

PAPAYA PRESS

ISSUE 4 - NOVEMBER 2019



The Papaya clean seed program aims to better protect the papaya industry against papaya sticky disease (pictured).

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Papaya clean seed update

Dr Paul Campbell

Delivered by research provider the Department of Agriculture and Fisheries Queensland (DAF), the Papaya clean seed program (PP18001) works to deliver a clean seed protocol to help better protect the papaya industry against papaya sticky disease.

DAF researcher on the project, Dr Paul Campbell, provided a quick update on the progress towards improving understanding of the disease, and management options for future seed production processes.

The first plantlets produced under the clean seed project have tested negative to the virus PMeV2 Aus that causes papaya sticky disease. Initial stages of the project have focused on four parental lines, including the

parents of the popular red variety RB1. The plants were produced through embryo rescue and tissue culture, and when planted out, they were protected in insect proof caging to stop the virus coming in from outside. The initial lines put through this system had ~98 % virus-free plants.

The transmission of viruses by seed is never one hundred percent. Even if the seed is infected, the embryo inside the seed may not be, but the process of germination infects the seedling. By using embryo rescue, we eliminate that infection mechanism and increase the chances of getting clean planting material. Dr Chat Kanchana-Udomkan (Griffith University), has done a great job getting the embryo rescue system established for the different parent lines. Finding the right seed age for embryo rescue is critical to the success of the technique.

Next steps for the project are to establish tissue culture lines for long term protection of the clean mother plant lines and get more parent lines through the system. We will also be starting some basic virus transmission studies now that there are some virus free plants available.

Keep an eye out for more updates to come.

The 'Papaya clean seed program' (PP18001) is funded by Hort Innovation using papaya industry levies and funds from the Australian Government.

Hort Innovation
Strategic levy investment

PAPAYA FUND

This project has been funded by Hort Innovation using the papaya research and development levy and funds from the Australian Government. For more information on the fund and strategic levy investment visit horticulture.com.au



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Hort Innovation is the grower-owned, not-for-profit research and development corporation for Australian horticulture.

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**Hort
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Strategic levy investment

**PAPAYA
FUND**

See your levy at work!

Get an update on all new, current and recently completed levy-funded activity on the Hort Innovation Papaya Fund page at www.horticulture.com.au/papaya.

You can access easy-to-read project updates, a snapshot of the Papaya Fund, research reports and resources, key industry contacts and more. Don't miss the Hort Innovation 'Growers' section to keep informed on your levy investments, upcoming events, scholarship opportunities and other handy info!

Stay in the loop with your levy by becoming a member of Hort Innovation, the grower-owned, not-for-profit research and development corporation for Australian horticulture. Paying a levy doesn't automatically make you a member, but signing up is free at www.horticulture.com.au/membership.

From the Chair

GERARD KATH

Welcome to the fourth edition of the Papaya Press.

It has been a challenging year for papaya growers with environmental conditions, market pressures and pests and disease having a significant impact on quality, yield and profitability.



Each year and season seems to bring a new set of challenges. The papaya industry is facing unprecedented high yields per week during harvest. This is having a major impact on the wholesale price of papaya, which is currently coming in well under one dollar per kilo. Ultimately, it means growers are selling below harvest cost, which is not sustainable for the industry.

However, every cloud has a silver lining and this period of low prices is also resulting in large volumes hitting retail shelves. This high penetration could be an opportunity to grow market share and generate longer term consumer demand.

As for most growers, weather and environmental conditions have been the predominant variable affecting profitability. Record low temperatures in September, followed by record high prolonged temperatures in November impacted the flowering and setting of fruit. I'm hearing this has caused low

yields per tree on the coast, whereas we're seeing winter freckle and fruit blemish on the Tablelands.

In 2019, fruit quality has been affected by poor and inconsistent fruit set on both yellow and red papaya which is most likely due to environmental conditions. Papaya Sticky Disease remains a prominent issue, and more research & development is required to fine tune best-practice recommendations to better protect our crops.

Seed production has been occurring across the coast and Tablelands, which has been more challenging due to the impact of pests and disease. But it's great that work is currently underway to ensure growers are sourcing clean planting material.

In people news, Christian Patterson has left his role as Relationship Manager at Hort Innovation. We thank him for his contribution to industry and wish him the best.

It's great to read about the progress of levy funded projects in this edition of the Papaya Press and I look forward to seeing levy payers reap the benefits of these projects in the future.

I'll wrap up with my final comment, that although growers seem pessimistic about papaya production now, this fluctuation in yield and price has come and gone before and will ultimately level out.

Best regards,
Gerard Kath



From the Hort Innovation Office

with Outgoing Papaya Fund Relationship Manager **CHRISTIAN PATTERSON**

Papaya levy funded projects have seen great progress in 2019 as they work towards achieving key outcomes outlined in the 2017-21 Strategic Investment Plan (SIP).



We're pleased to say the portfolio is well committed, and that levy funds are being utilised effectively.

This year, four new members joined the Papaya Fund Strategic Investment Advisory Panel (SIAP), taking our panel from three to seven members.

Welcome to the following SIAP members:

- Amanda Arbuckle, A&K Arbuckle, QLD
- Tayla MacKay, Mackays, QLD
- Paul Fagg, Skybury, QLD
- Mark McLaughlin, Skybury, QLD

It has been very rewarding working on the Papaya Fund, and I wish everyone all the best moving forward.

To keep up to date with your levy and how it's being used, head to the 'For Growers' page on the Papaya Australia website.



MARKETING UPDATE: AUSTRALIAN PAPAYA IN STORE!

To support the Papaya Spring peak, Papaya Australia activated an instore sampling campaign from 2 September to 1 October 2019 as part of the 'Papaya consumer sampling program' (PP18502).

The intent of the activation was to:

- Strengthen interest in Australian Papaya
- Showcase how delicious ripe papaya is with a simple sampling methodology (fresh papaya with lime option).
- Facilitate immediate purchase by displaying the papaya on the stand (for shoppers to select) and highlighting their position in store.
- Help boost purchase frequency by promoting the unique health benefits and delicious recipes.

Sampling took place across 183 stores nationwide, split between Woolworths, Coles and Independents. Over the campaign period, a total of 26,233 samples were consumed with over 20,400 shoppers exposed to the Papaya Australia brand.

In comparison to the 2018 sampling campaign over the same season, average samples increased by +13% achieving increased efficiency. Consequently, the cost per sample improved to \$1.82 vs \$2.16 in 2018.



PAPAYA AUSTRALIA SOCIAL MEDIA UPDATE

As part of the FY20 social media plans, Papaya Australia continued to leverage Facebook while also establishing its Instagram account, @papayaaustralia to drive awareness, foster education and encourage consideration in purchasing papaya.

PLATFORM	MEASUREMENT	KPI TO JUNE 2020	ACHIEVED TO DATE
FACEBOOK	Impressions	2,400,000	627,184
	Average Engagement rate	>6%	14%
	Total Engagements (comments, likes or shares)	180,000	48,119
INSTAGRAM	Impressions	420,000	104,749
	Average Engagement rate	>15%	28%
	Total Engagements (comments, likes or shares)	84,000	21,642

* Impressions – the number of times your content is shown in a social media feed



This post had an impressive reach of 33,262 people and a huge engagement rate of 18%. Fans were responsive to this post with a huge number of comments expressing appreciation for our Australian papaya growers. The use of three images showing papaya at different stages of production was effective in engaging the target audience by sharing an insight into papaya farming.

**TOP
PERFORMING
FACEBOOK
POST IN
SEPTEMBER**



Panacea's Pantry's papaya chia pudding jar recipe was the best performing post for the month on Instagram. It received a significant engagement rate of 29% and a total of 20 saves. Fans engaged positively with the post, expressing their excitement to try the delicious breakfast. The beautiful layers in the jar and brightly coloured papaya were effective amongst the Instagram feed.

**TOP
PERFORMING
INSTAGRAM
POST IN
SEPTEMBER**





PAPAYA BREEDING PROGRAM UPDATE: Putting flavour front and centre

DR CHAT KANCHANA-UDOMKAN

Flavour is a complex trait that combines both mouth perception, as well as amounts and ratios of volatile compounds present in the flesh. To date this trait is highly subjective to descriptions, and there is no tool to accurately determine the trait.

This is one of the reasons that we have included flavour research within the current 'National papaya breeding and evaluation program' (PP18000) aiming to characterise in-depth the key flavour type preferences within the whole papaya chain and to develop a library of "chemical fingerprints" that will be used as a tool to differentiate flavour types.

There are two phases in the flavour research. The initial phase, working in partnership with the University of Queensland, is to identify flavour types of the current commercial varieties by harvesting from various regions by a trained panel. During this phase, our research will also look for volatile compounds that create unique aromas to each variety. The information collected will then be analysed to

identify any correlations between human and machine detections. The second and final phase aims to compare our new developed varieties to the current commercial ones and identify descriptive characteristics of the novel varieties. This information can then be used for marketing purposes when naming the new varieties.

The first phase of the research commenced in September this year. We collected 15 different fruit samples including RB1, RB4, Skybury, 1B and Hybrid 13, harvesting from various regions across Dimbulah, Mareeba and Innisfail. All the samples were delivered under commercial conditions of transport to Brisbane central market, where they were then delivered to QAAFI to ripen and be stored in a controlled temperature cold room for the testing period.

There will be two sessions across the testing period – training and formal. During the training session, a selected professional panel was given fruit samples and asked to describe aroma, appearance, flavour, texture and aftertaste. For example, there are

four types of aroma to be identified in papaya, these are: musty, sweet melon, raw pumpkin and metallic. The panel were given descriptions of each aroma, and a standard reference, such as rock melon for musty aroma. The panel are then asked to score each sample according to the reference type, ranking their intensity from none through to high. Once the panel was familiar with the sample and reference, they were given the sample for the formal session where each fruit sample was cut in half, one for the formal testing session, and the other half for volatile analysis.

The fruit for volatile analysis was transported to a molecular laboratory at Griffith University, Nathan Campus. Here it was sampled for volatile analysis, sugar composition, Brix and acid content. Through this testing, we are able to identify the aroma of papaya flesh using gas chromatography mass spectrometry (GC-MS). This is an analytical method to identify different substances within a test sample – providing you with information of various chemical compounds and their ratio within each fruit sample, which is unique to each variety.



Results from this initial phase will provide information on the effects of growing regions on flesh flavour, especially in RB1 variety, as well as seasonal effect to the flavour. Information collected from the machine detection will be analysed and correlated with the results from the professional panel testing, with the aim of identifying key volatile components of each variety that could be generated as chemical fingerprints of the principal sensory flavour identities.

As a companion to traditional breeding, “chemical fingerprinting” offers the potential to improve the accuracy of targeted flavour selection. Soon we will have more accurate descriptions to describe our papaya flavour and will be able to tell which chemical components play an important role in representing each flavour type. This could lead to the branding of papaya in the market to give consumers a clearer idea of that they’re paying for.

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REGIONAL ROUND-UP

INNISFAIL, QLD – Joe Zappala

The last six months have been exceptional for the papaya industry on the wet tropics. We have had record high temperatures in February. The number of rain days this year have been greater than last year, but with less rainfall. We have also had an extended winter with some overnight temperatures in September the same as if it had been the middle of winter. The weather conditions have now returned to the long-term averages for this time of year with a drier than average spring expected.

The consequences of these weather extremes have delivered record low production on the wet tropics for the period from June to the end of September. Production has increased with the warmer weather. Quality now is excellent. Spring plantings are well underway with areas being planted the same as last year, if not slightly above. Production for the last quarter of this year is expected to be high with above average quality from the wet tropics.

TULLY, QLD – Daniel Mackay

The Tully region experienced an unusual long, cool and dry winter with temperatures recorded as low as 10 degrees in early September. Due to the cold winter production volumes were low, yet good fruit colour and minimal skin blemishing was recorded. Another effect this winter was the increased fruit size, yet the last few weeks have seen the profile returning to normal.

Pest and diseases are stable with the occurrence of papaya sticky

disease becoming less evident to non-existent.

With additional acres planted in the Tully region this year, production volumes will be strong coming into the new year.

TABLELANDS, QLD – Gerard Kath

Over the past couple months, papaya production on the Tablelands has seen great yield of fruit produced per week, with growers predicting an industry record.

In the first week of September we experienced extremely cold temperatures, which combined with dry air, more cold nights and windy conditions, has impacted fruit quickly of papaya, with skim blemish, winter freckle and cold burns being a problem across the Tablelands.

There will be a large volume of fruit continuing to hit the market as we lead into December. It's a challenging time for industry, with these high yields of fruit produced per week having a significant impact on price.

CARNARVON, WA – Annie van Blommestein

Pawpaw production in Carnarvon remains steady. At this stage, we haven't seen significant changes in the area under production.

Fruit is of good quality and is being picked for both the green and ripe markets.

Want to submit an update from your growing region? Email admin@australianpapaya.com.au

2019 Grower Communications Survey

As part of the Australian papaya industry communications program (PP16001), the annual grower survey was carried out in June – July this year.

The survey aims to give levy payers the opportunity to influence the future direction of the program; ensuring they're getting the information they want and need from levy-funded research & development and marketing projects.

The 10 survey questions were developed to gain feedback on the Papaya Press, the 'For Growers' webpage, as well as determine understanding of the levy and content preferences.

Thank you to the 10 papaya growers who participated in this year's survey – your insights are integral to the development of the communications program!

KEY SURVEY HIGHLIGHTS

- On average, respondents rated the May 2019 Papaya Press 7.7 out of 10.
- 90% of respondents said they would like to see more content on R&D outcomes in the Papaya Press.
- 70% of respondents would like to see more 'grower case studies' in future editions.
- 50% of respondents had accessed the 'For Growers' page since May.
- 80% of respondents thought there was enough information on the levy.
- Pest and disease management was shown to be a preferred content topic and was identified as a key issue for growers.

If you have any comments or story ideas for upcoming editions of the Papaya Press, please contact admin@australianpapaya.com.au

Minor use permits for the papaya industry

Get the latest information on minor use permits in this extract from the Hort Innovation Papaya Fund 2018/189 Annual Report. You can access the full document at: www.horticulture.com.au/fund-annual-reports.

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.

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).

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
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
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
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.

New strategy growing Hort Innovation into the future



Front and inside cover of the new Hort Innovation strategy

To kick off the new financial year, Hort Innovation released their 2019-23 Strategy, which will be used to guide the direction of the organisation for the next four years – providing a roadmap for current and future investments into research and development.

To inform the strategy, Hort Innovation gathered insights and feedback from over 350 growers and industry representatives across Australia through a series of 20 consultation workshops held earlier this year, as well as an online feedback system.

A strategy was then developed that supports and promotes the sustainability of the horticultural sector, driving future growth and

innovation for its industries.

Key activities flagged in the strategy place a focus on greater extension activities with more face-to-face grower engagement, the development of more sustainable farming practices to better future-proof horticultural industries, and better explore market expansion and trends.

Hort Innovation connects growers and consumers to drive demand and invest in solutions to improve productivity. These combine to increase the sustainability and prosperity of Australia's horticulture industries.

Download the 2019-23 Strategy at:
horticulture.com.au/corporate-governance/strategy-2019-2023/

THE STRATEGY AT A GLANCE

PURPOSE

Hort Innovation exists to drive a prosperous and healthy Australia, by providing the best knowledge and solutions to create a world-class horticulture sector.

GOAL

Hort Innovation is committed to sustainable growth in horticulture, with the overarching aim of increasing the sector's value to \$20 billion by 2030. This will be achieved through:

- Supporting growth in demand, both domestically and globally
- Supporting profitable and collaborative industries
- Delivering world-class innovation, knowledge and networks.

THE THREE STRATEGIC PILLARS:

1. Drive knowledge and innovation into horticulture industries
2. Deliver the highest value R&D, marketing and trade investments across industries, now and into the future
3. Enable activities that drive all strategies imperatives

Hort Innovation: Annual General Meeting 2019

Are you a Hort Innovation member that pays a statutory or voluntary levy, and have secured voting entitlements by completing an Annual Levy Return form?

If so, you have the right to vote at the AGM being held on Friday, 22 November at Pullman Sydney Airport.

AGM Details:

Date: Friday, 22 November 2019. Registrations open from 9:30am. Meeting commences at 12:00pm.

Location: Pullman Sydney Airport, 191 O'Riordan Street, Mascot NSW 2020

For more details on the 2019 AGM, head to:

horticulture.com.au/corporate-governance/agm-2019/

Across the day, three key events will take place:

- *Hort Innovation Showcase* will commence at 10am. This is an opportunity to learn more about Hort Innovation from its team members.
- *2019 Hort Innovation AGM* commences at 12:00pm. Voting members will elect an incoming Director on the Hort Innovation Board, with two more Board members appointed immediately following the AGM.
- *Workshop to shape new Extension & Adoption Function at Hort Innovation* will follow the AGM and run for 2-hours.