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A Tale of Two Pack Sheds

s papaya production grows, many farms are reviewing how they harvest and pack fruit to boost quality, value, and efficiency.

While every farm is different, shed

design and workflow can significantly impact operations. This story compares the practices at two recently upgraded Mareeba sheds, Lecker and Skybury, offering useful insights for growers planning upgrades or new builds.





IN THIS ISSUE

From the Chair	2
Innisfail & District Show	2-3
Regional round-up	3
A tale of two pack sheds	4-5
Unlocking papaya's blueprint	6
Learning from Darwin's Mealybug experience	7
Marketing Update	8

"

We grab fruit once to put it in a bin, then grab it once to put it in a box. That's it, keep it simple.

Gerard Kath, Lecker "

HARVESTING

LECKER SKYBURY

- Picking crew: 3 per trailer
- Use a mix of ground and elevated trailers, pending tree age
- Pick into quarter bins lined with 10mm foam mat situated on trailers at a 45° angle (See photo: Lecker 1 & 2 - PG5)
- Trailer specs: 4.8m long and 1.8-2.4m wide, with slide-on extension rails to increase reach. All forklift-access friendly
- Elevated trailers are fully adjustable to maintain efficiency on older trees (See photo: Lecker 7)
- Trailers unload full quarter bins at mobile field pads. Truck transports bins from pad to shed. (See photo: Lecker 5)
- Pad includes: toilet, under covered smoko area, shed for storing fruit, forklift. All equipment transportable (See photo: Lecker 6)

- Picking crew: 7-8 per trailer
- Use ground trailers only
- Occasional short use of ladders
- Pick onto trailer bed
- Trailer specs: 3m double-decker (See photo: Skybury 1 PG 5)

KEY CONSIDERATIONS

- √ Distance between packing shed and farm
- √ Optimising fruit quality
- √ Managing worker fatigue in paddock
- √ Harvest efficiency
- √ Separate picking and packing crews

Contact: Sherri Soncin, Secretary of Papaya Australia Email: admin@australianpapaya.com.au or Ph: 0499 045 979



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PAPAYA

See your levy at work!

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From the Chair

GERARD KATH

elcome back to another edition of the Papaya Press. We're now more than half way through the year.



Currently the supply, demand and price are balanced, and relatively okay. I hear constantly that Papaya is generally going quite well in consumption, yet confidence/demand is not strong across all lines of fruit and veg. There is a relatively strong underlying demand that has been built up over the years. Yet this can be easily tested by a likely increase in production come this Spring.

Generally, I'm not seeing any major change in the overall dynamics of our industry in the shorter foreseeable future. There's been no major increase or decrease in plantings in any of the major growing areas.

An increasing problem has emerged for our industry in the last several years, that being White Cockatoos. I'm hearing massive problems on the North Queensland coast and an increasing problem on the Tablelands of late. These birds are quite destructive for young plantings through to mature trees as well as attacking fruit on trees. They feed on discarded fruit on the ground and mainly

the seed, however, there is crop damage and consequences to overall production. I'm not sure of the solutions of whether this problem is going to continue, and the reason why it is a problem now and never was in the past. It may need some investment to look at the reasoning and the possible solution. In all my time in this industry, there's never a period that goes by where there isn't something new that challenges you in the production of good quality Papaya.

I want to give a special mention to the younger generation/the new wave of farmers that are coming through our industry. I am encouraged and heartened to see the younger generation have confidence in our Papaya industry.

This has been highlighted by a few feature articles in our previous few Papaya Press publications. It is not a common trend in horticulture to see younger generations taking up farming, so it's comforting and inspiring to see that our industry seems to be bucking that trend. I wish all new and aspiring younger growers the success and reward for their hard work that this industry has given me in the last 30 years.

Gerard Kath Chairman, Papaya Australia

PAPAYA/PAPAW PRIDE SHINES AT THE 2025 INNISFAIL & DISTRICT SHOW

n the heart of tropical Queensland, papaw pride was on full display as local growers defied over three meters of rainfall this year to deliver the most vibrant and competitive showcase seen in years.

The 2025 Papaya/Papaw Exhibit at the Innisfail & District Show saw a surge in entries, reflecting the resilience, skill, and dedication of the region's farming community.

Held on July 10th and 11th at the Innisfail Showgrounds, the exhibit featured 11 classes, each meticulously judged by two Department of Primary Industries (DPI) experts from South Johnstone and Mareeba. Criteria included even colour, size, weight, shape, appearance, packing

presentation, and sugar content.

"It's incredible to see this level of commitment from our growers," said Chief Steward Kevin Harding.

"Despite tough conditions, the Papaya/ Papaws on display was fantastic and speaks to the innovation and pride in our papaya industry." mentioned by the judges.

Twelve entrants competed fiercely, with accolades awarded to the following:

Class 1 - Best Medium (30L) Carton - Yellow Flesh Papaw (Local Market)

- 1st: Valley View Pawpaws
- 2nd: D.T.F Darveniza's

Class 2 - Best Medium (30L) Carton - Yellow Flesh Papaw (Southern Market)

• 1st: Valley View Pawpaws

Continued on page 3>>

REGIONAL ROUND-UP

What's happening in the regions?

GERARD KATH - TABLELANDS REGION, FAR NORTH QUEENSLAND

We're heading into the coldest time of the year – I recorded 6.5 degrees at the shed on the morning of 04.07.2025, and it could still be another 4–6 weeks of cold to come. Overall, it has been above average temperatures for a Winter. We had approximately 20mm of rain in mid-June on the Tablelands, which helped keep temperatures higher, trees and country greener.

With the continuation of cold weather and the likelihood of a dry Spring, it will lead to Spider mite pressures. The new chemical registration for Vertento by Syngenta, will help in fruit spotting bug control and thereby Spider mite control.

Plantings and production have been steady and on par with normal production cycles.

CHRIS AND DIANE ROBINSON – KUNUNARRA, WESTERN AUSTRALIA, REGION

We had a big dumping of rain (around end of March/beginning of April), which for some reason spurred on a big increase in production for a couple of weeks. That resulted in a real drop in prices for a couple of weeks, but reality came to bare and things improved and we're back to normal pricing and normal volumes again.

Everything has been going quite well at the moment. The weather is really cold, so things have slowed down as you'd expect. Fruit quality is really good - fruit volumes are down a little bit so that's pushed returns up a little bit. There's no major disease or pest problems at the moment – the fruit piercing moth problems we were

having earlier on in the year have pretty much totally vanished.

MATT PHEENEY, COOLALINGA NORTHERN TERRITORY REGION

We've been experiencing cool nights for a good month now without a break. It's lasting, we're not getting the warm breaks that we normally get in the middle of it. For the last five weeks we've been sitting around 14-15 degrees at night. The cooler weather has slowed everything down and it's a little bit different than the last couple of dry seasons we've had. I would say this is a cool dry season for us compared to normal. As a result, our production has definitely slowed, over the last couple of weeks especially we've seen things drop off and fruit size drop a little bit. Traditionally the end of July the weather will have started to warm up again ... but it's been a strange year everywhere weather-wise.

We're also trying to manage the Papaya Mealybugs – we're just trying to do the best we can with that. We do weekly sprays, but that's not doing it. We had the predators, but that wasn't keeping up with it either so we've had to chop about a quarter of the farm out. Hopefully we've got it under control now.

BRENT WILSON - TULLY REGION

Since February, rainfall has continuously tracked above the long-term average – some 700 mm YTD. This has contributed to some earlier difficulties in achieving desired timely pesticide applications.

As a result, we saw an increased temporary spike of pre-harvest losses due to disease and

insect damage. Adverse weather conditions also contributed to a small gap in the fruit column which we thankfully worked through.

Recent wet and cooler weather in June, slowed fruit progression down in the field and saw a slight reduction in fruit brix levels. Fruit volumes and brix levels have increased again, so the winter roller coaster continues.

One positive of the cooler weather has been the significant reduction in pest pressure especially within the three mite species prevalent on the coast.

The new plantings this year have gotten off to a great start and we are eagerly looking forward to the remainder of the season.

WILLIAM DARVENIZA - INNISFAIL REGION

The crop in Innisfail is suffering short supply with the colder weather, and flower drop resulting from the inconsistent wet season. Fruit quality has been good and fruit size has been increasing over the last couple of weeks.

Looking forward to some beautiful weather over the coming months as planting is coming into full swing. The area has seen people continue to increase planted areas and there a few more new faces on the scene

We will see some increased volumed in the next 18 months if the weather allows.

PAPAYA/PAPAW PRIDE SHINES AT THE 2025 INNISFAIL & DISTRICT SHOW «Continued from page 2

Class 3 - Heaviest (30L) Carton - Yellow from Class 1 & 2

- 1st: D.T.F Darveniza's
- 2nd: Valley View Pawpaws

Class 4 - Highest Sugar Single Papaw - Yellow Variety

- 1st: RMC Farming
- 2nd: D.T.F Darveniza's

Class 5 – Best Medium (220 Fibre) Carton – Red Bisexual Papaya (Local Market)

- 1st: Sweet Rosie's Reds
- 2nd: M & M Sweet Red Papaya

Class 6 - Best Medium (220 Fibre) Carton - Red Bisexual Papaya (Southern Market)

- 1st: Mac Farms
- 2nd: D.T.F Darveniza's

Class 7 – Heaviest Fibre Container – Red Bisexual Papaya

- 1st: Sweet Rosie's Reds
- 2nd: M & M Sweet Red Papaya

Class 8 - Best Tray Carton - Red Bisexual Papaya (Local Market)

- 1st: Sweet Rosie's Reds
- 2nd: M & M Sweet Red Papaya

Class 9 - Best Tray Carton - Red Bisexual Papaya



(Southern Market)

- 1st: D.T.F Darveniza's
- 2nd: Sweet Rosie's Reds

Class 10 – Heaviest Tray Carton – Red Bisexual Papaya

- 1st: M & M Sweet Red Papaya
- 2nd: RMC Farming

Class 11 – Highest Sugar Single Papaya – Red Bisexual Papaya

- 1st: Fresh Co Farming
- 2nd: J & K Knight

Champion Awards:

 Champion Yellow Papaw Carton – Local Market: Valley View Pawpaws

- Champion Yellow Papaw Carton Southern Market: Valley View Pawpaws
- Champion Red Bisexual Papaya Local Market: Sweet Rosie's Reds
- Champion Red Bisexual Papaya Southern Market: Mac Farms
- Champion Red Bisexual Papaya Tray: Sweet Rosie's Reds

Winners received up to \$300 in cash, vouchers, and products, incentivising participation and celebrating excellence.

Chief Steward Kevin Harding, Papaw Steward Dennis Ryan, and volunteers Kate Knight and Karen Harding were instrumental in orchestrating the event. Their efforts ensured a seamless and engaging experience for all participants and attendees.

Innisfail, a key region for papaya cultivation, benefits from its tropical climate, making it ideal for producing both red papaya and yellow pawpaw. The area growers continue to demonstrate innovation and commitment, contributing significantly to Australia's papaya industry.

The success of this year's exhibit not only highlights the quality of local produce but also reinforces the importance of agriculture in this community.

A Tale of Two Pack Sheds

POST-HARVEST TREATMENT LECKER SKYBURY Stacks of bins are loaded from truck to post harvest wash • Picking trailers drive into the packing shed and workers unload fruit by hand (See photo: Skybury 1) Recycled flood spray of water, Protak®, Ethrel® and acid applied via jets at the top of each bin • Chlorine bath, spray to waste Protak® flood spray, air knife (See photo: Lecker 8) drying tunnel (See photo: Skybury 2) Ground bins clearly labelled and always placed at bottom **KEY CONSIDERATIONS** of each stack to avoid excess mud Tank cleaned and drained daily √ Ripening needs After treatment, stacks are loaded into ripening room at √ Fungal control 26-28°C overnight prior to packing √ Flow of fruit through the shed (See photo: Lecker 3)

PACKING		
LECKER	SKYBURY	
 Packing stations: Modified scissor-lift trolleys with 360° rotation and adjustable height (See photo: Lecker 4 &9) Fruit sourced from quarter bins placed directly onto trolley by electric forklift Fruit hand packed into boxes or trays, labelled with count and packer ID Waste fruit loosely packed into box and pushed onto line for sorting at later stage Single packing line Boxes arrive to packers via overhead box feed Hand operated sicker gun used to label individual fruits 	 Packing stations: In-line benches (See photo: Skybury 5) Fruit sourced from variable-speed belt (See photo: Skybury 3) Fruit hand packed into boxes or trays, labelled with count and packer ID Waste fruit placed individually onto belt that feeds into dump truck for disposal and/or value add products Two independent packing lines Boxes arrive to packers via overhead box feed Hand operated sicker gun used to label individual fruits 	
KEY CO	NSIDERATIONS	
 ✓ Staffing requirements & workplace health and safety ✓ Maintaining continuous supply of fruit to packers 	√ Lighting, airflow and space	

PALLETISING		
LECKER	SKYBURY	
 Boxes automatically sorted into pallets based on count Stackers physically inspect fruit and stack onto ripe or unripe pallet per count Hand stacked from ground Pallet wrapper Stored overnight in ripening or cool room depending on pallet ripeness level prior to dispatch following day Waste fruit manually sorted into bins for waste, animal feed, value add or farm gate sales 	 All boxes arrive to central palletising area (See photo: Skybury 4) Pallet stackers follow label and stack onto pallet based on count Hand stacked from a raised platform, with adjustable pallet heights (See photo: Skybury 6) Pallet wrapper Stored overnight in cool room prior to dispatch following day 	
KEY CONSIDERATIONS		
√ Consistency in every pallet	√ Workplace health & safety	





This system is fully scalable, it's about reducing the number of hours our staff have to work.

Candy MacLaughlin, Skybury.

Future insights

Continual upgrades are inevitable as technology improves. Gerard would like to improve his postharvest wash volumes and is considering the addition of a heat exchanger to apply product at temperature. He is also looking at in-line stickering, which will be a gamechanger for the industry. Candy's next priority is improving the unloading of fruit into the chlorine bath.

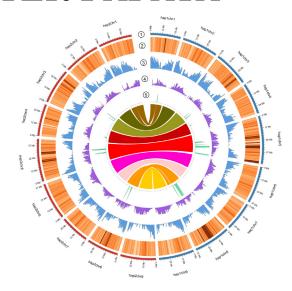
With thanks to Candy MacLaughlin & the Skybury team and Gerard Kath & the Lecker team for their insights.that never ends.

Story by **Ebony Faichney** Farmour



UNLOCKING ITS GENETIC BLUEPRINT **TO DELIVER BETTER PAPAYA**





Left: Fruit of diverse papaya cultivars packed and ready for transport (Credit: Dr Chatchumas Kanchana-udomkan); Right: A graphical representation of the multidimensional papaya genome generated in Circos (credit: Rajeev Varshney, Krzwywinski, M et al., Circos: an Information Aesthetic for Comparative Genomics, Genome Res (2009)".

he Hort Innovation funded project, "Building an advanced genomics platform for Australian horticulture" (AS21006), is greatly expanding the genomics resources available to papaya breeders for developing improved varieties that are also equipped to combat problems like pests, disease, and climate change.

Traditional breeding has served the papaya industry well. However, the challenges that today's growers face require more precise tools. Challenges like safeguarding against diseases and climate change, as well as meeting consumer preferences, are complex, and if the industry wants to take the next step towards solving them, it needs to harness the power of genomics.

"Like any problem, the solution is easier to achieve if you have the best resources available", says Prof Rajeev Varshney, Director, Centre for Crop and Food Innovation, Murdoch University (MU) who is leading the sequencing the genomes of a broad set of papaya cultivars, breeding lines and other genotypes to develop comprehensive genomic resources. This includes sequencing of the advanced materials collected and developed within the "National papaya breeding and evaluation programme" project (PP18000), led by Professor Rebecca Ford from Griffith University.

Other collaborators include Dr Natalie Dillon from Queensland Department of Primary Industries (QDPI). The partners are collaborating in genome analysis and defining strategies for using genomics tools to accelerate trait selective breeding.

"Think of a genomic resource as the full blueprint of a plant, drawn out in fine detail", says Dr Rhys Copeland, a postdoctoral researcher working on the project at Murdoch University. He adds, "It doesn't just list the DNA and genes present, it shows how they're organised, regulated, and linked to highly valued and sought after traits."

Prof Ford says, "Having the full and annotated genomes of current and future Australian papaya varieties will be a massive advantage to future targeted breeding programmes and in understanding the evolution and complexity of the traits that matter most". She adds, "The more genomes you assemble, the more insights you gain!"

These resources, combined with agronomic traits desired by industry and quality and eating traits demanded by consumers, are helping identify genetic markers, which are like signposts in the DNA linked to desirable traits. These 'signposts' enable breeders to make precise decisions with unprecedented accuracy. Instead of waiting years to see if a cross produces progeny with a desired trait, breeders can test seedlings for these markers using DNA analysis tools, like those used to determine papaya seedling

"The project has already produced high-quality reference genome assemblies for eleven papaya varieties from Australia, Thailand, Taiwan, and Malaysia.", says Prof Varshney. He adds, "We are excited to see that these resources are already being utilised including by Murdoch University's pre-breeding team to investigate sex determination in papaya." Breeders and growers prefer hermaphrodites, because

they can self-pollinate and produce fruit that consumers love. However, under stress, hermaphrodite flowers can revert to male, causing fruit drop and reducing yield.

The project aims to build on previous research to pinpoint key sex-determination genes, potentially leading to the development of stable hermaphrodites. Dr Dillon says, "It will be a breakthrough to identify the genes involved in sex determination".

In summary, genomic resources developed through this project will help accelerate variety development from decades to years, and support breeding for disease resistance and improved fruit quality. By developing cutting-edge genomic resources which can be used with practical breeding applications, this research is positioning the Australian papaya industry to meet tomorrow's challenges with today's innovations. The future of papaya breeding isn't just about better varieties; it's about breeding them smarter and faster than ever before.

For more information about the work being done in the "Building an advanced genomics platform for Australian horticulture" project (AS21006), please contact Prof Rajeev Varshney at Rajeev.varshney@murdoch.edu.au

The 'Building an advanced genomics platform for Australian horticulture' project (AS8766) is funded through Hort.Innovation with co-investment from Murdoch University, the University of Queensland/ Queensland Alliance for Agriculture and Food Innovation, Griffith University and Queensland Department of Primary Industries.

Learning from the Top End:

DARWIN'S EXPERIENCE WITH PAPAYA MEALYBUG



QLD DPI Extension officer Emily Pattison with NT DAF entomologists Sachinthi Kithulgoda and Dr Brian Thistleton viewing the parasitoid under magnification.

arlier this year, Queensland Department of Primarv Industries (QDPI) Extension officer Emily Pattison travelled to the Northern Territory as part of the papaya levy-funded project Supporting innovation in the Australian papaya industry (PP23003). The visit formed part of the project's preparedness focus: future-proofing the papaya industry by identifying emerging threats before they reach critical levels.

One threat in particular is Papaya mealybug (Paracoccus. marginatus), which is an exotic pest with the potential to cause significant damage to commercial papaya crops. While not yet established in the main growing regions of North Queensland, the pest has already been detected as far north as Townsville and in metropolitan areas such as Brisbane and Darwin.

Darwin was the site of Australia's first detection in July 2023. Although papaya plants were affected, it was the widespread damage to frangipani trees, which are iconic across the Darwin foreshore. This triggered community concern and prompted immediate action by the Northern Territory Department of Agriculture and Fisheries (NT DAF).

"I started the trip by scouting Darwin's parks and gardens, expecting to see the pest, but to my surprise, I couldn't find a single active infestation," said Emily. "It was clear something had changed since the early reports."

Emily met with NT entomologists Dr Brian Thistleton, Sachinthi Kithulgoda, and Haidee Brown, who had been involved in the response including its initial detection. Dr Thistleton also brought prior experience with papaya mealybug through his work on Australian Centre for International Agricultural Research (ACIAR) projects in East Timor.

That early knowledge helped the team quickly trial suitable biological control options. Initial efforts included releases of the Cryptolaemus lady beetle, which was well suited to urban environments. But their most significant finding was that the mealybug's natural enemy, Acerophagus.papayae, a specialist parasitoid, had arrived alongside the pest.

"Once the parasitoid numbers built up, the NT DAF team said that the impact was remarkable," said Emily. "Infestations collapsed so rapidly that papaya mealybug is now considered almost a non-issue in metropolitan Darwin."

The NT team carried out extensive monitoring to understand the behaviour and spread of both the pest and the parasitoid. "It was incredibly valuable to learn from their experience. They've laid some great groundwork for how we might approach this pest if it becomes established in North Queensland," she said.

Although isolated detections of papaya mealybug have occurred on commercial orchards in the NT, thanks to the presence of the parasitoid, it hasn't become a significant issue for local growers.

However, Emily cautions that the situation in Queensland may play out differently.

"There's still uncertainty about how the parasitoid will perform in our production systems, particularly because of our chemical programs targeting Fruit spotting bug. These may unintentionally harm beneficial insects and reduce the effectiveness of natural control," she explained.

To address this, QDPI entomologist Bruno Tamelini, also part of PP23003, is leading a research exploring global management strategies for Papaya mealybug. His work includes monitoring in the Cassowary Coast and Atherton Tablelands, early detection trapping, and verifying whether the parasitoid, Ai.papayae is already present in the region.

"We're also hoping to bring Sachinthi to North Queensland later this year to speak directly with growers about the NT's experience and what we can learn from it," said Emily. "This kind of cross-border collaboration is going to be incredibly valuable for us."

MARKETING UPDATE By Holly Jackson, Marketing Manager, Hort Innovation

STRONG START FOR THE FY26 PAPAYA MARKETING CAMPAIGN

WITH SAMPLING AND SOCIAL MEDIA DRIVING RESULTS

he first burst of activity from the FY26 Australian Papaya marketing campaign has wrapped up, running from April to May 2025. The campaign focused on increasing the number of households purchasing papayas by building awareness and encouraging trial.

CAMPAIGN INSIGHTS

The strategy was guided by key consumer insights:

- · Papaya has low household penetration, with over a third of buyers only purchasing once.
- While 64 per cent of consumers who intend to buy papaya actually do, this is down from 69 per cent last year - highlighting an opportunity to drive conversion at point of purchase.
- Positively, papaya are perceived as colourful, exotic, unique, and premium - strong attributes that are leveraged in campaign messaging.

SAMPLING SUCCESS AT THE GOOD FOOD & WINE SHOW

To boost awareness and encourage trial among consumers unfamiliar with the fruit, Australian Papaya featured a stand at the Melbourne Good Food and Wine Show in May. Held over three days and attracting more than 30,000 attendees, the event provided an ideal platform to connect with a highly engaged foodie audience.

Visitors were offered a warming papaya korma curry with rice, which proved popular in the cooler autumn weather, alongside fresh papaya served with a squeeze of lime or honey to showcase the fruit's natural flavour. Over 2,000 papaya korma curries were sampled, along with more than 4,500 fresh papaya pieces.

Flyers featuring additional papaya recipes were also available for attendees to take home. A new creative direction using vivid orange colours ensured the stand stood out and reinforced the 'taste of the tropics' message. Further sampling activity is planned for the next two bursts of the campaign, with the next burst live September to October.

SOCIAL MEDIA REACH

To further drive mass awareness of papaya, a social campaign ran from April to May, utilising static and video content to showcase the benefits of papaya and highlight the

fruit's year-round availability. To date, there have been over 5 million impressions (total number of times the ads have been seen). The next burst of campaign activity will feature influencerled content to further extend reach and drive engagement.

ACTIVE SAMPLING PROGRAM

A separate 'active sampling' initiative also began in April, recruiting 500 consumers to purchase papaya outside of their normal shopping routine. All participants have now completed their trial, and detailed feedback on their experiences including changes in future purchase intent will be shared with industry in the near future.







NEXT BURST COMING SOON!

The second wave of marketing activity is scheduled for September to October 2025, continuing to drive awareness and repeat purchases. Stay tuned for more updates!

