

Australian Bananas



Issue 40, Summer 2013-2014

Hopeful harvest

Trial blocks yield answers in the search for disease-resistant varieties



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Freckle eradication



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Retail campaign



Page 22 China-
Philippines study tour



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Cover: The Banana Plant Protection Program's Dr Mike Smith (left) and David Peasley at the Duranbah trial block.
Photographer: David Hancock.



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Challenges and achievements set 2014 agenda



ABGC Chairman Doug Phillips looks at the year's major events.

With Christmas and the New Year approaching, it's an opportune time to reflect on some of the challenges and successes of the past 12 months.

Once again it's a year when the banana industry has been subjected to the whims of Mother Nature. In January, ex-tropical cyclone Oswald affected many of the production regions on the east coast, most notably in south east Queensland and in New South Wales where damage was severe and losses significant.

At around the same time, in Western Australia our counterparts also bore the brunt of nature – not through cyclone but an extreme heat wave that significantly damaged fruit and plantations. Just recently, in mid-November, some growers in New South Wales were completing the year the same way it began – more damaging weather, this time hail storms.

Of course banana farmers, like all farmers, are unfortunately accustomed to dealing with the vagaries of the weather. My thoughts during the year have been with all affected growers as they work through these challenges – hopefully bouncing back.

Congress

The biennial Banana Industry Congress was held this year and, as with previous events, was a positive experience. Held

at the Palmer Coolum Resort on the Sunshine Coast, it gave growers and supply-chain partners the opportunity to hear about the latest developments in marketing and research being undertaken by industry.

Of course it was also a great opportunity to catch up with old friends during the extensive social program. Congress culminated with our industry Ball at which I had the great pleasure in presenting the Awards of Honour. Recipients were Senator Ron Boswell – a long-term ally of the banana industry; Tony Heidrich, a former CEO of ABGC who led our industry through some of its toughest challenges; and Mark Nucifora, a north Queensland grower who has provided outstanding service to the industry at the grass-roots level. They are recipients who represent both the diversity of those involved with our industry and the singular focus we have on improving our future.

Pest levy

While at Congress, I reported to members that ABGC had, after consultation with our growers, written to the Federal Agriculture Minister seeking his approval for an Emergency Plant Pest Response (EPPR) Levy. I was pleased to later announce the request has been granted.

Given our industry's constant engagement with pest management, including the current response to the Banana Freckle outbreak, it's worthwhile summarising the details here:

- An EPPR Levy to be set at zero, until

or unless required in the event of an incursion

- If an incursion occurs, the debt to the Federal Government to be repaid by implementing a positive EPPR Levy, via a thorough advisory and communications process with banana industry levy payers.

The importance of this levy cannot be understated as it provides industry with the ability to discharge its financial obligations associated with an exotic pest incursion as defined by the EPPR Deed.

The eventual approval of the levy was opportune as it was only a few months later that Banana Freckle was detected on Cavendish bananas within the Northern Territory. Since this detection, ABGC has been working with State and Federal biosecurity agencies and Plant Health Australia to initiate an eradication program. This program has started and is progressing well. Under the response program the costs will be shared between the various State and Federal governments as well as industry. Industry's commitments will be funded by a positive EPPR Levy. We will have more information on this in 2014.

Year ahead

The EPPR Levy is just one item already on the agenda for the New Year. It will be joined by others – probably some others already mentioned here. That's because many of our industry's issues revisit us so frequently – the challenges dealt out by Mother Nature are ever present; so are the challenges of producing bananas in a very competitive marketplace.

My roles of ABGC chairman and grower have made me keenly aware of the difficult times being experienced across our growing regions, particularly with regards to the returns we receive for our product. Please be aware that your industry body continues to work to do everything possible to improve our outlook. One positive for our industry will be the finalisation of a new Strategic Investment Plan that will guide us through the next five years (see report, Page 8).

Finally, I would like to take this opportunity to wish all growers and supply chain partners a Merry Christmas spent in the company of family and friends, and a happy, safe and prosperous New Year.

Doug Phillips, ABGC Chairman 🍌

Many issues but growers are always our focus



Events over the past few months have shown the breadth of issues affecting growers and our industry, says ABGC CEO Jim Pekin.

A disease incursion, a proactive approach to farm practices in the wet tropics and some important initiatives taking place in the broader horticulture sector have been among them.

These events are worth noting here and are just some examples of how the ABGC has been hard at work for the benefit of banana growers.

Banana Freckle

The exotic strain of Freckle, *Phyllosticta cavendishii*, was found in Howard Springs, south of Darwin, in July. This set off the pre-determined processes under the Emergency Plant Pest Response (EPPR) Deed, signed some years ago by the ABGC, other industries and all government jurisdictions.

Since then, ABGC has worked with the Northern Territory's Department of Primary Industry & Fisheries (DPI&F), Plant Health Australia, the Nursery & Garden Industry Association, and all the jurisdictions through the Consultative Committee on Emergency Plant Pests which determined the pest was technically feasible to eradicate.

I would like to take this opportunity to thank the many hundreds of NT residents for their support of the eradication program. These are the rural residents in the areas where Banana Freckle has been found – Howard Springs, Batchelor, Rum Jungle, Humpty Doo and Acacia Hills. It was difficult for residents to lose their banana plants but most understood it had to be done to protect the national and NT banana industries. The national industry is worth \$500 million at farm gate and many million more if you think about the associated industries involved in transport, farm supplies and produce wholesale and retail.

I also thank the NT DPI&F for their leadership and implementation of the eradication program, especially their Chief Plant Health Manager, Stephen West. At time of writing, the incursion response, including surveillance and eradication, is going very well.

The benefits of eradication are far



The ABGC worked with government and industry groups to respond to the NT's Banana Freckle outbreak.

HAL review

Horticulture Australia Limited (HAL) has commissioned consultants ACIL Allen to undertake a major performance review of HAL, with the final report due in May 2014.

All horticultural farmers' compulsory levies get collected by the Federal Department of Agriculture and provided to HAL to manage. From our end, the Banana Industry Strategic Investment Plan is implemented through banana R&D and marketing levies, managed by HAL. HAL comprises a Board, management and staff, and (thirdly) Industry Advisory Committees (IACs). The Banana IAC is a HAL committee and recommends investments for banana R&D and marketing to HAL management.

HAL's media release on this noted:

"This performance review will include an examination of the HAL service delivery model against the benchmark of good governance practice. The review will include the membership structure of HAL, the nature and transparency of funding arrangements and its ability to deliver services in an efficient and effective manner while meeting the future and strategic demands of a fast growing industry sector. The review will also closely examine the efficiency of the existing levy structures and the process by which levies are conceived, implemented, collected and expensed."

I jointly led a committee guiding a consultancy to develop HAL members' input to this review. The ABGC has also been in talks with various people on this and will make a submission to this review.

Continued next page



Damage from hail storms south of Coffs Harbour. Storms bookended the year for some NSW growers.

Storms in east but west stays dry as Summer starts

Dry weather conditions across all growing regions were broken by some November rain on the east coast.

Unfortunately the rain brought damaging storms to some areas, particularly New South Wales, including reports of substantial damage to farms on the mid north coast, just south of Coffs Harbour.

In Western Australia, the Carnarvon growing region had no rain in November and only several millimetres of rain recorded in October. Rainfall records show no significant rain in recent months with the biggest reported fall being 20 millimetres in June.

North Queensland has produced record levels of fruit in recent months with November rain and temperatures continuing favourable growing conditions for the start of Summer.

Queensland

In north Queensland, there have been dry conditions but generally mild

Damage at a plantation south of Coffs Harbour following the November storms.



temperatures during Spring. Growers have been irrigating to keep water up to the bananas.

Good growing conditions in recent months led to heavy production levels in late September, October and November.

The wet season officially began on November 1 and storms began bringing widespread rain soon after.

There were some reports of storm damage to a few farms.

No major pest issues have been reported although there has been some red spider mite. Leaf spot levels were low in the lead in to the wet season.

Fruit quality has been good. According to reports, there has been less nurse suckering this year.

New South Wales

Dry and windy conditions were experienced in recent months. In November, storms brought rain and some hail to the far north and mid north coast regions.

On the mid north coast, Boambee and Bonville, south of Coffs Harbour, suffered

significant hail damage to banana crops and some infrastructure. There were reports of major destruction with some plantations completely destroyed. The area was reported to have experienced two severe storms during November – the first causing severe damage and the second following to complete the destruction.

Damage to plants on the worst affected properties was estimated at between 80 to 100 per cent. Little or no damage was reported elsewhere in the Coffs District. Some hail storms were reported in the Nambucca region but there were no damage reports.

Plantations affected by ex-tropical cyclone Oswald in January have returned to production but heavy supply from north Queensland has restricted market demand for NSW fruit.

Western Australia

Lack of water has hampered banana production. Coming off the back of the lowest Winter volumes experienced, Spring volumes improved, but not to the levels of previous years.

Emergency irrigation water was released by the State Government with the Water Department releasing 1.5 gigalitres in the Carnarvon region. In November, temperatures topped 40 degrees over two days.

Growers have made Spring plantings and await Summer rains to bring a renewed supply of fresh irrigation water.

The Sweeter Banana Co-Operative attended the Perth Royal Show which ran in early October, and launched their Sweeter Banana Bread, giving away 6,500 samples to showgoers. The Bread is made with marked bananas unfit for sale at the market.

In the north of Western Australia, bananas are being planted and harvested in Kununurra in the Ord River irrigation area.

Banana grower AGM discusses industry sustainability

Grower members of the banana industry's peak body, the Australian Banana Growers' Council (ABGC), have discussed banana production levels, wholesale pricing and the financial difficulties currently being experienced by many growers.

At the ABGC's Annual General Meeting, held in South Johnstone on November 26, growers spoke about industry sustainability at the current high production levels. Also discussed were options for increasing the market for bananas.

Production levels

ABGC Chairman Doug Phillips commented on production levels, telling the meeting national banana production during the financial year's first quarter had trended above the previous first quarter, raising the possibility that higher production could continue during the rest of the financial year.

"As a grower myself, I am keenly aware of the pressures being felt across our growing regions, particularly with regards to the record levels of supply and corresponding returns we receive for our product," Mr Phillips said.

"Please be aware that our industry body continues to work to do everything possible to improve our outlook. In particular we look forward to the development of the industry's new Strategic Investment Plan.

"As the peak industry body, we also continue to offer assistance and expertise with the projects that are aiming to improve our industry. A focus of our activities is encouraging investment in supply chain communications, collation of data and the flow of that information. We believe this will assist all growers with their business planning and decision making."

Industry positives

Mr Phillips told the meeting that despite the record levels of production experienced in recent months and low prices, there were some positives.

"I think the things going for us in the past six months are that quality has been really good, demand generally has been pretty good, competing product lines have been relatively scarce and relatively poor in quality."

He said some of the higher production levels were due to regional diversification initiatives taken by some growers – something that was desirable to safeguard overall industry production capacity in the event of natural disasters striking individual growing regions.

Mr Phillips said ABGC was ready to assist with any initiatives growers may propose to address production levels but that these needed to be driven by banana-growing businesses.

Other issues

The meeting also discussed the Banana Freckle incursion response and the Emergency Plant Pest Response (EPPR) Levy, which will need to be put in place after all the information is available on the freckle eradication and growers consulted. Growers spoke about initiatives to encourage additional ABGC membership and changes to the release of banana transport figures to grower members.

Directors re-elected

Two ABGC directors, NSW-based grower Stephen Spear and north Queensland grower Steve Lizzio, were re-elected unopposed to their Board positions with the meeting congratulating both on their reappointments.

The meeting also heard that a director from either the WA or NT growing regions was still being sought to join the



Board following the resignation of WA director Michael Nixon earlier this year.

Thanks to Bob Brighton

Former grower Bob Brighton told the meeting he would be completing his retirement from the industry with this year's AGM being the last he would attend.

Mr Phillips extended thanks to Mr Brighton for his years of involvement with the industry.

"Your contributions have been certainly significant and very much appreciated and I say that on behalf of the ABGC Board and all past and present directors," Mr Phillips said.

Thanks to NAB

Following the meeting, a social barbecue was held at the Currajah Hotel, Wangan, (pictured above) with sponsorship for the barbecue provided by NAB Agribusiness.

Next AGM

The AGM was held at South Johnstone after being held last year for the first time in Tully. Consideration will be given to holding the next AGM in Tully.

ABGC announces Board appointments

The Australian Banana Growers' Council (ABGC) has announced the Board's executive appointments made at its quarterly Board meeting in November.

South Johnstone grower Doug Phillips has been reappointed as ABGC chairman, commencing his third year in the role. Tully grower Paul Johnston has also been reappointed as treasurer following his initial appointment to the role last year.

In a change to the role of vice chairman, Tully grower Adrian Crema has been appointed to the role following the retirement from the Board's executive team of Mullumbimby grower Peter Molenaar who continues as an ABGC director.

Mr Phillips thanked Peter Molenaar for his valued contributions as a member of the executive and said all Board members looked forward to continuing their work together to advance the interests of

banana growers.

The ABGC held a two-day Board meeting following the November 26 AGM and discussed matters including the development of new banana varieties, biosecurity legislation, management of the Banana Freckle incursion in the Northern Territory and issues affecting the broader horticulture sector, including the current review of Horticulture Australia Limited (HAL).



Single voice

The HAL members' meeting of November 22 considered and agreed on a proposal for the formation of a new across-horticulture advocacy body. The ABGC is part of the committee that developed this initiative. It will build on the work of the Horticultural Task Force, be formed into a public company, ensure most (if not all) horticulture peak grower bodies are

members, and ensure there is a strong and united horticulture body to advance the interests of all horticultural growers on national issues.

Those issues currently include the outcome of the HAL review, biosecurity legislation, Agvet chemicals regulation, employment conditions and innovation, and trade and market access.

Members are encouraged to contact me on any of these matters.

Year ahead

As Doug Phillips has noted in his Chairman's Comment, many banana growers are facing tough economic times due to production issues and prices, particularly over the past six months. The ABGC welcomes your views on these issues as we work towards a more prosperous 2014 for growers.

Jim Pekin, CEO

ceo comment... continued from previous page

BGA teams line up

Banana growers' associations in Queensland and New South Wales have elected officers at annual general meetings held in November.

Bartle Frere banana grower Rob Mayers was re-elected president of the Cassowary Coast Banana Growers' Association. Newly elected to BGA roles are Mission Beach grower Naomi Brownrigg as vice president, Tully grower Jane Rowe as treasurer and QDAFF Development Horticulturist Naomi King as secretary.

In Coffs Harbour, Wally Gately and Ron Gray have effectively exchanged their executive roles within the Coffs Harbour and District Banana Growers' Association.

At the Annual General Meeting, Mr Gately, the former vice president, was elected unopposed to the role of president. Former president Ron Gray nominated for the position of first vice president and was elected unopposed to that role.

Woolgoolga grower Jeff Eggins was elected as second vice president. David Pike continues as treasurer and Phil Bicknell as secretary.

Have your say on draft industry plan

A draft of the banana industry's new Strategic Investment Plan (SIP) setting out levy and matched-funding investments for the next five years will be available for stakeholder comment from mid-December.

Growers and others in the industry will be able to provide further input to the draft before it is finalised.

The draft is being reviewed by the Banana Industry Advisory Committee (IAC) before being made available for comment.

The SIP sets out how levy investment will be directed into research and development (R&D) and marketing projects starting from the 2014-15 financial year and continuing through to 2018-19.

It is expected that about \$6 million annually will be invested over this period with those funds including levies and matched funding from the Federal Government for R&D projects. No matched funding is provided for marketing which is solely levy funded.

The Plan focuses on three key areas:

- Maintaining sustainable and profitable supply – addressing plant health and other agronomic needs of the crop, biosecurity measures, new varieties, supply chain

development, industry data and a number of other R&D initiatives

- Increasing demand for Australian bananas – addressing consumer and marketing research and the industry marketing plan
- Effective adoption of R&D and building industry capacity – addressing industry extension and communication, capacity building, risk planning and monitoring return on investment of levy funds.

The plan has been formulated after consultation workshops in north Queensland and northern New South Wales involving more than 45 participants and discussions with other industry stakeholders.

After all input is received on the draft, a final plan will be considered by the IAC in February and will then be presented to the Horticulture Australia Limited (HAL) Board.

Further details will be provided in the December Banana Growers' e-Bulletin and the draft plan will be available on the ABGC website www.abgc.org.au from mid-December. Comment can be provided to the consultant, Jenny Margetts from Plant & Food Research, using contact details which will be provided on the website.

Committee guides six million dollar plan

It's the program working to ensure the banana industry's future – a \$6 million plan that is one of the most extensive research initiatives in Australian horticulture.

Now at its midpoint, the five-year Banana Plant Protection Program (BPPP) began in September 2011 and is guided by a six-member team – the program reference committee.

Committee members are four banana growers – Cameron MacKay (Tully), Doug Phillips (Innisfail), Stephen Spear (Nambucca) and Robert Mayers (Bartle Frere); Horticulture Australia Limited Portfolio Manager Ben Callaghan and Australian Banana Growers' Council (ABGC) Research & Development Manager Jay Anderson.

Cameron, Doug and Stephen are members of the Banana Industry Advisory Committee (IAC) to HAL while Robert is a member of the IAC's R&D subcommittee.

The BPPP has four sub-programs covering the industry's major areas of research and development: resistant varieties and consumer choice, safeguarding production and markets, sustainable production systems and building science and communication.

Cameron chairs the program reference

committee and says growers' interest in managing pest and disease issues was one of the major drivers behind establishing the BPPP.

"It was clear from the banana industry's strategic plan that pests and disease issues were high on growers' agendas," Cameron said.

"We wanted to bring together a group of people to build a strong science base to serve the industry for years to come.

"A program approach was used to gain a critical mass and provide a co-ordinated approach to research.

"It has been a long, slow process but I believe we are now close to what we were aiming for at the start."

It is the job of the reference committee to provide feedback to the program leadership to ensure that the program stays on track and maintains a national focus. The committee helps to prioritise new projects and provides information on emerging issues within the industry.

In the area of pest and disease management, there are many issues important to growers. While it can be difficult to prioritise them all, there are some stand-outs. For instance, the program reference committee has heard the industry's views on the importance of research into the soil-borne fungal disease Panama Disease

"It has been a long, slow process but I believe we are now close to what we were aiming for at the start."

Tropical Race 4 (TR4) is and has ensured it is a priority within the BPPP (see TR4 story this page).

Access to tolerant varieties and screening of those varieties has been given a high priority.

Working with the reference committee is a three-member program leadership team – University of Queensland scientist Andre Drenth, tropical-region consultant Richard Piper and subtropical-region consultant David Peasley.

The BPPP communicates with growers through project extension work, such as field days, and through industry publications. An information sheet on the BPPP has been included with editions of Australian Bananas distributed by mail.

For further information on the program, contact the program reference committee members or the program leadership team.

TR4 trial to enter new Territory

The Northern Territory is the only Australian location where TR4 is known to be present.

The disease has devastated the banana industry there and also affects banana production in parts of south east Asia. There are also reports the disease has reached Africa and the Middle East (see report, this page).

The TR4 research in the NT is planned as part of the Banana Plant Protection Program (BPPP) to gain valuable information allowing a better understanding of the disease and varieties to be screened for resistance to the disease.

BPPP Sub Program Leader Dr Mike Smith said it was planned to plant Williams bananas at the Coastal Plains Research Farm, located south east of Darwin, to act as "sentinels" on the site.

"The plants will be used to

test how widely and uniformly the disease is still present in the block, which is important for varietal screening trials to follow," Dr Smith said.

Dr Smith and Program Leader Dr Andre Drenth (pictured below) have been planning the trial with Northern Territory scientists Bob Williams and Lucy Tran-Nguyen.



Panama reaches Africa

The first detections of Panama Tropical Race 4 in Africa and the Middle East have been reported.

They are the first reports of TR4 outside of the south east Asian region.

In December it was reported TR4 had been found on a commercial farm in northern Mozambique earlier in the year. A consortium of agriculture and government groups have been mobilised to address the outbreak and raise awareness throughout Africa.

The report followed the release in November of a the journal Plant Disease said TR4 had been identified in Jordan and could affect up to 80 per cent of bananas in the Jordan Valley region where there is up to 1500 hectares of production.

Dr Andre Drenth in the Northern Territory where a trial block is planned as part of research into TR4.

Taking control

an inside look at eradication HQ

The NT Government launched a major eradication response to the outbreak of Banana Freckle. Government media officer Darrel Trueman takes us inside the eradication program's control centre.

I'm wearing a bright green reflective vest emblazoned with the words "Communications Manager" as I enter the house-sized Biosecurity and Product Integrity Group building. Inside it's a hive of activity.

Several people work at desks and tables in a large room, its white walls covered in maps, charts, and schedules. To one side, a man wears a vest similar to mine, though it's red and reads "Investigations Manager".

Smaller rooms throughout the building are labelled "Controller", "Biosirt", and "Teleconference in Progress". Notes are

jotted on whiteboards. Landlines and mobiles ring. Photocopiers whirr.

A woman wearing a bright blue vest that reads "Logistics Manager" is focussed on a computer screen, her fingers flying across the keyboard as she works to secure and track the resources and services making this effort possible.

There is a lot to do. Welcome to the National Banana Freckle Eradication Program local control centre at the NT Department of Primary Industry and Fisheries (DPIF) campus at Berrimah Farm on Darwin's southern outskirts.

Since the attractively-named *Phyllosticta cavendishii* was confirmed on Cavendish bananas in the NT in August, DPIF staff from across the NT, biosecurity experts from interstate, and contractors have worked on the Banana Freckle response. It is a full-time effort, including evenings and weekends, seven days a week. It involves the eradication of all bananas within a one kilometre radius of infected properties. So far, up until late November, they've identified 14 infected properties and conducted surveillance on more than 3000 properties.

P. cavendishii is a major concern because this is the first time it's been confirmed in the Northern Territory on Cavendish, Australia's main commercial variety. If Banana Freckle spreads beyond the Territory, it could have a significant negative impact on Australia's \$500 million banana industry.

Over in the control centre's DD&D area (destruction, disposal, and decontamination) a DPIF staff member seconded from the business development area has brought her communication and organisation skills to the team. On the wall beside her computer is an impressively-detailed, colour-coded flow chart which clearly identifies the many steps in the eradication processes.

In another wing of the building, the Banana Freckle Hotline is ringing. "We received over 275 calls in November," says an operator who enters details into a computer. "I open a new file for each new caller, 40 per cent of whom don't have bananas, but they're ringing us because we've left a surveillance note on their gate. I let them know we need to check anyway. A small number of people don't want

us to enter their property, but most accept that we have an important job to do. My last caller was rather chatty, telling me about the fabulous holiday he'd just had in the Philippines. He was happy for us to check out his property when he is away."

The Planning Manager is wearing a yellow vest and is a Victorian biosecurity professional who is assisting our team.

"This work is highly structured," she says. "Part of my job is to ensure that there's no loss of accountability, all roles are clear, and nothing is overlooked. We also keep tight reins on where the money is being spent, and what it's being spent on. Having a good outcome is our focus."

I peer out the window of the air conditioned control centre. It's hot and sticky out there today, 33 degrees with 64 per cent humidity.

I think about the rest of our team – dozens of surveillance and eradication staff, and contractors. They're fanned out across Darwin and the rural area, talking to residents, checking properties, swinging machetes, hauling heavy banana trees



Officers working on the eradication plan include NT DPIF chief Plant Health Manager Stephen West (second from left). ABGC CEO Jim Pekin (second from right) visited in October.

in the heat. It's hard yakka.

I'm grateful they're on the front lines, helping us to control this pest that threatens the livelihoods of so many

people. It's been said before, and it's worth repeating, "If you're going to do a thing, do it properly". Thankfully that's exactly what has been happening here.

Freckle eradication to enter new phase

Next steps are being considered in the plan to eradicate the serious fungal disease Banana Freckle (*Phyllosticta cavendishii*) from the Northern Territory.

At time of writing, eradication work on freckle, which is carried in wet spores, had continued through the start of the wet season in November and the rains brought by tropical cyclone Alessia towards the end of that month.

The work is included in the first phase of a Banana Freckle Response Plan drawn up by the Northern Territory Department of Primary Industry and Fisheries (DPIF) and endorsed by a National Management Group (NMG) comprising government and industry representatives.

The NMG and a Consultative Committee on Emergency Plant Pests (CCEPP), which also has government and industry representatives as members, are considering the next actions required.

The outbreak, first announced in August, is the first major find in Australia of freckle on Cavendish bananas. The disease rates as among the worst affecting bananas, along with others such as black Sigatoka. It

poses a serious threat to Australia's \$500 million banana industry.

By the start of December, freckle finds had been announced for 14 infected properties in four areas of the NT and surveillance was continuing.

The disease was initially located on two properties in the Howard Springs area, about 30 kilometres south east of Darwin. It was later found in the Batchelor and nearby Rum Jungle areas, about 60 kilometres further south. The November finds were at Humpty Doo and Acacia Hills, located between Howard Springs and the Batchelor and Rum Jungle areas.

Most finds have been in backyard bananas of rural residential properties but eradications of infected and surrounding properties have included a small commercial plantation at Rum Jungle. The disease has not been reported in major Northern Territory commercial production.

The cost of the eradication, funded jointly by governments and industry, was initially estimated at \$2.8million, including a contribution of about \$500,000 from the banana industry.

Further announcements are expected on cost estimates and the banana industry's funding

of its contribution. It is the first banana industry response under the Emergency Plant Pest Response Deed (EPPRD).

The Australian Banana Growers' Council (ABGC) began working with government as part of the CCEPP response which began when an incursion was first suspected in July.

After a decision to eradicate was announced on October 4, ABGC Chief Executive Officer Jim Pekin travelled to the Northern Territory to attend public meetings in communities where freckle-affected banana plants and fruit had been found.

Freckle is a fungal disease that covers banana plant leaves and fruit with raised black blemishes that have the texture of sandpaper. The fruit is safe to eat but the disease reduces plant yield and the fruit is unsaleable due to its appearance.

Eradication activities have included quarantining infected properties, cutting down and removing banana plants and fruit from designated zones and continuing surveillance work.

More on Banana Freckle – Secrets in the sequences, Page 12.



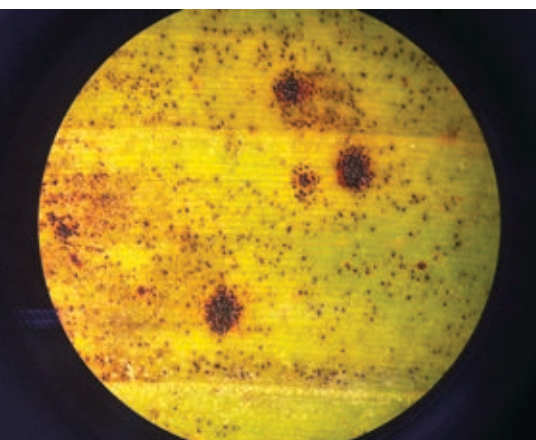
Above: Banana plants are eradicated at a small commercial plantation at Rum Jungle, NT. Below: Eradicated plants are transported in covered loads for burial in trenches in disposal areas.



Secrets in the sequences

For more than eight years, researchers in Australia have worked to unlock the secrets of Banana Freckle. Now, just in time, the painstaking work has been used to help fight our first major incursion to hit Cavendish. The Banana Plant Protection Program's Research Fellow for Banana Diagnostics Dr Juliane Henderson reports.

Below: The formation of Banana Freckle leaf spots can be seen in this view through a stereo microscope. Bottom: Freckle as it appears on an uncut bunch.



Banana Freckle's symptoms are plain to see in the field – raised brownish-black spots with a sandpaper feel. Yet in the lab, where the analysis goes much deeper, it has taken painstaking research to begin to unlock the disease's many secrets.

While the first major incidence of Banana Freckle on Cavendish in Australia was found in the Northern Territory in July, the work that has been helping to fight the incursion began in 2005. And it was only last year that a four-year PhD project made the breakthrough discovery of a previously unknown freckle-causing fungi.

Unique and mysterious

Freckle is a unique and mysterious banana plant disease. It is the only fungal disease found to infect both banana leaves and fruit. While infected fruit remains perfectly edible, its unsightly appearance can drastically reduce its marketability.

On the list of damaging banana diseases, Banana Freckle ranks as one of the world's worst. It is now a major constraint to production in south and south east Asia. In Taiwan, it is considered more serious than black Sigatoka. Studies from the Philippines have shown that without adequate fungicide control, almost 60 per cent of fruit can be rejected.

The disease's symptomatic sandpapery spots may be discrete, or aggregate to form circular or streaking lesions along leaf veins where water has carried the spores. On the fruit, the spots are surrounded by dark green, water-soaked halos and, in severe infections, these spots may entirely cover the fruit at harvest.

The effect on the cosmetic value of the crop is significant. Bunch yields can also suffer due to loss of leaf area through defoliation from severe infection or from control by de-leafing.

Spotting the difference

While Banana Freckle is easily identifiable in the field, it is the host range of the pathogen which has long been a source of mystery to banana pathologists.

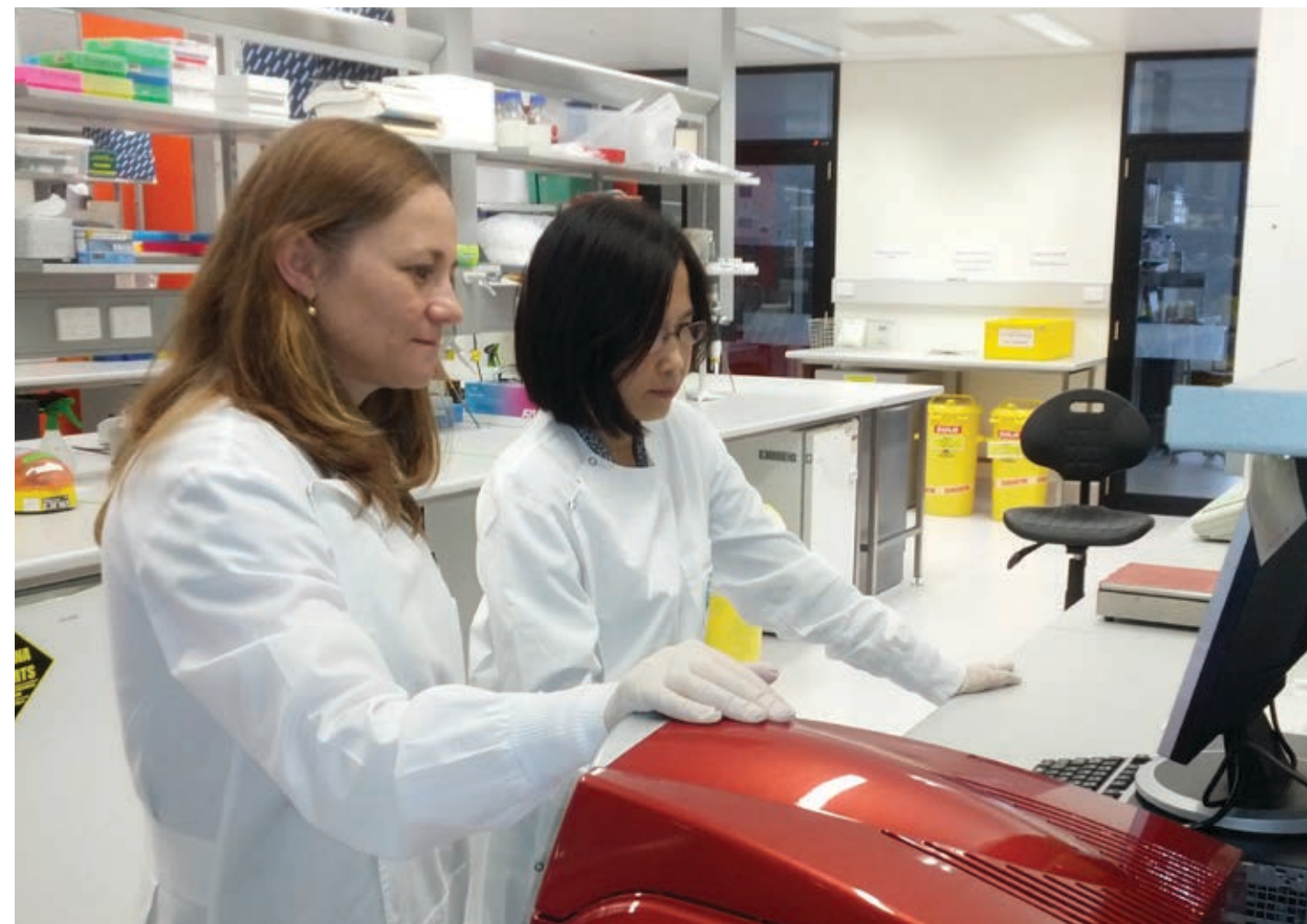
Disease records and field observations spanning decades had led to the hypothesis that two types of Banana Freckle existed.

One type of freckle was thought to occur throughout south and south east Asia infecting both Cavendish and non-Cavendish varieties. A second type, seen throughout Australasia and the South Pacific, appeared to only infect AAB/ABB varieties. This second type was often found on AAB/ABB varieties growing nearby to, but not infecting Cavendish plants. From this anecdotal evidence, grew the theory of two fungal strains or species.

However, until very recently, it was difficult to test this hypothesis. The pathogen, originally known as *Guignardia musae*, was not keen to give up its secrets. Isolation of the pathogen from infected bananas is incredibly difficult and, when successful, takes up to three months to grow in the laboratory. Even more challenging is coaxing the pathogen to produce the spores in culture which are needed for study, even though the pathogen readily does this in the field.

Despite these challenges, solving the mystery had significant consequences for the Australian banana industry. Only the non-Cavendish infecting type is present in parts of Australia and, even then, incidence is extremely low.

Incursion by the exotic, Cavendish-infecting variety of Banana Freckle has the potential to devastate the industry. Overseas, weekly applications of mancozeb or other fungicides are necessary to produce marketable fruit. With the Cavendish-infecting variety known to also infect AAB and ABB varieties, a method to differentiate the exotic and endemic Banana Freckle types is needed.



The mystery unravels

Our study of Banana Freckle began in 2005 with the collection of samples. In Australia we could only culture endemic isolates or extract the DNA from overseas leaf specimens which had been first killed using gamma irradiation.

Much of this early work was assisted by Sharon van Brunschot, who sought off-shore contacts and isolated the pathogen from samples collected in Australia. In 2008, during a Sigatoka science exchange in Montpellier, France, I and Kathy Grice took the opportunity to culture the pathogen off-shore from samples collected in Malaysia. These samples were grown in France before being imported back into Australia as sterile DNA. As our collection grew, the opportunity arose to commence a PhD student working on Banana Freckle.

Ms MeeHua Wong joined us from the

Department of Agriculture in Sarawak, Malaysia, in mid-2009. Charged with the task of solving the host range mystery of Banana Freckle, MeeHua worked diligently on a project she never anticipated would be as difficult as it was. Working 12 hours a day, six to seven days a week, MeeHua's determination and dedication became our secret weapon against Banana Freckle.

However, the mystery only really began to unravel after a four-month study tour to the Netherlands to work with Professor Pedro Crous, an expert in fungal taxonomy. In the Netherlands, MeeHua was able to study Freckle disease specimens

MeeHua Wong (right) and Juliane Henderson at work in Brisbane's EcoSciences Precinct.

collected throughout south east Asia under expert guidance.

This study tour would not have been possible without the aid of a Mort Johnston Professional Development Scholarship awarded to MeeHua in 2009. The scholarship panel recognised the importance of this work and the outcomes of the study opened the doors to our understanding and helped us prepare for the current Banana Freckle eradication campaign in the Northern Territory.

continued next page

“Research carried out so far is an excellent example of how research is fundamental to preparedness for pathogen incursions.”

Timeline

2005 Australian research begins on pathogen samples. Work is on endemic isolates gathered in Australia or on DNA extracted from imported and irradiated overseas specimens

2008 Pathogen cultured in Montpellier, France, from Malaysian samples and imported to Australia as sterile DNA

2009 The collection of samples is large enough to commence PhD student MeeHua Wong's work on Banana Freckle. Isolates studied from around the world

2012 Additional research conducted in the Netherlands on south east Asian samples. MeeHua identifies a third Banana Freckle fungi and develops a diagnostic tool

2013 MeeHua returns to Malaysia. Her research and diagnostic tool are used in the NT Banana Freckle incursion.

The secret's out

For four years, Malaysian PhD student MeeHua Wong worked to unlock the secrets of Banana Freckle.

In work assisted by funding from the Australian industry's Mort Johnston Development Scholarship, MeeHua developed a diagnostic tool now being used in the NT.

She found there were actually three types of fungi, not two, causing the disease:

Phyllosticta maculata – commonly found in Australia and the South Pacific on AAB and ABB varieties

Phyllosticta cavendishii – identified as being capable of infecting Cavendish as well as non-Cavendish varieties. Currently being eradicated on Cavendish in the Northern Territory.

Phyllosticta musarum – not in Australia. Causes Freckle disease on AAB and ABB varieties and has so far been found only in Thailand and India.

from previous page

Research gets results

At the conclusion of her four year PhD study, MeeHua delivered invaluable tools and knowledge for Banana Freckle. By studying the morphology of spores and the DNA sequences from isolates collected around the world, we now know that three species of fungi cause Banana Freckle.

Phyllosticta maculata is the name given to the species commonly found in Australia and the South Pacific on AAB and ABB varieties. *Phyllosticta cavendishii* has been identified as the species capable of infecting Cavendish as well as non-Cavendish varieties. It is this species which is currently being eradicated on Cavendish in the Northern Territory. A third species, *Phyllosticta musarum*, which does not occur in Australia, causes Freckle disease on AAB and ABB varieties and has so far been found only in Thailand and India.

Outcomes from MeeHua's study have been published in three internationally recognised journals and are already proving valuable in the Northern Territory disease eradication. DNA sequences as well as a DNA diagnostic tool which

differentiates the species are being used to identify the pathogen on samples collected in the field. Our new knowledge of pathogen isolation, culture and infection behaviour is also finding practical applications during the incursion response.

More to do

The opportunity for overseas study, made possible by the Mort Johnston Professional Development Scholarship, was integral to unlocking some of Banana Freckle disease's greatest secrets.

However, there are still many unknowns about the disease. It is possible that within each species, races exist, not unlike those in Fusarium wilt. A better understanding of how the disease spreads in the field is also needed to assist in future eradication strategies.

Hopefully, future work can unlock more secrets of this devastating disease. The Banana Freckle investigations carried out so far as part of the industry's Banana Plant Protection Program (BPPP) are an excellent example of how research is fundamental to preparedness for pathogen incursions through collaboration, determination and industry support.

“Working 12 hours a day, six to seven days a week, MeeHua's determination and dedication became our secret weapon against Banana Freckle.”




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Meet Juliane Henderson

Juliane's work helped eradicate a black Sigatoka outbreak and her current research includes Banana Freckle. In our continuing series on banana scientists, meet Juliane, a Research Fellow (Banana Diagnostics) for the Queensland Alliance for Agriculture and Food Innovation (QAAFI).

Tell us what got you interested in the banana industry?

In a way, the banana industry found me. In 2000, I was finishing up a research project with the sugar industry when I was shown a project proposal written by Ron Peterson. Ron wanted to improve the molecular diagnostics for black Sigatoka. I accepted the project and some six months later found myself in the midst of the Tully eradication. I'm fortunate that the industry have wanted to keep me since.

Where did you do your training, both academic and in the field?

In Grade 6 I took my microscope to school and spent hours showing my friends the mysteries of magnification. Not surprisingly, I ended up studying microbiology and biochemistry at QIT/ QUT in Brisbane. Plant pathology wasn't on my radar until I was offered a post-graduate virology project in James Dale's lab. I hold Marion Bateson, my postgraduate supervisor and mentor, personally responsible for my love of molecular plant pathology while Don Maclean (UQ Biochemistry) turned me into the diagnostician I am today.

I am still learning every day from everyone I interact with. I have spent more time in the field overseas than in Australia because that is where the

diseases are, but if anyone would like to invite me to their farms, I promise to clean my shoes first!

Tell us what happens on a good day in banana research? And on a not-so-good day?

On a good day in banana research, experiments work as planned, students are enthusiastic and obstacles are few. On a really good day, experiments work even better than hoped. Not-so-good days happen when experiments unexpectedly fail, or regulatory and bureaucratic hurdles get in the way of progress.

How does your work help the industry and tell us about a breakthrough moment you've had on a project.

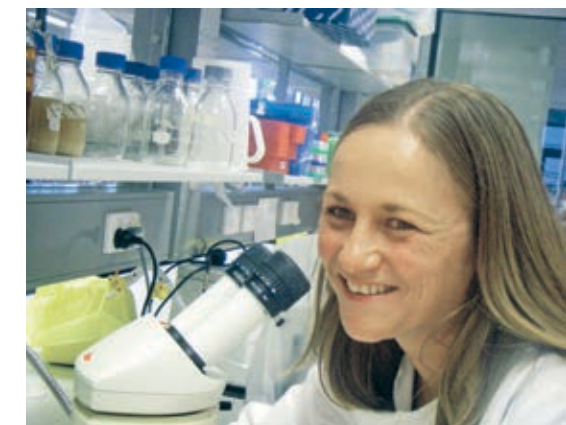
My team develops DNA-based tools to quickly identify exotic fungal and bacterial diseases. Fast and accurate disease diagnosis is essential when you have a potential quarantine threat banging on your door. A current example is Banana Freckle – diagnostics developed by us are being used for species identification in the Northern Territory.

One of my favourite breakthrough moments happened during the 2001 Tully black Sigatoka incursion. The published DNA test to distinguish yellow and black Sigatoka wasn't working, so we were left with only one choice – to develop a new test on the run. After a long and frustrating day in the lab, Julie Pattemore and I sat down on the veranda of the Mareeba Motor Inn to do the new design. We were armed with Sigatoka DNA sequences, a calculator and a mid-strength stubbie each. The assay worked and the DNA primers were affectionately known from then on as the 'Carlton Mid-Strength Primers'.

What's one of your favourite things about working in the banana industry?

The banana industry takes a very proactive approach to disease prevention and preparedness. It's nice to feel our work is valued and that we are truly a part of the industry.

Juliane and daughter Teggie test the waters on a yabbying expedition.



In the lab: Juliane at work in the Ecosciences Precinct.

When you tell people you are a banana scientist they usually say...?

Usually they tell me about a banana news story they have heard, a variety they tried once, or the latest urban myth they read on the internet. People connect easily over bananas.

What's one of the things most people don't know about bananas?

Just how many diseases bananas can get! Actually, I don't know the current count either... too many!

From a science perspective, what's a current hot topic about banana production?

First that springs to mind is the banana Freckle disease incursion in the NT. A lot of hard work is going into eradicating the Cavendish-infecting strain.

How do you like your bananas – fresh or cooked, what's your favourite banana recipe and how often do you make it?

Definitely fresh and before the sugar spots develop. If a banana actually makes it to the spotty stage in our house, we use it on homemade bacon, banana and pine nut pizzas.

When you've got time off, what are some of your favourite pastimes?

My family would say 'cleaning the house'. They confuse essential with preferred pursuits. I enjoy being support crew and photographer for my kids' outdoor pursuits but when I get the chance I like to duck off for a bike ride by myself. I am currently building a new bike so they soon might find me missing more often. I'm also a keen 'glamper' (tents, tarp, onsite ensuite and coffee machine!) and I love to fish. We have just spent two weeks in Wooli, NSW giving dozens of undersized fish sore mouths.



Lessons from the Philippines

Participation in an international workshop has provided important information for Australia's work to contain Panama TR4.

"This disease is something I never want to see in the north Queensland growing area" – Patrick Leahy

Dr Tony Pattison (standing, left of whiteboard) leads a break-out group discussing TR4 research and development.



An Australian banana industry contingent has visited plantations in the Philippines as part of an international workshop on Panama Disease Tropical Race 4 (TR4) and warned Australian growers not to be complacent.

The four-member contingent of three scientists and a north Queensland grower visited the Philippines in mid-November for the three-day workshop to discuss TR4, also known as Fusarium wilt.

Tully grower Patrick Leahy was among the group and said visits to field trials on the workshop's final day left him "shocked" when he witnessed the impact of the soil-borne fungal disease.

Another member of the group, Queensland Department of Agriculture, Fisheries and Forestry (QDAFF) Principal Nematologist Tony Pattison, said the Philippines' experience held many lessons for the Australian banana industry. TR4 is widespread in banana-growing regions in the Philippines but in Australia has been located only in the Northern Territory.

"At the top of the list is – don't believe it cannot happen here," Dr Pattison said.

Other members of the group attending the workshop were Australian Banana Growers' Council (ABGC) Research and Development Manager Jay Anderson and QDAFF Senior Development

Horticulturist Stewart Lindsay.

The workshop was held only days after Typhoon Haiyan devastated parts of the Philippines. Despite the typhoon being one of the largest ever recorded, the workshop was able to go ahead as scheduled in Davao City, located about 400 kilometres south of the areas worst affected by Haiyan.

The consultation workshop examined the socio-economic impacts of Fusarium wilt disease of Cavendish banana in the Asia-Pacific region. It was also attended by researchers, growers, government agencies and private-sector representatives from the Philippines, Taiwan, China, Indonesia, Malaysia and Vietnam.

Dr Anderson said the workshop held two days of presentations on the Fusarium situation in each country, the economic impact of the disease and current research into management of the disease. After the presentations, the whole group developed actions to progress in the areas of R&D, policy and institutional arrangements.

On the final day there was a visit to a box factory, tissue culture laboratory and to the field trials being conducted to assess tolerant varieties.

At the trials, there was the opportunity to see the severity of the effects of the disease.

For Patrick Leahy this was a significant part of the tour.

"The severity of the disease at this farm and the one next door shocked me badly," he said.

"I termed it as the killing fields with all susceptible varieties plants going down and the only healthy plants being among the 219 trial plants, although some of these trial plants had also died. This



disease is something I never want to see in the north Queensland growing area."

The participants also used the workshop as an opportunity to discuss how to collaborate on future research to benefit all banana growers.

Dr Pattison said the workshop highlighted that Fusarium wilt is a global problem for bananas because it can spread so easily.

"Once established it is very difficult to stop," Dr Pattison said.

"There are many lessons that the Australian banana industry can learn from the situation in the Philippines." At the top of the list was "don't believe it cannot happen here" along with the need to ensure strategies are in place which involve all levels of the banana industry.

"A regional Asian approach to managing the disease allows us to draw together experiences and strategies from the different countries to limit the spread and reduce the damage caused by Fusarium wilt," Dr Pattison said.

For Dr Pattison and Stewart Lindsay, the Philippines workshop follows other international research conducted when they attended the International Banana Symposium in Taiwan last year.

The Philippines workshop was hosted by the Food and Fertiliser Technology Centre for the Asian and Pacific Region and the Philippine Council

for Agriculture, Aquatic and Natural Resources Research and Development.

On behalf of the Australian contingent, Dr Anderson thanked research group Bioversity International for their assistance and hospitality.

Bioversity senior scientist Gus Molina participated in the workshop and was also a speaker at the Australian Banana Industry Congress in 2013.

Bioversity International's Dr Gus Molina discussing Philippines TR4-resistance screening trials with workshop participants.

During a visit to a tissue culture laboratory, Dr Emily Fabregar and Dr Chih-Ping Chao (centre) discuss tissue culture techniques and TR4-tolerant varieties.





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Growers gather for Tully weigh-in

Kennedy District's Jeff Dickinson took out two major awards at July's Tully Show.

Jeff was named Most Successful Exhibitor and won the Steward's Choice award after winning exhibit sections for Heaviest Plant Bunch, Champion Pair of Ratoon Bunches, Best Three Clusters and Open Heaviest Plant Bunch.

Di Carlos Bananas was the second Most Successful Exhibitor with wins including Champion Bunch. Sellars Bananas won the Champion Plant Bunch and had the Tully District's Champion Cluster Carton Extra Large. Other section winners included MacKay's South Davidson and Bolinda Estates and the Flegler Group.

Photos taken at the banana exhibit weigh-in are provided courtesy of The Tully Times.



Picking winners: Judging bunches at Tully are Queensland Department of Agriculture, Fisheries and Forestry (QDAFF) Senior Development Horticulturist Stewart Lindsay (left) and wholesaler Greg Bradshaw from exhibit sponsor P W Chew & Co.



The Tully tally: Mission Beach grower Naomi Brownrigg (left) with QDAFF Development Horticulturist Naomi King.



At the judges' table: Mourilyan grower Grahame Celledoni with daughter Anna-Louise and Tully grower Cameron MacKay.



Industry get together: Lindsay Hornblow from rural suppliers EE Muir and Sons' with Silkwood grower Steve Lizzio.



At the weigh-in: Irene Russell, Dennis Lindsay, Michael Lindsay (front) and Fabien Tauli.



Unwrapped: Tully grower Paul Johnston (blue shirt) unloads bananas for the weigh-in.



Bianca and Michael La Spina at the Tully weigh-in with French backpacker Sebastian Pitoizet (right).



Catching up: Australian Banana Growers' Council CEO Jim Pekin (left) with Tully grower Stephen MacKay.



At the banana exhibit weigh-in (from left) are Steve Morice, Barry Barnes and Gavin MacKay.

Tweed district celebrates bananas

The Tweed district in northern New South Wales has celebrated two events showcasing the banana industry – November's Murwillumbah Show and August's Tweed Valley Banana Festival.

The show featured an impressive display of local produce with Eungella grower Will Everest named as most successful exhibitor and other section winners including M & J Hesse, the Atwal Brothers and A & S Everest.

One of Australia's longest-running annual celebrations, the 58th Tweed Valley Banana Festival, was held in August. Thousands turned out on the streets of Murwillumbah for a parade led by festival queen Jessica Mattner and event mascot Banana Jim.



Outgoing Tweed Valley Banana Festival Queen Jessica Mattner leads the street parade aboard a bunch-laden tractor.



Festival mascot Banana Jim hits the streets of Murwillumbah on the festival's leading float, accompanied by quest winners.



Local businesses got into the spirit of the festival, including Matt Garner and Rachel Hancox of Ray White Rural Murwillumbah.



The Atwal Brothers from Dunbible took the prize for heaviest Cavendish bunch with this 56.5kg entry.



Bananas took pride of place in an impressive display of produce at the Murwillumbah Show.



Will Everest of Eungella was the show's most successful exhibitor. Pictured is his Lady Finger hand – the Champion hand of the show.

CAMPAIGN PUTS A SMILE on retailers' faces

Since its launch in 2012, the Australian Bananas "long-lasting energy snack" marketing campaign has proven to be a major hit with consumers. But how effective has it been in winning over our leading retailers?

It's been an exciting year for Australian Bananas. Not only has our marketing campaign and its key message of "long-lasting energy" continued to resonate with Australian consumers, we've also been busy working with Australia's leading retailers to ensure Australian Bananas are always top of mind at shopping time.

And now that investment in our retail presence is beginning to show some strong returns.

By working closely with all our retail partners, we've been able to drive awareness, provide consumer education, and ultimately lift sales and consumption of Australian Bananas.

Aussie Bananas Marketing Update

Central to our activity has been the consistent use of our highly successful and recognizable "No-No Na-Na" theme plus other key advertising messages.

This has meant consumers have had no difficulty in linking our mainstream advertising to any retail messaging, either in-store, online, on TV or in catalogue.

Working in partnership with IGA, we created an eight-week integrated marketing campaign designed to put Australian Bananas front and centre in their top 1300 stores. Highly visible bin card point of sale posters were supported with advertisements in the IGA Today magazine along with recipe panels and banners in print and online catalogues. This activity allowed IGA to highlight bananas without the sole reliance on price, whilst simultaneously incentivizing stores by running a national 'display' and sales competition.

The results have been impressive and IGA's Luke Couch is understandably delighted.

"IGA has worked extremely closely with Australian Bananas over the last 3 years and the results during the promotions have always far exceeded expectations for volume and sales to the point that our Australian Bananas promotion has become an integral part of IGA's Fresh Produce marketing calendar."

Luke Couch National Buying and Merchandise Manager – Fresh Produce, IGA

HAPPY RETAILERS

Woolworths, Australia's Number 1 Retailer and Number 1 Fruit and Vegetable supplier, is another to benefit by working closely with us. By linking Woolies bananas activity to the Australian Bananas marketing program, we have been able to take advantage of their significant marketing and advertising spend and successfully complete the consumer's path to purchase.

"The opportunity for Woolies to link in with the Banana Industry's marketing program provided a great platform for Woolies to engage and educate the consumer. This then enabled Woolies to drive the path to purchase through many media channels both internally and externally."

Donald Keith Senior Category Manager Fruit & Floral, Woolworths

AN AUSSIE FIRST!

It's a similar story at Aldi, where we secured exclusive bin-wrapping point of sale posters across all 317 stores during October and November. This enabled us to leverage key advertising messages from our TV and radio campaign which was airing at the same time. Using point of sale posters in this way was a first for Aldi in Australia!



AUSTRALIA'S TOP 300 GREEN GROCERS

And just to make sure we were covering the full range of retailers, we sent merchandising teams to Australia's top 300 Green Grocers to kit them out with point of sale posters and educational brochures to further reinforce the benefits of eating Australian Bananas, especially Lady Fingers.

Meanwhile, our "longer lasting energy" campaign shows no sign of running out of legs.

A major advertising burst in October and November was planned to coincide with our retailer activity. This two-pronged approach timed perfectly to support higher than expected production during this time.

The main media campaign will return in February and March 2014. Media will continue to extend from television and radio through to bus-side billboards, in-lift screens plus a significant focus on online advertising and social media, in line with the changing media habits of both the Australian and global consumer.

FACEBOOK PAGE

197,000 FANS

The Australian Bananas Facebook page now has over 197,000 fans and has reached over 7.3 million Australians since July 2013 alone!

This combination of a strong, single-minded advertising message, coupled with a highly integrated retail push, means that hopes are high for continued healthy sales of Australian Bananas in 2014.



Tour highlights threats, opportunities

An inside look at banana production in China and the Philippines has provided new ideas now being put into action by participants in an industry study tour. ABGC R&D Manager Jay Anderson reports.

Members of the study tour present some Australian Bananas merchandise to their hosts in China.



Tour diary

- Sept 4th & 5th: Hong Kong, China – visited Asia Fruit Logistica Expo
- 6th: Nanning, Guangxi Province, China – visits to farms, a market place and fertiliser plant
- 7th: Nanning, China – farm visits
- 8th & 9th: Sanya, Hainan Island, China – visits to farm, trial site and tissue culture laboratory
- 10th to 12th: Travel to Davao, the Philippines – visits to box factory, plastics factory and nursery. Farm and packing shed visits, wharf visit to see export fruit loaded onto ships.
- 13th – return to Australia

A study tour to China and the Philippines has given members of Australia's banana industry insights into major biosecurity issues as well as different approaches to fertiliser development, fruit handling and transport.

The 10-day September tour gave the group of growers and nurserymen a first-hand look at major biosecurity issues for global banana production. They saw the effects of Panama Disease Tropical Race 4 (TR4), Moko disease and black Sigatoka and the extra efforts required to manage these diseases.

Seeing a plantation in Hainan Island which has been abandoned due to TR4

had a big effect on tour participants. They have returned with a resolve to work on their own on-farm biosecurity but have also requested ongoing commitment by all involved in the banana industry – growers, industry leadership, ABGC, industry partners, researchers and State and Federal governments.

In China, study tour participants were fascinated with the development of various organic fertilisers and the high-tech fertigation delivery systems. Organic fertiliser made from the by-products of tapioca and ethanol manufacture mixed with mill ash is made by the Jin Sui Agricultural company and used by the many smaller growers who grow for the company.

The attention to quality in the Philippines was impressive. Quality control was high in the manufacture of cartons and plastics for use in the industry. Fruit was handled with care from the early stages when plastic sheets were used between hands to prevent rub, right through to the refrigerated storage used for fruit prior to loading at the wharves.

The visit to Asia Fruit Logistica in Hong Kong demonstrated to the group that other Australian horticultural commodities have achieved a high level of representation on the world stage. Study tour participants saw the latest innovations in transport, handling and marketing fruit and vegetables. The visit generated discussion amongst tour participants – in Australia we are in a prime position to supply produce to all of Asia but we cannot compete with other countries where there are significantly lower cost of production; we need to differentiate ourselves based on quality or look for savings through mechanisation.

Our thanks

The study tour was a valuable experience not only for the participants but for others in the industry who will share in the knowledge gained.

The tour group acknowledges the work of Marc Jackson in organising a fantastic itinerary. Simon Zhang is thanked for an excellent tour of the Chinese banana growing areas. John Perine, Unifruitti is thanked for the excellent Philippines itinerary and the group is also most appreciative of the time taken by Rey Valle, Unifruitti, to host the group.



Above: See that? Study tour members see how bagging is done in China. Below right middle: Bunches taken to market in China. Below right bottom: Grower Andrew Serra assists with in-field banana packing in China.

What happened on tour hasn't stayed on tour

Participants have been speaking with other growers about the trip. Here's a snapshot of some of the thoughts and ideas from study tour members:

Paul Inderbitzin, grower, Lakeland

"Since the trip through China I have gained a great appreciation for quarantine. Inductions now include a few basic rules framed around quarantine and biosecurity to highlight its importance to the new team members.

"When we recruit new staff we ask where they have been and if necessary supply new footwear. Foot baths and vehicle wash bays are being considered in our business plan to be implemented in critical control points."

Craig Althaus, nurseryman, Tully

"I'm planning upgraded quarantine measures at the nursery, including restricted access to production areas, vehicle and foot-sterilising baths and signage.

"Other measures include resurfacing the nursery surrounds, changing two greenhouse floor surfaces and trialing certified potting mixes from southern suppliers to eliminate the need to have potting mix stored in bays and exposed to contamination.

"The racks we use to transport plants to other farms have been stripped and repainted to allow improved sterilisation prior to them being reused. The tour also reinforced the importance and

the effectiveness of the existing QBAN (Quality Banana Approved Nursery) system and I am now better able to promote the scheme with the growers I supply."

Darryl Apap, grower, Mission Beach

"Fertiliser is the big thing we are looking at. We are setting up tanks in the irrigation shed so it can auto feed with the water irrigation pump."

Stephen MacKay, grower, Tully

"The study tour reinforced my thoughts on why the industry needs a stronghold on all quarantine issues, especially the fact of our island status. We should also be very aware of not introducing anything accidentally and it is just important that your own farm quarantine is part of the solution of not getting these incursions."

Weiwei Cui, shed supervisor, Mareeba

"It's important to keep diseases out of our bananas. All necessary quarantine measures need to be put into action."

Andrew Serra, grower, Tolga

"We have now put a section in our induction that asks workers if they have worked on farms in the Northern Territory or on

Highlights

- Demonstrated to Australian growers that we can't take our good disease status for granted
- Seeing the use of organic fertilisers and automated fertigation systems in China
- A whole-of-chain look at banana growing in the Philippines, from growing to transport to the wharf for export, and the focus on quality.



other banana farms around the world. If they have, then we request that they thoroughly clean their vehicles before entering the farm then we inspect them for any visible dirt. We will also sterilize their boots before they commence work.

"As a business we are also looking at closing off losing off all vehicle access points to our farm and placing a vehicle wheel wash at the main entrance and having a designated visitor parking area with a boot wash facility that they must pass through before entering the farm."

Aiden MacKay, grower, Tully

"My knowledge and awareness of the quarantine and hygiene measures needed to keep diseases away from the industry has greatly increased. I have also learned a lot on the study tour about how to control these diseases if they were ever to arise.

"We started to implement different practices throughout our business and will try to share this information with the rest of the industry. I am extremely grateful for the opportunity to attend the study tour and believe that I have benefited greatly from it."

Ben Franklin, General Manager – Banana Category, Costa Exchange, Tully

"Whilst I believe our business has a good working knowledge of disease (and control measures), to be able to see the challenges other countries face with devastating disease outbreaks brings home the importance of this message.

"Having taken several photos and videos of the trip it has been great to be able to share these internally within our

business and to other growers to assist with the creation of more robust policies and procedures and promote adherence to these in order to minimise the impact of disease outbreaks.

"It was also invaluable to see the amount of work being carried out on new varietal development with an emphasis on disease tolerance/resistance. It is critical that the ABGC continues to work on these matters with growers and other stakeholders in an open and transparent manner for the good of the whole industry."

Dr Puthiyaparambil Josekutty, Tissue Culture Lab Manager, Clonal Solutions, Walkamin

"I have been encouraging banana farmers to use disease-free tissue culture plants to improve their farming prospects but from now on I will advise them to use only disease-free tissue cultured banana for replanting and extending planting to new areas."

Shannon Paton, grower, Palmerston

"We have been doing some study into the beneficial fungi and bacteria created from animal manure - certain animals have only beneficial bacteria and fungi

(pathogens) and others have nasties that could turn the underground food chain in their favour. We are in the process of trying to multiply them to improve the health in the soil.

"We are going back to the basics in farm practices - less visits to the bunch to utilise time more efficiently, including our team and involving them in each process, allowing them to have a better understanding of why each practice we do is important to achieving a good product."

James Howe, grower, Mareeba

"I gained a greater appreciation for how much of a precious asset our farms are in FNQ and I certainly see a more significant benefit in preserving our disease free land.

"Seeing the Asian farmers battle with Panama Disease, Moko, black Sigatoka etcetera. and some of the actions they've resorted to in managing it, has made me aware of how much is at stake with regards to our industry and livelihood.

"I am grateful to have attended the China-Philippines Study Tour and am more knowledgeable for having done so."



Above left: bananas are washed and packed in the field on a Chinese plantation. Above right: Tablelands grower James Howe carrying bunches the way the locals do it – two at a time.



Above: 'Socks' used in Guangxi Province to give a good shape to the fruit and to constrict size. Also to keep fruit warm in cooler seasons. Slips of paper are placed between the hands to prevent rub damage. Right: Grower Darryl Apap thanks tour hosts at a cooperative farm in the Philippines where growers have their own blocks of about one hectare each and pack fruit cooperatively.

Next-generation growers

We continue our series on the new generation of banana growers with a profile on subtropical grower Duane Pierce who answered our 10 questions.

Duane is 26 years of age and has been farming with his father, Geoff, on a steep property at Glengarrie, just south of the Queensland-New South Wales border. Geoff and Duane farm six to seven hectares of Lady Fingers, two hectares of Cavendish and some Goldfinger. Duane will be taking over the running of the farm on a solo basis in the New Year.

How long has your family been in the business of farming bananas?

I am the fourth generation – my great grandfather began farming bananas back in the 1930s.

Did you come straight from school to begin work on the farm? Did you work on the farm while still at school?

During school holidays I worked on the farm and after school did one year in the landscaping business but decided to come back and work fulltime on the farm. It is nearly 10 years now that I have been here.

What do you like about banana farming?

I love the outdoors, the peace and quiet and it helps keep me fit.

What don't you like about it?

Working in the rain on steep slopes, the extremes of weather and the paperwork side of the farm.

What are your other interests apart from farming bananas?

I love surfing and fishing and constructing things – I'm always building something!

What do you see for your future in the banana industry?

I will be taking over the running of the farm in the New Year when my father, Geoff, retires from full-time farm work so I have been training a new worker to do the things I have been doing.

I do see a future, but it is in supplying direct to retailers. We have just extended our packing shed and have built two ripening rooms which started operations in late November. Having the ripening rooms means we will have more options for selling directly into the retail market. We are already selling direct into farmers' markets at Palm Beach and Currumbin

and I am also selling to a retailer with four fruit shops who can take all the bananas I can supply.

A great thing about the area where we are growing is there's strong consumer interest in locally-produced food. This November I participated in the Tweed Foodie Fest – a great event for promoting the range of quality produce in the region.

What do you see for the future of the industry?

The risk of imports is still around, but for subtropical growers, we need to market direct if we are to survive.

What would you like to see happening in the banana industry?

We need to keep up the research to help growers and there is always room for new ideas.

Are you looking at introducing new or different methods to your farm practices?

We have built our two new ripening rooms – one for Caves and one for Lady Fingers – and that has been a really important achievement for us as it will open up a lot more options for selling our product.

I will progressively be adding another five acres to Cav production – I'm planning to plant out an additional acre each year for the next five years. I am also currently looking at new ideas for props.



Fourth-generation banana farmer Duane is taking over the running of the family's NSW-border farm from his dad Geoff.

Where do you see yourself in 10 years' time?

I've been working the farm with my dad for the past ten years and in the New Year I'll be taking over the running of the farm on a full-time basis, although dad will still be there to help out when I need some support. In ten years' time I still will be growing bananas, probably with less Lady Fingers, more Cavendish and diversifying into other fruits like Dragon Fruit to sell direct. We have a half a million people living near our farm (on the Gold Coast) so we have our market right there.

Duane at his Banana Booth stall at the Palm Beach growers' markets.



Seven survivors set for new trials

Their survival on a trial block known as the “killing fields” has earmarked seven banana varieties for a new commercial trial. Luke Roberts reports.

X marks the spot: David Peasley (left) and Mike Smith at the centre of the Panama Race 1-infected block.



Seven of 13 banana varieties grown in an 18-month field trial testing for disease resistance will advance to new commercial production trials.

The seven, a mix of local and international varieties, scored promising results for resistance to the soil-borne fungal disease Panama Race 1.

The field trial was held in Duranbah in northern New South Wales and is part of the banana industry's Banana Plant Protection Program (BPPP). The BPPP is also running separate trials at South Johnstone in north Queensland and also has trial plans for Ayr in north Queensland's dry tropics and Darwin in the Northern Territory.

At the killing fields

About 35 subtropical growers attended an October field day at Duranbah to see the 13 new varieties and taste test the fruit.

The block is a race 1-infected site where bananas were grown more than 20 years ago. It is now colloquially known as the “killing fields”.

The trial screened new varieties, as well as local selections of established varieties, against race 1 with an ambition to find new resistant banana varieties with potential for the Australian banana industry.

Developing new disease resistant varieties down the track will ultimately mean Australian consumers will have more choice.

Included in the trial were imported varieties from international breeding programs from as far afield as Taiwan, Honduras and Cuba.

The resistance trials were conducted under the auspices of the Banana Plant Protection Program's (BPPP) Resistant Varieties and Consumer Choice sub program led by Mike Smith, Senior Principal Scientist of Queensland's Department of Agriculture, Fisheries and Forestry (QDAFF). The trial manager is David Peasley who is part of the program's leadership team (subtropical).

Dr Smith said it was important to identify disease-resistant varieties.

“Whilst the industry recognises the threats that exist from Panama Disease, you need to tackle the problem from a number of fronts. One approach is through resistant varieties that show good performance under a range of Australian environmental conditions,” Dr Smith said.

“We need resistant varieties which show good performance under a range of conditions so that the geographic area for banana production improves our resilience against the impact of cyclones.

“We also want to give consumers a greater choice of banana varieties which will increase the demand for bananas.”

New commercial trials

Although it is still early days, seven of the 13 varieties tested were chosen to go forward to commercial trials that will run for the next two to three years. They are: FLF-1, SC-1 and FC-1 (three local selections), as well as varieties from overseas breeding programs and collections - High Noon, Hom Thong Mokha, Fa'i Palagi,

Walking the field of dreams

and Pisang Ceylan.

Whilst these seven varieties are showing resistance to race 1, the real test will be how they perform under commercial conditions.

These race 1-resistant varieties will now be planted-out in a separate subtropical block to test for their agronomic characteristics.

Mr Peasley said it was necessary to take the varieties into the next phase of trials.

“We've isolated out varieties resistant to race 1 and showing good bunches and eating qualities. Next we need to test them under proper commercial conditions because the first trial just looked at disease tolerance,” he said.

The commercial site is currently being prepared for planting-out in early January with tissue cultured plantlets having recently established in a nursery at Duranbah for growing-on in pots.

In addition to the disease ratings, the commercial trials will provide lots of agronomic data for each variety including the number of hands, length of fingers, weight of bunches, plant height, bunch cycling time, wind and cold tolerance and more.

Levy at work

At the field day, growers heard that both the disease screening and forthcoming commercial trials are a direct response to growers' concerns.

“These trials show your levy is hard at work developing new varieties for the future,” Mr Peasley said. “We're putting significant resources into reinvigorating the subtropical industry.”

During the field day, growers conducted a preliminary taste test with the new varieties. This will be followed by more formal consumer taste panels.



For growers looking for disease-resistant and niche varieties, the Duranbah field trial holds exciting possibilities.

Growers attending the field day had the opportunity to see plants growing in Panama-infected conditions and to taste test bananas grown on the block.

Those attending came from the local Tweed and Brunswick districts as well as from the mid north coast districts of Coffs Harbour and Woolgoolga.



“I think it's a good trial. There's some promising varieties there for sure but it's a little bit early to tell whether they're going to be successful, we've just got to wait and see.” – Tweed Brunswick Banana Growers' Association President Robert Pierce



“It's good to see them trialled here before they get out to farms. Taste wise, nothing we tried today has impressed us very much though.” – Jeff and Max Eggins, growers, Woolgoolga

“I just wanted to see what's available. I farm ten acres including two acres of bananas with scope for another two. My place is down low and faces south so I'm looking for something that's cold tolerant.” – Tony Lattanzi, market grower, Cudgera Creek

The seven varieties

- FLF-1
- SC-1
- FC-1
- High Noon
- Hom Thong Mokha
- Fa'i Palagi
- Pisang Ceylan



“I was impressed with the trial. I honestly thought there would have been more Panama disease showing up. There was some nice fruit. There's good potential for the growers who want to try some of these varieties that have a different taste.” – Ron Gray, Coffs Harbour and District Banana Growers' Association Vice President

“These field days need to happen more often so there's a greater understanding and people know where we're at with disease. We haven't got Panama around Coffs Harbour so it was good to be able to see it first hand and to actually taste the bananas grown.” – Josh Tate, grower, Coffs Harbour



“There was a lot of grower interest in the trials and the day was put together very well. Seeing what Panama does to certain crops was a real eye opener. The real test is to see if we can get a variety that is both disease resistant and with the potential for subtropical growers to command a good price for their product.” – Coffs Harbour and District Banana Growers' Association President Wally Gately

Bananas tip timber from lab's top spot

Growers looking at options for new plantings and the industry's new varieties are considering tissue culture. ABGC Communications Manager Rhyll Cronin reports.

Chips off the old block: Dr Puthiyaparambil Josekutty checks banana plantlets being propagated in climate-controlled facilities.



Multiplying and growing-on millions of tree and crop plants each year is not unusual for one of the north Queensland labs producing tissue culture plants.

But an emerging trend seen by Atherton Tablelands-based Clonal Solutions Australia is the increasing interest from crop farmers inquiring about using tissue culture to source new plantings.

Leading the way are banana growers. Horticulturist Peter Radke, who co-owns Clonal Solutions with wife Ann, also a horticulturist, says while there is a big

variety of crops being multiplied out, bananas now make up the majority of the tissue culture business.

"In the lab now we'd have 20 crops including bananas," Mr Radke said. "That also includes at least a dozen different plants from a range of crop varieties that are for research and aren't being done anywhere else."

In 2014, the lab will bring up seven years of operation. It expanded from the Radke's nursery business, Yuruga, a native plant nursery which operates on the same Walkamin property and was established in 1985.

"When we started off doing tissue culture we were propagating Teak, Tea Tree, and Eucalypts for the timber industry. We grew millions and millions of superior clones," Mr Radke said.

"Now we're also doing agricultural crops. We're doing bananas by tissue culture, we're doing pineapples, papaya, avocados, coffee, cocoa and more."

Bananas in demand

Clonal Solutions' Tissue Culture Lab Manager Dr Puthiyaparambil Josekutty said banana plants are now the crop in highest demand for multiplying up so growers can make new plantings and replant existing farms with disease-free bananas.

He said there was increasing interest in using tissue culture to clone suckers from the best producing mother plants in existing blocks to help to improve the productivity of the farm.

There is also increasing interest in sourcing disease-tolerant plants from the Queensland Department of Agriculture, Fisheries and Forestry (QDAFF) – particularly plants that have showed promise in planting trials testing resistance to Fusarium wilt disease Panama Tropical Race 4 (TR4).

While plant nurseries cannot provide these plants directly, growers who order the plants from QDAFF can have them sent to a QBAN-registered nursery (QBAN stands for Quality Banana Approved Nursery). At the nurseries the plants can be grown on and hardened off prior to being taken to farms for planting. There is a lengthy waiting list for the QDAFF plants.

Dr Josekutty participated in the banana

industry's recent study tour of China and the Philippines with growers and another nursery industry representative, Craig Althaus of Blue Sky in Tully (see Study tour report, Page 22).

He said the tour's visits to plantations affected by TR4 and to tissue culture facilities showed the direction south east Asian countries had taken to combat the disease by using disease-free, tissue culture plants to replant affected farms and plant out new, uninfected sites.

While there are many benefits in using tissue culture for large-scale propagation, issues the industry continues to address are grower concerns about "offtypes" – cloned varieties that do not stay true to the original type – and plants that for other reasons don't grow on as expected. The timeframe needed to gather, propagate and prepare plants to get the best results can also be a cause of frustration – both for growers and lab operators.

Planning ahead a must

Growers often want plants quickly when they anticipate upcoming opportunities for better prices in the market and, alternatively, may want to delay plantings ahead of an anticipated fruit glut. Labs need around 12 months to gather, propagate and prepare high quality plants with little flexibility possible in their timeframes.

"We want to get orders 12 months in advance because then we can produce the best plants," Mr Radke said.

"It's when you speed things up, or when you slow things up too much, or when you do too many propagating cycles – those are three things that are critical for poor results and getting offtypes."

Mr Radke believes a collaborative approach between tissue culture labs and growers gives the best results.

"We're not plant breeders, we're propagators, but we do encourage growers to involve us in the breeding selection process," he said.

"The worst thing is if they conduct years and years of plant breeding and then present us with only three to six clones to propagate with.

"Not all clones propagate equally well. So what will usually happen is that about one third of those clones will be easy to produce, one third will prove to be

impossible to produce and one third will be in the middle. That means that if you only started with three to six plants you're in trouble."

Mr Radke said plant breeders now tend to provide the lab with 40 to 60 of their best clones knowing that these will be reduced down to about a dozen or so individual clones that are amenable to tissue culture production.

Working with farmers

For banana propagation, Dr Josekutty works with farmers to select suitable plants.

"We ask the farmers if they have any special selections on their farms – any plants that have special features," he said.

"We will advise that we go to the best paddock, along with a plant inspector, and choose the best tree. The inspector is there to check for any plant disease, the farmers are looking at the quality of the fruit and the trees and I am looking for the quality of the sucker for propagation."

Growers are sometimes unsure of the best sized suckers to use.

Mr Radke said: "Sometimes farmers will want to use a monster, maybe something two metres high and a bit old. Young, sword suckers not more than a meter tall are the best suckers to initiate tissue cultures."

Once selected, disease checks need to be done. The suckers are dug out and placed in groups of ten with leaf samples taken for virus indexing carried out at the Queensland DAFF laboratory in Brisbane. Permits are also needed to move the suckers from farms to the lab.

At the lab, the suckers are taken to a processing shed and each one cut back to a growing tip. Unsuitable suckers – those damaged or suspected of diseases – are discarded leaving the best suckers for propagation. There will be 200 to 300 plants produced from each growing tip as the tips are progressively divided and multiplied up to a maximum of eight multiplication cycles.

Plants are screened at least three times during the process to see if they will be suitable for potting out.

At the end of the process, the aim is to have 15 per cent more plants than ordered to allow screening for possible offtypes and poor performers in the nursery.

Selecting the best

Some tips for selecting suckers for tissue culture:

- Look for the best mother plants from the best blocks
- Select enough suckers – not all will be suitable for cloning
- Suckers will need to be the right size
- Plants are subject to biosecurity requirements including disease checks, virus indexing and movement permits
- Be aware of the timeframes required to get the number of cloned plants required.

Accreditation the key

Mr Radke believes that, in addition to QBAN, the tissue culture and nursery industry in Australia benefits from the NIASA best-practice system of accreditation which sets high standards for facility set up, hygiene practices, recording processes, staff qualifications and ongoing training.

"The Nursery Industry Accreditation Scheme of Australia (NIASA) has been the best thing since sliced bread," Mr Radke said.

"NIASA accreditation makes nurseries more profitable, the figures suggest about 50 per cent more profitable because of better standards and better quality plants produced.

"Our throw out rate is about five per cent of what it would be if we weren't NIASA accredited. Our disease level for the 1000-plus species of plants we are working with is less than one per cent of what it would be without NIASA."

While labour costs for qualified staff are high compared with those of some south east Asian and South American countries and even parts of the United States, Mr Radke sees a positive side.

"We think it's to our advantage here in Australia that our labour is dear. Because our labour is expensive we have to do things right and the smartest and cheapest way to do that is having highly qualified staff doing things perfectly, once only, and having a proper set up so you're not having losses and throw outs and disease and other issues."

With the start of the wet season in November, most banana farmers have decreased banana plantings and will be expected to start again in April or May. Within the light, temperature and humidity-controlled environment of the tissue culture lab, production continues year round.

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Nursing a headache

CUTTING PLANTS TO SMOOTH PRODUCTION CYCLES

Following Cyclone Yasi in 2011, many growers have taken another look at nurse suckering. Queensland Department of Agriculture, Fisheries and Forestry (QDAFF) Principal Horticulturist Jeff Daniells and Senior Development Horticulturist Stewart Lindsay report.



The banana industry's recent cyclone recovery project recommended the development of a database of crop cycle information for nurse suckering done at different times of the year.

This article starts this process by looking at records generated by past research trials at DAFF's South Johnstone Research Station.

Above: Stewart Lindsay at a South Johnstone nurse-suckered block.

Table 1. Bunching and production times at South Johnstone resulting from different nurse suckering times.

Nurse cut down	Sucker set on nurse	Bunching	Harvest
Jun 1987*	Jul 1987	Dec/Feb 1988	Apr/Jun 1988
Jun 1988*	Jul 1988	Jan/Feb 1989	May/Jul 1989
Early May 2011**	Jun 2011	50% Jan 2012	50% Mar 2012
Early Aug 2011**	Sept 2011	50% Feb 2012	50% May 2012
Late Oct 2011**	Nov 2011	50% May 2012	50% Nov/Dec 2012
Mid Dec 2012**	Feb 2013	50% Aug 2013	N/A
Jan 2013**	Mar 2013	50% Sept 2013	N/A
Feb 2013**	Apr 2013	50% Nov 2013	N/A

Table 2. Cropping patterns resulting from nurse suckering conducted at South Johnstone.

Cut down	Bunch emergence	Bunch harvest	Months (cut down to harvest)
January	September*	N/A [~ Dec/Jan]	11-12
February	November	N/A [~ Feb]	12
May	January	April	11
June	January	April**	10
August	February	May	9
October	May	September	11
December	August	Nov/Dec	11-12

1. * Nurse suckering involved physically cutting down nurse and gouging out growing point as per Daniells et al. Nov 1997 Good Fruit and Vegetables p 58. ** 2011 dates – chemical treatment of non-bunched plants and remove canopy or cut down bunch and canopy on bunched plants. All 2012/13 dates were chemically treated followed by canopy removal.

2. * Average month shown – actual spread usually 2-4 months. ** Harvest date adjusted to today's thinner calliper grade.

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When nurse suckering was first developed in the 1950s it was widely used in north Queensland to help confine fruit production to the Winter-Spring period when prices were highest on the southern markets. This remained the norm during the 1950s and 1960s.

Since then, nurse suckering has experienced revivals following cyclones because it can delay production of fruit and so avoid production gluts and associated low market prices. Nurse suckering has also been used to arrange farm production to provide more constant fruit supplies through the year, to make the time of harvest more uniform within a block and to rejuvenate older ratoons.

Present opportunities

These days, because north Queensland supplies nearly 90 per cent of the Australian market, fruit is required year round in relatively even quantities. Nurse suckering is very effective for adjusting the time of production to achieve this continuous supply across the farm.

If you want bunching and harvest in particular months of the year when should you be nurse suckering?

Our studies at DAFF South Johnstone prior to a few years ago were limited to using nurse suckering to schedule bunching and harvest to particular times of the year better suited for rating for leaf spot disease and for the maturity bronz-ing fruit disorder.

More recently in our cyclone recovery work we investigated some additional

times. Bunching and production times obtained at South Johnstone are shown in Table 1.

In summary, nurse suckering at South Johnstone tended to give the cropping patterns shown in Table 2.

These timings are based on our set of conditions at South Johnstone. Just exactly when bunching and harvest occurs following nurse suckering on your property will depend upon the particular set of conditions including crop management and climatic conditions (largely temperature).

Any historical information you have for nurse suckering on your farm will be valuable for adjusting timing strategies appropriately. As always, good farm records improve future decision making.

Getting cyclone-ready

Cyclones are most likely to occur in north Queensland from December to April. The three very severe cyclones which flattened banana crops in the Innisfail-Tully region during the past 30 years all occurred during February-March.

Two strategies can be utilised in the lead up to the cyclone season. Firstly, it is advisable to have what you consider to be an appropriate amount of your crop as small unbunched plants (<1.5 m tall) should a cyclone strike. These plants are less prone to wind damage without any manipulation required as the cyclone approaches. Secondly, keep another portion of your crop as slightly larger unbunched plants (< 1.7 m if plant crop or <2.0 m if nurse suckered). These plants should be deleafed prior to the cyclone's landfall – to better resist wind damage.

These strategies can be put in place by establishing plant crops at the appropriate time but can also be scheduled by nurse suckering.

However, crops ready for a December cyclone event are not so ready come March-April. Therefore, additional blocks would need to come into play as the cyclone season progresses.

If you require suitable small unbunched plants over this period from ratoons, nurse suckering should be undertaken in the period October to December.

Rematch set for Chloro & biopest oil

A recent survey conducted with growers from north Queensland revealed that there has been an increased interest in the use of chlorothalonil as a replacement for biopest oil and the industry standard mancozeb to control yellow Sigatoka.

This change has been largely due to the rising price of the product as well as the belief biopest oil-based programs are ineffective against the pathogen.

A field study has been conducted at the South Johnstone Research Station to evaluate the efficacy of chlorothalonil and paraffinic oil alone and in tank mixes with triazoles (difenoconazole, epoxiconazole, propiconazole, tebuconazole), pyrimethanil and fluopyram, as well as mancozeb mixed with paraffinic oil.

However, the last growing season was characterised by low disease pressure and therefore the experiment will be repeated during 2014 to confirm the outcomes of the 2013 trial.



Dr Suren Samuelian inspects plants during the trial on yellow Sigatoka controls.



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Bedtime stories for banana growers

They're a quicker, cheaper and more flexible way to plant, so why don't more growers use pre-formed and permanent beds? Queensland Department of Agriculture Fisheries and Forestry (QDAFF) Horticulturist Naomi King reports.

The concepts of pre-formed and permanent beds are not new to the banana industry. However, despite the many benefits they provide, they continue to be a rarely used practice.

The two types of beds can be used together to support each other or individually, depending on a farm's management practices.

Here is an explanation of the terms "pre-formed" and "permanent" and some of their advantages.

Pre-formed beds

Pre-forming beds refers to the practice of getting a banana plant block ready well in advance of the planting date.

This means all of the ground preparation and the forming of banana-row beds is carried out and the block is then left to sit fallow, generally over the wet season.

When the block is ready to plant, the row is simply sprayed out and any cultivation is restricted to the row. This leaves

the inter-row space intact, maintaining ground cover and also providing a hard, trafficable inter-row surface for the plant crop.

Advantages include:

- opportunity to take advantage of short windows of fine weather for planting
- quicker planting after rain as the raised beds dry out faster than flat ground
- allows wet season planting and generally more flexibility in the planting schedule
- improved inter-row access and trafficability.

Permanent beds

The term 'permanent beds' refers to the practice of leaving the row in the same place crop after crop – often with no, or very limited, ground preparation to the inter-row space.

Growers find there are advantages in only cultivating the banana-row bed, including:

- reduced cultivation as only half of the block is cultivated, therefore it is cheaper, faster and means less of the block is susceptible to erosion
- plants do not come into contact with the compacted inter-row soil which may restrict root growth
- subsoil and topsoil are less likely to be mixed, especially in blocks with mounded rows that require the whole block to be flattened before reforming rows
- Plant block inter-row spaces are already compacted and trafficable as they have not been disturbed, therefore machinery and vehicles are less likely to cause ruts
- Ground cover can be maintained in the inter-row spaces of fallow and plant crops
- Lime, magnesium and mill by-products can be applied just to the row, reducing costs.

Gavin MacKay: wet season planting

Gavin MacKay of Mackay Estates' Bolinda farm has found there are a number of advantages using pre-formed beds.

"We see a number of benefits from pre-forming our plant blocks," Gavin said. "The main one is the planting window. By having the block ready, it gives us the opportunity to plant in the wet season if we choose to."

"Also we find we can get our plant in earlier after rain as the formed rows dry out faster than flat ground."

Gavin said other benefits were the prevention of soil movement during the wet season and the improved trafficability of the plant block's inter-row space.

"Currently we prepare the block as per usual and leave it with a grass fallow. If we have a nematode problem we would look at using a non-host fallow crop but most of the time it's just a grass fallow. Down the track we may also look at using a wick wiper in the inter-row before planting to get a good ground cover established early."

"We also find we get a chance to get rid of some of the problem weeds as they are easier to control before the bananas are planted."

Gavin didn't believe there were any problems associated with this practice as they prepared the block exactly as they

normally would. The MacKay family have been pre-forming their plant blocks for a number of years and each year they try to prepare some of their plant blocks this way. All of the MacKays' ground preparation activities are performed with the aid of GPS-guided machinery. First they survey the farm by driving over it with a GPS-guided tractor that allows them to produce a map showing the gradient across the block.

Then they prepare the block as usual and, with the aid of GPS guidance, ensure the row and even inter-row spaces are positioned correctly. Where possible, the row spaces will be kept in the same location over successive banana crop cycles.

"If, at the end of the crop cycle, the block doesn't require any major renovations, we will leave the rows in the same place and just reshape the inter-row space," Gavin said.

"This is much quicker as we don't have to work up the whole block. We also aren't mixing up topsoil and subsoil and mixing compacted inter-row soil into the row when we get the block ready."



A pre-formed bed at LMB where both pre-formed and permanent beds have helped prevent ruts.

Stephen Lowe has tried permanent beds at the family's Tully farm.



Different ways of doing your block

Gavin Eilers: preventing ruts

Machinery taken into plant-crop blocks was forming ruts at an Innisfail property. Farm manager Gavin Eilers talks about how switching to pre-formed and permanent beds helped.

Gavin Eilers is the manager of LMB Farming's Stockton Road farm where he grows both Cavendish and Lady Finger bananas. Gavin has integrated pre-formed beds and permanent beds into his farming system making them standard practices that he has been using for the past five years.

Ruts (wet areas in the block) were becoming a problem he believed was mainly starting in the plant crop. Gavin has gone to great lengths to avoid the creation of ruts in his blocks.

"When we were working up the whole block, we found once we started going into the plant block every week with machinery we were starting rut problems," Gavin said.

"This was because the soil was soft and we didn't have enough grass yet. By leaving the rows in the same spot, we have a hard surface from the start for the machinery to drive on, and the grass is already covering the whole inter-row."

Gavin said that permanent beds have now rectified this problem. He also finds other benefits from using permanent beds, such as reducing his total inputs by targeting their placement.

"Now we only have to put products such as lime, magnesium or mill mud on the top of the row."

Gavin finds there is a lot less work involved by maintaining the rows in the same place. He injects glyphosate (Roundup) into the previous banana crop and believes this is a crucial practice as there is nothing left of the crop by the time he needs to prepare for planting. If there are ruts in the block, he will fix these spots with cultivation confined to the problem areas.

When getting the rows ready he uses GPS guided equipment and prepares the row only and leaves the inter-row space vegetated. First he will spray the row with glufosinate (Basta*), rip once and then do a single pass with the rotary hoe.

S Lowe & Sons: trialling beds

Tully's Barry and Stephen Lowe have tried permanent beds for the first time at their farm on Davidson Road, Tully. Stephen talks about how they got started.

"We trialled it (permanent beds) for the first time and we will just see how it goes before we do any more plant like this," said Stephen.

"There were a few benefits from leaving the rows in the same place and not working up the entire block. It was cheaper, faster to prepare and we didn't end up with any of the compacted soil on the row."

Leaving the rows in the same place meant the Lowes did not cultivate the block anywhere near as much as usual to get the ground ready for planting.

"Normally we would have to disc across the block in both directions a number of times to flatten the block out because we grow on mounds. Then we would reform the rows."

"By leaving the rows in the same place we avoided a lot of this work."

"This time we disced along the row twice to knock the bananas down and then as required to control volunteers. When we were ready to plant we ran the discs up each side of the row to put the dirt up on the row."

"We then ripped the row once, rotary hoed each side and the top of the row in three separate passes and then planted. A few weeks after we planted the bananas we ran the 'V' blade up the inter row."

When asked whether this is a practice they will continue to use on the farm, Stephen said it would come down to the individual block.

"If we didn't need to move the irrigation, or the block didn't have any ruts that required work, we would definitely do it (permanent beds) again."

"I think one of the main benefits is not mixing the compacted soil into the row where the bananas are growing. I have seen plant, both in cane and bananas, where you can pick where the old rows were by the way plants are growing. It can't be good growing in that (compacted soil). If you asked Barry, he would probably think the fact that it was faster and cheaper is the main reason he would do it again."

Leahy Family: on-time planting

Pre-formed beds helped Tully's Leahy family get their plant bananas in earlier.

The Leahy family began pre-forming their plant blocks nearly 10 years ago. They have continued using this practice and Patrick Leahy said that this year all of their plant bananas went into pre-formed beds.

"Everything that we planted this year was pre-formed. The main benefit we find is knowing we are able to start planting in August."

"When we finish with a block, if there are major ruts or we need to change the row direction, we will flatten the rows and laser level the block."

"However, if no work is required, we will chain the bananas down, spray the bananas out twice with Roundup* and tidy-up the shape of the rows."

Patrick said their ground preparation and planting is now all performed with the aid of GPS-guided machinery.

"With the guidance of the GPS, we set the discs up so the inside of the discs sit just on the bottom of the V and the outside of the discs above the row. This helps knock the edge off the row."

"We then come back past with the V blade. This is all we will do to re-shape the rows. We then leave the block to sit until we are ready to plant."

"When we are ready to plant, we will spray the top of the row and let the grass die. Then we will rip the top of the row twice, by travelling up and back, and do a single pass with the rotavator. We find the rotavator is really effective at picking up any remaining pieces of string and it doesn't get choked up by the string like a rotary hoe does."

A pre-formed bed at the Leahy's Tully farm.



Scholar looks at biologicals ahead of US study trip

North Queensland agronomic consultant Liam Riedy (pictured below) has begun research into biological controls for banana plant diseases ahead of a study tour being funded by a banana industry scholarship.

Mr Riedy has won the 2013 Mort Johnston Professional Development Scholarship and will use the \$10,000 prize to fund a visit to the United States next June.

Mr Riedy, from Wongaling Beach, works with consultancy group Total Grower Services (TGS).

He is researching biological fungicides that could be used as an alternative to current chemical treatments for banana diseases such as yellow Sigatoka.

"I and the TGS team have begun research on many biological control methods that could be used to control disease in the soil as well as

applied to the leaf," Mr Riedy said.

In the US, Mr Riedy will visit compost developers and see a range of integrated pest management systems and crops.

Mr Riedy said the use of biological fungicides – products based on micro-organisms used to control fungal diseases, bacteria and nematodes – had potential as a solution.

"Chemical resistance to fungicides is actually one of the biggest issues for the banana industry," Mr Riedy said. "Even though we're the largest horticulture industry in Australia we're considered by chemical companies to be very minor in terms of our use

of chemical treatments.

"That means that our access to new chemical treatments that could greatly assist the industry with issues such as fungal disease is extremely limited and it's difficult to get registrations for older chemicals as well.

"Biologicals will be a big thing if they can be shown to work in bananas," Mr Riedy said.

The Mort Johnston Professional Development Scholarship is awarded annually by the Australian Banana Growers' Council (ABGC) to honour the memory of Tully grower Mort Johnston by offering assistance for projects that advance the banana industry.



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New phases for banana trials

Over the past nine years the Gates Foundation has funded a project working to increase provitamin A and iron levels in Ugandan bananas. Separate research is also trialling modified plants for Fusarium wilt resistance. QUT's James Dale and Rob Harding and the Queensland Department of Agriculture, Fisheries and Forestry's Jeff Daniells provide this update.

In 2005, the Queensland University of Technology (QUT), with funding from the Bill and Melinda Gates Foundation, started a project with the ultimate aim of genetically modifying East African Highland Banana (EAHB) to increase the levels of provitamin A (pVA) and iron.

Deficiencies of these micronutrients are major public health problems amongst the peoples of East Africa where EAHB are the food staple.

The project was a collaboration between QUT and the National Agricultural Research Organisation (NARO) in Uganda. The Australian component involves technology development and optimisation using Australian banana cultivars as a model, with the technology transferred to NARO for the generation

First field trial

In 2009, the first Australian field trial of transgenic bananas was established at the Queensland Department of Agriculture, Fisheries and Forestry's South Johnstone Research Station (see Australian Bananas 2009 Vol 28 p49).

Despite being flattened by tropical cyclone Yasi midway through the Phase 1 work, the trial was a great success. Fruit of the best lines of genetically-engineered bananas contained up to a twenty-fold

increase in pVA levels.

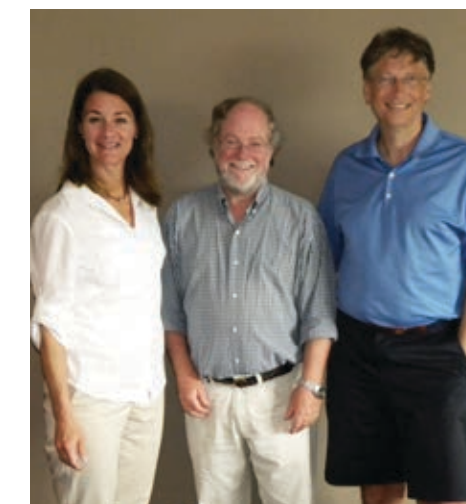
In 2012, Phase 2 field trials commenced at South Johnstone Research Station to further investigate strategies to enhance pVA levels as well as conduct more detailed and extensive analyses of the elite banana selections identified in Phase 1.

Recently, fruit of some of these latter selections was sent to the United States for a trial to determine how effective the enhanced provitamin A of the banana fruit was in boosting vitamin A levels in the body.

The Phase 2 work also includes a planting of bananas engineered for higher levels of iron in fruit, the results of which will be progressively available over the next 18 months.

Gates Meeting

The Bill and Melinda Gates Foundation has been the major funding source for the transgenic banana work. The QUT team's research has been backed with more than \$10 million over the past nine years through this foundation's Grand Challenges in Global Health program. In December 2011, Bill and Melinda Gates met with the QUT team in Cairns to discuss progress with the transgenic banana trials. Witnessing the Gates' commitment and enthusiasm was a highlight of the meeting.



Professor James Dale with Bill and Melinda Gates.

TR4 trials

In separate work being funded by an Australian Research Council Linkage grant, QUT has been genetically engineering bananas to obtain Fusarium wilt resistance.

In small plant glasshouse trials, several genetically modified (GM) Lady Finger lines with resistance to race 1 of the disease were identified. The research has now been extended to field trials where GM Lady Finger and Cavendish are being tested for resistance against TR4 Fusarium wilt on a grower's property in the Northern Territory. Results are so far very encouraging.

James Dale (centre) and the team of NARO scientists at the first Ugandan field trial site in 2010.



Banana stew & brew

Ugandans eat more bananas than anyone else, drink banana beer and have a word for a banana variety which also means “food”. Jeff Daniells of Queensland’s Department of Agriculture, Fisheries and Forestry (QDAFF) attended an international banana workshop in Uganda. He provided this report with Deborah Karamura of Bioversity International, Uganda.

Lycra is out and bunches are in for Ugandan cyclists. Bicycles are often used to transport bunches to market



Uganda is located on the equator in East Africa, inland from Kenya on the coast. Its land area is 236,000 square kilometres, about the size of Victoria, with a population estimated at 37 million.

Despite being on the equator, the climate is considerably moderate because of its elevation ranging between 600 and 5,100 metres above sea level. More than two thirds of the country is a plateau lying between 1,000 and 2,500 metres above sea level. Average annual rainfall varies between 750 mm to 1,500 mm, depending upon location, and is fairly reliable and relatively well distributed (usually in the range of 50-175 mm/month) throughout the year.

The capital city, Kampala, is situated in the central district. At an altitude of 1,200 metres and near to the equator it also borders the world’s second largest freshwater lake, the 69,000 km² Lake Victoria. Temperatures seldom vary much from the average max and mins of 26°C and 17°C. Thus the climate is relatively idyllic for bananas and people alike.

The staple diet

With climate so favourable, combined with suitable soils, it is probably not surprising bananas have become so important for Uganda. And despite the

modest size of the nation, it is actually ranked as the second largest producer of bananas in the world with 10 million tonnes annually, representing 8 per cent of world production. This compares with the largest producer, India, at 20 per cent and Australia’s 0.25 per cent.

Most of the production is consumed domestically and average per capita consumption is a whopping 280 kg annually, the highest in the world. Banana production is dominated by the East African Highland Banana (EAHB) at about 80 per cent and includes both cooking ‘matooke’ and brewing ‘mbidde’ types. They are most extensively grown at elevations between 1,000 to 2,000 metres.

The main production areas are located in the western/south western and central regions of the country. These cover vast areas of the total area under bananas in Uganda, estimated at 1.9 million hectares. Annual yields are between 10 to 20 tonnes per hectare. Production is mainly by smallholders, each farming around one hectare, and mostly for domestic consumption with fewer than 10,000 tonnes exported to neighbouring countries including Kenya.

Fruit of the matooke cooking bananas are harvested green, steam-cooked, mashed or pounded into a meal to provide a starchy staple nutritionally similar to the potato. This preparation is also referred to as matooke and is one of the national dishes of the country. It is typically eaten with a sauce made of vegetables, ground peanut, or some meat such as goat or beef. Matooke is so important a part of the diet that the word ‘matooke’ is synonymous with the word for ‘food’ in Uganda.

Beer production

Banana beer is an important alcoholic beverage produced in Uganda as well as in other East African countries. It is traditionally brewed using mbidde bananas which contain more tannin in their fruits than the matooke cooking bananas so making them unsuitable for cooking because of the bitter taste. The beer banana fruit is harvested when mature, ripened and squeezed to produce juice that is fermented (with sorghum) to make beer. Some other types of banana are also used to make beer including Ducasse

on Uganda’s menu



and Bluggoe. It is in high demand for social functions and in rural communities where currency is often limited, locally brewed beer acts as a liquid currency. Banana wine making has also been introduced in some banana conservation sites to add value to the current genetic diversity so strengthening conservation strategies for the crop.

Varietal diversity

East Africa is recognised as a secondary centre of global genetic diversity for bananas with a considerable amount of this diversity located in Uganda.

This diversity in East Africa is primarily in the East African Highland bananas but it has only in recent times been more widely appreciated that there are important popular unique AA diploid subgroups including Mshale-Nshonowa contained within this broader East African Highland Banana group. They are not confined to triploid AAA like Cavendish is.

There is also a unique AAB subgroup Sukali Ndizi which is related but distinct from Silk (the equivalent of Old Sugar in Australia, not Ducasse). There is a very small export market for this banana type in Europe with an estimated 2,500 tonnes



imported from East Africa annually.

A notable and popular cultivar of the Sukali Ndizi subgroup is Kamaramasenge. Gros Michel is a relatively popular dessert banana widely distributed in East Africa.

Disease threats

Despite the tranquil scene of endless rolling hills of bananas, the threat of major diseases is very real. Banana Xanthomonas Wilt (BXW) is a bacterial wilt disease currently confined to East Africa.

The plant wilting/death it causes is very similar to Moko disease which is present in the Philippines. During Jeff Daniells’ visit, he had the opportunity to see many thousands of hectares of bananas as he travelled from Kampala to Mbarara to Fort Portal and back to Kampala. But surprisingly no one was able to show any BXW and the bananas we travelled past also looked quite healthy.

The story is that BXW is mainly a problem in regions where certain types

of ABB banana, such as Ducasse, are common. Ducasse and other ABB bananas are highly susceptible to insect vector transmission of the wilt pathogen and are mostly grown in central Uganda where Jeff did not have the opportunity to visit.

BXW is also a problem for East African Highland Bananas that are not well managed, as in parts of the eastern Democratic Republic of the Congo.

Very good management (production is for markets) and few ABB bananas in south-western Uganda have prevented the disease from getting established. It is unclear exactly just how much of a threat BXW would be to well-managed Cavendish plantations in Australia.

Appropriate management should be able to adequately contain the disease, but in our higher rainfall environment in north Queensland and with many plantations subject to inundation of floodwaters any outbreaks that might occur could have flow-on effects down the catchment.

Banana bunchy top is widespread in neighbouring Burundi and the Democratic Republic of the Congo and looms large on the horizon as a major threat to the world’s greatest banana consumers.



Above right: Banana beer is traditionally prepared in a beer canoe. Bottom left: Symptoms of Banana Xanthomonas Wilt include a distinctive creamy yellow exudate, photo courtesy Guy Blomme, Bioversity. Bottom right: A roadside market stall.

Is rating food a five-star idea?

Food regulators are designing a five-star scale to help consumers assess the nutritional value of fresh food. Dietitian Glenn Cardwell rates the concept.

For a long time, well-intentioned people have tried to come up with ways to “rate” or “grade” food in such a way that, with one look, anyone can determine its healthiness.

We have been trying to concoct a grading system for years, never with a perfect solution. For example, how would you grade cheese? It is a great source of protein and calcium, the mineral needed for healthy bones, yet it is also high in sodium (salt) and fat. Does that mean it is good or bad?

The government is doing its best to create a front-of-pack labelling algorithm to create a star rating system based on half-star increments to a maximum of five stars. It is hoped this will help the public make healthier choices at the supermarket.

Five-star bananas?

Fruit is good for you. You would struggle to find anyone who would seriously think otherwise. So, bananas are good for you. No argument there.

How many stars do you think an avocado, sultana, garlic, pineapple and banana should receive? I hope you agree with me that they all get five stars.

With the new algorithm only raw garlic gets five stars. The sultana gets two-and-a-half stars; the avocado, four stars; and the pineapple and banana both get four-and-a-half-stars. That may suggest that garlic is healthier than the banana which, in turn, is healthier than the avocado.

That is not how nutrition works. Good nutrition is about eating a range of healthy foods, especially minimally processed foods like fresh, dried and frozen fruits and vegetables.

The government wants us to eat more fruit for health, so why not automatically give them five stars? Thankfully the horticultural industry is arguing on your behalf to make all fresh produce five-star foods. When the star system is approved it will be voluntary for two years. If too few foods and companies take part then it is likely to become mandatory.

Glenn Cardwell, Accredited Dietitian

Making health claims

You may recall that in 2005 the government proposed that no health claim could be made for a food that had more than 16 grams of sugar in a serve. That effectively meant a small banana could have a health claim, but a large banana couldn't. An unripe banana could also have a health claim, but as it ripened and the starches turned to sugar, you would have to remove the health claim. Naturally we wrote back to the government explaining the problem.

Eight years later, they have been more sensible and agreed that fruit should be able to make a health claim for any of its abundant nutrients. The key nutrients in the banana for which a general health claim can be made are fibre, potassium, folate, vitamin B6 and carbohydrate.

As the banana is a good source of potassium, it can claim that it “contributes to normal muscle function”. For folate it can be said the banana “contributes to the reduction of tiredness and fatigue”. The carbohydrate “contributes energy for normal metabolism”. There are many other general claims under Food Standards Code 1.2.7 that can be made for the banana and other fruits, but no food can claim to prevent or cure disease.

Keep it simple

In truth, food is neither good nor bad; it is the amount you eat and how it is prepared that determines whether it is doing you good or not. Put another way, while everyone agrees that fruit and vegetables are good for you, fewer than seven of every 100 Australians actually eat enough fruit and vegetables to be good for them.

Although it seems to be convenient to grade food on a short list of components such as the salt, saturated fat and sugar content, the nutritional value of a whole food can be easily misinterpreted.

If I were in charge I would really simplify things. All fresh fruit gets five stars. All fresh fruit can claim “absolutely sensational for the health of your body and mind. Eat them”. Does it really need to be more complicated than that? Oh, and bananas “make your body sing” too.



“If I were in charge I would really simplify things”

ABGC – Representing Banana Growers

Our mission

We advance the interests of Australian banana growers through effective leadership and representation that ensures a strong industry future.

Our role

- Formulate and advocate industry policy
- Communicate information to our members, all banana growers and stakeholders
- Participate in the IAC to implement the Banana Industry Strategic Plan and, as a member of Horticulture Australia Ltd, ensure it works efficiently and effectively for the benefit of levy payers.

Our goals

- Maintain and encourage grower membership of the ABGC
- Ensure good industry outcomes for marketing and R&D initiatives
- Build and maintain effective relationships with all stakeholders to ensure the integrity of the Australian Banana Industry
- Maintain an effective and professional organisation.

Key issues

- Effective biosecurity measures for pest & disease management
- No banana imports – ensuring an appropriate, scientifically rigorous system for Government import risk analysis
- Ensure continued and increased R&D investment by the Government
- Effective communications with key stakeholders including policy makers and key-decision makers
- Effective research, development and extension
- Banana marketing – achieving a strong market for Australian bananas and

recognition of their value as a healthy, energy-providing snack

- Supply-chain issues – working with our industry partners
- Together with other national horticulture industries, advocate for a range of improvements to reduce banana growers' costs.

Our Members

We have grower and affiliate members. Our grower members are banana producers from Queensland, New South Wales, Western Australia and the Northern Territory.

Under ABGC's Rules, the legal owner or owners of a banana plantation in Australia with at least half a hectare of bananas under production (Commercial Banana Plantation Owner) may apply to become a member of ABGC.

We also have affiliate members – non-growers who have joined the ABGC as a way of showing their support for, and involvement with, the banana industry.

Our board

Our Board of Directors currently comprises seven Directors – five from Queensland and two from New South Wales.

We are seeking a Director from Western Australia/Northern Territory.

Our Directors are: Doug Phillips, Chairman (Qld), Adrian Crema, Vice-Chairman (Qld), Paul Johnston, Treasurer (Qld), Peter Molenaar (NSW), Marc Derveniza (Qld), Steve Lizzio (Qld) and Stephen Spear (NSW).

For more information, please see the ABGC website, www.abgc.org.au or contact ABGC Chief Executive Officer: Jim Pekin by phoning 07 3278 4786.

ABGC Board meeting, May 2013



Robert Mayers in reef-grants role

Bartle Frere grower Robert Mayers (pictured above) has been appointed by the Australian Banana Growers' Council (ABGC) to work as the Reef Water Quality Grants Officer for the banana industry in the wet tropics.

Robert will work from the South Johnstone Research Station. He will assist banana growers with applications for the second phase of the Australian Government's Reef Water Quality Grants Program. Robert will also assist growers with related extension work.

Applications are now open for 2013-14 and 2014-15 financial year grants. Projects should be registered by February 7, 2014 with growers working with Robert to submit a complete application by March 17, 2014.

Robert will work with Terrain NRM on the program which is funded by the Australian Government's Caring for our Country initiative. Robert can be contacted by emailing robert.mayers@abgc.org.au. Further information on the grants is available on the Terrain website www.terrain.org.au.



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