Issue: 59 | AUGUST 2020

Australian BANANAS

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Banana rust thrips (*Chaetanaphothrips signipennis*)

Banana weevil borer (*Cosmopolites sordidus*)

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BANANA CELEBRATIONS

Front page: ABGC Chair Stephen Lowe is trialling a Cavendish selection from Taiwan on his Tully farm. The variety showed good levels of resistance to Panama TR4 at screening trials in the NT, and is being assessed now for its commercial suitability. Production is expected to start in the coming weeks. Stephen is pictured with DAF Research Horticulturist Katie Ferro.

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CEO COLUMN

Jim Pekin, CEO

Surveillance strategy review

The new Panama TR4 Program Management Board was due to meet for the second time on July 15, but had to post-pone, due to unforeseen circumstances.

The Board – which will oversee the continued delivery and governance of the Panama TR4 Program - will now meet on August 10, via teleconference.

On 30 June, the Australian Banana Growers' Council (ABGC) and Biosecurity Queensland (BQ) signed a Memorandum of Understanding (MoU) and Cost Sharing Deed (CSD) establishing the joint funding arrangement and management of the Program by industry and government.

The signing was a culmination of many hours of work by ABGC and BQ to fine tune how the two parties will jointly oversee and fund the Panama TR4 Program until 30 June, 2023.
(See funding table below)

After the signing of the MoU and CSD, the Board is now focussing on a review of the TR4 Program's surveillance strategy in the Northern Banana Biosecurity Zone.

Depending on the outcomes of this review, it could affect different growers in different ways.

This review is likely to result in a change in the frequency of surveillance visits for most growers.

For some, it will mean more surveillance, for others it will mean less. ABGC and BQ will be in a position to provide further details on the outcomes of the review once the Board has approved the strategy.

You will see from the graph on Page 7 of the magazine that TR4 continues to spread slowly in the Tully Valley on the infested farms, therefore all growers in this area and beyond should continue to be vigilant and report any suspect plants.

So far, the collaborative efforts of industry and government have limited the spread of this disease, however early detection will always be key.

As at 14 July 2020, 85 plants had been confirmed with TR4 in the Tully Valley, which have been destroyed across 34 different destruction sites, across the four infested farms since 2015.

This disease will continue to spread, however with so many potential risk pathways for TR4 we know that the best way to protect your farm is to keep the disease from entering your farm, and this means maintaining good on-farm biosecurity.

COVID-19 Health Management Plans

By now, most growers would be aware that the Queensland Government has stepped up its compliance monitoring activities to ensure all farms have a COVID-19 Health Management Plan in place.

This was a direct response to a positive case of COVID-19 on a farm in Bundaberg earlier this year. ABGC understands that the Government is planning to increase compliance monitoring across Queensland.

Workplace Health and Safety Queensland and Queensland Police targeted, in early July, farms across three regional growing regions, Burdekin and Bowen-Gumlu, Sunshine Coast and Caboolture and Gayndah-Mundubbera.

If you are unsure of your requirements as an employer, you can find more information on the ABGC's website www.abgc.org.au or email DAFCOVID19Enquiries@daf.qld.gov.au

Financial Year	2019/2020	2020/2021	2021/2022	2022/2023
Industry share	10%	25%	40%	50%
Industry monetary amount	$0.4M	$1M	$1.6M	$1.6M
QG share	90%	75%	60%	50%
QG monetary amount	$3.6M	$3M	$2.4M	$1.6M
Total	$4M	$4M	$4M	$3.2M

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
2020	381* (*not yet audited)

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* (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 industry's part of the cost-sharing deed with the Queensland Department of Agriculture and Fisheries for TR4 containment.

It also funds the pre-existing commitments – Torres Straight Exotic Fruit Flies Eradication Response, PHA membership/meetings and Government levy collection.

Further information:
Jim Pekin. CEO, ABGC: Email - jim.pekin@abgc.org.au
Phone – 07 3278 4786

CHAIR COLUMN

Stephen Lowe, ABGC Chair

COVID-19

Last magazine the COVID-19 pandemic was just taking hold globally - and four months later there still remains a great deal of uncertainty, both here on home soil and internationally.

For our industry, the pandemic has presented some distinct supply and demand challenges, which I'm sure we'll continue to face for some time.

While Queensland has faired quite well in the pandemic, in comparison to the likes of Victoria and NSW, consumer buying patterns nationally have affected demand, and wholesale prices, for industry across the board.

On page 12, Mackays Marketing CEO Richard Clayton provides an interesting insight into how consumer buying habits have changed during COVID and what we may see influence sales into the future.

Another logistical factor that has affected the banana supply chain has been the closure of several major distribution centres (DCs) in Victoria in June/July, following confirmed coronavirus cases amongst staff. The closures caused temporary stock shortages at Coles and Woolworths stores across the state.

On-farm, growers continue to take steps to protect their workers and families against COVID, to not only safeguard their health, but to ensure their farms can continue to operate.

Some of these measures may have seemed arduous at the time, but I believe that it has assisted industry greatly to minimize the transmission of this virus, especially amongst our seasonal workforce.

The Australian Banana Growers' Council (ABGC) assisted growers with implementing some of these on-farm changes by developing a 'COVID-19 Guide for Banana Growers'. The guide includes steps to help farm owners/managers to implement measures within their businesses to limit the spread of the virus, as well as steps that need to be taken if an employee displays or reports symptoms of COVID-19.

The guide can be found on the ABGC website at www.abgc.org.au

Water quality Senate hearing

At the time of writing this report, I was preparing to address a Senate inquiry on 27 July to assist the members of this Committee to develop evidence-based regulation of on-farm practices that impact water quality outcomes on the Great Barrier Reef (GBR).

This meeting was due to take place in March of this year, however it was postponed due to COVID.

Basically, the inquiry aims to establish whether there is enough valid, scientific evidence to justify new water quality regulation of farming practices in the GBR catchment.

Previously, ABGC (on behalf of North Queensland banana growers) have argued that there is a lack of scientific evidence available, about run-off and nutrient leaching from commercial banana farms.

ABGC Chair Stephen Lowe (third from left) and ABGC deputy chair Leon Collins (far left) met with LNP Shadow Minister for Agriculture Tony Perrett (far right) and Shadow Minister for Natural Resources Dale Last at Mourilyan (Far North Queensland) on June 24 during the LNPs regional tour to discuss issues of importance to the banana industry in the lead-up to the next election.

And, in many cases, decisions - including the decision to regulate some banana farming practices - are based on modelling and assumptions that are, at best, questionable.

The ABGC would like to see more resources put towards water quality science as it relates to the farming practices of the banana industry. In relation to the regulations recently approved by the Queensland Government, the banana industry is prepared to work with the nutrient and sediment erosion control provisions as they align closely to the industry's existing Best Management Practice Guidelines. The ABGC however strongly opposes any additional regulation that will impact on the industry's ability to be profitable through efficient expansion at a reasonable cost. The Queensland Government's desire to regulate the banana industry needs to be justified by evidence and this is currently lacking.

There is no doubt that profitable farming and the reef can co-exist but there needs to be improvements made to the systems, processes and culture that are currently in place.

I know that banana growers are making significant investment and are achieving significant changes to the way they farm their land.

It concerns me that these changes are not showing up in government modelling and environmental Report Cards. This disconnect between actions and results is causing resentment and scepticism among our growers who are rightly questioning the validity of the modelling being used.

In addressing the inquiry, I proposed that government, researchers and industry work together to agree on a way to measure and show the progress that is actually happening on farms. We need to leave egos and politics at the door and have a genuine discussion about mapping a way forward.

WA storm damage

Our thoughts were with Carnarvon banana growers in May when they suffered an estimated 30 per cent production loss across the growing region as a result of ex-tropical cyclone Mangga.

As growers, we all know the devastation mother nature can inflict at times on our businesses and we wish the Carnarvon growers affected by the recent storms a fast recovery.

DURANBAH CLOSURE

Banana field day held at the Duranbah trial site.

The curtain has closed on the NSW Department of Primary Industries (DPI) long history of banana research at the Duranbah trial site in northern NSW.

The final trials at the site were completed in April this year.

The work at the Duranbah site was part of a national project, Improved Plant Protection for the Banana Industry, specifically addressing pest and disease issues.

Funded by Hort Innovation through the banana funded project BA16001, the Duranbah research focussed on Panama disease tropical race 1 and cold tolerance.

There were three trial phases undertaken:

Phase 1 – Plants were grown with the sole purpose of determining if they survived Panama disease R1.

Phase 2 – Varieties that showed Panama disease R1 resistance were grown to collect growth data including plant height, girth, cycling time and bunch data.

Phase 3 – Standout varieties, called 'best bets', were grown in semi-commercial plantings to determine ripening and handling conditions and to undertake consumer acceptance.

NSW DPI Industry Development Officer Tom Flanagan said the negative impacts of ongoing drought and pests meant that trial results weren't definitive, with further research needed.

"Plans to relocate this valuable research to a new site are underway," Mr Flanagan said.

"Growers can be assured the NSW DPI is committed to investing and engaging in subtropical banana research to help strengthen and develop the industry."

MANDATORY HEALTH PLANS

Growers who employ seasonal workers, including visa holders, must have a health management plan in place to manage the risk of COVID-19.

The **Seasonal Workers Health Management Plan Direction** came into effect on 5 May 2020, and states – *"Workplace health management plans are mandatory for agribusinesses employing seasonal workers from the date of commencement of the Seasonal Workers Health Management Plan Direction."*

Completed and signed plans must be submitted to covid.plans@health.qld.gov.au and must detail daily health screening steps, measures to reduce the risk of transmission and managing workplace staff information.

A detailed FAQs about the management plan is available on the ABGC website (https://abgc.org.au/wp-content/uploads/2020/06/clean-employer-faqs-7-june-2020.pdf)

If growers are unsure of their requirements as an employer, email DAFCOVID19Enquiries@daf.qld.gov.au

COVID-19 GUIDE FOR BANANA GROWERS

When the COVID-19 health pandemic took hold earlier this year, the Australian Banana Growers' Council (ABGC) moved swiftly to ensure growers were kept abreast of the rapidly changing environment, which had the potential to seriously impact farms.

A key feature of the ABGC's COVID-19 communication activities was the development of a comprehensive guide which provides advice to growers on how to mitigate the risks and other important information.

The *Guide for Banana Growers on COVID-19* does not constitute legal advice, or advice from a qualified medical professional, however, it is designed to represent current best-practice.

It is drawn from official government advice and ABGC's representation on a number of key state and federal government and industry working groups.

It covers a range of issues intended to help growers mitigate the COVID-19 risk including business continuity, managing risks on farm (social distancing, hygiene, transporting workers, education), government assistance and what measures to put in place if a worker tests positive to COVID-19.

The guide can be found on the ABGC website www.abgc.org.au

UPDATE ON THE SPREAD OF TR4

Panama TR4 continues to spread slowly in the Tully Valley, but escalation of the disease is always a constant threat.

The number of plants confirmed with TR4, and the number of sites where these plants have been destroyed on infested farms (destruction sites), is increasing as time goes on (see graph right).

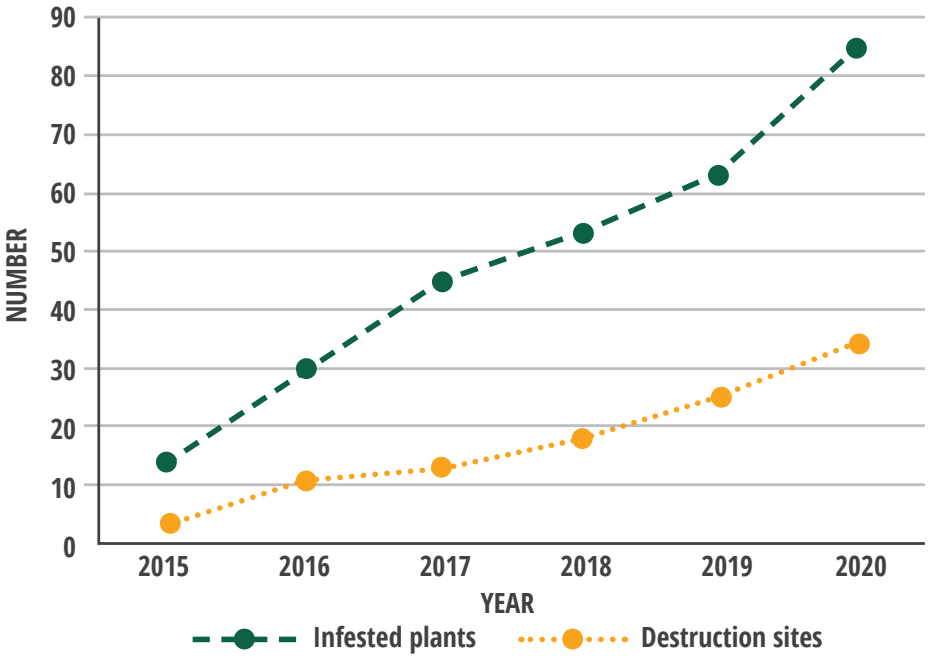
As of 14 July, 2020, 85 plants have been confirmed with the disease which have been destroyed across 34 different sites, across the four infested farms.

The sustained effort by industry, growers and government over the past five years has meant only four farms in Queensland have been confirmed with TR4 since 2015.

The threat of further spread, however, remains present and growers are reminded the best way to protect their farm is by keeping the disease out of their farm.

For those growers who haven't already done so, now is the time to install on-farm biosecurity measures or review the procedures already in place to make sure they are still effective.

The increase in the number of TR4 infested plants and destruction sites from March 15 to July 20



For further advice please ring ABGC or one of the industry extension officers: QLD- Shanara Vievers (07 4220 4149), Ingrid Jenkins (07 4220 4108) or Stewart Lindsay (07 4220 4120)

SENATE HEARS FERAL PIG IMPACTS

Following ABGC's submission to the inquiry into the impact of feral deer, pigs and goats in Australia, ABGC Deputy Chair, Leon Collins, was invited to speak at Parliament House on Tuesday 21 July.

Due to COVID restrictions, Leon addressed the Senate Environment and Communications References Committee via teleconference to highlight the impact of feral pigs on the banana industry and the control activities of growers to suppress pig numbers.

He informed the Committee on the biosecurity risks feral pigs posed to the industry as a vector of Panama tropical race 4 (TR4). He also outlined the extensive work conducted by the industry in eliminating close to 6000 feral pigs since July 2017 in TR4 hot spots in the Tully Valley.

Leon explained that the control of feral pigs was another way to help contain and slow the spread of TR4, giving industry time to adapt, and noted that the ABGC has asked for ongoing assistance and funding from the Department of Agriculture to help the banana industry manage the ongoing feral pig problem.

ABGC Deputy Chair Leon Collins addresses the Senate Environment and Communications References Committee to highlight the impact of feral pigs on the banana industry.

UPCOMING BOARD MEETINGS

ABGC directors will meet for their next quarterly board meeting at Lakeland on 10-11 September, subject to COVID-19 travel restrictions.

The Board's Annual General Meeting will be held in Tully on 11 November. All ABGC members are welcome to attend. The general quarterly Board meeting will be held at Mission Beach on 11-12 November.

WATERWAYS REPORT CARD

Elaine Seager, Terrain

Water quality in the Tully, Johnstone, Russell and Mulgrave freshwater rivers and estuaries continues to be in 'good' overall condition, according to the latest Wet Tropics Report Card (July 2018-June 2019).

The grades are an average across the entire year and are an assessment of the condition of waterway health – for example, the condition of the water supporting fish. By contrast, the Reef Report Card is based on an estimate of the quantity of pollutants going to the reef.

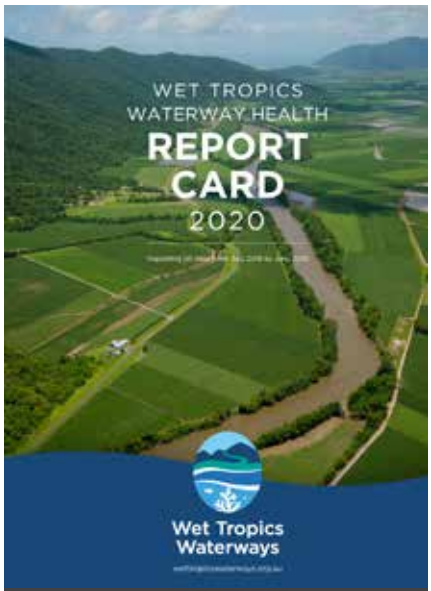
Wet Tropics Waterways Chair Professor Steve Turton said the underlying scores reflect the pressure put on waterways by the record-breaking dry periods followed by extreme flood events in 2018-19.

"Climate variability and heavy rainfall are a feature of the Wet Tropics, but this was the first year since we launched the Report Card in 2016 that we've been able to see the impact of a typical wet season," Mr Turton said.

"High concentrations of suspended nitrogen and phosphorus were recorded near river mouths of the Tully, Russell and Mulgrave during and after flood events. Scores for inshore water quality were the lowest in five years.

The lowest water quality score for the Tully, Russell and Mulgrave is for dissolved inorganic nitrogen (DIN), although the Tully and Russell basins improved their DIN scores from 'poor' to 'moderate'.

The Johnstone is scored 'good' for DIN. Pesticide scores were graded 'good' across the board.



The Wet Tropics Report Card

IMPROVE RECORD KEEPING WITH BETTERBUNCH APP

Record keeping can be an onerous and time-consuming task for growers.

Banana growers need to record fertiliser and chemical usage for food safety accreditation and under the government reef regulations.

The *BetterBunch* app is a free, easy to use app that has been helping growers since 2016.

The app allows growers to record farming data, including application and calibration schedules for fertilisers and chemicals, weather conditions, irrigation scheduling and planting records.

The app works across your computer, tablet and smartphone and can be used without internet connection in the field.

Laura Smith, Project Officer for Tully-based banana growers Mackays, said "When starting to use the *BetterBunch* program, Robert Mayers, from Australian Banana Growers' Council, provided excellent one on one training, with continuous support.

"The app is very user friendly, and produces great reports, especially for the requirements under Freshcare."

ABGC is currently reviewing the app to ensure it continues to meet the needs of our industry and is keen to hear from growers who use it and those who do not.

Over the next few weeks, Robert will be talking to growers to gauge their experiences in using the *Betterbunch* app to make it better for the future.

If you'd like to provide feedback, have any questions or would like to start using *BetterBunch* please contact Robert on 0447 000 203 or Robert.mayers@abgc.org.au

LAKELAND EDGES STEP CLOSER TO LONG-TERM WATER SECURITY

Lakeland is a step closer to realising long-term water security with the Queensland Government making the first milestone payment towards the Lakeland Irrigation Area Business Case.

In June, the Government paid the $10 million for the detailed business case for a new dam on the Palmer River.

The river flows west to the Mitchell catchment and into the Gulf of Carpentaria.

Milestone 1 will see the creation of instrumental project management and stakeholder engagement plans.

Professional Engineering and Development consultants, SMEC, has been appointed the principal project manager.

The detailed business case is due to be completed in September 2022.

The regionally significant project will open up 10,000 hectares of agricultural land and support 1000 jobs during construction and 1200 full-time positions upon completion.

CHEMICAL UPDATE

Entrust Organic (Corteva) has recently been registered for the banana industry for use in organic production.

The active ingredient in Entrust is spinosad, which is produced through the fermentation of a naturally occurring soil bacterium, and provides control of rust thrips and sugarcane bud moth in bananas.

There are currently no supplies of Entrust in Australia, but stock is expected in October 2020.

BANANA SARP

Earlier this year the Banana Strategic Agrochemical Review Process (SARP) was conducted through desktop audit and industry liaison to:

- Assess the importance of the diseases, insects and weeds that can affect each industry
- Evaluate the availability and effectiveness of fungicides, insecticides and herbicides (pesticides) in the control of these plant pests
- Determine any gaps in the current pest control strategy
- Identify suitable new or alternative pesticides to address the gaps.

Many growers and industry stakeholders provided valuable input into the process and the final report has now been published on the Hort Innovation web site.

The SARP report will assist in directing ongoing efforts to ensure the availability and access to effective chemical controls for the industry, to address needs and gaps.

This may relate to pursuing chemical registration with agrichemical companies, or minor use permits with the Australian Pesticides and Veterinary Medicines Authority (APVMA).

Growers can read about industry priorities and future options outlined in the SARP Report at: www.horticulture.com.au

COLES ADDS FAIR FARMS CERTIFICATION TO ETHICAL SOURCING PROGRAM

In May, Coles announced that growers no longer have to use internationally recognised Supplier Ethical Data Exchange (Sedex) to supply the supermarket.

Growers supplying Coles can now alternatively register with Fair Farms to satisfy the requirements of the Coles Ethical Sourcing Program, which sets out detailed standards for treatment of workers in the supply chain that suppliers are required to follow and demonstrate their compliance.

Growcom developed the Fair Farms Certification Program with support from the Fair Work Ombudsman, the Federal Department of Agriculture and AUSVEG.

Coles General Manager of Produce Craig Taylor said adopting Fair Farms Certification meant farmers now had another way to become approved under the Coles Ethical Sourcing Program, which also uses Sedex.

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1800 684 266 au.sales@yara.com @yara_australia yara.com.au

JOURNEY TO A STABLE FARMING FUTURE

By Lea Coghlan

Fourth generation farmer Shayne Cini on the bank of the South Johnstone River which runs beside his banana farm at Wangan.

ABGC Best Practice Management Coordinator Amelia Foster said BMP projects were funded under a sliding scale, depending on who accrues the most benefit – the grower or the environment.

"Grants of up to $45,000 are currently on offer, with co-funding from the applicant, to assist growers to make on-farm improvements," Mrs Foster said.

"There are growers who are changing their practices in line with the best management guidelines – making on-farm improvements like automated fertigation, building sediment control structures, improving drainage and purchasing slashers to increase ground cover.

"Funding is also available for innovative growers to undertake projects that will trial new ways of reducing nutrient and sediment loss and improve industry knowledge in this space."

Mrs Foster said the project being delivered by Shayne and Blaise was significant for the benefits it will deliver to the environment.

Just like farming, looking after the environment runs through Shayne Cini's veins.

Together with wife Blaise and daughters Kari and Eden, the fourth-generation farmer grows bananas on 99.5 hectares on the banks of the South Johnstone River near Wangan, south of Innisfail in Far North Queensland.

The Cini family has an inter-generational connection with the river.

Just as his father Danny did, and his grandfather Willy before him, Shayne has embarked on his own journey of continued environmental improvement, which has focussed primarily on riverbank stabilisation to repair badly eroded sections along the riverway which runs beside the property.

"There is so much pressure on growers to look after the environment and reduce sediment and nutrient losses and run-off from farms into the river system and ultimately, the Great Barrier Reef lagoon," Shayne said.

"We see the loss of the riverbank as a major contributor of fine sediment to the river system, far greater than what we lose off farm.

"Restoring the riverbank helps the environment, but it also helps us farm sustainably and leaves this farm in the best possible position for the next generation."

Shayne and Blaise recently secured an incentive grant through the BMP project, funded by the Office of the Great Barrier Reef, to stabilise a further 50m section of the riverbank.

Between 2020 and 2022, the Australian Banana Growers' Council has $750,000 in BMP grants available to help growers change practices to better align their farming systems with recommended best practice.

The grant will fund 75 per cent of this project. Shayne and Blaise will contribute the additional 25 per cent.

Shayne's grandfather first started work to stabilise the riverbank and reduce erosion and sediment loss into the river more than 40 years ago.

The new project is an extension of earlier works which Shayne estimates used some 6000 tonnes of rock. Work is scheduled to start later this year.

"We have already completed extensive riverbank erosion control measures over the past few years at two different locations on our property," Shayne explained.

"The first site consisted of a rock wall, incorporating a spillway to direct farm runoff to a designated area in order to reduce erosion. The second lot of works were undertaken to protect an irrigation pump site and stabilise the existing riverbank also from further erosion."

"This site consisted of a drain constructed to collect sediment moving off farm and direct the flow of farm runoff, stopping all riverbank erosion caused by runoff. Although the rock has prevented erosion, the riverbank continues to substantially subside further upstream."

The new project will be managed by the Cassowary Coast River Improvement Trust and involve placing basalt rock at the bottom of the riverbed to stabilise the toe (the foundation) and gradually build up with rock.

Once the bank is stabilised, it will be revegetated with suitable plant species.

Shayne and Blaise have embraced practice change in a number of areas on the farm.

They manage farm runoff and sediment control through laser levelling paddocks, ground covered inter-rows, gravelled roadways and drainage. The crop is under drip irrigation, and all paddocks are fertigated at least weekly.

"The soil is one of our most important assets, so we believe putting measures in place to protect it is a logical approach," Shayne said.

"If everyone is serious about looking after the environment, projects like ours have got to be a good prevention."

COVID EFFECTS ON

The COVID-19 pandemic has seen significant supply and demand challenges and a definitive shift in customer buying trends Australia-wide.

Here, Richard Clayton, CEO of Mackays Marketing provides some consumer insights on the new reality that's affecting customer demand for bananas and other fresh produce.

2020 started with Australia impacted by the double whammy of drought and bushfires, which was very visually brought to life for those of us living in urban areas of Australia.

Sydney consumers saw a lot of items at higher than usual prices, due to drought impacting supply. Vegetables were particularly hard hit, yet demand remained, due to sentiment towards supporting the bush.

We were thinking the banana crop might have been bigger than 2019 and with what was happening in other fruit lines we were not daunted by this sales challenge, and the year looked promising for bananas.

I was overseas the first week of March and was being sent clips of empty shelves due to COVID panic buying. On the transit back through America I did not see any community or government concern, and I was unsure of what I was coming back to.

On my first day back in the office, I clearly saw the results of the unprecedented panic buying frenzy. Most supply chains - for the vast majority of products in the supermarkets - were being broken, to the point it took months for them to recover.

At the time of writing this, that scramble had stopped, and we were able to reflect on how we thought the situation unfolded.

We are forever challenging ourselves to predict what lies in front of us. It appears to us that the consumer has reacted to this ever-evolving situation, and there are new consequences that will continue to influence sales and consumer behaviour.

In our office in NSW we have regular discussions around COVID and this is what we believe are key changes.

1. As a healthy **snack**, banana consumption has been affected by gyms being closed and no weekend sport. (There is an associated habit between exercising and eating bananas which has affected banana snacking occasions.)
2. Fruit can be an impulse purchase and **Working from home** has also changed snacking habits. For city office workers, the regular trip to the local metro supermarket provided an opportunity to regularly buy fresh bananas for a snack/breakfast. Working from home means less bananas 'within easy reach' and therefore either less consumption or more local consumption within walking distance, ie the local fruit shop or IGA.
3. People are cooking more at home and missing the *convenience food* close to their workplace. Food waste is lower due to using up what is at home and being more conscious of meal planning to create efficiency and/or reduce household stress.
4. People are shopping less at majors and more locally, most likely at independent IGAs and green grocers. Average weight of purchase (AWOP) at the majors has not increased remarkably. This begs the question. Are we struggling to be available to consumers when they need bananas or are they choosing longer-life snacks?
5. Many consumers are out of work, also affecting household budgets.

The quicker we get control of the virus in our community, the quicker we can return to normality. However, being able to maintain the disciplines required in the community to keep the spread at bay is unpredictable. On the positive, health will always be important (particularly during the pandemic) and bananas are well positioned to ride the well-being wave into the future.

But let's consider for bananas;

- How mindful will we need to be of consumers' willingness and ability to increase their AWOP on a tight budget?
- During times of banana oversupply what are the substitutes that consumers will opt out of to buy additional bananas instead.
- Will retailers need to offer deeper discounts to attract purchases in times of oversupply?

In 2021 what will **"value"** look like?

- The cheapest price?
- The healthiest product that gets eaten by the household?
- Less chance of ending up as food waste ie flexible, multiple uses?
- Portion size that suits the consumer?

During April, both major retailers Woolworths and Coles promoted bananas in store with double displays.

BANANA CONSUMPTION

KEY FACTS

Financial confidence is low:

- Australians are in two camps, either still financially 'insulated' (56%) or now financially 'constrained' 44% (Source: Nielsen).
- 20% of the working population have either lost their job or had their hours/pay cut. This and the approaching recession is driving a 'shift to thrift'.
- Couples and families are key groups impacted financially, which impacts banana sales as they are key purchasers.
- Charities are seeing huge increases in requests for financial and food assistance.

Shopping differently:

- Consumers have been shopping more locally (IGA, independent green grocer) and online sales are increasing.
- Convenience is key as people are avoiding crowded areas where possible. This might mean one to two big shops at a big retailer and 'top-up' shops either not happening at all, or happening close to home.
- Shopping days have changed to include more mid-week shops, thanks to the flexibility of working from home.

Health trends and eating out:

- People are looking to increase consumption of fresh fruit and veg to boost immunity and health.
- Households are eating out less and cooking at home more regularly which is expected to continue for health and budget reasons. More affluent households have gone back to eating out more.
- Food service is making a comeback but still impacted (no events, cruise ships, etc)
- Mental health is suffering and services are oversubscribed. $500 million has been injected by the Government already this year.

Uncontrollable shutdowns:

Lockdowns have removed control of shopping habits (i.e. Victoria at time of writing) and COVID cases have created supply chain issues (eg. there have been cases in stores and Distribution Centres).

WATCH THIS SPACE

Australia eats about one third of the horticulture we produce.

Amid COVID, uncertainty surrounds the future of export markets – and we also lack freight options. General uncertainty remains with the strength of overseas markets. For example, large volumes of table grapes and citrus are usually exported and if some of this stock were to end up on the domestic market (due to low export demand) there would be additional competition for sales.

Timeline COVID 2020:

JAN-FEB

No real impact to consumers as yet, though drought affecting veg prices.

MARCH

Panic buying, restaurant/café closures, stockpiling of long life veg, supply chains broken. Working from home begins. CBDs become ghost towns. Multiple shopping trips to multiple stores to source essentials – trend to local retailers. JobKeeper announced. Online shopping stopped, then redirected to the needy.

APRIL

April – Home schooling commences and school holidays. The start of shift to thrift, particularly less food waste through meal planning, shopping to lists. Trend to baking and cooking from scratch. Online reopens with double capacity and supermarket shelves starting to restock.

Businesses work on how to use JobKeeper and also adjust salaries and working hours to maintain minimum staff. Routines greatly disrupted.

Woolworths and Coles make the most of increased banana availability and run promotions with massive merchandising and marketing support (TV, catalogue, instore, recipes, double displays).

MAY

Restrictions ease in NSW. Schools encouraged to go back.

JUNE

"COVID-15" weight loss health kick becomes a trend. Restaurants reopened and people wanting to get out and support local restaurants as they reopen.

JULY

School holidays on. Travel to support regional areas. Concern with Greater Melbourne lockdown. Spreading across Australia.

AUG - DEC

To be discovered. Many are resetting their lives to do less, with significant reflection on why do we need to be so busy?

RESPONSE TO PANAMA vs A GLOBAL PANDEMIC – DIFFERENT... BUT SAME?

A global pandemic may seem a complete world away from a disease that threatens Australia's banana industry. However, on-farm responses by banana growers' to COVID, compared to efforts to continue to control Panama disease tropical race 4 (TR4), have some distinct parallels.

By Sonia Campbell

When COVID-19 gripped the globe earlier this year, it was - and continues to be - an unprecedented crisis no Australian in the present day has experienced before.

For banana growers who have biosecurity protocols in place to keep diseases such as Panama tropical race 4 (TR4) at bay, unwittingly their responses to COVID - to keep staff safe from infection and ultimately keep their farms running viably – have been similar in many ways.

South Johnstone banana grower and former Australian Banana Growers' Council (ABGC) chair Doug Phillips recently sat down with Australian Bananas magazine to consider this interesting analogy.

"Certainly, if you look at the responses in general (to TR4 and COVID-19) the 'principals' are almost identical. Different in application, but in principle the same," Mr Phillips said.

"You talk about early identification? Where you find it (Panama and COVID), you go into strict containment and controlled movement.

"If you talk about early identification? With TR4 we have risked-based surveying of farms, the same way we do (in the community) with COVID 19. The trace forward, trace back, that's a critical part of that risk identification, with both COVID and TR4. So really the principles of what we are trying to achieve with COVID, as opposed to what we are doing with TR4 are the same."

Department of Agriculture and Fisheries (DAF) Team Leader of Banana Production Systems, Stewart Lindsay believes those growers with good biosecurity protocols in place pre-COVID were at an advantage when it came to responding to the pandemic on farm.

He said these growers were accustomed to constant checks and balances, including disseminating information to their workforces quickly in times of need.

"I think those people who put their biosecurity in place (for TR4), bit by bit, early on, it's about working with people. And, if you have systems in place, then people almost develop that as a habit," Mr Lindsay said.

"So, similarly with COVID, you're reinforcing new behaviours. But it does take time to become second nature, because you're asking people to change the habits of a lifetime."

Mr Lindsay agreed with Mr Phillips that there were many parallels between industry's response to TR4 and the pandemic.

"Neither disease can actively seek out a suitable host, they both rely on distribution by other means. Both also have a period without obvious symptoms when they can be moved into close proximity of other hosts and infect them, so when you find infected hosts (people or plants) you are seeing the disease distribution in the past, rather than where it is right now," he said.

"That's why good quarantine practices have to assume that everywhere and everyone else is infected, and have practices that treat people and farms as if they are.

"So when you think about it, the (COVID) virus is not making the pandemic, we are. It's human behaviour that decides whether there is a second wave.

"It's the same with any disease (of) plant, animal or whatever. If you don't have an effective control, then quarantine is your only control, and that's why Panama and COVID are the same."

Mr Lindsay also drew comparisons between 'flattening the curve' of COVID-19 and managing infected farms.

"With COVID we're saying flatten the curve by doing the things that mean you are not infecting anyone else. That's really what managing these infected farms with Panama is effectively trying to achieve," Mr Lindsay said.

"If we had done nothing, the chance of Panama spreading to other farms and other districts would have been much higher, so by locking down farms and imposing conditions, including destroying infected plants, that's achieving that flattening of the curve that everyone talks about with COVID."

Mr Phillips believed there were other benefits of on-farm responses to both COVID and TR4.

"All of the measures that have been introduced for COVID such as increased hand washing and increased social distancing, are going to have a positive influence on the infection rates of other diseases, like influenza and other things like that, in the same way that good biosecurity practices bring about additional positive outcomes.

"If you are more structured in your planting material and you're using clean planting material, you're not spreading other things through your farm. You're not potentially importing nematodes, you are not importing other diseases and you're not spreading other things through your farm," Mr Phillips said.

"So you sit down and start to list the benefits (of the responses to TR4 and COVID), and you see similarities there as well."

CARNARVON PRODUCTION DROPS 30 PER CENT AFTER CYCLONE DAMAGE

Carnarvon banana grower and former ABGC director Tom Day in his plantation the morning after ex-tropical Cyclone Mangga

By Lea Coghlan

Carnarvon banana growers suffered an estimated 30 per cent production loss across the growing region as a result of ex-tropical cyclone Mangga which wreaked havoc on the coast of Western Australia in May.

The out-of-season storm whipped up a fury of dust, wind and rain leaving a trail of destruction.

ABGC director and Sweeter Banana Co-operative business manager Doriana Mangili said the damage varied depending on plantations' exposure.

"We were looking at 2020 being the biggest year for production in ten years as we've been able to ramp up production in the last five years," Ms Mangili said.

"It was the first time since Tropical Cyclone Olwyn struck in 2015 that we have had a severe weather event - no cyclones, no floods and no heatwaves for just over five years.

"This enabled us to ramp up production and this will hopefully help us in a 'holding pattern' until growers get back on their feet."

Former ABGC Director Tom Day, who owns a banana farm on the Gascoyne River, said he had never seen dust storms as severe as they were during the ex-tropical cyclone.

"The severe storm delivered eleven hours of dust," Mr Day recalled.

"You couldn't see 30m in front. But we only got 15-20mm of rain."

Ms Mangili said growers were able to access compensation through the APC Carnarvon Banana Producers Compensation Scheme.

The unique fund, to which growers contribute a levy to for each carton produced, provides the industry with self-insurance. Compensation is paid when visible damage to a plantation is in excess of 15 per cent across the entire farm.

"The funding gives some growers an opportunity to receive money up front to replant," Ms Mangili said.

"It's paid per the individual farm's production or what it would have been, prior to the damage."

Shortly after the event, Sweeter Bananas urged Western Australian consumers to look beyond blemished fruit as the region's growers recover.

The organisation is well known for producing the iconic premium Sweeter Lunchbox Banana, but Ms Mangili warned this fruit would be slightly more blemished due to crop damage.

Consumers were also encouraged to consider another product called Smoothies, a term given to fruit that doesn't meet premium supermarket specifications.

"The strong winds from the storm and the number of trees brought down has increased the fruit with markings and the volumes of Smoothies bananas has tripled," Ms Mangili said.

"Smoothies have been such a great help to our growers. Since we developed the product over two million kilos of bananas have been eaten by Western Australians instead of being dumped back in the paddocks as mulch.

"The damage consists of light skin markings on the fruit caused by the leaves rubbing on the bunches as they grow. It's cosmetic damage and doesn't impact the fruit inside.

"The simple action of purchasing a less than perfect looking product has a real impact on farm incomes and reducing global food waste."

COMPENSATION FUND HELPS CYCLONE-DEVASTED GROWERS RECOVER

When Tropical Cyclone Olwyn wiped out Carnarvon's banana industry in 2015, a unique grower-funded insurance scheme was a saving grace for the 45 growers impacted.

The region's banana growers applied for and were granted a 100 per cent payout each under the Carnarvon Banana Producers Compensation Scheme. It was the largest payout in the scheme's history.

Since it started in the early 1960s, there have been 24 claims totalling $10.39 million for cyclones, flooding, heat and fire damage.

Some 41 growers across 45 plantations with a total production area of 170 hectares contribute 30c/carton to the scheme.

It is administered by the APC Banana Growers Producers' Committee, which sits under Western Australia's Agricultural Produce Commission.

Grower and long-serving chair Bruce Munro, who stepped down in June (he was replaced as chair by committee member John Kearney), said the scheme was unique and had been an immense benefit over the years.

"I think the fact that it's a voluntary scheme is key to its success," Mr Munro said.

Growers use the money to cover operating costs to enable them to recover and restart after a natural disaster.

NATIONAL PLANT PROTECTION PROJECT KICKING MAJOR BANANA VARIETY GOALS AT THE HALFWAY MARK

The Australian banana industry's search for new varieties resistant to diseases such as Panama tropical race 4 (TR4) and Panama disease race 1 is looking brighter than ever, thanks to major inroads being made by a national plant protection project.

Most recently, the project has managed to access five Cavendish selections and one Dwarf Ducasse selection from Taiwan, all with reported resistance to TR4.

By Stewart Lindsay, Department of Agriculture and Fisheries, South Johnstone, Queensland.

The project "Improved Plant Protection for the Australian Banana Industry" (BA16001) is now a little over halfway completed and is achieving major goals for the banana industry. The five-year project is funded by Horticulture Innovation via the banana industry research and development levy, with co-investment from the Department of Agriculture and Fisheries, NT Department of Primary Industries and Resources, NSW Department of Primary Industries and contributions from the Australian Government.

The project combines a full range of activities from identifying, importing and screening new banana varieties for disease resistance to undertaking research activities into the highest priority pest and disease issues. These activities are grouped as theme areas, and some of the key activities and outcomes from the program so far are outlined below.

Theme 1 – Accessing and screening banana varieties for pest and disease resistance

This aspect of the project aims to access plant varieties from overseas breeding programs and then conduct research trials to screen for disease resistance against Panama disease Race 1 and Tropical Race 4 (TR4), Yellow Sigatoka leaf spot and to assess yield and performance characteristics. With the increasing spread of TR4 around the world, many overseas banana breeding programs are restricting access to their material to try and maximise the opportunity to commercialise the intellectual property in the varieties they have produced.

Accessing new varieties

The project has been successful in negotiating access to 35 new varieties, primarily from breeding programs focusing mainly on breeding dessert banana types familiar to the Australia market – selections of Cavendish and Lady Finger, and hybrids of Lady Finger and Silk/Sugar bananas.

The project has managed to access five Cavendish selections and one Dwarf Ducasse selection from Taiwan with reported resistance to TR4, which entered the quarantine tissue culture laboratory in mid-July 2020. From Brazil the project has successfully negotiated access to 25 varieties, mostly Lady Finger and Silk/Sugar hybrids with reported resistance to Panama disease Race 1, with 12 of these arriving in April 2020 and entering the quarantine screening system. In 2018 the project was able to access four varieties from the French breeding program, including two novel hybrids and two hybrids reported as similar to the Silk/Sugar banana variety, with reported Panama disease and leaf spot resistance. These lines successfully cleared the quarantine screening process and will be available for the next round of research screening trials.

Screening new varieties

The project has provided a network of field screening trials in New South Wales, north Queensland and Northern Territory to assess for:

- Panama disease Race 1 resistance and cold tolerance, and agronomic performance and consumer acceptance for selected varieties – Duranbah, New South Wales
- Agronomic performance and Yellow Sigatoka leaf spot resistance – South Johnstone, Queensland
- Panama disease TR4 resistance and agronomic performance – Coastal Plains Research Farm, Northern Territory

At the Duranbah site, 19 varieties were planted in February 2018 and have been assessed for their Panama disease Race 1 resistance, with a number of varieties showing promise. The site was also used to assess the production performance and consumer acceptance of PKZ and FHIA17, resistant varieties identified from the previous plant protection program. The consumer acceptance assessments compared FHIA-17 and PKZ with Cavendish sourced from North Queensland and northern New South Wales, with the consumer

The early stages (Jan 2020) of an on-farm trial site of resistant varieties.

A TR4 resistant Cavendish variety under assessment at South Johnstone.

Growers have been kept up to date with progress of new variety trials with regular tours of trial sites, including South Johnstone and Duranbah.

Horticulture and Forestry Science Tissue Culture Team members Emily Rames and David Gibson with some new banana varieties recently accessed from Taiwan and are currently going through quarantine processes Applied Plan Biotechnology Laboratory at Maroochy Research facility before undergoing trials for TR4 resistance.

tasting revealing that while PKZ and FHIA-17 possess some desirable agronomic attributes and disease resistance, they did not appeal to consumers when compared to Cavendish bananas sourced from NQ and NNSW. As a result it was not recommended that PKZ or FHIA-17 be pursued for commercialisation. The trial site at Duranbah has now been closed with the cessation of the lease, and a new site is being planned for the NSW DPI facility at Alstonville.

At South Johnstone, 32 varieties were planted in September 2018, with harvest for the plant crop spreading from May to December 2019. The trial is assessing a range of mostly Cavendish varieties, including all the selections in Australia from Taiwan with reported TR4 resistance. The first ratoon harvest is progressing well with more than 60% of the varieties harvested so far. The results of the plant crop assessments were presented in an article in the previous edition of the *Australian Bananas* magazine.

The trials at Coastal Plains Research Farm in the Northern Territory are proceeding well with disease assessment and agronomic data for the plant crop completed and analysed. There are two trials being undertaken, the main trial assessing 19 commercial varieties and a sub-trial investigating resistance in 14 important breeding lines. The results from the plant crop of both trials are presented in an article in this Australian Bananas edition. There are promising results so far with four new Cavendish selections, along with three hybrids from the French breeding program showing good resistance in the plant crop. The two cooking bananas Dwarf French Plantain and Tonga have also performed well.

Pre-commercialisation trials on farms

Once varieties have been screened in the research trials, those candidates with promising performance are then assessed under commercial production conditions on farms. These trials are supervised by DAF with restrictions around plant propagation and marketing to maintain the intellectual property of the originating breeding program. Between 100 and 300 plants of up to three Cavendish varieties with good TR4 resistance have been established on four properties across the North Queensland production districts between October 2019 and May 2020. A trial is also planned for planting later this year in the NT as well. These trials aim to gather some data and assessments by growers of the important commercial characteristics. These assessments will then be shared with the broader banana industry via extension activities and magazine articles.

Theme 2 – Managing the variety importation process, and providing access to clean planting material

The project provides for the registration and management of the only post-entry quarantine facilities in Australia for importing banana varieties. New varieties identified and received by the project are managed and assessed through these facilities to ensure they are clear of the many different exotic banana pests and diseases. This process takes between 1.5-2 years and has ensured that Australia has maintained its freedom from devastating new diseases and pests while still being able to import new banana varieties to test. DAF has recently increased the size of the post-entry quarantine facilities at both the EcoSciences Precinct in Brisbane and at the Maroochy Research Facility at Nambour, successfully passing the auditing and registration for both sites.

This component of the project is also responsible for managing the Australian banana germplasm collection. The collection continues to be used to support banana research trials and to supply plants for grower evaluation, where they are not restricted due to Material Transfer Agreements or research agreements. Between April 2019 and May 2020, a total of 5575 plantlets were provided and different accessions accessed 127 times. The collection and tissue culture laboratory are playing an important role in multiplying and providing the plants required for the next round of variety screening trials at South Johnstone and the Northern Territory.

New activities coming up

The variety screening efforts are continuing with new trial plantings planned in the Northern Territory and North Queensland later this year. These trials will continue screening activities for agronomic performance and TR4 resistance.

The project is also continuing the assessment and selection of improved Goldfinger and Cavendish types developed through the mutation breeding efforts undertaken in the recently completed project "Fusarium wilt TR4 research program" (BA14014). In that project 20 selections of Goldfinger with improved eating characteristics, and 27 selections of TR4 resistant Cavendish varieties with improved bunch and plant characteristics have been made. These selections need to undergo more rigorous assessment to identify the outstanding performers for their disease resistance, agronomic characteristics and consumer acceptability. Currently the Cavendish selections are only present in the Northern Territory, and the project team in Theme 2 has been busy developing a safe and effective protocol with biosecurity authorities in Queensland and the Northern Territory to allow for tissue-cultured plantlets of each selection to be imported safely back into Queensland.

So exciting times ahead for the banana industry investment in the search for new, disease resistant banana varieties.

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

PANAMA DISEASE RESEARCH PROGRAM, WHAT HAVE WE LEARNT?

By Tony Pattison, Department of Agriculture and Fisheries (DAF), South Johnstone

BACKGROUND

Panama disease Tropical Race 4 (TR4) was first found in the Tully valley in March 2015.

The unknowns surrounding this discovery left banana growers and the future of the Australian banana industry in a precarious position. Actions were taken to increase awareness and improve farm biosecurity in the short-term. However, investments were also made to look at long-term solutions for the worst-case scenario, if Panama disease could not be contained.

The project *The Fusarium wilt Tropical Race 4 Research Project* was a result of that investment and has recently been completed. So where has this investment left the Australian banana industry in terms of its ability to deal with Panama disease?

The Fusarium wilt TR4 Research Program set about to develop long-term management strategies, which meant that the outcomes from the research would not impact on banana growers until 5-15 years after the project was started. In establishing the project there were three main themes;

1. **Prevention** – through strengthening on-farm biosecurity tools,
2. **Resilience** – by providing growers with knowledge and awareness of practices that could suppress Panama disease and;
3. **Resistance** – through the development of banana cultivars with improved resistance and acceptability for the Australian banana industry.

OUTCOMES

Prevention

The prevention of Panama disease builds on biosecurity outcomes from previous projects. The aim was to provide Australian banana growers with improved capability to prevent Panama disease spreading further.

- On-farm biosecurity options for banana growers have been enhanced by developing an on-line version of the BMP Biosecurity manual, https://bmp.abgc.org.au/
- QBAN clean planting material scheme to ensure provision of clean, disease-free planting material has also been enhanced by conversion to an industry led program.

Resilience

A Panama disease resilient farming system aims to slow the progress of the disease. The basis of a resilient production system has been developed by understanding the plant-pathogen-microbe interactions, the infection process and how inoculum can build up in the soil.

The identification of the core microbiome of bananas benchmarks a microbial community for healthy banana plants. Where the core microbial community can be maintained or enhanced, Panama disease progress is slowed, and symptoms are less readily displayed. This tends to occur in north Queensland banana soils which have a higher clay content, increased vegetated ground cover and where nitrogen fertilisers are not overused.

Fusarium species, like the organism that causes Panama disease, are a dominant part of the banana soil fungal community. It is when the microbial competition is reduced or disrupted that the Panama disease organism can dominate to rapidly infect plants. The "disruptors" to a stable microbial community can be environmental stresses, such as weather extremes, heat, cold, waterlogging and drought, and those imposed by management practices, such as nutritional deficiencies, excessive nitrogen, poor soil management, soil acidity, loss of microbial diversity and tillage. Further work on understanding how to manage the banana soil microbial community is continuing in another project.

All plants found within banana plantations, such as weeds and ground covers, have the potential to host the Panama disease organism. A guide for banana growers has been produced to help understand the potential that other plants have for retaining Panama disease in banana paddocks.

Resistance

Banana cultivars with improved resistance are the foundation to continuing banana production where TR4 has become widespread. The project used a mutation breeding approach, called mutagenesis, to develop improved banana varieties with TR4 resistance. The mutagenesis program has demonstrated that it is possible to have a relatively low budget banana improvement program using the available resources within Australia.

The basis for the improvement program was commencing with cultivars that already have some resistance to TR4, and selecting plants with improved agronomic characteristics.

This approach has allowed banana lines with potential suitability for Australian production to be selected, with improved TR4 resistance and productivity equivalent to Williams. The successful cultivars at the basis of the improvement approach were the Cavendish varieties GCTCV 119, CJ19 and GCTCV 215. All retained their resistance to TR4.

The cultivar Goldfinger, which is highly resistant to TR4, was also used in the mutagenesis process to improve the fruit's eating characteristics. The on-going cultivar improvement process is now continuing in another banana levy funded project.

CONCLUSION

The Fusarium TR4 Research Program has built a strong foundation for the Australian banana industry to manage Panama disease with minimal impact on production. It has been a collaboration between state agricultural agencies and universities to fast track technological advances in science into applied agricultural research. The project has contributed to the national exposure of the problem of TR4 and shown to an international audience how the Australian banana industry has been proactive in combating the problem. The full final report for the project can be accessed through Hort Innovation https://www.horticulture.com.au/growers/help-your-business-grow/research-reports-publications-fact-sheets-and-more/ba14014/

Hort Innovation | BANANA FUND

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HELPING BANANA GROWERS FROM TULLY TO TIMBUKTU

The future of the banana industry relies heavily on the next generation. For banana research, this requires having energetic, innovative, early career scientists gain their qualifications working alongside current banana research teams and with banana growers.

The Hort Innovation and Queensland Government, Fusarium wilt TR4 research program supported two students working towards gaining their PhD qualifications. Here we meet the students and gain insights into their experience in the banana industry.

Henry Birt - University of Queensland
School of Earth and Environmental Science

Ryan Orr - James Cook University
Environmental Earth Science

What interested you in the banana industry?

Henry: As a scientist I want to make a positive difference. Australia is one of the few developed nations with high-quality tropical agriculture science. It is uniquely placed to contribute to solving global food security challenges. Therefore, I jumped at the opportunity to be involved with a world-class team, working on a globally relevant problem like TR4 in bananas.

Ryan: Living in Cairns, it is easy for me to see the dependence of the region on the banana industry and how devastating the effect of Panama disease could be to the region. Also, I really like to eat bananas, so I was interested to better understand how to grow them.

What were you doing and where, before you started your research on bananas?

Henry: I grew up in London, far from agriculture but became interested in environmental issues. My first interaction with tropical agriculture came while I was working in Brazil. It was here that I realised many environmental issues can be solved by improving agricultural systems.

Ryan: I grew up in Canada and obtained a university degree in chemistry and worked in environmental laboratories. Soon after moving to Cairns I wanted to work more outdoors and be more involved in agriculture, which took me to James Cook University. I was able to combine my experience in chemistry and soil science with how soils affect Panama disease.

What has your research focussed on?

Henry: Bananas are associated with bacteria and fungi that can influence the plant's health but remain under-exploited. Working with Paul Dennis and Tony Pattison at UQ and DAF we've been investigating what bacteria and fungi are associated with bananas and Panama disease; and what causes these communities to be structured in the way they are.

Ryan: My research has focussed on the impacts of soil physical and chemical properties on Panama disease severity. Primarily I have been looking at optimizing the availability of micronutrients (iron, manganese, copper and zinc) and nitrogen to ensure strong plant growth whilst limiting the effect of the pathogen.

What was the most memorable part of your research?

Henry: Collecting samples in North Queensland was a great experience. Getting on farm to see the people helps keep the research grounded in the real world. I got to see how different growers manage their properties and the daily challenges they face. Having access to banana farms and sampling soils in tropical forest was really memorable.

Ryan: At the start of the project I visited 28 banana farms spread across Far North Queensland, from Cardwell to Lakeland. Though it involved a lot of long days and lots of driving it was great to meet the farmers, understand their perspective on our work, how it could help and to see the region.

How do you think your research has helped banana growers?

Henry: Our work has defined a core set of microbes that are found in bananas across soil types, and varieties around the world. This means, we can now focus on managing a smaller, effective subset of microbes that influences the fungus that causes TR4. Soon we'll be able to offer guidelines to banana growers to manage microbes to reduce disease and support production.

Ryan: My research has helped to identify growing conditions and fertiliser management that may reduce the severity of Panama disease on farms, if it spreads in the future. I think this will be useful for farmers trying to maximize their yield if they are growing on farms affected by Panama disease.

What do you see for the future of the banana industry?

Henry: As understanding of the importance of microbes for plant health increases, we can start to manage them precisely on-farm. High-tech portable DNA sequencing for microbes may soon become part of the agronomist's toolkit to assess plant health. Soon we'll be able intervene with practices to boost production and protect plants that would enable lower production cost and environmental impact.

Ryan: I think Australia will continue to lead the international banana production market through innovation. We will continue producing bananas in a sustainable, cost-effective manner through highly efficient fertiliser use and well thought out disease management like this project contributed to.

Hort Innovation | BANANA FUND

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PLANT CROP RESULTS FROM THE LATEST TR4 SCREENING TRIAL IN THE NT

The quest for a commercially acceptable variety resistant to TR4 continues at the Coastal Plains Research Farm in the Northern Territory. The latest results from the program have been promising with four Cavendish selections showing resistance as good as or better than Formosana (GCTCV 218) in the plant crop.

By Sharl Mintoff, Samantha Cullen, Chris Kelly, Maxine Piggott
Northern Territory Department of Primary Industry and Resources, Darwin, NT

In December 2018, 32 banana varieties (comprising of three control reference varieties and 29 test varieties) were planted at Coastal Plains Research Farm in the Northern Territory to assess their resistance or susceptibility to Panama disease Tropical Race 4 (TR4).

This planting and assessment is part of the *'Improved plant protection for the banana industry'* project (BA16001). Data collection has been completed for the plant crop and includes the presence of external and internal symptoms of TR4, the amount of crop loss due to the disease and agronomic measurement of the surviving plants. Currently most of the surviving varieties have produced their first ratoon bunches with harvest expected over the coming months.

The trial itself was split into two smaller trials, to account for the different plant numbers that were available at the time, named the "Main trial" and the "Sub-trial". The Main trial consists of Cavendish lines from Taiwan and a selection from North Queensland, CIRAD hybrid lines, and various other selections. The Sub-trial consists of the parental lines used in the CIRAD breeding program, to help inform selection of future breeding crosses for TR4 resistance. The information presented in this article is for the disease screening results of the plant crop only.

METHODS

All plants in the trial were artificially inoculated with TR4 colonised millet. Three reference varieties acted as control treatments for comparison, Williams – Very Susceptible; Formosana (GCTCV 218) – Intermediate; and Goldfinger (FHIA-01) – Resistant, as their reactions to TR4 are well known and act as a reference point for the other test varieties. Once external symptoms became apparent in the susceptible Williams control or another susceptible variety, fortnightly disease assessments were conducted which noted the appearance of external disease symptoms and internal symptoms at plant death or harvest.

Disease performances have been categorised based on the criteria which follows. The categories and their definition are a little different to those reported for the previous TR4 screening trial in BA10020 owing to higher disease inoculum pressure encountered in the current trial.

Highly Resistant (HR) – No disease symptoms were observed within the crop cycle and may not show symptoms under high inoculum pressures.

Resistant (R) – Plants normally show no signs of infection in the presence of the pathogen. However, under high inoculum pressures low amounts of symptoms or losses may occur.

Intermediate (I) – Plants which can withstand some infection and suffer low losses under natural infestation conditions, with most completing their crop cycle. However, its susceptibility or resistance can be highly dependent on the inoculum pressure already present. With the appropriate crop management or environment to lower the inoculum levels, these should be commercially viable.

Susceptible (S) – more than 50% of plants show symptoms and/or killed due to pathogen infection.

Very susceptible (VS) – Majority of plants showed severe symptoms, most of which died due to TR4 (more than 70%).

RESULTS

Highly resistant

Eight varieties fell into this category and have not shown any disease symptoms within their plant crop and include three CIRAD hybrids (CIRAD 03, 04 and 05), Asia Pacific No.1 (slow offtype) and CIRAD parental lines (Inarnibal, M53, Manang and Tjau Lagada) (Figure 1).

Resistant

Under this category, these plants are normally resistant to the disease yet under high inoculum pressures can exhibit low proportions of symptoms, which was the case with the resistant control Goldfinger. Other varieties that fell into this category were Dwarf French Plantain, Asia Pacific No.3, and the breeding lines Pisang Bangkahulu and Paka.

Intermediate

Varieties in this category possess some resistance to tolerate infection and maintain minimal losses compared to susceptible varieties, however once the inoculum pressure of the disease increases the plant's susceptibility will also increase. An example of this is Formosana (GCTCV 218), which is used as the Intermediate control, as trials in Taiwan and the Philippines show low crop losses in the presence of the pathogen. Varieties within this trial that fell into this category are GCTCV 105, GCTCV 217, and the breeding lines Sinwobogi, Pisang Pipit and Pisang Batu.

Susceptible

Varieties that fall into this category showed a higher disease incidence compared to the Intermediate category and include the breeding lines: Heva and Pisang Sapon.

Very susceptible

Plants of this category suffered from severe disease symptoms and high mortality rates due to infection by TR4. These varieties included the Cavendish varieties Williams (very susceptible control) and the CJ19 selection, Hom Thong Mokho, CIRAD 06, Pisang Ceylan, PKZ, High Noon and the breeding line Nzumoheli (Figure 2).

CONCLUSION

Within the plant crop cycle, 11 of the tested varieties were rated as susceptible or worse.

Whereas, 12 of the tested varieties were rated as resistant or highly resistant. Encouragingly the two Asia Pacific Cavendish varieties, three of the four CIRAD hybrids and some CIRAD parental lines have shown strong resistance within their plant crop cycles. Currently, assessments of the first ratoon crop are underway and time will tell whether or not the resistance ratings of these varieties will hold into the next crop cycle.

This trial is expected to be completed by the end of the year. That will coincide with the commencement of the next screening trial including some varieties recently released from quarantine.

Resistance rating of trial plants (Plant crop)

Variety	Description	Rating
Control varieties		
Goldfinger	Resistant TR4 reference	R
Formosana	Intermediate TR4 reference	I
Williams	Very susceptible TR4 reference	VS
Main Trial		
Asia Pacific No. 1	Cavendish (slow offtype)	HR
CIRAD 03	Novel hybrid	HR
CIRAD 04	Novel hybrid	HR
CIRAD 05	Novel hybrid	HR
Asia Pacific No. 3	Cavendish	R
Dwarf French Plantain	Cooking banana	R
GCTCV 217	Cavendish	I
GCTCV 105	Cavendish	I
Hom Thong Mokho	Gros Michel style; ex Thailand	VS
CIRAD 06	Novel hybrid ex	VS
Pisang Ceylan	Mysore group	VS
PKZ	Highgate? Hybrid	VS
CJ19 selection	Cavendish ex N. Qld	VS
High Noon	Lady Finger hybrid	VS

Variety	Description	Rating
Sub trial		
Inarnibal	CIRAD parental line	HR
M53	CIRAD parental line	HR
Manang	CIRAD parental line	HR
Tjau Lagada	CIRAD parental line	HR
Pisang Bangkahulu	CIRAD parental line	R
Paka	CIRAD parental line	R
Sinwobogi	CIRAD parental line	I
Pisang Pipit	CIRAD parental line	I
Pisang Batu	CIRAD parental line	I
Heva	CIRAD parental line	S
Pisang Sapon	CIRAD parental line	S
Pisang Madu	CIRAD parental line	S
Nzumoheli	CIRAD parental line	VS
Pisang Oli	CIRAD parental line	N/A *

HR = highly resistant, R = resistant, I = intermediate, S = susceptible, VS = very susceptible, *very poor growth and appeared extremely stressed during the trial.

Figure 1: Varieties displaying resistance to TR4. Left to right shows CIRAD 03, CIRAD 05 and Dwarf French Plantain. (Photos of CIRAD 03 and 05 courtesy of Ingrid Jenkins, Queensland DAF.)

Figure 2: Very susceptible varieties with severe TR4 infection. From left to right: Williams, CJ19 selection and CIRAD 06.

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

NEW FLEXIBLE YARA'S NUTRITION SOLUTION

Yara's new YaraRega range of high quality, water-soluble NPK compound fertilisers can be applied via fertigation or dry application, allowing growers to confidently apply vital nutrients in all conditions.

Featuring a special coating that protects granules during storage and handling, YaraRega fertilisers dissolve readily in water for easy and efficient application using macro, micro and overhead sprinkler system or furrow irrigation. Use a 10% w/v stock solution for drip systems.

Alternatively, they can be broadcast as a soil application before anticipated rainfall or irrigation.

Yara Crop Nutrition North Queensland Sales Agronomist Tony Dyne said YaraRega fertilisers could be used in range of vegetable, fruit and tropical crops.

"It's a great concept," Mr Dyne said.

"You can either fertigate or spread it, which means you only need one fertiliser for most of the year.

"The special coating means the product can be handled in bulk bags without affecting the dissolution of the fertiliser.

"It's a compound granular fertiliser, so there's no risk of nutrient segregation during shipping, handling or spreading.

"We have received great feedback from customers who have already used it."

YaraRega 13-2-21 contains a balanced blend of nitrogen (13%), phosphorus (1.75%), potassium (20.8%), sulphur (9%) and magnesium (0.4%), as well as the micronutrients, boron (0.08%) and zinc (0.08%).

"This balance is ideal for crops that require high amounts of nitrogen and potassium but have low phosphorus requirements," Mr Dyne said.

"Forty percent of the nitrogen is present as nitrate meaning it is available for immediate plant uptake, ensuring good root development and the uptake of cations such as calcium, magnesium and potassium.

"Nitrate also reduces the potential losses caused by volatilisation, improving fertiliser use efficiency and protecting water quality.

"The remaining nitrogen content is presented as ammonium which delivers a sustained delivery of nitrogen."

The phosphorus content comprises two forms of plant-available phosphates.

"This combination gives greater and long-lasting availability of phosphorus to crops over a wide range of soil types," Mr Dyne said.

The potassium source in YaraRega 13-2-21 is based on sulphate of potash (SOP), which improves the production of most fruits and vegetables.

"Using an SOP-based fertiliser is particularly important for crops with a low tolerance to chloride," Mr Dyne said.

"YaraRega 13-2-21 is chloride-free, which is important when applying potassium during the fruit development/filling stage of sensitive horticultural crops."

A second formulation, 9-0-30 (14S), will become available later this year.

"Sulphur is an important component of enzymes and other proteins and is required for the nitrate metabolism," Mr Dyne said.

All YaraRega formulations contain less than one percent insolubles.

"By comparison, standard granular fertilisers can contain up to 20 percent 'fillers', coarse and insoluble particles that can block filters and drips," Mr Dyne said.

"Others have special coatings that help to improve their handling or spreading as dry granules but once dissolved in water, these waxes and oils are released into the solution and can create blockages.

"Once added to water, YaraRega dissolves quickly meaning water flow rates are not affected during fertigation.

"Nevertheless, it is not recommended for use in hydroponic irrigation systems."

YaraRega complements the rest of the Yara range, including YaraTera water-soluble NPK crystalline fertilisers for use in hydroponic systems, YaraVita foliar micronutrient fertilisers, YaraLiva calcium nitrate fertilisers, YaraMila NPK compound fertilisers and Yara Liquids fertilisers.

Yara fertilisers are supported by range of innovative decision-making tools to provide a complete crop nutrition solution for all production systems.

"Our objective is to help growers get the very best results from their investment in quality crop nutrition solutions," Mr Dyne said.

To celebrate the commercial launch of YaraRega, all purchases of 24 tonnes of YaraRega™ 13-2-21 completed before 31 August will go in the draw to win one of two ENGEL 40 litre fridge-freezers and transit bags worth $1600.

Yara Crop Nutrition North Queensland Sales Agronomist Tony Dyne.

Yara's range of high-quality compound fertilisers are suitable for a range of crops like bananas.

NATIONAL EXTENSION PROGRAM RENEWED FOR FIVE YEARS


Shanara Veivers


Tegan Kukulies


Stewart Lindsay


Ingrid Jenkins


Sue Heisswolf


Tom Flanagan

The National Banana Development and Extension Program has been renewed for a further five years, with a clear focus on re-engaging with growers at a farm level.

Now in its third iteration, the project (BA19004) is funded by Horticulture Innovation via the banana research and development levy, with co-investment from the Department of Agriculture and Fisheries and New South Wales Department of Primary Industries and contributions from the Australian Government.

The national team – Tegan Kukulies (currently on leave, Sue Heisswolf is acting), Stewart Lindsay, Ingrid Jenkins and Shanara Veivers (QLD DAF) and Tom Flanagan (NSW DPI) – have earmarked a return for key activities including the National Banana Roadshow Series, speed-date-a-researcher and field days, along with the addition of some new regionally based on-farm trials.

The current COVID-19 health pandemic has forced a rethink on the delivery model for the key activities, and while there remains uncertainty about scheduling for the immediate future, face-to-face interaction remains a high priority in extension and development activities following feedback from growers.

"The new program is about re-engaging at the farm level," Mr Lindsay said.

"We have divided the industry into districts and aim to coordinate locally relevant activities.

"As people are time poor, we want to visit growers on their farms where we can learn and talk about the circumstances where they may want to do something different."

The digital world is sure to be a key focus moving forward, with more videos and an improved Better Bananas website.

DAF Information Development Officer Ingrid Jenkins said the website was one of the successes of the program.

"The website was launched in July 2018 at the 2018 National Banana Roadshows and was created to provide growers and other industry stakeholders with a central go-to location for R&D information, detailing the latest research results and recommendations," Ms Jenkins said.

"It provides R&D updates, pest, disease and disorder identification guide, videos, information on R&D events and researcher profiles."

Mr Lindsay said activities delivered under the program to date had been largely driven by the needs of growers.

"In the early days, extension activities were run for each project but were adhoc, with no linkages across projects or structural coordination," Mr Lindsay said.

"The extension program provided a coordinated, structured approach to extension and development activities, particularly in North Queensland, and later on the sub-tropical region of northern NSW."

A clear winner among the younger growers has been the establishment of Next Gen groups in Queensland and northern NSW, which will continue under the new program with a focus on innovation and technology.

Primarily targeted at the young and 'young-at-heart' growers, the group's visit to regions like the Northern Territory, where the industry has battled the spread of Panama TR4 for many years, was life-changing for some.

"The group is designed for those young growers who are willing and keen to travel and share their experiences, knowledge and learnings," Mr Lindsay said.

"The feedback from this group is that the concept is highly valued – they always got something out of it.

"For us, they act as grower champions and as a brains trust."

New this round will be a series of regional on-farm innovation trials.

"These will be issues that may not be covered in an existing project but identified by growers as being important," Mr Lindsay said.

"We have planned for one or two on-farm grower trials in each of the banana regions to address these type of issues."

To contact the extension team:
South Johnstone-based 07 4220 4177
Subtropical enquiries (Tom Flanagan)
02 6626 1352
bettersbananas@daf.qld.gov.au

This National Banana and Development Extension Program (BA19004) has been funded by Hort Innovation, using the banana research and development levy, co-investment from the Department of Agriculture and Fisheries and New South Wales Department of Primary Industries and contributions from the Australian Government. Hort Innovation is the grower-owned, not-for-profit research and development corporation for Australian Horticulture.

AUSTRALIAN BANANA INDUSTRY EMBRACES NOVEL BIOLOGICAL FUNGICIDE

Agronomist Dave Doolan and Brock Saunderson, Peak Aviation, inspect Serenade.

The introduction of a Serenade® Prime, the first biological fungicide from Bayer, has changed the game for Far North Queensland banana growers.

Serenade Prime has been extensively researched and adopted in global banana production as an alternative to fungicides like mancozeb and chlorothalonil.

The recent registration in Australia, for control of Yellow Sigatoka and suppression of common leaf speckle, plus the ACO organic allowed input certification, provides growers flexibility in both conventional and organic spray programs and delivers a major step forward in the development of sustainable production systems.

Serenade Prime contains numerous biological compounds produced by a patented strain (QST 713) of the bacteria Bacillus amyloliquefaciens.

These compounds have contact activity when sprayed and prevent the development of yellow Sigatoka spores by physically rupturing the cell membrane.

This makes it very difficult for disease to develop resistance. In addition to biological control of fungi, Serenade Prime also triggers the plant's natural defences against future disease infection.

Agronomist Dave Doolan, who works in Innisfail with GF Rural Supplies, believes Serenade Prime is going to provide a significant improvement for the banana industry in managing Yellow Sigatoka.

"As a member of the Fungicide Group 44 protectant chemistry, I believe Serenade Prime has got a lot of advantages, especially as it is a biological product," Mr Doolan said.

"It's been a wet year, and so a lot of farmers have used Serenade Prime and we've been able to get a further insight into how it performs and a lot of them have been extremely happy. The product has worked very, very well.

"It's critical that growers still get their regular spray programs on and use Serenade Prime when there's no pressure, it's not a systemic product."

The emphasis Dave Doolan puts on a well-balanced fungicide program to include both protectants and systemics has been played out in three large-scale demonstration sites by Bayer in the Far North Queensland banana growing areas of Tully and Innisfail.

At each site, one block was treated with Serenade Prime plus oil as a protectant, in a program with Luna® Experience Fungicide plus oil, the next generation systemic fungicide from Bayer. Luna Experience is a co-formulation of fluopyram and tebuconazole, replacing Luna Privilege for control of yellow Sigatoka, leaf speckle and cordana leaf spot.

The Bayer combination was tested as an overall program against a more traditional approach of mancozeb plus oil or a chlorothalonil program, and Dave Doolan said the results were positive.

"The Bayer program has worked, there's no difference when you walk from the mancozeb section through into the Serenade Prime and Luna Experience treated block, so it is certainly holding up," Mr Doolan said.

"We had the chemicals applied by fixed wing aircraft as well as by helicopter on various blocks, so both the main means of aerial application were done."

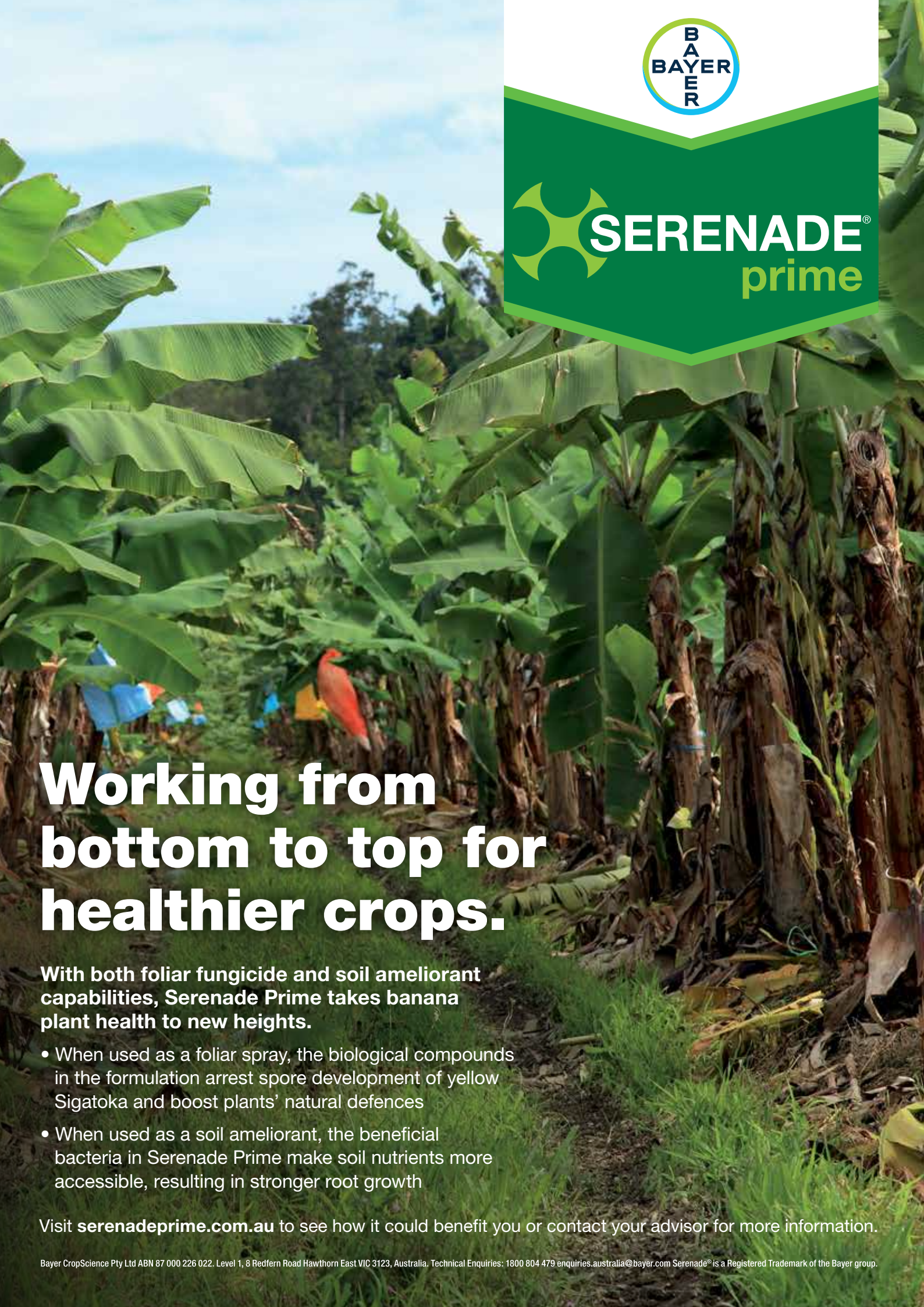
Nick Matthews and Dave Doolan discuss the benefits of Serenade Prime.

Director and Chief Pilot of Peak Aviation Services in Innisfail, Ian Saunderson, applied both Luna Experience and Serenade Prime through his fixed wing aircraft over the demonstration sites. Mr Saunderson said not only were the results of the Bayer program strong, but the products were also easy to handle.

"The registration of Serenade Prime on bananas, being novel chemistry as a protectant, and a biological one as well, is a major step forward for the banana industry I think, because it really goes towards sustainable agriculture," he said.

"It's the right direction to be going, I believe, if we are going to have an industry in 10 or 15 years. We haven't had a new protectant in the market for decades, so, it's really important work that Bayer is doing."

Serenade® and Luna® are Registered Trademarks of the Bayer Group.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Working from bottom to top for healthier crops.
With both foliar fungicide and soil ameliorant capabilities, Serenade Prime takes banana plant health to new heights.
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• When used as a soil ameliorant, the beneficial bacteria in Serenade Prime make soil nutrients more accessible, resulting in stronger root growth
Visit serenadeprime.com.au to see how it could benefit you or contact your advisor for more information.
Bayer CropScience Pty Ltd ABN 87 000 226 022. Level 1, 8 Redfern Road Hawthorn East VIC 3123, Australia. Technical Enquiries: 1800 804 479 enquiries.australia@bayer.com Serenade® is a Registered Trademark of the Bayer group.

BANANA FARMING LEGACY CONTINUES 75 YEARS ON

The third generation of Mackay banana growers from left – Barrie, Stephen, Daniel, Cameron and Gavin – currently lead the family's farming enterprise.

By Lea Coghlan

STANLEY'S LEGACY

When Stanley Mackay established a company to run his banana farm in Tully, Far North Queensland, 75 years ago, few would have predicted it would become the thriving, sustainable and forward-looking enterprise it is today.

It may look a little different to what he envisioned - four generations, seven farms, three growing regions, five agricultural commodities and 550 plus staff – but its success is testament to Stanley's tenacity and foresight, and the commitment by his children, grandchildren and great grandchildren to continue and build on his legacy.

Stanley was no stranger to the Far North, having done several stints cane cutting before he and his new wife Agnes made the permanent move to Tully from Nambour in the mid 1930s.

On arrival, Stanley continued to cut cane and in 1945 the couple leased a rainforest block near Mission Beach where they cleared the land by hand and planted bananas.

"When they bought their first farm of 36 hectares in 1954, our fathers, John and Robert, joined the business," Stanley's grandson Barrie Mackay said.

It heralded the beginning of SJ Mackay & Sons, later rebranded as Mackays.

"From a young age, our fathers were part of the business. That mantra continues today. Stanley always led the charge but at the end of the day it was always a team effort."

During Stanley's reign at the helm, more farms around Tully were added as the Mackay children and grandchildren joined the business. He lived long enough to watch the business start to diversify, initially into sugar cane.

Regarded as the grandfather of the modern-day banana industry, Stanley was a pioneer in so many ways.

In the region's fledgling banana industry, Stanley lobbied for better rail services for Tully growers.

He was the first grower to send fruit to Brisbane, Sydney and Melbourne, and later to Adelaide and Perth, opening up a world of trading opportunities.

He initiated the change from wooden crates to waxed cardboard boxes, albeit with some initial industry resistance, paving the way for greater packing efficiencies.

Stanley spent 27 years representing the industry on the COD Fruit Sectional Committee (a predecessor to the Australian Banana Growers' Council), travelling the east coast of Queensland for meetings – largely at his own expense – for the betterment of the industry.

"Stanley overcame many hurdles," Gavin Mackay said.

"In the early days, there was only sugar cane grown here.

"There was no infrastructure for bananas. Stanley introduced all the things into the area that we now take for granted."

Stanley made an ever-lasting impression on his family who continue today to uphold his strong work ethic, resilience and respect.

Their journey has had its challenges.

Mother Nature has wiped out crops while a devastating banana disease was found on one of the family's farms turning life as they knew it, on its head.

Mackays first truck, a 1942 ex-Army truck was used to transport 90 cases of bananas. Tractor in Banana Paddock (cutting crew)

LOOKING BEYOND BANANAS

While banana growing remains 90 per cent of the Mackays core business, biosecurity, weather and land suitability have been the driving force for diversification into other agricultural industries and regions.

Finding crops most suited to growing conditions in the Wet Tropics was a key factor early on, so a foray into sugar cane in 1985 was a natural progression.

Today, the Mackay family grows more than 1000 ha of cane and is one of the largest cane suppliers to Tully Sugar.

"We considered the move a cyclone strategy as well, as cane only lies down and can still be harvested after a cyclone, whereas bananas can be totally wiped out," Gavin Mackay said.

In 1991, the family purchased Bolinda Estates – 1456 ha of prime grazing land that formed part of King Ranch – which steered them to livestock.

"When we purchased our property at the top of the Tully River, some of the land was suitable for growing bananas, but the rest was not suitable for cane as it was too hilly," Stephen Mackay said.

"Because it was previously a cattle property, we kept banana farming with cattle. It mows the grass and pays the rates and gives us a bit of fun playing with something different."

Today, the family runs a 800-head commercial beef cattle herd on 400 ha.

In 2006, the family's main banana plantation was wiped out by Tropical Cyclone Larry, prompting a decision to explore higher ground. In 2008, the family started growing red papayas.

"We undertook a diversification program away from the main banana farm at Tully," Barrie Mackay explained.

"We were looking at ways to get away from the coast, and the impact of cyclones and floods.

"We moved to the top of the Tully Valley and then moved across the valley. It was okay for some of the cyclones, but not the big events like Cyclone Yasi which took the whole lot out.

"This prompted a move to a new area where we could separate our farms apart, to reduce the biosecurity risk and the impact of cyclones."

Lakeland, with its rich fertile soil and optimal growing conditions beckoned, and in 2012 Mackays purchased Gold Tyne, where they grow bananas, avocadoes and lychees.

In 2015 the family ventured south to Bundaberg where they also grow bananas, avocados and lychees.

Daniel Mackay believes geographic diversification has been one of the greatest challenges for the family operation.

"Our geographical diversification to Lakeland and Bundaberg and the fact that we have to run those farms remotely is a huge challenge," he said.

"But the fact that we are doing it is a huge triumph for us personally, and for our business as it gives us continuity."

Despite diversifying into new crops and regions, Mackays has stayed true to the crop that began the legacy – bananas - and constantly looks to improve through value-adding.

More recently, the global health pandemic and restrictions on travel and social distancing have created more challenges, in an industry that relies heavily on backpackers and seasonal workers.

Yet as their fathers and grandfather did before them, the current pillars of the family take it all in their stride.

"The resilience you gain from going through challenges like cyclones, Panama TR4 and others, gives you a level of resilience to be able to confront anything thrown at you," Stephen Mackay added.

"It's how you treat the challenge that defines the success."

And what do they think Stanley would be thinking of the modern-day business?

"I think Grandad would be content and humbled to see how much we have grown," Daniel Mackay said. "He was very much that as a person – humble and content."

Direct loading banana cartons from the truck into the railway wagons.
Robert Mackay packing in the family's packing shed.

A GAME CHANGER

When Mackays decided to grow avocadoes three years ago, not only were they trying a tree crop for the very first time they did so using an innovative growing system.

In a nod to the innovation that grandfather Stanley displayed decades earlier, the Mackay cousins are using a trellis system – believed to be a first for the Australian avocado industry – to grow avocadoes at their farms in Lakeland and Bundaberg.

The Mackays drew on the experiences of Mission Beach rare tropical fruit grower Peter Salleras, who trialled and introduced the Tatura trellising methods on his farm after being wiped out by two cyclones.

"Growing avocados traditionally you have about 150 trees to a hectare in an orchard," Cameron Mackay explained.

"Under the trellis system, we have a density of 2200 trees per hectare.

"We've modelled it on the apple industry which moved from tree crops to a trellis system to increase productivity and reduce labour costs."

The Mackays planted 16 ha at Gold Tyne and 25 ha at Bundaberg. The Lakeland orchard grows the Maluma avocado, a newer variety which has a smaller seed, bigger fruit and is slightly earlier maturing, and is under netting.

Aside from the harvest efficiencies, Stephen Mackay said growing avocados on a trellis system provided a layer of protection.

"There's a lot of models in Australia where horticultural producers are putting their crops in a protected agricultural space," Stephen Mackay explained.

"When we made the decision to start growing avocadoes, we wanted to make sure we weren't going to get wiped out.

"Typically, in the tropical part of the world there is the story of people who grow big horticultural trees for 10 years and a cyclone comes along, wipes them out and they have to start again.

"We do believe if a cyclone went through Lakeland or Bundaberg, we would be the producer that's first back on-line with a crop because we didn't lose our trees out of the ground."

SUCCESS

In a world where corporate giants dominate, it's inspiring to find a successful farming family enterprise that spans four generations, multiple crops and a labour force of more than 550 people.

"We work to a common goal," Cameron Mackay said.

"We will sit down and talk about what we want to do and when we leave the room we go and do it.

"We challenge each other – if you are not challenging each other at work I think you are giving up too early or giving up on something you should have fought for."

Stephen Mackay remembers the robust conversations between his father Robert, Uncle John and grandfather.

"It got pretty colourful as they were very boisterous with their opinions," he said.

"But come Friday afternoon, once they finished smoko the conversation would turn to where they were going fishing together.

"There was a great appreciation of the difference between business and family. You could have a strong opinion one way or another and not agree with each other. It was important that they held each other to account."

Daniel Mackay believes Mackays is a unique family operation, that presents both challenges and rewards.

"The uniqueness for us is the fact that there is five of us," Daniel Mackay said.

"While there are many challenges we face as a business, we can take comfort in knowing that we face them together.

"This has been forged over time in taking time to talk to each other, often about the things that sometimes make us feel uncomfortable - in good times and bad, ups and downs.

"The fact that we have remained a family business is an incredible achievement."

Daniel said business success was "doing all the things you are supposed to do at the right time."

"We are continually training people; we want people to progress," Daniel Mackay explained.

"There's only five of us – we couldn't grow that much fruit by ourselves. Our people are very much part of our success. Without them we wouldn't have been able to expand."

Gavin Mackay said innovation has been key to business success.

"As price takers and not price makers, we have to create efficiencies on our side of the business to get the most out of our product," he said. "We need to produce them cheaper than everyone else to be able to survive.

"Grandad always said never grow old with your farm."

There's little doubt that Stanley's original business model laid the foundation for the future.

"They all had equal rights from the word go," Stephen Mackay said. "That set a benchmark that is hard to beat."

Stan and Agnes Mackay with son John at the Tully Show.

NEXT GEN

Like many farming families, the Mackays are tackling succession planning to make sure the fourth generation of the family has an opportunity to carry on the tradition, if they choose.

There are 16 great grandchildren ranging in age from 3 years to 32 years and several have already entered the farming dynasty.

"We treat the business as 'ours' not 'mine'," Cameron Mackay explained.

"We are passing through. We are part of business growth. We had a great opportunity handed to us – it would be great to hand that opportunity over to the next generation."

"Our parents saw we all had different strengths and gave us challenges more suited to our strengths over the years and let us shine through – and it's one of the reasons that we've been able to develop so far," Stephen Mackay added.

2021 NUFFIELD SCHOLARSHIPS OPEN

For Lakeland banana grower Paul Inderbitzin winning a Nuffield Scholarship was life-changing.

The current Australian Banana Growers' Council director used the scholarship, supported by Horticulture Innovation Australia and the Banana Levy, to study fruit quality, biosecurity and waste management in the banana industry.

Scholarships are provided with support of industry bodies, to develop and promote all aspects of Australian agricultural production, distribution and management.

Nuffield Australia awards scholarships to increase practical farming knowledge and management skills and techniques generally. Scholars study farming practices overseas.

Applications for scholarships for study and travel in 2021, valued at $30,000, close 14 June, 2020.

Paul, who manages the family farming operation, Kureen Farming, Lakeland, northwest of Cairns, has nothing but praise for the Nuffield experience – on a farming and personal level.

"It opens your eyes to global agriculture," Paul said.

"We tend to get stuck on our own little farm, in our own industry where we think we know every square inch of everything. Then you get taken away from it."

Paul said the scholarship taught him to change his approach to farming.

"The Nuffield experience taught me you have to "think global and act local"," he explained.

"I learnt perception is reality with social media."

Paul also grew as a person, from having to trust his staff to run the business in his absence to learning how to manage people.

"Aside from seeing a whole new world of agriculture, my personal growth was phenomenal," Paul said.

"I learnt how to manage people – we manage a lot of people in the horticulture game, so that's a very valuable tool."

One of the biggest lessons Nuffield taught Paul was to look at the farm as a business. "Nuffield taught me that we need to keep the consumer first and foremost in what we do and really sell the "why" our farming business operates, why we want to grow really good products and feed people the best quality food we can."

ABGC director and 2013 Nuffield Scholar Paul Inderbitzin

While the Nuffield experience is intensive - scholars spend six weeks overseas studying cutting-edge farming practices around the world - Paul said the benefits were far-reaching.

More information about Nuffield Scholarship is available at www.nuffield.com.au

EFFICIENT FERTILISERS IMPROVE PRODUCTION AND QUALITY AT TOLGA

NICHE Lady Finger banana growers Dino and Carly Rocca are not afraid to take on a challenge, but with more intensive and costly growing systems, any efficiencies that can be achieved along the way are most welcome.

When those efficiencies also result in increased production and improved quality, including less under-peel chill during winter, it's a double bonus.

Dino and Carly operate Spring Creek Produce near Tolga, growing Lady Finger bananas as well as a new mandarin variety on the Rocca family farm, which was previously under potato and peanut production.

"We are smaller and so are working with a strong focus on quality. There was an opportunity to fill a hole in the niche Lady Finger market for premium quality Lady Fingers, so we expanded into that market," Carly said.

"We also planted the new mandarin variety in January last year to diversify into another crop."

Dino said Lady Fingers were harder and more expensive to grow, requiring more inputs, while another challenge was preventing flying foxes from getting into the banana bags and damaging the bunches.

The Lady Fingers are planted in single rows and are irrigated and fertigated via two drip lines. The daily irrigation is supplied by good quality underground water, monitored daily using an EnviroSCAN probe.

Nutrition was previously supplied by soil testing every three months and arranging the blending of straight fertilisers, or blending them on-farm, but the Roccas switched to using the all-in-one fertiliser blend, Banana One-Shot.

Together with their local Lindsay Rural Agronomist, David McDowell, who had a hand in developing Banana One-Shot, this has resulted in significantly increased yield, quality and plant health.

"We were previously soil testing and adjusting the fertiliser after every soil test. We were also doing a lot more ground spreading of granular fertiliser," Dino said.

"Before we used One-Shot, we had one employee spending four hours every day at a tank fertigating the bananas, which was not cost effective.

"Since using the One-Shot fertiliser, we have moved to soil testing once a year and just topping up with small amounts if required."

Carly said with the improved soil nutrient status, as well as pH levels, the requirement for further amendments was now limited and mainly included small amounts of trace element fertilisers.

Available exclusively from Lindsay Rural, Banana One-Shot is based on the high quality Haifa fertiliser, Poly-Feed, and comprises pure plant nutrients and generous quantities of essential micro-elements such as magnesium, boron and zinc. It contains 13 per cent nitrogen, just 0.17% phosphorus, a high 24% potassium, 8.7% sulphur and 2.1% magnesium.

Carly said small applications five days a week, at monthly recommended rates for the Lady Fingers advised by David, had supplied what was needed.

"We need to feed ourselves a bit every day and we like to think the bananas need the same."

Carly orders fertiliser monthly and calculates the kilograms of fertiliser to litres of water. Dino then sets the irrigation and fertigation schedule using a WiSA automated irrigation system that can be accessed on a smart phone. This has helped save another labour unit.

Since using Banana One-Shot, Dino said the bases of trees were huge, they were healthy and production had increased.

"We have been producing around an extra 2500 cartons a year after we changed the fertiliser program," Carly said.

"They are clean and their size has increased – and the colour and shelf life of the fruit is great. Over winter, we also now don't get as much under-peel chill.

"Our view now is if you're onto a good thing, don't change it. If you cut back on fertiliser and water, that's when your quality and returns will suffer."

Banana One-Shot also is being used with the young mandarin trees, together with Haifa's well-balanced nitrogen, phosphorus and potassium fertiliser, Poly-Feed.

The products have been incorporated with the irrigation schedule in small amounts every two weeks.

"The One-Shot and Poly-Feed is a good combination and supplies everything required," Carly said.

When planting bananas previously, the Roccas also trialled the controlled release fertiliser (CRF), Multicote Banana Plant.

Available through Lindsay Rural, the Multicote fertiliser uses Haifa's polymer coating technology, allowing nutrients to be released in a gradual manner according to soil temperature, matching plants' requirements. This is important in ensuring the nutrients being supplied are not lost during periods of high rainfall or over-watering.

Multicote Banana Plant contains 11% nitrogen, 8.3% phosphorus and 8.3% potassium, plus micro-elements.

"The CRF did advance them. We saw significant results in the height of the trees and they looked very healthy," Dino said.

He said the first returns were bigger bunches, the quality of the fruit was excellent and they also recognised longer fruit from the plant blocks, where smaller fruit would normally be expected.

Some of the quality Lady Finger bananas from Spring Creek Produce, near Tolga.

Dino and Carly Rocca overlook the processing of Lady Finger bananas at their Spring Creek Produce property near Tolga.

ONE BAG PER ACRE PER WEEK

Job done!!

BANANA ONE-SHOT

Based on Haifa's world renowned Poly-Feed fertiliser, Banana One-Shot is the complete blend for fertigation and foliar application.

Haifa

Peter Anderson
Qld Sales Agronomist
0459 488 850

Just ask for Banana One-Shot at your local rural merchandise store!

MOKO IN LATIN AMERICA

By Professor Andre Drenth

Bananas are susceptible to three important bacterial wilt diseases that reduce productivity and quality.

These diseases are Moko, blood disease and banana Xanthomonas wilt and they all cause similar symptoms of leaf wilting, vascular discoloration and fruits that remain green on the outside with rotten, discoloured inedible pulp.

Moko disease originates from South and Central America and has also been recorded in the Caribbean Islands, the Philippines and Malaysia; whilst banana blood disease originates from Indonesia and Xanthomonas wilt is present in Africa.

These three bacterial wilt diseases are absent from Australia and are of significant biosecurity concern to the Australian banana industry.

The banana diagnostic team working on Hort Innovation project BA16005 *"Strengthening the banana industry diagnostic capacity"*, under the leadership of Prof André Drenth, travelled to Costa Rica late last year to study the identification and management of Moko.

Travel was made possible through a Crawford Fund student award from the fund's Northern Territory Committee to Jane Ray and a National Plant Biosecurity Diagnostics Network grant for Moko Diagnostic Protocol Development to Dr Lilia Carvalhais. The team was hosted by Dr Luis Gómez Alpizar from the University of Costa Rica.

In Costa Rica the team visited banana plantations, inspected Moko eradication sites, collected samples of symptomatic banana plants, isolated the bacterium causing Moko, examined cultural morphology and extracted DNA of the pathogen.

The National Banana Corporation of Costa Rica (Corbana) also provided DNA from their Moko culture collections. The DNA was brought to Australia under a quarantine permit and used to validate the molecular diagnostics and to act as positive controls for the diagnostics of Moko. Comparing, photographing Moko disease in the field and documenting the difference between strains of Moko and blood disease provides valuable information for diagnosticians and help to speed up accurate diagnosis for the different banana bacterial wilts.

Gaining an understanding of methods used in Costa Rica to manage the disease in commercial banana plantations was enlightening and learnings can be applied to dealing with incursions of bacterial wilts.

Moko disease is highly transmissible via tools, soil, water and insects. To manage transmission in the field, farmers use multiple knives in sheathes that contain a liquid sanitiser to kill bacteria. They have footbath stations throughout the property, limit vehicle use and remove the male bel on the banana to prevent insect transmission.

During our visit to Costa Rica we found that Moko disease is endemic, but highly regulated and is a notifiable disease managed by Corbana. Suspect outbreaks are required by law to be reported and are subsequently managed according to a specific protocol.

Symptomatic plant samples are collected, the causal organism isolated then verified using molecular diagnostics. Once confirmed specific eradication procedures are followed including quarantine of an area around a diseased plant of 6 x 8m, removal of bananas / injection of Glyphosate, covering with plastic for 20 days and fumigation and fallow for another 30 days, prior to replanting. Due to the tight quarantine around Moko disease in Costa Rica there were not many active cases of Moko disease in commercial banana plantations at the time of our visit. However, it is important to realise that this has not always been the case and low incidence is only achieved through ongoing strict adherence to hygiene and tool sanitisation protocols and early detection and intervention through local eradication.

During our visit we also had discussions with Dole and Fyffes and visited Earth University which have their own banana plantation. We gave several seminars concerning emerging banana diseases in Southeast Asia, notably banana blood disease and Fusarium wilt TR4 as part of establishing collaborations and information exchange.

The first-hand experience with Moko disease symptoms in the field, disease management, improved isolate collection and knowledge of cultural morphology has improved our knowledge of this disease.

The molecular diagnostics carried out upon our return to Australia as part of this study has highlighted some deficiencies in currently reported diagnostic protocols. With this information, we are now developing more robust diagnostics to improve incursion preparedness. Accurate and robust diagnostics will speed definitive identification while insight into management of the disease gleaned from overseas experience will significantly improve management and eradication options for bacterial wilt diseases in banana such as Moko and blood disease in Southeast Asia and Australia.

A footbath in Costa Rica

Moko symptoms in the pseudostem of Cavendish

Moko symptoms in cavendish bananas

Looking for Moko symptoms at Corbana

Eradicating Moko in a Cavendish plantation

COLOMBIA LEARNS FROM QLD PANAMA TR4 EXPERIENCE

By Richard Dinnen, Biosecurity Queensland

When Panama disease tropical race four (Panama TR4) was first detected in Queensland in 2015, industry and government asked the international community for guidance. Now, overseas growers are turning to Queensland for help.

The success of Queensland's Panama TR4 Program has drawn international attention, with overseas biosecurity agencies keen to know how growers, industry and government have combined to contain the disease to just four farms in five years

Colombia declared a national emergency when Panama TR4 was detected there last year.

The Colombian government invited Queensland's Panama TR4 Program Leader, Rhiannon Evans to visit and share experience and expertise.

Her visit followed a fact-finding trip by Colombian officials to Far North Queensland last August.

"There were many similarities with the Queensland experience," Ms Evans said.

"I got plenty of questions wherever I went, and they were very much like the ones Queensland was asking the international banana community in 2015.

"There were levels of concern, fear, and a real thirst for knowledge."

Ms Evans met government officials, industry representatives and banana growers in Bogota, Medellin, and Santa Marta.

She visited banana farms, assessing on-site biosecurity measures, and went to the site of a Panama TR4 infestation to talk about containment strategies with local biosecurity officers.

Colombia is one of the world's biggest banana exporters, shipping 800,000 tonnes in 2018 – nearly twice Australia's production total.

Ms Evans said Colombia grows top quality fruit for export to Europe, but production methods are very different to Queensland.

"In Queensland, there's a lot more mechanical processes and machinery in harvesting and processing.

"In Colombia, they don't necessarily plant in rows, they plant in triangle-shaped clusters, which allows best use of fertiliser.

L to R Luis Miguel Mateus, Political and Economic Officer, Australian Embassy Colombia; Jose Francisco Zuniga Cotes, Executive President, ASBAMA; Rhiannon Evans, Program Leader (Panama TR4), Jaime Cárdenas López, Plant Protection Director, Agriculture Institute Colombia; Marco Tulio Calvo Sanchez, Assistant President, Augura

"But it also enables root-to-root contact, which is very risky for Panama TR4," Ms Evans said.

The Colombian banana industry is a major source of income, employment, and food.

Latin America has long been on the front line of efforts to fight this fungal banana disease, found in the region about 70 years ago.

Ms Evans said Colombia has responded promptly to the discovery of Panama TR4.

"It was clear when I arrived that a lot of actions had been taken in response to the detection of the disease.

"There have been some very clear responses to implementing biosecurity practices, controlling movement of people, vehicles and machinery.

"Colombia has a very strong banana industry, with several industry representative groups. Those groups have their own researchers and scientists, and some funding to respond to Panama TR4," she said.

Ms Evans feels there is much to learn from Queensland's experience of the disease.

"We have been very fortunate to have recognised the disease so early, and that's really evidenced by its limited spread after five years.

"We had very strong regulation. We had a very cohesive industry, and the scientific support to do the research for us.

"We were very fortunate here in Queensland, with these three elements able to influence our success."

Ms Evans has been asked to do online presentations about Queensland's Panama experience for other Latin American nations in the coming weeks.

Ms Evans said international relationships will be crucial in long-term global efforts to fight Panama TR4.

"It was good to be able to confirm what Queensland has done was the right thing to do.

"The banana industry is so big in Latin America, and they're determined to find answers to Panama TR4.

"You never stop learning with this disease, and there are still so many unanswered questions. We've got to work together and share what we learn," Ms Evans said.

Ms Evans travelled to Colombia as a guest of the Colombian Government.

Instituto Colombiano Agropecuario (ICA) Director of Plant Health, Mr Jorge Hernan Palacino near one of the new destruction sites on an infested farm in Colombia. Authorities are using the same methods applied in Queensland.

KEEPING PEOPLE PANAMA TR4 AWARE

By Sarah Flenley, Biosecurity Queensland's Panama TR4 Program

How will BQ's engagement team keep Panama TR4 front and centre in people's minds over the coming months?

Protecting the banana industry by keeping Panama disease tropical race 4 (Panama TR4) front and centre in people's minds is the focus of Panama TR4 Program's engagement team.

Since 2015, the team has delivered face-to-face Panama TR4 education sessions to hundreds of stakeholders in numerous locations including banana paddocks, police stations, tissue culture nurseries, farm sheds and community halls.

These sessions keep people informed on this soil-borne disease and its potential devastating impacts if we all don't work together to limit its spread.

Due to COVID-19 restrictions, the team took the education session and turned it into a short video on Biosecurity Queensland's YouTube channel. Since May 2020, the video has been watched over 200 times, proving it's a popular way to keep people informed.

The team is working on more online resources for organisations to promote to their staff.

Whilst the best protection against Panama TR4 is at a growers' farm gate, protecting the banana industry from limiting disease spread is everyone's responsibility.

Over the coming months, the engagement team will work with the community and local organisations to keep them informed on Panama TR4 and build their capacity to protect the banana industry by:

- engaging with stakeholders to explore how their business operations can contribute to the control and containment of Panama TR4.
- provide support and resources that promote biosecurity best-practice such as training videos, posters, and on-site visits.
- delivering community education campaigns via social media, industry publications, attendance at events, and digital platforms.
- working with banana growers and job agencies to ensure farm workers are aware of the disease and the importance of following on-farm rules.
- keeping stakeholders informed on the latest Panama TR4 news through industry and government communication channels.

In addition to this, the engagement team is available with Agri-Science Queensland's banana production extension team to work with growers on their on-farm biosecurity measures.

BQ Panama Ed: Panama TR4 Program engagement officer, Rebeca Breaden, delivering a Panama Ed session to SES volunteers in Innisfail before the COVID-19 health pandemic.

Growers can contact the Program's engagement officer Rebecca Breaden on 07 4091 8140 or industry extension officers
Shanara Vievers on 07 4220 4149, Ingrid Jenkins on 07 4220 4108 or Stewart Lindsay on 07 4220 4120.

To keep up to date with the progress of the engagement team please sign up to the quarterly Panama TR4 Program update via biosecurity.qld.gov.au (news & media).

INSPECTORS AT COALFACE IN FIGHT AGAINST BBTV

Banana Bunchy Top is the most devastating virus disease worldwide for bananas.

The ABGC's National Bunchy Top Project is working to contain the spread and minimise the number of infected plants in the containment zone which covers the Queensland Southern Biosecurity Zone (Cooroy to the NSW border) and NSW Banana Bunchy Top Virus Control Zone (Tweed, Lismore, Ballina and Byron Bay Local Government Areas from the Queensland border to Broadwater)

Bunchy Top is spread by aphids and does not contaminate the soil. There is no treatment that will cure an infected plant once it has Bunchy Top. It must be destroyed.

ABGC employs project manager David Peasley who manages a team of six casual bunchy top inspectors – three in northern NSW and one in southern Queensland and two recently appointed trainees.

"The key to controlling Bunchy Top is being able to detect the earliest stage of infection in the last one or two youngest leaves," Mr Peasley said. "Unless you can do that, the aphids that spread the virus, can transfer the virus to other plants.

"Our specially trained inspectors are skilled in finding and destroying infected plants as soon as possible.

"To help growers find the more obvious symptoms we have just produced a Bunchy Top Growers Guide for the Packing Shed Wall with photos and descriptions of what to look for.

"We are also producing a guide for backyard growers on how to 'Spot, Report, Verify and Destroy' infected plants safely and effectively.

"Growers are also being encouraged to meet with the inspectors when they visit and get to recognise the symptoms, particularly the distinctive dot-dash dark lines along the leaf veins.

"The inspectors carry pocket sized magnifiers which are free to growers to help them see these symptoms.

"We encourage growers to take a more active role in helping us control Bunchy Top and appreciate the increasing effort some growers are taking to recognise the more obvious symptoms."

Australian Bananas sat down with the team to find out about their experiences on the frontline.

GRANT EAST (NSW)
Inspecting for 24 years

Bunchy Top is hard to spot in the critical early stages.

What strategy did you use to develop the skill of early identification of Bunchy Top?

Experience, time on the job and concentration.

What can growers do to help with Bunchy Top eradication?

Keep plantations free of weeds, rocks and any other rubbish that may be found in banana rows. If a plantation is not clean, it wrecks our concentration as we have to pick through weeds to look for Bunchy Top.

WAYNE SHOOBRIDGE (NSW)
Inspecting for 22 years

What do you enjoy the most about the job? How has the job changed over the years?

I enjoy the interaction with growers and the physical work. There's less plantations now then back when I first started. One of the major things that has changed is the use of a GPS to mark the location of infected trees. You definitely need people on the ground to look for Bunchy Top. There are things a drone, for example, wouldn't find as there is too much leaf over the top of the plant.

What can growers do to help with Bunchy Top eradication?

Keep bananas suckered and stripped. It's important for growers to notify inspectors if they suspect they have Bunchy Top in their plantation and not wait for the inspectors to visit. If they find Bunchy Top, it has to be destroyed as soon as possible.

JOSHUA CHAPMAN (NSW)
Inspecting for 9 years

What do you enjoy the most about the job? How has the job changed over the years?

It is outdoor and keeps me fit. I enjoy providing a service to growers and industry. It is an important job. I still get satisfaction when I find Bunchy Top. We now use PDA units with GPS to accurately record the location of infected plants, the number of infected leaves and the destruction method. All the information is logged into our database immediately. We are always looking at better methods of controlling the spread of aphids.

Top eradication?

Don't chop them down. Don't try to hide them. Let us know.

SAMANTHA STRINGER (QLD)
Inspecting for 10 years

How do you stay fit and how do you handle the humid summer conditions?

My 2-year-old keeps me fit and I like the heat and humidity.

What do you enjoy the most about the job? How has the job changed over the years?

Being outdoors and working independently. Less backyard inspections, less regulatory interaction, less regulations and less office work.

Do you have any tips for growers to help them spot Bunchy Top?

Dedicate some time, say half a day per month, to look for Bunchy Top. Don't do other jobs at the same time. This will help focus your eyes on the symptoms.

What can growers do to help with Bunchy Top eradication?

Report what they see in their own plantation and in other backyards in their travels. Look for Bunchy Top themselves. Take an active role in detection and destruction. Assist inspectors with access on and off the property to ensure Panama disease is not spread. Take some responsibility and interest. It's your industry.

New Trainees ANN PHILLIPS AND LACHLAN HOHNBERG

"We have had an excellent introduction to detecting Bunchy Top in our first few days on the job. Grant, Wayne and Josh were helpful in showing us the early symptoms and we both were able to find our first infected plants. It is hard to see in the early stage. "

Hort Innovation | BANANA FUND

The inspectors are employed on Hort Innovation project BA18000 Banana Bunchy Top Virus (Phase 4) National surveillance and education

BIOSECURITY CODE OF PRACTICE TO PROTECT BANANA INDUSTRY

The Australian Banana industry will soon have a new Biosecurity Code of Practice to help protect it from devastating pests and diseases.

The ***Biosecurity Code of Practice for Planting Material*** clarifies industry's expectations of growers in high risk biosecurity areas when they are sourcing and planting banana material.

Outlined within the code are the minimum reasonable and practical steps to be considered to mitigate biosecurity risks associated with planting material.

An extensive consultation period on the draft Code will finish this month, with grower feedback incorporated into the final version for publication by the end of August 2020.

The Australian Banana Growers' Council (ABGC) and Biosecurity Solutions Australia jointly developed the Code in consultation with a banana industry reference and stakeholder group.

The Code is directed at banana growers and their employees in a biosecurity or a control zone known to be infected with serious banana pests.

These zones occur across Australia, however, in Queensland and New South Wales risk is addressed through a combination of strict regulation and a requirement for a grower to meet their general biosecurity responsibilities established by law.

The Code, however, is equally applicable for areas outside these zones.

Serious banana pests and diseases have had a major impact on the national banana industry in recent years.

ABGC Research and Development Manager Dr Rosie Godwin said the movement of new and potentially infected planting material, and any soil that maybe present on this material, poses a considerable risk of spreading pests and diseases within and between properties in a production area.

The biosecurity risk to individual growers and the broader industry is significant.

"Every grower already has a choice to protect their own farm by implementing on-farm biosecurity best management practices," Dr Godwin said.

"Despite a grower's best efforts, once an infestation establishes on neighbouring properties there is only so much a grower can do to stop it spreading to their farm.

"Simply put, this Code should be viewed in the context of what are the minimum steps a grower would expect their neighbour to take to prevent pest establishment, then natural spread onto their farm, when they bring in or move planting material on the farm.

"A number of requirements are already established under law and these requirements must always be followed despite what the Code says.

"However, where not already specified, the Code will provide a single and clear reference for what the industry believes are reasonable and practical steps in supporting a grower to meet their general biosecurity responsibilities - the General Biosecurity Obligation (GBO) in Queensland and, the General Biosecurity Duty (GBD) in NSW.

"Publishing this Code gives our industry control in determining its own biosecurity future. That is, the industry supporting government in deciding if growers are meeting their GBO or GBD in the way they use planting material.

"Importantly, with this Code of Practice each grower can also determine a better way than what is provided in the Code, as long as their preferred method is equivalent or better than the ways described in the Code."

Dr Godwin said biosecurity was a serious matter for all growers, with high health planting material the foundation of healthy plantations.

As confirmed in the Code, all growers have an obligation to be aware of pests, diseases and weeds, for example, Panama disease TR4, Race 1 and Bunchy top virus, and take action to prevent their introduction and spread.

Biosecurity Solutions Director Grant Telford said the Code aimed to help growers gain a better understanding of on-farm biosecurity and how a systems approach works when tackling biosecurity risks in relation to production and sourcing of banana planting material.

"Sometimes the preferred option isn't always reasonable and practical," Mr Telford said.

"Even simple steps such as monitoring new plantings, keeping and maintaining records, and training staff can make a huge difference in quickly responding to pest detections and limiting the damage they can cause."

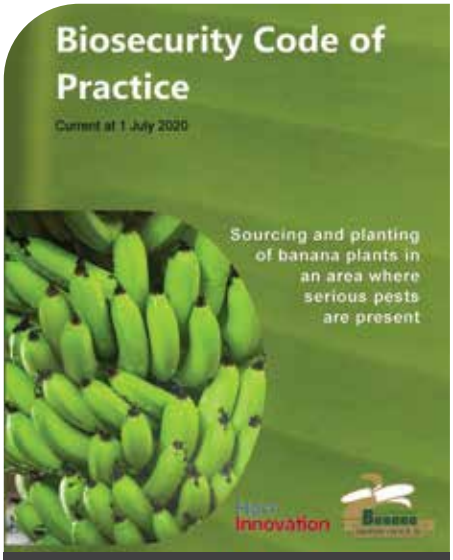
Dr Godwin said the Code represented a whole-of-industry approach to minimise biosecurity risks and protect the Australian banana industry.

"The ABGC sees this Code as an industry first in utilising provisions under current legislation and a tremendous step for the banana industry in biosecurity management," Dr Godwin said.

"This is not about imposing additional regulation but setting a flexible baseline and protecting growers from biosecurity risks created outside of their sphere of control.

"Once finalised, ABGC will present the Code to relevant state governments for their endorsement and support."

The Code has been developed through Hort Innovation project BA18000 Banana Bunchy Top Virus (Phase 4) National surveillance and education.



Australia's banana industry will soon have a new code of practice to protect it from biosecurity threats.

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

WORKPLACE HEALTH MANAGEMENT PLANS FOR EMPLOYERS

While most states are in or are heading towards recovery mode, COVID-19 could be with us for some time. It is important that businesses have a plan to keep their workforce and themselves safe and protected.

Businesses need to develop, implement and monitor safe work practices via a **Health Management Plan** – and this is especially true if you rely on backpackers or itinerant workers.

Check your state provisions to see if this is a mandatory requirement.

A workplace health management plan should:

- **Describe the health screening steps you will implement for employees.**
  - > You are required to undertake pre-employment screening and daily checks of your employees to determine the presence/absence of COVID-19 symptoms.
- **Describe the steps that you will implement to:**
  - > Manage and prevent the transmission of COVID-19 among your employees and the community.
  - > Maintain health standards in the workplace.
  - > Respond appropriately should an employee become unwell.

Queensland

A workplace health management plan is **mandatory** in Queensland for all agribusinesses or agriculture labour hire companies that employ seasonal workers (including non-permanent residents, temporary visa holders and backpackers).

A template for this plan can be found at **www.health.qld.gov.au**

NSW

Information can be retrieved from **www.nsw.gov.au** and the **Safework NSW** website.

Western Australia

COVID Safety Guidelines for Phase 4 have been updated. Businesses that were required to close and are reopening for the first time in Phase 4 must complete a COVID Safety Plan.

A template for this plan can be found at **www.wa.gov.au**

Businesses in other states should check their respective Health Department websites for direction.

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

UNCOVERING FRUIT QUALITY ISSUES IN NORTHERN NSW

The outcome of a NSW Department of Primary Industries (DPI) study into why subtropical bananas may be rejected at retail outlets has led to the development of a new banana packing poster.

The *Subtropical Packed Product Analysis* was carried out in Coffs Harbour, northern NSW, and looked at fruit ripening to see what issues were causing fruit to be rejected at retail outlets.

Earlier, a survey of NSW banana growers found very few investigated the causes of packed or rejected fruit so they could implement measures to reduce or eliminate quality issues.

NSW DPI Industry Development Officer Tom Flanagan said fruit was assessed at Golden Dawn, a major banana ripening and wholesale company in the Coffs Harbour region.

"Assessments were made on fruit supplied by 12 banana growers, consisting of 71 cartons that contained a total of 709 clusters," Mr Flanagan said.

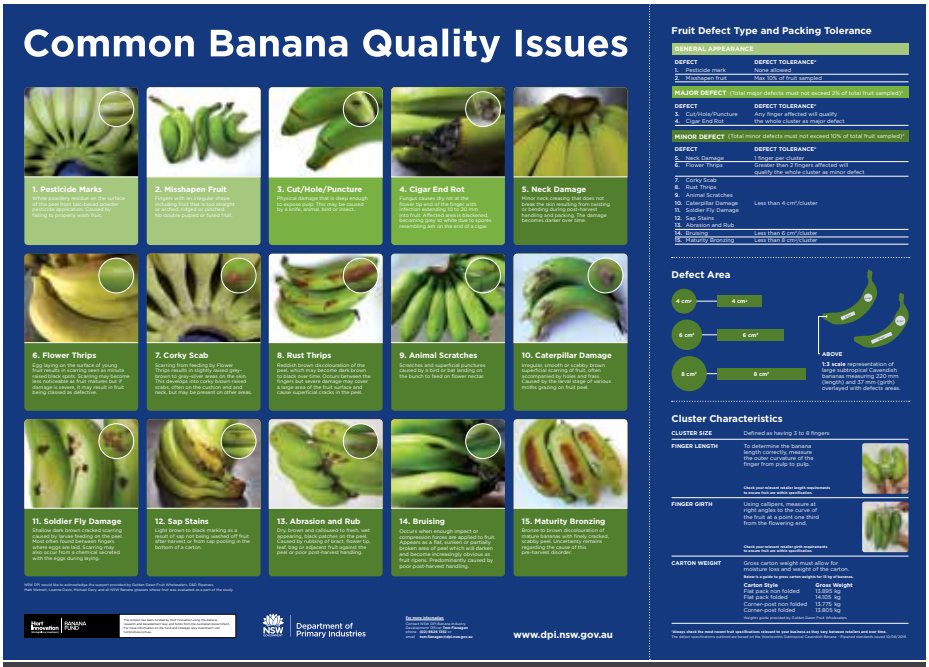
"Fruit was checked against the most recent specifications released by a major retailer.

"The specifications relate to 'total minor defects' of a consignment (%) and 'total major defect rates. If defects exceed the specified rates, retailers can pay suppliers less for their fruit or reject the consignment entirely."

The study found 38 per cent of all clusters inspected were deemed to have either a major or minor defect, more than three times above specifications.

Minor defects included abrasion, thrips damage, bruising, rub and dry scars.

Major defects included a cut, hole or puncture, pesticide residue and immature or thin fruit.



Learnings from the study have resulted in a new poster for packing sheds to help growers identify common quality issues.

"The findings show that too much fruit with major or minor defects is being packed," Mr Flanagan said.

"This is increasing the risk of consignments being rejected or their value reduced."

As a result of the study, a new banana packing poster has been developed, outlining common banana quality issues.

Mr Flanagan said there were simple, cost-effective changes that could be made in the paddock, packing shed and supply chain to improve the quality of fruit and increase profitability for growers.

He said a cut, hole or puncture through to the pulp of the fruit was the most common major defect found in the study, followed by white residue from talc-based pesticides.

"It is possible to reduce the frequency of these issues with appropriate post-harvest handling and packing strategies," Mr Flanagan said.

"For example, washing fruit thoroughly prior to packing will remove any pesticide residue, whereas increased screening for underdeveloped fruit, or using callipers to check girth, would prevent thin and immature fruit from being packed.

"When applied to the data from this study, employing these two simple strategies could reduce the occurrence of major defects by 45 %."

Mr Flanagan said post-harvest handling was an area where small changes to equipment, techniques and practices can have a large impact on fruit quality.

"Changes to post-harvest handling on your farm should be investigated to determine whether small, cost-effective changes can be easily implemented to help decrease defects, increasing quality and ultimately profitability," Mr Flanagan said.

Growers interested in getting a copy of the packing poster can contact Tom Flanagan on 02 6626 1352 or tom.flanagan@dpi.nsw.gov.au

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

CONSTRUCTED WETLAND TRIALLED AS NATURAL WATER TREATMENT SYSTEM

Water-logged land on a Tully banana farm has been transformed into a water quality treatment wetland which is starting to show promising results.

Innisfail banana grower Patrick Leahy has developed a water quality treatment wetland on his farm in partnership with the Wet Tropics Major Integrated Project.

By Skye Orsmond, Terrain

The constructed wetland is part of the Wet Tropics Major Integrated Project, which is trialling a range of treatment systems and methods to monitor and improve water quality in the Tully and Johnstone cane and banana growing areas.

Wetlands are known to improve water quality by removing nitrogen, mainly through the process of denitrification which involves bacteria in the soil converting nitrate in the water to nitrogen gas.

Tully banana grower Patrick Leahy saw potential for a constructed wetland on his 121-hectare farm.

"It was an unusable piece of land in a low-lying area of the farm. I knew a wetland would work well in that location but needed the support to make it happen," Mr Leahy said.

With financial backing from the Wet Tropics Major Integrated Project, the constructed wetland has been made a reality for Mr Leahy, who has taken a proactive approach to improving water quality for over 15 years.

"I've got several sediment traps and grassed drains already across my properties. I'm happy to see that results to-date show that the wetland is doing its job," Mr Leahy said.

The project partnered with Griffith University researcher Dr Fernanda Adame and her team from the Australian Rivers Institute to investigate and set a baseline for the performance of these treatment systems.

"The early indications look positive. The systems are starting to get the right conditions for the bacteria to remove nitrate from the water, and we are starting to see good levels of denitrification in the soil," Dr Adame said.

"We assessed soil and water characteristics and potential denitrification rates at the end of last year's dry season.

"Wetland species, bulkuru and grey rush, were planted at the site and a native, triangular sedge, is naturally vegetating the area.

"As vegetation establishes, the new leaves and roots of the plants will provide 'food' to these bacteria, which will result in improved efficiency of this wetland with time - removing nutrients from the water before it leaves the property," Dr Adame said.

Like natural wetlands, constructed wetlands can also trap sediments, pesticides, metals and pathogens in water.

Wet Tropics Major Integrated Project Catchment Repair Coordinator, Suzette Argent, is responsible for managing and monitoring catchment repair systems and works closely with landholders where trials are taking place.

"Building relationships with growers is imperative. Getting landholders on board and eager to trial new things is the cornerstone of the project," she said.

"We enjoy taking growers on the journey and sharing the results with them. They can see the difference they're making," Ms Argent said.

Other treatment systems including bioreactors, high efficiency sediment basins and in-drain wetlands have also been installed and are being monitored on farms throughout the Tully and Johnstone areas as part of the project.

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

SMALLER-SCALE WATER QUALITY SOLUTIONS AVAILABLE

Funding is available for growers interested in implementing small scale water quality run-off solutions including in-drain wetlands. An in-drain wetland is essentially a vegetated drain with benched sides.

These types of water treatment systems are more cost effective than large-scale constructed wetlands and are easy to maintain. Vegetation is a crucial component of water treatment systems, as it aids the denitrification process, helps prevent erosion and traps sediment. WTMIP is currently trialling an in-drain wetland on Gavin Devaney's banana property in Moresby, near Innisfail.

Wet Tropics Major Integrated Project

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

Queensland Government

BUILDING A BRIGHT FUTURE IN BANANAS

By Lea Coghlan

A run-down, rusted Nissan Pulsar sits in the yard of Innisfail banana grower Ricky (Randeep) Sahota.

It's not mechanically sound, nor is it used anymore on the farm these days, but its existence is a great reminder of how far the Indian-born grower has come since arriving in Far North Queensland 12 years ago.

"When we bought the farm, we spent all our money on buying the farm," Mr Sahota explained.

"We didn't have any money to buy a bike or a farm ute, so the car was the only transport we had.

"I would drop off my wife at work in town, collect stuff for the farm and then come home and tend to the bananas.

"I kept the rows pretty clean so my car could go through."

With a tight budget, Mr Sandeep and wife Parveen focussed on the farming necessities when they purchased the Mamu Road property at Garradunga.

Their minimalist approach – they invested in machinery that was critical to growing bananas like a bagging machinery, albeit a second-hand one – has paid off, and is a real credit to the hard work the family has put in.

Today, there is a designated family car in the garage and an ATV bike while a farm ute will arrive later this year.

Mr Sahota arrived in Innisfail in 2008 on a student visa, encouraged by stories from farming friends who had made a life for themselves growing bananas in the region.

His family grew cotton, canola and wheat in northern India in relatively dry conditions.

"It was pouring rain for months on end when I arrived in Innisfail," Mr Sahota said.

He soon acclimatised and continued working in the banana industry for seven years before the Mamu Road property came up for sale.

He purchased the property with cousin Amarpal (who has since returned to India) in 2015.

Today, Mr Sahota grows 18 hectares of bananas and leases some land to a local cane farmer.

The early days were tough – both Ricky and Parveen, and Amarpal and his wife - worked off-farm during the week, and packed bananas on the weekend.

Garradunga banana grower Ricky Sahota and his family wife Parveen, daughter Ojal, 5, and son Ansh, 18 months.

There was second-hand machinery and little technology.

"When we purchased the farm, I didn't have automated irrigation, so I had to change the valves every three to four hours at night," Mr Sahota recalled.

"At the same time, our daughter was born so she was my alarm clock at night for me to head out into the planation and change the valves."

In 2019, Mr Sahota secured a Reef Trust grant to install an automated fertigation system, with a second grant earlier this year allowing him to upgrade.

Mr Sahota's bananas are marketed by Innisfail-based company, Tropicana Banana, and generally sold through the Sydney wholesale markets.

Mr Sahota admits he never came to Australia with a plan to buy a banana farm.

"Having worked in the industry, it was what I knew how to do," he said.

"I like growing bananas.

"It's a 12-month crop and if the prices are right and you have good fruit, you can make money. It's a competitive market and this keeps you on your toes."

While he spent nearly a decade working on banana farms, growing Australia's number one selling supermarket fruit was a different story.

"I knew how to work in bananas, how to cut a bunch, de-sucker and de-leaf but I didn't know how to grow them, and I knew nothing about fertiliser and chemicals," Mr Sahota explained.

"It was big learning curve.

"Farming bananas in Australia is intensive – there's so many jobs you need to do, at certain times. I'm still learning how to farm and grow bananas but every year is getting better."

Ricky Sahota beside the Nissan Pulsar which doubled as a family car and farm vehicle in the family's early days of growing bananas.

THE WATER SHED EXPANDS SERVICES

The Water Shed has expanded its capabilities to help farmers even further.

From repairs and maintenance to on site installations, The Water Shed can tackle any job.

Our capabilities have grown to now include our own service technicians.

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Contact: info@thewatershed.com.au,
ph: 4061 6177
www.thewatershed.com.au

The Water Shed offers on-site service, installation and repairs.

The Water Shed service technicians are only a phone call away.

UNDER THE MICROSCOPE

Under the Microscope profiles the industry's emerging and exotic diseases. This month we profile the Banana Freckle Disease.

What is Banana Freckle Disease?

Freckle is caused by a fungus called *Phyllosticta cavendishii* which affects a wide range of bananas including Cavendish. Freckle affects both the leaves and the fruit making it unmarketable.

What are the symptoms?

Leaf

- Small reddish brown to black spots usually on the upper leave surface
- The spots protrude from the leaf surface giving it a sandpaper like feeling to the touch
- Spots sometimes cluster in lines and appear as streaks running across the leaf
- Large numbers of spots lead to death of the leaves
- Yellowing and early death of leaves due to freckle infections beginning at the leaf margins

Fruit

- Small reddish brown flecks surrounded by a halo of dark green water-soaked tissue on green fruit
- Dense clustering of the spots can lead to large black spots on the fruit and the peduncle
- Severity of disease increases as the fruit matures
- Freckle can cause severe blemishes on the fruit affecting market acceptability, but the eating quality of the fruit is not affected

How does it spread?

Spores of the fungus are spread by wind and rain. Long distance dispersal occurs though the movement of small plants, infected leaves and fruit.

Where is it found?

Phyllosticta cavendishii is found in South East Asia and the Pacific. It was discovered in the Northern Territory in 2013 but successfully eradicated thanks to an intensive government and the Australian banana industry campaign.

What are we doing to protect the industry?

- Strict regulation around fruit and plant material imports
- Regular surveillance for leaf diseases in North Queensland and Northern Territory
- Molecular diagnostics to distinguish between the different fungi causing freckle
- Increase awareness among industry stakeholders

What can I do to protect my farm?

- Use only disease-free planting material
- Check your farm frequently for unusual leaf spot symptoms and/or symptoms on the fruit

Freckle disease on Cavendish

Photos and text provided by Professor André Drenth, University of Queensland, as part of Hort Innovation Project BA16005 Strengthening the banana industry diagnostic capacity.

BANKING ON THE BANANA

By Lea Coghlan

When Mike McGrath tasted a frozen chocolate banana at a school fete in Mission Beach several years ago, it was a holy grail moment.

"It was amazing," Mr McGrath recalled.

"It was an average home-made version, but I remember thinking ... I have found a solution to my problem and people around the world are going to want this."

Mr McGrath's "problem" was his sweet tooth, in particular, ice-cream and chocolate, both which were contributing to rising levels of blood sugar and cholesterol.

That first taste convinced Mr McGrath he had stumbled upon a winner, despite being weary of business after his multi-million-dollar internet start-up failed a few years prior.

But having carved out a career as a successful commercially sponsored skydiver and a globe-trotting commercial pilot, there was no questioning Mr McGrath's passion.

Matched with an undeniable belief in the product, a "Silicon Valley" business plan and a lifetime of experience in branding and sponsorship, Feel Good Bananas was born.

"I knew nothing about food, I knew nothing about bananas," Mr McGrath said.

"Cooking for me is beans on toast.

"Despite the hoops, I discovered an amazing product, I know I can create a brand and I can find and connect with the people who will want what I am selling."

Feel Good Bananas is an organic banana flash frozen to create a natural ice-cream like texture and smothered in organic chocolate to resemble a single serve frozen stick-like dessert. It is packaged in 100 per cent biodegradable packaging.

"It's like a banana in terms of nutrition," Mr McGrath said.

"It's like a banana in terms of shape but in terms of the experience, it's more akin to an ice-cream than a banana and that's because of the blast freezing process."

Two years on, Feel Good Banana production is stocked in 50 locations, north to Port Douglas, south to Magnetic Island and west to Mareeba.

Earlier this year, Mr McGrath moved into a new manufacturing hub at Mission Beach, with support from the Cassowary Coast Regional Council.

He currently sources his bananas from three organic banana growers and is looking for more supply.

Mike McGrath, the brains behind Mission Beach-based Feel Good Bananas, at a Cairns stockist.

While the coronavirus pandemic crisis cost Feel Good Banana's founder Mike McGrath his day job as a sky diving instructor and slashed 80 per cent of the business's turnover, it may have delivered a silver lining.

"We've been fortunate to pick up extra retail clients during the pandemic including the Friendly Grocer Chain throughout the Far North," Mr McGrath said.

Mr McGrath now hopes to accelerate expansion plans in southeast Queensland, originally earmarked for 2021, to later this year.

Feel Good Bananas shut down production in early March and returned to weekly production in May.

END OF FINANCIAL YEAR MARKETING UPDATE

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

By Tate Connolly,
Hort Innovation Marketing Manager

We've closed out year two of three for our 'Peel Good, Feel Good' marketing program for Australian Bananas and there's a lot to feel good about. Bananas are still Australia's number one snack with 91.5% of Australian families buying Bananas.

But Australian Bananas never take that position for granted. For over 20 years we've been building a brand making bananas famous by making bodies sing. Over the years, we've had a lot of success with the advertising and marketing campaigns. And, our advertising awareness remains strong. In fact, prompted recall is now 45% - up from 40% at the start of the campaign. That means almost half of Aussies now recognise our advertising.

The media landscape continues to change and as digital media evolves, we've stayed one step ahead. Also adapting the marketing plan in line with current events to deliver the best return for our investment.

Advertising played a key role in driving mass awareness of campaign communications, ensuring key messages for Australian Bananas are established at scale. The latest advertising burst started in January and finished up on 30 June. We appeared in a number of key prime time programming across regional markets as well as Subscription TV and digital channel spots to extend our reach nationally.

This year, activity was heavily supported by radio advertising. The Australian Bananas' make your body sing-a-long radio adverts appeared between 27 January and 10 May 2020 across ARN and Nova networks nationally.

The campaign launched with a bang in Sydney as Australian Bananas took over Parramatta train station with a complete 'Peel Good, Feel Good' station domination from 27 January – 23 February.

With gyms and cinemas closing during the media campaign, we pivoted the program into channels that delivered our required reach and cut through. This meant quickly replanning the campaign from out-of-home channels to channels such as digital and social which saw a surge of consumption.

We continued to hit our demographic by targeting their online viewing habits across the major networks catch up television offerings as well as via contextual sites and app targeting. Australian Bananas have also geographically targeted consumers via mobile advertising 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.

Australian Bananas also remained live in the retail landscape for this campaign, in advertising panels adjacent to major and independent stores, driving top of mind awareness through until the end of June.

Campaign Performance to KPIs

The key growth opportunity identified by market research in 2018, at the start of this strategy, was to grow banana consumption with Young Transitionals (Adults under 35 years old) in the mid-morning snack occasion. The strategy is designed to re-establish these habits with this audience who were previously consuming bananas more often. It's a slow burn changing consumer habits, but two years into the strategy Australian Bananas are seeing great results. The average number of buying occasions for this audience were up +7.6% vs. last year.

We also monitor retail sales performance for our core audience of Families with children under 12yrs, since retention of this high value audience also form a key objective of our marketing activities. Performance for this group remained relatively flat (-1.2%) on average spend occasions. They continue to be an audience with high penetration (96.9%) and average spend per buying occasion.

The Year Ahead

When it comes to long term strategy, it's important to stay the course to get the best bang for our banana buck.

Our marketing challenge remains the same; How do we continue to demonstrate bananas relevance in the (changing) lives of modern Australian Families (with kids under 12) and Young Transitionals; encouraging habitual banana consumption **more often and for more occasions?**

We'll continue with our 'Peel Good, Feel Good' messaging to Young Transitional and drive activities which inspire young families with new usage occasions in their morning routine. Re-expressing bananas health benefits and extending consumption to new occasions where energy now plays a role.

That said, as has been done in the last few months, it's important to pivot and adjust the relevance of our message to our consumers as the world around them changes. Hence, the following important changes have been made to the plan:

- Paid media investment has been reviewed taking spend out of channels with low footfall such as out of home (billboards, buses, cinema screens)
- The sporting events program has been put on hold and energy has been invested into promoting bananas, recipes and news through press relations activities
- More focus on digital media which allow us to be flexible and responsive in our message and channel choices.

The future is somewhat uncertain for many Australians but bananas will continue to be a simple way for our nation to Peel Good, Feel Good.

CONGRESS IN FNQ IN 2021

Planning is in full swing for the next Australian Banana Industry Congress (ABIC) to be held in Tropical Far North Queensland from May 12-14, 2021.

The ABIC Management Committee is closely monitoring the unfolding impacts of the COVID-19 pandemic, however the committee remains hopeful of being able to host another exciting Congress by 2021.

The two-day plenary program and tradeshow will be hosted at the Cairns Convention Centre, while the nearby Pullman Cairns International Hotel will host the Banana Bar, Welcome Reception and Banana Ball and Awards night.

The Program Committee has already begun formulating an engaging and thought-provoking plenary program, including not-to-be missed presentations covering topics such as;

- Motivation, growing your business and chemistry of success
- Improving efficiencies on farm
- Innovation
- Succession Planning
- Mental Health
- Overcoming disease/biosecurity challenges
- Global banana research advances
- Commercialisation of new varieties
- Robotics and automation

The speaker program will also include a grower innovation panel, where delegates will hear from banana growers using/trialing innovative farming practices.

Kicking off the Congress plenary program with the keynote address will be one of Australia's most notable motivational speakers, Matt Church, whose presentation will explore the chemistry of success, how to create positive change and a healthy balanced life.

Mental wellbeing will also take centre stage, with passionate agriculture advocate Mary O'Brien included in our 2021 program.

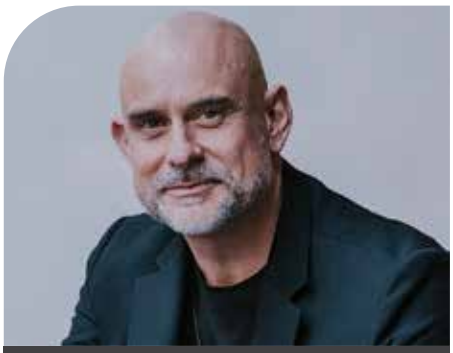
Ms O'Brien, who founded the 'Are you bogged mate?' program in 2018, travels the country breaking the stigma of mental health and depression among rural men, while also connecting them with vital resources and support.

Andrew Bate, co-founder of SwarmFarm Robotics, will bring delegates up-to-date with the company's latest innovative agricultural robot technology, creating new farming techniques and improved efficiencies for growers across the country.

As well as providing an opportunity to learn, share ideas, network and discuss the future of the industry, Congress is a great social occasion and the perfect excuse for growers to take a few days away from their farms.

Keep an eye out for the latest in Congress news in ABGC e-bulletins and up-coming issues of the magazine. You can also keep up-to-date with all things Congress – including registration details and program information – at the Congress website www.bananacongress.org.au which will be updated in coming weeks.

We hope to see you all in the tropics in 2021!



Matt Church

Mary O'Brien

For sponsorship and exhibition opportunities please email danny.perry@mci-group.com or phone Danny Perry on 02 9213 4015

For general information on Congress please call Sonia Campbell on 0428 038 330.

Cairns Convention Centre

GROWERS CELEBRATE INDUSTRY'S NATIONAL DAY

Despite the COVID-19 health pandemic, the Australian banana industry still managed to celebrate its national day – National Banana Day on May 1.

Growers from around Australia contributed videos and photos featuring banana growers which were uploaded to the ABGC Facebook page throughout the day. The response was nothing short of amazing.

Our #nationalbananaday2020 ABGC Facebook posts:

- reached more than 23,000 people
- generated 4308 post clicks
- triggered 1809 reactions, comments and shares

Here is a snippet of those videos.

BANANAS FEATURE IN NATIONAL BAKING COMPETITION

The humble banana took centre stage in a national banana bread competition run earlier this year to celebrate National Banana Day.

The response was overwhelming, with more than 100 entries across Facebook and Instagram. The combined reach of social activity was more than two million consumers. *Here is a snapshot of some of the entries:*




SCARLETT TRIUMPHS WITH STICKY DATE BANANA BREAD

By Lea Coghlan

When Scarlett Cheesman pulled together her award-winning National Banana Day Banana Bread Bake-off entry it was the first time she had created the masterpiece.

An accomplished banana bread baker, Scarlett's entry was among more than 100 entered via social media in the run up to the industry's national day.

"Our family cooks a lot, especially when we were spending more time at home (due to the coronavirus pandemic)," Scarlett said.

"My sister and I like to call ourselves procrastinator bakers – because usually when we are cooking we should be doing something else."

Scarlett, a university student from Sydney, said the banana bread recipe was your standard, run-of-the-mill recipe, varied to combine her father's love of sticky date pudding.

"We make a lot of banana bread," Scarlett said.

"As a family we like to randomly put together different ideas for food.

"This is a standard banana bread recipe we use as a family.

"My Dad really likes sticky date pudding so we decided to add some dates, pecans and make sticky toffee sauce to go on top.

"I caramelised some bananas and pecans to make them more scrunchy and added them to the top."

Even after creating the masterpiece, sticky date banana bread, it took prompting from partner Andre to enter the competition.

"It was his idea to enter the competition but he mostly watched while I did the cooking," Scarlett laughed.

"So when we got the message that we had won I thought it was a joke...because I had looked through the other entries and there were professional photos of banana bread and I thought surely someone like that was going to win."

In choosing Scarlett's entry as the winner, Australian Bananas ambassador and dietician Susie Burrell said: "Not only does this banana bread creation look unbelievably golden and delicious, the addition of sticky dates, toppings and extra bananas on top made this the real winner for me."

The competition was run in the lead-up to National Banana Day on 1 May. The more than 100 entries on Facebook and Instagram resulted in a combined reach of social activity for of more than two million consumers.

Avid home baker Scarlett Cheesman with her winning banana bread recipe.

Scarlett said her family were big supporters of the banana industry.

"We've always got a fridge full of bananas for banana ice cream but also a fridge full of classic brown bananas ready to go into banana bread."

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