

Papaya Fund

2016/17
Annual Report



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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.

Summary by
Astrid Hughes,
Relationship Manager,
Hort Innovation



Welcome

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What a year! As the papaya industry's Relationship Manager at Hort Innovation through 2016/17, I'm pleased to be able to share with you all of the insights on your levy in this Papaya Fund Annual Report.

The 2016/17 financial year was a busy one, with Hort Innovation continuing to invest the papaya levy and Australian Government contributions into initiatives to help growers be as productive and profitable as possible.

During the period, more than \$150,000 was invested into R&D for the papaya industry. From ongoing work to develop varieties with improved flavour and commercial traits, to new work to secure access to vital chemicals for growers, you can see the full list of projects for 2016/17 on [page 5](#). You can then read more, including what the projects mean for you, in the R&D report from [page 6](#).

In marketing, Hort Innovation invested more than \$133,000 during 2016/17 into a marketing program involving events, in-store activities, social media and public relations. Read all about this on [page 8](#).

As the Relationship Manager for the papaya industry, it has been my job to form one of the bridges between these strategic levy investments and you – the growers and other papaya stakeholders. That's why it was great getting to talk to you throughout the year about everything going on in the Hort Innovation Papaya Fund – and of course to hear directly from you – including out and about, and via phone and email.

During the year there was also a chance for many of us to talk one-on-one as part of consultation around the Papaya Strategic Investment Plan (SIP). The final SIP was released in April 2017, and will serve as a guiding document for the industry's Strategic Investment Advisory Panel (SIAP) when providing advice to Hort Innovation on future investments in the Papaya Fund. Find a quick overview on [page 3](#).

If you have an idea for a project you think aligns well with the SIP, I encourage you to submit it to Hort Innovation through the online form at www.bit.ly/2eTpOxA. You can also learn more about how the collection of ideas works in the video available at www.bit.ly/2hTROUQ.

It is now time for me to pass the reins of Relationship Management for this wonderful industry on to your new point of contact at Hort Innovation, Bradley Mills. Brad has been with the organisation since 2004, and brings a wealth of experience to the role. He can be reached on 0408 635 465 or at bradley.mills@horticulture.com.au. Please join me in welcoming him.

Astrid Hughes
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Strategic Investment Advisory Panel

Hort Innovation has industry-specific Strategic Investment Advisory Panels (SIAPs) that have an important role in helping ensure levy investment decisions are balanced and prioritised by the current needs of their industry.

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What is the papaya SIAP?

The papaya SIAP's key function is to provide advice to Hort Innovation on potential levy investments – helping guide the way the industry levy and Australian Government contributions are put to use in the Hort Innovation Papaya Fund.

The SIAP's new guiding document is the industry's Strategic Investment Plan (SIP), which was created through close consultation with industry and was finalised in April 2017. Information on the SIP can be found on [page 3](#), and you can download the full document from Hort Innovation's Papaya Fund page at www.horticulture.com.au/papaya.

How do ideas get to the SIAP?

All growers and industry stakeholders are welcome and encouraged to submit ideas for potential industry projects. To submit an idea, use Hort Innovation's Concept Proposal Form at www.bit.ly/2eTpOxA.

Papaya SIAP panellists

The papaya SIAP is made up of panellists from the papaya industry, plus a chair. Most panellists are levy-paying growers, with appointments made based on skills criteria and considering geographic and sectorial diversity.

NAME	ORGANISATION	LOCATION
Joe Zappala	J Zappala Farms	QLD
Yan Diczbalis	Queensland Department of Agriculture and Fisheries	QLD
Daniel Mackay	Mackays Bananas	QLD
Gerard Kath	Lecker Farming	QLD
Chair: Eoin Wallis		

During 2017/18, expressions of interest will be sought to further grow the papaya SIAP.

SIAP meetings

During 2016/17, the papaya SIAP convened twice to discuss and provide advice on concept proposals and investment areas in R&D and marketing. Summary notes from all SIAP meetings, including before and after this financial period, are always available on Hort Innovation's Papaya Fund page at www.horticulture.com.au/papaya.



Strategic Investment Plan 2017-2021

The Strategic Investment Plan will be used to guide Hort Innovation's strategic investment of the industry levy, ensuring investment decisions align with industry priorities. This at-a-glance version provides a top-level overview of the plan.

Potential impact of the plan

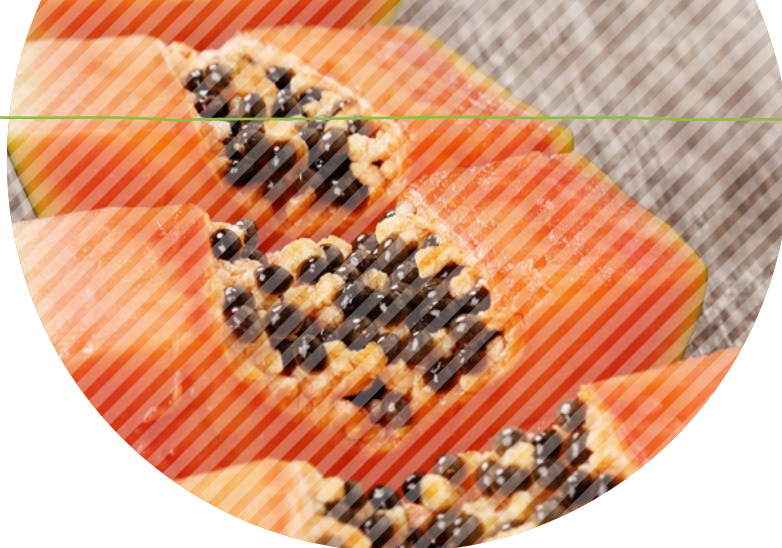


Based on an estimated investment of \$2.4 million over the next five years

OUTCOMES	STRATEGIES
Increased quality to ensure consistency of supply to the consumer	Engage with consumers to identify preferred taste and bring this understanding back to farm so growers can consistently provide quality fruit meeting consumer expectations
	Increase grower focus on quality through improved engagement and dissemination of best practice information
	Research and adopt improved postharvest packing, treatment protocols, storage, distribution and retailer processes to improve quality and increase shelf life

OUTCOMES	STRATEGIES
Access to new varieties and improved pest and disease management improves growers' productivity and profitability	Continue research, trials and adoption of chemical and other processes for effective pest and disease management
	Continue research and commercialisation of new genetically improved varieties that offer increased disease resistance and consumer appeal
	Develop and adopt an integrated pest and disease management (IPDM) plan
	Continue to research and refine agronomic practices to improve productivity, quality and environmental outcomes
Improved market access and increased consumer demand increases returns to growers	Increase demand in existing domestic markets through understanding of consumer preference and targeted marketing around these preferences
	Provide opportunities to access domestic and international new markets
	Support research, development, adoption of growing practices and marketing initiatives to position papaya as a naturally grown fruit with significant health benefits

Highest-priority strategies or activities for the initial stages of the plan are indicated in **bold**.



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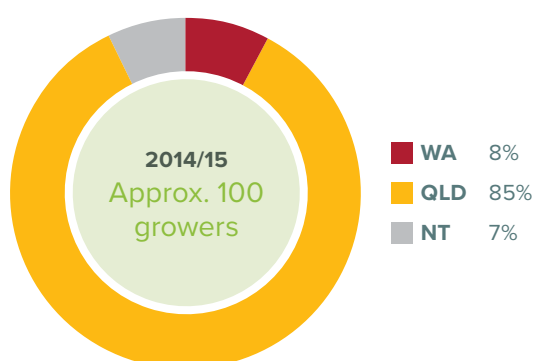
Major opportunities

- » Improved industry information and data sharing to advance production methods, supply chain forecasting, handling techniques and biosecurity defences
- » Links to and use of the research conducted in Fiji by Australian Centre for International Agricultural Research (ACIAR)
- » Co-operative marketing campaign to raise awareness of the health benefits of papaya with melon and cross-category promotion
- » Identify products that can be supplied consistently to target major retail markets
- » Consistently adopt management practices that minimise the use of chemicals for pest and disease management and have low impact on the environment to enhance the acceptance of papaya as a health fruit.

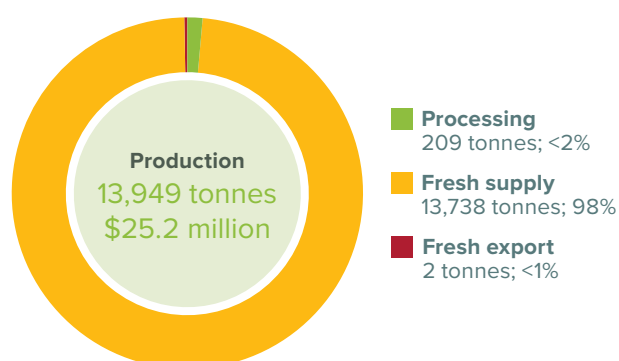
Major challenges

- » Regulatory changes and compliance issues
- » Extreme weather events such as cyclones and low rainfall
- » Competition from other exotic tropical fruits
- » Biosecurity breaches and the subsequent cost of quarantining against endemic and imported pests especially ringspot and fruit fly
- » Increasing costs of supply chain with transportation being one of the major impacts on profitability
- » Poor perception of fruit taste particularly in older demographic categories
- » Supply chain and cold chain issues affecting quality of a fragile product
- » Labour intensive harvesting practices
- » No industry standard product for supply into main retail market and inconsistent quality.

Industry size and production distribution



Papaya supply chain and value 2014/15



Any views contained in this abbreviated Strategic Investment Plan (SIP) do not necessarily represent the views of Horticulture Innovation Australia Limited (Hort Innovation) or its commitment to a particular course of action or a guarantee of specific outcomes. The ability to deliver on all the articulated strategies (and investments) will be determined by the ability of the statutory levy to provide the resources to do so. For more information on Hort Innovation's obligations, rights and responsibilities and a full disclaimer statement, refer to the full version of this SIP that is available on Hort Innovation's website at www.horticulture.com.au.

R&D project list 2016/17

NEW INVESTMENTS 2016/17

PP16000	Papaya industry minor use program
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ONGOING INVESTMENTS 2016/17

PP15000	New genetic targets to improve quality in papaya
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MT13061	Understanding the purchase behaviour of fresh produce consumers
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MT14055	Driving collaboration in Australian horticultural research
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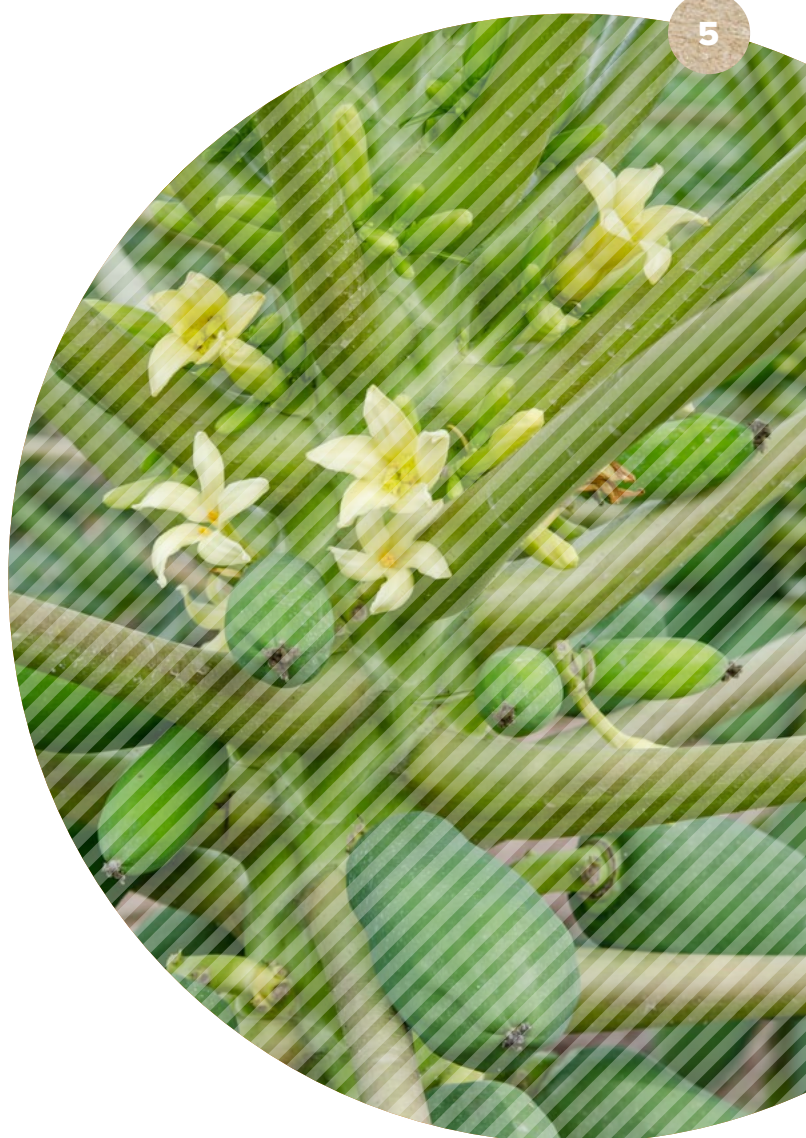
MT15032	Monitoring and evaluation framework for the industry Strategic Investment Plan
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MT15033	Strategic Investment Plan
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FINAL REPORTS ISSUED

PP13000	Effect of curative and protectant pre-harvest fungicide applications on post-harvest decay of papaya
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During the 2016/17 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.



R&D report

Take a closer look at some of the key projects in the Hort Innovation Papaya Fund below. To keep up to date with the latest information on new and ongoing R&D for the industry, keep an eye out for Hort Innovation's quarterly Hortlink publication, with the latest edition always available from www.horticulture.com.au/papaya.

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Effect of curative and protectant pre-harvest fungicide applications on post-harvest decay of papaya (PP13000)

NOW COMPLETE

Key research provider: The Department of Agriculture and Fisheries (DAF)

This project investigated control and management options growers can use to reduce post-harvest decay of papaya caused by fungal diseases – critical research considering the industry reports annual yield losses of 20 to 40 per cent due to post-harvest decay.

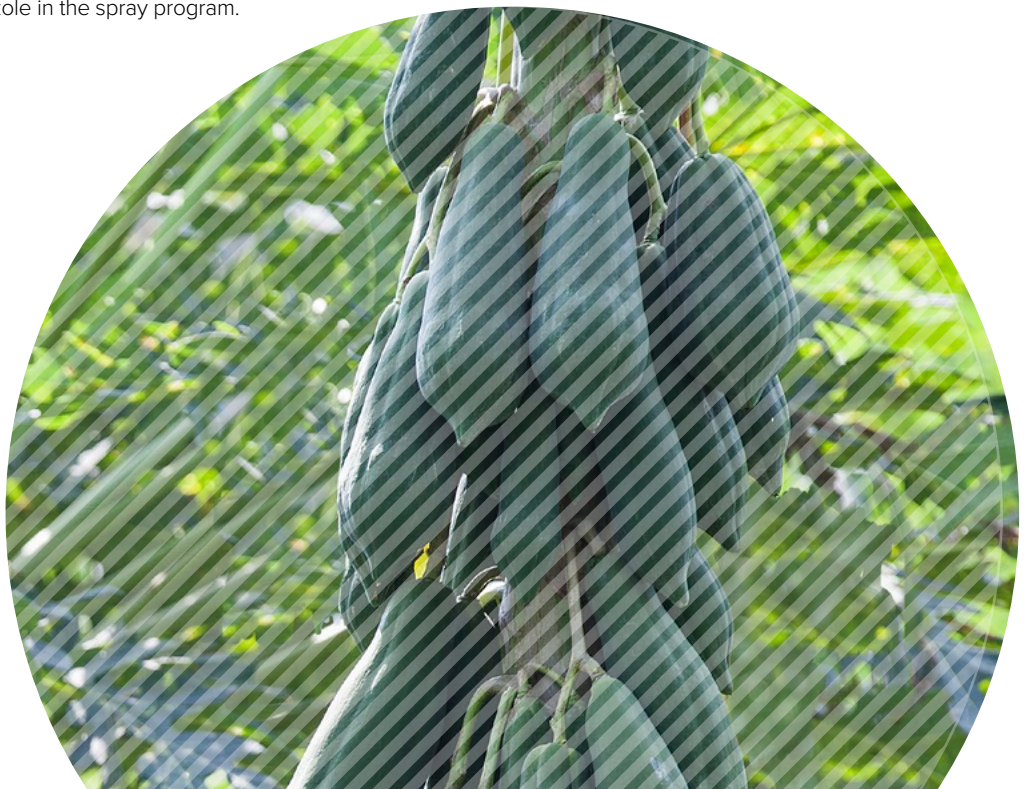
The project began in 2013, with a final report submitted just inside the 2016/17 financial year. It evaluated the efficacy of pre-harvest applications of difenoconazole in spray programs with protectant fungicides; the impact of regularly removing senescent leaves and disease infected fruit; as well as post-harvest hot water treatment.

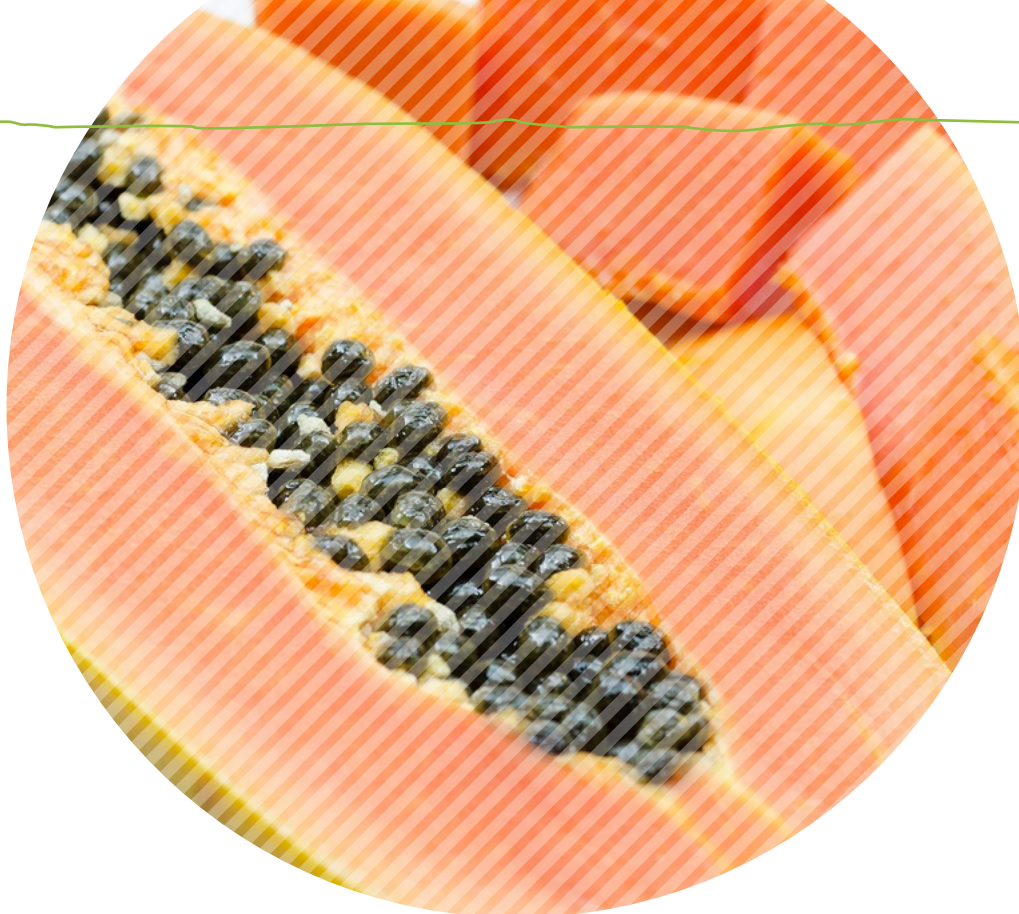
The trials were conducted with growers in the Mareeba and Innisfail area, and researchers found that while current fungicide spray schedules for the control of foliar diseases during the warm and wet summer months provided a level of control of many of the post-harvest rots of papaya, there was no benefit in including the curative fungicide difenoconazole in the spray program.

Removal of dead leaf proved an effective method of reducing disease inoculum levels in the crop and also provided a clear pathway to the fruit column during fungicide spray applications.

In the post-harvest trials, results from disease assessments showed that hot water temperature treatments between 50° to 52°C provided the optimal treatment for controlling disease.

The project determined that adequate control of post-harvest diseases of papaya could be achieved by combining field sprays with post-harvest treatments of hot water. It concluded that for Queensland papaya producers, the decision to install a hot water treatment system in farm packing sheds would require consideration of the cost benefit, including a reduction in the need for postharvest chemical fungicides, increased profit through reduced spoilage in supply chains, and the opportunity to use hot water from a 'clean-green' marketing stand-point. End users would also benefit by having disease-free fruit, with a longer shelf life most fully realized at times of the year when disease pressure is high.





Papaya industry minor use program (PP16000)

NEW INVESTMENT

Key research provider: Hort Innovation

Through this project, levy funds and Australian Government contributions are used to renew and apply for new minor use permits for the papaya industry. These submissions are prepared and submitted to the Australian Pesticides and Veterinary Medicines Authority (APVMA).

Find a list of minor use permits for the industry on [page 11](#), current as of September 15, 2017.

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 levy-paying members receive monthly. Not a member? Sign up to our membership program for free at www.horticulture.com.au/membership.

New genetic targets to improve quality in papaya (PP15000)

Key research provider: Griffith University

With a focus on improving the quality of Australian papaya and producing elite, uniform cultivars, this project began in 2016 to assist breeding now and in the near-future, and to support industry development.

It has five key sub-projects:

- » Breeding to improve flavour and other important traits in commercial papaya
- » Collection of papaya germplasm and the development of a related database, to provide a resource to increase the genetic base of Australian papaya
- » Molecular studies to assist breeding for papaya
- » Papaya ringspot virus type P (PRSV-P) resistance work
- » The employment of an industry development officer (IDO), who is responsible for carrying out the other sub-project work and for working closely with growers, researchers and other industry stakeholders.

Full details of all completed research can be found in project final reports, which 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).

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. The 2016/17 marketing program involved an influential social media presence, traditional public relations, in-store activity to entice new and retain existing consumers, and a papaya presence at expos to present health and nutritional benefits to expecting and new parents.

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Social media activity

The papaya social media campaign was a constant part of marketing activities for 2016/17. Through the Australian Papaya Facebook page, www.facebook.com/PapayaAustralia, papaya recipes, tips, facts, health information and more were communicated to an engaged community of consumers, with the page growing by 61 per cent to have more than 22,000 fans over the period. On average, each month of the campaign the page reached more than 98,200 people, and there were a total of 14,900 'likes' on its content over the period.

During peak flushes in spring and autumn, posts were made three times a week, with twice-weekly postings at other times.

The social media audience engaged highly with on-farm shots and other grower-related content, highlighting how consumers want a real connection with growers. Health content using the expertise of accredited practising dietitian Caitlin Reid was also popular, and included two Facebook Q&A sessions reaching more than 10,000 people; two top tips for understanding and enjoying papaya, reaching close to 5000 people; and a 'health explained' series spread over six posts, reaching some 50,000 people.



In-store activities

In May 2017, an in-store sampling campaign took place, offering consumers a chance to try papaya and, importantly, to learn about the fruit's health benefits and uses.

A total of 179 stores were selected for four-hour sessions in both New South Wales (89 stores) and Victoria (90 stores). A focus was on supermarkets, where underperformance had been flagged across the category. In all, 27,828 samples of fresh papaya and fresh papaya with lime were handed out during these demonstrations, with consumers given take-home health information and recipes too.

The in-store demonstrations also highlighted shopper insights, which can be factored into future marketing plans. These included:

- » 66 per cent of shoppers surveyed didn't know the difference between papaya and papaw
- » 34 per cent of shoppers had bought papaya before, with 41 per cent of these purchasing based on the health benefits of papaya
- » 39 per cent of shoppers had tried but never bought papaya before
- » 27 per cent of shoppers have never tried or bought papaya before
- » 37 per cent of shoppers said they don't notice papaya in stores
- » 40 per cent of shoppers said they are price resistant to purchase.



Public relations campaign

A public relations campaign for the industry circulated compelling materials that focused on taste, health and seasonality messaging, with accredited practising dietitian Caitlin Reid helping to communicate the health benefits of Australian Papaya.

There was a new seasonal media release and the circulation of existing recipes and imagery to a broad range of media, plus the updating of a social media toolkit featuring recommended, ready-to-use papaya health content for Facebook, Twitter and Instagram, which was sent to a database of health professionals, food and health media, and social media influencers.

There was also an outreach program to top-tier media and social media influencers, which involved tailored papaya pitches, the offering of interviews with Caitlin Reid and papaya grower Daniel Mackay, and the supply of fresh Australian Papaya hamper with product, facts, tips and health insights. The hampers were sent to *New Idea*, *Healthy Food Guide*, *Prevention*, *Woman's Day*, *Bauer Food Studio*, *Good Health*, *Kidgredients*, *The Lebanese Plate* and *Belly Rumbles*.

The public relations activity generated some 85 pieces of papaya coverage across traditional and social media during the period, with 91 per cent of these articles including a recipe or usage tips, 45 per cent including papaya health benefits, and 61 per cent including seasonal information. This coverage reached a combined total of more than 6.48 million people.

Family-focused expo activity

During 2016/17, Australian papayas were well-represented at two events involving the marketing campaign's primary target market of new and small-scale families.

- » **The Pregnancy, Babies and Children's Expo**, held in Melbourne in late February 2017, with 12,500 people in attendance. The papaya stand showcased papaya in puree form, with 2100 samples handed out. Blended with banana, the puree was a hit with babies and parents, including expecting parents looking for ideas for once bub is born. The puree was presented as healthy and cost-effective.

Surveying at the point of sampling found that 100 per cent of people did not understand just how versatile and healthy papaya is, but those leaving the stand walked away with targeted messaging to help rectify this.

- » **The Sydney Pregnancy and Baby Expo**, held over three days in May 2017, with 20,831 people attending. Over 7500 (36 per cent) of visitors were given fresh papaya, papaya and lime and puree samples during the show and walked away with a clear and targeted message and information on the benefits of papaya. Innisfail papaya grower Amanda Arbuckle represented growers at the show, creating a real and personal connection between consumers and growers and building trust and authenticity for the product.



Financial summary

Financial operating statement 2016/17

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	R&D (\$)	MARKETING (\$)	TOTAL (\$)
	2016/17 July – June	2016/17 July – June	2016/17 July – June
OPENING BALANCE	308,213	131,092	439,305
Grower levies (net of collection costs)	176,554	176,534	353,088
Australian Government money	94,195	–	94,195
Other income*	7,582	3,197	10,778
TOTAL	278,330	179,731	458,061
Project investments	150,847	133,136	283,983
Grower consultation and advice	7,154	1,175	8,329
Service delivery – fund-specific	5,547	1,750	7,297
Service delivery – base	24,842	17,688	42,530
SUB-TOTAL (LEVY + AUSTRALIAN GOVERNMENT CONTRIBUTION)	188,389	153,749	342,139
Levy contribution to across-industry activity	4,130	–	4,130
CLOSING BALANCE	394,024	157,073	551,097
Levy collection costs	7,132	7,132	14,264

* Interest, royalties



Minor use permits

Pesticides are a valuable tool for the papaya industry. While the use of pesticides is being modified through the increasing uptake of integrated pest management, there is still a need for the strategic use of specific chemicals.

Pesticide companies submit use patterns for registration to the Australian Pesticides and Veterinary Medicines Authority (APVMA) and the papaya industry is generally provided with limited registrations because of its minor crop status. Minor use permits therefore play a role, coming into play when the market size is considered too small to generate adequate commercial returns for the research and development investment by the pesticide companies.

Below is a list of minor use permits for the papaya industry, as of September 15, 2017.

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Permit ID	Permit description (pesticide/crop/pest)	Date issued	Expiry date	Permit holder
PER12592	Chlorothalonil and difenoconazole / Papaya / Black spot and brown spot	14-Aug-11	30-Jun-20	Growcom
PER13076 v2*	Propamocarb / Papaw or papaya (seedlings) / Damping off	05-Apr-12	31-Mar-22	Papaya Australia (PA)
PER13158 v8*	Dimethoate / Specified citrus, tropical fruit commodities and hot chilli peppers (post-harvest) / Various fruit fly species	06-Oct-11	05-Oct-17	Growcom
PER13671 v2*	Bulldock 25 EC / Papaya / Fruit-spotting bug and banana-spotting bug	28-Nov-12	30-Apr-19	PA
PER14098	Etoxazole (Paramite Selective Miticide) / Papaya / Two-spotted mite	3-Oct-13	30-Jun-18	PA
PER14097	Abamectin and fenbutatin oxide / Papaya / Two-spotted mite	31-Oct-13	30-Jun-18	PA
PER12450 v6	Trichlorfon / Specified fruit crops / Fruit fly	06-Oct-11	31-Jan-21	Growcom
PER14417	Copper as hydroxide / Papaya / Papaya fruit rot	28-Feb-14	31-Mar-19	PA
PER14490 v2*	Metalaxyl-M (Ridomil Gold 480EC), Metalaxyl (Zee-mil) + phosphorous acid / Papaya / Phytophthora root rot and Pythium	4-Apr-14	31-Mar-22	PA
PER13859	Dimethoate / Orchard clean-up - fruit fly host crops following harvest / Fruit fly	9-Feb-15	31-Jul-24	Growcom
PER80746	Ethephon / Papaya / Fruit degreening	18-Aug-15	31-Aug-20	PA

* During the 2016/17 financial year, renewals for these flagged permits were prepared by Hort Innovation and submitted to the APVMA.

All efforts have been made to provide the most current, complete and accurate information on these permits, however it's recommended that you 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.

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