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Cyclone Jasper Devastation

Over the past few months, the papaya industry has faced significant disruptions due to Cyclone Jasper and subsequent flooding.

On 13 December, 2023, Cyclone Jasper made landfall near Wujal Wujal without

causing major damage to the primary papaya growing areas. However, it stalled in the peninsula, leading to a convergence zone that stayed for about five days. This resulted in heavy rainfall, affecting all major papaya growing regions and causing issues both on farms and in markets.



Effects of Cyclone Jasper on Skybury Farms

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The heavy rainfall has resulted in significant damage to papaya plantations, both directly and indirectly. Direct damage is primarily attributed to erosion, particularly in the sandy, granitic soils around Mareeba.

Emily Pattison, Queensland Department of Agriculture and Fisheries (DAF) project coordinator of 'Papaya industry extension and communications program' (PP20000), said the rain in Mareeba was the perfect storm.

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The combination of heavy rain, the area's slope, and sandy soils led to extensive damage on farms, causing devastation in the region.

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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
Innovation**
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

Recent weather patterns have become the primary topic of conversation among growers. The past two months have delivered an onslaught of extreme conditions, from relentless rainfall to scorching heat and suffocating humidity. Even seasoned veterans refrain from comparing it to past years, indicating the severity of this season's challenges.



Leading up to the second week of December last year, the region experienced a prolonged dry spell, with the last significant rainfall on the Tablelands recorded in April. When news of Cyclone Jasper in mid-December broke, it was largely welcomed, for hopes of much-needed rain. However, Jasper's path changed unexpectedly after it crossed the coast on 13 December 2023. It was supposed to move across the Cape and head towards the Gulf in a day, but instead, it stalled for four days, pouring down an incredible amount of rain.

Just in Mareeba, a whopping 900mm of rain fell over four days, which is as much as the area usually gets in a whole year. And from January to the first week of February, another 700mm of rain hit the region. There are reports of some areas getting up to 2000mm of rain in just this short time.

I know that some coastal growers would say 'is that all'? It's important to remember that a lot of damage has been reported, and don't forget, we're just getting started with the wet season. Additional to the rainfall has been the heat and humidity. Brutal and unrelenting is often used around these topics. To attend to any tasks in the field is on par with working in a sauna. Picking, packing, desexing, and weed control are all manual tasks that are not done from an airconditioned cab. Most times, clothing is either wet from rain, sweat, or both.

How does this affect our crops? Let's break it down:

- **Harvesting:** We're seeing big losses in the amount of fruit we can gather and sell. This happens because sometimes we can't even get into the fields, or we lose trees, or we must toss out fruit that has gone bad. It's tough because even though we do our best out here, what happens at the markets a few days later can be heartbreaking. And the worst part is when we've already spent money on picking, packing, boxes, and shipping, and still end up with a loss.
- **Tree losses:** Some trees have been lost right away, but we know from experience that we might keep losing trees for the next six months, depending on how bad the rest of the wet season gets. Some growers have lost up to half their trees, and in some cases, entire blocks of trees are gone.
- **Farm damage:** The heavy rain has caused a lot of damage to farm roads, bridges, dams, and buildings. It's also washing away the top layer of soil which is bad for farming. Fixing all this stuff costs a lot of money.
- **Accumulation effect:** We've dealt with disasters like Cyclone Larry and Cyclone Yasi before, but what really adds up is how it affects us financially and emotionally over time. It can really shake our confidence and make it hard to keep going, especially when we're already feeling fragile.

Despite painting a bleak picture, there are still silver linings to be found in these events. As they say, "This too shall pass". I'm optimistic that we'll continue to see plenty of fruit later this year, and once the weather settles down, the quality of the fruit will improve.

I'm looking forward to consumers being able to enjoy ample quantities of high-quality fruit soon. For us growers, let's face the challenges ahead with hope and resilience.

Best regards,
Gerard Kath



Common Wet Season Diseases of Papaya

IMAGE	DISEASE	MANAGEMENT
PRE-HARVEST FRUIT DISEASES		
	Brown Spot Most commonly occurs as dark, sunken spots on fruit or as light brown spots similar to the symptom found on leaves.	<ul style="list-style-type: none">Apply preventative fungicides (e.g. Bravo, Digger or Luna sensation) every 10-14 days in hot, wet conditions.Check spray coverage.De-leafing affected leaves may assist in reducing symptoms on fruit.
	Phytophthora Fruit Rot Large lesions on fruit covered by white fungal crusts. It can cause fruit to shrink and mummify.	<ul style="list-style-type: none">Apply preventative fungicide (e.g. copper hydroxide) every 10-14 days in hot, wet conditions.It may help to allow some weed cover to prevent splashing of soil particles up onto fruit.
POST-HARVEST FRUIT DISEASES		
	Anthracnose During ripening, sunken black to brown spots develop on the surface on the fruit. These enlarge during storage and can extend well into the flesh.	<ul style="list-style-type: none">Apply recommended fungicides in the paddock.Use a registered post-harvest fungicide (e.g. Scholar or Sportak) and ensure good coverage on the fruit.Reduce plant stress.De-leafing older leaves may help by reducing the source of fungal load.
	Stem-End Rot Multiple disease can cause this symptom (e.g. Phomopsis or Lasiodiplodia). Wet rots occurring on the stem-end extending into the fruit.	
DISEASE OF LEAVES, TRUNKS AND ROOTS		
	Phytophthora Trunk Rot Appears as a white fungal crust on the trunk. Makes trunk weak and very susceptible to wind damage.	<ul style="list-style-type: none">Apply preventative fungicide (e.g. copper hydroxide) every 10-14 days in hot, wet conditions.Plant in well-drained areas, and use mounds.It may help to allow some weed cover to prevent splashing of soil particles up onto the trunk.Avoid damage to trunks (e.g. herbicide damage).
	Phytophthora Root Rot Rotting of the tap root which can cause the plant to fall easily. In some cases, the plant may linger until the leaves yellow and collapse.	<ul style="list-style-type: none">Plant using Ridomil.Apply Phos Acid fortnightly.Plant in well-drained areas, and use mounds.
	Brown Spot Small, light brown circular spots on leaves. Can cause premature yellowing of lower leaves in severe infections.	<ul style="list-style-type: none">Apply preventative fungicides (e.g. Bravo, Digger or Luna sensation) every 10-14 days in hot, wet conditions.Check spray coverage.De-leafing may reduce disease levels.Check nearby hosts such as cucurbits, tomatoes and legumes.

INDUSTRY NEWS

NEW NATIONAL BIOSECURITY TRAINING HUB LAUNCHED



Plant Health Australia (PHA), the Queensland Department of Agriculture and Fisheries, Agriculture Victoria, New South Wales Department of Primary Industries, and Animal Health Australia, have partnered to create the National Biosecurity Training Hub (<https://biotraininghub.com.au/>) – Australia's first one-stop shop for biosecurity training.

Biosecurity is a national priority to protect our food security, our agriculture industry, and the environment. The focus on preserving the Australian way of life continues to drive the demand for training resources to support biosecurity preparedness and response activities and ensure that the necessary skills and knowledge are in place to respond to and manage biosecurity incidents.

Dr Susanna Driessen, PHA's General Manager, Emergency Response, said pressures placed on Australia's biosecurity system require an increased need for governments and industry to work together to ensure we can meet the rising demand for expertise and knowledge.

"A collaborative approach necessitates the need for accessible online training resources to ensure we have the capacity and the capability to respond effectively," Dr Driessen said.

The National Biosecurity Training Hub (the Hub) offers a central location with a database of biosecurity training resources to help reduce the duplication of effort and costs associated with developing and delivering biosecurity training.

The Hub unifies and streamlines training to facilitate national visibility of biosecurity-related training across government, industry, and community in a single location. It's a centralised platform that supports biosecurity prevention, preparedness, response, and recovery by providing users with access to the latest biosecurity-related training materials and courses suited to different industries, levels and skill sets.

Designed with learners in mind, the Hub is easy to navigate with a library of plant, animal and aquatic biosecurity training that is searchable using a topic, keyword, location, and preferred method of delivery. The quality assurance protocols ensure each course listed meets the required standard.

"Australia's biosecurity system is built on shared responsibility for shared benefit. This initiative demonstrates the power of partnerships in improving cross-sectoral national biosecurity capability and capacity to prepare us for future biosecurity risks," PHA's CEO Sarah Corcoran said.

The Hub features 64 online training courses with plans for continuous expansion. Organisations with biosecurity training packages and who are interested in contributing to the Hub are encouraged to contact PHA via nbth@phau.com.au.

“A collaborative approach necessitates the need for accessible online training resources to ensure we have the capacity and the capability to respond effectively.”

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Cyclone Jasper Devastation


“Before Cyclone Jasper, there was minimal rainfall, with some farms even facing fires due to dry conditions. This lack of vegetation cover made the land vulnerable,” Emily said.

“However, once the cyclone hit, approximately 900mm of rain fell in the town within four days. In certain areas like Paddy’s Green, where a significant portion of papaya is grown, the rainfall exceeded 1000mm.

“The combination of heavy rain, the area’s slope, and sandy soils led to extensive damage on farms, causing devastation in the region.”

The Queensland State Government and the Federal Government have jointly announced funding of up to \$75,000 per primary producer to cover infrastructure repair costs, including erosion damage. Additionally, there is a further \$250,000 available in low-interest loans. The Queensland Rural Industry Development Authority (QRIDA) is administering these funds.

In addition to direct infrastructure damage, there is significant indirect damage from the rain, particularly from Phytophthora causing plant death and fruit quality issues, as well as other diseases causing post-harvest issues. This has resulted in a decrease in both volume and fruit quality in the markets. With the wet weather persisting, these effects are expected to last for several months.

While there are no grants available to cover lost income or indirect effects of the rain on primary producers, Essential Working Capital loans of up to \$100,000 are available to help supplement lost income. 

For more information on the grants, please visit:
Extraordinary Disaster Assistance Recovery Grants – Tropical (qrda.qld.gov.au).

For other questions, please contact
Emily Pattison, 0491 379 771,
Emily.pattison@daf.qld.gov.au



Result of Cyclone Jasper on Skybury Farms.

WET SEASON MONTHLY RAINFALL TOTALS FOR MAJOR PAPAYA GROWING REGIONS IN MM:

	November	December	January
Innisfail Wharf	53	437	659
South Johnstone	31.2	638.4	593.8
Tully Mill	84.1	684.2	679.5
Euramo	92	528	665
Mareeba	2	881	272

REGIONAL ROUND-UP

What’s happening in the regions?


TULLY, QUEENSLAND – NICHOLAS MACKAY

2024 has kicked off the same as 2023 ended, with some close calls regarding Cyclones (Jasper and Kirrily) and heavy rain events. Heatwaves and wet weather have meant a rough start to the year, with harvests interrupted by flooding roads.

In the Tully region, younger trees have held up better to the extreme weather and older trees have had significant flower drop that will impact numbers later in the year. There have been no physical losses due to wind, however the continuing heat and wet will bring disease and fruit loss. A major



pest in recent times has been cockatoos damaging fruit.

In better news, the sugar levels in the fruit have increased over the last few months and taste great. 

LEVY FUNDED PROJECT UPDATES

BREEDING PROGRAM

Semi-commercial trials of advanced red and yellow papaya breeding lines plus F1 red papaya hybrids have been conducted on several farms in the Coastal and Tablelands regions of Tropical North Queensland.

The trials were part of the ‘*National Papaya Breeding and Evaluation Program*’ (PP18000), led by Griffith University and funded through the Hort Innovation Papaya Fund.

The consumer-driven fruit quality traits of the advanced breeding lines, including three reds (Sunlight 1 and Sunlight 2 and Sunlight 3), two yellows (Moonlight 1 and Moonlight 2), and ten F1 red papaya hybrids (RH1 to RH10), were assessed.

Papaya breeder and Research Fellow from Griffith University, Dr Fawad Ali, said the three new red papaya lines are to be named ‘Sunlight 1’ and ‘Sunlight 2’ for the Coastal region and ‘Sunlight 3’ for the Tablelands region, all with significant trait genetic gains for the fruit quality traits over the current standard red commercial variety ‘RB1’.

“Sunlight 1 produces preferred medium-sized fruit, ~900g, with a moderate aroma and is 20% sweeter than RB1 fruit,” Dr Ali said.

“Sunlight 2 produces medium-sized fruit, ~1000g, with a moderate aroma and is 24% sweeter than RB1 fruit.

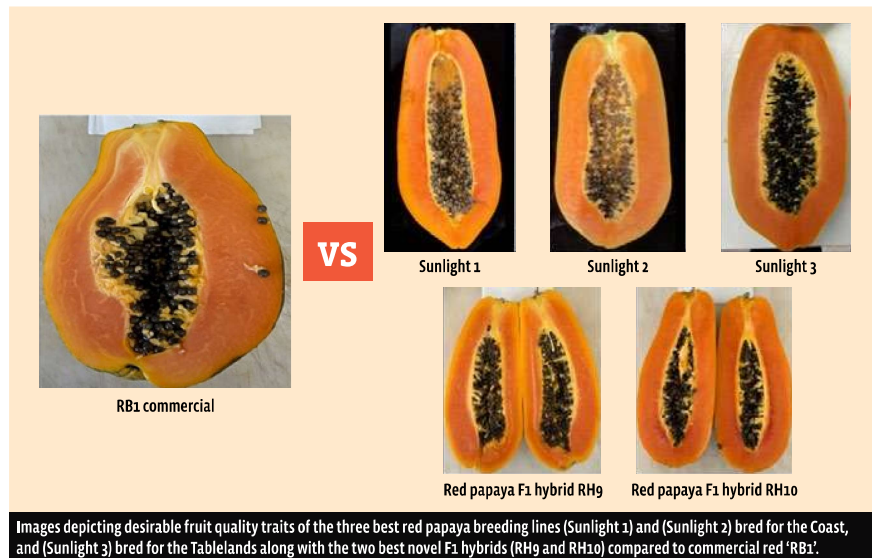
“Sunlight 3 produces ~950 g-medium-sized fruit with a moderate aroma and is 20% sweeter than RB1 fruit.

“The two new yellow papaya lines are to be named ‘Moonlight 1’ and ‘Moonlight 2’ and are both adapted to the Tablelands region.

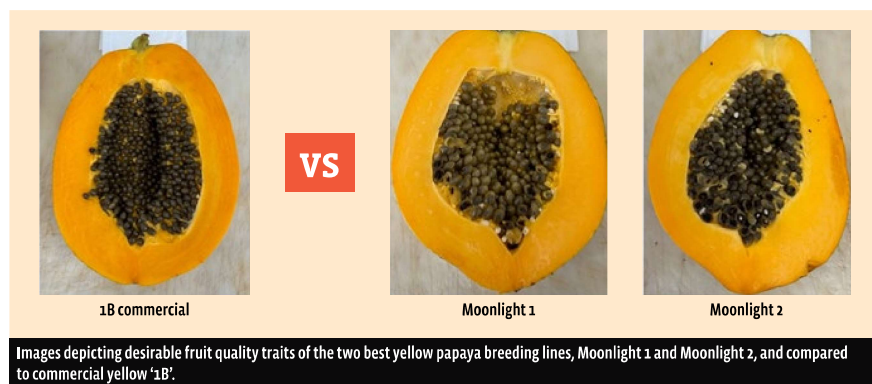
“Moonlight 1 produces ~1200g-sized fruit with a moderate aroma and is 11% sweeter than 1B fruit.

“Moonlight 2 produces a fruit ~1300g-sized, with moderate aroma and is 9% sweeter than 1B fruit.”

The next step will be to run commercial trials of selected lines across the Coastal and Tablelands regions and a tender is currently out for this with calls for research providers by Hort Innovation Australia.



Images depicting desirable fruit quality traits of the three best red papaya breeding lines (Sunlight 1) and (Sunlight 2) bred for the Coast, and (Sunlight 3) bred for the Tablelands along with the two best novel F1 hybrids (RH9 and RH10) compared to commercial red ‘RB1’.



Images depicting desirable fruit quality traits of the two best yellow papaya breeding lines, Moonlight 1 and Moonlight 2, and compared to commercial yellow ‘1B’.



At Lecker Farms in the Tablelands (Left; Papaya Breeder and Geneticist Dr Fawad Ali, Research Fellow at Griffith University and Right; Chairman Papaya Seeds Australia and Director & CEO, Gerard Kath, Lecker Farms).

For more information on the ‘*National Papaya Breeding and Evaluation Program*’ (PP18000), please get in touch with Professor Rebecca Ford at: rebecca.ford@griffith.edu.au.

The ‘National Papaya Breeding and Evaluation Program’ (PP18000) project is funded by Hort Innovation using papaya industry levies and funds from the Australian Government.

ANNUAL PAPAYA COMMUNICATIONS AND EXTENSION SURVEY

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

We want to hear 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.

MINOR USE PERMITS FOR THE PAPAYA INDUSTRY

A new minor use permit update allowing for the continued use of beta-cyfluthrin (Bulldock) has been issued to Hort Innovation by the Australian Pesticides and Veterinary Medicines Authority (APVMA), which is in force from 29 November 2022 to 30 November 2027. The permit will allow minor use of a registered agvet chemical product for control of fruit-spotting bug and banana-spotting bug in papaya.

Access the new minor use permit here: <https://www.horticulture.com.au/contentassets/b26d49c71cfe415eb7a811878d59eb82/per13671v4.pdf>

For a full list of current minor use permits for the papaya industry, head to: <https://www.horticulture.com.au/growers/help-your-business-grow/research-reports-publications-fact-sheets-and-more/pp16000/>

The 'Papaya industry minor use permit program' (PP16000) project is funded by Hort Innovation using papaya industry levies and funds from the Australian Government.

NEW AUSTRALIAN HORTICULTURE STATISTICS HANDBOOK RELEASED

The Australian Horticulture Statistics Handbook 2022-23 was released for the papaya industry in February.

The annual Handbook offers the most comprehensive and contemporary data available on all sectors of the Australian horticulture industry in one easy-to-use guide.

Information featured is drawn from several supply chain sources, including international trade statistics and industry peak bodies. It includes data on more than 75 horticultural products including fruit, nuts, vegetables, nursery, turf, and cut flowers.

The Australian Horticulture Statistics Handbook for the year ending 30 June 2023 is presented by Hort Innovation. It was produced by the multi-industry levy investment Australian Horticulture Statistics Handbook 2021-22 to 2023-24 (MT21006): <https://www.horticulture.com.au/growers/help-your-business-grow/research-reports-publications-fact-sheets-and-more/mt21006/>

New papaya production figures available

Papaya Australia has released the fifth 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 21 January 2024, the total number of papaya and paw paw consignment pallets sent from North Queensland was 14,136, with 11,524 (81%) of these being of the red variety and 2,612 (18%) yellow. Most pallets were sent across Queensland (6,703), followed by New South Wales (4,828), Victoria (2,292), and South Australia (313).

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/PAW PAW CONSIGNMENTS – PALLET SENT FROM NORTH QUEENSLAND PERIOD: JULY 2023 TO 21 JANUARY 2024

	Red Coast	Red Tablelands	REDS TOTAL	Yellow Coast	Yellow Tablelands	YELLOWS TOTAL	OVERALL TOTAL
QLD	945	4214	5159	709	1857	1544	6703
NSW	1981	1806	3787	555	848	1041	4828
VIC	1561	704	2265	17	10	27	2292
SA	0	313	313	0	0	0	313
TOTALS	4487	7037	11524	1281	1331	2612	14136

Key insights on the papaya industry from the 2022-2023 Handbook include:

- 18% of Australian households purchased papaya/pawpaw, buying an average of 900g per shopping trip.
- In 2022-23 there were 21,760 tonnes of papaya/pawpaw produced and valued at \$39M with 1% sent to be processed.
- The wholesale value of the fresh supply was \$45.8M, with \$36.2M distributed into retail and \$9.6M into food service.
- As a tropical fruit, red papaya and yellow pawpaw production predominantly occurs in the north of Australia, in Queensland, as well as production in the Northern Territory and Western Australia.
- There are currently two main categories grown in Australia. These include red papaya, which accounted for 85% of fresh production, and yellow pawpaw, which accounted for 15% of fresh production.
- Australia is a net importer of fresh red papaya and yellow pawpaw, typically importing between 20-90 tonnes per year. For the year ending June 2023, Australia imported two tonnes.
- For the year ending June 2023, 48% of exported fresh papaya/pawpaw were sent to New Zealand.

The full Handbook is available on the Hort Innovation website at: <https://www.horticulture.com.au/growers/help-your-business-grow/research-reports-publications-fact-sheets-and-more/australian-horticulture-statistics-handbook/#:~:text=The%20annual%20Australian%20Horticulture%20Statistics,%2C%20turf%2C%20and%20cut%20flowers.>



HORT INNOVATION UPDATES

Social media and marketing update

Positive positioning of papaya

After Tropical Cyclone Jasper hit Australian papaya growers hard, a collective effort rallied support, led by influencers on social media to drum up public support and awareness.

Through the papaya marketing levy, the extent of damage was brought to the public's attention via several channels through which the importance of continuing to buy papayas was emphasised.

With ample fruit harvested and stocked on supermarket shelves in advance of the imminent adverse conditions, consumers were encouraged to purchase papayas and support growers.

Social media posts were published to promote the availability of produce

while raising awareness about the impact on industry.

In addition, an influencer outreach campaign was conducted, targeting those who attended the recent health report launch event.

These influencers were encouraged to share a call to action in support of growers on their social channels. Through this, messaging was amplified and continued to build advocacy among this core group.

The following influencers actively shared the key messaging about papaya availability:

- Rebecca Gawthorne (@nourish_naturally)
- Lucie Nguyen (@butt.erhand)
- Marianne Hudson (@mycreativenutrition)
- Simon Leong (@simonfoodfavourites).

This engagement from the influencers provided a total of 852,666 Opportunities to See (OTS). OTS is a measure of how often people might see posts throughout a campaign.

The influencers were genuinely concerned about the situation for growers, with feedback such as the following representative of the response:

- “That’s terrible news. I will be sure to support the industry. I eat papaya for breakfast.”
- “It’s so sad to see so many papaya farms devastated by the recent cyclone. I’ll definitely share the message of support to buy more papayas.”

The influencers were not incentivised or financially rewarded for their help. 📌

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