

Apple and Pear Fund

2017/18
ANNUAL REPORT



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SUMMARY BY
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We're for growers

At Hort Innovation it's our job to work with industry to invest the apple and pear levy and Australian Government contributions into initiatives to help growers be as productive and profitable as possible – and 2017/18 was another fantastic year of growing better, together.

With close to **\$4.14 million** invested by Hort Innovation into R&D for the apple and pear industry during 2017/18, including into a host of new projects, I'm happy to be able to share with you all the key insights in this Hort Innovation Apple and Pear Fund Annual Report.

You'll find a top-level list of all R&D investments from the year on **p3**, and can explore the research projects in more detail from **p6**. Just some of the highlights include the strong new and ongoing investments in pest and disease management, the development of guidance for growing new red-blushed pear varieties and using artificial spur extinction to boost apple productivity, and of course the continuation of key industry programs including Future Orchards.

Meanwhile **in marketing, the Apple and Pear Fund program saw some \$1.72 million invested during the year to raise the profile and consumption of Australian apples and pears.** Find an overview of this activity from **p13**.

On a personal note, thank you for welcoming me as your new Relationship Manager. I know that during 2017/18 my predecessor, Mark Spees, enjoyed getting to connect with you about everything going on in the Apple and Pear Fund, and getting to hear your thoughts and share ideas. During 2018/19 I'm looking forward to doing the same, with even more opportunities to connect in person and a reminder that you can reach me any time at sam.turner@horticulture.com.au or on 0418 164 717 if there's something you'd like to ask or discuss around levy investments.

I also encourage you to explore the easy ways you can stay close to all of the good things your levy is achieving throughout the year...

- » **Become a member.** Paying a levy doesn't automatically make you a Hort Innovation member, but signing up is free at www.horticulture.com.au/membership. As well as providing the opportunity for voting rights at the organisation's Annual General Meeting, Hort Innovation membership includes exclusive email alerts with industry-specific news and opportunities, direct invitations to explore investment updates and more.
- » **Check out *Hortlink*.** This digital publication provides an update on all new, ongoing and recently completed investments in the Hort Innovation Apple and Pear Fund. The latest edition is always available from the Apple and Pear Fund page at www.horticulture.com.au/apple-and-pear, while members have *Hortlink* sent straight to their inboxes.
- » **Engage with your industry communications program.** Levy-funded communication programs are dedicated to bringing the latest information and advice to growers, including news, outcomes and resources related to levy investments. At the time of writing the most recent three-year *National apple and pear grower communications program* (AP15007) was drawing to a close, with Hort Innovation working with industry to establish a new investment to continue its activities. Find details of the new program in a future edition of *Hortlink*, and look out for the Hort Innovation Apple and Fund logo in its publications to easily identify work related to your levy.

Here's to another great year of investments and connection in 2018/19,

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Making levy investments

Discover how the apple and pear levy and Australian Government contributions are invested through the Hort Innovation Apple and Pear Fund in this quick recap.

Where do investment ideas come from?

Great investments start with great ideas, and Hort Innovation encourages all growers and other industry participants to share their thoughts and suggestions for the research and marketing initiatives they want to see.

Ideas can be submitted any time via Hort Innovation's simple Concept Proposal Form. Visit www.horticulture.com.au/innovation-concept-pipeline.

Ideas can be for your specific industry – to be funded by the industry levy and, in the case of R&D, Australian Government contributions – or they can be for Hort Innovation's strategic partnership initiative, Hort Frontiers. Hort Frontiers projects address broader, longer-term and more complex issues facing Australian horticulture as a whole, and are funded through partnerships with co-investors. Visit www.hortfrontiers.com.au for more.

How are levy decisions made?

Let's talk 'SIPs' and 'SIAPs'!

Investments specific to the Hort Innovation Apple and Pear Fund are guided by the industry's Strategic Investment Plan (SIP), which was finalised by Hort Innovation in April 2017 after close consultation with growers and other industry stakeholders.

The SIP outlines key industry priorities for investment and can be found on the Apple and Pear Fund page at www.horticulture.com.au/apple-and-pear.

The SIP document is used like a 'roadmap' by the apple and pear Strategic Investment Advisory Panel (SIAP) – a panel made up of growers and other industry representatives, which has a key role to play in the investment process. The SIAP discusses investment ideas at consultation meetings, with the SIP guiding them, in order to provide advice to Hort Innovation on potential levy investments.

Details of the SIAP panellists and summaries of the SIAP's meetings can be found at www.horticulture.com.au/apple-and-pear.

What happens next?

The SIAP's advice is used by Hort Innovation to work suitable ideas into project proposals. The proposals are then made public for potential delivery partners to submit responses. Current opportunities are always listed at www.horticulture.com.au/delivery-partners.

At the end of the process the 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.

How can I keep track of investments?

Newly contracted projects are announced in Hort Innovation's *Hortlink* publication, with the latest edition emailed directly to members three times a year and always available from the Apple and Pear Fund page at www.horticulture.com.au/apple-and-pear. *Hortlink* also provides updates on ongoing and recently completed investments.

The industry communications program also provides regular information on levy-funded activity. See **p10** for more.



R&D project list 2017/18



NEW INVESTMENTS IN 2017/18

AP16005 Developing agri-tech solutions for the Australian apple industry

AP16007 An integrated pest, disease and weed management program for the Australian apple and pear industry

AP17000 Independent mid-term evaluation of the national apple and pear communications program

AM17001 Developing a national systems approach for meeting biosecurity requirements to access key Asian markets

AM17010 Taste Australia trade shows*

LP15001 Global Masterclass in Horticultural Business

LP15006 Attracting new entrants into Australian horticulture

MT17015 Consumer behavioural and retail data for fresh produce

ST16008 AgVet collaborative forum

ST17007 Generation of data for pesticide applications in horticulture crops 2018^

* This investment is a parent program, under which further event-specific Taste Australia investments may sit.

^ Activities for the apple and pear industry under this investment are funded wholly through the government's AgVet grant program.

ONGOING INVESTMENTS IN 2017/18

AP14022 Independent program coordination for the apple and pear productivity program

AP14023 Improved tree and fruit nutrition for the Australian apple industry

AP15001 Integrated pest and disease management – phase II

AP15002 Physiological, metabolic and molecular basis of biennial bearing in apple

AP15004 Australian apple and pear industry innovation and adoption program

AP15005 Delivery of apple and pear Future Orchards extension program

AP15007 National apple and pear grower communications program

AP15013 Physiological, metabolic and molecular basis of biennial bearing in apple – Australian component of AP15002

AP15015 Apple and pear industry leadership initiative

AP15016 APAL contribution to AP15015 – industry leadership initiative

AP16001 Apple and pear industry minor use program

AP16002 Apple and pear crop estimate

AP16004 Variety evaluation and tree certification services for the apple and pear industry

MT13059 SITplus: Developing and optimising production of a male-only, temperature-sensitive-lethal, strain of Qfly, *B. tryoni*

MT14052 Essential market access data packages

MT16005 Enhanced National Bee Pest Surveillance Program

MT16010 Horticultural trade data 2017-2019

MT16011 Horticulture trade intelligence reporting 2017-2019



INVESTMENTS COMPLETED IN 2017/18

AP09031	PIPS Orchard Productivity Program – program extension
AP12002	Profitable Pears: Maximising productivity and quality of new pear varieties
AP13027	Orchard Action – co-production of knowledge to Victorian pome fruit orchardists [^]
AP14025	Prevar 3: New pome fruit products
AP14030	Consultancy services for Prevar project AP14025
AP15008	InfoPome 3
AP15009	Australian apple and pear industry market development program
MT13061	Understanding the purchase behaviour of fresh produce consumers
MT15032	Monitoring and evaluation framework for the industry Strategic Investment Plan
MT15033	Strategic Investment Plan

[^] This project did not involve the industry levy, and was instead funded by Hort Innovation using voluntary contributions and Australian Government funding. It was carried over from the original Horticulture Australia Limited (HAL).

During the 2017/18 financial year, all Australian levy paying horticulture industries also contributed to across-industry projects addressing issues that affect horticulture as a whole. Visit www.horticulture.com.au/across-horticulture for financial documents and information on this program.

Connect with
Hort Innovation!
Become a member
at **www.horticulture.com.au/membership**



R&D report

Take a closer look at just some of the levy investments in the Hort Innovation Apple and Pear Fund during 2017/18. 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/apple-and-pear as they become available.

An integrated pest, disease and weed management program for the Australian apple and pear industry (AP16007)

NEW IN 2017/18

Key research provider: The Victorian Department of Economic Development, Jobs, Transport and Resources (DEDJTR)

Beginning in late 2017, this program is tasked with helping growers develop and maintain pest-resilient farming systems using integrated pest management (IPM). It will provide clear knowledge on the tools and systems required to implement IPM, which involves the effective combination of chemical, cultural and biological methods to control pests, diseases and other undesirables in a 'whole of system' approach. A key component of its work is revising the industry's existing IPM manual to put a greater focus on the integration of management practices that optimise monitoring and management of pests and diseases.

This investment was instigated by previous project *A needs analysis for IPM R&D in the apple and pear industry* (AP15014), which reviewed the state of IPM in the industry and found that while there was a high level of awareness and availability of necessary tools, adoption of true IPM was low – while 86 per cent of apple and pear growers surveyed said they were using IPM, further investigation suggested that, by the technical definition, only 25 per cent actually were.

Consumer behavioural and retail data for fresh produce (MT17015)

NEW IN 2017/18

Key research provider: Nielsen

Contracted in June 2018, this multi-industry investment is tasked with providing regular consumer behaviour data and insight reporting to a range of industries, including the apple and pear industry. This 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 will be available to support strategic activities, as well as Hort Innovation Apple and Pear Fund marketing plans.

At the time of writing, the data and insights were soon to be easily accessible via a new online dashboard – look for further information in industry and Hort Innovation channels as it becomes available.

This project represents an evolution of previous investment *Understanding the purchase behaviour of fresh produce consumers* (MT13061).

Developing agri-tech solutions for the Australian apple industry (AP16005)

NEW IN 2017/18

Key research providers: SwarmFarm Robotics, The University of New South Wales and others

Contracted in late June 2018, this investment represents a new step in the age of 'digital agriculture' and autonomous operation. It is supporting the development of a new technological system that will perform autonomous flower density mapping and tree canopy measurement, which will be able to be used with spray equipment to provide decision support for variable rate autonomous spraying in apple crops.



Generation of data for pesticide applications in horticulture crops 2018 (ST17000)

NEW IN 2017/18

Key research provider: Eurofins Agrosience Services

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

In May 2018, Hort Innovation announced the securing of more than \$1 million in assistance grants under the Australian Government's Access to Industry Uses of Agricultural and Veterinary (AgVet) Chemicals program. Through this project, this grant funding is being used, along with levy contributions, to generate the data required for a range of registration and minor use applications across a variety of horticulture crops, including for the apple and pear industry (with work for apple and pears being funded wholly through the grant).

Apple and pear industry minor use program (AP16001)

Key research provider: Hort Innovation

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

For more on minor use permits, including a list of permits, see [p12](#).

All current permits for the industry remain searchable at portal.apvma.gov.au/permits, while permit updates are also circulated in Hort Innovation's *Growing Innovation* e-newsletter, which levy-paying members receive monthly. Not a member? Sign up to the Hort Innovation membership program for free at www.horticulture.com.au/membership.

PIPS Orchard Productivity Program – program extension (AP09031)

NOW COMPLETE

Key research provider: Tasmanian Institute of Agriculture

An extension of the industry's initial Productivity, Irrigation, Pests and Soils (PIPS) orchard productivity program, this two-year project was tasked with developing the artificial spur extinction (ASE) technique as a crop-load management tool for the industry, including demonstrating its effectiveness and benefits compared to traditional chemical thinning, and providing information on the cost of implementation.

ASE involves selectively removing buds by hand to imitate natural bud extinction, and can be used to precisely determine where and how much fruit is set on each limb of a tree. The aim of ASE is to promote the vigour and performance of floral spurs, stimulate spur strength, and improve fruit quality and regularity of production.

The project team established two small-plot trials where Gala and Fuji apples were used to compare ASE and chemical thinning for crop-load management. There was also a large semi-commercial-scale demonstration site to confirm results of the small-plot trials on a larger scale, and to enable accurate measurement of ASE labour requirements for a cost comparison between ASE and chemical thinning.

The team reported that the research "has demonstrated clearly that ASE is a feasible tool for managing crop load without the need for chemical thinning" and noted that ASE produces higher yields and improves fruit quality, while giving growers the ability to determine the desired fruit number and placement on trees.

"Unlike chemical thinning, ASE provides a tool for precision crop-load management, enabling optimisation of bud position and improved light distribution within the canopy," the project's final report reads. "On top of these significant benefits, it simplifies the hand-thinning task, fruit maturity is more even, it is not weather dependent, and it removes the negative impact that most chemical thinners have on fruit size and shape."

[Continues >>](#)

Want to keep up to date with the latest information on new, ongoing and recently completed R&D investments throughout the year? Check out Hort Innovation's **Hortlink** publication – the latest edition is always available from your grower page, www.horticulture.com.au/apple-and-pear.

The researchers also noted that because the bulk of the thinning is completed prior to flowering, there is minimal resource wastage in ASE managed trees, hence fruit size is greater than in conventionally managed trees.

“There is also a positive response in fruit set of individual buds with the proportion of buds failing to set fruit being reduced and an increased proportion of buds setting multiple fruit. Return bloom is accentuated, reducing the risk of biennial bearing. Yields of 100 t/ha of high quality fruit are achievable,” the project’s report reads.

The project’s cost comparison between ASE and chemical thinning suggests that ASE is also an economically viable approach to crop-load management. In the first year of implementation, ASE was found to be comparable in cost to conventional thinning, but in subsequent years proved more economical. This is because the first year of ASE is the most labour-intensive, requiring some tree restructuring and removal of buds across entire trees, but in subsequent years buds only need to be removed on new wood and pruning is reduced to the level normally required in the orchard.

Profitable pears: maximising productivity and quality of new pear varieties (AP12002)

NOW COMPLETE

Key research provider: The Victorian Department of Economic Development, Jobs, Transport and Resources (DEDJTR)

Beginning in 2013 and now concluded, this project investigated management techniques and physiological mechanisms to increase the profitability of growing red-blushed pears. The work was carried out at an experimental orchard, the Pear Field Laboratory, with new red-blushed pear varieties previously developed under the National Pear Breeding Program.

The researchers looked at the effects and benefits of factors including tree density, rootstocks, tree training, irrigation, root pruning, plant growth regulators and nitrogen requirements. They used a fruit grader equipped with optical and near-infrared cameras to measure fruit quality.

Economic modelling was also undertaken, looking at expected initial returns from growing new pear cultivars. The economic analysis was based on variety ANP-0131 (Deliza) – which was found in the research to be the most vigorous and productive new red-blushed variety. Deliza was grafted to Quince A rootstock, with a Beurré Hardy interstem, and trained on an Open Tatura trellis with multiple leaders. Three densities were compared: 1481 (low), 2222 (high) and 4444 (ultra-high) trees per hectare.

Key findings from the research included:

- » Drip irrigation optimised yield, fruit size and water use efficiency outcomes in comparison to microjet treatments
- » The rootstock tested increased precocity and total yield in the first three years of bearing, while use of BP1 rootstock was detrimental to yield
- » Yield in the first three bearing years increased from low density (1481 trees per hectare) to high density (2222 trees per hectare), but no further yield benefit was found at the even higher density
- » Economic models predicted that high-density planting systems (2222 trees per hectare) would be most profitable, with payback periods of between seven and 11 years, depending on pack-outs, prices and yield
- » Modelling of nitrogen use and movement indicated that ANP-0118 bearing trees allocated approximately 60 per cent of applied nitrogen to fruit, with 13 per cent of applied nitrogen lost by leaching under drip irrigation.

The researchers noted that their results suggest growing the new red-blushed pears would be a profitable investment for pear growers in areas such as the Goulburn Valley, if done in a modern orchard system characterised by high-density plantings of compact trees that use water efficiently, fruit early in life and produce consistent high yields of quality.

Australian apple and pear industry innovation and adoption program (AP15004) and Delivery of apple and pear Future Orchards extension program (AP15005)

Key research providers: APAL and AgFirst

Projects AP15004 and AP15005 deliver the apple and pear Future Orchards program, which is responsible for accelerating and expanding the adoption of innovation and technology in apple and pear businesses, and facilitating industry capacity-building.

Future Orchards is an internationally renowned program. It includes regular orchard field walks, orchard benchmarking, and orchard business analysis to deliver world’s best practice and R&D linkages to apple and pear growers in Australia’s major growing regions. The program also aims to upskill the workforce, improve grower crop and business risk mitigation strategies, and provide grower services and technical support along the supply chain. It seeks to improve crop protection stewardship and chemical access, provide biosecurity preparedness, improve post-harvest productivity, and nurture technical preparedness for export.

[Continues >>](#)



Project AP15005 is specifically responsible for the technical delivery of the Future Orchards program. It covers the Focus Orchards network to demonstrate the adoption of best practice and new technology, Focus Orchard properties, OrchardNet, Orchard Business Analysis reporting and regional trials.

Improved tree and fruit nutrition for the Australian apple industry (AP14023)

Key research provider: Tasmanian Institute of Agriculture

Research into optimising nitrogen-use efficiency has the potential to boost productivity in apple growing. This project is developing a multi-season nitrogen budget underpinned by fertigation research, to in turn produce a user-friendly decision-support tool to assist growers across the country in optimising irrigation and fertigation application. It is expected that the tool, referred to as 'SINATA' (the Strategic Irrigation and Nitrogen Assessment Tool for Apples), will ultimately allow growers to look up their soil type, local climate and tree information to determine average irrigation and nitrogen requirements, assess the efficiency of their current management practices, and explore potential savings associated with changes in irrigation and nitrogen application, such as switching from calendar-based irrigation schedules to targeted schedules based on soil moisture status.

Physiological, metabolic and molecular basis of biennial bearing in apple (AP15002) and Physiological, metabolic and molecular basis of biennial bearing in apple – Australian component of AP15002 (AP15013)

Key research providers: University of Hohenheim, Germany and The Victorian Department of Economic Development, Jobs, Transport and Resources (DEDJTR)

Biennial bearing is a major constraint to apple flowering and production, and it's estimated that around 30 per cent of commercial cultivars are susceptible. While this cropping irregularity is usually managed by chemical, mechanical or manual thinning methods, the underlying physiological, metabolic and molecular plant processes are largely unknown. Beginning in 2016, these two related projects aim to increase understanding of the mechanisms involved in biennial bearing and in turn why apple crops fail to develop sufficient flower numbers in the year after a high crop load.

Integrated pest and disease management – phase II (AP15001)

Key research provider: The Victorian Department of Economic Development, Jobs, Transport and Resources (DEDJTR)

This project has followed on from initial work (phase one) that resulted in approval to import and release the *Mastrus ridens* wasp as a biocontrol agent against codling moth in apples, to supplement pheromone-mediated mating disruption of the moth. This second phase is responsible for the release of *Mastrus ridens* into sites in Southern Queensland, New South Wales, South Australia, Tasmania and Victoria for study of the wasp's dispersal, predation and hyper-parasitism. The project is also investigating the effect of commonly-used pesticides on the wasp.

Independent program coordination for apple and pear productivity program (AP14022)

Key research provider: RMCG

This investment supports the coordination and integration of a number of projects, which together make up the 'PIPS2' program for the industry – the second iteration of the Productivity, Irrigation, Pests and Soils program. PIPS2 projects include AP14023, AP15001, AP15002, AP15013, and the now-completed AP09031 and AP12002. Activities of the coordination project include improving communication within and between project teams and the apple and pear industry, coordinating linkages and activities between PIPS2 and the Future Orchards program, and more.

Variety evaluation and tree certification services for the apple and pear industry (AP16004)

Key research provider: Australian Pome Fruit Improvement Program

Established in May 2017, this investment supports the operation of the Australian Pome Fruit Improvement Program and so delivers essential infrastructure related to the evaluation of new varieties and the certification of trees propagated from high-health-status materials. It runs new-variety demonstration sites and initiatives including New Varieties Roadshows.

National apple and pear grower communications program (AP15007)

Key research provider: APAL

This investment ensures apple and pear growers are kept up-to-date with the latest industry news, information and R&D updates. Its goal is to support the industry as a whole to advance and grow, to allow informed decision-making in apple and pear businesses, and to facilitate the uptake of new practices, technologies and information.

The project produces and maintains key communication channels for the industry, including but not limited to...

- » The bi-monthly *Australian Fruitgrower* magazine
- » The weekly *Industry Juice* e-newsletter
- » The APAL website, www.apal.org.au
- » APAL social media, including Twitter, Facebook and LinkedIn
- » Video content on the APAL YouTube channel, including demonstration videos, expert information/discussion videos, and grower showcases.

The project is also involved in the production of media releases, delivering media training to industry representatives, maintaining an industry photo library on image-sharing service Flickr, and producing 'hot topics'.

InfoPome 3 (AP15008)

NOW COMPLETE

Key research provider: APAL

InfoPome is the apple and pear industry's stock tracking system. Cool-store data is voluntarily provided by growers and collated into regular national reports of the amounts of apples and pears in cool-store. The reports are separated by variety and state, allowing growers to see stock levels currently available in storage. Supply of this data (and analysis reports drawing out critical messages) allows informed decisions to be made around sales and marketing.

While InfoPome has been in existence in one form or another for more than a decade, this investment funded the past three years of system maintenance and development. During this time, data collection was streamlined with a simplified form and new iOS and Android phone apps; reporting moved from monthly to weekly, providing finer detail for users; allowances were introduced for correcting for missing data; and independent analysis of the data and associated commentary was added. Analysis included the average rate of stock

drawdowns per month and the projected stock cover until the next season, as well as comparisons with levels at the same time in previous seasons.

During the course of this iteration of the InfoPome initiative, the weekly, automated InfoPome reports were made available to those cool stores that contributed to the data collection.

Apple and pear crop estimate (AP16002)

Key research provider: AgFirst

This project is responsible for producing apple and pear crop estimates for each season. Detailed crop estimates are designed to provide information on the size and quality of national crops that can then be used by growers, packers, marketers and the industry at large to plan more effectively and maximise the value of the crops.

Apple and pear industry leadership initiative (AP15015)

Key research provider: Marcus Oldham College

This investment supports Apple & Pear New Horizons Scholarships for young people, to help accelerate change in the apple and pear industry. The scholarships are used towards the completion of a Diploma of Agribusiness at Victoria's Marcus Oldham College.

Global Masterclass in Horticultural Business (LP15001)

NEW IN 2017/18

HORT FRONTIERS

Key research provider: University of Tasmania in partnership with Lincoln University and Wageningen Research Academy

The Masterclass in Horticultural Business course was developed under the Hort Frontiers Leadership Fund and is aimed at fostering new innovators and leaders for the Australian horticulture industry. Best described as a 'mini MBA', it's a nine-month course where participants develop their business skills and build their own business plans for the future. The course is delivered predominantly online, with several face-to-face sessions and field trips to some of Australia's savviest horticulture outfits.

Apple and pear levy has been co-invested into the Masterclass investment to support scholarships for industry levy-payers. For the 2018 Masterclass, four apple and pear scholarships were awarded.

Attracting new entrants into Australian horticulture – promoting careers in horticulture (LP15006)

NEW IN 2017/18

HORT FRONTIERS

Key research provider: Rimfire Resources

This project, part of the Hort Frontiers Leadership Fund, is about engaging graduate students with the horticulture industry. It involves a Graduate Engagement Program with a two-phased approach that's designed to attract the right people, retain them and support their ongoing leadership development. The first phase involves students undertaking internships within horticulture businesses, for which funding support is offered for both the student and the business. The second phase involves employment of students following graduation, with Hort Innovation co-investing to support the first-year salary and participation in a five-day leadership program.

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 apple and pear industry is one of several contributors to the work, with the program now part of the Hort Frontiers Pollination Fund.

SITplus: Developing and optimising production of a male-only, temperature-sensitive lethal, strain of Qfly, *B. tryoni* (MT13059)

HORT FRONTIERS

Key research provider: South Australian Research and Development Institute (SARDI)

This project is developing a 'temperature-sensitive lethal, male-selecting' strain of Queensland fruit fly (Qfly). To put simply, the research will allow for male-only, sterile fruit flies to be bred in large numbers. It is one of the key projects in the broader strategic co-investment SITplus initiative that's tackling the issue of Qfly. The male flies are to ultimately be released in growing regions of south-eastern Australian that are affected by Qfly. They will come to outnumber the wild male population in these areas and by mating with wild females – and limiting the opportunity for wild males to do so – they are intended to lead to the collapse of wild Qfly populations. The apple and pear industry is one of several involved in the project which, as a SITplus initiative, is now part of the Hort Frontiers Fruit Fly Fund.



Full details of completed research can be found in project final reports which, when finalised, are available to order at www.horticulture.com.au/final-report-order-form. Final reports are free to Australian horticulture levy payers, registered Hort Innovation members and industry representative bodies.

Minor use permits

Why minor use permits?

While the use of pesticides and other chemicals in the horticulture industry is being modified through the increasing uptake of integrated pest management approaches, there remains a need for the strategic use of specific chemicals.

Chemical companies submit use patterns for product label registrations to the Australian Pesticides and Veterinary Medicines Authority (APVMA), and the apple and pear industry is generally provided with a number of label registrations because of its 'major' crop status in this area. However, there are instances where chemical companies consider the market size too small to generate adequate commercial returns, based on the R&D investment required. This is where minor use permits come into play. The APVMA's national permit system adds some flexibility to the approval process and provides a legal framework that can allow access to products for minor use purposes.

Permits in 2017/18

During the 2017/18 financial year, a renewal for PER14562 was prepared by Hort Innovation and submitted to the APVMA, facilitated through the *Apple and pear industry minor use program* (AP16001). At the time of writing, the renewal remained with the APVMA for assessment. See details of the original permit in the table below.

Current permits

Below is a list of minor use permits for the pome fruit industry, current as of September 1, 2018.

PERMIT ID	DESCRIPTION (CHEMICAL/CROP/PEST OR USE)	ORIGINAL DATE OF ISSUE	EXPIRY DATE	PERMIT HOLDER
PER12590 version 3	Delegate (spinetoram) / Pome fruit and stone fruit / Fruit fly, suppression only	06-Oct-11	31-May-19	Growcom
PER12864 version 2	Polyram (metiram) / Apple varieties / Alternaria	18-Apr-13	30-Jun-21	Growcom
PER14562	Thiacloprid (Calypso) / Pome fruit and stone fruit / Mediterranean fruit fly, Western Australia only	13-Dec-13	30-Nov-18	Growcom
PER13859	Dimethoate / Orchard clean-up – fruit fly host crops following harvest / Fruit fly	9-Feb-15	31-Jul-24	Growcom

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**, which levy-paying members receive monthly. Not a member? Sign up for free at www.horticulture.com.au/membership.

Marketing report

Hort Innovation is responsible for investing the apple and pear marketing levy into a range of activities to drive awareness and consumption, under the Hort Innovation Apple and Pear Fund. Here's a quick look at some of the activities and achievements of the 2017/18 program.

APPLE MARKETING

The 2017/18 financial year saw the continuation of the 'Get Your Crunch On' campaign that was launched in March 2017. With activity across TV, digital, social media, radio and cinema, the campaign built on previously established messaging that apples are the ultimate go-to, on-the-go healthy snack. The campaign also took out two Parents' Voice awards in 2017 (right) – with Aussie Apples beating out Heinz and Uncle Toby's for promoting healthy eating to children, and receiving an award for work with Netball Australia for encouraging children to be active.



Consumer tracking

Through 2017/18, the key objective for Aussie Apples was to re-establish apples as a healthy, on-the-go snack. A key performance indicator (KPI) of the activity was to get apples back into consumers' lists of their top five favourite snacks.

In March 2017, apples were ranked as the number six preferred snack, according to research conducted by market research agency Edentify. A year later, in May 2018, apples had overtaken biscuits and nuts to tie for position number three.

Another KPI was purchase intent. When the Aussie Apples campaign launched in March 2017, 80 per cent of consumers said they would be 'very' or 'quite likely' to purchase apples in the next fortnight when surveyed. In May 2018, this had increased to 89 per cent.

Finally, the number of consumers who remembered seeing the Aussies Apples advertisement increased from five per cent in March 2017 to 18 per cent in May 2018, exceeding the KPI of a 12 per cent recall.

With most Australian households already purchasing apples, the ongoing focus is now getting people to buy apples more frequently, by prioritising the fruit over other snack alternatives. This means constantly reminding people with the campaign motto to 'Get Your Crunch On', so that apples remain top-of-mind, as well as targeting the right people, in places that are contextually relevant to them, and at the right time, such as during snack times and on-the-go.

Aussie Apples on TV

In 2018, the Aussies Apples' Get Your Crunch On ad appeared on TV, with 30-second and 15-second ads shown in both metropolitan and regional markets, as well as on subscription TV, including during high-rating shows such as *MasterChef*

and *The Voice*. The activity ran for four weeks, between April and June 2018, and there were 10 million grocery buyers aged 25 to 54 years old that saw the ad during this time. A further four weeks of TV activity ran across July and August 2018.

Digital media activity

Digital advertising incorporating ads across websites and mobile applications was also central to the Aussie Apples campaign during 2017/18.

Millennials in their 20s and 30s are now the largest spending group in the economy, however, according to Nielsen, households aged 35 years or younger with no children contribute just 3.8 per cent of total apple sales (*moving annual total to 21/4/18*). To capture the spend of this lucrative demographic, at the tail-end of 2017/18, a new burst of Aussie Apples digital advertising commenced that also incorporated YouTube and music service Spotify, with eight weeks of activity concluding in June 2018.

All facets of the digital campaign achieved an above benchmark result during this period.

Across digital video ad placement, with almost 800,000 impressions, the overall 'completion rate' (the percentage of people exposed to the ad who watched it through to completion without skipping or stopping it) scored 88 per cent, exceeding the benchmark of 70 per cent.

Spotify had an audio 'completion rate' of 91 per cent across more than 176,000 impressions (the number of times content was displayed to the audience), targeting people during the key snacking times of mid-morning and mid-afternoon.

YouTube served almost 1.5 million six-second ad impressions with a 93 per cent completion rate.

The next round of digital advertising began at the end of June, carrying into August 2018.

Radio activity

Something new for Aussie Apples in 2018 was radio ad placement, targeting people with the 'crunch' sound on the way to and from work, school and the shops. The radio ads were aired between April and May 2018 across the Eastern seaboard, reaching almost two million grocery buyers aged 25 to 54. The ads contained messages about health, seasonality and varieties.

Cinema advertising

For four weeks during April 2018, the Aussie Apples ad was shown in cinemas, before top-grossing movies and also across digital advertising panels in cinema foyers. Through this activity, campaign messaging reached 1.4 million people, including some 570,000 grocery buyers aged 25 to 54.

Social media activity

During 2017/18, the always-on Aussie Apples Facebook page, www.facebook.com/aussieapples, kept apples top of mind by engaging consumers with interesting, shareable content which included apple recipes, health benefits, fun facts and emotive videos. The Aussie Apples social media campaign delivered more than 6.8 million impressions and saw 2.9 million 'engagements' with the content during the financial year, with a 42 per cent engagement rate well exceeding industry benchmarks.

Woolworths' Awesome Apple Days

On days in March, April and May 2018, Aussie Apples partnered with Woolworths to run 'Awesome Apple Days' throughout all Woolworths stores nationally. Hort Innovation provided Woolworths with Aussie Apples aprons and apple slicers, for staff to use in providing samples of different varieties of apples. The days helped to create consumer engagement in the category at the beginning of the season, to keep apples top of mind at the point of purchase.

Netball Australia partnership

During 2017, an Aussie Apples partnership with Netball Australia saw positive outcomes for industry, including hundreds of apples being handed out at games, ambassador activities, match signage at televised netball events, production of a sports nutrition guide and more.

In early 2018, Aussie Apples drew the partnership to a close, with the support of the apple and pear industry's Strategic Investment Advisory Panel. The decision was made to shift the focus to a broader range of media activities and retailer activations to support the sales of Australian apples – extending the Get Your Crunch on messaging through the activities described throughout this snapshot.



Grower portal

To enhance growers' marketing capabilities, the Aussie Apples Grower Portal was launched in February 2018, giving growers access to industry marketing materials and information all in one place. This initiative aligns with the Apple and Pear Strategic Investment Plan by addressing the need to increase industry knowledge of marketing as a means of adding to product value.

Growers can register to use the portal at the top-right of the Aussie Apples website, www.aussieapples.com.au, for access to logos, posters and other promo material, the CSIRO Apple Health Report and more.

Export activity for apples

Australian apples are supported by a comprehensive export program to help achieve the target of exporting 10 per cent of Australia's marketable apple yield by 2027, as set out in the Apple and Pear Export Strategy.

'Taste Australia' is Hort Innovation's export-market initiative, encompassing trade show attendance, in-store promotions and seminars for buyers, media and influencers to spread the message about Australia's quality produce.

Through Taste Australia, Australian apples were promoted in Thailand in 'Tops' stores in 2017/18. The retailer imported three containers of Pink Lady apples, supported by an in-store sampling program with branded materials. Education and training for staff was a significant component of the program, which included sessions on storage, handling and product ripeness. In addition, media activity included a cooking demonstration on the 'Food Stylist' Facebook page and website.

Additionally, in-store sampling of apples, as well as pears, took place in 19 stores in Hong Kong across May and June 2018. For one of the participating retailers, Park N Shop, sampling drove an increase of 327 per cent in sales compared to a period without sampling.

Into 2018/19, apples will continue to have representation in key trade shows in export markets, including Asia Fruit Logistica. This will be complemented by further activity in the Taste Australia retailer engagement program, while the export co-promotion program will also continue to provide support to growers to help increase apple exports. This program has already supported growers to help them target export markets including the United Kingdom, the Middle East, Hong Kong, Thailand and the Netherlands.

PEAR MARKETING

The 2017/18 marketing activity for Australian Pears gathered momentum with new pear recipes, and education around pear ripening and selection. Australian Pears branding was highly visible through digital and social media, and comprehensive in-store sampling through the major retailers Woolworths and Coles.

Consumer tracking

The main objective of the 2017 Australian Pears marketing campaign was to increase snacking and cooking occasions for pears. Following the year's marketing activity, consumer tracking data revealed there had indeed been an increase in pear consumption during snacking times of mid-morning and mid-afternoon, as well as at lunch time. There had also been an increase in consumers using pears across a range of different occasions, including increases in incidences of consumers snacking on pears whole, and using them for lunch, in smoothies and for dessert.

While these were some great wins, a key barrier to purchase for consumers remained not knowing if a pear is ripe. This was revealed through consumer feedback during in-store sampling sessions and in consumer tracking, where almost one in two consumers claimed they would buy more pears if they knew how to judge how ripe they were. Therefore, the 2018 campaign centred on educating consumers on how to choose, ripen and use pears.

MyFoodBook

During 2017/18, Australian Pears continued its subscription with popular recipe and cookbook site MyFoodBook. The MyFoodBook community includes more than 200,000 subscribers and promotes recipes to more than 2.8 million people each month.

The partnership has involved MyFoodBook's content creation for pears, including quick snack ideas, four-ingredient-or-less recipes, and content educating consumers on how to ripen pears, including videos and blog posts.

From October 2017 to June 2018, there were more than 300,000 'engagements' with Australian Pears content, including recipe viewing, sharing, exporting and saving. This has been achieved through MyFoodBook videos, site sponsorships, cookbook downloads and social media.

Social media activity

Across the financial year, the Australian Pears social media campaign saw Facebook activity (www.facebook.com/australianpears) that delivered more than six million impressions and over two million engagements (video views, comments and sharing). Consumers were engaged with and inspired by a range of content including recipes, variety information and health benefits, with posts also tied to pop culture and current events.



In-store sampling

Towards the end of 2017 there was in-store sampling in Woolworths and Coles stores. Brand ambassadors served wedges of Packham pears to shoppers, with the aim of increasing awareness of pears and educating shoppers on ripening techniques and growing regions. There were 286 sampling sessions nationally between November 2017 and January 2018.

Woolworths stores showed a 24 per cent uplift in overall pear sales in the stores where sampling occurred, compared to the prior four weeks. A fantastic result was a 66 per cent increase in 1kg pre-packed pears.

Due to the positive results, a further 200 sampling sessions were scheduled for 2018/19, to help drive sales of pears by educating consumers on the different varieties, including tips for identifying when each variety is ripe, as well as ripening techniques.

Export activity for pears

Australian pears were showcased in Thailand through the Taste Australia program, with in-store sampling and branded display materials implemented across a range of retailers.

Education and training of retailers was also a significant component of the program, with sessions on storage, handling and product ripeness. Feedback from market was that importers and retailers had been discarding pears if they were soft or yellowing. The training was effective in decreasing waste and increasing understanding of product diversity, quality, nutrition and eating experience.

Media activity to increase awareness of pears took place through cooking events with media gift baskets and cross promotion with other Australian products in recipes, such as pears in salads and desserts. This content was published on the websites and Facebook pages of popular Thailand channels 'Somethingcooked' and 'Food Stylist'.

Into 2018/19, there will be continued representation for Australian pears at key trade shows, marketing activity through Taste Australia, and the export co-promotion program which helps to fund marketing activities in export markets to promote the sale of pears.



COMBINED APPLE AND PEAR MARKETING

Hailstorm Heroes campaign

In the wake of the severe hailstorm that hit Adelaide Hills and the South East in October 2017, Hort Innovation launched a 'Hailstorm Heroes' campaign in April 2018 to assure South Australian and Northern Territory consumers that fruit with a few spots and dots was still delicious.

The campaign built on the success of the 2016 national Hailstorm Heroes campaign, which was undertaken to support Goulburn Valley pear growers after another massive hailstorm.

Delivered in partnership with the local industry, the campaign involved 30-second radio advertisements and Facebook posts. A supporting public relations campaign targeted the media, producing 100 pieces of coverage with a reach of some 4.5 million people combined across TV, radio, print, online and social media.

Hort Innovation also worked with growers, Brand SA and retailers to create Hailstorm Heroes branded packaging for the campaign, including special Hailstorm Heroes apple and pear packs for Coles, Aldi and independents, plus Hailstorm Heroes stickers for the Odd Bunch lines in Woolworths supermarkets.

In-store sampling in key supermarkets and independent grocers across South Australia and the Northern Territory was also used.

Databar stickers in supermarkets

In 2018, Coles and Woolworths, with support from Hort Innovation, began rolling out 'databar stickers' on new season apple and pear varieties.

The databar initiative aims to improve forecasting and waste management, directing sales back to the correct article at a retail level. The stickers also provide a level of traceability back to packhouses, addressing a key challenge around food safety and protection, as well as helping to monitor any quality issues.

The Sydney Royal Easter Show

A key consumer event, Aussie Apples and Australian Pears were present at the Sydney Royal Easter Show in 2018, with a highly visual and engaging exhibit positioned at the entrance of the Woolworths Food Farm.

The Show had 782,000 attendees, with 553,000 entering the Woolworths Food Farm. The stand sold apple and pear slinkies, whole fruit and apple juice, and staff handed out samples and flyers and spoke to attendees about fruit varieties, growing regions and seasonality.

The Show's Primary School Day was also a success, with orchardist Barney Hyams teaching school groups throughout the day about apples and pears.



Financial statement

Financial operating statement 2017/18

	R&D (\$)	MARKETING (\$)	TOTAL (\$)
	2017/18 July – June	2017/18 July – June	2017/18 July – June
OPENING BALANCE	1,854,436	3,176,975	5,031,411
Levies from growers (net of collection costs)	2,043,722	\$3,129,704	5,173,426
Australian Government money	2,467,986	–	2,467,986
Other income*	56,363	144,700	201,062
TOTAL INCOME	4,568,071	3,274,403	7,842,474
Project funding	4,137,505	1,718,550	5,856,055
Consultation with and advice from growers	43,263	16,377	59,640
Service delivery – Base	172,759	71,677	244,436
Service delivery – Shared	261,606	66,076	327,683
Service delivery – Fund specific	320,838	133,114	453,952
TOTAL EXPENDITURE	4,935,972	2,005,793	6,941,765
Levy contribution to across-industry activity	105,577	–	105,577
CLOSING BALANCE	1,380,958	4,445,585	5,826,543
Levy collection costs	39,571	93,617	133,188

At the end of 2016/17, the industry's pro rata share of levy funds were committed to strategic reserves (\$362,972 for R&D and \$670,746 for marketing), and so have been deducted from the 2017/18 opening balance.

* Interest, royalties

Service delivery costs explained

Base service delivery (flat rate) = keeping the lights on

This figure contributes to the standard fixed costs that are incurred with the running of the business (for example, costs relating to rent, utility bills, equipment). These costs are calculated on a monthly basis and are based on actual program expenditure.

Shared service delivery (flat rate) = related to program delivery

Shared costs are related to program delivery and include costs that are incurred in supporting activities relating to R&D and marketing programs that are not attributable to any one levy industry (for example, costs relating to procurement and information technology activities). These costs are calculated on a monthly basis and are based on actual program expenditure.

Fund specific service delivery (flat rate for 2017/18) = direct servicing costs

These are the actual costs for activities and services that are directly incurred in the administration of levy program expenditure, and which are identifiable and attributable to a specific levy investment fund (for example, costs around direct relationship, marketing and fund management, and logistical costs around industry advisory meetings and activities). From 2018/19 these costs will be charged at cost on a monthly basis.

For more information explaining the costs in the financial summary, visit www.bit.ly/2x7ERLC.

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