half an hour. It will be an invaluable tool for the avocado industry, especially for the Avocado Nursery Voluntary Accreditation Scheme (ANVAS) clean planting scheme.

Options for managing black root rot were also explored and one fungicide identified as promising for use in conjunction with careful post-planting care.

The outcomes from the study pave the way for future plantings of avocados to be free of black root rot. Full details can be found in the project's final research report, which can be downloaded from www.bit.ly/av14012.

Pest status and management of six-spotted mite (*Eotetranychus sexmaculatus*) in WA avocado orchards (AV15012)

NOW COMPLETE

Key research provider: Department of Agriculture and Food, Western Australia

Avocado orchards in south western Australia are vulnerable to attack by the six-spotted mite (SSM), *Eotetranychus sexmaculatus*. If left untreated, trees in infested orchards can be defoliated, resulting in sunburnt, unmarketable fruit and reduced tree vigour. Miticides are available for use on the pest, but there is potential for resistance to develop.

This project, which ran from 2016 to early 2019, sought to assist growers in monitoring mite populations and implementing appropriate management techniques. It also investigated the role that predatory mites play during production.

Monitoring orchards for SSM is critical to avoid large populations building up. The team developed and distributed identification kits at talks about SSM to give growers the skills needed to identify the pest on avocado leaves (with many growers having traditionally relied on consultants for population monitoring). You can still download the guide at www.bit.ly/ssm-guide.

The project team found the key time for the prevention of spring outbreaks of SSM is in late summer/early autumn or if no action taken, to monitor through winter.

Meanwhile, four species of predatory mites were assessed through releases in avocado orchards. Only one, *Metaseiulus (Typhlodromus) occidentalis*, reduced SSM in field studies.

Field monitoring, however, revealed other candidates for biocontrol. Large populations of the native *Euseius elinae* were found in orchards, even where potential predators had been released, as well as a previously unknown predator, *Amblydromalus lailae*. The researchers reported it likely that the two mite species work together to suppress SSM. More work will be required to quantify the role of *A. lailae*, either alone or in combination with *E. elinae*. And while the project considerably advanced the understanding of predatory mites as a control for SSM, more work is needed before predatory mites species, either released or present naturally, can be relied upon as a stand-alone method of protecting avocado trees from the pest.

Full details can be found in the project's final research report, which can be downloaded from www.bit.ly/av15012.

Implementation of recommendations from the Avocado Nursery Voluntary Accreditation Scheme review (AV16013)

NOW COMPLETE

Key research provider: Nursery & Garden Industry Australia

The long-running Avocado Nursery Voluntary Accreditation Scheme (ANVAS) was established to provide superior planting material for the avocado industry. It has supported sound nursery practices, the use of virus-tested and registered sources of seed and budwood, and the exclusion of soil-borne plant pathogens and root diseases. Participation in the scheme has been voluntary, with any nursery operator that meets ANVAS requirements able to apply for accreditation.

ANVAS was reviewed as part of a previous levy-funded project, and investment AV16013 was tasked with implementing the recommendations from this work – updating and improving the scheme and its guidelines to ensure they are best placed to protect the industry's productivity and profitability, and that they are aligned with new technologies and emergent pathogens. This included instigating the transition of the ANVAS nursery production requirements into the Nursery Industry Accreditation Scheme Australia (NIASA).

The work involved mapping synergies and gaps between ANVAS and NIASA, and producing an expanded nursery production module dealing specifically with current avocado production challenges and risks, to ensure the best possible stock to industry customers. The NIASA 'High Health Avocado Production' requirements now form part of revised NIASA guidelines and NIASA's National Audit Portal.

Ongoing updates and improvements to the avocado production procedures continue to be overseen by a committee involving both Avocados Australia and Nursery & Garden Industry Australia representatives.

Continued >>

At the time of writing this summary, the final transition of technical ANVAS requirements for avocado production nurseries to the new NIASA requirements was set to be achieved by January 2020. ANVAS accreditation will still be managed by Avocados Australia, with production nurseries required to provide evidence of NIASA High Health Avocado Production accreditation to support their applications. Look for more details in industry channels as they arise.

Full details can be found in the project's final research report, which can be downloaded from www.bit.ly/av16013.

Avocado rootstock SHSR-04 commercialisation (AV15005)

NOW COMPLETE

Key research provider: IP Active

This project managed the commercial process for development of the avocado rootstock SHSR-04, which was selected for its commercial level of Phytophthora root rot resistance and potential to provide an alternative to the current industry standard rootstock, Dusa. The project successfully obtained the plant breeders rights for the rootstock and next steps will involve licencing for propagation and sale. Three commercial nurseries with expertise in avocado clonal rootstock development have been considered for assessment and commercial licensing of the rootstock.

Consumer behavioural and retail data for fresh produce (MT17015)

Key research provider: Nielsen

This multi-industry investment is tasked with providing regular consumer behavioural data and insight reporting to a range of industries, through the Harvest to Home platform (www.harvesttohome.net.au).

The platform has a dedicated dashboard for avocados, making data and reporting easily accessible for industry participants. The information is intended to assist growers and supply chain partners in decision-making for their businesses and, for the wider industry, the data and insights are available to support strategic activities, as well as Hort Innovation Avocado Fund marketing plans.

Maximising yield and reducing seasonal variation (AV16005)

Key research provider: CSIRO

This project is developing the knowledge and tools needed to manipulate and maximise avocado tree yields, to help improve production and profitability in the industry.

Specifically, the project is looking at resource competition between shoots and fruits, potentially opening the door for new methods of reducing fruit drop. Because vegetative shoot growth coincides with fruit development in avocado trees, competition exists for carbohydrates, other nutrients and hormones necessary for maintaining growth. This competition



can impact on the early stages of fruit development, resulting in fruit growth cessation followed by abscission – a key event that limits avocado production.

The research is also looking at how high, sustainable production can be achieved from year to year, through progressing the understanding of high-yielding tree development.

Improving avocado orchard productivity through disease management (AV16007)

Key research provider: The University of Queensland

Beginning December 2017, this investment is identifying strategies to minimise the effects of key diseases in avocado orchards and in fruit as it progresses through the supply chain – helping the avocado industry increase orchard productivity and fruit quality.

The project has a focus on diseases and issues including:

- » Phytophthora root rot
- » Phellinus brown root rot
- » Nectriaceous black root rot
- » Stem end rot
- » Branch and graft dieback.

The dedicated Phytophthora component involves the work of a Murdoch University team, whose work includes a closer look at phosphite treatments, including the issue of residues, potential for Phytophthora pathogens to develop tolerance, alternatives and more.

The project's work links in with other Hort Innovation Avocado Fund investments including AV16010, on the next page.

Avocado industry biosecurity capacity building (AV16010)

Key research provider: The University of Queensland

This investment began in late 2017 to bolster biosecurity for the avocado industry. It is tasked with developing new diagnostic protocols for high-risk biosecurity threats to the industry, such as avocado scab fungus *Sphaceloma perseae*, and maintaining existing diagnostic protocols for quarantinable pests and pathogens.

The project is also monitoring emerging biosecurity threats to allow rapid responses to any incursions that arise, and providing diagnostic support for other levy-funded avocado plant health projects.

As part of the work, the researchers are also specifically looking at the diversity of scolytid beetles and associated fungi affecting avocados in Australia.

Review of national biosecurity plans (MT17003)

Key research provider: Plant Health Australia

Beginning in late 2017, this five-year project is for and funded by both the avocado and mango industries. It is responsible for reviewing and updating the industries' biosecurity plans. These plans are top-level documents that identify high-priority endemic and exotic pests, diseases and weeds, along with the risk mitigation activities required to reduce their biosecurity threat, and surveillance and diagnostic activities. They provide a strategic framework for industry and government to work together to improve preparedness for and response to these potential threats.

Current biosecurity plans for the industries are available from Plant Health Australia, with the avocado plan at www.planthealthaustralia.com.au/avocados.

Avocado industry and market data capture and analysis (AV16006)

Key research provider: Avocados Australia

Key activities this project is responsible for include:

- » Maintenance of Infocado, the industry's system for monitoring volumes of avocados dispatched and forecast to be supplied, with weekly and quarterly reporting (www.avocado.org.au/infocado)
- » Maintenance of OrchardInfo, which is used to monitor industry productive capacity and inform medium-long term production outlooks, with reports distributed to contributors (www.avocado.org.au/orchardinfo)
- » Other relevant local data collection, analysis and reporting for the industry, including to identify and understand trends, supply, demand and price relationships – publications include the yearly 'Facts at a glance' fact sheet (download from www.bit.ly/av16006)
- » Global trade data analysis.

Avocado export readiness and market access (AV17000)

Key research provider: Avocados Australia

Beginning in late 2017, this project acknowledges that a rapid increase in avocado production in Australia has been creating a need for the industry to access and develop new markets. The project is tasked with ensuring the industry is prepared to export and that there is capacity to pursue new and improved market access. It will also provide the necessary support for government negotiations with intended markets as required.

Avocado industry capacity building – Western Australia (AV17006)

Key research provider: The Department of Primary Industries and Regional Development, Western Australia

This investment supports the role and activities of a Western Australia Avocado Research Officer, to help develop the capacity and productivity of the state's avocado industry. The officer is tasked with delivering best practice management information to growers and other industry participants in Western Australia, supporting national development activities within the region (such as forums and workshops), and helping address identified orchard productivity issues in the state through research activities.

Enhanced National Bee Pest Surveillance Program (MT16005)

HORT FRONTIERS

Key research provider: Plant Health Australia

This investment is delivering a nationally coordinated bee-pest surveillance program to help safeguard honey-bee and pollinator-dependent industries in Australia. It builds upon the previous *National Bee Pest Surveillance Program* (MT12011), and includes upgrading sentinel hive arrays, strengthening relationships with surveillance operators, the introduction of new elements such as Asian hornet screening and more. The surveillance is designed to enable the early detection of high-priority pest incursions that can impact on honey bees, providing the best opportunity for successful pest eradication.

The avocado industry is one of several contributors to the work, and the program is part of the Hort Frontiers Pollination Fund.

Avocado industry minor use program (AV16002)

Key research provider: Hort Innovation

Through this project, levy funds and Australian Government contributions are used to submit renewals and applications for minor use permits for the avocado industry as required. These submissions are prepared and submitted to the Australian Pesticides and Veterinary Medicines Authority (APVMA).

For more on minor use permits, including a list of permits, see p19.

All current minor use permits for the industry are searchable at portal.apvma.gov.au/permits. Permit updates are also circulated in Hort Innovation's *Growing Innovation* e-newsletter, which you can sign up for at www.horticulture.com.au/sign-up.

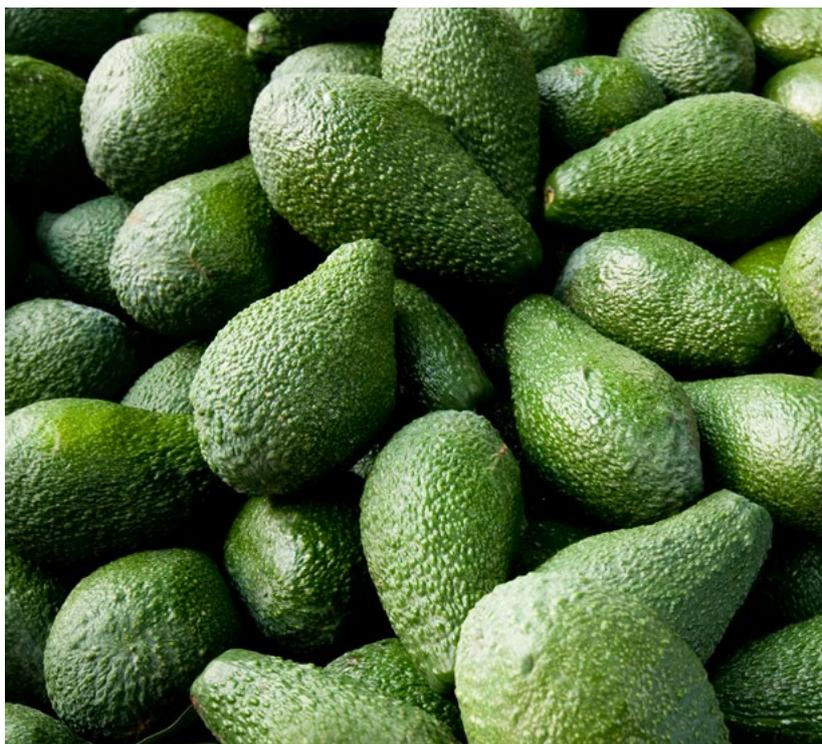
Various data generation investments (ST17000, ST16006 and MT17012)

Key research providers: Peracto, Eurofins

The generation of pesticide residue, efficacy and crop safety data is required to support label registration and minor use permit applications made to the APVMA which, when approved, provide access to safe and effective chemicals for the management of pests, weeds and diseases.

For the avocado industry, the multi-industry investment **Generation of data for pesticide applications in horticulture crops 2018 (ST17000)** is producing the data required to support a Bayer DC-163 label registration, for the control of Lepidoptera including avocado leafrollers and loopers, and flower-eating caterpillar.

Data generation for other applications relevant to the avocado industry is also supported by the multi-industry projects **Generation of residue data for permit applications 2017 (MT17012)** and **Generation of residue, efficacy and crop safety data for pesticide applications in horticulture crops 2017 (ST16006)**.



Impact assessment work

During 2018/19, Hort Innovation engaged independent consultants to evaluate the impact of our R&D investments. This included looking across a random sample of all Hort Innovation R&D projects completed in the 2017/18 financial year, plus a specific look at the impact of work within the Hort Innovation Avocado Fund. The assessments revealed a range of economic, social and environmental benefits being generated for growers, supply chain participants and the community at large. The results also highlighted the value of these benefits in monetary terms.

Results and information on the whole-of-R&D impact assessment, facilitated through the project *Ex-post impact assessment (MT18011)*, can be found at www.horticulture.com.au/mt18011. The work specific to the Avocado Fund took place through the investment *Ex-post impact assessment – industry specific (MT18009)* and you can download a fact sheet on the results, plus find full assessment documents, at www.horticulture.com.au/mt18009.



To keep up to date with the latest information on new, ongoing and recently completed R&D investments throughout the year – and to search and find resources and reports from these investments – visit www.horticulture.com.au/avocado.

Minor use permits

The Hort Innovation Avocado Fund supports the submission of applications for new and renewed minor use permits for the industry, as well as data generation activities to support chemical permits and registrations, and strategic agrichemical reviews.

Together these efforts provide the industry access to safe, relevant and effective chemicals for the management of pests, weeds and diseases.

For full details on these activities and links to relevant information, visit www.bit.ly/minor-use-avocado.

Permits in 2018/19

During the 2018/19 financial year, successful renewals for PER13158 (issued as PER87164) and PER14597 were prepared by Hort Innovation and submitted to the APVMA, facilitated through the *Avocado industry minor use program (AV16002)*.

Meanwhile, a successful new permit PER85877 and renewed permit PER85167 were also issued during 2018/19, with the applications submitted through the industry minor use program in the previous financial year.

Details for all of these permits can be found in the following table.



Current permits

Below is a list of minor use permits for the avocado industry, current as of 17 September 2019.

| PERMIT ID | DESCRIPTION | DATE ISSUED | EXPIRY DATE | PERMIT HOLDER |
|-----------------------|---|-------------|-------------|---|
| PER12450 Version 6 | Trichlorfon / Specified fruit crops / Fruit fly | 06-Oct-11 | 31-Jan-21 | Growcom |
| PER14813 Version 2 | Phosphorous acid / Avocado / Phytophthora root rot <i>Please note: As of 15 January 2019, use now covered by the Agri-Fos 600 label</i> | 18-Sep-14 | 30-Sep-19 | Liquid Fertiliser Pty Ltd |
| PER87164 Version 2 | Dimethoate / Specified citrus and tropical and sub-tropical inedible peel fruit commodities – post-harvest dip or flood spray / Various fruit fly species | 01-Mar-19 | 31-Mar-24 | Hort Innovation |
| PER14597 Version 2 | Methomyl (Lannate L) / Avocado / Ectropis looper. (NSW and QLD only) | 01-Apr-14 | 31-Mar-22 | Hort Innovation |
| PER14618 Version 3 | Abamectin / Avocado / Tea red spider mite | 09-Feb-15 | 31-Oct-20 | Avocados Australia Limited (AAL) C/Hort Innovation |
| PER13859 | Dimethoate / Orchard cleanup – fruit fly host crops following harvest / Fruit fly | 09-Feb-15 | 31-Jul-24 | Growcom |
| PER81560 | Chlorantraniliprole (Dupont Altacor Hort Insecticide) / Avocado / Lepidopteran pests including Ectropis looper and avocado leaf roller | 13-May-16 | 30-Apr-21 | AAL |
| PER85167 Version 2 | Etoxazole (ParaMite) / Avocado / Six-spotted mite (WA only) | 26-Sep-17 | 30-Sep-21 | AAL C/Hort Innovation |
| PER85877 | Paclobutrazol (soil drench application) / Avocado orchards (high density plantings only) / Vegetative growth management | 29-Aug-18 | 31-Aug-23 | AAL C/Hort Innovation |

All efforts have been made to provide the most current, complete and accurate information on these permits, however you should always confirm all details on the APVMA website at portal.apvma.gov.au/permits. Details of the conditions of use associated with these permits can also be found on the APVMA site.

Minor use permit updates are circulated in Hort Innovation's e-newsletter, *Growing Innovation*. Don't yet receive it? Sign up for free at www.horticulture.com.au/sign-up.

Marketing report

Hort Innovation is responsible for investing the avocado marketing levy into a range of activities to drive awareness and consumption, under the Hort Innovation Avocado Fund. Here's a quick look at some of the activities and achievements of 2018/19.

The avocado marketing program aims to increase domestic demand for Australian avocados by at least 20 per cent by 2021. There is a focus on reminding consumers of the health benefits of avocados, inspiring them with delicious meal ideas, and building their confidence in selecting, storing and ripening avocados at home.

Television

In 2018/19, television played a key role in driving mass awareness of avocados and ensuring key messages for Australian Avocados were established in both metro and regional markets. The goal was to reach 35 per cent of the target audience (grocery buyers aged 25 to 54) at least twice with the ad, across several key metro and regional networks, including Seven, Nine, Ten, WIN, Southern Cross Austereo (SCA) and Prime. Across both metro and regional areas, the campaign successfully reached this goal.

In September 2018, two months of staggered television activity began with Australian Avocados securing spots on



popular shows such as *The Bachelor Australia*, with an average of more than 800,000 total viewers per episode; *The Block*, with an audience of more than one million tuning in; and *Survivor*, with an audience averaging more than 700,000 per episode.

In 2019, a second burst of television activity was staggered across eight weeks from March to May and leveraged strong-performing TV programs such as *My Kitchen Rules* and *Bachelor in Paradise*, as well as consistently rating news and current affairs programs.

Digital

Supporting the television campaign, there was Australian Avocados digital activity from August to September in 2018 and March to June in 2019. This consisted of Australian Avocados' standard 15-second video ad placed



across catch-up television services plus music streaming service Spotify, and six-second ads across YouTube.

This campaign delivered strongly against its target of a 70 per cent completion rate (videos being watched the whole way through) and 70 per cent viewability rate (videos that are seen by the consumer). The catch-up television strategy had an overall completion rate of 91 per cent and a viewability rate of 93 per cent, while serving out more than 517,000 opportunities for people to see the content. Spotify had a completion rate of 70 per cent across more than 247,000 opportunities for people to see, and YouTube more than 905,000 opportunities to see with an 84 per cent completion rate.

Cinema

The Australian Avocados 15-second ad was also shown in cinemas to drive consideration for avocados and reinforce the creative message. The total reach for this cinema activity was 1.34 million people. The ad was shown ahead of movies ranging from *Dumbo* and *Aladdin* to *Captain Marvel* and *Avengers: End Game*, and there was also a static ad displayed in foyers.

Out of home

To extend reach and drive the frequency of key messages, Australian Avocado ads were placed on panels in gyms, on street furniture and on shopping center digital screens throughout 2018/19. This reinforced key messages in consumers' minds, helped to drive action before entering a retail store, and was a critical step on the path to purchase journey.

From August to September 2018, Australian Avocados were featured on 336 screens nationwide across a variety of shopping centres to target grocery buyers aged 25 to 54. This activity reached more than three million



people an average of 5.3 times. These placements were crucial as a last point of contact for buyers on their path to purchase.

Anytime Fitness and Fitness First gyms participated in the campaign, with Australian Avocados featuring on gym panels in 250 gyms with over 2.7 million member visits within the campaign duration. This delivered more than 7.4 million opportunities for people to see key messaging about avocados.

Into 2019, from March to June the campaign included 81 shopping center panels (all in direct proximity to grocery stores), 44 street panels, a 15-second video ad across 154 Fitness First gyms and a digital panel across 755 Fitness First gyms, with the Fitness First activity also including a full-page ad within the *Fitness First Magazine*.

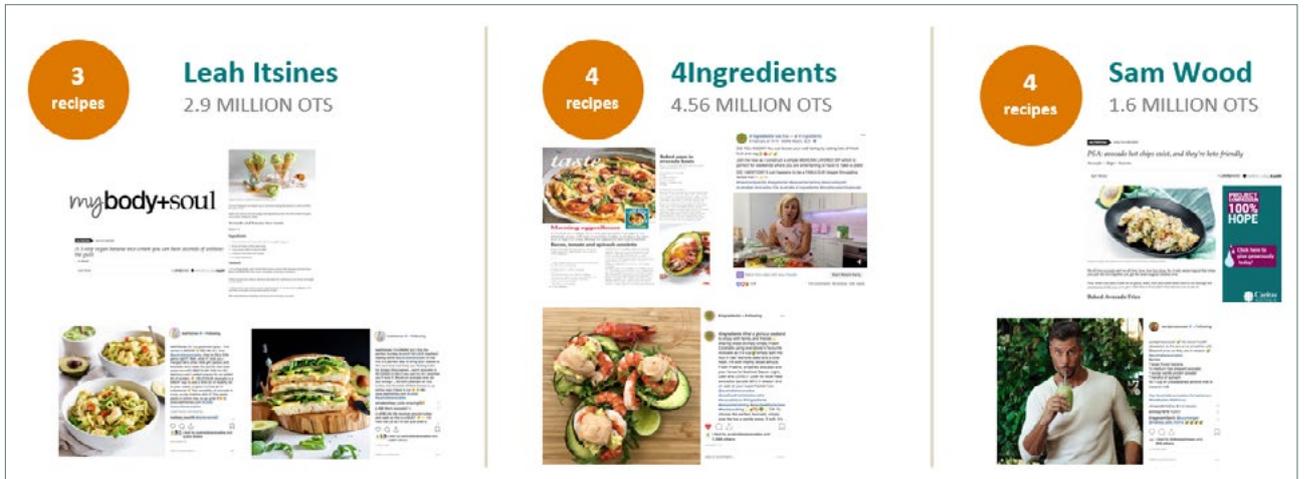
Social media

Social media was used to consistently remind target audiences to buy Australian avocados by delivering reasons why avocados make everything better. The 'always on' approach to this

activity ensured avocados remained top of mind for consumers.

Indeed, 2018/19 was a strong year for Australian Avocados on social media, with Facebook (www.facebook.com/AustralianAvocados) and Instagram (@AustralianAvocados) activity and Instagram activity delivering more than 27 million opportunities to see, earning more than 500,000 interactions with consumers (not counting video views), and 3.2 million video views.

The Australian Avocados Facebook page saw an increase of 16 per cent in organic (not paid) reach and more than double the average engagement rate from 2017/18. There was also three times the number of engagements (excluding video views) since last year despite lower media spend in this channel. For 2018/19, there was also the introduction of paid advertising by Australian Avocados on Instagram, resulting in 14 times the number of impressions, more than three times the number of engagements since last year, and an increase of more than 20 per cent in user-generated content shared by fans.



The use of social media influencers ensured Australian Avocados produced new and relevant content throughout the year and produced more than 10.7 million opportunities for people to see and nearly 45,000 engagements. Partnerships were developed with Aussie food blogger Leah Itsines, food content publisher 4 ingredients and personal trainer and media personality Sam Wood. Their avocado recipe content was pitched to media and shared on their own personal social media channels, as well as across Australian Avocados owned channels.

Together these influencers provided an Instagram following of over 690,000 and provided nine million opportunities for their audiences to see the key messages of Australian Avocados.

Public relations (PR)

The objective of the PR campaign was to reach out to media to in turn educate Australians on the similarities and differences between Hass and Shepard avocado seasons. The aim was to drive awareness of how to select avocados and provide inspiration on how to use the two varieties to ultimately turn Hass

lovers into Shepard lovers as well, and Shepard lovers into Hass lovers too.

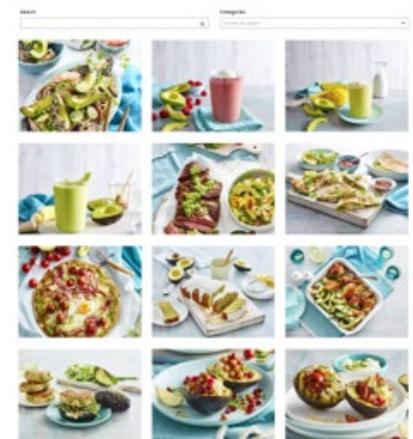
The campaign targeted the traditional dip in sales during the transition period between Shepard and Hass avocados. Between February and May 2019, 48 pieces of media and social media coverage were secured across a variety of platforms including TV, radio, print, online and social media. Highlights included a weather cross to an avocado farm during TV breakfast program *Sunrise*, a feature on Foxtel television channel Lifestyle, a piece in *The Guardian*, and content on the *mybody+soul* Instagram page.





13 times avocado secretly transformed our cooking

These delicious yet good-for-you recipes all have one common ingredient, but you'd be forgiven for not knowing what it is at first glance. From brownies to ice cream, pasta sauce to dressing, it's the humble avocado that makes these dishes really sing. This gallery is brought to you by Australian Avocados.



MyFoodBook partnership

Australian Avocados continued to be extremely popular on the digital recipe platform MyFoodBook during the year. In total, avocado recipes were viewed over 250,000 times from June 2018 to June 2019. Avocados were also featured in two seasonal MyFoodBook cookbooks: *30 Minute Meals Foodbook* and *Winter Warmers*.

Taste.com.au partnership

From March to May 2019, Australian Avocados partnered with taste.com.au to feature Australian Avocados in recipe content, Taste TV videos, gallery content and competitions. Avocados featured in three Taste TV videos, which were viewed over 260,000 times, and three recipe galleries, which had over 95,000 page views and featured a variety of inspiring recipes. Highlights included pieces detailing how avocados can transform cooking and a panko-crusted avocado Japanese noodle salad recipe.

The Australian Avocados website

The new consumer-facing Australian Avocados website (www.australianavocados.com.au) was launched in February 2019. The most visited pages within the website have so far included the 'about avocados' section and recipe content, indicating that consumers are keen to learn more and to try new ways of using avocado.

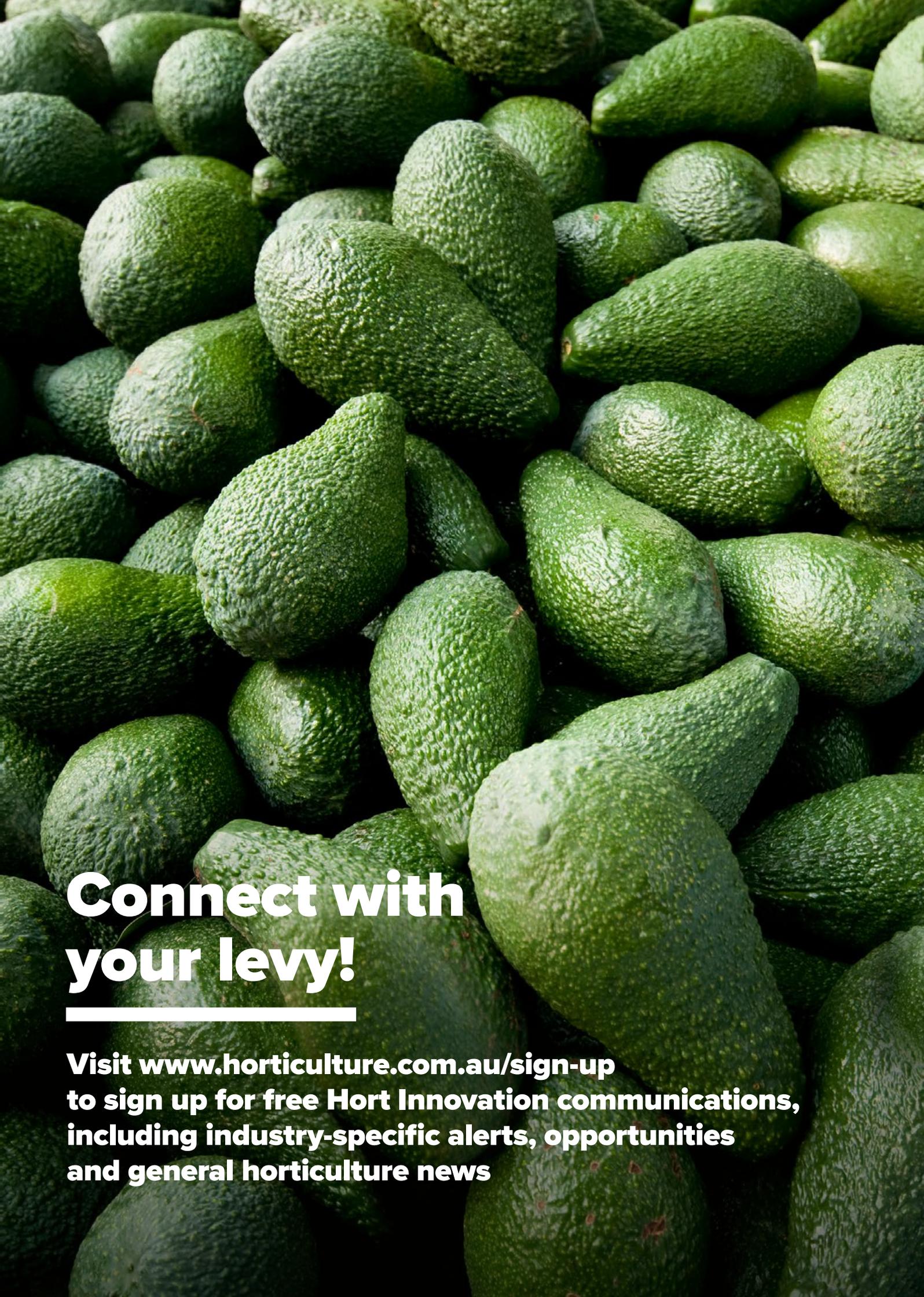
Consumer data showed that avocado-based recipes drove the highest click through rate to the Australian Avocados website and the highest volume of searches continues to be during the evening hours, showing that people are likely thinking about recipes and what to eat during the commute home.

Financial statement

Financial operating statement 2018/19

| | R&D (\$) | MARKETING (\$) | TOTAL (\$) |
|---|------------------------|------------------------|------------------------|
| | 2018/19 July – June | 2018/19 July – June | 2018/19 July – June |
| OPENING BALANCE | 1,683,004 | 1,543,708 | 3,226,712 |
| Levies from growers (net of collection costs) | 2,660,484 | 4,051,906 | 6,712,390 |
| Australian Government money | 1,633,212 | – | 1,633,212 |
| Other income* | 59,778 | 67,351 | 127,129 |
| TOTAL INCOME | 4,353,475 | 4,119,257 | 8,472,732 |
| Project funding | 2,692,965 | 2,834,239 | 5,527,204 |
| Consultation with and advice from growers | 39,683 | 28,973 | 68,656 |
| Service delivery – base | 114,325 | 119,363 | 233,688 |
| Service delivery – shared | 189,453 | 197,802 | 387,255 |
| Service delivery – fund specific | 230,000 | 230,000 | 460,000 |
| TOTAL EXPENDITURE | 3,266,425 | 3,410,377 | 6,676,802 |
| Levy contribution to across-industry activity | 73,012 | – | 73,012 |
| CLOSING BALANCE | 2,697,042 | 2,252,587 | 4,949,629 |
| Levy collection costs | 14,918 | 22,023 | 36,940 |

* Interest, royalties



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