



Papaya Fund

Annual Report 2018/19

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The projects in this report have been funded by Hort Innovation using sources including the papaya 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:

- ✓ **The industry communications program**, delivering the *Papaya Press* magazine and the industry-facing section of www.australianpapaya.com.au
- ✓ **The papaya Harvest to Home dashboard** providing regular consumer behavioural data and insight reporting, at www.harvesttohome.net.au
- ✓ Continued work to develop and release **new papaya varieties** with strong consumer appeal and improved traits for growers (p7)
- ✓ Efforts to protect the industry from **papaya sticky disease** (p8)
- ✓ A multi-pronged **domestic marketing campaign** (p11)
- ✓ New **final research reports and grower resources**, with 10+ now available from www.horticulture.com.au/papaya

2018/19 SNAPSHOT

\$293
THOUSAND
INVESTED
IN R&D

\$146
THOUSAND
INVESTED IN
MARKETING

10
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 papaya R&D and marketing levies, as well as 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 \$293,000 invested into R&D through the Hort Innovation Papaya Fund across the year, to support the industry in being as productive and profitable as possible. This included the establishment of several new investments and a host of ongoing projects addressing important issues and opportunities.

Meanwhile in marketing, the Hort Innovation Papaya Fund saw close to \$146,000 invested in 2018/19 into a range of activities to raise the profile and consumption of Australian papaya.

Read on to learn more about all of this work. And remember to take advantage of the Hort Innovation website at www.horticulture.com.au/papaya, where you can search and find information relating to investments, past and present, at any time. The new site and its Papaya 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).

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 papaya industry, outside of levy-funded initiatives within the Papaya Fund. Here's a quick look at just some examples.



The new Hort Innovation website, with dedicated Papaya Fund section

You can now visit www.horticulture.com.au/papaya to quickly search and find papaya 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 industry levies can be invested into Hort Frontiers projects upon the advice of the relevant Strategic Investment Advisory Panels, the bulk of funding comes from broad-reaching funding relationships that are 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 papaya 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 papaya 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 Papaya 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/papaya-plan, or find the full version at www.horticulture.com.au/papaya.

The SIP is currently used like a 'roadmap' by the papaya Strategic Investment Advisory Panel (SIAP) – a 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 Papaya Fund are detailed on the 'Your investments' page at www.horticulture.com.au/papaya. 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 communications program is tasked with providing growers with regular information on levy-related activity. See p8 for more.



New investment analysis

You can now clearly see how investments in the Hort Innovation Papaya Fund align to the industry's SIP, with new and interactive investment analysis information available from www.bit.ly/papaya-investment. The analysis currently shows the allocation of funding against each of the papaya 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.

R&D project list 2018/19

NEW INVESTMENTS IN 2018/19

PP18000	National papaya breeding and evaluation program
PP18001	Papaya clean seed program
PP18002	Technical review of the national papaya breeding and evaluation program*
MT18011	Ex-post impact assessment^

* This flagged project both began and ended in 2018/19

^ This multi-industry project was a key monitoring and evaluation investment during 2018/19 – we encourage you to find the full details at www.horticulture.com.au/mt18011

ONGOING INVESTMENTS IN 2018/19

PP16000	Papaya industry minor use program
PP16001	Australian papaya industry communication program
MT17015	Consumer behavioural and retail data for fresh produce
ST16008	AgVet collaborative forum
ST17000	Generation of data for pesticide applications in horticulture crops 2018†

† Activities for the papaya industry under this investment are funded wholly through the government's AgVet grant program

INVESTMENTS COMPLETED IN 2018/19

PP15000	New genetic targets to improve quality in papaya
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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 Papaya 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/papaya as they become available.

New genetic targets to improve quality in papaya (PP15000)

NOW COMPLETE

Key research provider: Griffith University

With a focus on improving the quality of Australian papaya and producing elite, uniform cultivars, this investment began in 2016 to assist breeding now and in the near future, and to support industry development. It ended during 2018, and had five key sub-projects:

- » **Breeding to improve flavour and other important traits in commercial papaya.** Here, the work developed advanced breeding lines of red and yellow papaya that were found to outperform current industry standard varieties in many key agronomic and fruit quality traits, including setting fruit lower on the tree for ease of harvest, higher and consistent yields, and sweeter fruit. These new lines underwent initial evaluation across trial sites in key growing regions.
- » **Collection and evaluation of papaya germplasm,** and the development of a related genetic material database to provide a resource to increase the genetic base of Australian papaya.
- » **Molecular studies to assist breeding for papaya,** which helped pinpoint the location of genes related to sweetness and other traits including fruit firmness, flesh thickness, skin freckle and fruit size. This is the foundation for the development of molecular trait selection tools for breeders.
- » **Papaya ringspot virus type P (PRSV-P) resistance work,** looking at transferring traits from disease-resistant germplasm to new papaya crosses. This is a step forward in creating superior, resistant varieties.
- » **The employment of an industry development officer (IDO),** responsible for assisting with the other sub-project work and for working closely with growers, researchers and other industry stakeholders.

This investment also released the *Handbook of Papaya Evaluation* during 2017. The handbook represented the development of a standard, reliable protocol for growers, breeders and researchers to evaluate papaya tree productivity and fruit quality. Including easy-reference images and information describing key traits, and how to measure them, you can download the resource on the Hort Innovation website from www.bit.ly/pp15000. From this link, you can also download the project's final research report with full details of its work.

National papaya breeding and evaluation program (PP18000)

NEW IN 2018/19

Key research provider: Griffith University

New red and yellow papaya varieties are continuing to be bred and evaluated under this program, which follows on from PP15000, described above. The research team is focused on delivering new elite, genetically stable cultivars that meet the needs of growers and the preferences of consumers, and that are adapted to key growing areas in northern Queensland, including the Tableland and coastal regions. The ultimate goal is to expand the marketability and profitability of the Australian papaya industry.

Following the investment *Technical review of the national papaya breeding and evaluation program (PP18002)*, new recommendations have been incorporated into PP18000. This has seen sensory work added as a new component, which will involve using professional taste panels and flavour mapping, conducted in collaboration with the University of Queensland, to support the development of premium varieties and drive consumer acceptability and preference for Australian papaya.

The review also recommended work to access more international germplasms to broaden genetic diversity, especially in red-fleshed varieties.



Papaya clean seed program (PP18001)

NEW IN 2018/19

Key research provider: The Queensland Department of Agriculture and Fisheries

Beginning in late 2018, this investment is tasked with delivering a clean seed protocol to help protect the papaya industry against papaya sticky disease.

Papaya meleira virus 2 (PMeV2) is a seed-transmissible virus that is associated with symptom development in papaya sticky disease. Investigations have found the virus in plant lines used to generate seeds for the industry, raising the need for a clean seed program.

The work is also investigating other causal agents of the disease and raising general awareness.

Australian papaya industry communication program (PP16001)

Key research provider: Cox Inall Communications

This program is responsible for keeping Australian papaya growers and other industry stakeholders informed about key industry issues and the latest R&D and marketing activities and results in a timely way. The goal is to facilitate the uptake of new information, technologies and practices – in turn helping growers forge more productive, profitable and resilient businesses.

After the development of a comprehensive communications strategy in conjunction with industry, communications channels that are produced and maintained by the project include:

- » The biannual magazine, *Papaya Press*, which is distributed as a hard copy to the Papaya Australia database and is also available to access online via www.australianpapaya.com.au/for-growers/papaya-press
- » The industry-facing section of the www.australianpapaya.com.au website, which continues to be evolved.

Consumer behavioural and retail data for fresh produce (MT17015)

Key research provider: Nielsen

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

The platform has established a dedicated dashboard for papaya, that will make 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 Papaya Fund marketing plans.

Papaya industry minor use program (PP16000)

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 papaya 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 p9.

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

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

Key research provider: 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.

In May 2018, Hort Innovation secured more than \$1 million in assistance grants under the Australian Government's Access to Industry Uses of Agricultural and Veterinary (AgVet) Chemicals program. This funding is being used to generate the data required for a range of registration and minor use applications across a variety of horticulture crops. For the papaya industry, this will ultimately support a Syngenta label registration application for Scholar (Fludioxonil) for the control of anthracnose. There will also be a Dow crop-group registration application for Transform (Sulfoxaflor) for fruit-spotting and banana-spotting bugs, which will involve papaya.



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/papaya.

Minor use permits

The Hort Innovation Papaya 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 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-papaya.

Permits in 2018/19

During the 2018/19 financial year, successful renewal applications for PER13158 (issued as PER87164) and PER14417 were prepared by Hort Innovation and submitted to the APVMA, facilitated through the *Papaya industry minor use program* (PP16000).

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



Current permits

Below is a list of minor use permits for the papaya industry, current as of 19 September 2019.

PERMIT ID	DESCRIPTION	DATE ISSUED	EXPIRY DATE	PERMIT HOLDER
PER12592	Chlorothalonil and difenoconazole / Papaya / Black spot and brown spot	14-Aug-11	30-Jun-20	Growcom C/Hort Innovation
PER13076 Version 2	Propamocarb / Papaw or papaya seedlings / Damping off	05-Apr-12	31-Mar-22	Papaya Australia C/Hort Innovation
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
PER13671 Version 3	Beta-cyfluthrin (Bulldock 25 EC) / Papaya / Fruit spotting bug and Banana spotting bug	28-Nov-12	28-Feb-23	Papaya Australia C/Hort Innovation
PER14098 Version 2	Etoxazole (ParaMite Selective Miticide) / Papaya / Two-spotted mite	03-Oct-13	30-Jun-23	Papaya Australia
PER14097 Version 3	Abamectin and fenbutatin oxide / Papaya / Two-spotted mite	31-Oct-13	30-Jun-23	Papaya Australia
PER12450 Version 6	Trichlorfon / Specified fruit crops / Fruit fly	06-Oct-11	31-Jan-21	Growcom C/Hort Innovation
PER14417 Version 2	Copper as hydroxide / Papaya / Papaya fruit rot (Phytophthora)	28-Feb-14	31-Dec-24	Hort Innovation
PER14490 Version 2	Metalaxyl-M (Ridomil Gold), metalaxyl (Zee-mil) + phosphorous acid / Papaya / Phytophthora root rot and pythium	04-Apr-14	31-Mar-22	Papaya Australia C/Hort Innovation
PER13859	Dimethoate / Orchard clean-up – fruit fly host crops following harvest / Fruit fly	09-Feb-15	31-Jul-24	Growcom C/Hort Innovation
PER80746	Ethephon / Papaya / Fruit de-greening	18-Aug-15	31-Aug-20	Papaya Australia
PER85397	Sulfoxaflor (Transform) / Lychee, mango, papaya, and passionfruit (field grown) / Fruit spotting bug and banana spotting bug	17-Apr-18	30-Apr-23	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 papaya marketing levy into a range of activities to drive awareness and consumption of the fruit, under the Hort Innovation Papaya Fund. Read on for a snapshot of activities and results from 2018/19.

The 2018/19 marketing program marked the start of a new three-year strategy to drive growth for the industry. The focus was on increasing the number of households that purchase papaya by positioning Australian papaya as a delicious and ideal fruit for families, particularly with its strong health benefits across the different life stages.

Public relations (PR)

As part of securing media coverage and conversation about Australia papaya, a number of different activities were undertaken. Overall these activities delivered a total of 12.2 million opportunities for people to see papaya content through a mixture of traditional and online coverage. The activities included:

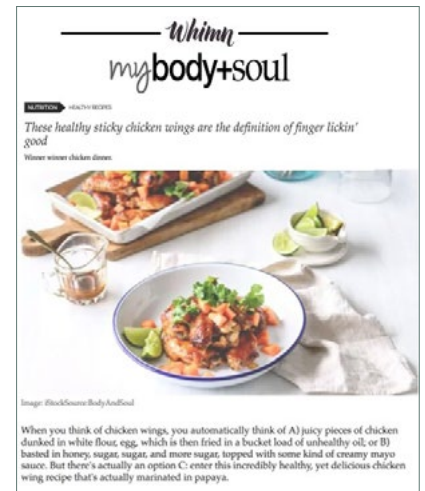
Media materials and outreach

Media materials including seasonal press releases, new papaya-inspired recipes, hampers, and tips and fact sheets were used to engage media and influencers to drive conversation and coverage about Australian papaya during the spring and autumn peaks. The 2018 Australian Papaya Nutrition Review was also used.

To emphasise the health benefits of Australian papaya for families, there was a continued partnership with Accredited Practising Dietitian Caitlin Reid. Caitlin's authority as a health professional provided credibility to health messages. Specifically, Caitlin provided two social media posts on Instagram, quotes for a press release, a presentation at a media event (described below), and was available as a spokesperson for media interviews.

Media event

To further engage and excite media about Australian papaya and amplify key messages to consumers, particularly during the spring peak, a major media event was organised. Media and influencers were hosted at a curated papaya lunch to build key



relationships and inspire and educate guests. Papaya grower Daniel Mackay represented the industry, by providing a season update and sharing insights on growing, varieties and the farm. Ambassador Caitlin Reid shared the latest health information.

Attendees included *Woman's Day* and *Better Homes & Gardens*, as well as health and food influencers such as Nadia Felsch and Guy Turland (Bondi Harvest). Coverage from the event directly resulted in 43 media and social mentions with more than 1.8 million opportunities for people to see papaya content.

Social media

The Papaya Australia Facebook page (www.facebook.com/papayaaustralia) performed well during the year, with a strong fan base and high level of community engagement (10 per cent average engagement rate versus a five per cent target).

A mix of created and curated content that focused on varietal information, grower updates and recipe inspiration was employed to drive awareness, education and inspiration among target audiences. Grower content appealed greatly to fans – when accompanied with a seasonal update it garnered high engagement and reach on the page. With two posts per week, the page achieved 1.8 million opportunities for people to see the content.

Sampling events

Essential Baby & Toddler Show, Sydney

Papaya Australia featured at the Sydney Essential Baby & Toddler Show during September 2018. The intent was to drive awareness and tighten relevance of Australian papaya among expecting and new mums as well as young families, due to its benefits during pregnancy and as a baby superfood. Over 18,000 showgoers had the opportunity to see Papaya Australia at the event and 5250 samples and 10,100 recipe cards were distributed.

The Dietitians Association of Australia (DAA) Smart Eating Week

Papaya Australia was also involved at this year's DAA's Smart Eating Week event with Bupa in February 2019, to ensure the health messages for papaya were amplified into the new year.

Bupa dietitians supported the week by hosting two events – one in Melbourne, and one in Sydney. Over the course of the week, 150 attendees engaged with resident dietitians, sampling papaya (including with lime) and learning about the fruit and its powerful health benefits.

Feedback received was extremely positive, with attendees taking significant interest in the papaya recipes and health report. Bupa expressed thanks to the growers for generously supporting and donating fruit for the event.

The Sydney Royal Easter Show

Papaya Australia was part of the tropical fruit exhibit at the Sydney Royal Easter Show in April 2019. The event was leveraged to drive awareness of Australian papaya among consumers, particularly young families, and to educate showgoers on the health benefits. It was estimated that 901,000 people attended the 2019 Royal Easter Show.



The exhibit was brought to life with a stand at which brand ambassadors engaged with showgoers through sampling of fresh papaya (with lime option) and distribution of brochures, inclusive of papaya benefits, a papaya-inspired recipe and call out to the Papaya Australia website and social page. Papaya growers were also on hand on peak days to interact with consumers, share their knowledge and provide insights into life on the papaya farm.

The response to the stand was overwhelmingly positive, with crowds and queues forming at the tropical exhibit. The vibrant colours ensured maximum cut-through and strong visibility. An estimated 675,000 showgoers was exposed to the Papaya Australia brand. Over the course of the event, 35,280 papaya samples and 38,000 brochures were distributed. The cost per sample was efficient, at \$0.55 per sample.

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	407,597	81,969	489,566
Levies from growers (net of collection costs)	142,656	143,452	286,108
Australian Government money	189,132	–	189,132
Other income*	8,054	794	8,848
TOTAL INCOME	339,842	144,245	484,087
Project funding	293,498	145,843	439,341
Consultation with and advice from growers	1,587	99	1,686
Service delivery – base	13,239	6,674	19,913
Service delivery – shared	21,939	11,059	32,998
Service delivery – fund specific	48,000	27,000	75,000
TOTAL EXPENDITURE	378,263	190,675	568,938
Levy contribution to across-industry activity	8,481	–	8,481
CLOSING BALANCE	360,695	35,540	396,234
Levy collection costs	4,637	4,424	9,061

* Interest, royalties



Connect with your levy!

**Visit www.horticulture.com.au/sign-up
to sign up for free Hort Innovation communications,
including industry-specific alerts, opportunities
and general horticulture news**

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