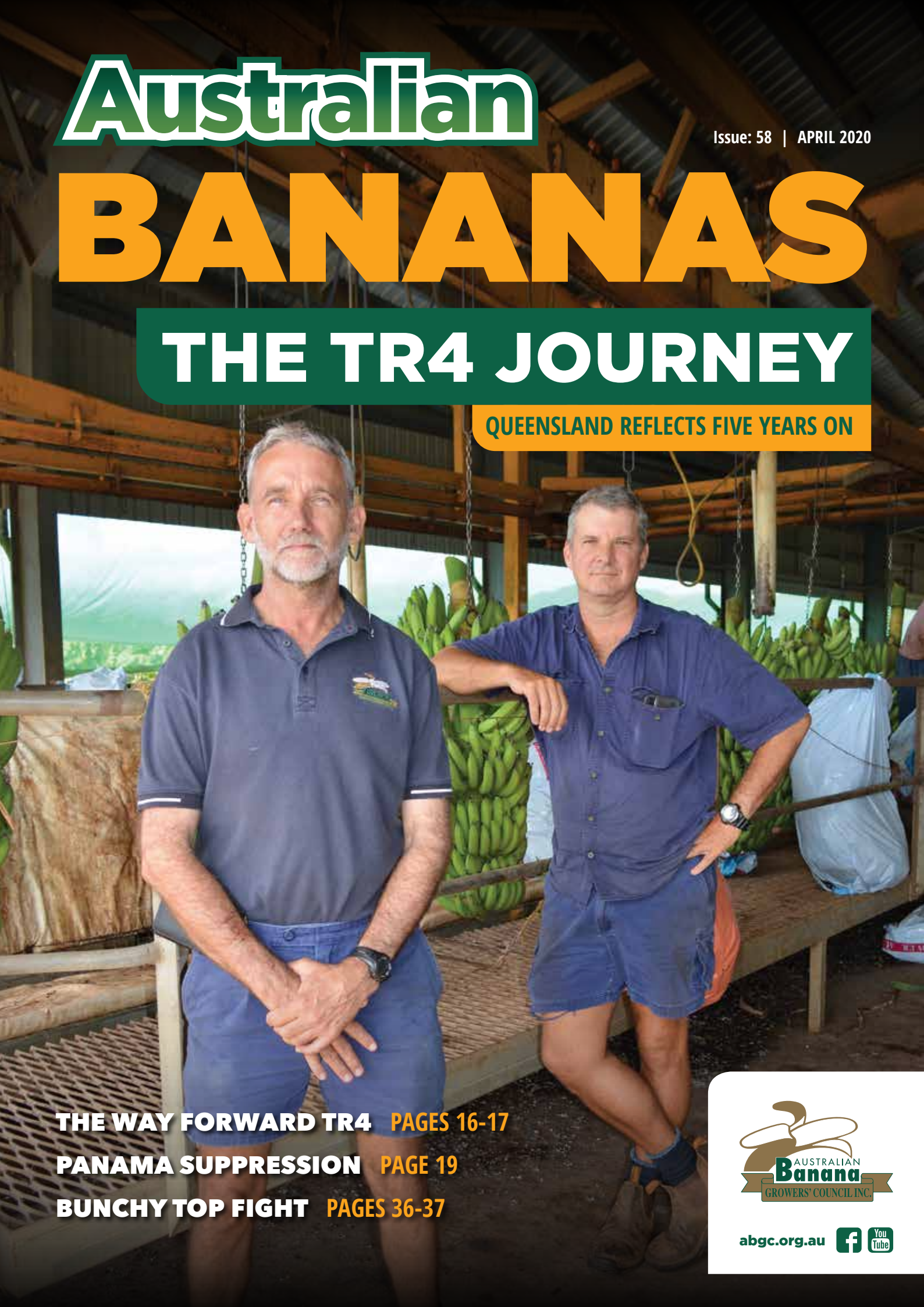
Australian BANANAS

Issue: 58 | APRIL 2020

THE TR4 JOURNEY

QUEENSLAND REFLECTS FIVE YEARS ON



AUSTRALIAN Banana GROWERS' COUNCIL INC.
abgc.org.au

Bunchy Top Growers' Guide
Here's what to look for

Newer infected leaves are narrower and upright with yellow wavy margins.

Infected plants become stunted. New leaves have yellow, upturned leaf margins.

Typically choked plant. New leaves shorter, narrower and upright.

Learn to recognise these symptoms - the earlier, the better!

If you spot these symptoms:

- **Don't disturb the plant as you can scatter infected aphids to healthy plants.**
- **Call the Bunchy Top hotline on 1800 068 371 or contact your Bunchy Top Inspector who can detect the 'hard to find' early symptoms to stop infection spreading further.**

Dark green dot dashes along the leaf veins hooking into the mid-rib confirm Bunchy Top infection. Visible underneath looking towards the light.

Dark green stripes along the leaf mid-rib (not always present).

(Symptoms pictured represent severe infections)

Hort Innovation BANANA FUND

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

AUSTRALIAN Banana GROWERS' COUNCIL INC.

BUNCHY TOP NATIONAL PROJECT

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Front page: Pictured (L-R) ABGC Chair Stephen Lowe with former ABGC Chair Doug Phillips. Mr Phillips was serving as Chair when Panama TR4 was first detected in Queensland in 2015.

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CEO COLUMN

Jim Pekin, CEO

Meeting the Challenges of Coronavirus

This column was to be on grower strategies to mitigate Panama TR4 risks and on the concern about Bunchy Top in neglected areas in the Tweed Region. But, instead, it needs to be about coronavirus.

This is an important time. Everyone, including farm workers, needs to follow the rules and guidelines set down by the Government on the advice of health authorities. Growers have plenty of new issues to think through. If growers can do this, they can manage the risks and so retain staff and remain in production.

There are questions from growers about the rule on keeping a social distance of 1.5m from others, i.e. how to do that in buses and cars to and from the farm, in the shed and at smoko and meal breaks? Each grower can think through this, or please ring your colleagues or ABGC for ideas or information.

It is vitally important for your business to continue to operate to plan, provide physical resources (e.g. sanitisers, Personal Protective Equipment (PPE) and knives for each individual), and to reorganize your business (e.g. discrete zones for particular activities) and staff to limit coronavirus risks.

Examples of staff policies needed include:

• Confidential reporting of personal illness and close contact with individuals that test positive; • Identify staff with symptoms for exclusion from work; • Prohibit non-essential visitors; • Prohibit interaction with truck drivers; • If staff are excluded from work due to being positive for it or in close contact; • Increased hygiene and cleaning.

A risk that is less easy to manage is with hostels (shared accommodation) and what those hostel residents do outside of work. One grower advised that she has required all of her backpackers to sign an agreement that says they will abide by the Government rules on social distancing – i.e. not attending parties or gatherings, only essential visits to supermarket, pharmacy, etc. She has done this as a duty of care to all staff. This is in the backpackers' best interest as they will not be able to work if they have symptoms.

Growers need to be careful with hiring any new backpackers in their areas, especially those who have had to resort to their own shared housing, because hostels are not taking new residents. These backpackers don't always have a good understanding of English and of the most recent Government coronavirus rules.

While immediate and urgent actions continue to be taken to inform growers and others in the industry about the virus and ways to mitigate the risks from coronavirus, there has been a great deal of work done behind the scenes to ensure our industry is prepared for the challenges ahead.

The ABGC has been actively lobbying our industry's concerns around the extension of visas for working holiday makers and for those on the Seasonal Worker Program and for government action to minimise the risks in shared accommodation. We have raised issues such as exemptions to border closures for freight and those involved in agribusiness.

I was heartened to hear first-hand Federal Agriculture Minister David Littleproud's announcement (25 March, 2020) that food production and inputs to it (i.e. agribusiness) are an essential service and that "maintaining food production, access to workers, agricultural supply lines, transportation and logistics is absolutely critical and will not be affected by the measures aimed at curbing the virus's spread".

The Palaszczuk Government shared this view by declaring freight and locals in agribusiness exempt from the Queensland border shut down (effective midnight 25 March, 2020), which meant banana trucks and locals involved in the banana industry (and other agriculture) near the border can continue their business and employment.

ABGC will continue to provide information as it comes to hand through our regular grower e-bulletins and the designated Coronavirus page on our website. Please read page 6 of this magazine for a snapshot of the employer and worker guidelines. I am available to hear growers' concerns and help you with options.

ANNUAL BANANA VOLUMES

The national banana levy collected by the Federal Department of Agriculture is compulsory for commercial banana growers. It is 2.19 cents per kilogram of bananas sold.

The dollars collected show an estimate of production for the previous financial year.
Right is a table of the levy-based banana volumes.

For non-industry participants, please note this is an approximation of production, but not all bananas grown are sold, i.e. some don't make the retailer-required specifications.

Also. there is a lag factor, in that levies paid on June sales (at least) are paid in the following financial year.

Exemptions from paying the levy and other details are to be found at agriculture.gov.au/ag-farm-food/levies/rates/bananas

Years ending 30th June (in '000 tonnes):	
2013	341
2014	371
2015	371
2016	393
2017	414
2018	388
2019	372

BANANA LEVY RATE

The make-up and purpose of the various components of the Banana Industry Levy are as follows.

Levy Amount	Purpose
0.50c /kg	Plant Health Australia (PHA) levy: The Department sends the funds to PHA, for the ongoing containment and management of Panama Tropical Race 4 disease, and to conduct activities that aim to improve biosecurity within the banana industry.
1.69c /kg	Hort Innovation (HIA) levy. The Department sends the funds to HIA for R&D and Marketing: 0.54 c/Kg is for Banana R&D, which is matched dollar for dollar by the Department and 1.15 c/kg for Banana Marketing
	Total = 2.19c /kg*

The total compulsory levy was reduced by 0.75c/kg from 1 July 2019, due to the abolition of the specific Emergency Plant Pest Response levy for bananas, previously established for the Freckle Response. It is now 2.19c/kg (32.85c per 15kg carton).

The Banana PHA levy currently funds the containment of the first TR4 infested farm that the industry purchased and the remaining debt for the industry's share of the cost of the national Banana Freckle eradication program. It also funds the pre-existing commitments – Torres Straight Exotic Fruit Flies Eradication Response, PHA membership/meetings and Government levy collection.

Further information:
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CHAIR COLUMN

Stephen Lowe, ABGC Chair

COVID-19

The past month has certainly taught communities globally that, at times, the world can be filled with uncertainty and present challenges to us all, both personally and in business.

For us as banana growers, the Coronavirus (COVID-19) has brought another level of worry and testing times for most as we endeavour to take vital steps to protect our workers, ourselves and ensure the continued operation of our farms.

As the pandemic unfolded (as this magazine went to print) the Australian Banana Growers' Council (ABGC) recognised that some growers may have needed assistance coming to terms with the effect COVID-19 could have on their businesses, including protecting the health and safety of their workers and viability of their operations.

To assist, we developed a COVID-19 Employee and Workplace Guide to help growers navigate changes they would need to make within their businesses to help limit the spread of the virus, by educating employees and establishing a safe/hygienic work environment, above and beyond normal workplace standards.

The guide also includes steps that farm owners/managers should take if an employee displays or reports symptoms of COVID-19, as well as pay and leave entitlements if a staff member tests positive to the virus.

I hope this resource provides some useful information and greater assurance to many of you as we continue to navigate very unchartered waters. The resource is available on ABGC's website; www.abgc.org.au

At the time of writing this, COVID-19 was presenting one of the greatest global challenges in living memory, but I continue to remain hopeful that we as an industry, and community, are able to draw on each other for strength and support to get through what is sure to be an ongoing critical time.

ABGC will continue to proactively gather and validate information as it happens and share it promptly with growers.

Water quality Senate inquiry

Last month I was due to address a Senate inquiry in Cairns, focused on whether there is enough valid, scientific evidence to justify the new regulation of farming practices. Unfortunately, this hearing was cancelled due to COVID-19.

I was looking forward to informing this Committee about the lack of scientific evidence available about run-off or nutrient leaching from commercial banana farms. All decisions, including the decision to regulate some banana farming practices, are based on modelling and assumptions – some of which are questionable.

I am not suggesting that all the science is inaccurate or that the banana industry can't continue to improve its farming practices. But, there needs to be greater acknowledgement from government that their reliance on modelling may be producing inaccurate results. And it is these results, waved around in report cards and other scientific statements, that have the ability to unfairly damage the reputation of the banana industry and banana growers. The Great Barrier Reef is more than a tourist destination to banana growers. It is a part of our community.

For some time, the ABGC has pressed government to put more resources into monitoring what is happening on commercial banana farms. If growers are given evidence that they need to improve their farming practice, I am confident they will implement change because banana growers want to stay profitable. Growers are experts in farming and should sit side- by-side with experts in water quality to find solutions that benefit everyone.

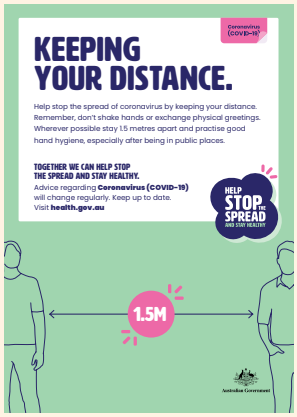
I look forward to meeting with the Senators and any other Member of Parliament to share these views.

ABGC Executive change - Stephen Lowe (pictured middle) and Leon Collins (left) remained in their positions as ABGC Chair and Deputy Chair (respectively) following the December AGM. Ben Franklin (pictured right) took over as Treasurer from Stephen Spear, who stood down from the position but remained on the board as a director.

COVID-19 (CORONAVIRUS) PROTECTING YOU, YOUR WORKERS AND YOUR FARM

The ABGC understands that COVID-19 (coronavirus) continues to create a great deal of uncertainty and concern for most of us, both personally and in business. For this reason, we have created a Workplace & Employee Guide available at www.abgc.org.au, a snapshot of which is presented below. The information covers your responsibilities as an employer and what measures you need to take to protect you and your workers.

SOCIAL DISTANCING



- Practice social distancing
- Keep at least 1.5 metres apart from others
- Avoid any close contact, including shaking hands

GOOD HYGIENE IS CRITCAL

- Clean your hands regularly with soap and water or alcohol-based hand sanitiser
- Cover your nose and mouth with a tissue or bent elbow when coughing or sneezing
- Dispose of tissues immediately after use and wash your hands or apply hand sanitiser afterwards

EMPLOYEE ENTITLEMENTS

- Growcom (a registered industrial association) has provided advice on employee entitlements. These are available on the ABGC website, under COVID-19 – Important Grower Information
- All growers should seek legal or other professional external advice specific to their situation before standing down employees without pay

WHAT SHOULD I DO AS A FARM MANAGER?

- Stagger food breaks
- Restrict the number of employees that travel together, where possible
- Regularly clean and sanitise frequently touched areas in the workplace and on transport
- Provide handwashing facilities in packing sheds and other high traffic areas
- Provide a good supply of alcohol-based sanitiser, tissues and cleaning supplies
- Promote good hygiene practices
- Be familiar with government rules and actions required, available in the ABGC's grower e-bulletins and www.qld.gov.au/health/conditions/health-alerts/coronavirus-covid-19

WHAT IF AN EMPLOYEE SHOWS SYMPTOMS OF CORONAVIRUS?

- If an employee thinks they have been exposed to the virus, suggest they take the corona quiz (https://www.qld.gov.au/health/conditions/health-alerts/coronavirus-covid-19/novel-coronavirus-quiz). This will determine if they need immediate medical attention or other actions
- If the employee believes they have coronavirus (flu-like) symptoms remove them from 'close' contact and isolate them immediately from other workers
- If a Health Authority rings to advise your employee is positive for coronavirus, they will ask who the employee has had 'close contact' with
- Close contact is where there has been face to face contact with a confirmed case for greater than 15 minutes or those who have shared a closed space*, including buses and cars for more than two hours
- If there's other staff at your farm that have been in 'close contact' with the infected worker, they may be at risk and, as such, must self-quarantine in their home/accommodation for 14 days after last contact with the confirmed case
- Immediately sterilise all areas the employee may have come into contact with

*Closed space is a place that has a ceiling or roof and is completely or substantially enclosed, whether permanently or temporarily.

WORKCOVER

- Worksafe Queensland has prepared an informative Frequently Asked Questions (www.worksafe.qld.gov.au) covering both workers' and employers' entitlements when it comes to the impacts of COVID-19
- This includes 'Does WorkCover cover my worker's wages during their quarantine period?'; 'Do I need to send people home if they have cold and flu symptoms?'; and 'What safety measures do I need to take to protect my workers?'

WorkCover QUEENSLAND

FREIGHT EXEMPT IN BORDER CLOSURE

The Queensland Government has declared freight exempt in tough new border controls in wake of the COVID-19 pandemic.

At the time of writing, the Government had closed the Queensland/NSW border effective from midnight Wednesday 25 March.

It's the first time the extraordinary measure has been taken in more than a century in Queensland (since the Spanish Flu outbreak), but the drastic move is considered essential to slow the spread of the virus.

Other exemptions include emergency workers, emergency vehicles, those travelling to and from work, court orders, compassionate grounds and medical treatment.

Penalties include fines of up to $13,345.

Disclaimer: The information is current at the time of going to print.

FINANCIAL SUPPORT FOR GROWERS

In wake of the COVID-19 pandemic, the Australian Government has implemented an economic plan to cushion the economic impact.

Small and medium business entities with aggregated annual turnover under $50 million and that employ workers will be eligible for assistance.

Eligibility will generally be based on prior year turnover.

In brief:

- The payment will be calculated by the Australian Taxation Office (ATO).
- No forms are required.
- Payment will be delivered by the ATO as a credit in the activity statement system from 28 April, 2020, after employers have lodged their activity statements.
- Where account is in credit, ATO will refund within 14 days.
- Payments will only be available to active eligible employers established prior to 12 March, 2020.
- Businesses must continue to be active.
- Eligible businesses that withhold tax to the ATO on their employees' salary and wages will receive a payment equal to 100 per cent of the amount withheld, up to a maximum payment of $50,000.
- Eligible businesses that pay salary and wages will receive a minimum payment of $10,000, even if they are not required to withhold tax.
- Growers should consider seeking professional advice from their accountant and/or financial advisor specific to their situation.

For detailed information on the Australian Government's economic response:

www.treasury.gov.au under *Economic Response to the Coronavirus*

www.business.gov.au under *Coronavirus information and support for business*

www.ato.gov.au under the *COVID-19 page*

2019 AUSTRALASIAN PLANT PATHOLOGY SOCIETY (APPS) AWARDS

The banana industry is fortunate to have a number of highly skilled and experienced researchers and scientists working behind the scenes on pests and diseases, new varieties and plant pathology. Several of these scientists were honoured in the 2019 Australasian Plant Pathology Society (APPS) Awards, announced late last year.

Lester Burgess Award (Diagnostic and Extension)

Kathy Grice

Ms Grice has enjoyed a long and distinguished career as a diagnostician, extension practitioner and researcher across a range of crops in tropical Queensland. Her most significant contribution has been to the banana industry. Kathy and her team were instrumental in providing crucial diagnostic support during the black Sigatoka eradication campaign, the first successful eradication from a commercial growing region in the world. Kathy has had significant involvement and leadership in response to new banana pathogen incursions, development of a new technique for monitoring fungicide resistance in yellow Sigatoka, authored several diagnostic manuals and has regularly contributed to scientific literature.

Fellows of the Australasian Plant Pathology Society

Professor Elizabeth Aitken

Prof Aitken has been an active member of the APPS and took a lead in the scientific program for the 2017 conference. Her publication record is outstanding. The major areas of Prof Aitken's research have included a sustained contribution to our understanding of a range of important diseases, especially the Fusaria in tropical plants such as bananas and ginger. She has been active in the genetics of plant-pathogen interactions, molecular aspects of pathogenicity and the development and application of disease diagnostics.

Professor Andre Drenth

Prof Drenth's contributions to tropical plant pathology have resulted in a substantial publication record and reputation both in Australia and across a great range of international project engagements. As a teacher and mentor, he has contributed significantly to the development of a new generation of plant pathologists while also serving as editor to a range of highly esteemed international journals. His research interests include Phytophthora pathogen and he is recognised as a national and international authority on diseases of macadamia and banana.

Associate Professor John Thomas

Prof Thomas has had an outstanding career in plant pathology, with a specific international reputation in virology. His crop specialties have been broad ranging in tropical agriculture, with an emphasis on gemniviruses affecting bananas. His role in the containment of these significant plant pathogens has been a continuing effort in germplasm conservation. He is co-convenor of the International Network for Improvement of Banana and Plantain. Prof Thomas led the citrus canker diagnostic response in Queensland in 2004 and continues to be engaged in international virology projects throughout South East Asia and Africa.

NEW SERVICE AIMS TO ADDRESS BURDEN OF AGRICULTURAL WASTE PLASTIC

Agricultural plastic waste is a burden for growers.

In the banana industry, plastic is used broadly, including in the form of bunch covers and plastic twine.

But once used, there are little options available to growers to dispose of agricultural plastic waste, other than landfill, which can be a costly exercise.

A new service established on the Cassowary Coast aims to provide an alternative to growers.

Michael and William Ritchie, Ritchie's Technology, are available to take cleaned sting or twine (free from mud) from banana growers, and banana bunch covers (straight plastic ones).

The business is able to collect bags of bunch covers from farms if required, for a fee, in consultation with growers.

Ritchie Technology aims to cover costs and reduce the cost of disposal for the grower.

The ultimate objective is to establish a factory in Silkwood to manufacture items such as pipes, posts, pavers and bumps stops from locally sourced plastic.

For more information, contact Ritchie Technology on ph 0428 868 758 or rmritchie01@outlook.com

BANANA APP TO HELP DELIVER MORE INDUSTRY INFORMATION

A national program mapping the location and extent of all commercial banana plantations across Australia is set to help deliver more accurate industry information and biosecurity preparedness.

The success of the map relies on the participation of banana growers who are being asked to contribute by putting the location and extent of their banana plantations into a land use survey app.

A first of its kind for the banana industry, the mapping will provide a national baseline for all commercial (>1 hectare) plantations in Australia.

The project is a partnership between the Australian Banana Growers' Council, Hort Innovation, the University of New England (UNE), Central Queensland University, Tie-up Farming and government.

Craig Shephard, Senior Researcher with the Applied Agricultural Remote Sensing Centre (AARSC) at UNE, said banana growers held the key to ensure the banana map was as accurate as possible.

Growers can access the land use survey app here: une.edu.au/landusesurvey

To participate, a grower drops a point on the map (or searches for an address) to share the crop location and identifies the crop type, in this case bananas. There is an option to provide more information in a text comment and/or attach a photo.

The new point is reviewed and compared to imagery and, if accurate, it's digitised as a banana plantation in the map.

The banana map builds on a map of commercial avocado, macadamia and mango orchards, developed and launched in 2017. This map has been viewed over 23,000 times and was applied in response to the recent bushfire crisis in Australia.

Mr Shephard said the banana map could be applied in a number of different ways.

He said containment strategies for pests and diseases including Panama TR4 stood to benefit from a more accurate understanding of the number and location of banana plantations.

"Knowing the distribution and extent of crops has the power to greatly inform decision-making at farm and industry levels," Mr Shephard explained.

"Applications include increased biosecurity preparedness, where targeted field surveys and the implementation of exclusion zones can immediately be implemented following an incursion, saving both time and money.

"For the industry, knowing the spatial distribution of crops greatly assists with a better understanding of demographics (i.e. regional forecasting), whilst a more accurate measure of a production area can assist with improved estimation of annual production."

Mr Shephard said field work associated with developing the map started in North Queensland in late 2019.

"As remote sensing scientists, we observe things from afar, so we need to ground truth the data that is provided," Mr Shephard said.

"In some way ways, growers become our ground truth."

The mapping adheres to national standards for commodity level land use mapping, supported by the Australian Collaborative Land Use and Management Program (ACLUMP).

Banana growers are encouraged to contribute to a national banana mapping project which will help provide more accurate information to the industry.

ACLUMP promotes nationally consistent land use information. Privacy concerns are acknowledged and respected as the information sources used to compile land use include remotely sensed data (imagery), state and national ancillary datasets, field observation and expert opinion.

No personal or confidential information is collected as part of the land use mapping process nor contained within the land use datasets.

This project is funded via the Australian Government's Rural R&D for Profit program and through co-investment from partners; Hort Innovation, Central Queensland University, University of New England, ABGC, the Queensland Department of Agriculture and Fisheries and the Northern Territory Department of Agriculture and Resources.

NEW PROJECT PUTS SUPPLY CHAIN IN SPOTLIGHT

By Andrew Macnish, Sohail Mazhar, Dan Sole and Bill Johnston, Queensland Department of Agriculture and Fisheries (DAF)

A new project aims to offer banana producers the opportunity to increase profitability and growth of exports.

The project will bring a laser-like focus on monitoring and improving handling practices to deliver more predictable fruit quality and reduce waste, during the supply chain process.

Pacific Coast Produce, a cooperative of six growers in north Queensland, has been exporting organic and ecoganic Cavendish bananas to Asian markets by airfreight since 2009. About 10% of their consignments are downgraded or discarded because the fruit arrives over-ripe or chilled. This results in significant lost revenue.

There is currently no temperature monitoring of export shipments, which limits the capacity of supply chain partners to identify when, where and how fruit quality loss occurs. The unpredictable arrival quality of individual shipments is a barrier to future growth of export markets for Australian organic bananas.

Dianne and Frank Sciacca, Pacific Coast Produce, are part of a collaborative project looking at improving export supply chains.

A newly commissioned project through the Fight Food Waste Cooperative Research Centre with co-investment from the Department of Agriculture and Fisheries (DAF) and Pacific Coast Produce, as well as in-kind support from the Australian Food Cold Chain Council, will address this issue by demonstrating the benefits of a regular supply chain monitoring and improvement program. The project has three elements:

1. **Monitoring**
   Monitoring shipments to record handling temperatures, identify the cause of fruit quality loss and highlight improvement opportunities.
2. **Decision support tool**
   Developing a decision support tool that predicts fruit arrival quality, waste and shelf life based on how bananas respond to variations in shipment conditions.
3. **Improving practice**
   Encouraging adoption of monitoring technology, improved practices and the decision support tool to reduce waste in export and domestic banana supply chains.

The latest generation of low cost remote monitoring technologies will be used to automatically track consignment movement and report shipment temperatures in real-time. Export shipments will be assessed for fruit quality and compared against organic bananas from other exporting countries. This activity will help identify opportunities to improve handling practice to maintain cold-chain integrity and reduce fruit quality loss and waste.

The project will also determine how Cavendish bananas respond to inevitable variations in export conditions through a series of fruit storage trials in the Cairns laboratory of the DAF. The fruit response will form the basis of a mathematical model that predicts fruit arrival quality, waste and shelf life. A decision support tool that integrates the monitored supply chain conditions and modelled trial data will be developed to inform handling and marketing decisions.

Targeted chain improvement strategies and resources such as best practice guidelines, a supply chain manual and the decision support tool will be delivered to the banana industry. While the project focus is on exports, lessons learnt from this study are also expected to be relevant for improving the efficiency of the Australian domestic supply chain.

For further information about the project, please visit the Fight Food Waste CRC website: https://fightfoodwastecrc.com.au

The Fight Food Waste Cooperative Research Centre (CRC) gratefully acknowledges the Australian Government Department of Industry, Science, Energy and Resources' financial contribution through the Cooperative Research Centres program as well as the participants of this project.

QUALITY BANANA APPROVED NURSERY (QBAN) SCHEME FACILITIES

QBAN is the Australian Banana Industry's high health, clean planting material scheme.

Note: Laboratory is where plants are produced using tissue culture, Nursery is where the tissue culture plantlets are grown in pots for the grower

Kool Bananas Tissue Culture Laboratory contact Phil Berry-Porter LABORATORY	0407 126 113	shazza141@bigpond.com	Mission Beach, Qld	Tissue culture plants only
Blue Sky Tissue Culture - contact Craig & Sue Althaus NURSERY	07 4068 2208	admin@blueskytc.com.au	Tully, Qld	Potted plants for commercial sales
Lowes Tc Pty Ltd - contact Natasha Marocik LABORATORY & NURSERY (NSW)	02 4389 8750	Natasha@lowestc.com.au	Tumbi Umbi NSW	Tissue cultured plants and plugs (where authorised)
Yuruga Laboratory and Nursery LABORATORY & NURSERY	07 4093 3826	nursery@yuruga.com.au	Walkamin, Atherton Tablelands 4872, Qld	Tissue culture plants, potted plants or both
Mission Beach Tissue Culture - contact Stephen Lavis LABORATORY & NURSERY	0418 299 900	sdlavis4@bigpond.com	Mission Beach and Walkamin, Q	Tissue culture plants, potted plants or both
Wide Bay Seedlings - contact Adrian Ross NURSERY	07 4129 6684	office@wbseedlings.com.au	Pioneers Rest, Qld	Potted plants
Ausplant Nursery - contact Brady Cumming NURSERY	07 4662 4934	brady@ausplantnursery.com.au	Dalby , Qld	Potted plants
Ramm Botanicals Pty Ltd. Laboratory	02 4351 2099	Ramm@ramm.com.au	Kangy Angy NSW 2258	Tissue cultured plants

TOM CALLS IT A DAY

The ABGC Board farewelled retiring West Australian director Tom Day in December last year, with the representation of growers in the far west handed over to incoming director, Doriana Mangili. Following his departure, Mr Day spoke with Australian Bananas Magazine, reflecting on his two stints as a director.

When retiring Australian Banana Growers' Council director Tom Day bought his banana farm 30 years ago it was a homecoming of sorts.

Mr Day grew up on a banana farm in the Carnarvon region, 900km north of Perth, which was run by his father, who managed the first government research station in Carnarvon, and uncle.

He remembers the early days when his father and uncle cleared the land with an axe and mattock.

"We had to get in there and dig – physically dig rows and flood irrigate. Blokes had horses and they used to do contract ploughing."

Before Mr Day and wife Margaret began farming, the couple spent time in the transport and fuel industries and owned the popular watering hole, the Tropicana Tavern, at Carnarvon.

When the time came to sell the tavern, Mr Day and Margaret bought an 8-ha farm which they named Eshnadarragh - after Margaret's hometown in Northern Ireland – on the mighty Gascoyne River. The couple continued to grow tomatoes for a period, before building the banana crop which produced up to 18,000 boxes of bananas annually off a 4.5ha section.

"We spent 12 months looking around at other options including sheep stations, before we settled on bananas," Mr Day explained.

"You'll never make a fortune but bananas have always been reasonable and they grow easy here. I like the lifestyle and being able to live on the farm."

In December 2019, Mr Day called time on his second, four-year term as a director on the ABGC board – he served from 2005 to 2009 and 2015 to 2019 - and reflected on the highlights, challenges and future of one of the industry's smallest production areas.

He said the whole-of-industry response to the detection of Panama disease tropical race 4 in Australia's largest growing region, Far North Queensland, was a highlight.

Despite being thousands of kilometres from the eastern seaboard, Mr Day said Western Australian growers were always warmly received by Queensland.

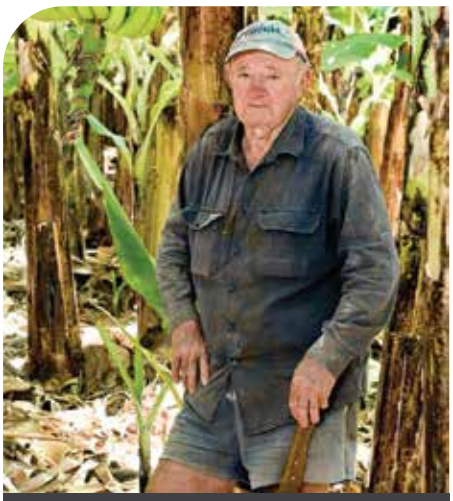
While WA is home to a small banana production area, Mr Day believes the industry will continue to flourish due to the success of the Sweeter Banana Co-operative, of which he is a founding member.

It was formed in 1993 to develop a recognisable brand.

He said it was an honour to serve the interests of his state's growers at the national level.

"In Western Australia we don't have the same problems with pests and diseases as growers in Queensland do, so I was able to look at issues from the outside and provide a different perspective," Mr Day said.

"I always felt respected and that people listened too."



Carnarvon grower Tom Day retired from his role as ABGC director after two four-year stints as the voice for WA and NT growers.

While there are minimal pests or diseases issues in the west, banana growing on the other side of Australia is not without its challenges.

"We had the biggest flood we ever had in 2010," Mr Day recalled.

"There was 400mm of water through the house.

"In 2015, Cyclone Olwyn knocked over the whole property."

Mr Day has nothing but praise for Doriana Mangili, the director who has been appointed to take his place, and business manager for the Sweeter Banana Co-operative.

While Mr Day, who turns 80 next year, has slowed down considerably, bananas will always remain a huge part of his life.

He oversees operations on two banana farms leased by the Sweeter Banana Co-operative, including his own.

"I only give orders now," he added, with a wry smile.

NEW BOARD MEMBERS

The Australian Banana Growers' Council (ABGC) appointed two new directors at its AGM in December.

With WA director Tom Day stepping down, Mr Day was succeeded by Sweeter Banana Co-Operative Business Manager Doriana Mangili. Ms Mangili brings a wealth of banana knowledge to the board, along with her strong business background. Ms Mangili has worked at Sweeter for more than a decade, beginning as the Marketing Officer. She is currently serving the national banana industry via the Banana R&D Strategic Industry Advisory Panel.

Far North Queensland fourth generation Tablelands farmer Andrew Serra was also elected to the Board. Mr Serra has a background in construction project management and also serves in various industry roles including the Banana Marketing Strategic Industry Advisory Panel , the Panama TR4 Collaborative Working Agreement Group, and the Banana Export Working Group.

Chair Stephen Lowe and Deputy Chair Leon Collins stayed on in their executive positions, while Ben Franklin took over as Treasurer from Stephen Spear.

Mr Spear, the Board's New South Wales representative, will stay on as a Director. Also joining the board for another term were Paul Inderbitzin and Jade Buchanan.

ABGC board members – L-R – Stephen Spear, Stephen Lowe, Andrew Serra, Doriana Mangili, Ben Franklin, Jade Buchanan, Leon Collins. (Absent: Paul Inderbitzin).

QUEENSLAND MARKS

Last month marked five years since the first Queensland detection of Panama tropical race 4 (TR4) in the state's far north. With four Tully farms now confirmed with the disease, we take a look back at some of the lessons learnt since March 2015; why the Australian banana industry has so far managed to contain this destructive disease more successfully than any other banana growing country in the world; and why it's essential the fight continues.

Stewart Lindsay is candid when reflecting on the five years since Panama TR4 was first detected in the Tully Valley in 2015.

Casting his mind back to March of that year, the Department of Agriculture and Fisheries (DAF) banana authority said initially he would have predicted a much wider spread of the disease, than the four existing infested farms, by 2020.

"The fact that our industry is so mechanised, and that means there was a lot of contractors and their machinery moving between farms (before and at the time of the first detection), I am stunned that we don't have it spread more widely," the DAF Team Leader - Banana Production Systems reflected.

"As time went on and we hadn't seen any incursions on other farms it almost seemed like, "Could we have been that lucky? Could we have got it before it had spread anywhere else?" But it's just not the way this disease works.

"If it had only been on the first infested farm, and it never went anywhere else, that would have been a miracle. And, that would have been as much luck as good management."

Containment

Patrick Leahy – a long-time Tully banana grower who sits on the 'varieties sub-committee' of the Plant Protection Project Reference Committee - believes the industry's swift response to contain the disease after the first detection in March 2015 played the most significant role in reducing further spread.

"The main thing that we've been able to do, that other countries haven't, is the containment," Mr Leahy said.

"As an industry, we went straight into quarantine-type mode, mostly at a farm level. We've kept vehicle movement in and out of our farms to a minimum.

"Growers that have done their on-farm biosecurity - that haven't got TR4 - some have done it very well, some have done it at different levels, but the main thing is we've kept people and vehicles out of our farms."

"The Philippines for instance, I've been there on a TR4 infected farm and the footbaths are virtually non-existent. They are just a mat with a bit of chemical on them, they've got mud on them, but the walkway through the farm, is to a village at the end. So, you've got a whole community that walks in and out of that farm every day."

"In Taiwan, where they've had TR4 since the 1980s, on-farm biosecurity is nil."

Grower response

Australian Banana Growers' Council (ABGC) Chair Stephen Lowe said he had little doubt the rapid response of growers to adopt the 'come clean, leave clean' mindset – right from the outset of the first detection - had played a major role in the containment of TR4 over the past five years.

"I applaud growers for the steps they have taken to improve their on-farm biosecurity, from those that have implemented world-class procedures to those that have done as much as they can," Mr Lowe said.

"Collectively these actions have helped growers to not only protect their own businesses, but industry at large."

Government and industry response setting biosecurity standards

Making sure that growers knew what to do to protect their farms was a priority for government and the industry from the start.

Biosecurity Queensland's (BQ) Panama TR4 Program Leader Rhiannon Evans said "together we had to ask the 'big questions'," including - "What's the most important thing we need to do right now? How do we contain it to the first property and how do we make sure growers know how to protect their farms?"

March 2015 – First QLD TR4 infection on a farm in the Tully Valley (1IP)

1IP quarantined, infected plants across 10 hectares destroyed

QLD Government commits $5.2 million for emergency response phase, Biosecurity Queensland (BQ) establishes tracing and surveillance program to determine spread of TR4

ABGC gains $300,000 funding to provide biosecurity advice to growers. The Federal Govt later provides a further $300,000

TR4 information to growers is rolled out by ABGC and DAF at a series of biosecurity planning and zoning workshops, followed by individual farm visits

Premier's Panama TR4 Taskfoce established to focus on potential economic, social and community impact of TR4

ABGC hosts information meetings for banana growers and other industry members in Tully, Innisfail and Mareeba

BQ surveillance officers check every FNQ farm for TR4

Behind the scenes, ABGC strongly lobbies government for TR4 funding, including TR4 extension and other assistance for growers. Also lobbied financial institutions to maintain confidence in the banana industry

ABGC and DAF formulate comprehensive extension program

FIVE YEARS OF TR4

"One way was an agreed set of biosecurity standards and guidelines, focused on containing the disease, that BQ, ABGC and DAF used across all extension activities and into the BQ Panama TR4 Grower Kit.

"The banana industry employs many people in this region so BQ also wanted to make sure that the community in general knew how to protect the industry from TR4. BQ travelled around the region promoting the biosecurity standards of 'come clean/ leave clean' and 'never enter a banana farm without permission' messages.

"We also work with organisations like Ergon, Telstra, local councils and emergency service providers to make sure they were doing what they can to not spread the disease."

Farm buyout

The early industry buyout of the first infested property – partly funded by the Federal Government – is seen as another critical component of the Tully TR4 containment.

In August 2016, ABGC conducted a national ballot of all banana growers, which resulted in growers voting in favour of increasing the Plant Health Australia (PHA) levy to purchase the property.

The $4.5 million buyout was considered the best chance of protecting the remainder of the industry from further spread of the disease, allowing ABGC to immediately close all operations at the farm and destroy all banana plants on the 137 hectare-site.

Doug Phillips, who was Chair of ABGC at the time of the buyout, believes the purchase was key to the success of containment, for more reasons than one.

"Our focus from a very early stage was we have to contain this. We knew we couldn't eradicate it," Mr Phillips recounted.

"Being able to destroy all the bananas on that property was critical. We were able to isolate that farm, lock it down and eliminate movements on and off that farm. But I also think it helped demonstrate to industry the significance of this disease and how important it was to get on top of it."

Actions of infested farms

Mr Lowe said the actions of the operators of the three farms currently operating with TR4 also could not be understated.

He said the ability of these farm operators to meet their biosecurity obligations while continuing to trade with the disease, was a credit to their good management and preparation.

"All three farms operating with TR4 had good biosecurity protocols in place prior to getting this disease and this certainly helped them to not only return to production but ensure the greatest possible protection to the wider industry in containing further spread," Mr Lowe said.

"They should be commended immensely for their efforts, particularly knowing how devastating it has been for all three farms to have to deal with such overwhelming circumstances."

Early detection

As DAF's Banana Production Systems' Team Leader, Stewart Lindsay has travelled the world and witnessed the devastation that TR4 has had on other infested growing regions across the globe.

He said early detection is key.

"The fact that it (TR4) was found relatively early in Tully is really important. If you talk to the guys in the Philippines, the guys in Colombia and even in Mozambique, you get the same story, they (initially) thought it was Erwinia or Moko or one of the other diseases," he said.

FUNDING

ABGC acknowledges that funding and support from government and industry over the past five years has been - and continues to be - critical in the TR4 fight.

- Queensland Government - $42 million to date invested in containment and management of TR4, R&D projects, feral pig control and continued co-management with industry until 2023
- Federal Government – $1.5 million towards 1IP buyout, $300,000 for ABGC grower training and undisclosed amounts including initial emergency response
- Growers - contributing levies of $3 million to buyout of 1IP, on-going funding for securing 1IP; and countless monies spent individually on on-farm biosecurity improvements and feral pig control

Growers take action to improve on-farm biosecurity, including fencing, wash-down facilities, footbaths and boot exchange stations

ABGC gains support of industry nationally (via a national ballet) for a levy for TR4, mostly to buy first infected farm, to contain TR4

R&D efforts wide and varied in the fight against TR4 and the search for resistant varieties. QLD Govt invests more than $3 million over five years to fund R&D efforts

Panama TR4 Open Day held at South Johnstone Research Station

Factsheets and flyers distributed widely to growers and uploaded online

BQ's Panama TR4 Program established to manage on-going control and containment of the disease

1IP and a related farm bought by industry, all operations stopped and 167ha of bananas destroyed

BQ Panama TR4 Grower kits sent to all banana growers nationally

2nd Tully farm confirmed with TR4

QLD Govt invests further $19.05 million toward TR4 control and containment

"In the Philippines, for five years they were managing TR4 like it was Moko, not realizing that it was different, and needed different management and biosecurity. But after five years has gone by, the disease has moved, and your ability to contain it is already lost.

Ms Evans said that early detection on the first infested property in Tully played a crucial role in containment.

"The first farm self-reporting meant government and industry could act quickly to contain this disease. If we get the disease early, the infected plant can be destroyed safely and biosecurity measures can be put in place to minimise spread."

Surveillance

Finding TR4 early and destroying any infected plants safely is one of the best opportunities for containing the disease, therefore surveillance has been critical.

Ms Evans said, "following the first detection, we needed to know if TR4 was anywhere else, so BQ officers went to all banana farms across far north Queensland looking for TR4.

"Having surveillance officers walk up and down banana farms is one of the most effectice ways to detect the disease early, but it's the costliest.

"These days BQ and industry agreed that the surveillance program is based on level of risk and we review the surveillance strategy every couple of years to make sure we are addressing these risks."

Ms Evans said to find the disease, growers were encouraged to check their own plants and were legally required to reports signs of the disease.

"We have had a few growers self-report and I know it is not an easy call to make. But if it is TR4 on your property, making this call can reduce the impact and give you the best chance of continuing to trade."

FERAL PIG ERADICATION

A significant part of the fight to contain TR4 in the Tully Valley has been the control of feral pig populations.

A co-ordinated feral pig eradication program – involving aerial shooting, as well as ground shooting, baiting, exclusion fencing and trapping – began in July 2017 and continues to be funded by multiple agencies including the Australian Banana Growers' Council, growers and government.

ABGC deputy chair Leon Collins and professional shooter Trevor Williamson continue to co-ordinate the banana industry's role in the program, which has so far resulted in more than 5100 pigs culled in high-risk TR4 zones.

Mr Collins said with pigs widely recognized as a vector of the soil-borne fungal disease, he believed the numbers taken out of the valley since July 2017 had significantly reduced the risk of TR4 spread.

"The aerial shooting has allowed us to start having an impact on the breeding numbers of feral pigs in the area. Whereas before, with just the trapping and the ground shooting, it wasn't an efficient enough form of control to actually get on top of and reduce numbers," he said.

Groundbreaking collaboration

From the outset, industry and government has worked successfully together to provide the most rapid response to TR4 containment and ensure the delivery of the subsequent Panama TR4 Program.

While at times the partnership has had its challenges, it's now progressed into a new Panama TR4 Program Management Board - comprising equal ABGC and DAF representation - which will see industry and government jointly fund the program until 2023.

The Board will give the banana industry the opportunity to participate in key decisions on the future management of TR4.

Sharing knowledge

Stewart Lindsay said while DAF had some useful knowledge and information for growers to improve their on-farm biosecurity levels, growers worked well to find solutions of their own and were happy to share their knowledge.

"In November 2015 we had the Panama TR4 field day at Wangan and the most popular segment was where we had five growers with videos of everything sharing and showcasing what they had done (to improve biosecurity on their farms) and they made themselves for available as a panel to answer questions," Mr Lindsay said.

"Growers are fantastic at working out solutions to problems and have been very generous in their sharing. You'd see one grower that had done something really well, and then another grower did a different thing really well, they were happy to share that with the DAF/ABGC extension team. So we were then able to share that with the broader industry."

Feral pig eradication program begins, involving aerial shooting in high risk TR4 areas. Funded largely by ABGC, growers and QLD Government

BQ deliver one-on-one visits to highest risk growers

3rd infested farm detected

BQ Panama TR4 Ready Campaign launched to raise community awareness

A number of Next Gen grower visits to the NT offered first hand learnings of TR4

Community awareness – BQ run awareness program and deliver TR4 education to key stakeholders including freight industry, emergency services and public utility companies

BQ workshops to get growers Panama TR4 ready. Stephen and Gavin Mackay share learnings from operating with TR4

Extension

After the detection of TR4 in Queensland it was important to get as much information as possible to growers about containing the disease, understanding it and how best to respond to it. For this to occur, it was important to establish a solid extension program.

ABGC immediately sought to obtain TR4 extension funding from both Governments to run comprehensive training for growers. At the time ABGC and DAF drew on the skills of former and existing staff, and also sourced new industry professionals to undertake the task.

"Part of that first strategy of 'what do we have to do to stop this thing spreading' (containment), was to get everybody in the industry (growers, suppliers etc) up to a common level of understanding about TR4," Stewart Lindsay said.

"ABGC spoke to government and got funding support straight away to develop an extension program that would roll out in the form of biosecurity planning workshops supported by follow up farm visits.

"But in the early days, a couple of retired DAF people came back as ABGC employees for an amount of time to work to help pull this all together. So, we had existing DAF staff, ABGC staff, former DAF staff with skills and experience, and they all sat together and came up with what needed to be done. It was sort of a perfect secondment. But in a word, it's co-operation."

Mr Lindsay said this co-operative effort also involved growers, their market agents and supply chain, who also were heavily involved in the organisation and success of the extension workshops.

Research Preparedness

Jeff Daniells, Department of Agriculture and Fisheries (DAF) Principal Horticulturist, believes that Queensland's leading banana research and development staff were well prepared for the state's TR4 outbreak thanks to their involvement in research projects spanning over 20 years.

He highlighted in particular several international banana projects funded by the Australian Centre for International Agricultural Research (ACIAR) – the earliest one going back to the late 80s. These projects allowed DAF staff to gain extensive experience off-shore with diseases such as black Sigatoka and Panama TR4 and elevated them onto the world stage.

Mr Daniells said these and other international opportunities allowed key banana R&D staff to travel extensively, visiting and learning from other banana research programs, as well as presenting their own learnings at global symposiums and workshops.

"Particularly since that first ACIAR project (in the late 80s), we (DAF) as an R&D effort in bananas, have been acknowledged highly since then, because it put us in the international arena and gave us a lot more opportunities to interact internationally.

"So when it comes to the crunch of the crisis (like TR4) you've got people that can be relatively cool in that crisis ... and be able to think clearly and have some insight. Because you are building on your experience."

Staying ahead of the game

Jeff Daniells believes it is essential for the industry to "stay ahead of the game", not only in regards to TR4.

"We've got to think beyond TR4," he said. "We can't

GROWERS HELPING GROWERS

Not surprisingly, growers have readily shared their knowledge and innovation with other growers, to assist whole of industry to improve on-farm biosecurity levels.

The MacKay family – whose Bolinda farm became the second property to test positive to TR4 – have played a major role in sharing with industry and other stakeholders valuable knowledge on how they have continued to farm in the face of adversity.

Cousins, Gavin and Stephen MacKay – who manage Bolinda Estate – have contributed tirelessly to industry meetings and biosecurity workshops and appeared in a video developed by DAF talking about lessons learned while trading with TR4.

Their efforts were recognised at the 2019 Congress Banana Ball where they received a Banana Industry Award of Honour.

The Mackay family collectively has provided valuable feedback to ABGC, government and industry on how to continue to operate a working business on an infested farm.

Stephen and Gavin MacKay (MacKays) along with Mark Smith (Darwin Fruit Farms) address Congress 2019 giving an insight into living with TR4

Queensland's TR4 containment success has attracted widespread international interest over the years

QLD police and ABGC assist Cassowary Coast growers to tackle concerns over trespassing on banana farms

ABGC gains industry support to co-contribute to funding, governance and delivery of the Panama TR4 Program until 2023

QLD Govt commits $12 million funding over four years to support industry's fight against TR4

QLD Govt and the ABGC form Panama TR4 Program Management Board to jointly deliver TR4 Program until 2023

4th infested farm detected

First Panama TR4 Program Management Board, consisting of ABGC and DAF held April 2020

afford to become complacent on the biosecurity effort. Who knows if a (Panama) Race 5 won't come along from somewhere or some other exotic pest or disease?

"We've got to look beyond TR4 in terms of threats. We've got to be thinking on a number of fronts. It's about preparedness for other things before they come as well.

Buying time

Stewart Lindsay says it's essential for industry to continue to buy time and remain vigilant in the TR4 fight.

"We need to continue, because R&D solutions are going to take time," he said. "Obviously varieties are a really key part of any future situation where people are living with Panama disease but it's going to take time to get the varieties to test them."

"Even from when you receive a variety, it's at least three years before you have any results to tell you whether you want to have a look at it closer on a commercial farm. So we need the containment to continue."

MESSAGE FROM THE CHAIR

"If the past five years has taught us anything, it has shown that continuing to buy time - until a TR4-resistant variety is commercially available - is absolutely essential for our industry's survival, both in the short and long term.

"The only way this is going to happen is if we continue to do the good work that we have done over the past five years.

"A large portion of this effort has involved working together with DAF and BQ to ensure we continue to look for this disease.

"Look for it in our paddocks, look for it as we go about our daily routines and allow BQ to continue to search for it as part of its routine surveillance program.

"As we are all aware, finding TR4 early and destroying infected plants (in line with biosecurity protocols) is the best chance we have of continuing to slow the spread of this disease.

"I would urge all growers – regardless of your location – to always be on the lookout. To report any signs of a diseased plant. And, to encourage others to do the same.

"Reporting a suspected infection, is one of the scariest things for a grower to do. However, in doing so, you are not only looking after your own interests, but the interests of the national banana industry."

"I'd like to thank growers for the efforts you have gone to, to help keep our industry safe. It has not been an easy five years and I am hopeful that we can continue to support each other as we move forward with this disease."

"Finally, I'd like to thank government – particularly the Queensland Government – for their continued support and funding. The State's commitment to our industry has enabled us to contain and manage TR4 as well as we have since 2015. While Commonwealth assistance allowed us to purchase 1IP and also respond swiftly to containment."

ABGC Chair Stephen Lowe.

PANAMA TR4 PROGRAM MANAGEMENT BOARD

From 2020 to 30 June 2023, the banana industry – through grower levies – will contribute to the delivery of the Panama TR4 Program. The Australian Banana Growers' Council (ABGC) and the Department of Agriculture and Fisheries (DAF) will jointly fund, govern and deliver the Panama Project during this period.

The Program will be managed through a joint Panama TR4 Management Board (PM Board). The PM Board is be made up of equal representation from ABGC and DAF. Industry meetings to inform growers and seek feedback on how the Panama TR4 Program will be managed into the future were scheduled to be held on 1-3 April, however were postponed due to the continuing COVID-19 (Corona virus) pandemic.

ABGC will continue to inform industry on any developments with the Panama TR4 Program through its various communication channels. For further queries don't hesitate to contact ABGC head office on 07 3278 4786.

How will DAF and the ABGC jointly fund, govern and deliver the Panama TR4 Program?

The PM Board will oversee the delivery and governance of the Program until 2023. The Board met for the first time on 1 April 2020 and will continue to meet quarterly. A legal cost-sharing agreement between DAF and the ABGC for the joint funding of the Program until 2023 is in the final stages of development.

How will the Panama TR4 Program be funded under the new collaborative arrangement?

In 2019, the Queensland Government committed a further $12.089 million from 1 January 2019 to 30 June 2023 to control and contain Panama TR4 in the Far North Queensland banana production areas. The ABGC has committed the following, through grower levies, for the period, 2020 to 30 June 2023:

- 2019/20 – 10%
- 2020/21 – 25%
- 2021/22 – 40%
- 2022/23 – 50%

Who is on the Board?

The Board has equal government and industry representation.

The Board comprises:

Chair: Malcolm Letts, Department of Agriculture and Fisheries (DAF), Deputy Director-General and Chief Biosecurity Officer

Board members:

Stephen Lowe, ABGC Chair and Tully grower
Andrew Serra, ABGC Board member and Tableland grower
Jim Pekin, ABGC Chief Executive Officer
Mike Ashton, DAF, General Manager and Chief Plant Protection Officer, Plant Biosecurity and Product Integrity
Lynne Turner, DAF, General Manager, Horticulture and Forestry Science

How will the PM Board make decisions?

The Board gives the banana industry an opportunity to make key decisions on the future management of the disease, and to oversee an effective and efficient Panama TR4 Program.

The ABGC secured the support of growers to proceed with the jointly funded and delivered model. Growers will have an opportunity to provide input to the Board through their ABGC representatives. The industry and the government will have equal decision-making responsibilities.

How will the PM Board communicate decisions to growers?

The Board will meet quarterly and is committed to keeping the banana industry informed on all key decisions and Program deliverables.
The board will provide:

- A quarterly snapshot report via ABGC e-bulletins and Panama TR4 Program updates;
- A yearly update in the Australian Bananas magazine; and
- A dedicated page on the ABGC website including information on board members, board purpose, timeframes and deliverables.

PANAMA TR4 - FAQS

Following the fourth detection, the industry has been asking questions about what happens now with Panama TR4. We asked those questions to Biosecurity Queensland's Panama TR4 Program and here is what they had to say...

If you have any more questions, please call Sarah Flenley, Principal Engagement Officer of the Panama TR4 Program on 0400 867 264 or Sonia Campbell, ABGC Communications Manager on 0428 038 330.

FOURTH DETECTION

Will the latest detection change the way Biosecurity Queensland's Panama TR4 Program (Program) regulates the disease?

Farms with Panama TR4 still need to meet the biosecurity restrictions set out in a Notice of presence of Panama disease tropical race 4 (notice). Any changes to how the disease is regulated into the future will be done with industry through the Panama TR4 Program Management Board (PM Board).

If the disease continues to spread, will the government declare it endemic?

Unfortunately, this disease will continue to spread. As to when it's declared endemic will depend on where it is detected and its range of presence. Currently the Program's regulatory response is to manage the disease at a farm-gate level with strict restrictions on a Panama TR4 infested farm, and surveillance on infested farms and those considered highest and medium at risk of disease detection.

Fortunately, this disease has spread slower than any of us expected in 2015. Any decisions around the future management of Panama TR4 based on disease spread would need to consider the situation at hand, the level of risk to the industry, a cost-benefit analysis and what level of biosecurity response is now required.

Any decisions on the future management of Panama TR4 by the Program would be considered and approved by the PM Board.

FARMING WITH TR4 AND MIXED CROPS

Can you farm other crops or graze cattle on a farm with Panama TR4?

Growing crops other than bananas, or grazing cattle on land affected by Panama TR4 can be possible if the requirements of the notice are met.

In mixed farming situations, an assessment will be carried out by the Program to determine whether the land could have been contaminated with Panama TR4 and biosecurity restrictions may be put in place. These assessments consider both a grower's right to their livelihood and the need to protect the industry from wider spread.

SURVEILLANCE

Does the latest detection change how surveillance is undertaken?

No. The Program's current tracing and surveillance strategy is based on risk exposure and allocation of resources. The strategy is undergoing its annual review in consultation with banana growers, the Australian Banana Growers' Council, Agri-Science Queensland and departmental scientists. Any changes to the strategy would be approved by the PM Board and communicated to the industry.

How do Program staff make sure they are not spreading the disease?

We have strict infield hygiene and decontamination (decon) processes to minimise the risk of spread. This includes a 3-step decon before staff enter and exit a banana farm, wearing footwear provided by the grower or doing a full decon of staff footwear, no Program vehicles entering a banana farm and all vehicles undergoing a full decon between banana growing areas. We follow all reasonable on-farm biosecurity requirements.

PANAMA TR4 PROGRAM

Now that industry levies are contributing to the Program, what changes in spending have occurred?

When growers agreed to industry levies contributing to the Program, they said they wanted to make sure the Program was efficient and effective. This has always been a priority of the Program; we take the responsibility of managing public funds seriously.

In 2019, the Program successfully secured funding for the Program from both the Government and the banana industry until 2023. This means we can introduce greater efficiencies based on a longer-term funding arrangement.

The Program has made savings by:

- Swapping rental vehicle leases in favour of Queensland Government vehicle leases and reducing the number of vehicles
- Reviewing and reducing decontamination practises
- Purchasing rather than renting secure storage containers
- Vacancy managing positions unless critical to the delivery of the Program
- Keeping cleaning and maintenance to the absolute minimum.

The Program will continue to implement efficiencies where possible through the reviewing of their annual business plans and strategies.

DISEASE SPREAD

With four infested properties in the Tully Valley, is Tully River water considered high risk?

Tully River water that is sourced downstream from an infested property could potentially be contaminated. However, there is no practical diagnostic testing system available for detecting Panama TR4 in water at this stage. What we have noticed is that the disease has been detected up hill and up river from the initial detection within the infested farms. Anything that moves soil and water can move the disease, so it is best to take a precautionary approach and protect your farm with on-farm biosecurity.

What is the Program doing to protect the banana industry from the spread of Panama TR4?

The Program is focussed on control and containment of the disease through:

- Working with the Panama TR4 infested properties to minimise disease spread
- Visiting farms to check for signs of the disease – early detection is critical
- Working with growers to implement on-farm biosecurity measures and preparing growers at highest risk of disease detection by working through the notice requirements
- Providing information to growers, the banana industry and the wider community on Panama TR4 and how to minimise disease spread

Why hasn't Panama TR4 been detected on more properties in five years?

Good question, please read the Queensland Marks Five Years of TR4 article on pages 12 to 15, to find out why.

PROGRESS WITH THE SELECTION OF IMPROVED VARIANTS OF THE TR4 RESISTANT CAVENDISH - CJ19

Twelve selections have been made from the CJ19 mutagenesis screening trial in the Northern Territory. Here are some details of the selections and the next steps for their further evaluation.

By Sharon Hamill, Jeff Daniells and Stewart Lindsay (Queensland Department of Agriculture and Fisheries) and Sharl Mintoff, Samantha Cullen, Maxine Piggott and Chris Kelly (Northern Territory Department of Primary Industry and Resources)

Background

A major component of the DAF and Horticulture Innovation funded project 'Fusarium Wilt Tropical Race 4 Research Program' (BA14014) has been the use of mutagenesis to develop TR4 resistant banana plants. This approach seeks to improve poor production and consumption characteristics of Cavendish and non-Cavendish varieties with existing TR4 resistance by creating mutations or offtypes.

One of the varieties treated in the program was the TR4 resistant Cavendish variety CJ19. Evaluation of a plant crop of the irradiated plants in the NT has now been completed. A second trial block of irradiated CJ19 at Lakeland in Far North Queensland was planted after the NT and is less advanced in development.

CJ19 is a Cavendish selection imported from Indonesia in 2003. It has demonstrated much greater resistance to TR4 than Formosana (GCTCV 218) in trials at Coastal Plains Research Farm (CPRF; see August 2019 edition of Australian Bananas pages 14-15). We have sought to improve the agronomic characteristics of CJ19 whilst retaining its resistance to TR4 by irradiation.

The field planting was established at CPRF on 3 October, 2018. There were 650 irradiated plants of CJ19, plus 50 unirradiated CJ19 and 10 Williams, to act as control or check varieties, distributed throughout the block. At planting, 200 ml of TR4 inoculated millet was placed in the bottom of each planting hole of all plants (controls and irradiated plants). Uninoculated Williams control plants were established nearby to allow comparisons of key production features.

12 selections for further evaluation

To select irradiated plants with improved features, the following selection criteria were used:-

- Resistant to TR4
- Plant and bunch characteristics more like Williams Cavendish. Plants of better appearance were determined by some growers and researchers
- Yield/unit time no less than 80% of Williams
- Pseudostem height greater than CJ19 and no more than 5% greater than Williams

Seven of the 12 selections were harvested two to three weeks later than the average for the top ten Williams plants but were earlier than the average for the top ten CJ19 plants. Four plants had yield/unit time greater than Williams. All but one of the selections were between CJ19 and Williams in height (i.e. 205-238 cm in plant crop). The information for each of these selections is based on only the single plants of each that we have.

The next steps for each of these selections is to establish and multiply each in tissue culture at NT DPIR's Berrimah Farm. A protocol needs to be developed to then transfer these selections to Queensland with approval sought from Biosecurity Queensland. Once available in Queensland, the selections will be evaluated in Far North Queensland. Their resistance to TR4 will also be confirmed in a trial at CPRF with multiple plants of each of the selections.

Williams control

CJ19 Section 1

CJ19 Selection 2

CJ19 Selection 3

CJ19 Selection 4

CJ19 Control

Hort Innovation Strategic levy investment | BANANA FUND

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

UNLOCKING SECRETS TO THE SUPPRESSION OF PANAMA DISEASE

By Tony Pattison, Queensland Department of Agriculture and Fisheries

Why is it that Panama disease shows up in some plants, blocks and farms and not others? The answer to this question may be in the soil, and what lives in it. What is living in soils from different land uses and how this effects suppression of Panama disease is part of a study conducted in the north Queensland wet tropics. The study compared soils from rainforests, pastures, sugarcane and bananas, with scrutiny of their microbial characteristics, including bacteria, fungi, nematodes, arthropods and insects. The ability to suppress Race 1 Panama disease, when a susceptible Ducasse plant is grown in inoculated soil was also tested.

Bananas grown in soils collected from banana and sugarcane farms showed more pronounced external symptoms of Panama disease, like leaf yellowing, pseudostem splitting and leaf collapse, than in plants grown in soils collected from pasture or national parks. However, the amount of internal disease symptoms measured showed a different result. The amount of disease infected corm tissue of bananas was highest in plants grown in the pasture soils, with on average 3-10% more infected corm material than plants grown in banana soils.

The differences in the expression of the disease symptoms could be explained by differences in the microbial communities in the soils. A complete analysis of the microbiology is continuing, but the initial results show some big differences. For example, the banana soils had one-third of the number of fungal feeding nematodes, compared with rainforest and pasture soils. Soil fungi can compete with Fusarium, with some fungi developing methods to give them a competitive advantage, like the production of antibiotics. The soil microbial community acts as a reservoir of organisms, with the plant having some ability to select which organisms can move through the roots. If there is a large selection of fungi, they can hinder and slow Fusarium, helping the plant to defend itself. The interaction between the plant and beneficial soil fungi may be why we see the differences in Panama disease between plants, blocks and farms.

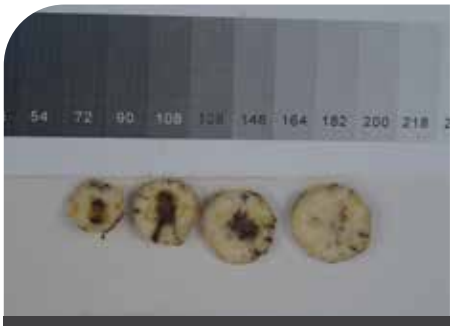
Getting the full benefits from the soil biology for Australian banana growers to suppress Panama disease is the focus of a new 5-year Department of Agriculture and Fisheries and Queensland University collaborative project, with support from the Australian Centre for International Agricultural Research (ACIAR), and work to take place in Australia, the Philippines, Laos and Indonesia.

A pot experiment where Ducasse banana plants grown in soil from different land uses rainforest, pasture, sugarcane or bananas, show a range of Panama disease symptoms.

Dr Hazel Gaza holding Ducasse banana plants infected with Panama disease and showing typical leaf yellowing on the left and an apparently healthy plant on the right.

Differences in the expression of Panama disease symptoms of Ducasse banana plants grown in soils collected from pastures.

Differences in the expression of Panama disease symptoms of Ducasse banana plants grown in soils collected from banana.



Typical internal infection caused by Panama disease on Ducasse banana plants grown in soils collected from different land uses.

This work has been funded by the Australian Centre for International Agricultural Research in collaboration with Queensland Department of Agriculture and Fisheries.

PLANT CROP VARIETY RESULTS SOUTH JOHNSTONE

Several TR4 resistant varieties are amongst the new varieties being assessed for agronomic performance at the South Johnstone Research Facility. The growers who attended the June 2019 field walk at South Johnstone saw many of the varieties as they were approaching harvest in the plant crop. The results of that first crop are presented here.

By Jeff Daniells and Carole Wright, Queensland Department of Agriculture and Fisheries

The agronomic evaluation at South Johnstone has been proceeding well and quickly since it was planted with tissue culture plantlets on 26 September 2018. Bunch harvest commenced in mid-May 2019 for the early varieties and continued through until the end of the calendar year for the slower selections. Data for most of the varieties is presented in the table on the opposite page.

This trial is a first look at many of the varieties. So far we only have data for a plant crop in north Queensland, and the number of plants of each variety in the trial is quite modest. It is also important to appreciate when comparing varieties harvested early with the much later ones, that part of the difference occurring may be due to the time of year when the bunch happens to be filling.

Once revised material transfer agreements are in place with those organizations that developed the varieties then some of the better performing ones can be advanced to the on-farm trial stage which will include greater numbers of plants than are possible at South Johnstone.

New high yielding TR4 resistant Taiwanese varieties

We have included all of the Cavendish selections from Taiwan present in Australia in this trial. All of the Taiwanese Cavendish selections were from two to five months slower than Williams in the first crop but several had heavier bunches. When one considers the bunch weight relative to the time taken, two of the new selections in the table – Asia Pacific #3 and GCTCV 217 had comparable yields to Williams, as did the two Formosana (GCTCV 218) selections which is very encouraging. The other Taiwanese varieties yielded from 77 to 94% compared to that of Williams in the plant crop. Some had significantly shorter fruit, as indicated by the percentage of fruit in the 22-26 cm size class, and several, but not all, of the Taiwanese varieties were taller plants than Williams.

Rahan Meristem Cavendish selections performing well

All four selections from Rahan Meristem – Gal, Jaffa, Adi 9001 and Adi 9168 had heavy bunches of long fruit as well as good hand separation in the bunch, which should help minimise fingertip scarring. Notably Gal and Jaffa were the only varieties in the trial with significantly higher yield (per unit of time) than Williams. We have not tested these selections against TR4 but they are not expected to have any resistance. These selections are owned in Australia by Rahan Meristem and are expected to be made available to a few selected growers for on-farm evaluations towards the end of 2020.

Miscellaneous

The dwarf selections of Cavendish – Brier and Dwarf Cavendish have yielded well, being comparable to Williams but with shorter fruit, particularly in the case of Dwarf Cavendish. Yields of the CIRAD hybrids ranged from 52 to 58% of that of Williams. They were 12 to 46% taller than Williams in the plant crop and their leaf petioles seemed quite brittle, often snapping under strong wind. Fruit of the four CIRAD hybrids have been tasted by staff at South Johnstone – CIRAD's 03 & 05 were particularly liked whilst 04 and 06 were unusually fragrant. A repeat evaluation in the future for a few varieties in the trial with true-to-type plants is required because of a high incidence of tissue culture offtypes.

Where to from here?

The first ratoon harvest is already underway with some of the early varieties commencing harvest in January 2020. The trial will continue for two ratoon crops collecting agronomic information followed by leaf spot screening in ratoon 3.

The Taiwanese Cavendish selection - GCTCV 217 yielded as well as Williams in the plant crop.

Plant crop bunch of Gal. Both Gal and Jaffa had significantly higher yield per unit of time compared to Williams.

Brier (pictured) and Dwarf Cavendish are both dwarf plants that yielded well but the former had significantly more fruit in the 22-26 cm category.

Table Selected yield and plant characteristics of most of the varieties in the plant crop

Variety	Months planting to harvest	Bunch Wt (kg)*	Bunch Wt* /12 months	Fruit 22-26 cm (wt %)	Fruit 20-22 cm (wt %)	Pseudostem Ht (m)
Williams	8.7	23.3	32.3	64	21	2.6
Grande Naine	9.0	22.1	30.1	66	27	2.4 <
Asia Pacific #3	10.9 >	30.6 >	34.2	61	21	2.7
Formosana	12.2 >	30.4 >	30.3	59	17	2.8 >
Formosana Sel	12.3 >	32.1 >	31.7	56	25	2.9 >
GCTCV 105	11.3 >	26.7 >	28.6 <	29 <	36	2.8
GCTCV 119	14.1 >	29.4 >	25.4 <	28 <	36	3.4 >
GCTCV 215	11.7 >	23.9	24.9 <	63	21	2.8 >
GCTCV 217	11.9 >	29.7 >	30.5	59	23	3.0 >
GCTCV 247	11.4 >	22.8	24.3 <	66	20	2.9 >
CJ19	10.9 >	20.7 <	23.3 <	48	22	2.2 <
Dwarf Cav	9.0	24.2	32.7	26 <	41	1.9 <
Brier	9.4	26.6	34.2	49	27	2.1 <
Short Fruit Will.	11.3 >	26.9 >	28.9 <	36 <	32	2.7
Jaffa	9.8	29.6 >	36.9 >	63	21	2.7
Gal	8.9	26.2	35.7 >	76	13	2.4 <
Adi 9001	9.2	26.2	34.9	68	19	2.3 <
Adi 9168	9.6	25.6	32.7	60	23	2.0 <
CIRAD 03	9.7	13.3 <	16.8 <	n.a.	n.a.	3.1 >
CIRAD 04	13.7 >	22.5	20.0 <	n.a.	n.a.	3.8 >
CIRAD 05	9.6	14.2 <	18.0 <	n.a.	n.a.	3.1 >
CIRAD 06	10.1 >	15.5 <	18.7 <	n.a.	n.a.	2.9 >

< = significantly less than Williams (95% confidence level) and > = significantly more than.

n.a. = not applicable as these 4 CIRAD hybrids are not Cavendish type bananas and most of their fruit is shorter than the 2 preferred Cavendish size classes

	Less desirable
	More desirable

	Taiwan derived Cavendish selections
	Rahan Meristem Cavendish selections

* excludes bunch stalk weight

CIRAD 05 was good-tasting but yielded only 56% of Williams and was 12% taller than Williams.

GCTCV 215 had greater TR4 resistance than Formosana in the NT screening trial but yielded about 20% less in this South Johnstone trial.

Formosana Selection took 3.5 months longer than Williams from planting to harvest but its heavier bunch weight made up for it.

Hort Innovation Strategic levy investment | BANANA FUND

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LESSONS FROM LAOS

Traditional small holder farm in Laos growing a mix of crops with bananas in the background.

What if we did nothing to manage Panama disease? This is the scenario being faced in Laos, a land-locked country south of China and between Thailand and Vietnam.

By Tony Pattison, Queensland Department of Agriculture and Fisheries

The arrival of Panama disease TR4 in the north of Laos in 2016, has all but wiped out the expanding Cavendish export market supplying bananas to China.

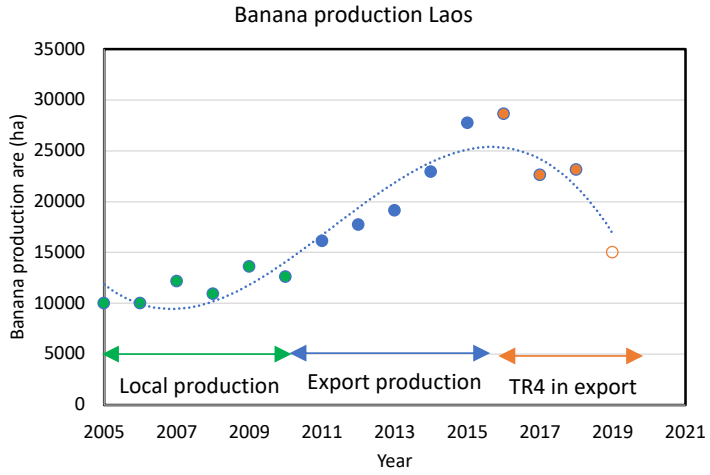
The banana industry in Laos has traditionally supplied local markets with varieties like Ducasse, from small mixed farming plots.

In 2011, with the spread of TR4 in China, there was a move to grow Cavendish bananas in Laos. This was to supply the lucrative Chinese banana market that had a short fall caused by TR4. However, in the establishment of the new plantations, there was little knowledge or awareness about TR4 and how it spreads. As a result, ineffective or no biosecurity was put in place in establishing the plantations. Although tissue cultured plants were used, by themselves they were ineffective to prevent the incursion of TR4.

The area under Cavendish banana production initially expanded, with an additional 18,000 ha of bananas, up to 2016. By the time TR4 was confirmed in the Cavendish plantations in 2017, 6,000 ha had already been lost in production to the disease. The area under Cavendish banana production continues to decline. Furthermore, with little information and no protocols in place to stop the spread, new areas continue to become infected with TR4.

The spread of TR4 in Cavendish plantations from the north to the south of Laos, threatens not only traditional banana production supplying local markets, but also wild banana species that can be found in nearby forests.

The lesson to be learnt about TR4 from the Laos experience is to do nothing will result in the rapid spread of the disease and substantial loss of production. Therefore, the greater our knowledge about TR4 and the more on-farm systems that can be put in place, the better the banana industry can be in minimising the impacts of Panama disease.



Acknowledgement: This work has been funded by the Australian Centre for International Agricultural Research in collaboration with Queensland Department of Agriculture and Fisheries.

Sale of bananas at the traditional local markets.

Severe infection of TR4 on a Cavendish plantation in northern Laos.

TR4 continues to spread in Cavendish banana plantations, with a plant showing typical symptoms in amongst apparent healthy bananas.

Wild bananas (Musa sp.) growing in the background, next to a Cavendish banana plantation infected with TR4 and showing leaf yellowing in the foreground.

Fall armyworm
(Photo by James Castner, University of Florida)

UNDER THE MICROSCOPE

A regular feature in *Australian Bananas Magazine*, Under the Microscope profiles the industry's emerging and exotic diseases. This month we feature Fall armyworm, a new exotic pest recently detected in North Queensland. While bananas are not a preferred host, this pest has serious implications for other agricultural industries including sugar cane and horticulture in North Queensland.

What is Fall armyworm?

Fall armyworm (Spodoptera frugiperda) is an invasive moth pest. It has been found at South Johnstone, Tolga, Lakeland and Bowen, after detections on two Torres Strait islands, at Bamaga and Georgetown in February.

Fall armyworm is known to feed on more than 350 plant species including maize, cotton, rice, sorghum, sugarcane, wheat and many vegetable and fruit crops. While it will eat banana plants, they are not a preferred host.

Fall armyworm poses a threat to Queensland's agricultural industries.

What are the symptoms?

- Signs of the pest include egg masses, plant leaf damage or fruit or vegetable damage
- Larvae initially feed on leaves, creating pinholes and windows in leaf tissue, and giving leaf margins a tattered appearance. Larvae can also eat buds and tunnel into and feed on fruit
- In grass-like plants, they often feed within the leaf whorl (where leaves radiate from or wrap around the stem or stalk)
- Can defoliate preferred host plants and acquire an 'armyworm' habit and disperse in large numbers

How does is spread?

The adult moths are capable of flying long distances. In the Americas, adult moths can undertake annual seasonal migration as far north as Canada. Fall armyworm can also spread through people movement.

Where in the world is it found?

Fall armyworm is native to tropical and subtropical regions of the Americas. Since 2016 it has rapidly spread to and throughout Africa, the Indian subcontinent, China and Southeast Asia. The recent detection in Far North Queensland is the first time it has been discovered in Queensland.

What are we doing to protect the industry?

- Strict regulation concerning import of plant and plant products
- Surveillance
- Increase awareness among industry stakeholders; and
- Growers are urged to monitor crops for signs of unusual levels of caterpillar damage leading to defoliation of the crop

What can I do to protect my farm?

While the potential impact of fall armyworm is considered to be low for the banana industry, another pest incursion reinforces the need for growers to have solid on-farm biosecurity. This includes:

- Using clean plant material
- Limit vehicle and machinery movement on farm
- Implement boot decontamination system
- Vigilance in regular crop monitoring, and
- Photograph and report any suspect sightings to the Department of Agriculture and Fisheries (DAF) on 13 25 23

For more information on the Fall armyworm visit DAF at www.daf.qld.gov.au

Fall armyworm larvae (Photo by Chass Hesselein, Alabama Cooperative Extension System)

Fall armyworm lava feeding on maize
(Photo by University of Georgia)

Fall armyworm adult moth
(Photo by Lyle Buss, University of Florida)

STAYING A STEP AHEAD OF THE GAME

Boogan banana grower Gavin Devaney in a newly planted out banana plantation.

Far North Queensland banana grower Gavin Devaney could have easily ended up on the other side of the farming fence. Armed with an Honours Degree in Agricultural Science (Major in Rural Technology), the third-generation farmer was on the cusp of studying to become a veterinarian – until wife Andrea accepted a job as a teacher at Gavin's old stomping ground in Innisfail. Lea Coghlan reports.

Gavin Devaney is passionate about growing bananas.

It drives everything he does on his family's 101-hectare banana farm, Bartle Frere Bananas, in the tiny hamlet of Boogan, outside Innisfail.

"I'm 41 years old with at least another 20 years of doing what I want to do," Mr Devaney said.

"I don't want to do anything else but farm.

"I have two young boys who have been around the property their whole life, and if one of them wants to keep farming I hope the industry is here.

"It's a good industry for the country – we don't import bananas and we grow enough bananas in a few hundred kilometres to support the entire nation."

Mr Devaney was destined for a life on the land, having watched his parents Bernie and Sandra build the family's banana and cane farming business from scratch.

He credits his parents for instilling in him a passion and tenacity for farming.

Mr Devaney dropped out of school at 15 years of age but returned to complete his secondary education and go on to university – as a mature age student.

"I did it the hard way," Mr Devaney said.

"But in the end, I wanted it. I wasn't forced into it."

On completing their university degrees, Gavin and wife Andrea, parents to Quinn, 9, and Brady, 8, decided Andrea's first teaching post would influence where they relocated to.

"If Andrea had been placed in Brisbane, I would have done veterinarian studies," Mr Devaney said.

"If she got a job here then I would come back and given the farm a shot. She got an interview and a job at Good Counsel Primary School."

While Mr Devaney had his own thoughts on farming, he spent the first several years on his return to the land in 2002 learning the growing side and an equal amount of time understanding that farming was a business.

Today, he runs the quality assurance, biosecurity and labour hire – the family employs up to 35 staff – while the growing and packing is overseen by his parents.

The Devaneys have been supplying supermarket giant, Aldi, for 12 years, a partnership that started at a time when the industry shifted from a B21 carton to 13kg open crate carton.

Aldi originally used the crates to display the bananas.

"We were one of the early adopters of the 13kg box," Mr Devaney explained.

"They would wheel out pallets into the store, people would take out the bananas from the carton and then use our cartons to take the rest of their groceries home."

It was this approach to reusable packaging that prompted the Devaneys to rebrand as Enviro-Choice – Earth's Choice, a move that gave the family a strong foothold in the marketplace.

Forward thinking

A self-described modern farmer, Mr Devaney embraces change.

"You can sit on the fence waiting for change but the fence can consume you," he said.

"If you keep building with the fence you don't get consumed by it.

"If you are in front of change you are not scared of it."

When Panama tropical race 4 was first detected in Tully in 2015, Mr Devaney and his father agreed it was "all in or all out".

"We had watched what other growers had gone through," Mr Devaney said.

"We didn't want to be locked down for six months, with millions of dollars' worth of crops out in the paddock."

Safeguarding the family farm from the greatest challenge facing the banana industry soon became front of mind as the Devaneys worked to protect their livelihood.

"We focussed on securing the farm to a minimum standard so if there is an incursion it's only a week or so dealing with Biosecurity Queensland and then we can be operational again."

The family's Bombardieri Road farm, which they purchased in 1999, ticks all the boxes for biosecurity.

The farm is the last property on the road, with one limited-access entrance, allowing for almost total control over who enters and exits the property.

Anyone who needs to enter the farm on foot is required to sign-in, before walking through a foot race – essentially a sponge-lined foot bath filled with approved disinfectant.

This leads to a colour-coded boot exchange area, where you must leave your shoes behind and put on a new pair supplied by the Devaneys and only used on-site.

All farm vehicles and machinery stay on their property, and petrol or diesel is delivered via a hose over the fence.

The property was once a thoroughfare for feral pigs, but that population has been seriously dented thanks to fencing and floodgates.

Mr Devaney believes growers are better off implementing measures to protect their farms while they have a cash flow and steady supply of product.

"For about $1000/acre you can secure yourself quite well," he said.

"We can sit here and believe that Tully can lock Tully up.

"But it's inevitable that TR4 will spread so it's up to growers to secure themselves and ensure they keep 'what's out' out.

"That's always been my focus."

Recently, the Devaneys purchased an adjoining 26 ha cane farm – it is currently being planted out with bananas – this time as a means of securing water.

Mr Devaney has invested considerable time and effort into engineering the new farm to reduce his environmental impact and improve the quality of water run-off (see breakout).

Point of difference

Mr Devaney is always looking for that edge.

He packs off a packing wheel – as opposed to transferring product across a belt from a trough system - and said this helped him meet Aldi's product specifications when the supermarket giant first established itself in the industry.

"They wanted three different sizes of bananas in the pack and we were able to achieve this off the wheel system," Mr Devaney explained.

Meeting the market is front of mind, and earlier this year he launched trials into three different pack sizes, one targeting the lunchbox sized banana market.

"We are trying to offer a variety of different sized bananas to the supermarket and independent grocers to allow consumers to shop as they want to," Mr Devaney explained.

"It gives consumers a choice."

Mr Devaney believes farmers use every means available to produce a quality product.

"There are no shortcuts anymore," he said.

"People that string their crop do it for a reason – they might farm in a windy part of the country or are trying to get a little weight in the fruit for a certain market.

"A grower might use a cloth bag because they suffer bag rub."

A bright future

Despite the pest and disease challenges and natural disaster threats, Mr Devaney is excited about the future.

"We grow crops nine months out, not knowing if a storm is going to flatten you, not knowing if a cyclone is going to come around the corner and not knowing if you have a market for the fruit," he said.

"You can grow a crop all year and then have to sell it for $8 a carton, and don't even get your costs back.

"But we continue to do it because its instilled in us.

"If the industry can secure itself against disease I believe there is a bright outlook for the future."

Gavin beside a new fence which locks in his block from a main highway. Fencing is one of the tools Gavin has used to protect his property from pests and diseases.

INNOVATIVE FARMING

By Skye Orsmond, Terrain NRM

Mr Devaney is converting the adjoining 26-ha cane paddock into a best practice banana farm with innovative water quality runoff solutions.

Earthworks on the property, which is beside the Bruce Highway, south of Innisfail, have attracted plenty of attention.

"People thought I was subdividing the land with the amount of earthworks happening," Mr Devaney said.

His aim is to improve the farm's layout and reduce its environmental impacts while also maintaining productivity and profitability.

Supported by industry representative body Australian Banana Growers' Council and the Wet Tropics Major Integrated Project (WTMIP), the Devaneys have implemented a combination of best management practice principles and innovative drainage solutions.

Mr Devaney said water quality was front of mind from word go.

He met the cost of implementing the detailed design while allowing the WTMIP to utilise approximately two acres of productive land to trial an innovative in-drain wetland design on his farm.

An in-drain wetland system replicates the same nitrogen removal process that occurs naturally in a wetland, as well as the potential to remove sediment.

MIP Johnstone Basin Coordinator Sandra Henrich said that many growers in the Johnstone region were implementing practices to improve their farms in line with best management principles.

"We always knew that it would be the growers who would devise locally relevant solutions to improve water quality," she said. "Their region is one of a kind and their solutions need to follow suit.

"They say necessity is the mother of invention. Farmers have been inventors for almost 100 years – the MIP respects that skill and ingenuity and supports growers to trial what they know will work."

The Wet Tropics Major Integrated Project is funded by the Queensland Government through the Queensland Reef Water Quality Program.

IS RECORD KEEPING ADDING TO YOUR BOTTOM LINE?

Keeping accurate records is a key ingredient in running a successful business. Collecting, storing and analysing data makes good business sense and will improve productivity and profitability.

There are many ways growers can keep records. For example, a simple diary with notes about the timing and location of fertiliser and pesticide applications is a good place to start. Alternatively, receipts, test results and supplier recommendations can be stapled to the pages to keep all the information together. An even better option is the record keeping app called BetterBunch, developed by the ABGC specifically for banana growers to use on their smart devices. While in the paddock, it can record many things including:

- the application and calibration schedules of fertilisers and chemicals;
- weather conditions at time of chemical application; and
- irrigation scheduling, planting records and harvest details.

The app doesn't need internet connection when data is entered as it will download the information when you next sync it to the computer. Soil and leaf results for each paddock can be recorded using BetterBunch and it is easy to retrieve records for audits such as Freshcare and HACCP making preparation for these audits so much easier.

Reflecting on previous year's expenses or test results can help growers improve performance and set future goals. Good record keeping will also help growers to comply with the new environmental regulations that started on 1 December, 2019.

The general records requirements in the regulations include details about the property, ownership and a farm map as well as all agricultural chemicals applied to the land or crops, fertiliser and mill mud/mill ash applied. Growers must keep records about the method of application (fertigation/ broadcast/ banded) and the amount of nitrogen and phosphorus applied on a kg/ha/year basis. If growers are keeping chemical and fertiliser records for Freshcare or HACCP it's possible that the requirements of the regulations are being satisfied.

Information is available on the Queensland Government website https://www.qld.gov.au/environment/agriculture/sustainable-farming/reef/reef-regulations/producers/bananas

Grower Peter Grant uploads farm data into the BetterBunch record keeping app.

If you want any help with your record keeping, including a quick and simple lesson on how to use the BetterBunch app, please contact the ABGC Extension Team on 4015 2797. The app is available free to growers who have completed their BMP training.

FERTILISER PLANNING ON BANANA FARMS

Banana growers have been managing the rate of nutrient application for years because they know it is an important step to get the best out of the crop. As a result of new environmental regulations that commenced in December 2019, there is now a limit (or threshold) on the amount of nitrogen and phosphorus than can be applied to plant and ratoon crops.

Growers can apply more nutrients than those prescribed in the regulation if they have evidence that the crop needs higher rates to retain productivity. This evidence is to be included as part of a Nutrient Management Plan. If the annual amount of nitrogen and phosphorus applied to the crop is below the threshold rates, a grower will not need to change their current fertiliser rates. However, they will need to maintain records to demonstrate that the levels have not been exceeded.

Under the regulations, if a grower needs to have a Nutrient Management Plan, it must be developed by an appropriate person.

"For many growers, they will already be getting advice from a professional who is deemed to be an 'appropriate person'," explained ABGC Industry Strategy Manager Michelle McKinlay.

"The advice needs to come from a person with the appropriate qualifications, training or skills or experience for nutrient management such as agronomists, agricultural advisors or extension officers".

Threshold rates for fertiliser application

Crop stage	Nitrogen	Phosphorus
Plant	280 kg/ha/year	60 kg/ha/year
Ratoon	400 kg/ha/year	60 kg/ha/year

The Nutrient Management Plan will need to demonstrate that the crop requires higher amounts of nitrogen and phosphorus through regular leaf testing. The plan will also need to include other elements such as a farm map, leaf testing results, recommended fertiliser rates and annual yields.

For more details on the contents of the plan, visit the Queensland Government website www.qld.gov.au/environment/agriculture/sustainable-farming/reef/reef-regulations/producers/bananas

The ABGC Extension Team is available to help growers with fertiliser planning and navigating the new regulations.

The Banana Best Management Practice Guidelines promote the use of soil and leaf tests to guide and monitor your nutrient application. The guidelines cover leaf and soil testing, fertiliser programming, nutrient budgeting, application methods and record keeping. They are available on the ABGC website, www.abgc.org.au - click on BMP and then Environmental BMP. The electronic version is named Environmental BMP. Hard copies are available from the ABGC Extension Team.

Funding is currently available to help growers to improve their nutrient management practices. Contact the local ABGC Extension Team on 4015 2797 for more information.

CONGRESS IN CAIRNS IN 2021

Tropical Far North Queensland will host the next Australian Banana Industry Congress in 2021.

Cairns Convention Centre has been selected as the venue to host the banana industry's premier biennial event's tradeshow and plenary program, from May 12-14.

The nearby Pullman Hotel provides great accommodation options and will host the Banana Bar, Welcome reception and Banana Ball and awards night.

The Congress Planning Committee is working hard to deliver a superb experience for delegates, including an exciting program of events and speaker line-up.

Keep an eye out for the latest in Congress news in ABGC growers' e-bulletin and up-coming issues of the magazine. The Congress 2021 website will also be launched very soon.

We hope to see you in the tropics in 2021!

GROWERS MOVE STEP CLOSER TO ENDING BYPASS UNCERTAINTY

Banana plantations at Coffs Harbour which will be impacted by a planned bypass.

By Lea Coghlan

A group of banana growers in the Coffs Harbour region whose properties will be impacted by a planned bypass are a step closer to reaching a resolution after years of uncertainty.

In April 2019, *Australian Bananas Magazine* reported on the plight of the growers, whose lives and livelihoods have been seriously impacted by the planned $1 billion Coffs Harbour bypass project.

First mooted in 2004, the 14km bypass project is part of an upgrade – the largest infrastructure project in Australia – designed to deliver a four-lane divided road on the Pacific Highway between Queensland and Hexham, NSW.

But while the bypass will be widely welcomed for the benefits it will deliver to improve travel time and freight efficiency, it comes at a cost.

The NSW north coast banana growers have been part of a lengthy community-driven campaign to ensure the best outcome was achieved for local farmers and the community.

Banana grower and NSW Farmers Coffs Harbour branch secretary Paul Shoker said the Road and Maritime Services had initiated a programmed acquisition process for the project, with some ten banana farms understood to be made formal offers for partial or total acquisition.

The acquisition, while a bitter pill to swallow, finally delivers some certainty to growers who have waged a 15-year battle for answers.

"A lot of growers have faced years of uncertainty and are feeling exhausted with the process," Mr Shoker said.

"Of the ten banana farms impacted, I understand some banana growers will be forced into early retirement, some growers have other farms established elsewhere and some growers have diversified into other crops."

For Mr Shoker's family-owned farm, the acquisition – which will split the Gately Road property – is the best of a bad situation.

"If there are any lessons learnt in this process, is that every farm is unique and individual," Mr Shoker said.

"The location of infrastructure like sheds and internal roads is generally done for a reason and moving these could well impact on the efficient operation of the farms.

"It's not a simple fix to move them elsewhere on the property.

"I'd like to see in the future projects such as these work with the affected landholder to develop transition plans, where planners acknowledge and respect the individual situation of each landowner."

Mr Shoker said the announcement in September last year that the project would include three tunnels rather than large cuttings, was welcomed.

"The inclusion of three tunnels will keep the ridgeline intact and result in less environmental impacts on properties, which is a good thing," Mr Stoker said.

Growers had also been able to provide input into land management issues such as access to creek water, managing floodwaters and managing spills on the road.

While the project will impact individual properties, Mr Shoker said it would also change the "nature" of the valley, which has been home to fourth and fifth generation farmers.

Coffs Harbour banana grower Paul Shoker addresses the ABGC board during its visit to northern NSW in early 2019.

TOM RELISHES OPPORTUNITY TO USE SCIENCE TO HELP BANANA INDUSTRY FLOURISH

By Lea Coghlan

Early this year, Tom Flanagan took up a new role as industry development officer with the NSW Department of Primary Industries. *Australian Bananas Magazine* spoke to Tom about the journey he has taken to arrive in the banana industry.

Tom Flanagan's arrival in agriculture was anything but conventional.

There was no childhood raised on a farm – he grew up in the northern suburbs of Brisbane – nor did he choose to study agriculture on finishing secondary school, instead completing a four-year psychology degree.

But an 18-month sojourn to South America aligned the new industry development officer at the NSW Department of Primary Industries with a career in agriculture.

"I went to South America for 18 months predominantly volunteering and one of the positions was working on a small-scale mixed cropping farm in Ecuador," Mr Flanagan said.

"At that point I had a keen interest in working with plants but the farm gave me experience and insight working with plants in an agricultural setting.

"The thing that excited me about agriculture was that it provided a perfect combination of practical work on the land, with science that spans a broad range of disciplines and engagement with the local community.

"My experience on the farm in Ecuador gave me the opportunity to experience this firsthand."

A choice

Several years ago, Mr Flanagan was at a crossroads in his career – continue in land rehabilitation or pursue a career in agriculture.

Lucky for the Australian banana industry, the choice was easy for the self-proclaimed science enthusiast who was eager to sink his teeth into a challenge.

"Agriculture is booming, particularly within the context of a global population," Mr Flanagan said.

"With that comes challenges – some are already being felt, and others are on their way.

"Due to the global challenges that face our society and agricultural industries, the ability to increase productivity whilst limiting our environmental impact is going to become increasingly important.

"Working in agriculture allows me to combine my interests of working on the land, science and community whilst making a contribution to addressing the challenges that face agriculture, the environment and society, not only locally but globally."

Science is a passion

After completing a degree in plant ecology at the University of Queensland, Mr Flanagan worked on conservation projects, predominantly large-scale plantings and weed and invasive plant eradication programs. But he missed doing research.

"I have an incredible passion for science," he said.

"I love designing and running experiments and trials to answer difficult questions.

"As I am finding out, bananas are quite a challenging crop, which makes it more interesting.

"I believe I have a strong science background, training and knowledge that provide a great foundation for me to undertake exciting research on bananas."

Connecting with people – in the case of his job, predominantly banana growers – has also got Mr Flanagan excited.

"I love engaging with the community and, in particular, with growers," he said.

"The opportunity to engage in scientific research and then be able to communicate the results to growers and help them with the process of adoption, if that's what they wish to do, is a match made in heaven for me."

A new outlook

Mr Flanagan joins the NSW DPI fresh from a position as a research agronomist with a private company based in Narrabri, where he conducted agronomic trials across a range of winter and summer grains and pulses.

He admits to riding a huge learning curve in the months since starting his new role, but with that comes an opportunity to cast a fresh set of eyes over issues and challenges.

"My first impression is that there is a strong and proud grower community in this region," Mr Flanagan said.

"The research and extension officers are incredibly passionate about their roles and the collaborative relationship between NSW, Queensland and Western Australia will hopefully foster a bright and optimistic future for the banana industry.

Tom Flanagan, new industry development officer with the NSW Department of Primary Industries, is looking forward to working with the grower community in northern NSW.

"There is a lot of research to be done and lots of challenges, but if we can all come together as a community, we will be able to meet those challenges and help the industry prosper."

Getting to know the region

Mr Flanagan has spent the months since his arrival getting to know growers in the region, meeting his research and extension officer counterparts in Far North Queensland and wrapping up projects funded under Hort Innovation's Sub-Tropical Banana Development and Extension Program, a three-year project which concludes at the end of April.

He has also started collaborating with his Queensland colleagues on future research priorities.

Mr Flanagan said Panama TR4 remained one of the biggest challenges for the industry and he was impressed with the biosecurity measures put in place.

"The job that has been achieved to limit the spread to this degree by the response in Queensland appears to be unrivalled anywhere in the world," he said.

"It's a looming challenge, not just for Far North Queensland but for the whole industry."

He is also looking forward to what may come of current screening trials for Panama race 1, which affects lady finger bananas.

"These variety trials are a great way of screening new and emerging varieties to guide alternative options for growers and build resilience in the industry."

Belinda Nissen (pictured right) with her sister Naomi Brownrigg was a highly respected member of the Cassowary Coast banana community.

TRIBUTE - BELINDA NISSEN

In January, the Cassowary Coast banana industry lost a highly respected and cherished member of its close-knit farming community.

Belinda Nissen was known as one of the hardest workers in the industry and leaves behind a legacy of forward thinking and a lifetime dedicated to producing the highest quality product.

By Sonia Campbell

Belinda Nissen exuded the finest attributes of any good banana grower.

She was hard working – even in sickness – she was innovative, she radiated with pride at producing a high-quality product and she had a genuine heartfelt love of the industry.

"She was the hardest worker, honestly, she really loved it," Belinda's sister Naomi Brownrigg explains.

"When the paddocks were good, and all the work was up to date, she was so happy. She loved getting feedback from people saying the farm looks good, the fruit's good, you know, because she just put everything into it. Her work ethic was unbelievable."

On January 21, Belinda sadly passed away after a battle with cancer.

"When Belinda was diagnosed with brain cancer, she was basically given no chance of long term survival," Ms Brownrigg said. "It is difficult to know how you would react to such terrible news, but Belinda faced this diagnosis with such a brave outlook. Somehow she coped amazingly well, which in turn helped all of us cope. Personally, I take great strength from her."

For more than 20 years, Belinda and Naomi operated Sellars' Bananas at Mission Beach, taking over the management of the farm from their father Allan Sellars, who established the business in the late 1960s.

Over the years, the sisters built a reputation for their innovation, progressive thinking and consistently producing a high-quality product.

Ms Brownrigg said Belinda always gave "110 per cent" and always led by example.

"She'd say, "You've got to have heart. You know, you've got to love it enough to give it everything.

"For us as a family farm, we always just admired her and just her stamina, and her wanting to do it right all the time, she never really cut corners you know, she just wanted to do it right.

"She never went, 'Oh I'm going home today, I feel really tired'. She'd just keep going. It was really exhausting keeping up with her! Because I'd think, well she's still going, I'd better keep going too!"

Belinda was born the middle child of five kids and Naomi described her as the "rudder of the family boat".

"We lost our mum Roslyn when Lindy (Belinda) was only 10 years of age and from that point I think she grew up overnight to see it upon herself to make sure the rest of us were alright," Ms Brownrigg said.

Belinda, Naomi and their three siblings grew up on the family farm, helping their father Allan during school holidays, with Belinda joining her dad on the farm full-time after finishing high school.

The following year Cyclone Winifred hit the region and Ms Brownrigg said it was Belinda's "introduction to the real challenges of growing bananas."

After two years, Belinda left the family business to spend a year abroad, before returning and starting a nursing degree. After completing her degree in 1993, a life of bananas beckoned and she returned to the farm, where Naomi also now worked part-time.

The pair eventually took over the running of the farm from their father in the early 2000s, with both now married and starting families of their own.

Over the past 20 years Belinda and Naomi were a formidable banana farming team. They regularly exhibited fruit in the Innisfail and Tully shows, winning champion cartons in the cluster sections more than 50 times and picking up Most Successful Exhibitor at the Tully Show five years running.

Belinda and her husband Mark had two sons – Jacob and Liam. Tragically they lost their eldest son Liam on Christmas Day 2014 at the age of 16. Ms Brownrigg said despite the family's complete devastation at the time they found the strength to carry on.

Even in sickness, this same strength shone through in Belinda who continued to work on the farm despite her diagnosis and even after undergoing surgery and throughout intensive radiation therapy.

"She'd have five days of radiation therapy and come Sunday she'd say, "I'm coming out to work". She just wanted to work.

"She loved being a wife and mother and was like the glue that held our family together. She would want to be remembered as Jacob and Liam's mum, a loving wife to Mark and a much-loved sister and daughter.

"She will also be remembered as a great banana farmer, one of the female pioneers in our industry. To all the blokes out there who treated us as equals, I want to say thank you."

FENDT 200 S3 – FROM 70 – 110HP

Fendt, a worldwide brand of AGCO (NYSE:AGCO) is pursuing its strategy to integrate highlights from the large tractor sector into smaller models with the Fendt 200 Vario and 200 V/F/P Vario in the Australian and New Zealand market.

Orchards, hop fields, vineyards or mixed farming businesses can now also benefit from the commercial and ecological advantages. The 3.3 litre, 3-cylinder AGCO power engine is now emissions stage 3b (Tier 4 Interim), and includes a number of tried and tested advanced in-house features from Fendt.

Emission stage 3 b meets the emission standard and protects the environment

Fitted with a 3.3 cc 3-cylinder AGCO power engine (AP 33 AWI), the emissions stage 3b Fendt 200 Vario and 200 V/F/P Vario meet the emissions standard thanks to AGRex (external exhaust gas recovery) and DOC (diesel oxidation catalyst) without the need for additional maintenance.

Other innovations for the compact tractors from 70 to 110 HP include the reversible fan. The air flow direction switches when the fan blades are turned.This results in permanently clean fan grills, so increasing the performance and efficiency of the tractor and creating a huge time saving, as well as taking over the time-consuming driver's job of manually cleaning the fan grill.

One feature is the optional front PTO 540 E, which reaches 540 rpm at a reduced engine speed and therefore saves on fuel. An air braking system with an electronically-controlled air dryer is available for the trailer system, ensuring less maintenance work and even better reliability.

The VarioActive steering feature is also adopted from the AGCO/Fendt large tractor range. This means fewer steering wheel turns to lock the wheels. At a low speed of less than 8 km/h, maximum wheel lock is achieved by just one turn of the steering wheel.

The effect of the automatic steering system is reduced from 8 km/h to 18 km. With VarioActive, the farmer benefits from the quicker steering wheel reaction when performing tight turns or during front loading.

Innovations for the Fendt 200 Vario

Modern implements require increasing flexibility and power from the tractor hydraulics. The hydraulic concept will give the Fendt 200 Vario an outstanding pump capacity of 104 l/min thanks to the use of a load sensing pump (LS control pump). This allows drivers to operate the front loader quickly at low engine speed. A high level of operator comfort is provided by the electrical valves for front loading.

A power-beyond connection (pressure and control line, return) is also available as an option to increase the efficiency of implements, e.g. forage wagons. The front linkage in the Fendt 200 Vario has also been revamped. A cast metal lower link frame with diagonally folding lower links creates additional clearance to the front loader.

Further to this, the cast metal front plate and stroke cylinder have been reworked for more undercut. The LED work lights both front and back and on the A-pillar ensure better vision. This means enhanced driving safety, as does the automatic differential lock release, which is now activated regardless of the steering angle, and the 4WD mode shut-off.

For more information visit https://www.fendt.com/au or contact your local Fendt dealer.

WELCOME ABOARD LEA

The ABGC extends a warm welcome to Lea Coghlan who has taken over the role as communications officer while Amy Spear is on maternity leave.

Lea has an extensive background in media and communications in Far North Queensland having worked as a journalist for regional, state and national newspapers including *The Cairns Post, North Queensland Register, Queensland Country Life* and *Good Fruit and Vegetables*.

Lea has also worked in government and corporate communications with the Queensland Government and Far North Queensland's horticulture industry.

Lea can be contacted at lea@abgc.org.au or 0439 005 946.

The ABGC welcomed new Senior Communications Officer Lea Coghlan to the team last month.

REEF TEAM WELCOMES NEW EXTENSION OFFICER

The ABGC Reef Team welcomed Robyn Bell last month as the new extension officer.

Robyn Bell has joined the ABGC Reef Team in South Johnstone as an extension officer and will be working on the Best Management Practice II Project.

Robyn has recently moved up from Cannonvale in the Whitsundays.

Robyn has worked in a range of roles in the agricultural production and natural resource management fields, with a recent role delivering water quality grants in sugarcane.

She has extensive experience working with growers, including record keeping and understanding reef regulations, plus the administration of water quality grants. She is rapidly learning about bananas.

INDEPENDENT REPORT FORECASTS BRIGHT OUTLOOK FOR AUSTRALIAN BANANA INDUSTRY

The future looks bright for the north Queensland banana industry, according to a recent economic report commissioned by the Australian Banana Growers' Council (ABGC).

The Australian banana industry is estimated to need an additional 2000 hectares under cultivation by 2027 if it is to meet projected future demand for bananas, the independent analysis found.

If the future supply and demand is achieved, it will result in an extra 2849 fulltime jobs, with the majority of these in North Queensland.

"This analysis has been able to quantify what many banana growers and the broader industry have known for a long time," said ABGC Industry Strategy Manager Michelle McKinlay.

"The industry is an economic powerhouse for North Queensland and will continue to play a significant role in the future of the region."

The economic analysis into the future demand and supply of Australian bananas was conducted by economist and environmental scientist Professor Emeritus Tor Hundloe, using a raft of published references.

It used two reference years – 2027, to allow for on-farm efficiencies required to increase production, and 2042, to reflect a reasonable planning horizon for growers.

Based on Australian Bureau of Statistics projections, Australia's population is predicted to grow to 37.4 million by 2050 with part of this predicted growth attributed to an increase in immigration.

Using mid-range predictions of population growth, Professor Hundloe estimates there could be 28.8 million people by 2027 and 34.3 million by 2042.

Professor Hundloe found that banana consumption correlated strongly with the size of the Australian population because "nearly all Australians, including those who emigrate, eat bananas".

The analysis projects that an extra 67,000 tonnes of bananas would be needed to meet demand created by the predicted population growth by 2027.

This is based on production rates of 33.5 tonnes/ha and would require an extra 2,000 ha under cultivation, increasing the North Queensland area under cultivation to 13,000 ha. Looking forward to 2042, there would need to be an extra 4,600 hectares under production taking the total industry footprint to 15,600 hectares.

Production efficiencies and new varieties are also likely to contribute to increased supply.

Given 94 per cent of the industry's production is based in North Queensland, Mr Hundloe expects the expansion of land under banana cultivation to occur in the north.

The increased banana-growing land and the resultant increase in production and sales of bananas would increase jobs in North Queensland.

The analysis found that a major advantage of the expansion in horticulture in general, and banana farming in particular, is that it favours job creation, as opposed to the increasingly mechanised and computerised mining industry.

Ms McKinlay said the industry was a significant contributor, directly and indirectly, to north Queensland's economy.

"The vast majority of the industry comprises family-owned businesses who work hard to provide a quality product for consumers, while creating jobs, supporting local families and small business, and fuelling the nation."

TAKE TIME TO GET PIECE RATE RIGHT

By Robert Hayes, State Manager – MADEC, National Harvest Labour Information Service

Using piece rates to pay workers is a good way to encourage productivity and incentivise workers.

A piece rate payment is one where payment is made according to each "piece" processed. An example would be how much weight or volume of product is picked, packed, pruned or made. Prior to picking or packing, a rate is agreed and payment is made that depends, for example, on how many kilos, buckets or bins are picked or packed.

Once a rate is agreed, payment is solely based on how fast the worker is, with the fastest worker earning the most and the slowest the least.

The employees' earnings will depend entirely on their productivity. A piece rate agreement does not guarantee that the employee will earn at least the minimum weekly or hourly wage in the award.

Piece rate payments don't include overtime

Following a decision of the FairWork Commission on 2 April, 2019, a number of changes were made to the Horticulture Award including the requirement to pay overtime to casual workers from the 15 April, 2019. Nothing in the decision changes the payment of a casual employee on a piecework agreement. This means that the pieceworker does not get overtime or the night loading, and neither the overtime rate nor the night loading are factored into the calculation of the piece rate, but additional payments for working on public holidays still apply.

When can a piece rate be used?

A number of criteria must be followed before workers can be paid on a piece rate as follows:

- The award or registered agreement must allow for piece rate payments.
- A piece rate can only be used when the weight, volume, or unit picked or packed by individual workers can be measured.
- If an employee is doing an hourly paid task and achieves 304 hours before the eight week overtime period is finished (which would trigger overtime payment), they cannot then be switched to piece rates (that don't attract overtime) for the same task. If they have been doing an hourly paid shed job and then switched to a different piecework paid job such as picking, that will not attract overtime

Calculating the piece rate

Determining what an average competent worker is can be difficult, and may need adjustment if it doesn't allow for an average competent worker to earn at least 15% above the minimum hourly rate in the Award.

Where historical data exists, use this to assist in calculating the piece rate. It is preferable that the piece rate is calculated using sample data from as many workers as possible to ensure it is representative of the workforce.

Piecework is not intended to be mechanism to reduce wages costs. Piecework provides a 15% loading for workers as they are being placed on a productivity form of payment. If all workers on a property were considered to be competent, it follows that the total wages cost could actually be higher than if workers were paid on an hourly basis.

Find out more at the FairWork Ombudsman website https://www.fairwork.gov.au/pay/minimum-wages/piece-rates-and-commission-payments

The National Harvest Labour Information Service connects growers with workers and is provided as a no-cost service through a call centre and website. It is funded through the Australian Government and managed by MADEC, a not-for-profit organisation

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STILL NUMBER ONE

By Tate Connolly, Marketing Manager Hort Innovation

Welcome to the Australian Bananas 2020 marketing update. This activity is managed by Hort Innovation on behalf of the industry and is funded by the banana marketing levy.

The Australian Bananas marketing campaign for the second half of the year continues to build on the momentum of the campaign in half one. Research results remain positive; over the past six months we have kept bananas as the number one energy snack while maintaining purchase frequency and volume.

Market Context

In the last 52 weeks, banana dollar sales remained stable at more than 1.6% while volume sales were up more than 2.0% driven by increases to average buying occasions, average spend and average weight purchased.

The marketing activity appears to be resonating with our target audience of Young Transitionals with volumes up in this target segment more than 13.3% and dollar sales up more than 15.1% compared to the previous year.

Source: Nielsen Homescan | Bananas | Sales Performance | 52 weeks to 22/02/2020 vs Prior Year

Bananas have consolidated their position as the #1 snacking foods and have built upon their status as top energy snack by increasing by 3% largely due to a good performance amongst total grocery buyers and increases in families with kids under 12 years of age.

More than half of families with kids under 12 report that they are buying more bananas than two years ago, partly driven by a strong awareness of the nutritional benefits and also because of the perception of convenience.

In alignment with the key campaign messages, people are also continuing to associate bananas with great taste and a good source of energy.

Source: Edentify Consumer and Brand Tracking

Above the Line activity

Over the past 18 months of the 'Peel Good, Feel Good' campaign, ad recall has gone from strength to strength, with this burst surpassing the previous record. This means the campaign creative is cutting through and our key messages are landing with our audiences.

Being top of mind is important, as the key objectives for the recent burst of advertising were to help increase frequency of purchase and four weekly penetration amongst our target audiences.

The current advertising investment, running from 12 January to 17 May is using a combination of regional television, radio and digital video on demand to drive mass awareness of campaign communications, ensuring key messages for Australian Bananas are established at scale.

This year saw the launch of our first use of radio advertising in a number of years. Radio is a great medium for driving frequency of purchase and speaking to consumers on the path to purchase. The radio activity started on 26 January and will run until 26 April. It includes both broadcast and digital stations.

This activity has been supported by a burst of Cinema activity. The Australian Bananas' TVC appeared in cinemas for four weeks from the 12 January, aligning with several blockbuster releases. Advertising was also featured in foyers providing an additional touchpoint in the cinemagoer journey and adding incremental reach. Due to cinema closures, four weeks of further cinema advertising has now been removed from the plan.

Out of home advertising launched with a four week station takeover of Paramatta station whilst Australian Bananas featured on bus sides in all five metro markets from the 26 Feb – 15 March.

Advertising is also currently live within the retail landscape, driving awareness and consideration.

Retail provides time targeted reach, impact and keeps bananas top of mind on the path to purchase. We have 535 panels live from the 19 January to the 18 May, with 100% of our retail panels directly outside supermarkets.

Gym advertising has been removed from the plan due to COVID-19 closures at the time of writing.

Online

We continue to hit our target audience by targeting their online viewing habits across the major networks' catch-up television offerings as well as via contextual sites and apps. Australian bananas have also targeted consumers via mobile advertising. Using their historical location data we have created a segment of consumers who frequent gyms and health food stores and have been able to serve them an Australian Bananas ad to keep the healthy snack top of mind. This ensures we are using our budget efficiently to hit the right people at the right time.

This is coupled with six second YouTube bumper video ads targeted to people aged 25-54, across the YouTube network, which greatly helps increase our incremental reach.

The "Always on" Australian Bananas social media continues to actively deliver a consistent brand presence throughout the year. Our fun and engaging content focuses on recipes, topical dates and activities which has helped to deliver over 2.7 million impressions to audiences across Facebook and Instagram, in January alone.

National Banana Day

Due to the COVID-19 pandemic plans for National Banana Day have been adjusted. Of course, we'll still celebrate the day, but with a lower level of activity. Look out for more information on these activities in upcoming ABGC e-bulletins.

Note: At the time of writing adjustments were being made to the marketing campaign in light of the Covid -19 situation.

CROP PROTECTION: THE CHALLENGES FACING AUSTRALIAN HORTICULTURE

with Consultant Kevin Brodnaruk

Banana growers have recently been invited to take part in reviews into the future use of agrichemicals. Consultant Kevin Brodnaruk answers a series of questions to help explain the current climate in the agrichemical industry. Kevin has more than 30 years' experience in the areas of pesticide development, use and regulation. He is currently working with agricultural industries, government agencies and research and development corporations and in the area of pesticide regulation and risk assessment

1. What are the biggest changes and challenges in the agrichemical industry for horticulture?

Aside from managing resistance and incursions of exotic pests and diseases, I think a big challenge for horticulture will be ensuring there are enough tools for growers to manage their pest, disease and weed problems.

Firstly, there has been a continuing trend in company mergers and acquisitions reducing the number participating in the farm chemical market. As a result, there is likely to be fewer companies involved in research, plus rationalising of existing product portfolios, which in the mid-term, could result in fewer new chemistries/technologies being developed and brought to market.

Secondly, in global terms Australia is a relatively small farm chemicals market, with herbicides making up more than half. For horticultural industries, gaining access to new technologies could become more difficult as the cost of developing uses for many of the smaller Australian horticultural industries may not be seen as commercially justifiable.

Thirdly, for export-oriented industries, the challenge will be how best to ensure compliance with importing countries standards. At the moment, Maximum Residue Limit (MRL) setting is not globally harmonised. MRLs can differ between countries, which can make compliance difficult. This means growers may have to exclude a farm chemical to ensure their exported produce complies with an importing country's standards.

Lastly, regulatory pressures on farm chemicals are increasing internationally and in Australia. Older chemistries are being re-evaluated to ensure they comply with current health and environmental standards with regulators applying newer risk assessment methodologies.

The scope of pest management options available to growers is finite, so any factor that potentially reduces options can have an impact.

2. What are the issues that industry needs to be concerned about in relation to chemical/pesticide use in the banana industry moving forward?

I think probably the main issue moving forward will be access to new technologies that best fit with industry practices and constraints. The relatively small size of the Australian farm chemical market can often result in new technologies, when brought to Australia, being initially developed in major crops, delaying access for minor crops. This can often result in a lag of a number of years before a registrant seeks to expand label uses, assuming it has a fit.

A positive of the Australian regulatory system is the ability to gain permitted uses. Where the Australian Pesticides and Veterinary Medicines Authority (APVMA) is satisfied a proposed use complies with regulatory standards, off-label uses can be approved allowing growers to access new pest management options. This provides a potential pathway to gaining access earlier to a new technology or to an existing option where a gap has been identified.

3. Recently, growers have been invited to provide feedback to reviews on current pesticide/chemical use in horticulture industries? What is driving this?

Australia applies a risk-based approach when assessing farm chemicals. The risk assessment methodologies, now employed by the regulatory authorities have progressed, so the purpose of the reviews is to ensure approved uses meet those contemporary health and environmental standards. As most of the chemicals under review were last assessed some time ago, it has been seen as prudent that they be re-evaluated. To try and ensure their risk assessments are based on current practices the APVMA seeks input on specific work practices.

4. Some chemicals could be lost to the banana industry? What are the implications for growers?

I would expect that the implications could be significant, should the outcome of a chemical review be the cancellation of a use, particularly if it involves something that is widely used. Where cancellation is recommended, industry would need to consider whether an alternative is needed, engage with registrants and the APVMA, particularly if access via an APVMA permit is the best pathway in the first instance.

5. What should industry and growers be doing moving forward to ensure access is maintained to agrichemicals?

I believe the thinking around pest management going forward needs to be strategic. To be effective this will need stakeholders to be well informed. To achieve this, it is going to require industry engagement with the registrants and the regulator regarding specific chemicals, and the government where policy initiatives are being considered.

6. What are the challenges of maintaining or retaining access to chemicals/pesticides?

The challenge for industries will be to recognise that this is a possibility for many older farm chemicals and the need to be strategic when considering currently available pest management options. Satisfying regulatory requirements for an old farm chemical could be prohibitively expensive with no guarantee of a positive outcome, whereas pursuing a newer technology may be a more effective approach from a long-term perspective.

A graph showing the chemicals and pesticides withdrawn from the market by American and European based agri-chemical companies over the past 60 years.

MODELLING HIGHLIGHTS RISK OF BUNCHY TOP VIRUS SPREADING IF BASELINE CONTROLS IGNORED

By Amy Spear

Sophisticated data modelling looking at the movement of Banana Bunchy Top Virus in Australia shows a high risk that the devastating disease will spread, if current baseline controls are not maintained.

The modelling was undertaken by Professor Chris Gilligan of Cambridge University (UK), a world-leading epidemiologist, with his postdoctoral research associate Dr Hola Kwame Adrakey and support from Australian banana virologists Professor John Thomas (QAAFI, The University of Queensland) and Dr Kathy Crew (Queensland DAF) together with Barry Sullivan (Lagom Agriculture Pty, Ltd)

The scenarios showed any reduction in the amount of surveillance and eradication of affected plants would result in the intensification of the epidemic in southern Queensland and northern New South Wales.

Professor Gilligan said the concern was not only for the current Bunchy Top zone, but for the country's high production areas in North Queensland.

Banana Bunchy Top Virus is spread by aphids and infected planting material. "It's not that it is going to spread directly in a simplistic way, but that somebody will move an infected plant north," he explained. "The more infection you have, the more likely you are to have transmission.

"In my view, as an epidemiologist, I think there is a significant risk to the northern region. That's something the industry needs to think about."

The method

Over nearly a decade, successive phases of the National Bunchy Top Project have gathered detailed inspection data, showing both positive and negative detections in commercial plantations, as well as in backyards in New South Wales and Queensland.

In addition, records of actions taken to remove infected plants meant that Professor Gilligan and Dr Adrakey were able to look at the data and extract biologically meaningful parameters relating to the dispersal kernel and the transmission rate. That is, how far does Bunchy Top spread and can it infect other healthy plants when it gets there. This is also affected by environmental and meteorological conditions.

John Thomas, Josh Chapman, Kathy Crew, Chris Gilligan, Grant East and Wayne Shoobridge.

The team drew on work done in the 1970s by Rob Allen and project data and modern technology to create working models that can look at and predict the spread of Bunchy Top not only within one plantation, but on a larger scale across the landscape.

The modelling uses the current strategy that characterises properties as A through to E, based on inspection results. Category A properties have had no Bunchy Top detections in recent times - and therefore receive fewer inspector visits. Inspection frequency increases as the category gets lower (e.g. D and E) and the incidence of Bunchy Top gets higher.

Professor Gilligan said they established a base line from the current strategy and then ran various models forward over a period of time, usually around five years. Different scenarios include visiting some categories less frequently, relying on growers doing their own assessments or reducing the area that is inspected around a positive detection.

The challenge

Professor Gilligan said Bunchy Top was one of the most difficult diseases to detect visually.

"It's a really skilled job and I admire the Bunchy Top inspectors we've met here in Australia," he said. "Repeatedly, people have shown me the symptoms in the field and I think 'this is very difficult'."

On top of this, early detection is key.

Professor John Thomas noted that advanced symptoms are much easier to see 'but the horse has bolted by that time'.

"As recently as this morning, we were looking at plants with many symptomatic leaves - and from two metres away we simply couldn't see them."

Even with the new methods being developed by Dr Crew and Professor Thomas, the effectiveness of trained inspectors cannot be understated.

"The inspectors are the most efficient compromise for detection," Professor Thomas said. "They're quite efficient and can do thousands of plants. The lab tests are more accurate because we can detect plants with and without symptoms - but the rate at which we can process this is far, far less."

As Dr Crew points out, there is no resistance to this viral disease: "All commercially grown cultivars have varying degrees of susceptibility. Infected plants produce no marketable fruit and are in danger of infecting other plants. If it's not managed, it's completely devastating as has happened in other countries."

Looking ahead

While the research and modelling can provide information and advice to assist decision makers, time and resources are limited when it comes to battling this potentially devastating disease.

The banana industry is in the fortunate position of having a range of experts and industry working together on this issue.

"Going forward, it may be about using a combination of the modelling and the inspectors' expertise to optimise how they do their property visits, how frequently, where they look around a detection area and what types of properties get different frequencies of inspections," Professor Gilligan said.

"It's better to know what you're dealing with - good or bad - than to ignore it."

WEEDY PLANTATIONS RISK TO FIGHT AGAINST BUNCHY TOP VIRUS

Banana growers who don't keep their weeds under control are threatening the fight to control the spread of Bunchy Top (BT) disease.

David Peasley, project manager for the National Bunchy Top Project, is urging growers to clean up their plantations after 26 of the 180 plantations in the NSW Bunchy Top zone were considered too weedy to inspect.

"Some of the plantations have a history of BT but unfortunately our inspectors cannot carry out their inspections because plants and suckers are obscured by weed growth," Mr Peasley said.

Legislation recently passed in NSW and Queensland means that growers must control weeds in their plantations as part of their general biosecurity obligation /duty.

Unkept plantations are not just a huge biosecurity risk to the industry, they also pose a workplace health and safety risk to the inspectors who need to enter plantations to conduct bunchy top surveillance.

It is industry's expectation that growers will maintain weeds in their plant below the height of 30 cm to minimise these risks.

"We have no hope of controlling the spread of BT if we can't carry out the necessary frequency of inspections to keep the disease under control or eradicate it from plantations," Mr Peasley said.

"It is not fair on other growers who do the right thing and keep their plantations weed free."

Mr Peasley said the number of weedy plantations had increased markedly over the past couple of years and this had put the future of the whole control program at risk.

"A considerable amount of money, funded through grower levies and government, is being invested to run the national program," Mr Peasley said.

"It is not fair on growers who are contributing through their levies to have to keep paying when some growers don't take their responsibility seriously."

Bunchy Top inspector Wayne Shoobridge attempts to inspect banana plants in an overgrown plantation.

Bunchy Top inspector Grant East encounters a weedy banana plantation during a recent inspection.

WHY PLANTING MATERIAL MATTERS

Tissue Culture.

By Dr Rosie Godwin, ABGC

One of the most important components of successful horticultural production and development is ensuring farmers have access to high-health, good quality planting material when they need it.

Planting material is essentially the foundation stone upon which to build your business.

Planting material of inferior quality undermines the potential yield and performance of plantations thereby compromising profit margins. This is particularly relevant in the context of other modern production constraints including increased regulatory burden (e.g. food safety, labour force management, WHS, reef regulations), climate unpredictability, biosecurity, and waste management.

The need to have high-quality disease-free planting material has been recognised by an increasing number of horticultural industries such as avocado, macadamias, citrus, grapes and strawberries as well as bananas. These industries see the value and have invested their industry funds in updating and developing clean planting material schemes. The schemes set the standards and the protocols expected by industry to produce quality planting material that is correctly labelled, vigorous, uniform and disease-free. Quality- assured planting material can therefore make a real contribution to industry productivity and sustainability.

Diseases and insect pests are relevant to the quality of planting material for two important reasons:

i. Particular diseases and insect pests are not yet present in all growing areas or regions. Extreme care is therefore essential to prevent their spread to non-affected areas through planting material or other means or it can have devastating consequences. Within Australia, diseases that only occur in some areas but have the potential to be spread through planting material include Bunchy Top, Panama disease Tropical Race 4, Race 1, or Subtropical Race 4, and pests such as banana weevil borer and nematodes. Examples of exotic diseases that can be spread through planting material include Black Sigatoka, Freckle, Moko, and exotic viruses. It is critical therefore that planting material is never brought into Australia except through official means.

ii. Diseases and insect pests that infect banana planting materials reduce bunch size, stand density, and consequently yield and the productive life of plantations. Therefore planting material and the block where the new plantations are to be established, should be free of these diseases and pests. Even if some pest or disease is present in a block, clean planting material provides a mechanism to minimise the existing problems without making them worse.

Access to clean planting material remains a priority for the Australian banana industry. Through a Hort Innovation levy funded project, the banana industry recently updated and transitioned its clean planting material scheme, QBAN (Quality Banana Approved Nursery), from the Queensland Government to an industry-accredited scheme jointly run by Greenlife Industry Australia and the banana industry.
The overall goal of QBAN is to ensure the high physiological and phytosanitary quality of planting material available to farmers. As such QBAN specifies the requirements for businesses to gain accreditation in one or more of the following:

i. the sourcing or collecting of material for tissue culture initiation
ii. tissue culture production
iii. banana nursery production

QBAN accreditation therefore specifies protocols and requirements to ensure planting material is sourced from healthy mother plants and propagated using techniques to ensure it generates uniform, vigorous and correctly labelled planting material that is successfully distributed to customers.

QBAN is currently in a transition phase with existing tissue culture and nursery businesses to gain accreditation under the new scheme by January 2021. The new scheme will be reviewed annually, updated according to the latest research and evaluated in its ability to meet the needs of growers.

Choosing high health planting material is the controllable first step in ensuring a high plantation health.

SJ FIELD WALK

A small group of growers attended a field walk at the South Johnstone Research Facility in March where they got to view new varieties – some with TR4 resistance – currently being assessed for agronomic performance.

Department of Agriculture and Fisheries (DAF) Principal Horticulturist Jeff Daniells and DAF's Banana Production Systems' Team Leader Stewart Lindsay took growers through the trial site where the first ratoon harvest is underway, with some of the early varieties commencing harvest in January.

The trial will continue for two ratoon crops collecting agronomic information followed by leaf spot screening in ratoon three.

During the field walk growers got to see, touch and ask questions about each new variety and give feedback on what they'd like to see in any future commercially viable TR4 resistant varieties.

For more detail on the trials see Page 21.

This event was organised and funded as part of the strategic levy investment project National Banana Development and Extension Program BA16007 is part of the Hort Innovation Banana Fund. The project is funded by Hort Innovation using the banana research and development levy, co-investment from the Queensland 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.

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