

What happened in the **Papaya** Fund last year?

Annual Report 2020/21



About Hort Innovation and the Papaya Fund

Hort Innovation is the grower-owned, not-for-profit research and development corporation for Australia's horticulture sector. We work closely with industry to invest the papaya R&D and marketing levies, together with Australian Government contributions, into key initiatives for growers, through the Papaya Fund. We're extremely proud of the work we do to help drive productivity, profitability and demand for papaya growers, and for the horticulture sector at large.

Throughout another challenging year for the horticulture sector, activity in the Papaya Fund remained strong. Read on for an overview of what was delivered.

We also encourage you to download a copy of the overarching Hort Innovation Annual Report 2020/21 at www.horticulture.com.au/annual-report-portal to better understand how Hort Innovation worked for the benefit of the horticulture sector during the year.

In this report...

- Papaya Fund snapshot 2020/21 1**
- Just some of the things delivered for you during the year 2**
- Here's what your fund invested in over the year 3**
- Making investments in 2020/21 4**
- Financial operating statement 5**
- What will be the fund's focus over the next five years? 6**
- R&D case study 7**
- Marketing case study 9**
- Minor use permits 11**
- Appendix: How strategic levy investments are made 13**



\$153,879

invested in R&D



\$104,001

invested in marketing



11

active R&D investments



\$353,059

in levies collected

by the Government and passed on to Hort Innovation for investment



32%

Production volumes for papaya grew by 32 per cent, from 14,921 tonnes in 2018/19 to 19,468 tonnes in 2019/20



65%

Red papaya accounts for 65 per cent of Australian production, while yellow papaya accounts for 35 per cent



85

The majority of Australia's papaya production – 85 per cent – happens in Queensland, with the remainder grown in Western Australia and the Northern Territory

These facts and more can be found in the Australian Horticulture Statistics Handbook, which is delivered by Hort Innovation each year. The handbook is packed with horticulture statistical information and analysis for some 75 categories, for use by individual industries and the wider sector. The 2019/20 edition was released in early 2021 and features an interactive dashboard format for desktop users. See www.horticulture.com.au/horticulture-statistics-handbook.

Just some of the things delivered for you during the year



Preparation support for pest incursions such as fall armyworm and serpentine leafminer, including emergency minor use permits and longer-term investments to bolster the horticulture sector's response



A new communications and extension program to support papaya growers in adopting improved practices on-farm and keeping up-to date with the latest industry news – see hortinn.com/pp20000



Continued work into developing premium papaya varieties through the breeding and evaluation program – see hortinn.com/pp18000



The papaya Harvest to Home dashboard providing regular household purchase data and insight reporting, at www.harvesttohome.net.au



A domestic marketing campaign and **The Good Mood Food** across-horticulture campaign to support industries through the effects of another challenging year – see www.horticulture.com.au/the-good-mood-food*



Investments in the Hort Frontiers strategic partnership initiative to address longer-term and often complex issues and opportunities critical to the future of Australian horticulture – see www.horticulture.com.au/hort-frontiers*

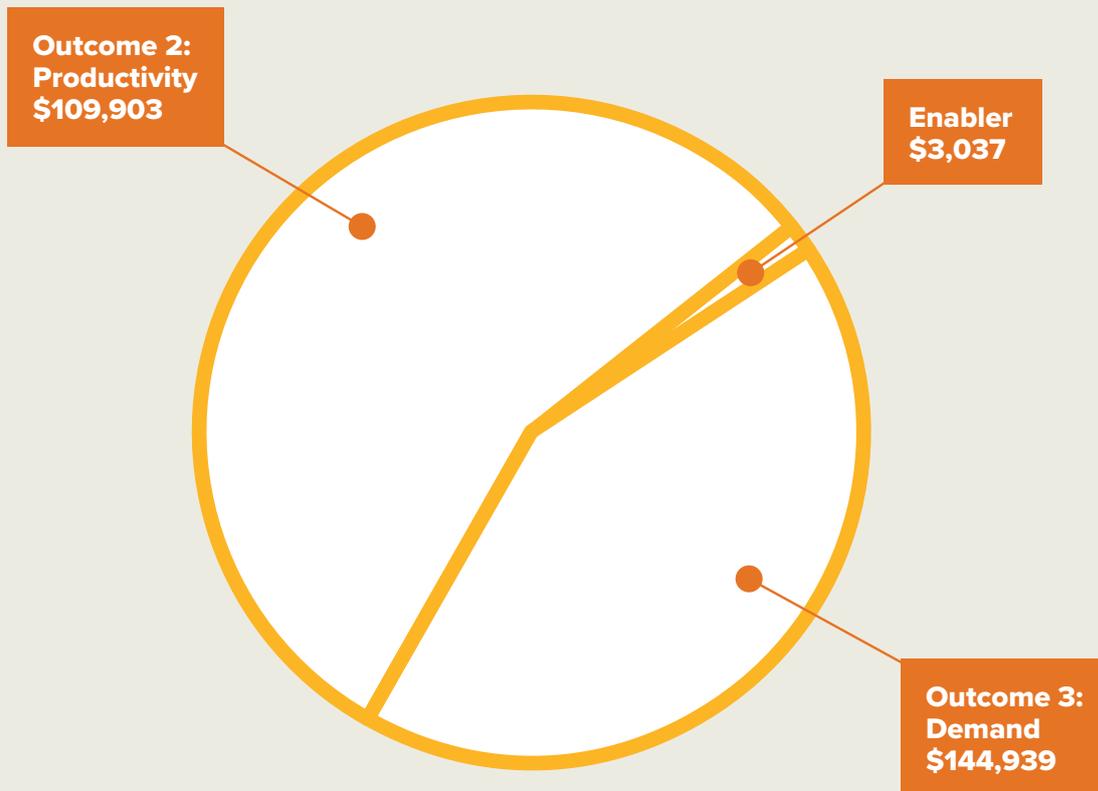


Projects supported by grants secured by Hort Innovation, ranging from cross-sector Rural R&D for Profit initiatives to horticulture-specific work to aid in access to crop protection products – see the Hort Innovation Annual Report 2020/21 for more*

You can visit www.horticulture.com.au/papaya at any time to access information on new, ongoing and completed projects, and to download resources produced by levy investments such as fact sheets and guides.

*These initiatives were delivered outside of the Hort Innovation Papaya Fund and, in most instances, did not involve the industry levy

Here's what your fund invested in over the year



Investments that are specific to the Hort Innovation Papaya Fund are guided by the papaya Strategic Investment Plan (SIP). The SIP features priority outcome areas that have been identified and agreed upon by the industry, and Hort Innovation works to invest in R&D and marketing initiatives that are aligned to these.

In the above chart, you can see how project expenditure in the Papaya Fund during 2020/21 was aligned to the SIP. Each project has been allocated to a SIP outcome based on its primary objective

There was no activity during 2020/21 under Outcome 1: Quality.

Expenditure on projects classified as 'enabler' support the broader delivery of the industry's strategic investment plan, such as impact assessments.

Which projects were in each of the SIP outcome areas?

Outcome 2: Productivity

Access to new varieties and improved pest and disease management improves growers' productivity and profitability

Project title and code	2020/21 investment	Status	More information
Strategic Agrichemical Review Process (SARP) – Updates (MT19008)	\$1,100	Completed	hortinn.com/mt19008
Papaya industry minor use program (PP16000)	\$614	Ongoing	hortinn.com/pp16000
National papaya breeding and evaluation program (PP18000)	\$40,000	Ongoing	hortinn.com/pp18000
Papaya clean seed program (PP18001)	\$31,689	Ongoing	hortinn.com/pp18001
Papaya industry extension and communications program (PP20000)	\$20,000	Ongoing	hortinn.com/pp20000
Nutrient requirements for papaya production (PP20002)	\$16,500	Completed	hortinn.com/pp20002
Australian papaya industry communication program (PP16001)	\$27,508	Completed	hortinn.com/pp16001

Outcome 3: Demand

Improved market access and increased consumer demand increases returns to growers

Marketing activities during 2020/21 contributed to demand-related outcomes in the SIP. You can read more about the papaya marketing campaign on p9.

Project title and code	2020/21 investment	Status	More information
Consumer behavioural and retail data for fresh produce (MT17015)	\$8,449	Ongoing	hortinn.com/mt17015-papaya
Biosecurity plan for the lychee, papaya and passionfruit industries (MT18006)	\$4,982	Ongoing	hortinn.com/mt18006

Financial operating statement

Papaya Fund Financial operating statement 2020/21

	R&D (\$)	Marketing (\$)	Total (\$)
	2020/21 July – June	2020/21 July – June	2020/21 July – June
OPENING BALANCE	410,546	84,612	495,158
Levies from growers (net of collection costs)	176,637	176,422	353,059
Australian Government money	90,606	–	90,606
Other income*	1,296	390	1,686
TOTAL INCOME	268,539	176,812	445,351
Project funding	153,879	104,001	257,880
Consultation with and advice from growers	–	–	–
Service delivery	27,333	22,727	50,060
TOTAL EXPENDITURE	181,212	126,728	307,940
Levy contribution to across-industry activity	–	–	–
CLOSING BALANCE	497,873	134,696	632,569
Levy collection costs	6,177	6,251	12,428

*Interest, royalties

Levy collection costs – These are the costs associated with the collection of levies from industry charged by Levy Revenue Services (LRS)

Service delivery – Also known as Corporate Cost Recovery (CCR), this is the total cost of managing the investment portfolio charged by Hort Innovation

Making sure that levy investment decisions align with industry priorities

What will be the Papaya Fund's focus over the next five years?



The papaya Strategic Investment Plan (SIP) was created in 2021 to reflect current priorities for the papaya industry. This involved extensive consultation with papaya growers and industry stakeholders, including Papaya Australia. The SIP is the roadmap that helps guide Hort Innovation's oversight and management of individual levy industry investment programs.

The papaya SIP lays the foundation for decision making in levy investments and represents the balanced interest of the particular industry from which the levy is collected. The most important function of the SIP is to make sure that levy investment decisions align with industry priorities.

The papaya SIP identifies four outcome areas that will contribute to the productivity and profitability of the papaya sector. They are:

- Industry supply, productivity and sustainability
- Demand creation
- Extension and capability
- Business insights.

What projects will the fund be investing in next year?

The papaya Annual Investment Plan (AIP) 2021/22 will detail how levy funds will be spent over the 12-month period. Investment decisions will be guided by the industry SIP and prioritised based on potential industry impact, as well as availability of levy funds.

The AIP is developed by Hort Innovation, and is informed by the SIP and industry consultation, including collaboration with Papaya Australia. The AIP is then discussed with the industry SIAP for feedback and prioritisation. All investments will need to link to the industry's SIP by addressing a minimum of one KPI against a strategy under one of the four outcomes.

Annual Investment Plans will be published each year over the lifespan of the SIP and industry stakeholders will be advised via established communication channels.

Hort Innovation will continue to report on fund performance regularly, with more focus on reporting on outcomes and the impact of investments.



When available, you can visit www.horticulture.com.au/papaya-fund-management to view both documents and get a full picture of how your levy will be invested over the next five years.

Producing a perfect papaya for every Australian palate

This investment is developing new papaya varieties that will appeal to a broader range of tastes. It's also analysing and highlighting the key flavour types within the whole papaya chain to create a library of chemical fingerprints to differentiate these new, delicious flavour types.

The challenge

To create new papaya varieties with improved eating quality that will provide greater diversity and please more tastebuds, driving the future marketability and profitability of Aussie papayas.

Meet Chris

The Australian papaya industry is experiencing rapid growth, but it could do even better with more varieties and more flavours, says Queensland papaya grower, Chris Maisel. "Right now, it's sort of like having all your eggs in one basket. If that one variety does well, then you please that part of the market. Having more varieties is like having more tools in your toolbox and you can potentially please a greater share of the market."

Chris is hopeful this investment will result in new papaya varieties, which will appeal to more consumers and continue the industry's rapid growth. "From an industry point of view, it offers possible additional expansion of the line, as well as the possibility to look for desired traits, like clean skins, uniform sizes, smaller internal cavities, resistance to pests and pathogens – things like that. I think it's inevitable that the varieties will change going forward, it's just a matter of time and patience, and a lot of work."

That time, patience and work is being funded through this program – essential research and development that many individual producers simply can't fund or manage on their own. "It's of the utmost importance, particularly for the cohort of smaller growers who are unable to spend the money on R&D that some of the larger, multi-faceted business can," says Chris.

"Without research like this, there would be no collaborative approach to increasing the profitability



Chris Maisel, papaya grower, Queensland

and sustainability of our industry. Given that we are a small sector, we need to seize every opportunity like this presented to us. This research provides a proactive approach rather than a reactive defence to an arriving situation."

"From what I've seen so far, a couple new commercial varieties of red and yellow have risen to prominence. However, the process is not a short or easy one, and the arrival of a new variety or two is not the finish line. As an industry, we need to continue varietal development and drive for increased productivity and profitability going forward."

Continued



The approach

The project team have worked to select and stabilise new breeding lines to obtain varieties that will thrive, and support the growth of the industry. At present, researchers are onto the fifth generation for both red papaya and yellow papaw, with a target to produce generation seven of these lines by 2022 and additional hybrid varieties by 2023.

The new, genetically stable lines, which suit each growing climate, will be used to create new F1 hybrid varieties for the industry.

The impact

The selected advanced breeding lines have been evaluated based on many genetic traits, fruit quality, as well as flavour and aroma. The key beneficial traits of the new breeds are fruit that's set lower to the ground for easy harvest, cylindrical fruit shape for more efficient packing, high sugar and sweetness to suit the demand of the market and consumer, and comparable yield to the standard commercial varieties.

The identified genes associated with great flavour and aroma, and desirable sugar, acid, and chemical compounds, will be developed further to help select the future breeding stock.

For more information, visit hortinn.com/pp18000

Project details

National papaya breeding and evaluation program (PP18000)

Key research provider: Griffith University

Start date: August 2018

Expected end date: February 2024

Estimated value for life of project: \$606,692

Getting papaya on more Aussie plates

Hort Innovation is responsible for investing the papaya marketing levy into a range of activities to drive awareness and use of papaya, under the Hort Innovation Papaya Fund.

The opportunity

Papaya is rarely front of mind among Australian shoppers when filling their trolleys, but the 2020/21 marketing campaign aimed to change this by educating consumers about the fruit's versatility and many health benefits.

The approach

The campaign aimed to raise the profile and increase demand for Australian papaya through seasonal media outreach and compelling social media content.

Respected dietician Caitlin Reid APD was engaged to update the Papaya Health Report and identify compelling health messages that would resonate with consumers and media. Caitlin fronted the team's media campaign, acting as the spokesperson for media interviews.

Utilising recipe assets, health messaging and media releases, the team secured coverage in several top-tier media outlets, including *Sunday Telegraph*, *Woman's Day*, *Westfield*, *MINDFOOD*, *Woolworths Magazine*, *Australian Women's Weekly* and *Healthy Food Guide*.

On social media, the objective was to increase awareness and household penetration of Australian Papaya via an "always on" Facebook and Instagram strategy.

Audiences were inspired with a mix of created and curated (external content with the publisher credited) content, educating and demonstrating the varietal differences and nutritional profile of the fruit. Regular social media posts centered around the key themes of Eat Me, Love Me, and Know Me.

Advertising supported all social media content throughout the campaign, optimised for reach and engagement, to drive increased awareness and consideration at the point of purchase.

In total, campaign social media content achieved more than 4.4 million impressions and attracted 128,600 likes, shares and comments across Facebook and Instagram. This high level of engagement demonstrated that the messaging and content resonated with consumers.



Continued

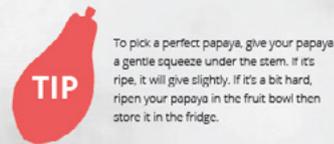
The Facts on Papaya

From digestive and immune wellbeing to skin hydration and elasticity, papaya is loaded with delicious goodness.

For the average Australian, a serve of papaya (150g) provides all their vitamin C needs, almost a third of vitamin A needs, and more than a quarter of folate needs.



5 GOOD REASONS TO EAT PAPAYA



To pick a perfect papaya, give your papaya a gentle squeeze under the stem. If it's ripe, it will give slightly. If it's a bit hard, ripen your papaya in the fruit bowl then store it in the fridge.

SIMPLE SNACK



Use papaya in both sweet and savoury dishes. They pair well with coconut, passionfruit, seafood, curries and pork. Squeeze fresh lime on top for a fresh snack.



The outcome

Thanks to great content and a strategic focus on social media, hundreds of thousands more Australians are now more aware of the many delicious benefits of papaya and more likely than ever to make a purchase.

Read more about the campaign at hortinn.com/papaya-marketing-snapshot

Project details

These marketing activities are strategic levy investments in the Hort Innovation Papaya Fund

Woman's Day

IN SEASON NOW

All about Aussie papaya

President of Papaya Australia and Queensland grower Gerard Kath's tips for selecting, storing and savouring the tropical fruit

RIPE & READY
For a papaya full of freshness and flavour, look out for fruit with slightly yellow skin. Give your papaya a gentle squeeze under the stem and if it's ripe, it will give slightly.

SIGNS OF SWEETNESS
Don't shy away from a nicely freckled fruit. Spots on the skin are a sign of sweetness and your papaya will still be perfectly ripe on the inside. Fruit that is grown inland gets this freckle across the skin, whereas coastal-grown fruit can be clean skinned and just as sweet.

BEAUTIFULLY BRIGHT
When selecting pre-cut papaya, look for vibrant coloured flesh, as this ensures it will be flavourful and ripe. When the flesh is paler and lacking vibrancy, your fruit will be less juicy and flavoursome.

LOVE IT LATER
If your papaya is a bit hard and partially yellow, pop it in the fruit bowl for a few days to ripen. To speed up the process, store your unripe papaya in a brown paper bag with a banana.

SPRING SWEETNESS
Papaya is an incredibly refreshing snack when it's kept cool like a watermelon. Once ripe, store your papaya in the fridge and enjoy with a squeeze of fresh lime for a zesty spring snack.

Each leaf is: Cheryl Gidley. The Photographers: Chris & Elyse Frischberg. Photographs by Alan Seaman. Garden: Graham. Social: @papayaaustralia

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 hortinn.com/papaya-minor-use.

Permits in 2020/21

During the 2020/21 financial year, a successful new permit application for PER89943, and successful renewals for PER12450 and PER89170 were prepared by Hort Innovation and submitted to the APVMA, facilitated through the *Papaya industry minor use program* (PP16000).

Meanwhile, fall armyworm – an incredibly destructive exotic pest – was detected on Australian shores for the first time in 2020. To support readiness and protect the horticulture sector, emergency permit PER89870 was issued by Hort Innovation in 2020/21 to acquire crop protection chemicals for the papaya industry.

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 25 August 2021.

Permit ID	Description	Date issued	Expiry date	Permit holder
PER12592 Version 2	Chlorothalonil and Difenconazole / Papaya / Black spot and brown spot	14-Aug-11	30-Apr-25	Hort Innovation
PER13076 Version 2	Propamocarb / Papaw or papaya (seedlings) / Damping off	05-Apr-12	31-Mar-22	Papaya Australia (PA) 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	PA C/Hort Innovation
PER14098 Version 2	Etoxazole (Paramite selective miticide) / Papaya / Two-spotted mite	03-Oct-13	30-Jun-23	PA
PER14097 Version 3	Abamectin and Fenbutatin Oxide / Papaya / Two-spotted mite	31-Oct-13	30-Jun-23	PA
PER14417 Version 2	Copper as Hydroxide / Papaya / Papaya fruit rot (<i>Phytophthora</i>)	28-Feb-14	31-Dec-24	Hort Innovation

Continued

Minor use permits

Current permits (continued)

Permit ID	Description	Date issued	Expiry date	Permit holder
PER14490 Version 2	Metalaxyl-M (Ridomil Gold), Metalaxyl (Zee-mil) and Phosphorous acid / Papaya / Phytophthora root rot and Pythium	04-Apr-14	31-Mar-22	PA C/Hort Innovation
PER13859	Dimethoate / Orchard cleanup – fruit fly host crops following harvest / Fruit fly	09-Feb-15	31-Jul-24	Growcom
PER80746 Version 2	Ethephon / Papaya / Fruit de-greening	18-Aug-15	31-Aug-25	Hort Innovation
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
PER89170 Version 2	Fludioxonil (Scholar Fungicide) / Papaya / Anthracnose and stem end rot (post-harvest dip or overhead treatment)	12-Feb-20	28-Feb-24	Hort Innovation
PER89241	Spinetoram / Tropical inedible peel / Fall armyworm	06-Mar-20	31-Mar-23	Hort Innovation
PER89870	Spinosad (Entrust Organic) / Various including tropical and sub-tropical fruit crops (inedible peel) / Fall armyworm	21-Jul-20	31-Jul-23	Hort Innovation
PER12450 Version 7	Trichlorfon / Specified fruit crops / Fruit fly	06-Oct-11	30-Nov-25	Hort Innovation
PER89943	Trivor Insecticide (acetamiprid and pyriproxyfen) / Custard apples, lychee, papaya, passionfruit, persimmons and olives / Various pests including; Fruit spotting bugs, olive lace bug, fruit fly suppression, mealybugs, scale insects, plant hoppers, leafhoppers and light brown apple moth	29-Jan-21	31-Jan-24	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.

Keep up to date!

Find monthly minor use permit updates in our *Growing Innovation* e-newsletter.

Sign up for free at www.horticulture.com.au/sign-up.

How strategic levy investments are made in the Papaya Fund

The below diagram shows how Hort Innovation makes strategic levy investments on behalf of horticulture industries. The papaya R&D and marketing levies were invested this way during the year, guided by the papaya Strategic Investment Plan 2017-2021 and advice from the industry’s investment advisory panel.



* Encapsulating extension and international trade

To learn more about funding specific to the Hort Innovation Papaya Fund, visit www.horticulture.com.au/papaya. During the year, other sources of funding were also used to support activities for the benefit of Australian horticulture, including grant funding secured by Hort Innovation, co-investment dollars brokered through our Hort Frontiers initiative and centralised strategic levy reserve.

Hort Innovation

Horticulture Innovation Australia Limited
ACN 602 100 149

Level 7, 141 Walker Street
North Sydney NSW 2060 Australia

02 8295 2300 | communications@horticulture.com.au

www.horticulture.com.au

© Copyright 2021 Hort Innovation. All rights reserved.