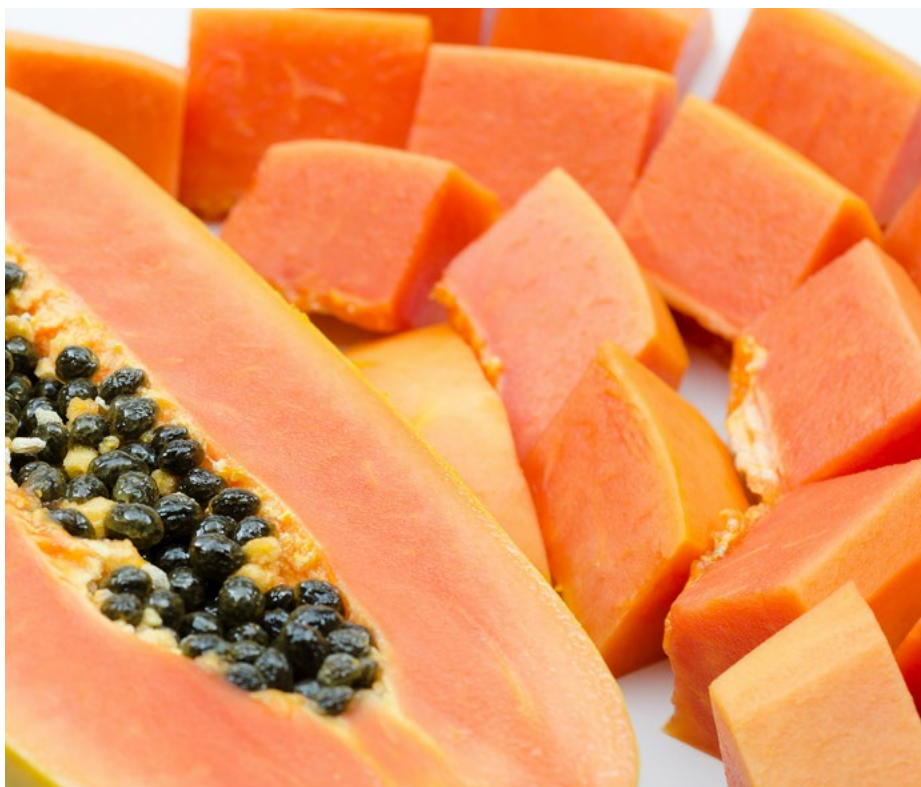


# PAPAYA PRESS

ISSUE 15 - JUNE 2024

## That's a wrap for the extension and communications program



This issue of the Papaya Press marks the final publication funded by the 'Papaya industry extension and communications program' (PP20000), which concludes at the end of July 2024 after three years.

The project's objective was to quantify practices used by papaya growers in integrated pest and disease management (IPDM),

agronomy, and supply chain management, helping them make improvements and manage industry communications better.

Key activities to achieve these goals included one-on-one engagement, Papaya Press publications, on-farm demonstrations/trials, and workshops. The table on page 5 provides a summary of the projects achievements.

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### ENGAGEMENT

- **424 hours** of direct engagement with growers (in-person or via phone) by May 20, 2024.
- **Eight issues** of the Papaya Press distributed to 80 growers each.

### SIX WORKSHOPS

- **Industry priority setting workshop:** August 21, 2021, Brother's Leagues Club, Innisfail.
- **Spray efficiency workshop:** Co-hosted with Allan Blair on April 28, 2022, RMC Farming, Innisfail.
- **Breeding R&D workshop:** Co-hosted with Griffith on August 5, 2022, DAF offices, Mareeba.
- **Papaya post-harvest bus tour:** January 19, 2023, Skybury Farms, Mareeba.
- **Pest and disease forum:** October 19, 2023, DAF offices, Innisfail.
- **Nursery bus tour:** June 14, 2024, DAF offices, Mareeba.

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This edition has been developed by Dentsu Creative PR and the Department of Agriculture & Fisheries (Queensland).

This magazine is funded by Hort Innovation using the papaya R&D levy and contributions from the Australian Government.

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

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**Hort Innovation** **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](http://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](http://www.horticulture.com.au/membership).

# From the Chair

GERARD KATH

**We are quickly approaching the coldest and shortest days of the year. Papayas, being tropical plants, understandably do not thrive during this season (neither do I)! During this time, trees slowdown in growth and fruit production, leading to poorer flavour and brix levels. This year's high rainfall during the wet season has further impacted our crops by reducing tree numbers, yields, and fruit size.**



Reflecting on the past four months, transport production figures show that the industry has produced approximately 15% less fruit compared to the same period last year. This reduction has driven up prices for quality fruit due to strong demand, even amidst significant competition for consumer discretionary spending. The ongoing discussions about the cost-of-living pressures highlight that our economy is more divided than ever, with some consumers under financial strain while others remain unaffected. Our regular and loyal consumers, those with expendable income, have sustained the demand. Had production increased by 15% as it did last year, the additional fruit might have ended up with consumers unable to afford such luxury items, potentially driving prices down to the cost of production levels.

During the last Papaya Strategic Investment Advisory Panel (SIAP) meeting, we had a thought-provoking session directly relevant to all growers. An agenda item required everyone to list issues that keep them awake at night. The topics varied, mostly focusing on production challenges. Examples included fruit spotting bug control, spider mite pressure and control, cost of production versus returns and retail prices, post-harvest fruit rots, staff availability and productivity, and pest pressures from cockatoos and flying foxes. These challenges are common concerns for many growers.

We encourage all growers to share their thoughts to help us gain a comprehensive understanding of the issues. While we may not have immediate solutions or delve deeply into every topic, identifying common issues can guide research and investment efforts.

This edition marks the conclusion of the 'Papaya industry extension and communications program' (PP20000), which finishes at the end of July 2024 after three years. Thank you to the Department of Agriculture and Fisheries, Queensland and the Dentsu Creative Public Relations teams who has led the charge on the magazine and broader program.

Best regards,  
**Gerard Kath**

## REGIONAL ROUND-UP

### What's happening in the regions?

#### SOUTH JOHNSTONE, QUEENSLAND – BOOLABAH FARMS

We have given up on checking the weather forecast in Innisfail. We are still trying to find a bit of sunshine, which hasn't revealed itself to us in Innisfail since December last year, making life difficult in the aftermath of Cyclone Jasper. At the moment, we are trying to stay on top of our spray program to get the next lot of fruit through this wet season. Production has been slow but new



paddocks coming through are looking very good. Nothing outside of the usual challenges we face this time of year.

# PLANTING THE SEED FOR IMPROVED NURSERY PRACTICES

THE PAPAYA INDUSTRY NURSERY BUS TOUR WAS HELD ON JUNE 14, 2024 AS PART OF THE ‘PAPAYA INDUSTRY EXTENSION AND COMMUNICATIONS PROJECT’ (PP20000).



Nursery Manager, Ben Lavers, explaining the batching system used by Turkinje nursery to allow tree traceability



Growers observing the seedling transplanter at Flourish nursery



Elaine Duncan of Flourish addressing the growers in the nursery

**Delivered by the project team at the Queensland Department of Agriculture and Fisheries (DAF), growers were invited to join a tour of commercial nurseries around Mareeba, Queensland.**

DAF project coordinator, Emily Pattison, said it was a great day, with twenty-three participants attending the event.

“Growers were given the opportunity to visit Flourish, Mareeba’s largest commercial nursery, which supplies wholesale nursery plants to retail stores and performs contract nursery work for local farms,” Emily said.

“Flourish aims to produce high-quality seedlings at a competitive price while remaining profitable, and the automation and efficiency implemented across this business was amazing to see.

“By producing so many different species (>200) and providing them at a high-quality standard, Flourish represents one of the leaders of nursery innovation in Queensland.

“We are so fortunate to have had the opportunity to visit this nursery and understand what a high-throughput nursery looks like.”

Owner and manager, Elaine Duncan, also addressed the group, taking the growers through some of the nursery processes, from creating potting mix to seeding, fertilising, and delivering a quality product.

The group then went to Turkinje Nursery, an accredited tree crop nursery supplying commercial farms in the region.

“Turkinje is accredited through the rigorous ANVAS scheme, which certifies avocado nurseries, particularly around disease management,” Emily said.

“Avocados suffer from a similar disease to papaya – *Phytophthora cinnamomi*. A large portion of their accreditation focuses on managing *Phytophthora* to ensure plants go out disease-free. Their accreditation places Turkinje in the highest nursery best practice category.”

Best practice is the baseline for Turkinje nursery manager, Ben Lavers.

“As I outlined procedures to the papaya growers, it was clear that my attitude to hygiene was ‘above and beyond,’” Ben said.

“Tree hygiene is one of the most important factors in my business. My reputation for producing clean trees is paramount to its continued success.”

The visit to the nurseries was followed by a presentation by Phill Slocombe of Papaya Seeds Australia, who shared some valuable advice from his own experience in raising papaya seedlings. This presentation was very well received by the growers.

The event received excellent feedback from the attendees, with all stating they learned something new and were motivated to make changes in their own nurseries.

*This event was run as part of the Papaya Industry Extension and Communications Project (PP20000) which is funded by Hort Innovation, using papaya levy funds, co-investment from the Department of Agriculture and Fisheries and contributions from the Australian Government. Hort Innovation is the grower-owned, not-for-profit research and development corporation for Australian horticulture.*

# INDUSTRY NEWS

## New papaya production figures available

Papaya Australia has released the sixth set of production figures from North Queensland's main papaya growing areas under the 'Papaya market supply data capture and analysis' (PP20003) project.

From July 2023 to April 28, 2025, the total number of papaya and paw paw consignment pallets sent from North Queensland was 20,392. The Tablelands received 58.4 % of the red and yellow variety, while 41.6% went to the coast. Most pallets were sent across Queensland (9,460), followed by New South Wales (6,959), Victoria (3,482), and South Australia (491).

The aim of this project is to assist papaya growers in making better production and marketing decisions

during the growing season as well as in the long-term.

Production figures are tallied to give a production overview of the Tablelands and coastal areas. To obtain the data, transport companies report the total pallets sent to the main eastern seaboard markets, estimating the weekly production volume in tonnes, with the assumption that pallet weight represents approximately 800kg of fruit.

*The 'Papaya market supply data capture and analysis' (PP20003) project is funded by Hort Innovation using papaya industry levies and funds from the Australian Government.*

### PAPAYA PRODUCTION FIGURES 1ST JULY 2023 TO 28TH APRIL 2024

Total Red & Yellow to QLD	9460
Total Red & Yellow to NSW	6959
Total Red & Yellow to VIC	3482
Total Red & Yellow to SA	491
<b>TOTAL</b>	<b>20392</b>
Total Red & Yellow for Coast	8481
Total Red & Yellow for Tablelands	11911

## ANNUAL PAPAYA COMMUNICATIONS AND EXTENSION SURVEY

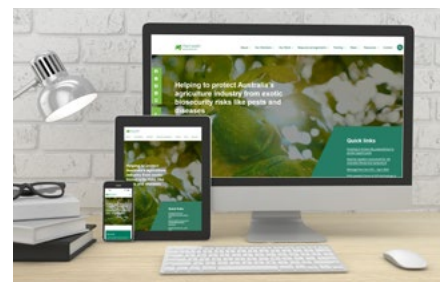
The 'Papaya Industry Extension and Communications Program' (PP20000) is coming to a close this July.

Last call to provide your feedback!

Influence the future of levy extension and communications activities by providing your anonymous and confidential feedback on priority topics and activities covered under the program.

It only takes a few minutes. Fill the survey out here: <https://www.surveymonkey.com/r/QY9QJ6X>

*The 'Papaya industry extension and communications program' (PP20000) project is funded by Hort Innovation using papaya industry levies and funds from the Australian Government.*



## INTRODUCING PHA'S NEW ONLINE PLATFORM FOR PLANT BIOSECURITY KNOWLEDGE

The Australian plant industry has an engaging new online platform for plant biosecurity knowledge.

Plant Health Australia's (PHA) new website incorporates improvements to enhance the user experience, making it easier to access plant biosecurity information, tools, and resources.

As the trusted coordinator of the Australian plant biosecurity system, PHA brings expertise, knowledge, and stakeholders together to generate solutions that improve biosecurity outcomes to ensure the plant biosecurity system is future-orientated and solutions-focused.

With a library of more than 1,300 plant biosecurity resources, PHA's full portfolio of work, newly added 'Our Members' and 'Training' sections, the website is fresh and modern, making it easy for users to navigate and find what they need.

"The new comprehensive resource centre is the ultimate knowledge repository of all things plant biosecurity," said Sarah Corcoran CEO of PHA.

The refreshed website has a contemporary design with simplified navigation, search feature, and resource centre that allows users to seamlessly explore decades worth of plant biosecurity information.

"Designed with our stakeholders in mind, the website is engaging and intuitive, with a responsive mobile-friendly design, ensuring easy on-the-go access," said Ms Corcoran.

The website will regularly be updated with new resources, news, and events to ensure it remains relevant and functional.

Explore PHA's new website now: <https://www.planthealthaustralia.com.au/>

(Continued from page 1)

# Papaya industry extension and communications program conclusion

## ON-FARM DEMONSTRATIONS/TRIALS

### 1. EARLY SEX DETERMINATION OF PAPAYA SEEDLINGS THROUGH DNA ANALYSIS:

- Used molecular techniques to determine the sex of papaya seedlings early. The test was 100% accurate in the field; interested growers were trained to use the technique on-farm.

### 2. NITROGEN REQUIREMENTS OF PAPAYA:

- Evaluated ideal nitrogen rates for papaya using four rates over 12 months (250 kg/ha to 600 kg/ha).
- Results showed decreased productivity at 250 kg/ha, with 350 kg/ha, 450 kg/ha, and 600 kg/ha yielding similar production levels.

### 3. PHYTOPHTHORA SYSTEMS MANAGEMENT:

- Investigated the role of organic matter and gypsum on phytophthora suppression starting in October 2022.
- The treatments were: control, pretreatment of 5t/ha of gypsum, 2.5t/ha of microfine prilled gypsum (OzCal) spread around the tree monthly and mulch applied pre-planting.
- No significant treatment differences were found, with the biggest factor being planting position in the paddock.

### 4. MONITORING LEAFHOPPER POPULATIONS FOR PHYTOPLASMA CONTROL:

- Used sticky traps to monitor leafhoppers and their relation to dieback.
- Red sticky traps did not intercept leafhoppers in two months; further trials are needed to determine the best colour for leafhopper attraction.

### 5. COMPARISON OF SINGLE PLANTS AND QUAD PLANTINGS:

- A trial started in November 2023 to test growth and production advantages of single versus quad-planted papaya seedlings.
- Single plants had their first fruit on average 48cm lower and trunks were on average 3.2cm thicker in diameter 10cm above the ground.

### 6. INCORPORATING PREDATORY MITE RELEASE INTO PEST MITE MANAGEMENT STRATEGIES:

- Tested the effectiveness of releasing predatory mites as part of an IPM system for Two-spotted mite and African spider mite.
- Drone-released predatory mites were ineffective due to high pre-treatment pest populations and challenges with the drone release method, indicating a need for more targeted application strategies.



The 'Papaya industry extension and communications program' (PP20000) project is funded by Hort Innovation using papaya industry levies and funds from the Australian Government.

# LEVY FUNDED PROJECT UPDATES

## TRIALS COMPLETE ON CONSUMER PREFERENCES FOR PAPAYA FRUIT FLAVOUR

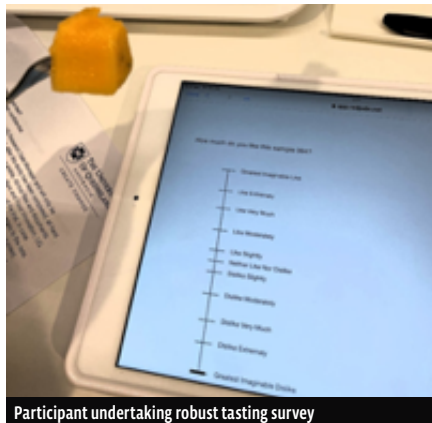
Consumer surveys have been undertaken on Australian and international papaya varieties, including the new breeding lines, to determine which varieties are preferred by domestic consumers.

The surveys were conducted through the ‘National Papaya Breeding and Evaluation Program’ (PP18000) and ‘Genetics of Fruit Sensory Preferences’ (AS19003) research projects, led by Griffith University and funded through the Hort Innovation Papaya Fund.

The robust tasting surveys were conducted by PhD Researcher, Joshua Lomax, who won the Centre for Planetary Health award through Griffith University to Queensland Alliance for Agriculture and Food Innovation (QAAFI) facility at the University of Queensland, Long Pocket.

With the help of the QAAFI team, led by Heather Smyth and Emma Hassall, 125 participants were recruited to taste nine papaya genotypes, including ABLs and hybrids developed in PP18000, along with common commercial varieties.

“These varieties were selected because they represent distinct flavour profiles (as determined in previous sensory studies) and include red papaya varieties: RB1, T2-6-5.27.12 (red ABL), Hybrid 6 (cross between the red ABL C2-6-5.15.2 and Solo), Sunlight 1 (red ABL registered through PBR Australia), Solo (Hawaiian variety) and Hybrid 1 (cross between the red ABL C2-6-5.9.2 and Solo); and yellow pawpaw varieties: Moonlight 1 (yellow ABL registered through PBR Australia), ML3-3-13 (yellow ABL) and 1B,” Mr Lomax said.



Participant undertaking robust tasting survey

“The survey was marketed as a ‘tropical fruit tasting’, to avoid any bias towards papaya lovers’ or ‘haters’. Nobody knew they were tasting papaya until they sat down in their tasting booth.

“The survey was designed to be simple and prompted each participant to score the fruit sample on a scale from 0 (greatest imaginable dislike) to 100 (greatest imaginable like).

“The participant group included a mixture of gender and ages, and information about the participants’ typical papaya consumption habits was collected.

“Interestingly, the average scores across all the papaya genotypes were greatly affected by the participants papaya consumption habits, finding that people who claimed to never consume papaya consistently scored the fruit samples lower than any other group, and people who rarely eat papaya scored each fruit sample similarly to those that are more frequent consumers (2-4 times a week, once a week and 1-3 times a month).

“This suggested that there are some flavours in the fruit that people may be very sensitive to and that there is a proportion of Australians who don’t know that they like papaya fruit. Numerous participants walked out of the tastings pleasantly surprised about some of the samples because they didn’t think that they liked papaya beforehand, which is a promising indication of the untapped potential for the papaya industry.

“Coming out on top of the tastiest papaya genotypes were RB1, T2-6-5.27.12, Hybrid 6 and Sunlight 1; Solo and Hybrid 1 were close behind and the yellow varieties scored the lowest. Out of the three yellow varieties Moonlight 1 stood head and shoulders over ML3-3-13 and the current industry standard, 1B, had by far the lowest liking scores.

“The participants were also invited to note down anything that they liked or disliked about each fruit sample and one of the recurring notes that people liked about Moonlight 1 was that it had hints of mango flavours.

“The next step is to find trends in the data and link characteristics which people liked or disliked, to specific chemicals in the fruit. To do this, machine learning techniques approaches will be tested on all combinations of chemical and sensory data to generate the best predictors of fruit flavour and overall liking.

“Our research highlights the positive flavour developments from the ‘National Papaya Breeding and Evaluation Program’ (PP18000) and the consumer perceptions that can be used to inform future marketing strategies to boost papaya popularity. This data will be used to determine specific compounds in the fruit that people like and dislike.

“Based on our analysis, future Australian varieties can be selected that appeal to more people, including those who are resistant to papaya flavour.”

For more information on the ‘Genetics of Fruit Sensory Preferences Program’ (AS19003), contact Josh Lomax at [josh.lomax@griffithuni.edu.au](mailto:josh.lomax@griffithuni.edu.au) or Dr Ido Bar at [i.bar@griffith.edu.au](mailto:i.bar@griffith.edu.au); and on the ‘National Papaya Breeding and Evaluation Program’ (PP18000) contact Prof Rebecca Ford at [rebecca.ford@griffith.edu.au](mailto:rebecca.ford@griffith.edu.au) or Dr Fawad Ali at [fawad.ali@griffith.edu.au](mailto:fawad.ali@griffith.edu.au).

The ‘Genetics of Fruit Sensory Preferences Program’ (AS19003) project was funded by Hort Innovation using papaya industry levies and funds from the Australian Government.



## CONSUMER BEHAVIOURAL DATA

The ‘Consumer behavioural data program’ (MT21004) released its latest set of data in March 2024 which seeks to provide growers and supply chain partners with information and insights to support business decision-making and strategic activities for the wider industry.

Commencing in mid-2021, this multi-industry investment program through Hort Innovation is led by the global information service, NielsenIQ, and is expected to be completed in July 2026.

The program provides regular consumer behaviour data and insight reporting to a range of industries through the Harvest to Home platform (<https://www.harvesttohome.net.au/fruitmushroomnuts/latest-highlights/papaya-papaw>).

Data is updated every 12 months, with the next set of data to be published in mid-2024.

This program is a part of Hort Innovation’s Consumer Insights Strategy which focuses on building a detailed understanding of our consumers and the potential market opportunities for the horticulture sector.

For more information on the ‘Consumer behavioural data program’ (MT21004), head to: <https://www.horticulture.com.au/growers/providing-access-to-valuable-data-via-the-harvest-to-home-platform/>

*The ‘Consumer behavioural data program’ (MT21004) project is funded by Hort Innovation using multi-industry strategic levies and contributions from the Australian Government.*

*Hort Innovation Australia have calculated this information based in part on data reported by NielsenIQ through its Homescan Service for the Papaya industry with data to 27th March 2022, for the Total Australia market, according to the NielsenIQ standard product hierarchy. Copyright © 2022, Nielsen Consumer LLC.*

## SNAPSHOT: 2024 CONSUMER BEHAVIOURAL DATA FIGURES

The most recent round of data was released in March 2024, with key papaya insights including:

### MARKETING OVERVIEW

- In the 52 weeks (ending March 2024), papaya/papaw was showing no significant change at 0.6% in terms of dollars (\$) and a decline of 8.6% in terms of volume (kg).
- Buying household percentage fell from 12% to 10%, and compared to the prior year, the average spend (\$) rose, from \$22.82 to \$25.90.
- The average weight purchased (kg) rose slightly. Queensland grew the most of all states (4.4%) in dollar sales and declined the least (-6.2%) in volume.
- 23.6% of papaya/papaw volume sales were sold on sold at a reduced cost or with the presence of a feature or display over the past 52 weeks.

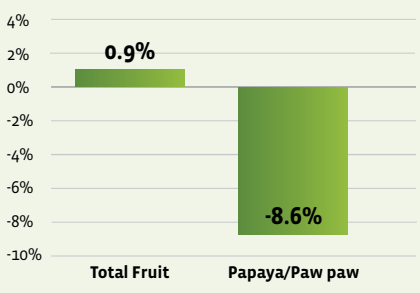
### RETAIL OVERVIEW

- Looking at the dollar share of trade, major supermarkets comprised 47.5% of all papaya/papaw. Non-supermarkets comprise 37.0% of dollar share of trade, and dollar sales were relatively stable at -0.6%.
- High income households were the highest contributors for papaya / papaw with 37.6% in terms of dollar sales versus 44.9% for total fruit.

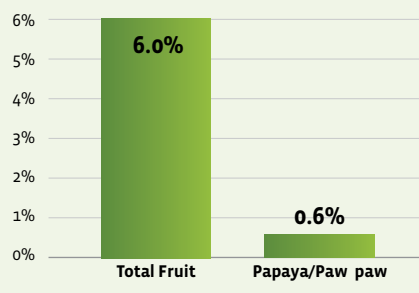
### IN SUMMARY

- Recent activity shows that papaya/papaw was relatively flat in terms of dollars (\$) and in decline at -8.6% in terms of volume (kg).

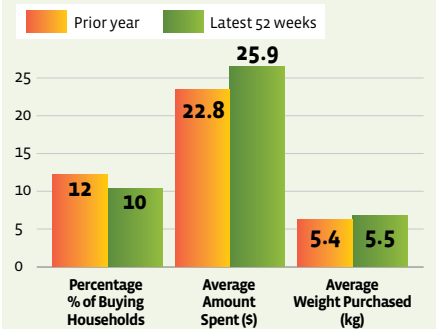
### VOLUME (KG) GROWTH VERSUS TOTAL FRUIT



### DOLLAR SALES (\$) GROWTH VERSUS TOTAL FRUIT



### HOUSEHOLD BUYING BEHAVIOUR



# HORT INNOVATION UPDATES

## Social media and marketing update

### Plan to inspire and drive trial at point of purchase

By Lynda Pallone and Joanna Krol-Slocombe,  
Hort Innovation Marketing

**A**iming to increase the number of households purchasing papaya, the Papaya Marketing Plan for FY25 is built on a shared vision endorsed by the Papaya SIAP.

This plan draws from key priorities identified during an industry workshop in April, bringing together insights from Hort Innovation representatives and industry stakeholders.

Incorporating these insights, the FY25 marketing plan seeks to shift consumer behavior by educating them about the taste, uses, and value of papayas. The goal is to change perceptions from ‘papayas seem expensive’ to ‘one papaya can serve up to four people, representing great value for money’.

Spanning two financial years, the marketing plan focuses on three main activity bursts – April-May 2025, September-October 2025, and April-May 2026. The plan is structured around two main pillars: inspiring

**THE STRATEGIC APPROACH** is driven by twelve key facts about papaya consumption and market dynamics:

- 1. Consumer value perception:** Despite cost-of-living pressures, 78% of consumers view papayas as worth the cost.
- 2. Fresh supply dominance:** 99% of papaya production is directed towards fresh supply, compared to 65% for all fruits.
- 3. Above average food service share:** Papaya holds a 21% share in food service, above the 14% average for fruits.
- 4. Sales decline trends:** While papaya sales are declining, the rate (0.4%) is much lower compared to the 7.1% average for all fruits.
- 5. Low household penetration:** Only 10.4% of households purchased papaya in the past year, with 38% buying only once.
- 6. Low spontaneous purchase intent:** 54% of consumers have never bought papaya, and less than 1% plan to purchase it in the next week.
- 7. Emotional connection barriers:** Price and seasonality are key barriers, indicating
- 8. Consumption patterns:** Papaya is primarily consumed fresh and as a snack, highlighting opportunities to increase its use for breakfast and dessert.
- 9. Retail trial opportunities:** 64% of consumers intending to buy papaya actually follow through, showing potential for driving trials at retail.
- 10. Effective marketing channels:** Limited budgets can be maximised through online content and influencers.
- 11. Health and taste perception:** While papaya is seen as healthy and delicious, it needs to stand out more compared to other fruits.
- 12. Under-representation in major retailers:** There is potential to grow sales volume through major retailers where papaya is under-represented.

consumers to try papaya and driving trial at the point of purchase.

Through the inspiration pillar, content will feature the journey from paddock to plate on paid social media. For the trial pillar, in-store sampling will showcase papaya as a healthy snack and a perfect

breakfast option, emphasising its health benefits and taste attributes to elevate these meal occasions.

*These marketing activities have been funded by Hort Innovation through the papaya marketing levy.*

## 2023/24 Australian-Grown Horticulture Sustainability Framework

**A**ustralian Horticulture is embracing a greener future with the 2023/24 Australian-Grown Horticulture Sustainability Framework.

The 2023/24 Australian-Grown Horticulture Sustainability Framework is a comprehensive roadmap for Australian horticulture growers, promoting sustainable, ethical, and safe farming practices, improving their market access by meeting the rising demand for sustainability.

The framework is an important tool for growers to translate their practices, into a language buyers, consumers and the public understand.

**The framework is structured around four key pillars:**

- 1. Nourish & Nurture** – Improving diets, health, and well-being through safe, quality food and greenlife.

- 2. People & Enterprise** – Highlighting the connection between the sector's people, enterprises, and economic value.
- 3. Planet & Resources** – Emphasising sustainable agricultural practices and resource management.
- 4. Climate & Waste** – Focusing on waste reduction and climate resilience.

Hort Innovation invests in \$80 million worth of sustainability initiatives, enhancing areas from carbon emissions reduction and water efficiency to waste management and advanced agricultural technology.

The Framework is available on the Hort Innovation website at: <https://www.horticulture.com.au/contentassets/f629a21ab8514f16882f40764927d09f/2023-horticulture-sustainability-framework-003.pdf>