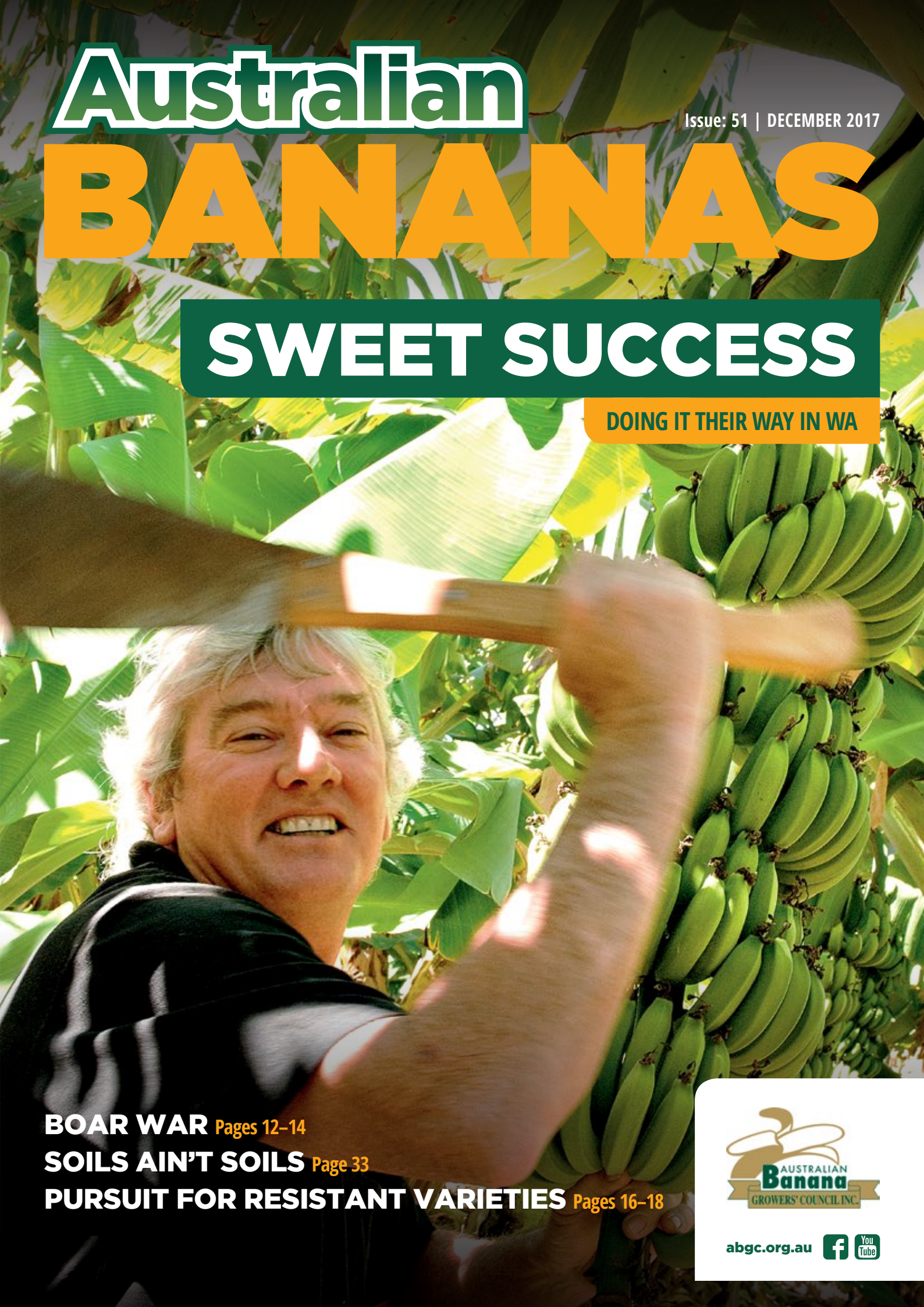
Australian
BANANAS
Issue: 51 | DECEMBER 2017

SWEET SUCCESS

DOING IT THEIR WAY IN WA



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BUSY TIMES FOR INDUSTRY

Stephen Lowe, ABGC Chair

It's been a busy time for growers, particularly those in TR4 hotspots in the Tully Valley who have actively been involved in a co-ordinated feral pig control program over recent months.

Since the initial detection of Panama TR4 in the valley in 2015, we have been particularly aware of the threat feral pigs pose in spreading the disease.

Their numbers have grown substantially in the Wet Tropics in recent years and with the added threat of Panama, we as an industry had no choice but to take urgent action.

The Australian Banana Growers' Council formed a Feral Pig Management Working Group in September to address growing pig populations.

Under the leadership of ABGC director Leon Collins this group has pushed for a comprehensive and co-ordinated feral pig program across the Cassowary Coast.

Leon has also co-ordinated a comprehensive aerial shooting program—taking out almost 630 pigs in the three months to 20 November.

This is an incredible effort and I'd like to commend Leon for his exceptional work in leading this significant program, which has involved multiple parties including banana and cane growers, milling groups and graziers.

I would also thank all of those involved who have personally funded the program. I know many growers who have spent tens of thousands of dollars on aerial shooting alone.

The fact that growers have committed such a large sum of money to this program reflects their understanding of how big a risk feral pigs are to the successful containment of TR4.

This program has also been supported by the ABGC to the tune of $25,000.

You can read more about the feral pig containment efforts on **pages 12–14** of this magazine.

NUFFIELD SUCCESS

I recently had the opportunity to attend the 2017 Nuffield National Conference in Darwin where 2016 Nuffield scholar Matthew Abbott was a keynote speaker.

Matt is an organic banana grower from Mena Creek and recently completed his Nuffield scholarship and spoke of the "life-changing" experiences that the national scholarship program had presented to him.

His speech was both inspiring and informative and we were lucky enough to have Matt present some of his Nuffield experience highlights at the ABGC AGM on November 29.

I would certainly recommend to anyone involved in agriculture to attend conferences like the Nuffield forum. Although they may not be specifically banana oriented, they can offer a wealth of information, with relevance to your industry and your business.

The ABGC is also a big supporter of the Nuffield program itself and would encourage anyone interested in becoming the next scholar to check out the website www.nuffield.com.au.

BANANA WOMENS' NETWORK

A big thank-you to ABGC Extension Officers Sarah Simpson and Dale Bennett for their fantastic efforts in getting the new Banana Womens' Network off the ground.

The initial support for the network has been outstanding and I would encourage other women in our industry that are not members already to come on board and share in the unique networking and business opportunities the group will offer.

MERRY CHRISTMAS

Finally, I'd like to wish all a very Merry Christmas and a prosperous New Year.

ABGC Chair Stephen Lowe joined a group of Next Gen banana growers on a trip to the Top End recently.

A LOOK BACK: 2017 IN REVIEW

Jim Pekin, CEO

ABGC's big issues for the year have been Panama Tropical Race 4 (TR4), research and Reef quality.

TR4

In July, the second farm in Queensland with TR4 was detected. It was a jolt and made people nervous. However, an optimist would say that having 28 months between the first and second detections was a much better result than achieved elsewhere in the world where TR4 has hit.

It again highlighted that each grower must do what they can do on their farm to protect themselves.

ABGC had earlier deployed specialist consultant Shane Dullahide to offer assistance to those growers who wanted to prepare in case they got the disease.

The results of Biosecurity Queensland (BQ) surveillance done to date on the second infested property shows that TR4 is contained within a relatively small area in one part of the property. Also, BQ's testing shows that this incursion was found early.

The farm's owners are to be thanked for addressing the massive challenges head on, so as to protect themselves and the rest of the industry. They have also recently provided ABGC and DAF with advice from their experiences that would help other growers if they get a detection.

ABGC has managed the first infected farm so as to avoid spreading the disease.

We continue to work with members and BQ to help with the TR4 Program. A recent example is a changed TR4 on-farm surveillance strategy that is based on risks including from the second detection.

RESEARCH & DEVELOPMENT

ABGC is appreciative of the dedicated scientists that are delivering results for industry on TR4 and on other areas.

The Banana Strategic Investment Advisory Panel continues to ensure Hort Innovation has effective R&D projects on a range of issues.

The new Banana Plant Protection Program, led by DAF has started, and both a Project Reference Committee and a Varieties Committee had their first meetings in October. All five themes are underway.

The Banana Bunchy Top Virus surveillance work has been overseen by a reference committee who are also providing advice on disease epidemiology. The NSW project is to be extended from January until December 2018.

In February, ABGC organised and run a successful Banana Export Forum. That has led to a detailed Banana Export Strategy being developed by *McKinna et al*, a well-respected consultant in this field. We anticipate a data-driven set of break-through recommendations for interested growers and others.

REEF WATER QUALITY

Over the last 12 months, the ABGC has been an active participant in a number of initiatives aimed at improving the water quality of the Great Barrier Reef. We are part of the $15 million Major Integrated Project, which is one of the significant projects being rolled out in the Johnstone and Tully catchments over the next three years. By working collaboratively with the community and other industries, the banana industry will continue to making a real difference to the water quality in these catchments. Banana growers have rightly earned a reputation for being early adopters of new information and improving their farm practices. This willingness to embrace change will prepare the industry well for the water quality challenges that lie ahead.

CREDITS

ABGC would not exist without the support of members. We appreciate your advice and direction, and we cannot exist without your membership fees.

Members will note that from 1 January 2018, the membership fee will be set at 0.22c/kg (that is, $0.0022/kg), rather than the traditional 3 cents per carton. This was decided by the Board for equity reasons.

I want to recognise the people that put a lot of time and effort into ABGC and never get thanked—the seven ABGC Directors. Their leadership is imperative. I particularly would like to thank our Chair, Stephen Lowe.

Finally, thanks to ABGC staff—for their attitude to do whatever they can for growers. They make it a great place to work.

ABGC BOARD RE-ELECTED

ABGC held its Annual General Meeting at South Johnstone on November 29, where New South Wales Director, Stephen Spear and Queensland Director, Leon Collins successfully stood for re-election. (This is in accordance with Rule 7.6 of ABGC's Rules which require directors to retire by rotation). At the Board's quarterly meeting on November 30, Ben Franklin stood down as ABGC Deputy Chair, with Leon Collins taking over this position. Stephen Lowe was re-appointed as Chair and Stephen Spear as Treasurer. The ABGC Board of Directors (L–R): Jade Buchanan, Treasurer Stephen Spear, Chair Stephen Lowe, Ben Franklin, Paul Inderbitzin and Deputy Chair Leon Collins. Not present, Tom Day.

NEW IMPROVED PLANT PROTECTION PROGRAM TAKES SHAPE

Hort Innovation signed off on a new five-year plant protection program for the banana industry earlier this year.

This improved program sees the Queensland's Department of Agriculture and Fisheries (DAF) and the Queensland Alliance for Agriculture and Food Innovation (QAAFI) take the lead on different areas of the project.

This project, which has over 30 researchers supporting it, aims to provide the Australian banana industry with safe access to disease free, new and improved varieties, strengthened diagnostic capacity and improved integrated pest and disease management strategies.

In the DAF led components, scientists are negotiating access to and evaluating banana varieties to identify desirable traits, in particular addressing the need for banana cultivars for production in TR4-affected locations.

This includes the running of screening and field trials in NSW (against Panama disease Race 1) and in the Northern Territory to identify varieties with improved pest, disease, agronomic and consumer preference traits suited to diversify production, expand sales, improve production efficiency and sustain production in the face of disease.

It is vital that new banana cultivars are safely imported into Australia free from exotic pests and diseases and therefore DAF will provide the facilities and processes to ensure the safe importation of international plant material.

With an estimated $30 million and $43 million spent annually in North Queensland on leaf disease and bunch pest control respectively, there is an emphasis on researching improved pest and disease management strategies. The aim of this research area led by DAF is to provide industry with new pest and disease control options that reduce the reliance on chemicals, alleviate resistance and reduce labour costs, particularly focusing on leaf diseases, bunch pests and nematodes.

The strategic levy investment project BA16001 (Improved plant protection for the banana industry) is part of the Hort Innovation Banana Fund, working in partnership with BA16005 (Strengthening industry diagnostic capacity) which focuses on developing diagnostic assays for early detection of exotic and emerging plant pathogens. This research led by QAAFI is important for management of potential future disease incursions.

A Project Reference Group with members from across the banana industry and its various sectors will help to ensure the project remains focused on the high priority issues. It is joined by the Variety Committee which consists of banana growers, supply chain businesses and researchers and provides guidance on issues associated with variety importation and development. These groups are a key part of the guiding the project activities by providing advice and feedback to the Hort innovation R&D Strategic Industry Advisory Panel (SIAP) and BA16001 project staff.

As there are many important activities and scientists involved, working on the project at a range of sites across the country, the project team is using tech solutions to provide progress updates and foster a cohesive project team to ensure the best possible outcomes for industry. The researchers involved in this project are looking forward to continuing to support the industry in their research areas of expertise.

** The project Improved plant protection for the banana industry (BA16001) has been funded by Hort Innovation, using the Banana research and development levy, and contributions from the Australian Government, with in-kind contributions from the Queensland Department of Agriculture and Fisheries. Hort Innovation is the grower-owned not-for-profit research and development corporation for Australian Horticulture.*

ABGC MEMBERSHIP FEE CHANGING FROM CARTONS TO KILOGRAMS

The Board of the Australian Banana Growers' Council (ABGC) reviewed the ABGC membership fee which has been paid at 3 cents per carton rate since 2004.

From **1 January 2018**, the membership fee will be set at **0.22c/kg** (that is, $0.0022/kg)

In recent years there has been a significant move to the use of 15Kg cartons instead of 13 Kg ones. It is estimated that there are now more than 70% of bananas sold in 15 Kg cartons. Of course, there are still many who use 13 Kg cartons and some who use 12 Kg and 8 Kg ones.

Regardless of carton size, all members have been paying a 3c per carton membership fee.

To ensure that the collection of fees across all lines remains equitable, the Board has decided to move away from the current method of collecting per carton. Instead, membership fee payments will be made on a per kilogram basis.

ABGC will inform banana agents of the new arrangement. A new remittance form will also be provided to those members who pay ABGC directly.

We thank you for your continued support of the ABGC—your united voice for the banana industry.

Please contact ABGC on email jim.pekin@abgc.org.au or telephone 07 3278 4786 with any concerns or queries.

NEW BANANA WOMEN'S NETWORK

Far northern banana farming business women who attended the inaugural meeting of the Banana Women's Network. L–R: Alicia Johnston, Sharon Collins, Susan Campbell (in front) Jenny Crema, Blaise Cini and Zanelle Collins.

A new network aiming to support and promote banana farming business women has been launched by the Australian Banana Growers' Council.

The Banana Women's Network will provide opportunities for members to share ideas and experiences, and is funded by the Queensland Department of Environment and Heritage Protection.

ABGC Extension Officer Dale Bennett said most banana farms are family owned and operated, with women playing a significant role.

"Often, the men have several avenues where they can mix with and talk to other growers through their local banana growers' meetings and field days, whereas the women don't tend to go along to these meetings," Ms Bennett said.

It was a sentiment echoed by Tully banana grower Jenny Crema, of Crema Farming, who said it was a chance to discuss challenges which were often very different to those faced by husbands or partners.

"I certainly would encourage other banana farming women, who are interested in connecting through the network, to become involved," she said.

Ms Bennett said the initiative would promote the important role women play within the banana industry, ensuring its continued profitability and success.

"We think it's important to recognise their significant contribution and provide them with a platform to extend their personal and professional connections, including sharing farming ideas, techniques and new technologies," she added.

The first meeting was held in Innisfail on October 27. The network will meet three times a year and feature guest speakers, training and discussion of issues identified by the group.

For more information, contact Dale Bennett (dale@abgc.org.au) or Sarah Simpson (sarah@abgc.org.au), or call 07 4015 2797. Alternatively, members can join the private Facebook group 'Banana Women's Network'.

ROADSHOWS SET TO RETURN IN 2018

The six-stop National Banana Roadshow Series will again be coming to a location near you in 2018.

The fast paced, day-long events are pencilled in for July/August and will again be held in Innisfail, Tully, Mareeba, Murwillumbah, Coffs Harbour and Carnarvon.

The events are designed to feature the latest research and development in bananas and in previous years have featured topics from panama disease to environmental practices, through to productivity and supply chain management.

The events which ran in 2014 and 2016 were very well attended and received by growers and next year's roadshows are tasked with again raising the bar.

Organisers are looking to include more interactive elements and activities which encourage more networking and discussion amongst growers and researchers. Keep an eye out in future ABGC e-bulletins for more details as planning progresses.

** The 2018 Roadshows will against be funded by Hort Innovation.*

Hort Innovation Strategic levy investment | BANANA FUND

HOW SWEET IT IS: SUCCESS

Growers in Carnarvon that make up the Sweeter Banana Co-operative have created a niche market for their 'desert' bananas with sweet success—using some savvy marketing to prove big isn't always best.

Carnarvon growers Michael Nixon and Chris Collins.

By Amy Spear

They do things a little differently in Carnarvon.

Bananas are grown where the desert meets the sea—a striking landscape that creates unique growing conditions and a distinct, now sought-after product.

The Sweeter Banana Co-operative, formed in 1993, accounts for more than 60 per cent of production from the region in Western Australia.

In the years since those farmers formed an initial marketing alliance, the cooperative has grown into an organization that handles all aspects of business, bar the actual growing.

One of its key roles, even today, is educating the consumer.

"It's a very dry climate," explained business manager Doriana Mangili.

"We have less than 200mm of rainfall a year and sometimes it doesn't rain at all."

GROWING DESERT BANANAS

The crop is 100 per cent irrigated, pumped from aquifers underneath a river that may only flow for a couple of weeks a year.

"Our bananas are subtropical, they're a lot smaller than the Queensland bananas," said Ms Mangili, who's been with the cooperative since 2005.

"We grow them quite close together to create a micro-climate, keeping the humidity in and the sea breezes out."

The tight quarters are necessary, but also result in more skin markings on the fruit—traditionally unacceptable for supermarket sale.

STANDING OUT FROM THE PACK

When Queensland bananas started appearing more on the local market, the perception was that Carnarvon growers had to match their image—larger fruit with unmarked skin. Growers were throwing out roughly 30 per cent of their crop in the field and another 30 per cent in the packing shed.

"We were disposing of 60 per cent of our product and selling the rest at below cost of production—it just wasn't very sustainable," said Ms Mangili.

Enter the 'lunchbox banana'.

The Sweeter Bananas Co-operative came up with the idea to take advantage of their product's size, but also its flavour.

"Bananas take twice as long to grow in our region—14 to 18 months from planting until you harvest a bunch—and we pick them at a much riper stage than they do in tropical areas. The result is that they're a lot sweeter and creamier."

Their isolated location on the edge of the desert is another point they've been emphasising with consumers. Without the presence of pests and disease, growers have no need for insecticides or pesticides.

CREATING A NICHE MARKET

The Co-operative has helped to ensure consistent quality from their growers and, as farms are only around 8 hectares on average, created economies of scale. An account manager employed by the group is based in Perth and ensures they can independently source information, rather than relying on other market agents.

"As an individual grower you simply can't do this, but if you share the cost between 20 growers it's possible," said Ms Mangili.

FOR CARNARVON GROWERS

"BANANAS TAKE TWICE AS LONG TO GROW IN OUR REGION—14 TO 18 MONTHS FROM PLANTING UNTIL YOU HARVEST A BUNCH—AND WE PICK THEM AT A MUCH RIPER STAGE THAN THEY DO IN TROPICAL AREAS. THE RESULT IS THAT THEY'RE A LOT SWEETER AND CREAMIER," DORIANA MANGILI, SWEETER BANANA CO-OPERATIVE.

Creating their own niche market means they're also able to shield growers from at least some of the market volatility seen elsewhere.

This growing customer base hasn't come without a lot of hard work. The Cooperative has had an annual presence at the Royal Perth Show, handing out some 40,000 banana samples to the public. They've organised in-store demonstrations, turned up at events around WA and talked to countless people about why their product is different.

It didn't hurt that, in 2012, a Curtin University study found that 4 out of 5 people preferred Western Australian bananas.

"We still only supply about 5 per cent of the Perth market, but we've gone from producing a product that we'd throw away 60 per cent of, to very low waste compared to the industry standard," Ms Mangili said.

"We also created a smoothie product back in 2009 from bananas that don't make the first grade. They've been selling successfully in Coles since then, advertised as perfect for smoothies. They're exactly the same bananas, just ones with a few more skin markings."

BUY WEST EAT BEST CAMPAIGN

Earlier this year the Sweeter Banana Co-operative, with support from other Carnarvon market agents Mercer Mooney and QPI, joined the WA Department of Primary Industry's Buy West Eat Best campaign.

Ms Mangili said it's been a great investment for the Co-operative and the Carnarvon industry more broadly.

"The whole campaign is based on the idea that by buying Western Australian produce, you're supporting local farmers and their communities.

"Even when its promoting other products, like meat or fish, it's still the 'Buy West Eat Best' brand, which appears on all of our bags."

The campaign has included television, radio, bus signs, in-store material and social media—the Cooperative even flew one of their own growers and a bunch of bananas to Perth to be part of the TV component.

BOUNCING BACK

Of course, even the best marketing in the world can't stop a cyclone in its tracks.

In 2015, Cyclone Olwyn wiped out all of the Sweeter Banana Cooperative crop.

After 15 months without the Carnarvon product, consumers had moved on. Ms Mangili said it was almost like starting again—but that's exactly what they did, and they've continued to win those customers back.

"As growers, we understand that it is our job to market," she said.

"Our responsibility doesn't stop at delivery. It's not up to the retailers to push our product—if they can give us the space, then it's our responsibility to market, promote and sell that product.

"People ask us what we're doing differently. Ultimately, we just have an ordinary packing shed doing ordinary things. Our difference is in the marketing, promotion, the ability to have someone based in Perth. It's our business model that's the important part."

Peter DeBoni.

Ivan Bilich and Phil Byron .

TV INVESTMENT

Carnarvon bananas will make their way into Western Australian lounge rooms over the next 12 months with a dedicated television advertisement.

Backed completely by the region's growers, rather than any industry bodies, the ad is part of the Good Choice campaign under the Buy West Eat Best program.

"It's quite unique that a group of horticultural producers invest in something like a television campaign—particularly in WA but right across the board as well," said the Co-operative's business manager Doriana Mangili.

"It's also a reflection of the mature industry in Carnarvon that 90 per cent of the growers collaborated together to get behind this industry-wide campaign.

"It's quite an achievement."

Western Australian residents can keep an eye out for Chris Collins, the Co-operative's chair, who features in the Good Choice advertisements. He appears with his own bunch of bananas, flown to Perth specifically for the occasion.

For more information on the Buy West Eat Best program, delivered by WA's Department of Primary Industries and Regional Development, visit www.buywesteatbest.org.au.

CO-OPERATIVE LOOKS AT LEASING FOR RETIRING GROWERS

By Amy Spear

It can be tempting to think of retirement as a series of beers on the verandah at sunset, but the reality—as any grower knows—is much more complex.

Moving away from home is not always ideal, nor is the maintenance of a labour-intensive farm.

And in a small banana growing region like Carnarvon, the loss of a grower also has a significant impact on its ability to meet market demand.

The Sweeter Banana Co-operative may have a solution to this dilemma: leasing farms off retiring growers, who can choose to stay on at the property.

"The idea is that we will come to an agreement on lease fees, as well as a portion of electricity and water to run the farm. The retiring grower will still live there, but we'll organise someone to take care of the crop," explained the Co-operative's business manager Doriana Mangili.

"They'll make a small income from our lease and we'll make an income from the sale of the bananas. It helps us to retain the volumes and introduce more best practice standards so we can continue to improve quality."

The first property the Co-operative will manage belongs to Tom Day.

Mr Day is a founding member of the Co-operative and a board director with the ABGC.

"It's a good idea as it keeps up the numbers," he said. "It's not much use having markets if you can't supply the fruit. And the advantage is that I get to stay on the property."

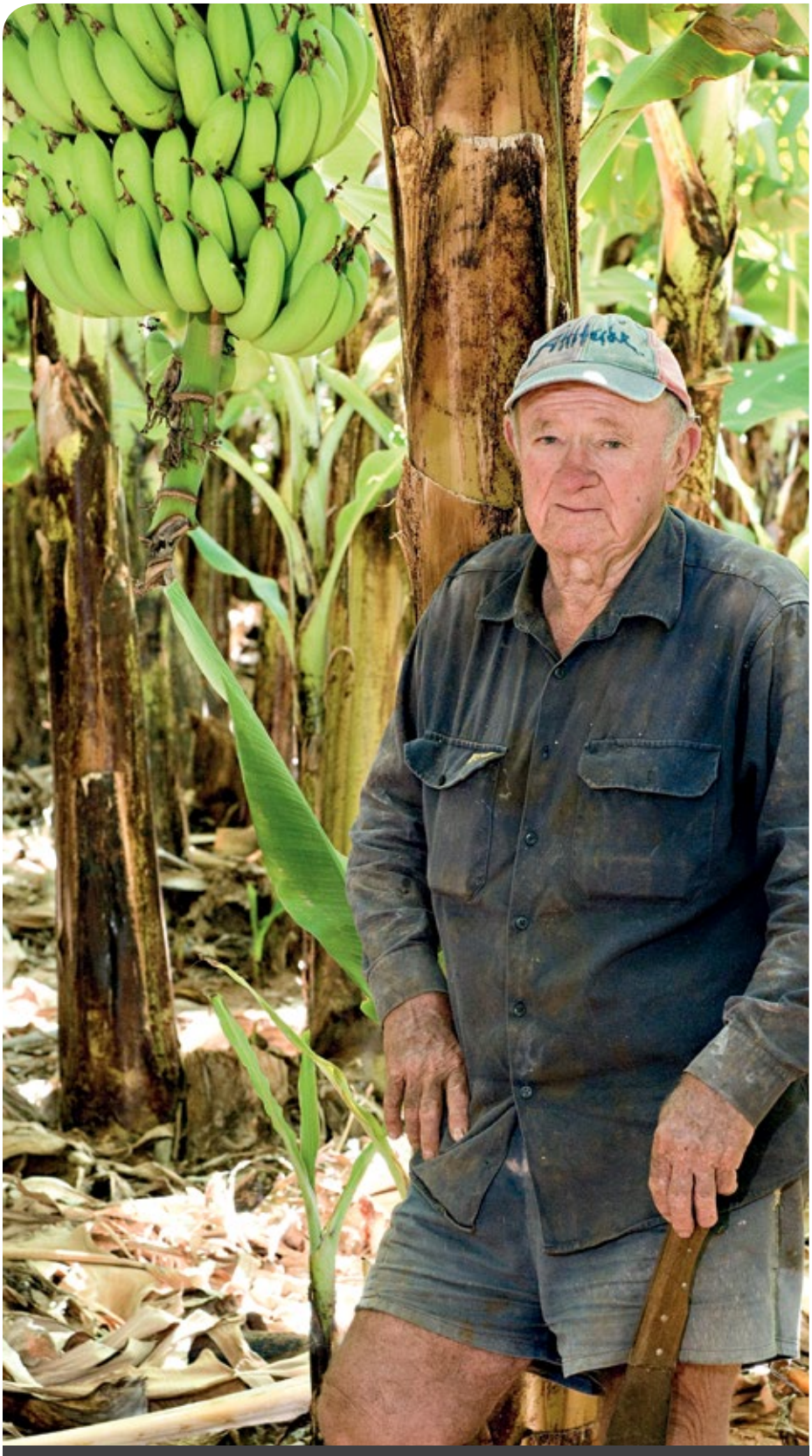
"I think it's a win-win. People are getting older and it's not easy work, there's lots of intensive labor."

As well as maintaining supply, the Co-operative may look to diversify their offerings, depending on demand.

"If we need to supply organic, for example, we could look at doing that on a particular property. As a co-operative we can take risks that individual growers may not want to," Ms Mangili said.

"Obviously it has to work financially for our co-operative and its members, as well as for the grower who's leasing us the farm."

Both Ms Mangili and Mr Day believe that, with the right industry bodies on the ground, it could be a very successful model into the future—for Carnarvon and in growing regions across the country.



Win-win for industry and grower: Retiring grower Tom Day will lease his farm to the Sweeter Banana Co-operative, allowing him to step away from business, but stay on his beloved property.

NEW QBAN SIGNED OFF

THE new project to update and transition the QBAN (Quality Approved Banana Nursery) from a state government regulated scheme to an industry-run scheme has begun.

Having access to clean planting material is crucial for reducing the spread of both exotic and endemic diseases such as TR4 and Bunchy top virus.

Under the new project which was signed on 31 August 2017, the Nursery and Garden Industry Australia (NGIA) are working in partnership with the Australian Banana Growers' Council (ABGC) to update and transition the banana-specific clean planting material scheme across to the Nursery Industry Accreditation Scheme Australia (NIASA) and BioSecure HACCP certification.

The QBAN transition project will take approximately two years for development and implementation and will be done in consultation with current QBAN businesses, technical experts, government regulators and banana growers. Biosecurity consultant Grant Telford, has recently been employed by NGIA to work on the project which aims to update and achieve a scheme that is:

- more practical and workable
- ensures the best possible biosecurity for the banana industry
- meets new legislative requirements in each state
- Targets priority diseases such as Panama TR4 and Banana Bunchy Top Virus and provide a superior disease-tested, cost effective product that growers prefer to plant to enhance their on-farm biosecurity and meet their General Biosecurity Obligation.

The scope of the project will first include tissue culture laboratories and grow-out nurseries. Additional modules for clean mother block and in-ground production nurseries for supply of clean bits and suckers will be investigated for their feasibility and development.

The strategy will encompass the following steps:

- Current guidelines mapped to NIASA BMP/ Biosecure HACCP with commonalities and gaps identified
- QBAN requirements not currently included will be added as new banana-specific appendices and HACCP procedures
- Implementation in QBAN businesses.

Responsibilities for the new QBAN scheme will be shared, with ABGC providing governance/oversight, setting criteria to achieve QBAN accreditation (NIASA/ BioSecure HACCP certification), issuing certificates and maintaining a database of information. NGIA will be responsible for providing the platform for QBAN, and auditing and accrediting QBAN facilities for certification. ABGC in partnership with NGIA will review and update the scheme as required.

The use of clean planting material produced and certified under an accredited scheme is the best way for growers to maintain good biosecurity on their farms and minimise the threats from exotic and endemic diseases.

A list of QBAN businesses where growers can source clean planting material is shown opposite.

For further information, please contact Dr Rosie Godwin rosie@abgc.org.au or John McDonald john.mcdonald@ngia.com.au.

** Funding for the transition and establishment of the new QBAN scheme is provided by Horticulture Innovation Australia's BA14014 Fusarium wilt Tropical Race 4 Research Program which is led by the Queensland Department of Agriculture. The project will be subcontracted to NGIA and is expected to begin soon.*

- *NIASA (Nursery Industry Accreditation Scheme Australia) is a national scheme for production nurseries which operate in accordance with a set of national 'best management practice' guidelines.*
- *BioSecure HACCP—(Hazard Analysis Critical Control Points) is the industry-specific on-farm biosecurity program (a set of protocols) designed to assist production nurseries assess their endemic and exotic pest and disease risks, and implement management strategies at critical control points. Businesses manage biosecurity risks by establishing an effective quarantine process for both imported and exported plant material.*

Quality Banana Approved Nursery (QBAN) scheme facilities. March 2017
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: Phil Berry-Porter (Contact) LABORATORY			
0407 126 113	shazza141@bigpond.com	Mission Beach, QLD	Tissue culture plants only
Blue Sky Tissue Culture: Craig & Sue Althaus (Contact) NURSERY			
07 4068 2208	admin@blueskytc.com.au	Tully, QLD	Potted plants for commercial sales
Lemara Tissue Culture: Peter Bakker (Contact) LABORATORY & NURSERY			
07 4778 4441	lemara@bigpond.com	Townsville, Wulguru, QLD	Tissue culture plants, potted plants or both
Lowes Tc Pty Ltd: Natasha Marocik (Contact) LABORATORY & NURSERY (NSW)			
02 4389 8750	Natasha@lowestc.com.au	Tumbi Umbi, NSW	Tissue cultured plants and plugs (where authorised)
Ramm Botanicals: Jason Dexter (Contact) or Ryan Weber (Owner) LABORATORY & NURSERY (NSW)			Tissue culture plants and 25mm diameter ellegaard plugs (where authorised)
02 4351 2099	Jason.dexter@ramm.com.au or ramm@ramm.com.au (general inquiries)	Kangy Angy, NSW Central Coast	
Arakai Pty Ltd: James Howe (Contact) LABORATORY & NURSERY			
0407 933 791 or 07 4093 3826	jhowe@howefarms.com	Walkamin, Atherton Tablelands, QLD	Tissue culture plants, potted plants or both
Mission Beach Tissue Culture: Stephen Lavis (Contact) LABORATORY & NURSERY			
0418 299 900	sdlavis4@bigpond.com	Mission Beach & Walkamin, QLD	Tissue culture plants, potted plants or both
Wide Bay Seedlings: Adrian Ross (Contact) NURSERY			
07 4129 6684	office@wbseedlings.com.au	Pioneers Rest, Qld	Potted plants
Ausplant Nursery: Brady Cumming (Contact) NURSERY			
07 4662 4934	brady@ausplantnursery.com.au	Dalby, Qld	Potted plants
El Arish Tropical Exotics: Scott & Ann Cains (Contact) NURSERY			
07 4068 5058	scott@elarishtropicalexotics.com	El Arish , Qld	Potted plants

BOAR WAR: TAKING TO THE

"PEOPLE DON'T REALISE WHAT SORT OF PIG PRESSURE WE'VE HAD. IN THE LAST TWO YEARS, IT HAS BLOWN OUT OF CONTROL," ABGC DIRECTOR LEON COLLINS.

A renewed scourge in Queensland's banana heartland has forced growers to leave nothing to chance, addressing a very real threat in the on-going challenge to contain Panama TR4.

Feral pigs have been in the direct line of fire for growers in the Tully Valley, who have joined forces to protect their industry and attempt to bring under control plague proportions of the animals, throughout the Cassowary Coast. .

By Sonia Campbell

Feral pigs have long been traversing the Queensland landscape, causing untold damage to agriculture, harbouring disease and wreaking general havoc as an environmental pest.

However, since the detection of Panama tropical race 4 (TR4) in the Tully Valley in 2015, they have also been recognised as a serious vector of the soil-borne fungal disease.

With populations of feral pigs in the Wet Tropics region widely viewed as having reached plague proportions in recent years, it's left North Queensland growers with a very real fight on their hands to bring growing infestations under control.

Recognising the risk to industry, a *Feral Pig Management Working Group* was established by the Australian Banana Growers' Council (ABGC) in September of this year.

Led by ABGC director and Far Northern producer Leon Collins, the group was formed to promote a co-ordinated effort on feral pig management throughout northern Queensland, involving government, growers and community.

Prior to the official establishment of the working group, Mr Collins said about 10 major stakeholder growers had already come on board—including banana and cane growers, as well as Tully Sugar. Since August, they have personally funded a co-ordinated aerial pig control shooting program, with staggering results.

"People don't realise what sort of pig pressure we've had. In the last two years, it has blown out of control," Mr Collins said.

"We've got to take them out. We can't wait. That's why we decided that the quickest knockdown for us to start, was to utilise a helicopter and aerial shoot."

"And it's worked. In three months we have taken out almost 700 pigs. And it doesn't stop. Every time we go up we get more."

TAKING TO THE SKIES

The growers enlisted the help of experienced rural helicopter pilot Peter Liddle and licensed professional marksman Trevor Williamson to carry out the aerial shooting program.

At $650 per hour, it's a costly exercise. However, it is also the most rapid and effective means of addressing a problem that is potentially putting an entire national industry in jeopardy.

"It's more urgent now because of TR4. Growers have spent a huge amount of money on pig control. Some of the figures are frightening. But we don't have any other option," Mr Collins explains.

"TR4 is a risk to all agricultural areas, everywhere. In Tully, most of your big banana growers are big cane growers as well.

"On our farm alone, we've spent $68,000 on pig control so far this year. That's just us. We've spent $128 per hectare. That doesn't include biosecurity, just pig control. Which has also involved manufacturing traps, trapping and fencing."

COUNTING THE COST

Paul Johnston who farms bananas, sugarcane and cattle in the Tully Valley, has also spent countless time, money and effort addressing feral pig management across his farming estate.

"We've caught more than 370 (pigs) on our farm so far this year. That's just shooting them and trapping them," Mr Johnston said.

"We've always had pigs and we've always been trapping them, forever and a day, but this is the most we've ever got, and we haven't even put a dint in them."

Mr Johnston is part of the collective that continues to fund the co-ordinated aerial shooting operation throughout the Tully Valley and said it was the only way of winning the war against the menacing pest.

"Before that (the aerial shooting) we weren't even keeping up to them," he said.

L–R: Trevor Williamson, Peter Liddle and Leon Collins.

SKIES IN THE TR4 BATTLE

"In a couple of weeks, you can get 100 pigs from a chopper, you won't get that amount with traps. You'll get a couple here and there, but at the moment they are here in big numbers and we just can't keep up."

Mr Johnston also runs up to 15 pig traps on his farm, which are checked each day and rebaited when needed. He estimates the cost of his on-farm trapping program and his investment in aerial pig management, would exceed $50,000 for the year.

However, he said there was very little alternative.

"We can control people movement and vehicle movement on farm, but not these pigs. Every morning I look around and you can see where they've been the night before," he said.

"Spreading Panama is our biggest concern. At the moment they are rooting up the soil and shortly, I have to plant bananas and they will be doing damage to the small bananas as well.

"Even when they are rooting up the soil looking for grubs they can plough up a whole creek bed and then you get heavy rain and it all goes down the creek. So it's not only a TR4 risk but an environmental impact, as well."

LONGER TERM SOLUTION REQUIRED

Mr Collins said while growers, ABGC and the Tully Cane Productivity Services were currently funding the aerial shooting operation, a longer term solution would be needed involving government and industry support at multiple levels.

"From 2001 to 2006 we had the last feral pig management program running here. We took 6000 pigs out of the Tully Valley alone during that program. It worked very well and for three years after that program, pigs were not a problem.

"That program was funded by everyone, banana growers, canegrowers, mills, council, State Government and Federal Government. Right now, it's more than just about TR4, it's about establishing a long-term management plan to address feral pig populations, well into the future."

Paul Johnston checks on one of his many pig traps that he has on his Tully Valley farm.

UNITED FRONT

Efforts to control feral pig numbers throughout the Cassowary Coast is being addressed by multiple stakeholders.

As well as the ABGC's Feral Pig Management Working Group, an Executive Oversight Committee is now working towards a co-ordinated and integrated approach to feral pig control as part of the Cassowary Coast Regional Council Feral Pig Management Strategy.

Membership organisations that are represented on the Oversight Committee include; ABGC, Canegrowers (Innisfail & Tully), Tully Sugar Ltd, MSF, Cassowary Coast Regional Council, Queensland Department of Agriculture and Fisheries/ BQ, Queensland Parks and Wildlife, Terrain NRM and the Department of Defence.

Innisfail Babinda Cane Productivity Services (IBCPS) have a short term contractor helping cane growers with pig management. Banana growers have been collaborating with IBCPS to conduct a co-ordinated baiting program throughout the Innisfail area, to try and create a sustainable management program across the catchment.

WEIGHING UP THE RISK

Innisfail banana grower Shannon Paton has been hunting feral pigs for about 15 years and knows all too well the risk they pose to agriculture and the environment.

On his East Palmerston banana property he regularly hunts and traps wild pigs that have entered his land, animals which are often caked in thick mud and dirt, after wallowing beside a nearby creek bed or in a large pool of mud.

He knows the risks the animals pose to his farming operations and has attempted to quantify just how much dirt they can carry on their fur and feet, potentially spreading soil-borne disease.

"We got a boar in a trap. We took him and weighed him and he was 94kg. We then took him down to the wash bay and washed him down and he dropped 5kg neat after he drip-dried," Mr Paton said.

"That was a smooth skinned boar, he didn't have much hair on him, but he was still able to carry that much (soil) on him."

Mr Paton estimates that 30 per cent of the feral pigs that come onto his land are covered in mud, causing him constant concern over the risk of TR4.

"Absolutely. Their numbers have certainly increased. It's become an issue over probably the last three years now. As everyone is aware, since (Tropical) race 4 was detected here in the far north, we've had a lot of people put up fences and do the best that they can.

"You can fence your land and do the best that you can. But if you get a 120–140kg boar in particular, he's going to go through a fence, regardless of whether you've got tucker there or not."

ON-FARM BIOSECURITY: OUR BEST DEFENCE AGAINST TR4

When it comes to containing Panama TR4, on-farm biosecurity continues to be the banana industry's best line of defence.

ABGC CEO Jim Pekin said while feral pig control was important for TR4 containment, boots and wheels coming onto farms were the major risk to manage.

"Since TR4 was first detected in Tully, many growers have implemented stringent on-farm measures to protect their farms against the disease."

"These processes give the industry the best chance of stopping further spread of this disease which can be spread through soil and plant material."

"The key message is, 'Come clean, leave clean'."

NOT JUST A POT SHOT

From the cockpit of an R22 helicopter, professional shooter Trevor Williamson has a birds-eye view of his target.

The skilled marksman, along with experienced rural pilot Peter Liddle, have been assisting growers in the concentrated aerial shooting program in the Tully Valley in recent months.

Together they work in unison. Communicating in perfect harmony to first seek out their target and then position the chopper before taking aim.

It's rare for Mr Williamson to miss his target, however he says getting the right shot comes down to the skill of the pilot.

"It's not as simple as people think," he explains. "Aerial shooting is an extremely effective tool, but in the bananas and fringing creeks it takes a lot of skill to do what we have to do. And, a lot of the skill comes down to the helicopter pilot, because they have to put the stock in the right position to shoot or you won't get them."

In some cases, smoke is used to flush out pigs found in heavily grassed areas adjacent to banana farms. This adds another element to the aerial program.

Program co-ordinator Leon Collins praised both Mr Liddle and Mr Williamson for their efforts so far.

"The communication between the marksman and the pilot is fantastic, which leads to such a smooth flowing operation," he said.

MIXED CROPPING AND TR4

By Deanna Belbin

Growers that undertake mixed cropping on their properties are reminded that biosecurity measures should be followed for all cropping areas.

Minimising the risk of spread of all pests, diseases and weeds specific to each crop is not only sound farm management, but also part of your general biosecurity obligations.

Having a robust farm biosecurity plan across all cropping areas and being prepared is vital to minimise the disruption to your farming operations if a serious biosecurity issue is detected.

For example, a Panama disease tropical race 4 (TR4) infected banana block on a mixed crop property has the potential to contaminate other farm areas.

Where a 'Notice of presence of Panama disease tropical race 4' has been given to you, any land exposed to the unrestricted movement of soil, banana plants, machinery, and other carriers will be placed under Panama movement controls. Any potential carriers of Panama TR4 must then be cleaned and decontaminated prior to moving off the affected property.

To reduce the risk of cross-contamination between blocks, you should consider implementing procedures to separate the operations between different cropped areas, with their own pools of machinery and equipment. This will limit the amount of required machinery decontamination should Panama TR4 or any other pest or disease appear on your property.

EXCLUSION AND SEPARATION ZONES

Dividing a farm into separate areas or zones, is a cost-effective way for you to control the movement of vehicles, machinery and equipment between zones and within zones. An effective farm zoning plan usually incorporates three main zones:

- an exclusion zone to exclude all non-essential vehicles
- a separation or clean zone, such as a clean roadway, to ensure essential vehicles that come onto the farm, such as fruit pick up or fuel delivery do not bring or take contaminants with them a 'farm activity' or 'dirty' zone where farm vehicles, machinery, equipment or tools appropriately decontaminated on entry and exit.

If your business can demonstrate that specific areas of a mixed cropping property have not been exposed to banana plant material or soil in which banana plants may be grown, and therefore has not been exposed to Panama TR4, you can consider those areas to be 'clean zones'.

Keeping a register of vehicles, machinery, staff movements, and decontamination procedures is important to assist trace investigations should an area be infected with a disease. The information can help determine the extent of the area exposed to the risk and prevent further disease spread.

Biosecurity Queensland can provide technical support to growers on proposed mixed cropping ventures and assist with the implementation of a farm biosecurity plan and farm zoning plan. Phone 13 25 23 for more information or visit biosecurity.qld.gov.au.

TR4 SHED POSTERS

Biosecurity Queensland is still offering free shed posters depicting the life cycle of Panama disease tropical race 4.

The poster was developed in consultation with leading Banana Fusarium Wilt experts illustrating how the disease infects a banana plant, produces spores, the different stages of plant death and how it continues to survive after the death of the plant.

They are A1 sized and made from durable, waterproof and long lasting material, which is suitable for indoor and outdoor use.

If you'd like a free poster contact Rachel Densmore at the Panama TR4 Program with your name and postal address via email Rachel.Densmore@daf.qld.gov.au or by phoning (07) 4091 8140.

NEW PROJECT TO BENEFIT BANANA INDUSTRY

Hort Innovation and the Australian Banana Growers' Council have recently finalised a contract for a three-year project that will continue the strategic industry development work which commenced in 2014.

The project, BA 16008—Banana Strategic Industry Development, will focus on strategic, long-term water quality and biosecurity issues. It will be driven by the ABGC's Michelle McKinlay, who has again been appointed to the Industry Strategy Manager role.

Under the original project, Michelle had the responsibility of making an assessment of the banana industry's level of biosecurity and environmental preparedness.

Based on this assessment, she wrote the Banana Industry Water Quality Strategy 2017–2020 and the Banana Industry Biosecurity Framework. These documents outline priority actions to be implemented so that the industry continues to improve on an impressive track record.

Now her challenge is to consolidate this progress as she moves with the industry into the implementation phase.

"I am very happy to again be working with banana growers as well as representatives from government departments and peak industry bodies," she said.

"It is such an energetic industry where growers are keen to listen and improve their practices—whether that is reducing run-off or making their farm more biosecure."

One of Michelle's goals for the next three years is to broaden the project's reach and work more with growers based outside of North Queensland.

"In addition to building on the work and relationships I formed in the last project, I am also looking for opportunities to work more with the growers in NSW and WA," she said. "There are a number of experienced people who are working really hard to support the banana industry in these states. I hope I can contribute to their efforts."

** The project Banana Strategic Industry Development(BA16008) has been funded by Hort Innovation, using the Banana research and development levy, and contributions from the Australian Government, with in-kind contributions from the Queensland Department of Agriculture and Fisheries. Hort Innovation is the grower-owned not-for-profit research and development corporation for Australian Horticulture.*

PURSUIT FOR PANAMA RESISTANT VARIETIES

By Stewart Lindsay, Queensland Department of Agriculture and Fisheries

The outbreak of Panama disease TR4 in the North Queensland banana industry in March 2015 has generated a lot of interest among banana growers and marketers about the potential for new banana varieties with desirable pest and disease resistance.

While banana varieties with resistant genetics offer the best option for effective control of the different strains of Panama disease, there are many other exotic and endemic pests and diseases, as well as production and marketing attributes that need to be considered in the evaluation and selection of new varieties.

The Australian banana industry has invested in the importation and testing of international banana selections and hybrids at different times since the late 1980's in the pursuit of improved pest and disease and production characteristics. The rigorous quarantine procedures required to protect the Australian industry from exotic pests and diseases means that the importation and testing process is relatively slow and expensive. As a result, it is important to have a clear strategy for the selection and importation of new varieties to ensure the most efficient use of the R&D investment.

There has also been the limited use of non-conventional breeding techniques for bananas in Australia, particularly the use of somaclonal selection and genetic modification, as alternative approaches that try to achieve resistance in existing varieties that are accepted in the market.

Currently the Australian banana industry is actively investing R&D levies in both importing new varieties from overseas for testing as well as the development of resistant forms of existing varieties using somaclonal selection.

BANANA BREEDING TECHNIQUES

The development of new banana varieties is a slow and costly process and high levels of infertility make it difficult to do conventional breeding from some commercially important varieties like Cavendish.

Banana breeding techniques fall into three broad categories:

- Conventional cross-breeding techniques—fertile male and female lines are crossed to produce seedling plants which are often tetraploid (4 sets of chromosomes) but manipulation can also produce triploid offspring (3 sets of chromosomes). Most commercial banana varieties, like Ladyfinger, Ducasse or Cavendish are triploids.
- Somaclonal selection—uses natural or induced mutations in existing cultivars to produce plants with desirable attributes such as pest or disease resistance, improved plant stature and increased yield. This method was pioneered by the Taiwan Banana Research Institute (TBRI) in developing Cavendish varieties with varying levels of resistance to Panama disease TR4.
- Genetic modification—involves the manipulation of the banana DNA by inserting identified genes for desirable characteristics from bananas or other organisms. Newer techniques include the manipulation of the plant's own genes without the introduction of any external genetic material.

According to Bioversity International, in 2013 there were 14 active conventional banana cross-breeding programs, 10 active somaclonal breeding (natural and induced) programs and 6 banana genetic modification programs underway across the globe. Not all these programs have relevance to the Australian banana industry, as they are breeding plantains and cooking bananas, while access to varieties from some of those programs with relevance are closed or restricted.

CURRENT INDUSTRY FUNDED VARIETY ACTIVITIES

Importing and testing banana varieties from overseas

Variety importation and testing has been supported since 2010 by **BA10020 Banana Plant Protection Program** and now **BA16001 Improved Plant Protection for the Banana Industry** which are part of the Hort Innovation Banana Fund. Access to varieties is negotiated under research agreements with the respective breeding programs and the plants are then introduced as tissue cultured plantlets and held under strict quarantine conditions at DAF Queensland facilities the Eco-Sciences Precinct in Brisbane and the quarantine tissue culture facility at the Maroochy Research Facility in Nambour. The introduced plants are tested for the presence of specific viruses and phytoplasma that cause disease in bananas and are spread in infected planting material. If the plants are found to be free of disease then they are multiplied as tissue culture plantlets and planted at field screening sites in NSW, North Queensland and the Northern Territory as part of a coordinated assessment program.

In the field screening site at Duranbah in NSW varieties are assessed for their resistance to Panama disease Race 1 strains and their production characteristics under subtropical conditions.

In North Queensland the varieties are grown at the DAF South Johnstone Research Facility and assessed for their resistance to Yellow Sigatoka and production characteristics under tropical conditions.

At the Coastal Plains Research Station in the Northern Territory the plants are assessed for their resistance to Panama disease TR4 with some assessment of production characteristics.

Panama disease TR4 screening of new varieties is based at the Coastal Plans Research Station in the Northern Territory.

The non-Cavendish banana hybrids imported represent a range of both tetraploids and triploids from the FHIA program based in Honduras as well as the CIRAD program from the French West Indies.

FHIA-02 at the NT screening trial—this variety is an example of a new hybrid variety created by conventional breeding from the FHIA program, Honduras.

These programs contain breeding lines with a range of pest and disease resistances but are unable to test against Panama disease TR4 in their own region. The outputs of these programs are completely new varieties that may have the right combination of desired traits for pest and disease resistance and eating quality or production characteristics, which can only be confirmed by disease screening and production assessment. Any of these varieties that tick all the boxes will then need to be introduced to the market as a brand new banana product.

Selections of Cavendish and Gros Michel have also been imported, with some from somaclonal breeding programs in Taiwan and Cuba looking to develop varieties resistance to Panama disease TR4 and Race 1 respectively. Most of the Taiwanese Cavendish selections have some level of resistance to TR4 but often have longer crop cycles and smaller bunches than the current industry standard Williams Cavendish. So far a resistance Cavendish with equivalent production characteristics to Williams has not been identified although there are some selections with good levels of resistance to TR4.

CJ19 in the NT screening trial is an example of somaclonal selection from Cavendish to develop TR4 resistance.

Three new resistant Cavendish selections from Taiwan have cleared quarantine and are available for planting in the new field trial in mid-2018.

Developing resistant banana varieties using somaclonal selection (mutagenesis)

The second key activity under way in Australia is the use of somaclonal selection to develop resistant varieties. As mentioned earlier, somaclonal selection relies on natural or induced mutations in existing varieties to produce progeny with desirable attributes such as pest or disease resistance, improved plant stature and increased yield. The current somaclonal selection program in Australia is led by DAF Queensland and funded through the Hort Innovation project **BA14014 Fusarium wilt Tropical Race 4 Research Program**, with co-investment from DAF Queensland.

The activity is based on the same approach taken to develop the variety DPM 25 as a Cavendish selection with acceptable resistance to Panama disease Subtropical Race 4 in the early 1990s. The mutagenesis approach deliberately induces changes in the banana plant's own genetic information with chemical or radiation treatment. The changes induced by mutagenesis are uncontrolled with unpredictable outcomes and the technique relies on treating thousands of plants in the starting population to deliver only relatively few plants to the field for screening. However, by combining this approach with selected parent material with an acceptable level of resistance we can improve the odds of producing one or more plants with a combination of disease resistance and desirable production characteristics.

The current strategy is to mutate 2–4 Cavendish selections with TR4 resistance and assess 500 of each these selections in field screening in the Northern Territory for TR4 resistance and improved production characteristics. So far the Taiwanese selection GCTCV 119 has been treated and the resulting plants were planted in the field in the Northern Territory in June 2017.

Some of the 800 mutated GCTCV 119 plants at the NT screening trial in August 2017.

Dwarf Nathan, an extra-dwarf Cavendish showing good resistance to TR4, has also been treated and the surviving plants are currently in the nursery in the Northern Territory with planting to occur before the end of 2017.

Dwarf Nathan is an extra-dwarf Cavendish type showing good resistance to TR4 at the NT screening site. It is hoped the mutagenesis technique can produce a new plant with similar resistance and acceptable production characteristics.

A non-Cavendish line, the highly resistant Goldfinger, has also been mutated in an attempt to improve fruit quality characteristics and will be grown and assessed initially at South Johnstone. Any lines identified with improved fruit quality will then be screened against TR4 in the Northern Territory.

The somaclonal selection technique is relatively uncontrolled but currently offers the best opportunity for developing resistant selections that are familiar and acceptable to Australian consumers. The mutagenesis approach is more efficient for the Australian situation than the detection of natural somaclonal variants from standard tissue culture multiplication due our limited area and resources for identifying improved selections.

ACCESSING NEW VARIETIES

Currently there is a high level of interest from growers to grow and assess new varieties under their own commercial conditions. In many instances access to new varieties is restricted as part of the testing agreement with the breeding program and the varieties cannot be provided for testing on farm. The project **BA16001 Improved Plant Protection for the Banana Industry** is currently planning for coordinated pre-commercialisation trials for some varieties allowed under the testing agreements on a small number of representative farms in North Queensland.

The long term investment required in breeding banana varieties means that commercial production of promising new varieties will most likely be licensed and managed to maximise the return on the investment to the breeding program as has occurred in other crops like apples, stonefruit and mangoes.

STEERING THE DIRECTION FOR VARIETY R&D

With the limited resources available and the high priority for identifying resistant varieties it is essential that the R&D investment decisions represent the best value for the banana industry. A key part of this is the development of the Variety Committee as an industry group to provide advice and feedback to the Hort innovation Strategic Industry Advisory Panel (SIAP) and BA16001 project staff. The Variety Committee consists of banana growers, supply chain businesses and researchers and focuses on the broad strategic issues associated with variety importation and development.

Hort Innovation
Strategic levy investment
BANANA FUND

PURSUIT FOR PANAMA RESISTANT VARIETIES CONT'D...

Table 1—Banana varieties recently tested or currently under testing for disease resistance and agronomic characteristics

VARIETY	SUB-GROUP	NSW	NQ	NT
FA'I PALAGI	Cavendish	X	X	
FC-1		X		
GCTCV 105		X	X	X
GCTCV 215				X
GCTCV 217		X	X	X
GCTCV 218 (CONTROL VARIETY)				X
CJ19				X
DWARF NATHAN				X
DWARF PARFITT OFFTYPE				X
DPM25		X	X	X
WILLIAMS (CONTROL VARIETY)		X	X	X
HIGHGATE	Gros Michel	X	X	
GROS MICHEL (CONTROL VARIETY)			X	
IBP 5-61		X	X	
IBP 12		X	X	
IBP 5-B		X	X	
DUCASSE (CONTROL VARIETY)	Pisang Awak	X		
DWARF DUCASSE (CONTROL VARIETY)		X	X	X
LADYFINGER (CONTROL VARIETY)	Pome	X		
HOM THONG MOKHO	Rio	X	X	
PISANG GAJIH MERAH	Saba	X	X	X
SENORITA	Pisang mas			X
FLF-1	To be determined, probably somaclonal selection FHIA-18	X		
LITTLE GEM	Somaclonal selection FHIA-01	X		
FHIA-01 (GOLDFINGER) (CONTROL VARIETY)	FHIA hybrids	X		X
FHIA-02				X
FHIA-03				X
FHIA-18 (CONTROL VARIETY)				X
FHIA-25 (CONTROL VARIETY)				X
FHIA-26				X
SH-3436				X
SH-3641				X
SH-3656				X
SH-3748				X
SH-3362 (AUTO-TETRAPLOID)				X
SH-3142	FHIA—elite diploid parent			X
SH-3217	FHIA—elite diploid parent			X
SH-3362	FHIA—elite diploid parent			X
MUSA ACCUMINATA SSP BANKSII	NQ native seeded banana			X

These projects have been funded by Hort Innovation, using the Banana research and development levy, and contributions from the Australian Government, with in-kind contributions from the Queensland Department of Agriculture and Fisheries. Hort Innovation is the grower-owned not-for-profit research and development corporation for Australian Horticulture.

CAN SOIL MANAGEMENT HELP WITH SUPPRESSION OF PANAMA DISEASE?

By Tony Pattison, Department of Agriculture & Fisheries, South Johnstone

Having soils that can overcome soil borne diseases, like Panama disease of bananas, is a major goal for banana growers. But can soil management, through changes in fertiliser, pesticide and ground cover practices have a big enough impact to reduce the disease? The answer is yes, but it is not that simple.

The ability for soil to suppress Panama disease was tested on a field site over a two-year period. When bananas were planted, and the soil tested for suppression, there was none. When Fusarium race 1 was added to the soil, all plants were equally showing symptoms of the disease.

Two years later, when soil from the field site was tested again in the same way, some soils showed high levels of disease while others did not. The soils that showed high levels of disease had been kept bare, with high rates of nitrogen fertiliser applied; 350 kgN/ha/crop cycle. The soils with the lowest disease had vegetated ground covers and low rates on nitrogen; 220 kgN/ha/crop cycle.

In the two-year period, with the different soil management practices, there were changes in the soil micro-organisms. Under low nitrogen and with continual ground cover, soil organisms that decompose and recycle organic matter become more dominant.

For soil micro-organisms to decompose organic matter they must produce enzymes. Enzymes are substances produced by a living organism, which increase the rate of a biochemical reactions. In particular, the amount of beta-glucosidase measured in the soil related to the amount of disease in bananas.

Beta-glucosidase is an enzyme that is used in the breakdown of cellulose to sugars. Soil micro-organisms produce the beta-glucosidase, which is secreted into the soil. In the soil the beta-glucosidase degrades the cellulose found in organic matter into simple sugars that the organisms uses for energy.

Fusarium living in the soil can produce beta-glucosidase when it is living as a saprophyte, getting its energy from dead organic matter. However, most soil micro-organisms that produce large amounts of beta-glucosidase are more efficient at decomposing the organic matter and getting the sugar than Fusarium. This results in competition with Fusarium in the soil and suppression of Panama disease.

A downside in this situation is that soil micro-organisms that produce large amounts beta-glucosidase are most efficient in soils with low nitrogen. Low nitrogen for soil micro-organisms, means low nitrogen available for plant growth, which can result in reduced banana production.

The upside is better nitrogen management practices can maintain production while encouraging the soil organisms that produce beta-glucosidase to compete with Fusarium. Better nutrient management will also reduce off-farm movement of nitrogen, reducing farming impacts on the environment.

Fertiliser practices like fertigation, where small amounts of nutrients are applied often, or slow release fertilisers that trickle nitrogen into the soil system are more likely to maintain the suppressive soil organisms than when fertiliser is applied in large amounts monthly.

Nitrogen management is only one part of building a suppressive soil. Soil pH, organic matter, clay content are all important characteristics that affect suppression of Panama disease. The physical and chemical properties of the soil can dictate the types of soil micro-organisms that control soil functions. Beneficial micro-organism typically decline rapidly and are slow to build up, whereas the unfavourable organisms are usually quick to build up, but slow to decline.

Using the soil beta-glucosidase test and quick assessments of banana productivity, such as finger number assessments, it is possible to view soils in four ways (Figure 1):

- Low production, disease conducive
- Low production, disease suppressive
- High production, disease conducive
- High production, disease suppressive.

As our knowledge on the impact of soil management on crop production and diseases increases, we can use the four different scenarios of production and suppression to identify better banana farming practices. This may be done at a farm level or an industry level.

We now know that soil management practices have an important role in the suppression of Panama disease. The beta-glucosidase soil test gives us a tool to quickly identify situations where disease can be suppressed. The challenge is to manage the soil so that productivity can be maintained.

** This work was funded by the Queensland Government and the Australian Centre for International Agricultural Research (ACIAR).*

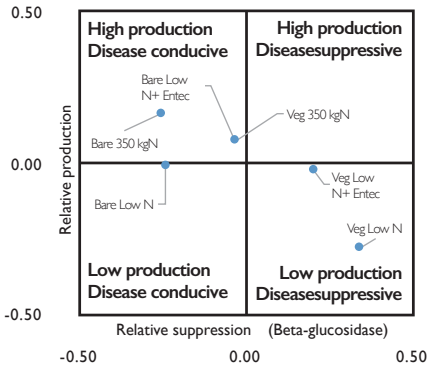


Figure 1: Relative banana production and Panama disease suppression quadrats, with an example from a field experiment using high nitrogen 350 kg N/ha/crop cycle and low nitrogen 220 kg N/ha/crop cycle as urea or Entec™ treated urea, in bare soil or with vegetative ground cover.

Ground covers maintained around banana plants, with lower nitrogen inputs helped increase soil microbial activity with more beta-glucosidase activity which helped to suppress Panama disease.

Bare soil around banana plants showing recently applied fertiliser, which had lower microbial, beta-glucosidase activity and lower disease suppression.

NEXT GEN GROWERS VENTURE TO DARWIN

In October, a group of enthusiastic, young growers took part in a two-day visit to the Northern Territory, as part of a fact-finding Next Gen tour. The tour included a visit to a Panama TR4 trial site and the opportunity to network at the Nuffield Australia National Conference in Darwin.

By Tegan Kukulies

Thirteen young banana growers from the NextGen group participated in a study tour to the Northern Territory.

The two-day trip covered three key activities, starting with a visit to the variety screening and development trials at the Coastal Plains Research Station. This was followed by a visit to one of the only remaining commercial banana farms in the NT growing Williams Cavendish.

On the second day, growers took the opportunity to attend the 2017 Nuffield Australia conference.

At the Coastal Plains Research Station, growers saw two variety initiatives that are underway aiming to develop a panama resistant variety. The first initiative is a trial consisting of 27 varieties, predominantly from international breeding efforts which are being screened for Panama disease tropical race 4 resistance.

The second newer initiative, includes nearly 800 GCTCV 119 plants which have undergone mutagenesis, a process which essentially generates greater off-type variation in the tissue culture process in an aim to develop an off-type resistant to panama disease.

The group at the Darwin Fruit Farm. Back Left to Right: Stephen Lavis, Chaise Pensini, Ben Abbott, Derek Pregl, Adam Gilbert. Middle Left to Right: Alex Pope, Andrew Serra, Kris Horsford, Stephen Lowe, Luke Gilbert. Front Left to Right: Tegan Kukulies, Glen Thompson, Peter Inderbitzin, Gavin Devaney, Mark Smith, Mick Horsford, Shannon Paton, Patrick Marzano.

L–R: Andrew Serra, Alex Pope, Peter Inderbitzin, Luke Gilbert.

The group at the 2017 Nuffield Australia Conference. Back Left to Right: Adam Gilbert, Stephen Lowe, Matthew Abbott, Luke Gilbert, Andrew Serra, Gavin Devaney, Peter Inderbitzin, Kris Horsford. Front Left to Right: Naomi Abbott, Michael Horsford, Alex Pope, Shannon Paton, Tegan Kukulies.

There was lots of discussion about the variety screening trial as growers were able to see how the varieties were performing.

Adam Gilbert, a grower with family-owned properties on the Atherton Tablelands and in Tully, said his first impression of the Williams was "heart-breaking".

"To see such a productive plant and to see that they aren't going to stand up to TR4. They may stand up for 12 months, but after a couple of ratoons they are going to be all dead!" he said.

Peter Inderbitzin, a grower at Lakeland commented on the different Cavendish lines.

"It was interesting to see the variation in the different Cavendish lines. I was impressed with Formosana and CJ19 and I think they are two options which could be explored further."

Innisfail grower Kris Horsford added, "It was interesting to see many of the FHIA lines surviving under high disease pressure. These aren't Cavendish lines, so I'm not sure what the future of them would be commercially, but some appear to be producing decent bunches".

The second stop was to the Darwin Fruit Farm which has a long history of panama disease and is one of the only remaining farms in the area growing Williams in the presence of the disease.

"It was a valuable experience to see a commercial farm growing Williams in the presence of TR4. We saw what was honestly one of the best plant blocks I have seen and you didn't have to look too far to find plants with symptoms of TR4," Luke Gilbert commented.

Farm manager Mark Smith and the team at LaManna Premier Group generously gave their time by sharing their experiences of commercial banana production in the presence of TR4. The group gained great value out of the visit and were sincerely thankful to Mark and the LaManna team for their contribution.

The trip coincided with the 2017 Nuffield Australia National Conference held in Darwin. Presenting at the conference was the banana industry's 2016 Nuffield scholar Matthew Abbott. Matthew, who is also a NextGen member, presented findings from his Nuffield study that focussed on opportunities for organic banana production, particularly sustainable practices in Australia.

Innisfail grower Gavin Devaney said attending the conference was extremely valuable.

"We heard from a large range of people from different industries and it didn't take long to appreciate that all agricultural industries have very similar issues and therefore a lot of knowledge and learnings can be drawn from these other industries," he said. "Listening to other grower's talk first-hand about their experiences was a real highlight."

The group was very conscious of the biosecurity risks associated with visiting the NT and followed stringent procedures. Personal items and bags were not taken into the field and shoes, clothes and hats worn in the field were disposed of in the NT and phones were sanitised.

This successful young banana growers group, commonly termed in the industry as the NextGen group, is part of the three year National Banana Development and Extension Program (BA16007) funded by Hort Innovation with co-investment from the Queensland Government Department of Agriculture and Fisheries (DAF). Growers who would like to get involved in the group should contact Tegan Kukulies from the DAF on (07) 4220 4152.

L–R: Gavin Devaney, Kris Horsford, Ben Abbott.

L–R: Chaise Pensini, Stephen Lowe, Shannon Paton.

Hort Innovation
Strategic levy investment
BANANA FUND

KUNUNURRA BANANA BOOM

The tropical semi-arid conditions of the Ord River in Kununurra certainly has its challenges when it comes to growing bananas. But Western Australia's largest banana producer—Kimberley Produce—has taken on the task with gusto and with confidence in the future is now expanding its banana operations even further.

Craig and Lachlan Dobson of Kimberley Produce. Picture: Coles.

By Sonia Campbell

For the Dobson family, the gamble to return to banana production in the semi-arid Ord River region near Kununurra four years ago, is certainly paying off.

It wasn't an easy decision though. Bananas were originally a staple crop for the dedicated farming family, who have operated Kimberley Produce in West Australia's far northern Kimberley region, for the past 22 years.

The family, however, walked away from Australia's favourite fruit in 2004—along with the majority of banana growers on the Ord—after the industry was almost decimated by severe storms.

"Twenty years ago we grew bananas in Kununurra and then we dropped bananas (in 2004) after we got hit by a lot of bad weather," owner Stewart Dobson recounts.

"Then we went to red grape fruit, and they were a good crop, but we started ripping those out after an oversupply and we couldn't get a good enough return on investment, so we went back to bananas in 2013," he said.

Mr Dobson and his wife Rosalie manage Kimberley Produce with their sons Craig and Lachlan, who are now the main drivers of the company's farming operations, which also includes mangoes, grapefruit and papaya.

The company has 75 hectares under banana production, making them WA's largest banana producer. And, they are about to get even bigger.

They are currently undertaking a significant expansion of their banana plantations, thanks in part to receiving a grant under the national Coles Nurture Fund scheme. This will assist the company in implementing innovative on-farm irrigation systems, plant densities, crop and nutrient monitoring, with a view to improve productivity.

The Coles Nurture Fund is investing $50 million over five years in grants and interest-free loans to Australian primary producers who have innovative ideas, to help them implement new market-leading products, technologies, systems and processes.

"We are going to use the grant to increase our banana plantings, by using a bit of innovative technology and management," Mr Dobson said.

"Using things like innovative sprinkler systems, soil moisture monitoring, and a crop health drone to try and maintain the moisture and humidity within the plantation, as well as reducing evaporation. "

"We farm on the Ord River, which is semi-arid tropics. We haven't had any rain here since the 15th of April. We have had to rely on irrigation, but our annual evaporation rate normally is 4000mm per annum."

"We've put in 75 hectares of bananas in the last four years and starting on October 1, we'll now expand that to more than 100 hectares."

Despite the harsh growing conditions, the Dobsons say they are still able to produce a high quality crop, which is currently in high demand. But it does come at a cost. On average they spend $1200 a hectare per year on irrigation, as they pump directly from the Ord River and use remote water monitors to ensure efficient water management across their cropping estate.

"The second main factor is plant density. We grow 2700 plants per hectare. Normally when you pick a bunch, you cut the tree and leave it on the ground. We don't do that, we leave the plant to supply shade to maintain a full canopy and reduce heat stress."

And their product speaks for itself. The company produces about 375,000 cartons of banana each year and they have sold directly to Coles Kununurra since early 2016.

"Bananas are like all primary produce, they have their ups and downs, but we are fortunate that Coles are interested in our development and they have been buying our bananas through a direct contract for almost two years," Mr Dobson said.

And it would appear the family is more than happy to be back in the banana business, describing it as one of their favourite crops.

"We like growing bananas. It's a challenge, but growing anything on the Ord is a challenge. But provided you are prepared to think outside the square you can make it work."

** For further information on the Coles Nurture Fund go to www.coles.com.au.*

Stewart and Rosalie Dobson. Picture: Coles.

A LOOK BACK WITH MATT

NSW Banana Industry Development Officer Matt Weinert with banana researcher David Peasley.

NSW banana industry development officer Matt Weinert has just completed his three-year contract, working with the Department of Primary Industry, funded by Hort Innovation.

And while Matt's future remains in NSW within the banana industry, **Paula Doran** took time to speak to Matt about the highlights of three years thus far.

What is the main aim of the project?

To reinvigorate the NSW banana industry. I'm not sure I've achieved this but we have got new, young growers entering the industry, especially in the Tweed area. At the Tweed BGA in early September these young growers stepped up to take on the BGA committee positions, which is enormously satisfying for me to watch. It bodes well for the industry in NSW.

Was there anyone doing this project before you?

Jeremy Bright was working in a general horticulturist role supporting the banana industry amongst others and Geraldine O'Flynn had done a great job with the subtropical marketing project, but there wasn't anyone working specifically on the production side of bananas.

What has been the highlight for you?

There's been a couple of highlights—the biggest is seeing young growers enter the industry and being able to help them achieve what they want.

Another thing I've really enjoyed is the project reference group and the support they have given the project.

Greatest achievement?

The nutrition workshop and booklet. People mention it to me frequently and it was mentioned in the project evaluation several times. There is a lot of interest from growers to run more nutrition workshops to help them better target their nutrition programs. The aim is to run workshops where growers bring in leaf and soil analyses and together we work through these to help them develop their own programs.

I've really enjoyed working on the establishment of linkages between the young growers in the Tweed and Coffs producing regions.

The other highlight would be the banana weevil borer aggregation pheromone being commercially available in Australia for the first time. This sort of technology is the future of pest control.

What do you enjoy most about working in the NSW banana industry?

Again, working with the young growers. I always say 'You can't teach keen' and have recently added, 'you can only focus it'... the young guys I have the pleasure of working with have got 'keen' in spades.

I've also had some great mentors like David Turner (WA) John Robinson (South Africa), David Peasley, Mike Smith and Andre Drenth who have been so willing to share their experience and knowledge with me. It was also great to be part of the national extension project, working with Naomi Abbott and then Tegan Kukulies. The roadshows are a wonderful event.

MATT UNDER THE MICROSCOPE

Coff's Harbour banana grower, David Pike said Matt had injected a lot of positivity into the NSW industry.

"In the first instance, the role of an Industry Development Officer in itself was a positive step, but in Matt we've had a breath of fresh air," Mr Pike said.

"For one, he's a Queenslander, so he doesn't have that defeatist attitude that a lot of us NSW growers have. But he also has the ability to bring science to the farm. He listens to growers' problems and then goes off and researches the answers to help them."

Mr Pike praised the development of the pheromone traps for weevil borers which had been produced during the three-year IDO project.

"It's difficult to quantify the benefit we've received per carton in terms of the investment the industry has made in this role, but it is easy to quantify what Matt has achieved in regard to maintaining the positivity amongst growers.

"I think a lot of the growers were ready to throw in the towel until Matt came along. It's because of him that a lot of us are still here," Mr Pike said. "He really turned out to be a top candidate."

Tweed Coast banana researcher David Peasley echoed those sentiments. "The sub-tropical banana industry has certainly been in decline. What Matt's done is worked to get people motivated and connected—particularly young growers. He's led a new era where people are working together on social media and he's getting them engaged.

"He's a very smart man, and he's got a great way of communicating."

PROTECTING AUSTRALIA'S

NQ GROWERS RECOGNISED FOR REEF PROTECTION EFFORTS

Frank and Dianne Sciacca with their Prince of Wales Environmental Leadership—Reef Sustainability Award at the Reef Alliance Awards ceremony in Townsville. Picture supplied by Reef Alliance.

The tireless work of North Queensland banana growers Frank and Dianne Sciacca has been acknowledged with the 2017 Prince of Wales Environmental Leadership—Reef Sustainability Award.

The Sciacca's innovative system is often regarded as ahead of its time, reflected in their recognition at the Reef Alliance Awards ceremony in Townsville. Amy Spear reports.

A PASSION FOR NATURE

North Queensland banana growers live and work alongside one of the world's most stunning natural icons: the Great Barrier Reef.

It's a responsibility the majority of farmers take very seriously and none more so than this year's Awards recipients.

The Reef Alliance Awards celebrate the achievements and efforts of outstanding individuals who have taken part in the Australian Government Reef Programme and/or Reef Trust Initiative.

Passionate about nature, the Sciaccas co-founded the Ecoganic farming system after observing years of degradation and declining reef health.

"Farmers were taught to accept the science benefits around the development of industrialised fertilisers and chemicals over the past 50 years," Mr Sciacca said.

Some 20 years ago, he questioned why people would sacrifice natural assets and the earth's health to produce cheaper food for a production driven market place.

Mr Sciacca's desire was to develop a farming and marketing system that could return a price to cover the cost of environmental protection as well as food production for the consumer.

"In 2002, the Ecoganic farming system was developed including an auditable framework for third party certification," Mr Sciacca said.

"It has been a very long journey and finally gratifying to receive this acknowledgment from a peak body such as Queensland Farmers Federation."

Many shoppers would have spotted the Sciacca's Wax Tip Eco Bananas in supermarkets, and they've continued to spread the word over the years through academic papers, media opportunities, speaking engagements and field days.

The Sciaccas received a hand-crafted piece of pottery, designed by His Royal Highness The Prince of Wales and created by artists at The Prince's School of Traditional Arts programme at the Icherisheher Centre for Traditional Arts in Azerbaijan.

LEADING THE WAY AT MENA CREEK

Third generation farmer David Rolfe's game-changing move to automation saw him named a finalist in the Reef Nutrient Management category of the 2017 Reef Alliance Awards.

A banana grower from Mena Creek, Mr Rolfe automated the property's irrigation system and moved to fertigation—decisions that have significantly improved overall farm health.

"Kate and I are honoured to be nominated and announced as finalists for the Reef Nutrient Management award," he said.

"Watching my father grow cane in the 70s, I became aware of the significance of controlling run off, soil health and nutrition.

"Now that our son, Cooper, has joined us on the farm it is important that we continue to improve our farming practices to sustain farm health and to ensure viability long into the future."

He added that as a recreational fisherman and competitive outrigger paddler, the significance of healthy waterways was always front of mind.

Christopher Russo, a canegrower from Farnsfield, ultimately took home the award for his innovative modification of a high clearance tractor and nitrogen injection bar to apply liquid nitrogen subsurface.

Reef Award finalist David Rolfe.

NATURAL ICON

Picture provided by Tourism and Events Queensland.

REEF REPORT CARD RELEASED

By Amy Spear

GROWERS CONTINUE TO MAKE HEADWAY IN BEST PRACTICE

The banana industry continues to adopt Best Management Practices, with the 2016 Reef Report Card showing 62 per cent of Wet Tropics production land had improved their practice.

Released in October, the latest figure was a considerable increase from 56 per cent the previous year.

"The results show we're going in the right direction," said Robert Mayers, Extension Officer with the Australian Banana Growers' Council.

"A lot of these processes take time to show results. For example, if you're improving sediment management as you're replanting blocks, it may take years to change the whole farm—it certainly doesn't happen overnight."

The Reef Report Card measures the percentage of growers who've adopted BMP in the areas of sediment and nutrients.

The Wet Tropics region has made very good progress in reducing particulate phosphorous, moderate progress in reducing sediment and pesticides, and very poor progress in reducing particulate nitrogen and dissolved in organic nitrogen.

For bananas specifically, BMP for sediment rose to 60 per cent, representing 7522 hectares, and nutrients climbed to 63 per cent, or 7831 hectares.

The noticeable improvement aligns with the industry's ability to employ a dedicated extension officer in Mr Mayers.

This was possible due to a project funded by the Department of Environment and Heritage Protection.

Mr Mayers said fertigation was one of the changes being readily embraced on farm, significantly reducing the risk of nutrient losses through drainage and runoff.

"It's a change that can be adopted any time of year," explained Mr Mayers.

"But when it comes to sediment management, a lot of that is best done when a block is first set-up or replanted. "

The benefits of BMP aren't just environmental. In fact, there's a very real cost-benefit to growers who improve their methods.

"You may not see that in the first year, but over a period of time, it becomes apparent," said Mr Mayers.

"If you can retain your top soil, your best soil, it's the best outcome for your farm.

"When it comes to nutrient management, if you can have the same production and reduce your nutrient input, you're saving money. Who doesn't want to save money?"

Over the past few years, it's become apparent that innovation is needed along with a wider uptake of BMP.

Involvement in the Wet Tropics Major Integrated Project, funded by the Queensland Government, is just one of the ways the industry is moving in this direction.

The MIP works with all landholders in the Wet Tropics as well as the wider community. It aims to increase understanding of the effects of different management practices and provide monitoring on a larger scale. More than that, though, it will allow the ABGC to better target extension work, increase practice change and pilot innovative actions for the banana industry.

As an extension officer, Mr Mayers' job is about ensuring growers feel comfortable and confident in making positive change.

He points out that there are helpful resources online through the ABGC website, as well as in hard copy. The BetterBunch app is also a useful tool in working towards on-farm change and, in some cases, funding is available through the Australian Government's Reef Trust III program to assist with implementation.

Mr Mayers himself, along Sarah Simpson and Dale Bennett, are available to answer questions and act as conduits to the right information. Currently, they're developing workshops and plans to help growers better design farms for sediment management.

"I can see that this work is of significant benefit to banana growers," Mr Mayers said.

"Even though I'm not growing anymore, I'm still very passionate about the industry."

The Reef Report Card for 2017 will be released in late 2018.

FUSARIUM WILT RACE 1 VARIETAL SCREENING RESULTS

New varieties were screened against Fusarium wilt Race 1 in the Australian subtropics and tropics as part of the 'Banana Plant Protection Program' project. Here we look at several promising varieties which were identified.

By Jeff Daniells, Mike Smith, David Peasley, Wayne O'Neill and Andre Drenth.

THE DISEASE

Fusarium wilt of bananas, otherwise known as Panama disease, is by no means a new disease of bananas having plagued the subtropical Lady Finger industry in Australia since early in the 20th Century. Initially only Race 1 of the pathogen—to which Cavendish is typically resistant—was known. Subtropical Race 4 began to cause losses in Cavendish grown in southern production areas in the 1970s and tropical Race 4 (TR4) was detected in the Northern Territory in 1997. However, it is only since the 2015 TR4 incursion in North Queensland that the quest to find resistance for this strain of the Panama disease has become urgent.

These days the Lady Finger industry is mostly split between NSW and the Atherton Tablelands with an overall gross revenue of about $30 million per year. In NSW the variety represents about half of the total banana production area. Race 1 has to date only caused minor problems for Lady Fingers on the Atherton Tableland because of both limited distribution of the pathogen and warmer winters resulting in less stress than the subtropics.

The niche variety Ducasse is also seriously affected by Race 1. Most growers of Ducasse on the wet tropical coast are affected. As a result, there has been a shift in production to NSW which now represents a majority of the area under Ducasse.

Typical internal symptoms of Race 1 in Ducasse (note discolouration of vascular tissues).

The strategic levy investment project Banana Plant Protection Program (BA10020) is part of the Hort Innovation Banana Fund. The project developed a rigorous screening program for Panama wilt which included multiple screenings at different sites. New varieties were screened against Race 1 (VCG 0124) in the subtropics at Duranbah, northern NSW as well as on grower's properties in the tropics at East Palmerston and South Johnstone in North Queensland, while screening for TR4 was conducted in the Northern Territory and overseas through a collaboration with Wageningen Agricultural University.

The subtropical banana industry has struggled for many years due to inability to compete successfully in the wider Australian market with fruit from the tropics. Product differentiation is seen as a solution and alternative varieties are one means of achieving greater market share. Due to the widespread occurrence of Race 1 in subtropical production areas, resistant varieties are eagerly sought by many growers.

VARIETIES EVALUATED

At the commencement of the project in 2011 there were several previously imported varieties that had just cleared quarantine and were ready for evaluation. These included several Cavendish and Gros Michel selections and hybrids from the Honduran breeding program. More background information and results from other aspects of the evaluations can be found in past editions of *Australian Bananas*.

All of the tall Gros Michel selections were very susceptible to Race 1 in both the subtropics and the tropics.

FUSARIUM WILT SYMPTOMS

Like TR4, Race 1 Panama disease is characterised by yellowing of the margins of older leaves followed by necrosis. Leaves eventually collapse leaving a skirt of dead leaves. Pseudostem splitting can occur. Cutting through the pseudostem reveals dark brown to black discolouration of the water conducting tissues.

SCREENING PROCEDURE

A subtropical screening site in northern New South Wales and two tropical sites around Innisfail were selected for disease screening. To ensure relatively uniform disease inoculum pressure, the Duranbah trial site was artificially inoculated with Race 1 (VCG 0124) at planting. At the two grower properties in North Queensland previous cropping of the blocks had included Ducasse bananas severely affected by Race 1. Plants were inspected at regular intervals during growth with disease symptoms and death of plants recorded. Discolouration of the cut rhizome due to disease was rated at bunch harvest.

RESULTS

There are various ways to categorize the reaction of varieties to the disease. Here we have attempted to integrate our findings into a simplified format for ease of interpretation. Essentially we have three categories:

- Very susceptible (VS)—Severe symptoms with >50% of plants not producing a bunch. Clearly not commercially feasible.
- Intermediate (I)—Typically many plants with mild disease symptoms but most producing a commercial bunch. With the right environment/crop management to lower inocula levels these should be commercially feasible.
- Resistant (R)—Plants show no sign of disease under most circumstances.

DISCUSSION

- Not surprisingly all of the Cavendish selections tested were resistant to Race 1. Due to limited space/plant availability/expectation of resistance most of the Cavendish were not tested in the tropics.

- The Gros Michel selections from Cuba (IBP series) were all very susceptible in both the tropics and subtropics despite them reportedly being resistant in Cuba. Results from overseas evaluations may not hold true in our production areas—thus the need for evaluation in our own regions. It appears that there may have been insufficient disease pressure in the Cuban trials.
- Surprisingly the semi-dwarf Gros Michel, Highgate, was resistant in North Queensland. This is encouraging because it is a further example that resistant selections can be located amongst closely related banana types.
- Hom Thong Mokho and High Noon were resistant in the tropics but intermediate in the subtropics. Disease reactions obtained in the subtropics are not always the same as for the tropics. This is mostly due to cold stress experienced in the subtropics leading to breakdown of resistance. Stresses due to other extremes of environment can also contribute.
- There is much emphasis on seeking TR4 resistance given the threat of its further spread. But it must be remembered that any new varieties need to also have Race 1 resistance given its already widespread distribution.
- Having demonstrated TR4 resistance does not imply that a variety will automatically be equally resistant to Race 1. There are indications from the Northern Territory screening work that Dwarf Ducasse has an intermediate reaction to TR4 whilst it is very susceptible to Race 1.
- Screening for Race 1 resistance in the subtropics and tropics is continuing in the new project—'Improved Plant Protection for the Banana Industry' (BA16001).

* *The contributors; Jeff Daniells, Mike Smith and Wayne O'Neill, QLD Department of Agriculture and Fisheries, David Peasley, Peasley Horticultural Services, and Andre Drenth, University of Queensland.*

* *This project has been funded by Hort Innovation, using the banana research and development levy and contributions from the Australian Government. Hort Innovation is the grower owned, not-for-profit research and development corporation for Australian horticulture.*

Little Gem, a selection made from Goldfinger, was resistant to Race 1 at Duranbah, NSW.

Table Race 1 Fusarium wilt disease reactions in subtropics and tropics (evaluated as part of the BA10020 project)

VARIETY	SUBTROPICS	TROPICS
WILLIAMS (R CONTROL/REFERENCE NQ/NSW) C	R	R
FA'I PALAGI C	R	–
FC-1 C	R	–
GCTCV 105 C	R	–
GCTCV 217 C	R	–
FLF-1	R	–
LITTLE GEM	R	–
PISANG GAJIH MERAH	–	R
HIGH NOON	I	R
HOM THONG MOKHO	I	R
FHIA-02	–	R
HIGHGATE G	VS	R
LADY FINGER (I CONTROL/REFERENCE NQ)	VS	I
GROS MICHEL G	–	VS
IBP 5-61 G	VS	VS
IBP 12 G	VS	VS
IBP5-B G	VS	VS
DUCASSE (VS CONTROL/REFERENCE NSW)	VS	VS
DWARF DUCASSE (VS CONTROL/REFERENCE NQ)	VS	VS

C = Cavendish Selection; G = Gros Michel Selection; R = Resistant; I = Intermediate; VS = Very Susceptible; NQ = North Queensland; – = Not Evaluated or Requires Re-Evaluation.

David Peasley and Andre Drenth inspecting Ducasse with Race 1 Fusarium wilt at the Duranbah trial site during BA10020.

* *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 key investment visit horticulture.com.au.*

INNOVATION FIELD TRIAL COMMENCES

Innovation field trial commenced at the South Johnstone Research Station.

Over the next two-and-a-half years 390 Williams Cavendish plants at the South Johnstone Research Station will be subjected to different practices which growers may not be willing to, or have the time, to try on their own farms.

This exciting new field trial was only just planted at the beginning of November and will initially be looking at some 'out of the box' ground cover management options for the bed area.

These include a pinto peanut, a weed mat, a chemical soil stabiliser product and mint, compared to a bare bed. This trial will evolve over time and the next practice which will be investigated is the impacts of timing desuckering of tissue culture plants.

Over the life of the trial, other practices which emerge (e.g. bunch treatments) will be applied and the impacts measured. The trial will focus on measuring the agronomic impacts of different treatments however, where possible, will also monitor other factors such as soil erosion.

The team running the trial is committed to providing updates on this trial, so keep an eye out on the ABGC website.

The strategic levy investment project BA16007 (National Banana Development and Extension Program) is part of the Hort Innovation Banana Fund. This trial has been funded by Hort Innovation, using the Hort Innovation banana research and development levy, co-investment from the Queensland Department of Agriculture and Fisheries and contributions from the Australian Government. Hort Innovation is the grower-owned, not-for-profit research and development corporation for Australian horticulture.

APEN CONFERENCE 2017

The banana industry was well represented at the recent Australasia-Pacific Extension Network (APEN) Conference in Townsville.

The APEN conference was an unmissable opportunity for the Australian Banana Growers' Council's Reef Extension Team, based at South Johnstone.

"As an industry, we were really lucky to have APEN on our doorstep in 2017. APEN was a great opportunity to learn, network and gather ideas for our own extension project," said ABGC's Reef Team Leader Sarah Simpson.

ABGC currently has two extension projects underway. One being the Queensland Environment and Heritage Protection (EHP) Enhancing BMP uptake or BetterBunch project, and the other the Commonwealth funded Reef Trust III.

"It was really interesting to learn about other industries' extension projects and seeing similarities with our own industry. There were some key things that we learnt during the conference that we are going to incorporate into our banana industry extension projects," said Ms Simpson.

L–R: Robert Mayers, Shanara Veivers, Tegan Kukulies, Dale Bennett, Sarah Simpson.

There was a high contingent of North Queenslanders present at APEN, including Tegan Kukulies from the Queensland Department of Agriculture and Fisheries (DAF) from South Johnstone, who also presented at the conference. Tegan spoke on the collaborative On-farm Biosecurity Extension project which was led by ABGC. This project was initiated following the detection of Panama Tropical Race 4 in North Queensland in 2015.

APEN coincided with the Global Forum for Rural Advisory Services (GFRAS) international conference which saw a week-long calendar of events on offer to delegates from all over the world to experience whilst in the north.

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NUFFIELD TOUR OFFERS INSIGHT

2016 Nuffield Scholar Matthew Abbott recently returned from his final international tour as part of his 'life-changing' Nuffield experience, where he focussed his attention on value adding through product branding.

An organic banana farmer from Mena Creek in Far North Queensland, Matt gives an insight into the new technologies and branding innovations he discovered during his latest Nuffield adventure which took in Japan, Italy, Spain and the United States.

2016 Nuffield Scholar Matthew Abbott with his wife Naomi at the Nuffield National Conference in Darwin. Matt is a third generation farmer who operates Rabbit's Organic Bananas with his family in far North Queensland.

THE CHALLENGE FOR AUSTRALIAN BANANA GROWERS

"The Australian banana industry has periods of oversupply, where production increases, but value decreases, so we are essentially growing more and getting paid less," Matthew explains.

"We are lucky that 94 per cent of Australian households buy fresh bananas and consume around 16kg per person per year. This is quite high and leaves limited potential to increase domestic consumption. The challenge for us as farmers is how we increase returns to improve our financial viability."

When you embarked on your latest Nuffield tour you were keen to investigate how banana growers can achieve a higher return on investment, by looking at ways to increase product value through branding. What did you discover?

During my travels I visited Japan, Italy, Spain and in the US, I went to Florida and California.

I visited producers, marketers, universities and numerous retailers, looking at branding, including packaging in supermarkets. I was especially interested in retail displays and to see how products were branded, the number of lines and categories available and the price differences. I was also interested in looking at new technology in regards to branding opportunities and value adding.

In Japan, pre-packaged bananas and product branding is massive. How do they do things differently to our industry here in Australia?

In Japan a lot of produce was in plastic packaging driven by food safety and convenience. Plastic packaging has been part of the Japanese culture for a long time, but they do recycle 70 per cent of their plastic waste, which is considerably higher than most other countries.

Everything was branded and was commonly branded by farm or provenance. Bananas are packed either individually or in clusters of three or four bananas.

Big on branding—a supermarket display in Japan where bananas are marketed highlighting difference in taste, ripeness, size and quality.

In one supermarket there were six different product lines, some even from the same company. They had five different price points, all were essentially Cavendish bananas and some of these lines were up to 75 per cent more in price.

Branding was used to highlight the difference in taste, ripeness, size and quality. These qualities are what Japanese consumers see value in. It is interesting that taste is so important, if you compare that to Australia where the majority of bananas are unbranded and there is limited emphasis on taste. A good example of this is when looking at product specifications for bananas for the big retailers, taste and flavour do not get a look in.

CARVING A NEW PATH

You also visited the United States where the majority of bananas sold are also heavily branded. You believe the 'take home' message from Japan and the US is that branding is very important to identify your product and increase value. Why though will you not be following their example?

In our organic business we are conscious of playing our part and looking after the environment and not adding additional packaging waste. Therefore, I don't believe any of the branding examples would be applicable for our organic business.

Bananas in their natural form have many advantages, the main being convenience and they are already in an environmentally friendly package.

As farmers we are a very important part of the food chain. We grow safe, healthy food for the rest of the population to eat. It is important that we start to recognise the value of what we add and what makes our product unique. The challenge for our business is how do we brand our product and how do we get value from what we do.

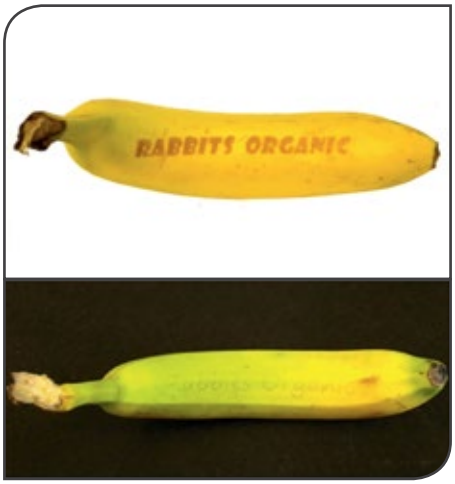
INTO WORLD OF INNOVATION

TAKING A LEAD FROM SPAIN

During your tour of Spain, you visited a company called Laser Foods, which uses latest laser technology to print brands directly onto the skins of fruit. This is something you're currently trialling on your own farm. Can you tell us more?

The laser technology uses light to mark the fruit, without damaging the skin of the banana or pulp inside. The machine also has artificial vision for identifying the area to be marked.

Another key point is the application can be done on farm. It is important for the farmer to be the one adding and receiving the value. It allows branding directly onto the product and removes the need for added packaging.



When initially marked it is barely visible (pictured above—banana pictured on the bottom). And then gradually the image gets darker (as pictured on banana on the top).

The size of the brand will impact the time it takes to mark. The banana pictured on the bottom, the font is in normal text and took point one of a second to mark, and the one on the top the text is in bold and took 1.2 seconds to mark.

Similar to laser ink, it doesn't use packaging to brand. The ink is edible which is very important for food safety and quality assurance standards. A print head with an electronic eye senses the fruit, which triggers the printer to mark the fruit. It's quite a simple yet effective system.

The challenges with this is developing a system to support application and adapting it to current packing systems and ensuring the ripening process doesn't affect the ink integrity and we are currently doing trials for this in our shed at the moment.

BIODEGRADABLE PACKAGING—LEADING THE WAY IN USA

Your trip wasn't all about bananas and you got some great insight into biodegradable packaging from RaboResearch when marketing tomatoes?

I spent a day with Rabo vice-president and senior analysis Roland Fumasi. He indicated the importance of convenience for consumers when considering product choice.

They will choose environmentally sustainable packaging before purchasing a product without packaging. Two features of the tomato packaging (pictured below) is that it's both recycled and biodegradable. And it still hits the mark of being convenient for consumers. It still has plastic on the cover, but they have greatly reduced the amount of plastic.

VALUE ADDING

You also visited a citrus company—Uncle Matt Organics—which produces both fresh and processed products. What did you learn from them when it comes to value adding?

Their company focusses on high quality and consistency. They developed a brand and are now able to demand a premium over their competitors.

They also maximise their waste by having multiple products. For instance, premium fresh fruit, premium fruit juice and oil which they extract from the skin of fruit.

There are clearly high value and low value products which bananas can be used for. For instance, banana flour—which has been developed in North Queensland by a banana grower—is a great example of increasing value. Other banana products including purées, which are used in bases for drinks, baby products, children's snacks and flavour additives. And, whole banana pieces, used frozen and dried, or for baby products.

ITALIAN INVENTION

In Italy you met a company that manufacture fruit processing equipment. What potential innovation do they offer for banana growers?

They have developed a banana peeler to be used in making puree. The machine gets around a 55 per cent recovery rate, the pulp then goes through another machine to separate out small pieces of skin that end up in the pulp.

This could have added benefits for Australian producers, due to our higher cost of labour in many cases, compared to other banana producing nations.

EXPORT OPPORTUNITIES

You have done some extensive travel during your Nuffield experience, do you see any significant opportunity in export?

Definitely. Our fresh domestic banana market is in a state of over-supply, therefore export markets have huge potential to provide market opportunities. These opportunities could be in fresh or value added. But we need to focus on high end and high value to compensate for our higher production costs.

However, Australia has an advantage over our competitors. We have a very high level of food safety, very high quality standards, very reliable and trustworthy. The Australian brand is strong and very well respected across the world.

The middle class in Asia is growing at a phenomenal rate. With Asia's close proximity and food quality issues this presents real opportunity for us. There are lots of good examples of Australian industries doing this.

NUFFIELD APPLICATIONS

If you are interested in becoming the next Nuffield Scholar go to the Nuffield website www.nuffield.com.au.

Applications for 2019 scholarships will open on 1 April 2018. The process for being awarded a 2019 scholarship includes application and interview processes in 2018. Applications are required from April–June 2018, interviews will be held in July/August. Scholarships will be awarded in September 2018 and travel will commence in 2019.

WELCOME ABOARD AMY

The ABGC welcomed new Senior Communications Officer Amy Spear to the team last month.

Amy replaces former Senior Comms Officer Sonia Campbell, who took on the role of Communications Manager after the departure of Paula Doran.

Amy comes with a wealth of media and communications experience. She has spent the past decade working across print, broadcast and digital media. She's worked for ABC Rural in South Australia and Broken Hill, spent time with major mastheads under Fairfax and NewsCorp and produced radio for ABC Darwin before moving to Queensland in early 2017. Prior to joining ABGC, she was a Communications Officer for Griffith University.

Some of Amy's extended family are banana growers on the mid north coast of NSW. The Bananacoast Credit Union, originally designed for growers, began in her grandparents' house. She takes so much pride in her banana heritage that she even had her wedding photos taken in a banana field earlier this year.

OMETHOATE EXTENSION

APVMA have extended Permit PER84270 to allow the use of registered Omethoate products (Folimat 800) to 1 December 2018.

The period of retail supply has also been extended to 1 December 2018 for omethoate products manufactured before 31/03/17 as listed in the permit.

Please check the permit for approved labels and uses at the APVMA permits search page at: https://portal.apvma.gov.au/permits (search for omethoate).

AUSTRALIAN BANANAS BUNCH OF MEMORIES

It's been almost 20 years since the ABGC produced this festive edition of Australian Bananas.

The 1997/98 Annual Report inside reflected on the ABGC's sixth year in operation, noting achievements such as successfully lobbying the Federal Government for financial support after Black Sigatoka was found at Alexandra Farm at Daintree.

Len Collins concluded the report by announcing that he would stand for a fifth and final year as Chairman.

"I LOOK FORWARD TO THE FUTURE WITH OPTIMISM FOR I KNOW THAT IN TIMES OF GREAT ADVERSITY AUSTRALIANS AND AUSTRALIAN BANANA FARMERS RISE TO THE CHALLENGE," HE WROTE.

Among the nineties hairstyles and industry reports were articles on the upcoming third annual conference, a feature on paper made from bananas and research information from Stewart Lindsay—well, some things don't change!

Australian Banana Growers' Council Inc.
Volume 4, December 1998

Len Collins, Chairman
Australian Banana Growers' Council Inc.

Stewart Lindsay, Centre for Wet Tropics Agriculture, QHI, South Johnstone, spoke about the Cavendish mentality at the second National Banana Industry Congress

John Robinson (left) talks packing with ABGC Industry Development Officer Kym McMecken at Pike's shed, Coffs Harbour.

SOILS AIN'T SOILS

By Paul Nelson and Ryan Orr, James Cook University, Cairns and Tony Pattison, Department of Agriculture & Fisheries, South Johnstone

The selection of good banana growing soils is one of the most critical factors for successful banana production. On the wet tropical coast of North Queensland, good drainage is a critical factor. On the Atherton Tablelands, the soil's ability to store moisture for plant growth is particularly important.

It should come as no surprise that there are only a few soil types having all the characteristics required for that banana production region. Geographical analysis by James Cook University has found that 95% of bananas are produced on 24 different soil types. However, 64% of banana production is based on only five soil types or 'series'. Each soil series has unique physical and chemical properties down the profile, which in turn dictate a lot of the soil biological characteristics.

The five most common soil series for banana production are Innisfail (15%), Pingin (14%), Tully (14%), Tolga (9%) and Liverpool (6%). The other 19 soil series, each with less than 5% of the total banana growing area, make up the other 31% of the area. The five most common soils have clay or clay loam top soils with a clay content between 29%–55%. Clay is important for holding on to nutrients and water. The Tolga series, found on the Tablelands where water storage is very important, has the highest clay content at 55%. The soils on the wet topical coast tended to have the greatest sand content, around 50%, which helps with drainage.

DISEASES AND SOIL

The occurrence and virulence of disease causing organisms that attack roots can be dictated to some extent by the soil type. Recent work at James Cook University has found that, of the main soils used to grow bananas, those with a higher clay content tended to suppress Panama disease Race 1 more than those with less clay. This suppression may be due to several physical, chemical and biological factors associated with clay content. A further assessment of the composition of microbial communities living in the different soils is currently underway by University of Queensland researchers using DNA-based techniques.

While soil type is important, many of the soil properties involved in suppression of soil-borne diseases can also be changed through management practices. Tillage, application of fertilisers, lime and other amendments, management of drainage and management of ground cover all influence soil properties and the balance of micro-organisms.

Knowing your soil type can help understand which farm management practices are most important at promoting a beneficial soil biology, by creating a good physical and chemical environment for beneficial organisms to survive and to promote banana production.

Map showing the 24 sampling sites to include 95% of the soils used for banana production in North QLD.

A pot trial showed that the main banana growing soils of Far North Queensland differed in their ability to suppress Panama disease Tropical Race 1 (Credit: Alison Bowen).

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 key investment visit horticulture.com.au.*

STRENGTHENING RESEARCH TIES WITH INDONESIA TO GUARD AGAINST BLOOD DISEASE INTO AUSTRALIA

University of Queensland's Professor André Drenth is one of a select few researchers invited to participate in a new Indonesian Government program that aims to strengthen Indonesia's global research collaborations and boost food security, by studying tropical plant diseases such as Panama Tropical Race 4 and blood disease of bananas.

His visit to the country's oldest university, the Universitas Gadjah Mada in Yogyakarta in October, not only aimed to build meaningful collaboration with Indonesia, but also strengthen Australia's future capabilities of keeping out future disease. Professor André Drenth reports.

Blood disease of bananas is a serious problem in Indonesia. It is part of a group of pathogens causing bacterial wilts and is caused by a bacterium called Ralstonia syzygii subsp. celebesensis.

The pathogen is closely related to Moko disease which occurs in Latin American and the Philippines.

Bacterial wilt diseases are important as they affect the fruit and are spread in infected plant material, fruit, soil and by insects. Since the pathogen infects the fruit the presence of this pathogen has implications for market access.

The symptoms and disease cycle of both Blood and Moko disease are similar. Insects attracted to banana flowers carry the pathogen to healthy plants where the bacteria then infect the male flower. The bacteria then quickly spread to every finger of the developing bunch and degrades the pulp.

The vascular tissue throughout the plant shows a reddish discolouration which oozes reddish-brown when cut. Young leaves turn bright yellow before turning necrotic while older leaves turn yellow, collapse and die. The bacterium colonises the whole plant such that suckers will also be infected.

Australia is currently free of both blood and moko disease and it is important to keep these pathogens out of Australia as the cost of control, through regular monitoring and removal of infected plants is expensive.

Over the last 20 years blood disease has increased its spread significantly in Indonesia and it is now also reported in Malaysia. Moko disease that was only present in Latin America and the Philippines is now also present in Malaysia.

** Story continues on page 36.*

MAKING BANANAS EVEN MORE APPEALING

As the Australian Bananas marketing campaign continues to build momentum, research results are looking positive.

Over the last six months we have increased advertising recall and kept bananas as the number one energy snack while maintaining purchase frequency and volume, despite price fluctuations. Hort Innovation Marketing Manager, Elisa King reports.

TELEVISION

Our most recent TV burst kicked off in August across all major metro and regional markets including Foxtel, delivering full national coverage.

Given our campaign is now well established, we ran a greater proportion of cost-efficient 15 second commercials versus 30 sec. This cost advantage allowed us to reach a higher proportion of people aged 25–54 during this TV burst (45% vs. 35%).

This latest burst was able to tap into a peak programming period for each of the networks.

Overall, our commercial appeared in 8 of the top 10 performing TV shows in metro markets, and 10 of the top 10 performing shows in regional markets including: The Block, The Bachelor/ Bachelorette, Hell's Kitchen, The AFL/Finals Series, The Project, A Current Affair, Nine News and Seven News.

A highlight was a placement in the best performing episode of the Bachelorette for the season.

In metro markets our ad was seen by 3,066,722 people aged 25–54 at least 2 times during the campaign period. In regional markets it was seen by 1,149,466 people 25–54 at least 2 times.

OUT-OF-HOME

Our out-of-home investment continues to play a pivotal role in delivering scale and repeat exposure for the Australian Bananas brand.

Retail Digital Poster Panels, buses, gyms and large format digital billboards all featured Bananas advertising from September to the end of November across all markets.

Specially tailored large-format creative concepts were produced for this burst to match our message to each out-of-home location, delivering excellent cut through.

Our Retail Digital Poster Panels are a great way to deliver a highly targeted message. 70% of our panels in shopping centres were located directly in front of supermarkets to prompt customers just before purchase. These panels were also time-targeted to appear during key snacking and shopping periods.

This activity was seen by 8,200,053 people 25–54 during the campaign period.

Bus-side posters delivered mass awareness and impact to our audience along their daily commute.

This financial year, we secured the entire bus-side network (versus the 35% we have booked in the past) which meant we reached 400,000 more people than in the previous financial year.

The final layer of out of home investment featured targeted creative in over 400 gyms nationally. This fitness-focussed campaign appeared on over 975 digital screens as well as over 1,800 standard TV screens. We also negotiated 636 cardio screens and high impact placements in Fitness First magazine free of charge.

All up our gyms campaign reached 5,733,784 people aged 25–54.

From mid September we reintroduced our commercials to cinema-goers nationally. This gave us huge exposure beyond the traditional TV audience and extended our presence in retail centres close to supermarkets.

We strategically ran the cinema campaign during some of the busiest periods for cinema attendance, with our 11 week campaign falling over the October school holidays.

We secured prime positioning on 907 movie screens across a wide range of Blockbuster movies.

This cinema activity was supported with 15 second animated videos on 432 cinema foyer digital screens—half of which we negotiated as bonus.

In total our cinema campaign reached 811,499 people 25–54 in a highly engaged and captive environment.

ONLINE

Our online advertising campaign ran from the end of August to mid November.

This activity extends the visibility of our TV commercials in popular online environments such as premium Catch-up TV, where a growing audience is watching TV at their preferred time across Network 7, 9, 10 and SBS catchup TV platforms.

Our catchup TV activity continues to deliver a significant incremental audience on all devices including mobile, tablet and computer.

This burst, we also ran six new 6 second video ads on YouTube and social media platforms. These shorter ads were designed to quickly convey our message without being overly intrusive. Due to their cost efficiency, we were able to reach a far greater audience with 3,800,000 ad impressions during the campaign period.

We also reintroduced online display ads on high-visibility websites. This time, we used point of sale data from Coles to specifically target people who have stopped buying bananas. The performance of this activity has been well above industry benchmarks with a click through rate of 0.36% for our lapsed/lapsing buyers (industry average 0.10%).

With more than 90% Australian households buying bananas, the ability to target a lapsed audience and re-engage them is a powerful marketing tool.

SOCIAL MEDIA

The Australian Bananas social media activity delivers a consistent brand presence throughout the year.

Since July 2017, we have delivered over 22,000,000 impressions to audiences across Facebook and Instagram and over 5,000,000 engagements with bananas content have been recorded—either a like, comment, share or view.

Our notoriously catchy creative has had a greater focus on recipes and building partnerships with high profile social media influencers. At key times over the coming month e.g.: Boxing Day, Australia Day, ANZAC Day, we will re-introduce grower content that has previously performed very well.

PUBLIC RELATIONS

Our PR activity continues to build awareness and positive conversations around Australian Bananas in the media.

For the second year dietitian and Australian Bananas ambassador, Susie Burrell, has communicated the health benefits of bananas through monthly content shared on her blog Shape Me and ongoing social media support.

To stay top of mind with food media, we have developed 12 new delicious bananas recipes. The first six recipes have been pitched to consumer food and health media securing 61 pieces of coverage reaching 5,099,666 people to date.

THE ENERGY CONTINUES

While our latest research results have been pleasing, the job of marketing Australian Bananas never stops. We are already well underway with our plans for the next phase of our campaign and are always focused on one goal—delivering more bang for your banana buck!

MORE AUSSIES WARY OF PESTICIDES THAN GM FOOD

Australians are noticeably happier about eating genetically modified foods than foods grown with pesticides, according to a survey conducted by the Australian National University.

'The Australian Beliefs and Attitudes Towards Science Survey' was released in August this year and showed nearly half of respondents (46.6%) thought it was generally safe to eat GM foods. By comparison, only 37% of Americans believed GM foods were safe to eat.

When it came to consuming foods grown with pesticides, 62.3% of Aussies felt they were 'generally unsafe'. Roughly a third (31.1%) rated them as generally safe, compared to 28% of Americans.

The survey, which delved into a range of scientific issues, also found that men were a little more likely to approve of 'controversial scientific interventions' in life, and to believe it's safe to eat genetically modified foods or those grown with pesticides.

An initiative of the Australian National Centre for Public Awareness of Science, respondents rated farmers among the top three professions contributing to the wellbeing of society, just behind scientists and doctors.

DAIRY-FREE 'MILK' PRODUCTS HAVE GONE BANANAS

Fancy some banana milk with your morning cereal and coffee?

Dairy-free alternatives to traditional cow's milk have surged in recent years, but the latest addition steers away from popular nut varieties and into familiar fruit territory.

Texas-based vegan company Mooala (their mascot is a koala with dairy cattle-like fur) has bottled the beverage, which they say contains pureed bananas, roasted sunflower seeds and a dash of cinnamon and salt.

'Bananamilk'—not to be confused with a banana flavoured milk—can be used as an alternative for smoothies, baking and even hot drinks. It's both nut and dairy free.

Mooala, who also produce almond milk, are currently stocked in retailers such as Whole Foods and Costco in the US.

Despite it's very Australian-inspired name, the company said local retailers are still a year or two away.

Who knows, perhaps there's room for an Aussie grower to milk their produce for all its worth—quite literally.

LESS RUN OFF GIVES IMPROVED PROFITABILITY FOR BANANA FARMS

New research shows that banana farmers can improve their profitability and at the same time reduce the run off of dissolved inorganic nitrogen (DIN) and total suspended sediment (TSS).

The results have been found in the RP140B Banana BMP Project report which presents an economic assessment of adopting banana best management practices.

The Department of Agriculture and Fisheries (DAF) publication can be downloaded at: https://publications.qld.gov.au/dataset/862d67fd-9069-44ec-9e73-7354e6f20a64/resource/8e9fe2c7-931e-4e06-90e0-9cd791ead488/download/rp140b-technical-report.pdf

STRENGTHENING RESEARCH TIES WITH INDONESIA TO GUARD AGAINST BLOOD DISEASE INTO AUSTRALIA CONT'D...

The increase in spread and wider distribution of these serious pathogens just to our North has of course implications for the Australian Banana Industry.

To better understand the spread of this disease and prevent it from entering Australia the new banana diagnostics project BA16005 awarded to Andre Drenth at the University of Queensland is tasked with improving diagnostic tests for bacterial wilts.

Further links and funding provided by the Indonesian government has enabled us to conduct a survey in Indonesia (see figure) to look at the spread of this disease and obtain DNA for use as controls in diagnostic assays. Currently with a small initiative grant for blood disease from the Plant Biosecurity CRC we are conducting further surveys in Eastern Indonesia.

Knowing the distribution of these bacterial wilts, having reliable diagnostics and working out how to contain and eradicate the pathogen if it arrives in Australia will be of significant benefit to the Australian banana industry.

BANANA RACE DAY

Another superb day for punters and fashionistas at the Banana Industry Race Day at the Innisfail Turf Club in August. Hundreds enjoyed a great lunch at the Australian Banana Growers' Council sponsored luncheon, followed by the ever popular Fashions on the Field.

L–R: Lisa Crema, Alison Campbell and Jenny Crema.

Always a superb crew of volunteers providing a great lunch for the punters.

L–R: Dean and Jess Sinton.

L–R: Jason Aquilina and Gavin Devaney.

L–R: Nic Yee and Cameron Flegler.

L–R: Christine and Rob Mayers.

L–R: Jordan and Dale Bennett.

L–R: Jayde Mayers and Michelle Zahra.

L–R: Katie Ferro, Emily Pattison, Tegan Kukulies and Sarah Simpson.

BANANAS BACK AT MURWILLUMBAH SHOW

Bananas were back in a big way at the 2017 Murwillumbah Show.

After a one-year hiatus, a group of energetic young growers from the Tweed Brunswick Banana Growers' Association ensured the industry was well represented at the showground on November 3 and 4.

Champion Hand of Show went to E & Z McKeever, Champion Bunch of Show to G & J Colefax and A & S Everest took home Champion Carton of Show and Most Successful Exhibitor.

The banana exhibit featured new varieties, free fruit and jam tasting and plenty of eye-catching Australian Bananas' merchandise.

A prize pool of $3500 was on offer thanks to continuing and new sponsors.

** Photos supplied by Kim Honan, ABC and Matt Weirnert, NSW DPI.*

Farming brothers Ethan and Zac McKeever picked up Best Hand Cavendish and Champion Hand of Show.

Zac McKeever talks with ABC rural reporter Kim Honan.

NSW banana industry development officer Matt Weinert on hand at the banana exhibit.

SHOW RESULTS

- **Best Commercial Bunch of Cavendish:** G & J Colefax
- **Best Commercial Bunch of Lady Finger:** Daniel Thompson
- **Heaviest Bunch of Cavendish:** M & D Gadsby (48kg)
- **Heaviest Bunch of Lady Finger:** Will Everest (39kg)
- **Best Hand Cavendish:** E & Z McKeever
- **Best Hand Lady Fingers:** A & S Everest
- **Best Commercial Carton Cavendish:** Atwal Brothers
- **Best Commercial Carton Lady Fingers:** A & S Everest
- **Champion Hand of Show:** E & Z McKeever
- **Champion Bunch of Show:** G & J Colefax
- **Champion Carton of Show:** A & S Everest
- **Most Successful Exhibitor:** A & S Everest
- **Any Other Variety (Bunch):** A & S Everest

BANANA WOMEN'S LAUNCH

Such a fantastic show of support at the official launch of the ABGC's new Banana Women's Network at Innisfail on 27 October.

The network aims to provide a platform for women in the banana industry to share ideas and experiences with like-minded women and judging by the success of its first meeting, it looks like it's hitting the mark.

L–R: Katrini Cini and Blaise Cini.

L–R: Alicia Johnston and Sharon Collins.

L–R: Amanda Bastin, Zanelle Collins and Mary Collins.

L–R: Katie Ferro, Lyndal Mackay and Katrina Cini.

L–R: Dale Bennett and Sarah Simpson.

L–R: Katrina Cini, Katie Ferro, Linda Jaques, Kylie Worth and Amanda Bastin.

L–R: Ingrid Jenkins, Dale Bennett and Tegan Kukulies.

BANANA HURL

It may be too late for Tokyo 2020, but competitors at this year's 'World Championship Banana Hurl' were clearly going for gold—or yellow, in this case.

Organised by the Nambucca District Banana Growers Association, the unique event was held in conjunction with the Macksville Gift on November 11.

In the Open Male category, Tim Eschebach took out first prize for the third time with a banana throw of 66.72 metres, while Tammy Woods claimed the top spot in the Open Female category after hurling her fruit 26.58 metres. Congratulations also to Simon Walker, Charlotte Kearney, Malcolm Noble and India Walker, who finished first in their Secondary and Primary divisions.

The 2017 Banana Hurl, with prizes and merchandise supplied by Hort Innovation, raised almost $160 for Macksville cancer support. Throwing bananas were donated by Michael Spear, eating bananas by Stephen Spear and volunteers from the community and association kept the event running smoothly.

** Photos supplied by Helen Rushton.*

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