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Messages from the AUSVEG Chairman and Interim CEO



Geoff Moar AUSVEG Chairman

A USVEG is very pleased to Announce it has united with PMA Australia-New Zealand Limited (PMA-ANZ) to deliver a joint industry conference and trade show in 2017 at the Adelaide Convention Centre.

This historic partnership is a significant one for the Australian horticulture industry, as it will continue the positive legacy from our respective conventions while providing even more value to our growers and industry members.

AUSVEG is looking forward to working with PMA-ANZ to create a truly unified horticultural event that will bring growers and industry from around the world to one location. We are confident this partnership will ensure attendees can benefit from listening to a wider range of world-class presenters, visit the industry's leading agribusinesses at an expansive trade show and network with each other.

While an exact date is yet to be confirmed, the event will most likely be held in May or June next year. We will continue to keep you informed of all developments as we work with PMA-ANZ to finalise the details of this important industry conference.

In other news, the AUSVEG Export Development team has once again taken a delegation of export-ready Australian vegetable levy payers to display their fresh produce at Asia Fruit Logistica, Asia's leading trade show for international fresh fruit and vegetable businesses.

Asia Fruit Logistica presented a valuable opportunity for the Australian grower delegation to connect with key buyers and build on existing export partnerships in the AsiaPacific region. The Australian Vegetables stand, which formed part of the larger Australia Fresh pavilion, generated a lot of interest regarding supply and product availability and received positive feedback from delegates.

The next stop for export-ready Australian vegetable growers is the World of Perishables Expo, which will be held in Dubai in November. We look forward to seeing the Australian vegetable industry's export success continue to flourish through our attendance at these invaluable trade shows.

Finally, this edition includes an overview of the AUSVEG management team, led by our dedicated Interim CEO Simon Bolles. This team plays a vital role in ensuring AUSVEG fulfils its responsibilities as the national representative for the Australian vegetable and potato industries, and they are responsible for undertaking various projects on behalf of industry including export development, marketing, communications, public affairs and scientific affairs. I thank them for their hard work as AUSVEG enters an exciting new chapter.



Geoff Moar Chairman AUSVEG



Simon Bolles AUSVEG Interim CEO

The Australian horticulture industry has entered an exciting new era.

Next year, AUSVEG and PMA Australia-New Zealand Limited (PMA-ANZ) will combine two of the industry's biggest conferences to provide growers and whole-of-supply-chain companies with the most significant horticulture event in the Australasian region.

This joint industry conference and trade show will be held at the Adelaide Convention Centre in 2017 and will be a world-class event that will bring together the full supply chain and a wide range of fruit, vegetable and floral producers. AUSVEG has been working closely with PMA-ANZ Chairman John Said, retiring CEO Michael Worthington and incoming CEO Darren Keating during this time, and I thank them for their co-operation and goodwill.

AUSVEG and PMA-ANZ are also in discussions with other industry groups to co-host the event to further unite the horticulture industry. We look forward to bringing you more updates as they become available.

Meanwhile, the Federal Government's review of the working holiday maker visa is now closed for submissions. Unfortunately for Australian vegetable and potato growers, they face yet another period of uncertainty about the future of this vital program.

The proposed introduction of the so-called 'backpacker tax', which would see a rate of 32.5 per cent from the first dollar earned, is set to have a major impact on our regional industries, acting as a deterrent for backpackers from coming to live and work in Australia.

In our submission to the review, AUSVEG called for this tax to be removed to avoid its potentially damaging impacts on our industry. We hope the Federal Government will listen to concerns aired by those within the potato and vegetable industries as well as other sectors that rely on this critical source of labour.

In this edition, there is also a focus on women in horticulture and the important role they play in the industry. This issue came to light at the Women in Horticulture High Tea, which was held in conjunction with the 2016 National Horticulture Convention in June.

During the event, ABC Landline host Pip Courtney urged women to tell their story to mainstream media while keynote speaker Dr Sharman Stone encouraged the audience to get their daughters as well as their sons involved in agriculture. A panel of successful female growers also inspired attendees as to what can be achieved when women work together.

As women are traditionally under-represented in the agriculture and horticulture industry, *Vegetables Australia* will bring you a dedicated column to highlight the essential role that women play not just in the growing process, but the entire horticultural supply chain.

Anon folles

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vegetables

FRONT COVER: Petra Doust Photograph by Loic Le Guilly Welcome to a bumper edition of *Vegetables Australia*. This 64-page publication is jam-packed with R&D news and information on the latest developments in the vegetable industry.

Headlining this edition is the historic announcement that AUSVEG and PMA Australia-New Zealand Limited (PMA-ANZ) have partnered to bring you a combined horticulture industry event in 2017. It is an exciting time for AUSVEG and the wider industry, and further details can be found on page 10.

Vegetables Australia would like to welcome two new columns to this edition. The first is dedicated to the National Vegetable Extension Network (page 12), which will communicate information to growers through 10 regionallybased extension projects. Our second column on page 30 will provide you with the latest news from the Soil Wealth and Integrated Crop Protection (ICP) projects. We hope you enjoy reading the results from valuable R&D projects

in these columns.

In other R&D news, we take a look at the latest updates from the *Sweetpotato project* (page 52) as well as a new project that is seeking grower input to examine how using earthworms can boost productivity across vegetable farms (page 56).

Our Young grower profile for September/October is 2016 AUSVEG Young Grower of the Year and loveable larrikin, Thang Hoang Le – better known to many as Aussie Kev. Aussie Kev is Operations Manager at his family business, LVE Pty Ltd in Angle Vale, South Australia (page 34). Still in South Australia, vegetable grower and AUSVEG SA Rising Star award winner Tony Catanzariti discusses his on-farm challenges and plans for the future (page 18).

Houston's Farm Quality Assurance (QA), Technology and Innovation Manager Petra Doust is this edition's EnviroVeg profile subject, and she talks about developments in her workplace over the years as well as the ever-changing issues faced in achieving





environmental sustainability in Tasmania (page 44). We hope you enjoy this extended edition and we welcome any feedback or suggestions for story ideas and grower profiles. Don't hesitate to contact the editorial team on 03 9882 0277 or info@ ausveg.com.au. We look forward to hearing from you!



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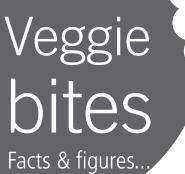
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The Australian Bureau of Statistics reported that for the year 2014-15, seven per cent of adults met the Australian Dietary Guidelines for recommended daily serves of vegetables.



As of September 2016, broccoli had 38,520 'likes' on social media website Facebook. This is up from 22,485 in October 2015.





The world's longest carrot was presented at the UK National Giant Vegetable Championship in Somerset on 2 September 2007. The carrot, measuring 5.841 metres, achieved the Guinness World Record and was grown by Joe Atherton from the UK.



The vegetable industry is the fourth highest value agricultural industry in Australia, worth around \$3.8 billion at the farm gate. Source: Australian Bureau of Agricultural and Resource Economics and Sciences Vegetable Farm Survey 2014-15.



Veggycation® states that one serve (75 grams) of sweetpotato provides 10 per cent of the recommended daily intake of fibre, vitamin B5 and vitamin B6.



32%

The latest Economic Confidence Survey found grower confidence in the industry increased by over 32 per cent during the April to June 2016 quarter when compared to the previous quarter.

> This communication has been funded by Horticulture Innovation Australia Limited using the National Vegetable Levy and funds from the Australian Government.

Project Number: VG15027



Project Harvest Wave 36 reported that capsicum is consumed on average 10 times per month and is purchased mainly from mainstream and specialist retailers.

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The 2017 joint industry event will be held at the Adelaide Convention Centre.

AUSVEG and PMA-ANZ combine forces to host joint industry event in 2017

IN AN INDUSTRY FIRST, AUSVEG AND PMA AUSTRALIA-NEW ZEALAND LIMITED (PMA-ANZ) HAVE JOINED FORCES TO LAUNCH A HORTICULTURE CONFERENCE AND TRADE SHOW. THE HISTORIC EVENT WILL BE HELD AT THE ADELAIDE CONVENTION CENTRE IN MID-2017.

AUSVEG is entering an exciting new chapter, with the announcement of a combined horticulture event in 2017.

The peak industry body for vegetable and potato growers has joined forces with PMA Australia-New Zealand Limited (PMA-ANZ) to deliver a ground-breaking horticulture conference and trade show, which will be staged at the Adelaide Convention Centre.

The exact date of the event is yet to be confirmed, however it will be held in May or June 2017.

PMA-ANZ is an affiliate of the Produce Marketing Association (PMA Global), the leading global fresh produce trade association serving member companies around the world and every segment of the fresh fruit, vegetable and floral supply chain.

The Memorandum of Understanding between AUSVEG and PMA-ANZ will effectively combine two of the industry's biggest conventions to provide growers and wholeof-supply-chain companies and organisations with the most significant horticulture event in the Australasian region.

A landmark partnership

AUSVEG Chairman Geoff Moar was thrilled by the announcement, and said he was looking forward to working with PMA-ANZ.

"AUSVEG and PMA-ANZ are excited to join forces in 2017 to deliver an industry event that will not only continue the positive legacy from our respective conventions, but also provide even more value to our growers and industry members," he said.

"We are looking forward to working with PMA-ANZ to create a truly unified horticultural event that will bring growers and industry from around the world to one location. We are confident this partnership will ensure attendees can benefit from listening to a wider range of world-class presenters, visit the industry's leading agribusinesses at an expansive trade show and network with each other."

Strengthening horticulture

AUSVEG is working closely with PMA-ANZ Chairman John Said, retiring CEO Michael Worthington and incoming CEO Darren Keating to plan the conference, with Mr Said forecasting a world-class event in 2017.

"The union between AUSVEG and PMA-ANZ is certain to strengthen the future of horticulture and fresh produce in our region. We are excited to join AUSVEG in hosting this event in 2017 and making it a truly world-class event that brings together the full supply chain and the wide range of fruit, vegetable and floral producers," he said.

"They can look forward to once again hearing from worldclass presenters who will inform and inspire fresh produce industry members, while the trade show will be the place to showcase the most exciting developments in horticulture.

"This combined industry event will allow a wider range of horticulture growers and members of the fresh produce supply chain to forge strong business networks and gain valuable insights into the entire industry."

AUSVEG and PMA-ANZ are also in discussions with other industry groups to co-host the event in an effort to further unite the horticulture industry.







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The National Vegetable Extension Network is up and running



HORTICULTURE INNOVATION AUSTRALIA HAS TEAMED UP WITH MEMBERS OF THE VEGETABLE INDUSTRY TO DEVELOP THE NATIONAL VEGETABLE EXTENSION NETWORK. THE AIM OF THE NETWORK IS TO EFFECTIVELY COMMUNICATE INFORMATION TO GROWERS THROUGH 10 REGIONALLY-BASED EXTENSION PROJECTS, WITH COORDINATION AND SUPPORT PROVIDED BY APPLIED HORTICULTURAL RESEARCH.

For too long, research funded by vegetable growers and Australian taxpayers has done only half the job.

Researchers have made great progress in developing and testing new methods for pest and disease control, postharvest handling, soil health, biosecurity, crop agronomy, irrigation, health and nutrition, and more. While some of these projects have extended their findings back to the growers in a useful and practical way, sadly, most struggle.

A wealth of potentially useful information languishes in carefully written final reports or scientific papers that few growers or industry practitioners will ever read.

The good news is that this is all about to change.

Effective extension

The National Vegetable Extension Network has been set up by Horticulture Innovation Australia (Hort Innovation) and the vegetable industry to effectively extend vitally important research-based information to growers.

It may surprise you to know just how much information has been produced by current and already completed vegetable R&D projects:

- The Australian vegetable industry and Hort Innovation has funded 235 separate research or development projects over the past 10 years;
- There are more than 600 R&D outputs currently available on the AUSVEG InfoVeg website (ausveg.com. au/infoveg), as well as relevant outputs from other horticultural industries, R&D from the private sector and international scientific literature;
- A recent review of vegetable industry extension materials identified and reviewed nearly 300 extension resources including fact sheets, ute guides, books, CDs and DVDs, websites and posters.

How will it work?

Regional projects: The lifeblood of the National Vegetable Extension Network flows from 10 regionally-based extension projects. The regional extension projects and the leaders' contact details are listed on the next page.

Coordination and support:

Overall extension program technical support and coordination is being provided by Applied Horticultural Research (AHR). In this important supporting role, AHR staff Adam Goldwater and Dr Gordon Rogers will assist the program.

• Review of recent vegetable research: All recent and current vegetable R&D projects will be reviewed and any available extension materials such as fact sheets, books and ute guides will be identified for regional projects to use. The review will also identify current projects that incorporate extension. This review is critically important for the regional projects so participants are aware of the research available for extension.

- · Coordination: Assist regional projects to prioritise projects to suit local needs and coordinate with other regions. AHR will also help coordinate with national extension projects such as Soil Wealth, Integrated Crop Protection and Soil Borne Disease Management. Regular meetings will be organised to bolster collaboration between the regional project staff and deliver a united, cohesive program that works to benefit vegetable growers.
- **Branding:** The name and logo that you see in this article was developed as the first official activity of the coordination project.
- Videos: In the first year, five videos will be produced that regional projects will be able to use to help communicate the results of key research.

Communication: This is what it's all about, and AUSVEG will



Region Project leader Email address Bowen Gumlu and Anna McCowan idm@bowengumlugrowers. FNQ com.au Wide Bay Burnett Bree Grima bree.grima@bfvg.com.au Southern Queensland Anthony Staatz anthonys@koalafarms. com.au New South Wales Bill Dixon bill.dixon@lls.nsw.gov.au Western Australia John Shannon office@vegetableswa. com.au Northern Territory Greg Owens greg@ntfarmers.org.au Jordan Brooke-South Australia jordan.brooke-barnett@ Barnett ausveg.com.au Tasmania Donna Lucas donnal@rmcg.com.au Victoria – Gippsland Nicola Watts info@egfci.com.au Victoria - Northern, Anne-Maree anne-mareeb@rmcg.com. Western and South Boland au Eastern

be playing a key role in this aspect of the National Vegetable Extension Network.

Each issue of *Vegetables Australia* will carry a special feature on upcoming extension events of national and regional importance.

Levy-funded research on show

The 2016 National Horticultural and Innovation Expo was a two-day event held in Gatton, Queensland. Organised by Lockyer Valley Growers, the expo showcased new seed varieties, machinery

1

demonstrations and the latest research, innovation and technology.

The event was an overwhelming success and a great method of linking growers to all those involved in the horticultural supply chain. Hort Innovation had a booth over the two days where the National Vegetable Extension Network Banner was premiered and the conversation started.

RIPPA the robot was a big hit, and once growers learnt that the robot was a levy-funded research output, they were keen to hear more of what R&D has occurred with their levy dollars.

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For more information on the National Vegetable Extension Network and upcoming events, please contact Adam Goldwater on 02 8627 1040 or adam.goldwater@ahr.com.au.

This project has been funded by Horticulture Innovation Australia Limited using the National Vegetable Levy and funds from the Australian Government.

Project Number: VG15049



The National Vegetable Levy at work

Who pays the National Vegetable Levy?

The levy is paid by growers who produce vegetables in Australia.

• The charge is set at half of one per cent at the first point of sale.

The Federal Government also provides funding in addition to grower levy payments. Once paid, these funds are managed by Hort Innovation.

How is levy money invested?

There are now two pools with different funding priorities.

Pool 1 is funded by grower levies with contributions from the Federal Government. This pool has a one to five year scope and will invest in applied R&D designed to directly benefit growers. This includes pest and disease management and biosecurity matters, with findings communicated through a variety of channels including Vegetables Australia.

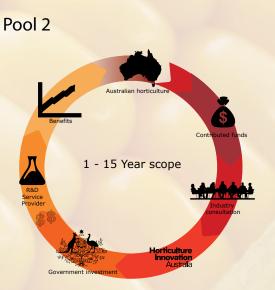
Pool 2 has a one to 15 year scope and matches strategic co-investment funds with at least \$20 million, at the Pool's maturity, of government seed funds annually. This pool aims to address multi- and cross-industry challenges and opportunities of strategic and long-term importance to Australia's horticulture industries.

Five 'Foundation Funds' have so far been established in Pool 2 and will work with an expert panel to direct strategic projects. They are:

- The Leadership and People Development Fund
- The Fruit Fly Fund
- The Asian Markets Fund

- The Green Cities Fund
- The Health, Nutrition and Food Safety Fund





How can growers get involved?

Vegetable growers play a fundamental role in advising on the allocation of both levy and co-investment funds, and will be engaged in extensive consultation with Hort Innovation in regional grower meetings, industry-specific consultation programs and individual grower and grower group consultation.

Growers can also submit ideas for R&D projects via Hort Innovation's Concept Portal at horticulture.com.au/concept-proposal-form.

For more information about the National Vegetable Levy, visit ausveg.com.au/rnd/thelevysystem/vegetablelevy.htm



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Meet the AUSVEG team

ALONGSIDE ITS BOARD OF DIRECTORS AND INTERIM CEO, AUSVEG IS DRIVEN BY A TEAM OF MANAGERS WHO LEAD A RANGE OF DEPARTMENTS, INCLUDING EXPORT DEVELOPMENT, SCIENTIFIC AFFAIRS, COMMUNICATIONS, PUBLIC AFFAIRS, MARKETING AND FINANCE, AS WELL AS CONTRIBUTING TO VICTORIAN AND SOUTH AUSTRALIAN REPRESENTATION.





Simon Bolles

Simon Bolles, Interim CEO

Since his appointment as Interim CEO in May 2016, Simon Bolles has taken leave of absence as an AUSVEG Skills-based Director and member of the Risk and Compliance and Finance and Audit subcommittees. Simon has a 30-year career in the financial services sector, as well as being an experienced Board Member. He has direct, research and advisory experience of numerous industries, particularly in the fields of agribusiness, superannuation/ investments and infrastructure.

Jordan Brooke-Barnett, National Manager - Public Affairs

Jordan Brooke-Barnett is the National Manager of Public Affairs and is responsible for AUSVEG's considerable lobbying and campaign work. He is passionate about growing the horticulture industry and is always available to talk to growers about political issues facing our industry. In addition to his national commitments, Jordan leads state vegetable representative body AUSVEG SA and is a passionate advocate for the South Australian industry. Jordan has worked in a number of industry development roles with AUSVEG since joining the company in 2011.



Michael Coote



Nev Crljenkovic

Michael Coote, National Manager - Export Development

Michael Coote holds the role of AUSVEG National Manager -Export Development. Michael's main responsibility is delivery of the vegetable industry's export market development and market access program. He is a management professional with over 10 years of experience in the delivery of large-scale transformation, reform and government efficiency initiatives. Michael has consulted across a range of industries and sectors, including state and federal government, not-for-profit organisations and industry associations.

Nev Crljenkovic, Chief Finance Officer

As Chief Financial Officer, Nev Crljenkovic manages all financial, accounting and administration matters pertaining to AUSVEG. Nev has over 12 years of accounting experience with the last six years spent in management and the previous five in the public practice sector. Nev holds a Bachelor of Business (Accounting) degree from Swinburne University and is a Certified Practicing Accountant (CPA).



Kurt Hermann



Kurt Hermann, AUSVEG VIC State Manager

Kurt Hermann grew up in regional Victoria before moving to Melbourne to study Public Relations at RMIT University. Following his graduation, Kurt worked for a number of award-winning Melbourne public relations agencies with a broad mix of clients. Since joining AUSVEG as Design Team Coordinator in 2013, and his subsequent role as Assistant Manager - Industry Development, Kurt has gained an in-depth understanding of the Australian vegetable and potato industries and the R&D advisory mechanisms instituted by Horticulture Innovation Australia. He was appointed to head the newly established AUSVEG VIC in October 2015.

Dr Jessica Lye, National Manager - Science and Extension

Jessica Lye joined the AUSVEG team in August 2014 and holds the position of National Manager - Science and Extension. Jessica manages the National Vegetable and Potato Biosecurity Program, as well as the scientific team at AUSVEG. Jessica joined AUSVEG after several years in scientific research and brings strong academic credentials, having completed a Bachelor of Science with Honours at Monash University before completing a PhD in Molecular Genetics.





Nathan McIntyre

Shaun Lindhe, National Manager - Communications

Shaun Lindhe joined AUSVEG in 2014 and currently manages all vegetable and potato industry communication projects within AUSVEG, including the production of popular industry magazines Vegetables Australia and Potatoes Australia. He is responsible for managing the peak industry body's communications functions, ensuring important R&D outcomes are widely conveyed to industry, media and the public. Shaun holds a Master of Global Media Communications and a Bachelor of Arts (Honours) majoring in Media and Communications from the University of Melbourne.

Nathan McIntyre, National Marketing Manager

As National Marketing Manager, Nathan McIntyre is responsible for overseeing the National Horticulture Convention, as well as developing and maintaining the numerous Strategic Partnerships that AUSVEG has established over the years. Nathan holds a Bachelor of Business majoring in Public Relations and has a background in marketing within the sporting sector, having previously worked on major marketing campaigns for Golf Australia.

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Keeping up a family tradition

FROM AN EARLY AGE, TONY CATANZARITI KNEW HE WANTED TO BE A VEGETABLE GROWER. NOW THE SOUTH AUSTRALIAN HAS HIS OWN SUCCESSFUL BUSINESS THAT SAW HIM HONOURED AT THE 2016 AUSVEG SA AWARDS FOR EXCELLENCE. TONY SPOKE TO MICHELLE DE'LISLE ABOUT BUILDING HIS BUSINESS, THE ON-FARM CHALLENGES AND FUTURE INDUSTRY GOALS.

Being anything other than a vegetable grower was not really an option for South Australian Tony Catanzariti.

"I was born into it," he says. "I was always interested in it from when I was a kid. I liked the tractors, the dirt and I was a bit of a go-getter I suppose."

The vegetable industry runs in the quietly determined grower's blood, having worked full-time on the farm since he was 15.

Tony started in the industry

as a youngster with his father and uncles, who were market gardeners. Now, he owns the business, A&S Catanzariti, with three full-time staff (including himself) and three part-time staff helping to create a profitable produce enterprise in Virginia, 30 kilometres north of Adelaide.

The business grows a range of vegetables including baby spinach, rocket, fancy lettuce, cauliflower, cabbages and broccoli. Helping Tony to keep A&S Catanzariti running smoothly is his wife Stacy, brother Michael and cousin Joseph. With one young daughter and another child on the way, things are certainly busy on the Catanzariti farm.

Growing success

A determined attitude has helped Tony slowly build up his business and in April, he was duly rewarded with the Rising Star Award at the 2016 AUSVEG SA Awards for Excellence.

"I started from nothing and I've managed to quadruple my sales in four years. I managed to do a speciality line a lot of other people weren't doing in Adelaide – there's only one other person doing that with the baby spinach. It was my own little thing; the edge I had up on everyone," Tony says. A&S Catanzariti now sells







spinach and rocket to three main processors – Hi-Tech Processors, DSA Fresh and Salad Greens & Kitchen Herbs Pty Ltd – while the cauliflowers are supplied to Fresh Fruit for You at the Adelaide Produce Market.

"I achieved the sales by managing to lease a bit more land, a bit more infrastructure and slowly grow a good product and achieve good produce consistently. Consistent produce gets consistent sales," Tony says.

Overcoming challenges

Like all growers, Tony experiences setbacks in vegetable production due to

weather, along with the challenges associated with soil conditions and pest management.

The South Australian vegetable grower remains philosophical about these, opting to take the good with the bad.

"It (the vegetable industry) is not an easy industry but you keep at it. You have your good runs and you have your bad runs and slowly, slowly you get there," Tony explains.

He added that there are plans in place to monitor and control the challenges that arise on-farm.

"To combat these, I have regular checks to see if there's any pests flying around, as well as conducting soil tests and leaf analysis. We try to compost more organic matter through cover crops and spread out gypsum in the lawn, just to condition the soil."

Hail has affected the farm's spinach crops for three years in a row, so there are plans to protect them from further damage in the months ahead.

"We may look to plant out further north or we could set up some paddocks with hail netting and try to eliminate that risk," Tony says.

Future ambition

Tony has a firm eye on the future when it comes to the

business. Currently leasing land, the ambitious grower has a desire to purchase his own piece of profitable soil and continue from there.

"I'd like to purchase my own land and then have all my own setup within processing, growing and marketing – the full range from start to finish," he explains.

There is also a desire to continue the Catanzariti legacy in the farming and vegetable industry.

"Some people may not agree with it, thinking that the farming industry's not the best but I'd like to have my children involved in the running of the farm."



Mighty tough on chewing pests with a little soft spot for beneficials





Women in horticulture tackle the big issues at high tea

A HIGHLIGHT OF THE 2016 NATIONAL HORTICULTURE CONVENTION OCCURRED AWAY FROM THE HUSTLE AND BUSTLE OF RACV ROYAL PINES. THE WOMEN IN HORTICULTURE HIGH TEA PROVIDED AROUND 100 DELEGATES WITH THE OPPORTUNITY TO BE WINED AND DINED WHILE LISTENING TO A NUMBER OF POWERFUL WOMEN IN THE INDUSTRY, INCLUDING ABC'S *LANDLINE* HOST, PIP COURTNEY.

Women of all ages and backgrounds – along with a handful of men – came together to celebrate and talk about the opportunities of women in horticulture at a high tea held in June.

In conjunction with the 2016 National Horticulture Convention, the Women in Horticulture High Tea, sponsored by Steritech, was held at Palazzo Versace on the Gold Coast on Saturday 25 June. The two-hour event was chaired by Pip Courtney from ABC's *Landline* and featured a panel of five female growers along with a keynote speaker, former Member for Murray Dr Sharman Stone.

Delicious sandwiches, cakes and scones were met with approval, as was the champagne, tea and coffee served throughout the event.

Urging women to tell their story

The afternoon kicked off with a video featuring Just Veg, a Kalfresh marketing initiative that had previously featured on *Landline*. Ms Courtney spoke following the presentation, using Just Veg as an example of a powerful success story about women in horticulture.

"It frustrates me that there are so many similar good news stories about women in ag which aren't being told," Ms Courtney said.

"The reason they aren't being aired, broadcast, posted, shared, tweeted or linked to is that the family of the woman or the enterprise involved, doesn't tell anybody. She is going about her business, unaware of how interesting or inspiring her story is. Unaware too, of the positives their business or their industry can gain from the media coverage. "So the message I have for you today is: Don't keep your achievements to yourself."

Women in leadership

During her keynote speech, Dr Sharman Stone reflected on her time as Member of Murray and the challenges that faced her electorate, including the battle to save the SPC Ardmona processing factory in Shepparton.

Dr Stone also discussed the fact that there was a limited number of women on horticulture boards. She urged the audience to get their daughters as well as their sons involved in agriculture and reiterated that they were so much more than "farmers' wives".

"What are we doing women? We have 50 per cent of the brains of the population in Australia; 50 per cent of the energy; 50 per cent of the caring. We've got more than 50 per cent of formal education and qualifications – much more," Dr Stone said.

"I'm saying to our women here: we've got to step up. We can keep on blaming the glass ceilings, the discrimination and the fact that for the same job, we get 17 per cent less pay in Australia – all of that. But it's also about us making sure that we don't give up. We can't give up because too much is at stake."

Insightful grower panel

Following the presentations, members of the audience were involved in an interactive question and answer session with a five-woman grower panel. Kalfresh's Tracey Rieck,

Alice Gorman and Jane Miles joined Horticulture Innovation



Australia Director Susan Finger and Sharron Windolf from Windolf Farms, who spoke to the audience about a range of issues including farm operations, succession planning, media, marketing, product development and leadership.

A former journalist with 20 years' experience, Alice gave a fascinating insight into the media and how she has transitioned her experience into marketing at Kalfresh. She knew very little about farming before meeting her husband Richard, however through the course of their relationship

Alice realised the incredible work that farmers do.

"Very few farmers actually go out and promote themselves and that's been probably the bane of my existence – getting the farmers within our business to actually talk about what they do. It's been a work in progress and I think we're doing really well now," Alice said.

"If you don't tell your story, you can't really get upset when people don't appreciate what you do."

Jane outlined the challenges faced when coming up with the Just Veg marketing campaign, including budget restrictions



presented to over 100 guests.

touched on leadership, telling the audience to "grasp every opportunity you can".

As the high tea drew to a close, it was clear that the presentations had a profound impact on the attendees. AUSVEG would like to thank all of the speakers for generously giving up their time to share their inspiring stories at the event.

and understanding what

customers want, while Tracey

team. That included looking at

Sharron spoke in relation to

the challenges in succession

planning and the need for an

open discussion while Susan

other products, making sure

everything is profitable and

increasing the value of it.

talked about what was next

for the Kalfresh marketing

Vegetables Australia will feature a dedicated 'Women in Horticulture' column in future editions of the magazine. If you have a story idea or information you would like to share, please contact AUSVEG on 03 9882 0277 or info@ausveg.com.au.

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with Scott Mathew

WHEN IT COMES TO FARM HYGIENE, MANY GROWERS MAY BE UNAWARE OF THE ESSENTIAL ROLE IT PLAYS ALONGSIDE CROP PROTECTION INPUTS. SYNGENTA TECHNICAL SERVICES LEAD SCOTT MATHEW EXPLAINS HOW GROWERS CAN IMPROVE THEIR FARM HYGIENE TO EFFECTIVELY MANAGE PESTS AND DISEASES.

Throughout the year, I attend or present at many meetings on disease, insect or weed management. In those meetings, we spend quite a bit of time discussing how to select the most suitable agricultural chemical for disease, insect or weed control and how to get the best out of the applications. However, one factor that tends to be missed and is an essential component for use in conjunction with crop protection input selection is farm hygiene.

With the identification of virus movements within the vegetable industry, farm hygiene has again become very topical.

What is farm hygiene?

Farm hygiene is the practice of protecting your property against diseases, insects or weeds by preventing the introduction and/ or spread of pests and diseases that may adversely affect your crop production.

Keeping your land and farming equipment clean, as well as preventing or limiting access to your property by other vehicles, machinery or people can help prevent the introduction of new pests and diseases to your farm. Also, keep machinery and equipment clean when moving between paddocks.

How easily are insects, weeds or diseases spread?

There are many pests that may be introduced to your property or spread between production areas. The most common ways in which diseases, insects, nematodes and weeds can be easily transferred to your property include soil clinging to machinery, vehicles or boots and plant material such as seeds, seedlings or mulches. Viruses can be transferred by hands or equipment and insects, such as mites, can cling to clothing.

What can you do to help improve farm hygiene?

There are several ways to limit the risk of introducing diseases, insects or weeds onto your property, including:

• Restricting the movement of machinery, vehicles, equipment and people both onto your property and within your paddocks.

- Establishing one delivery point for all deliveries to your property.
- Placing a sign on the boundary of your property asking visitors to visit your office first. If they need to proceed further, supply them with a footbath or boot covers, for example.
- Keeping machinery, vehicles, clothing and footwear as clean as possible when moving between production areas.
- Checking any plant material used. Buy certified seed and ensure seedlings are disease-free.
- Ensuring visitors to your property, such as crop consultants, resellers or casual workers, take precautions (i.e. footbaths or

clean boots) as they are likely to have visited several other properties recently.

- Ensuring any machinery entering your property is thoroughly cleaned beforehand.
- Removing crop residues that are known to harbour pests or diseases as soon as practical.
- Learning as much as possible about the pests on your farm and the surrounding properties, as well as any new pests in your region. The ability to correctly identify pests and a thorough knowledge of their lifecycle are very useful skills when planning a hygiene program for your farm.

The R&D content for this article has been provided to *Vegetables Australia* to educate Australian vegetable growers about the most relevant and practical information on crop protection technologies and their on-farm applications.

For more information or to ask a question, please contact your local Syngenta Territory Manager, the Syngenta Advice Line on 1800 067 108, visit syngenta.com.au or email *Vegetables Australia*: info@ausveg.com.au. Please note that your questions may be published.

This communication has been funded by Horticulture Innovation Australia Limited using the National Vegetable Levy and funds from the Australian Government.

Project Number: VG15027



R&D

Veggie Stats: Eggplant

TO ENABLE DEEPER INSIGHTS INTO THE PRODUCTION AND TRADE PERFORMANCE OF KEY AUSTRALIAN VEGETABLE PRODUCTS, WE HAVE DEVELOPED A SERIES OF CROP-SPECIFIC VEGGIE STATS PROFILES. THE NEXT INSTALMENT OF THIS SERIES FOCUSES ON EGGPLANT PRODUCTION.

The following Veggie Stats article has been developed specifically to give readers a detailed snapshot of the key facts and figures on eggplant. Veggie Stats utilises data from the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) and the Global Trade Atlas, funded by Horticulture Innovation Australia Limited using the National Vegetable Levy and funds from the Australian Government.

It is important to note the data itself provides a broad indication of the

performance of eggplant growers and should be interpreted carefully. The data is presented at the national level and therefore does not account for differences among jurisdictions.

In addition to this, the information provided is not specific to every Australian grower since each enterprise operates differently from one another.

Please note that ABARES and the Australian Bureau of Statistics do not provide financial data or information on annual trends for this commodity.



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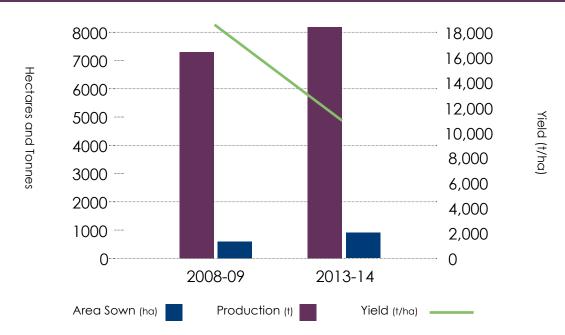
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Eggplant Production – Key facts and figures

- Over the period 2008-09 to 2013-14, eggplant production has increased by 12.2 per cent.
- During the same period, the number of eggplant growers has increased by over 28 per cent to 319 nationally.
- Malaysia is the largest export market for eggplant, representing \$34,139 in 2015-16.
- Queensland has the highest gross value of eggplant production of any state in Australia.
- Eggplant exports have grown over 300 per cent since 2009-10.



Farm-Gate Statistics

- Eggplant production has increased from 7,258 tonnes in 2008-09 to 8,146 tonnes in 2013-14.
- The area planted has also increased by 368 hectares during the same period.
- Average yield has fallen from 18,280.7kg per hectare in 2008-09 to 10,646kg per hectare in 2013-14.





Gross Value of Production

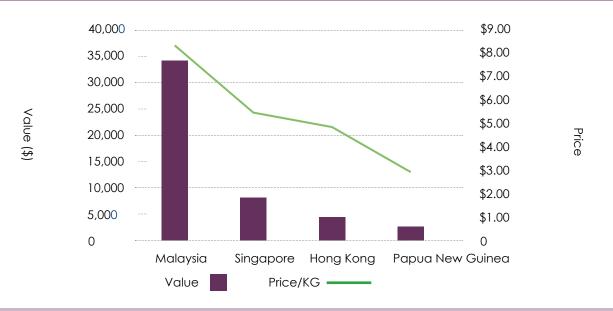
The gross value of eggplant production rose by around 23 per cent from 2008-09 to 2013-14, equal to around \$3.07 million.

Queensland has the largest eggplant industry of all the states, representing just over 50 per cent of the gross value of production nationally in 2013-14.

New South Wales had the largest growth in eggplant production, with the gross value of vegetable production in the state growing by \$4.35 million from 2008-09 to 2013-14. This is the largest rate of growth of all the states over that period.



Key Export Markets 2015-16



• Malaysia is Australia largest eggplant export market in 2015-16, accounting for around 69 per cent of total export value.

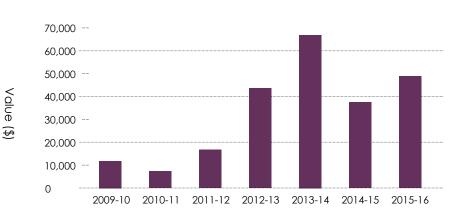
• Malaysia also received the highest price per kilo for eggplants at \$8.20 in 2015-16.

Total Exports

The value of eggplant exports grew by \$37,684 (325 per cent) over the period 2009-10 to 2015-16.

Eggplant exports were at their highest in 2013-14, valued at around \$67,000.

Over the last three years, the value of eggplant exports was estimated to be worth over \$150,000.





Mediterranean fruit fly in fly trap. Image courtesy of Peggy Greb, USDA Agricultural Research Service, Bugwood.org.



Queensland fruit fly. Image courtesy of Pest and Diseases Image Library, Bugwood.org.

Endemic fruit fly edition

IN THE PREVIOUS EDITION OF *THE FRONT LINE*, WE EXPLAINED PREPAREDNESS MEASURES TO REDUCE FRUIT FLY POPULATIONS IN THE TORRES STRAIT AND THE POSSIBLE IMPACTS THAT AN INCURSION OF ORIENTAL FRUIT FLY COULD HAVE ON THE VEGETABLE INDUSTRY. IN THIS EDITION, WE INVESTIGATE CURRENT RESEARCH AND EXTENSION INITIATIVES TO CONTROL FRUIT FLY AND RECENT ADVANCES IN THE NATIONAL FRUIT FLY STRATEGY.

The annual fiscal impact of fruit fly in Australia, arising from both control costs and loss of market access, is approximately \$300 million.

It is likely that fruit fly will continue to pose a significant barrier to accessing new export markets due to the wide host range of Queensland fruit fly (Qfly) and Mediterranean fruit fly (Med fly). Over 75 per cent of all our fruit and vegetable exports, valued at around \$640 million in 2012-13, are susceptible to fruit fly.

The economic benefit of a national approach to controlling the pest was demonstrated in 2012 when an Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) Benefit-Cost analysis estimated that the benefits of implementing a national strategy against fruit fly would equate to \$29-38 million per year.

National Fruit Fly Strategy

In 2006, the continued spread of Qfly provided an incentive for drafting a National Fruit Fly Strategy (NFFS) to control these pests at a regional level, retain Fruit Fly Free status in key growing areas, and assist international market access.

The strategy contains 20 recommendations and 80 strategies across major operational, policy and research areas. It was developed as a guide for the implementation of a viable, cost-effective and sustainable approach to fruit fly management.

In 2015, the NFFS benefited from the launch of a joint industry-government initiative between Horticulture Innovation Australia (Hort Innovation) and the Federal and State Governments. Ultimately, three key elements will contribute to a successful realisation of the NFFS.

1. The National Fruit Fly Council

- 2. SITplus Consortium
- 3. Adaptive Area Wide Management of Qfly using SIT

Gaining traction

1.The National Fruit Fly Council (Fruit Fly Council National Manager Darryl Barbour)

The National Fruit Fly Council was officially launched in 2015, with the aim of ensuring recommendations of the NFFS are carried out.

The Council will consider fruit fly management systems and activities that will assist in securing entry conditions for horticultural produce into markets, ensuring that regulation and legislative controls for managing fruit flies are in harmony both across Australia and with international standards, and ensuring that Australian R&D provides technically justifiable approaches and innovative solutions to meet the requirements of these areas.

2. SITplus Consortium (Program Director Dan Ryan)

The SITplus Consortium is a research group facilitated by Hort Innovation that brings together experts from Macquarie University, Primary Industries and Regions SA's (PIRSA) Biosecurity SA and South Australian Research and Development Institute (SARDI) divisions, Hort Innovation, the CSIRO Health and Biosecurity Flagship, Plant & Food Research Australia, and the NSW Department of Primary Industries.

SIT has been used successfully around the world, including in South Australia \rightarrow





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USDA Agricultural Research Service, Bugwood.org.



where it was used to combat isolated outbreaks of Medfly from Western Australia. SIT works by first knocking down wild fly populations to low levels and then flooding the remaining population with sterile male flies. These sterile flies mate with female flies, resulting in population collapse.

As an essential element of the NFFS, a SITplus facility is currently being built at Port Augusta, South Australia.

Once the facility is operational during the second half of 2016 it will develop and breed sterile male fruit flies - up to 50 million fruit flies each week for release around the country. Sterile fruit fly release will be an essential element to the success of the Area Wide Management aspect of the NFFS.

3. Adaptive Area Wide Management of Qfly using SIT (Qfly Area Wide Management **Coordinator Dr Penny Measham)** The project Adaptive Area Wide Management of Qfly using SIT is currently being facilitated

by Hort Innovation through a Rural Research and Development for Profit coinvestment project (the SITplus R&D initiative). It will develop an Area Wide Management (AWM) approach that will enable more effective management of Qfly in key production regions.

The approach will be 'adaptive', which means that it will incorporate advances in SIT technology as they arise. One component of the project is the development of a habitat suitability model, which will lead to a better understanding of where and when Qfly is present. This information can then inform decisions on the allocation of resources for AWM and SIT.

During implementation of the strategy, the Fruit Fly Council National Manager will work closely with the SITplus Consortium Program Director and the Qfly AWM Coordinator. Keep an eye on The Front Line for updates from these program managers.

State initiative

In other news, the Victorian Government recently announced a \$6.7 million regional grants package focusing on fruit fly traps, urban tree removal programs, pest monitoring and engagement with schools and sporting clubs.

This pledge of funding emphasises the significant threat that fruit fly poses to Victoria, which has a horticultural industry with a farm gate value of around \$2.4

billion and horticultural exports valued at \$909 million in 2014-15. The Victorian Fruit Fly Coordinator Cathy Mansfield will be tasked with rolling out the 2015-2020 Victorian Fruit Fly Action Plan.

AUSVEG wishes Ms Mansfield and all parties involved in the NFFS the best of luck in tackling this issue. Without effective buy-in from all parties, fruit flies have an opportunity to significantly damage Australian horticultural regions and limit future export opportunities.

rticulture

In the next edition of *The Front Line*, we will investigate the goals and outcomes of specific RD&E projects launched as part of the NFFS. For further information on how you can contribute to the management

of fruit flies, please visit the Plant Health Australia website at planthealthaustralia.com.au or contact the AUSVEG National Manager – Scientific and Extension Dr Jessica Lye on 03 9882 0277 or jessica.lye@ ausveg.com

Any unusual plant pest should be reported immediately to the relevant state or territory agriculture agency through the Exotic Plant Pest Hotline (1800 084 881).

This communication has been funded by Horticulture Innovation Australia Limited using the National Vegetable Levy and funds from the Australian Government

Project Number: VG15027

WHAT IS AREA WIDE MANAGEMENT?

Area-wide management (AWM) is Integrated Pest Management (IPM) applied against an entire target pest population within a delimited geographical area.

For the purposes of the NFFS, it will include all fly habitats within that area, in order to reduce the total Queensland fruit fly (Qfly) population. A reduced population in all habitats reduces the likelihood of Qfly moving into farms from habitats such as backyard gardens and/or native hosts. This means that any strategies used on-farm should become more effective, and contribute to lower pest populations over time.

Such an approach is particularly relevant for pest species that are mobile, have a wide host range, and are locally generated in the farming system. AWM enables management strategies on a larger scale which may be more effective than a paddock-by-paddock approach.

THE STRATEGY

The NFFS is linked to an Implementation Action Plan, published in 2010. The plan sets out 15 project initiatives across the commodity supply chain and proposes a national governance structure. It was followed by an ABARES Benefit-Cost analysis of the Action Plan in 2012 and a Plant Biosecurity CRC National Fruit Fly Research Development and Extension Plan in 2015.

Therefore, by 2015 the recommendations of the NFFS had been fairly well dissected, discussed, justified, analysed, assessed, and of course, planned. In 2014, phase out of

dimethoate and fenthion from production systems commenced and the Greater Sunraysia Pest Free Area (PFA) lost Fruit Fly Free status. Clearly, it was time to put the NFFS recommendations into practice.

With the restructure of the Fruit Fly Council and a new injection of funds, recommendations made in the Strategy and practical actions outlined in the Implementation Plan are likely to come to fruition.

For more information visit preventfruitfly.com.au.

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Mulyan Farms owner Ed Fagan oversees the harvest with the purpose-built spinach harvester of the high-yielding spinach crop grown after a legume cover.

R&D Farm Productivity Resource Use & Management

Soil Wealth and Integrated Crop Protection industry update

THE SOIL WEALTH AND INTEGRATED CROP PROTECTION PROJECTS HAVE PROVIDED VEGETABLE GROWERS AROUND AUSTRALIA WITH PRACTICAL INFORMATION AND VALUABLE RESOURCES. IN THE FIRST EDITION OF THIS REGULAR COLUMN, WE DISCUSS THE RESULTS FROM A SUCCESSFUL DEMONSTRATION SITE IN NEW SOUTH WALES AND TWO EXCITING WEBINAR SERIES ON MANAGING CROP NUTRITION AND INTEGRATED PEST MANAGEMENT.

Welcome to the new regular feature in *Vegetables Australia* on Soil Wealth and Integrated Crop Protection (ICP). These projects, coordinated by Applied Horticultural Research and RM Consulting Group (RMCG), aim to improve the communication and adoption of existing soil management and plant health R&D.

You will see articles on project demonstration sites, read about recent project events and new resources available from the Soil Wealth/ ICP website at soilwealth.com. au or integratedcropprotection. com.au.

Soil Wealth demonstration site

Ed and James Fagan from Mulyan Farms have hosted a Soil Wealth demonstration site on their Cowra farm in New South Wales since 2014. Trials on the site build on the reduced tillage farming initiatives the brothers started on the property in 2009. Recently, a cover crop and demonstration trial showed significant benefits in the commercial spinach crop that followed. The cover crops tested were annual clover, annual ryegrass and field peas, with the results then compared to bare fallow.

The legume cover crops were included because of their capacity to fix atmospheric nitrogen and make it available to the subsequent crops.

The cover crops provide organic matter, but also help to move soil nutrients closer to the soil surface. They encourage soil microorganisms such as Mycorrhizal fungi and beneficial bacteria which, together with the extra organic matter, help to improve soil structure leading to better soil aeration and drainage.

Cover crop trial results

The highest yields were obtained with clover at 16.8 tonnes per hectare (48 per cent higher than bare fallow) and field peas at 15.4 tonnes per hectare (36 per cent higher than control). Ryegrass alone also resulted in higher yields compared to bare fallow.

The higher yields from the legumes were most likely due to the added nitrogen these crops provided. The quality of the spinach was also excellent and deemed one of the best spinach crops produced so far at Mulyan Farms.

These practices will contribute to healthier soils and a healthier bank balance for Ed and James.

"The Soil Wealth project and demonstration site here on Mulyan Farms has allowed us to look at many different cover crops side by side," James Fagan said.

"We have been able to

observe and compare growth rates, rooting depths, nutrient deficiencies, green manure versus brown manure, and stubble residue breakdowns – all within the same paddock and the same environment.

"The project has also provided lots of soil and tissue testing right here on our farm to help us understand positive and negative impacts from cover crop and cultivation decisions.

"It has allowed us to plant our cash crops over many different treatments and focus on the best economical strategy, knowing it is sustainable and that our soil health will only get better. We like the project's interest in all physical, chemical and biological aspects on our farm."

Soil Wealth webinar series

The Soil Wealth team with FertCare are presenting a series of four webinars on

managing plant nutrition in vegetable crops.

The first webinar on *Soil Test Interpretation for Vegetable Crops* was presented recently by Dr Doris Blaesing and Dr Gordon Rogers from the Soil Wealth team. If you missed this popular webinar, you can view the recording and download the presentation from the Soil Wealth/ICP website at soilwealth.com.au. Just look under 'Resources/weblinks'.

There are three more webinars in the crop nutrition series to come. To register for these and other webinars, visit the Soil Wealth/ICP website and look under the 'Events' tab.

ICP webinar series

The ICP team is delivering a series of four webinars on the

key practical elements of Integrated Pest Management (IPM).

IPM experts Dr Paul Horne and Jessica Page, with Carl Larsen from RMCG, discussed the chemical, cultural and biological options for controlling insect pests in Australian vegetable crops in the first webinar at the end of July. The full recording of the webinar and discussion can be viewed on the Soil Wealth/ ICP website under 'Resources/ videos and apps' tab.

If you missed the first webinar, there are three more in the series being delivered by Dr Horne and Ms Page. To register for these and other webinars, visit the Soil Wealth/ICP website and look under the 'Events' tab.

For more information, please contact project leaders Dr Gordon Rogers on 02 8627 1040 or gordon@ahr.com.au and Dr Anne-Maree Boland on 03 9882 2670 or anne-mareeb@rmcg.com.au.

More information and resources are also available from the Soil Wealth/ ICP website at soilwealth.com.au or integratedcropprotection.com.au. The Soil Wealth and Integrated Crop Protection projects have been funded by Horticulture Innovation Australia Limited using the National Vegetable Levy and funds from the Australian Government.

Project Numbers: VG13076 and VG13078

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Analysing the results of the latest Grower Confidence Survey

THE LATEST RESULTS FROM THE INDUSTRY-FUNDED GROWER CONFIDENCE SURVEY ARE IN, WITH GROWERS INDICATING THAT CONFIDENCE IN THE BROADER VEGETABLE INDUSTRY IS HIGHER THAN THE PREVIOUS QUARTER. *VEGETABLES AUSTRALIA* DELVES DEEPER INTO THE ECONOMIC STATISTICS TO PROVIDE AN ANALYSIS OF VEGETABLE GROWER CONFIDENCE LEVELS AND THE POSSIBLE IMPLICATIONS FOR THE WIDER INDUSTRY.

A USVEG conducts quarterly vegetable growers from across Australia that comprises questions relating to how confident growers feel about key economic indicators, including macroeconomics, investment, the market and government policy. The results from these surveys are then used to measure changes in grower confidence when compared to results from previous surveys.

Information from the quarterly surveys is used to track grower sentiment in relation to economic indicators over time, with respondents located all over Australia and varying in farm size. Figure 1 shows the tracking of vegetable grower confidence over the last six quarters, starting with a base confidence index of 100.

National results

The latest confidence survey conducted in the June 2016 quarter indicated that confidence levels in the national vegetable industry increased by over 32 per cent when all economic indicators were considered.

As can be seen in Figure 2, confidence in each individual economic indicator rose in

varying degrees when compared to the previous quarter. Confidence in government policy (both state and federal levels) grew substantially in the survey period by over 240 per cent, but it is important to note that this was following a particularly low level of confidence in the economic indicator in the previous guarter.

Market confidence also grew in the survey period, increasing by around 40 per cent to nearly match the level of confidence that growers have in the current investment climate.

State-based results

Given the number of surveys completed by growers in different states, we are able to analyse the confidence levels of some vegetable growing states in the most recent survey period compared to the previous period.

Victoria: Vegetable growers in Victoria were, on average, more confident than their national counterparts in all economic indicators and were measured to be around 14 per cent more confident than the national level.

Tasmania: While investment and government confidence levels were slightly higher

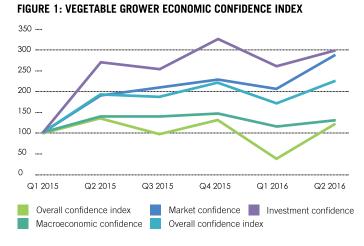
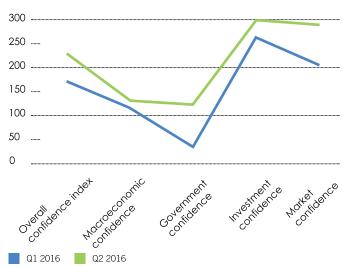


FIGURE 2: NATIONAL VEGETABLE GROWER CONFIDENCE Q1 VS Q2 2016



Economic Update



than the national levels, confidence levels in the market and macroeconomic categories were below the national levels. However, overall grower confidence was only three per cent lower than the national level.

Queensland: Queensland growers were found to be the least confident in the survey period. Growers in the state expressed a lack of confidence in the government index in particular, with confidence levels in the category around 78 per cent lower than the national level. Overall confidence was measured to be around 13.5 per cent lower than the national level.

Implications for the industry

The results in this survey have a number of positive results for the vegetable industry moving forward. Growers indicated that they felt more confident investing in their businesses in light of current economic conditions, which could have a flow-on effect of creating jobs and strengthening the economic status of the Australian vegetable industry, as well as the national economy.

Results also indicated that confidence levels relating to government policies rose during the survey period. It is possible that this increase has occurred as a result of the 2016 Federal Budget handed down in May, which outlined a number of favourable initiatives for the vegetable industry, such as reducing the company tax rate, increased biosecurity funding and \$2 billion for major water infrastructure projects.



For more information, please contact AUSVEG. Phone: 03 9882 0277 Email: info@ausveg.com.au

The Economist Sub-Program has been funded by Horticulture Innovation Australia using the National Vegetable Levy and funds from the Australian Government.

Project Number: VG15027

Horticulture Innovation Australia





Plant & Food Research has been working to support the needs of the Australian horticultural, arable and marine-based food industries for more than a decade.

We specialise in servicing the diverse R&D needs of the horticulture sector and make use of our extensive research network to bring together integrated science teams designed to best support both the science and commercialisation needs of Australia's primary industries.





Young grower profile

Name:

Thang Hoang Le (Aussie Kev)

Age:

32

Location:

Hillier/Angle Vale, South Australia

Works:

LVE Pty Ltd – soil grown protected cropping, greenhouses and glasshouses

Grows:

Capsicums, tomatoes, cucumbers and zucchini

How did you first become involved in the vegetable industry?

I've been involved in farming since I was 12 years old. I started by folding boxes for my folks to pack our produce and sell to our merchant. I helped out on the farm every weekend throughout primary school, high school and university. Despite all my studies, I still ended up on the farm. It was when the family decided to sell produce in the Adelaide Produce Market that we expanded our business and we have been going strong for the past 10 years as grower merchants.

What is your role in the business?

I am the Operations Manager. My role is to make sure the produce is grown, packed and sold to maximise profits and return minimal problems to the family business. If I could give myself a title, it would be, "The guy that the family makes do everything."

How would you describe your average day at work?

My workload has dramatically reduced but when we first started becoming merchants, I would easily average 15 hours a day during the summer periods organising pickers and packers, picking up stock from growers, organising watering and fertilisers and managing pests and diseases on the farms. Then the family and workers started packing well into the night so we could sell the produce as fresh as possible. Then it was off to the markets for a second shift to sell the produce. Now I enjoy more of a management role and occasionally I still do some of those tasks.

What do you enjoy most about working in the vegetable industry, and how do you maintain your enthusiasm?

What I absolutely love about the industry is it has a family feeling about it. Everyone knows everything about everyone. We Hillier/Angle Vale, South Australia

all compete against each other, but everyone in the market and on the farms genuinely cares for one another. At the end of the day, there is a very strong sense of comradery in the agricultural industry.

I maintain my enthusiasm by meeting up with like-minded young growers under AUSVEG in the Northern Adelaide Plains and we have meetings and barbecues where we can discuss problems, trials and new ideas. No matter how small, big or stupid the ideas that are being thrown around, we always have a crack at it.

What are the biggest challenges you face working in the industry?

The biggest challenge in the industry is unity and lack of awareness for the problems related to it. Firstly, the industry has too many groups and, to be effective enough to bring awareness of the problems our farmers face, we need a strong voice to bring the plight of our farmers to the public's attention.

Secondly, we are facing a changing marketplace where major retailers are dominating





sales and this affects smaller retailers and small/medium farms. We, as an industry, need to address these issues and many others in order to maintain continuity of our industry and prepare to adopt and embrace change.

What has been your greatest achievement so far?

Straight up, it has been winning AUSVEG SA Young Grower of the Year (at a state level) and AUSVEG Young Grower of the Year (at a national level). Being acknowledged for such a prestigious award is a very humbling experience. Also, helping develop and being a part of the young growers group has given me inspiration and encouragement throughout the years. I love those guys.

What does winning the national AUSVEG Young Grower of the Year award mean to you, in terms of your career in the industry?

Winning the award opens up new business opportunities and

provides me with valuable new connections to both buyers and suppliers within the industry.

I think winning the AUSVEG Young Grower award is an important achievement in my life and helps guide me towards building up my future dreams and ambitions. It also gives me great pride to be a second generation Australian farmer with a Vietnamese heritage. I hope winning this award inspires other young people to choose farming as a profession and love this job as much as I do.

How do you think more young people could be encouraged to study and take up jobs in the vegetable industry?

If they had Vietnamese parents, they would end up either being a doctor or a farmer. But seriously, the best way to encourage young people is to target their mindset. Young people think the farming profession is dirty, too hard and at the lower end of the social class. They don't actually realise that other industries aren't doing too well but the farming industry is always continuing, because people will always need to eat. There needs to be more focus on dressing up the industry to make it more attractive to younger Australians.

Where do you see opportunities for growth in the Australian vegetable industry?

I think the real opportunities lie in soil grown produce that can be exported around the world. We just need to put more emphasis on the marketing. What we don't realise, and still have not capitalised on, is that the whole world recognises Australian produce as being the cleanest and healthiest. We need to implement modern farming practices, for example Integrated Pest Management (IPM), and market soil grown Australian produce, firstly to Asia and then the world. We must maintain that image and use what we are blessed with here and that is an abundance of land and clean water.

The Asians will pay for premium produce. They are already buying bottled Tasmanian air. They will buy Australian IPM soil grown produce, trust me.

If you weren't working in the vegetable industry, what would you be doing?

I would continue my economics and marketing degree and if that fails, I'll be Aussie Kev the plumber.

Where do you see yourself in five years?

In five years, I see myself expanding my business and building an export shed. I believe my export market lies in Vietnam and from there we'll have a crack at the neighbouring countries.

I also believe in embracing technology and modernising farming by delivering farmers with the right informational tools for their business. So we will introduce Farmate, an app that hopefully helps farmers receive critical information.



Stingless bee carrying pollen returning to its hive.



Blow flies, like the Australian brown blow fly, pollinate crops such as carrots.

The role of honey bees and wild pollinators in vegetable production



INSECT POLLINATION IS A VITAL COMPONENT OF VEGETABLE PRODUCTION AND SEED VEGETABLE PRODUCTION. IN THIS ARTICLE, PLANT & FOOD RESEARCH EXPLAINS THE ROLE OF HONEY BEES AND FLIES AS POLLINATORS, AND PROVIDES AN OVERVIEW OF AN UPCOMING FIVE-YEAR RESEARCH PROJECT THAT WILL FOCUS ON UNMANAGED INSECT SPECIES IN VEGETABLE CROP POLLINATION.

nsect pollination is not only important for the production of vegetables such as pumpkins, courgettes and cucumbers, but is often crucial for vegetable seed production.

Honey bees are often used to pollinate these crops, but recent research indicates that the presence of unmanaged pollinators - such as other bee species and flies - can improve yields beyond what honey bees can achieve alone.

This is because honey bees may be more attracted to the nectar and pollen of non-crop plants flowering at the same time as the crop plant. Secondly, honey bee movements between flowers and trees requiring cross pollination may be less frequent than those of other insects (floral constancy). Thirdly, under cold cloudy conditions, honey bees are more reluctant to forage than other insect pollinators.

Upcoming research project

In Australia, the roles of unmanaged insect species in vegetable crop pollination are still poorly understood, limiting the ability for growers to use them to increase yields. Given

this challenge, a new five-year program funded by Horticulture Innovation Australia with coinvestment from Plant & Food Research aims to understand the role of different pollinators, including honey bees, in Australian crops.

Researchers will liaise with industry groups, including the vegetable industry, to determine the highest priority crops where yields can be improved through better pollinator management. Focused research to identify the most efficient pollinating species will also form the basis for the development of new pollinator management strategies for growers.

Based on limited existing research, following is a list of the likely key contributing pollinators within Australian vegetable crops, from Plant & Food Research's perspective.

Honey bees

Honey bees are the only pollinators that can be easily moved en masse into flowering fields, making them the most flexible and widely used. Feral (unmanaged) honey bees can also provide significant pollination, but if Varroa mite (Varroa destructor) arrives as most experts predict, it is likely

to decimate populations. (More about honey bee management and use in crop pollination can be found at far.org.nz.)

Australia has over 1,000 native bee species. Some nest in cavities, others in the soil. Some are solitary, while others are social.

Although many species are likely to contribute to crop pollination, research has focused on two bees. Stingless bees (particularly Tetragonula carbonaria) are sometimes used in warmer regions, but they are reluctant to forage at temperatures below 18 degrees Celsius. Blue banded bees (Amegilla sp.) play a useful role and can forage in cooler conditions. (Information on Australian bees can be found at aussiebee.com.au.)

Fly pollinators

Flies can be the most important pollinators under certain

weather conditions, locations or crop types. They can be particularly beneficial for pollination of carrot and onion hybrid seed crops.

While some flies can be problematic to other primary industries (some blow flies cause sheep flystrike), other species provide multiple benefits. For example, a number of hover fly (Syrphidae) and bristle fly (Tachinidae) species have adult flies that pollinate, while larvae attack pest aphids and caterpillars. Blow flies, such as the Australian brown blow fly. pollinate crops such as carrot.

Plant & Food Research is also very interested in understanding crop growers' thoughts and experiences of current crop pollination requirements and strategies. This is important for future research goals specifically to address grower needs. To provide your thoughts in a short online survey, please visit pollinationsurvey.com.

For more information, please contact Brad Howlett from Plant & Food Research at brad.howlett@plantandfood.co.nz.

This communication has been funded by Horticulture Innovation Australia Limited using the National Vegetable Levy and funds from the Australian Government.

Project Number: VG15027

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Australian growers showcase their produce at Asia Fruit Logistica



FOLLOWING SUCCESSFUL PARTICIPATION AT ASIA FRUIT LOGISTICA FROM 2013 TO 2015, THE AUSTRALIAN VEGETABLES STAND RETURNED TO THE INTERNATIONAL TRADE SHOW IN HONG KONG FROM 7-9 SEPTEMBER.

Ten vegetable growers from across the country travelled to Hong Kong to display their produce at Asia Fruit Logistica and were able to successfully create and strengthen business relationships in Hong Kong and other Asian markets in the region.

Growers from Victoria, Queensland, Tasmania, South Australia and Western Australia displayed a wide variety of fresh Australian produce, including broccoli, cauliflower, carrots, onions, potatoes and pumpkins. Other products on the impressive Australian Vegetables display included sweet corn, beans, celery, lettuce, kale and radishes.

Showcasing Australian produce

The Australian Vegetables stand formed part of the larger Australia Fresh pavilion, which was coordinated by Horticulture Innovation Australia and encompassed a wide range of Australian horticultural exhibitors under the one Australian banner.

The Australian Vegetables stand also incorporated cooking demonstrations from Australian chef Tim Hollands, showcasing to buyers and consumers the methods of preparing Australian produce for the best results. Throughout the event, the

Australia delegation worked

hard to enhance the fresh, clean and safe reputation of Australian horticultural produce.

The prominence of Asia Fruit Logistica within the Asia-Pacific region allowed Australian growers to be exposed to buyers from a wide range of export markets. Large numbers of buyers travelled from a range of nearby markets including China, Japan, Singapore, Malaysia and Taiwan, and the popularity and strong reputation of Australian vegetables in Asia was evident during the trade show, with buyers placing a strong emphasis on traceability, quality and safety.

As part of the levy-funded trade mission, grower

participants also visited a range of retailers, importers and wholesalers to gain a deeper understanding of the Hong Kong market. Overall, Asia Fruit Logistica allowed growers to further understand the offerings of competitor markets such as South Africa, the United States and New Zealand.

Networking opportunities

At the conclusion of the trade mission and Asia Fruit Logistica, the growers who took part in this event were confident that enhanced trade will occur for their businesses as a result of participating in this activity. Vegetable exports to the Hong

Export Development



Kong market have increased to over AUD\$13 million in 2015-16, up from AUD\$8 million in the previous financial year. Following this trade event, further growth in fresh vegetable exports from Australia is expected.

Key messages from buyers and consumers in Hong Kong suggest that Australian carrots, potatoes, leafy vegetables and organic varieties are all in high demand, while innovative products and pre-packed options are popular among retailers. Buyers also placed increased importance on a product's origin and traceability, given increasing concerns regarding food safety. Consumer enquiries in Hong Kong ranged from vegetable production in Australia to supply and product availability. Many retailers also enquired about any new, valueadded and innovative products that haven't reached Asia yet, reinforcing the need for further innovation and product development in Australia.



UPCOMING EVENT: WOP DUBAI

13-15 November, Dubai World Trade Centre. Expressions of interest to attend this trade show can be sent to export@ausveg. com.au or for more information visit wop-dubai.com.

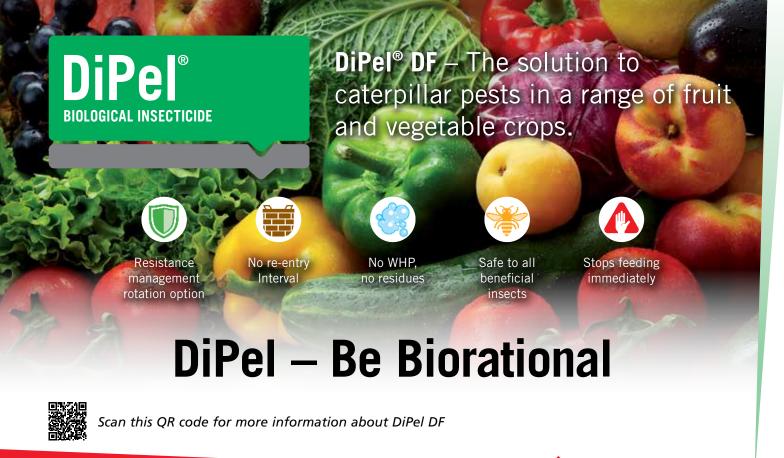
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For more information on the Asia Fruit Logistica trade mission, contact AUSVEG on 03 9882 0277 or email info@ausveg.com.au.

The Vegetable Industry Market Access and Development Program has been funded by Horticulture Innovation Australia Limited using the National Vegetable Levy and funds from the Australian Government.

Project Number: VG13097

Horticulture Innovation







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Fresh is best for Millennial shoppers

THE AUSTRALIAN MARKET FOR FRESH VEGETABLES IS TAKING ON A NEW DIRECTION WITH THE RISE OF THE MILLENNIALS. TO HELP THE VEGETABLE INDUSTRY CAPITALISE ON THIS TRANSITION, CONSUMER RESEARCH AGENCY COLMAR BRUNTON UNDERTOOK AN EXTENSIVE LEVY-FUNDED STUDY INTO WHAT MAKES THIS NEW WAVE OF CONSUMERS TICK. JARROD STRAUCH REPORTS.

Millennials love their vegetables.

That was the message from an online study conducted across six weeks by consumer research agency Colmar Brunton, which found that 99 per cent of consumers aged 18 to 35 years enjoy eating vegetables. The study was conducted as part of the Project Harvest consumer research project commissioned by Horticulture Innovation Australia (Hort Innovation).

This key demographic is set to become the leading grocery buyer in Australian households over the next decade, and using the insights from Colmar Brunton's research, the vegetable industry is in a valuable position to capitalise on its ascendancy.

Communication is king

In particular, increasing the level and relevance of communication to consumers about fresh vegetables could connect directly with Millennials.

Colmar Brunton found that many Millennials have a limited knowledge of seasonality, the benefits of local produce, the origin of their vegetables and how to reduce waste when using their vegetable purchases.

However, they're also eager to learn, with the majority of Millennials wanting to see more information about the seasonality of their food purchases. These shoppers are interested in information that's accessible at the point of purchase, either in-store or on-pack.

In general, Colmar Brunton

found that communication to Millennials can afford to be more specific and more detailed than what has been provided to previous generations, and connecting this information with the cost-benefits could increase vegetable purchases.

Quality control

For many Millennials, the quality of their produce is inherently linked with its provenance. More than half of the respondents said that knowing where their vegetables are grown is important because of varying degrees of trust in quality standards in different growing countries.

Millennials also make other judgements based on country of origin. Nearly half of the respondents said that knowing the provenance of their produce is important because of perceptions of higher food safety – in particular, respondents explicitly stated that they believe Australian produce is safer to eat than international produce.

However, the research also showed that Millennials don't actually know where the fresh produce in their shopping basket comes from. More than half of Millennial shoppers believe that the majority of fresh vegetables sold in supermarkets are imported, even though the total value of fresh vegetable imports into Australia is only 2.3 per cent of Australia's value of production of vegetables for human consumption.

Millennials also draw a direct link between fresh vegetables and quality, with many believing that frozen vegetables are a compromise on quality for the sake of convenience. This makes them more likely than the average consumer to buy pre-prepared fresh vegetables, such as ready-made salads, but less likely to buy packets of frozen vegetables.

Waste not, want not

With many Millennials being concerned about the sustainability of their lifestyles, providing options to reduce the proportion of their fresh vegetable purchases which is currently going to waste could help to increase their overall consumption.

Among this cohort, there are high levels of interest in the availability of smaller portion sizes, suggesting that industry could capitalise through offering single- or double-serve product formats.

Millennials also want to know how to make the most out of the parts of vegetables they currently discard, with this stem-to-root philosophy clearly presenting opportunities to communicate to consumers with smart usage tips.

Further reading

These insights are just some of the valuable findings delivered by Colmar Brunton in its report on the online community study. The full report covers a range of themes from across the sixweek period, including attitudes to health and nutritional information, perceptions of product formats and packaging, and consumer knowledge of seasonality.

The full report is free to all levy-paying growers and is available in the 'Vegetable Market' insights section of the InfoVeg database.

To read the full report on the online community study, please contact AUSVEG on 03 9882 0277 or email info@ausveg.com.au.

Consumer and market program for the vegetable industry has been funded by Horticulture Innovation Australia Limited using the National Vegetable Levy and funds from the Australian Government.

Project number: VG12078

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Vegetables Australia September/October 2016



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Developing fertiliser from waste products

Turning waste into a practical resource is the pinnacle of a sustainable on-farm system.

Products that would otherwise end up in waste can rejuvenate highly saline, acidic or arid soils and reduce the use of traditional chemical fertilisers. Healthier soils also increase the efficiency of other inputs.

Using specially-developed microbes from Greenbelt bio fertiliser, Rob Hinrichsen of Kalfresh in Queensland has developed his own fertiliser. Combined with other innovative best practice techniques and innovations, this helped Mr Hinrichsen win the 2016 AUSVEG Grower of the Year award at the National Horticulture Convention in June.

Grower case study

The process and ingredients used to develop a fertiliser will be different for each grower, depending on where they are based and what is available, as Mark Low from Greenbelt explained.

"Normally when we meet with a grower, we chat about what base materials are available in their area and create a recipe. We use what can be sourced and are very interested in taking waste materials from local areas and returning the carbon back into the soil."

A range of inputs are possible based on what is sustainable and available nearby. In the initial trial at Kalfresh, different manures, saw dust and mushroom waste were combined with a mix of specific microbes and fungi.

After around a month under the right temperature and moisture conditions, the microbes developed the fertiliser. From this trial, there was a reported 20 per cent increase in overall yield compared to the control.

As part of the Soil Wealth trial site at Kalbar, this fertiliser is used in combination with new research in biological agents, controlled traffic farming, reduced tillage and other best practice techniques. Results from this trial site can be found at soilwealth.com.au/ demo-sites/kalbar-qld.

> For more information, contact AUSVEG Environment Coordinator Andrew Shaw on 03 9882 0277 or andrew.shaw@ ausveg.com.au.

EnviroVeg program update

EnviroVeg is a vegetable levy-funded environmental best practice program designed specifically for vegetable growers, and is currently in a crucial period to shape its future.

As the current iteration of this project nears completion, EnviroVeg is developing a forward plan to outline how the resources from this program can continue to benefit Australian vegetable growers.

Valuable information

Results from the 2016 EnviroVeg survey will provide input into the forward plan, highlighting the areas growers see as most important for the future of their program. An impact assessment will also use the survey results to determine what best practice techniques are important to growers.

Growers are encouraged to access the resources of this

program, including assessment templates, the EnviroVeg manual and information on best practice techniques through the EnviroVeg website: enviroveg.com.

orticulture

For more information, contact AUSVEG Environment Coordinator Andrew Shaw on 03 9882 0277 or andrew.shaw@ausveg.com.au.

The EnviroVeg Program has been funded by Horticulture Innovation Australia Limited using the National Vegetable Levy and funds from the Australian Government.

Project Number: VG12008

Beneficial bacteria: An avenue to unlock soil wealth

MANY VEGETABLE PRODUCERS IN AUSTRALIA HAVE RECOGNISED THE VALUE OF USING BENEFICIAL INSECTS THROUGH INTEGRATED PEST MANAGEMENT TO PRODUCE SUSTAINABLE CROPS, BUT IT DOESN'T STOP THERE. *VEGETABLES AUSTRALIA* INVESTIGATES NEW RESEARCH ON BENEFICIAL BACTERIA AND HOW THE FIELD OF BIOLOGICS IS BEING USED TO ACHIEVE GREATER ACCESS TO SOIL RESOURCES AND SOIL HEALTH.

The vegetable industry in Australia has seen many developments and changes that have shaped how vegetables are produced. Ploughing, irrigation and advances in chemicals and pest management have all shaped how vegetable producers operate today.

The next big shift could be the development of biologics, which are products derived from living organisms to enhance plant productivity.

Current research in biologics include a focus on beneficial bacterial or fungal microorganisms as well as biochemicals such as plant extracts, which have resulted in the development of a number of new products overseas.

The benefits of these products vary, from combating sucking pests including whiteflies and controlling parasitic nematodes to working as a biological fungicide, and these products are increasingly becoming available for use in Australia.

Industry R&D

After seven years of isolating and testing around 20,000 different microorganisms, Bayer has developed the biologic product Serenade® Prime, based on the highly active QST 713 strain of the soil bacteria *Bacillus subtilis*. This strain stood out for a number of reasons, according to Bayer Agronomic Development of Biologics Director Denise Manker.

"It works because it is a good root coloniser. Plants allocate about 30 per cent of their energy into making efforts to attract beneficial microbes. We are supplying the best possible microbe into that root system so that it can colonise and help the plant better access soil resources," she said.

This strain is very adaptable – it colonises and benefits a range of crops early in the crop cycle, forming a mutually beneficial relationship between the soil and plant roots. The bacteria enables better nutrient exchange between the soil and the plant roots, and the plant provides a food source for the bacterial colonies in the form of root exudates.

"It colonises plants when they are in the growing stage and increases nutrient uptake by a range of methods, including adjusting the soil pH and attracting phosphorus and iron," Ms Manker said.

The endospores can sense growing roots from up to 13 centimetres through the soil matrix, which stimulates the endospores to germinate. They then grow multiple flagella (small tails) and can "swim" through soil towards the roots where they colonise the surfaces of young roots and root hairs. This occurs very rapidly (usually within two days).

Biological agents in action

Vegetable growing operation Kalfresh – winner of the AUSVEG Innovative Marketing award at the 2016 National Horticulture Convention – has been trialling rhizobacteria in conjunction with controlled traffic farming, cover cropping and Integrated Pest Management techniques at its Soil Wealth demonstration site at Kalbar, Queensland.

Sustainable

Kalfresh Agronomist Andrew Johnston explained that the benefits have been seen across the whole production business. "For the beans there has

been a better weight and the carrots have grown a better quality. There has been a broad level of benefits – increased yield that works hand in hand with cover cropping, improved soil structure which, in turn, reduces the costs of working the soil and holding onto moisture," he explained.

Mr Johnston views this as the future for horticulture production in Australia.

"This is the way the industry is moving. If you use more chemicals at the start then you will need more chemicals throughout the crop's life. If you go down a softer route you need less chemistry, and if you can reduce your input through the whole crop's life and get a better result at the end, that is a winwin situation."



The EnviroVeg Program has been funded by Horticulture Innovation Australia Limited using the National Vegetable Levy and funds from the Australian Government.

Project Number: VG12008 Horticulture

Horticulture Innovation Australia



44 EnviroVeg



Invention borne of necessity; Innovation in practice

HOUSTON'S FARM IS A STALWART FOR INNOVATION, BEST PRACTICE TECHNIQUES AND COMMUNITY EDUCATION IN SOUTHERN TASMANIA. AS IT CELEBRATES ITS 25TH YEAR, QUALITY ASSURANCE, TECHNOLOGY AND INNOVATION MANAGER PETRA DOUST SPOKE WITH AUSVEG ENVIRONMENT COORDINATOR ANDREW SHAW ABOUT DEVELOPMENTS IN HER DYNAMIC WORKPLACE.

H ouston's Farm was founded on innovation. In a video on the company's website, Anthony Houston recalls its first foray into the production of loose lettuce products. As the supply chain challenged the business, advancement followed and Houston's Farm now supplies a range of loose leaf and salad value added products across Australia.

The business has come a long way since then, employing over 150 people including Quality Assurance (QA), Technology and Innovation Manager Petra Doust, who describes smart refinements to the company's focus during her five years at Houston's Farm.

"When I joined, my role was as an Agronomist/Research officer. We recognised that as a growing business we needed dedicated resources, and there are now managers assigned in the area of research and development as well as production. My role has since expanded into the QA side of the farm, which includes both environmental assurance and food safety," she says.

Petra's role evolved so that the QA measures performed on the production side of the business could translate into on-farm processes. The required follow-ups and internal audits are organised so that there is no gap between production and on-farm food safety, and ensures that best practice techniques are developed and maintained. Petra also manages the

farm's research program. "Our key research focus areas for the near future include minimising foreign object risk, increasing soil health and sustainability, minimising waste and loss and understanding pre-harvest factors which affect shelf life," she says. "There is an all-round

focus into how we can become more efficient."

Industry champion

While Petra is focused on her specific area, it is important that she can see the bigger picture. The challenges she deals with will ultimately impact all other aspects of the growing operation, especially regarding QA issues.

"A healthy environment leads to increased food safety assurance. The tidier our farms are, the less chance for habitat for pests," Petra explains.

The obvious passion that Petra displays for her workplace is epitomised by ongoing improvements and the sheer quantity of best practice programs she has championed, including the vegetable industry's specific scheme, EnviroVeg Platinum.

"We genuinely care about the environment and try to use methods that are environmentally friendly," she says.

"We have an active Integrated Pest Management program which aims to use multiple control methods to control pests. In some respect we let nature do some of the work for us. We think about safety of people, the health of the land, our neighbours' land and food safety."

The techniques employed throughout the farm include developed farm biosecurity procedures, controlled traffic farming, monitoring soil and crop removal figures to determine inputs and a range of measures that exceed expectations.





"We have invested in data management systems, which enable us to make more informed and timely decisions. There is variety in our crop rotations and reduced soil cultivation for which we use machinery that has less impact on the soil structure," Petra says.

There is also awareness that external consultation is required for continual improvement.

"We are involved in a number of projects with external companies to look at better ways of managing irrigation and to understand pre-harvest factors that affect quality. We always want to improve and realise that sometimes you need a different set of eyes to see the obvious.

"We can't just look at ourselves; we are a part of a bigger community."

Challenges in an engaging workplace

Within her own area of expertise, Petra faces everchanging issues and the way these are dealt with relate to best practice ideals.

"Our crop rotation is intensive and the hard season just gone has resulted in putting more pressure on some land which was meant to be rested. We are now back on track and plan to do more cover cropping to build organic matter and improve soil structure. We intend to take one of our farms totally out of production for a few years to increase sustainability going into the future," she explains.

"A couple of the biggest issues for us regarding quality is the elimination of foreign objects and maintaining production in challenging environmental conditions. We work really hard to identify the risks and manage these to ensure the customer receives the highest quality product.

"The rise of social media makes issues with product farreaching and they have a huge impact, so we are doing more monitoring and managing as preventative measures rather than reactive ones.

"There are always areas we can improve on. It's about changing culture as well so that people start caring about their workplace and look for opportunities for improvement."

Having a broader perspective means that Petra can relate these issues to areas outside her workplace 'bubble', including industry and social issues.

"The city is in close proximity to our boundaries – they have a different view of how food is produced and have limited understanding of what happens on-farm, but their opinion matters. As well as this, within Tasmania the major vegetable processors are in the north of the state so it is really hard to make the most out of the land and entice younger people to stay on the land down here," she says.

These issues are not going to dissipate readily, but Petra knows to keep them in perspective.

"One issue has impact on another and you've got to look at the whole picture."

> The EnviroVeg Program has been funded by Horticulture Innovation Australia Limited using the National Vegetable Levy and funds from the Australian Government.

> > Project Number: VG12008





Minor Use Awareness Program: Latest news

MINOR USE HAS AN IMPORTANT ROLE TO PLAY IN THE AUSTRALIAN VEGETABLE INDUSTRY, PARTICULARLY AS INTEGRATED CROP PROTECTION AND INTEGRATED PEST MANAGEMENT TECHNIQUES BECOME MORE WIDESPREAD. THIS ARTICLE EXPLAINS HOW MINOR USE WORKS WITH THESE SUSTAINABLE FARMING PRACTICES.

ntegrated Crop Protection (ICP) and Integrated Pest Management (IPM) are terms that are gaining wider use across the horticultural industry. As consumers and markets expect less chemical use with higher volumes of produce, this means that ICP/IPM are important for the future of vegetable farming.

While older 'hard' chemicals are slowly being phased out, new chemicals are usually 'softer' as they enter the market. 'Soft' chemicals specifically target the pests, leaving several of the beneficial insects behind. These beneficials can then continue keeping pest populations under control.

There are current R&D projects dedicated to ICP and IPM, run by Applied Horticultural Research and RM Consulting Group, which highlight the use of chemicals, beneficial insects and provide resources for growers to become better involved in ICP.

ICP/IPM and minor use

Access to appropriate 'soft' chemicals for use in ICP/ IPM and organic practices is important for the industry. For some pest issues, there are limited or no control options for growers using these practices. While the use of ICP/IPM will reduce the use of pesticides as a whole, it doesn't remove the need for chemical control entirely. Therefore, gaining access to newer, softer chemistry to control these issues will in turn improve access for control to the industry. Chemistry specific for these

situations can be requested to

ensure the continued supply of quality vegetable produce to market. Chemical companies are more supportive of label extensions while they still control the data of the active chemical, and have the only product on the market, which can make the application easier.

Get involved!

To understand the needs of the industry and the needs of different groups within the industry, communication and involvement are key. The Minor Use Prioritisation Strategy needs input and involvement to better represent vegetable growers and the industry as a whole.

To be involved, AUSVEG must understand what the on-farm needs are. This can be done by joining the Minor Use Database. If you would like to join the Database, you can request a form from the Minor Use and Agronomy Coordinator by emailing minoruse@ausveg.com.au. All details provided for the Database are kept confidential.



Project Number: VG13096 Horticulture

Innovation Australia

Minor use permits

Permit Number	Сгор	Pesticide Group	Active	Pest/Disease/ Target weed	Date Issued	Expiry Date	Permit Holder	States
PER14211 Version 2	Snowpeas and sugar snap peas	Fungicide	Fenhexamid	Grey mould and Chocolate spot	27-Nov-13	31-Mar-17	Growcom	All states
PER81876	Fruiting vegetables – cucurbits; fruiting vegetables – other than cucurbits (except sweet corn and mushrooms), leafy vegetables (except lettuce), legume vegetables, root and tuber vegetables, bulb onions, cabbage, celery and rhubarb	Miticide/ Insecticide	Abamectin	Vegetable leafminer	24-Jun-16	30-Apr-19	Growcom	QLD only
PER13152 Version 2	Rhubarb	Herbicide	MCPA present as sodium salt	Broadleaf weeds	4-Dec-11	30-Sep-21	Growcom	All states
PER14326 Version 2	Capsicums, chilli peppers, cucumbers, leafy lettuce (grown in protected situations)	Fungicide	Captan	Grey mould	19-Dec-13	30-Nov-21	Growcom	All states (except Vic)
PER12047 Version 2	Sweetpotato (seed roots)	Fungicide	Thiabendazole	Field rots caused by Scurf and Root rot	29-Jun-11	30-Sep-21	Growcom	All states
PER12008 Version 5	Brassica leafy vegetables, silverbeet, spinach, rocket, shallots, spring onions	Herbicide	Propachlor	Annual grasses and broadleaf weeds as per product label	18-Jun-12	30-Nov-25	Growcom	All states (except Vic)

All efforts have been made to provide the most current, complete and accurate information on these permits, however we recommend that you confirm the details of these permits at the following APVMA website: apvma.gov.au/permits/search.php



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The John Deere Gator XUV 560 utility vehicle.

Mid-size model vehicles built for tough terrain

A NEW RANGE OF EASY TO USE UTILITY VEHICLES HAS BEEN RELEASED TO THE AUSTRALIAN MARKET, AIMING TO PROVIDE USERS WITH COMFORT WHILE PERFORMING HEAVY DUTY JOBS ON-FARM.

As vegetable growers face long hours working out in the field, comfort is often a luxury as workers are exposed to harsh elements throughout the day.

To ensure growers can perform heavy duty jobs on a daily basis, ease of use is constantly front of mind for the mid-size utility vehicle market. It is something John Deere has focused on when updating its crossover line-up with the addition of the Gator XUV560 and XUV560 S4.

These models are designed for operators seeking a versatile 4x4 and are outfitted with ergonomic operator stations, V-twin engines, independent four-wheel suspension, fourwheel drive and the availability of more than 60 attachments. "These updates provide even more options for our customers to choose from," John Deere Marketing Manager for Gator Utility Vehicles Mark Davey said.

"The XUV560 was crafted to deliver all the bells and whistles you expect from John Deere, at an attractive price tag."

Compact models

The vehicles are designed for comfort with car-like convenience. The pair offer easy entry and exit through an occupant protective structure and safety is an important requirement, with three-point seat belts and side grab handles.

Both models have sealed under hood storage and feature a large, one-piece cargo box made of material that eliminates rust and dents and reduces noise. The tailgate features are similar to a truck, helping growers to complete the challenging jobs around the farm, and can be opened or removed for easier cleanout or to carry longer items.

Features and benefits

The Gator XUV560 and XUV560 S4 include four-wheel independent suspension when driving over challenging terrain. These models are powered by a 570 cc V-twin petrol engine, and the carburettor is tuned for reliable cold-weather starting and quiet idling. They feature acceleration with a top speed of 45 kilometres per hour.

Available in a two-seat or four-

seat model, the vehicles offer optional add-ons for the cargo box such as a rail system, power lift, wall extensions and a spare tyre rack. Other considerations include 60 attachment options that range from lighting to tyre upgrades, to racks and guards.

The Gator XUV560 and XUV560 S4 mid-size utility vehicles are now available for order.



For more information, contact your local John Deere dealer or visit the website at JohnDeere.com.au.



Growers benefit from Root-knot nematode control option

THE CHALLENGE TO CONTROL THE GLOBAL PEST ROOT-KNOT NEMATODE HAS RAMPED UP WITH THE INTRODUCTION OF A NEW NEMATICIDE FOR USE IN CUCURBITS AND FRUITING VEGETABLES IN QUEENSLAND.

A unique nematicide with the new active ingredient fluensulfone is now available to many growers in Australia and around the world.

The launch of Nimitz® was eagerly anticipated by many after several years of development and now, after a season of demonstrating its handling benefits and effectiveness in controlling plant-parasitic nematodes, growers are becoming more confident that the threat of future crop losses from nematodes will be able to be managed.

The nematicide became available in late 2015. It is registered for use to control Root-knot nematode in cucurbits (including cucumbers, watermelons, rockmelons, zucchinis and squash) and fruiting vegetables including tomatoes (not for processing), capsicums, chillies, okra and eggplants.

Industry discussion

Adama Australia General Manager Technical and Development Andrew Horsfield presented on the future of the nematicide in fruit and vegetable crops during the National Horticulture Convention in June. This encouraged many interested growers to visit the booth at the Trade Show to discuss the potential of the product in their cropping situations.

"Trial and development work continues with the aim to register Nimitz® for use in all states as well as carrots, potatoes, leafy vegetables, sugarcane and other crops," Mr Horsfield said.

Usage limitations

Mr Horsfield said there are challenges in introducing a new molecule to the global market, including ensuring that all treated produce is accepted as widely as possible by importing countries to minimise any risk to the Australian export trade.

"The use pattern and recropping intervals for Nimitz® in Australia have been initially restricted to manage this risk until import tolerance levels for all trading partners have been fully established," he said. "These issues will be addressed with the submission for a label extension to include the root and tuber crops in 2017."

Product availability

Adama is committed to the ongoing stewardship of this new product and as such, the nematicide is only available via distributors with accredited agronomy staff to assist growers with understanding soil moisture management requirements, grazing limitations and the implications for rotational crop intervals.

For more information, visit adama.com or contact Adama Market Manager Horticulture, Luke Collins at luke.collins@adama.com or 0421 187 765.

The AUSVEG Minor Use Department has fielded many enquiries regarding access to suitable nematicide options in other crops and may be contacted on 03 9882 0277 or minoruse@ausveg.com.au for further information.

MINOR USE PERMIT

Fenamiphos is no longer able to be used in any crop in Australia (other than aloe vera and banana planting material) as of 23 July 2016. Adama Australia supported the application for a minor use permit sought by Growcom in April, on behalf of Australian Sweetpotato Growers Inc due to the current lack of alternatives for growers. The request has been approved by the Australian Pesticides and Veterinary Medicines Authority (Permit Number 82572), which allows the application of Nimitz[®] prior to Sweetpotato crops under strict directions for use.

For more information, please visit apvma.gov.au.



Seasonal worker recruitments a boost to industry

VEGETABLE GROWERS ARE INCREASINGLY TAKING ON PACIFIC ISLANDER WORKERS AS PART OF THE FEDERAL GOVERNMENT'S SEASONAL WORKER PROGRAMME. THIS INITIATIVE HAS PROVED TO BE A SUCCESS FOR BUSINESSES ACROSS THE HORTICULTURE INDUSTRY, PROVIDING BENEFITS FOR GROWERS AND WORKERS ALIKE.

The horticulture industry relies heavily on seasonal workers and the biggest challenge for any expanding business is finding productive, skilled returning seasonal workers.

To assist growers and businesses with this issue, the Federal Government introduced the Seasonal Worker Programme (SWP) on 1 July 2012, building on the Pacific Seasonal Worker Pilot Scheme that concluded on 30 June 2012.

The benefits of the SWP can outweigh the initial investment required through increased productivity, improved quality control, wastage reduction and reduced training and supervision costs, coupled with peace of mind that the workers are a reliable source of skilled, compliant, returning workers every season or all year round, if needed.

A secure workforce

Australia's largest asparagus producer Vizzarri Farms, located in Koo Wee Rup, Victoria, works with The Connect Group – Seasonal Workers Australia – using the Federal Government SWP in recruiting seasonal workers.

Starting with a small crew of Vanuatu workers in 2010, Vizzarri Farms has increased SWP worker numbers year on year and now they make up a major percentage of the workforce. "If we don't have a secure workforce, we can't deliver food to the nation and abroad. We need reliable, productive, committed and skilled returning workers to get the crops from the paddock to the consumer. The SWP has allowed us to achieve that," Vizzarri Farms Managing Director Joe Vizzarri said.

On-farm accommodation is also provided for the Pacific Island workers.

"Workers being onsite has its advantages. These guys are far more flexible, loyal, have the right attitude to work and are here when I need them. They are here to work hard and they certainly do that.

"Utilising the SWP gives us the confidence to develop the business. This is a business investment that is paying dividends," Mr Vizzarri said.

Worthy investment

In December 2014, Riviera Farms implemented the first SWP trial in the East Gippsland region and in 2015 worker numbers doubled on the first season's intake.

"Using The Connect Group gives me confidence that the workers are looked after, paid correctly and fully compliant," Riviera Farms Managing Director Nelson Cox said.

"We've invested time, money, and effort into this strategy, including setting up compliant accommodation and purchasing suitable transport

"We started the Seasonal Worker Programme (SWP) with Connect in 2015 and the team is happy, smiling, hard working with good leaders. They average picking rates that often surpass previous groups."

– Pitchford Produce Managing Director Graeme Pitchford, Goolwa, South Australia.

"We've worked with Connect for three years and the SWP works for us. Best labour investment decision I have ever made."
AA Mango Contractors Managing Director Andrew Dalglish, Katherine, Northern Territory. "After using SWP workers we found the program to be as cost-effective as previous models, without the hassle and worry that everything was right. Connect Group made it easy for us to make a start."

 Vernview Orchards Managing Director and apple grower Sue Finger, Yarra Valley, Victoria.

"I can tell the Team Leader what needs to be done and walk away with the confidence that the task will be done well, on time and without fuss."

- Riviera Farms Agronomist Paul Smith, Lindenow, Victoria.



vehicles. This is the only way to be confident that everything is right. Long-term, the benefits for us are better quality, consistency and efficiencies.

"Direct employment can be a real nightmare with so many workers needed. Working with The Connect Group has made employment simpler for us."

Grower commitment

With over six years' experience

in the SWP across Australia, The Connect Group works with growers to develop the best fit, most economical labour solution for their business.

The group manages the entire process and simplifies seasonal recruitment. A long-term labour solution is developed, and the group can also assist growers to develop a positive cash flow accommodation strategy for the future. Flexible piece rates and/or hourly rates are developed to suit each individual business requirements, according to the Horticulture Award 2010. Regulatory and compliance

issues are rapidly tightening and growers have indicated that their customers are increasingly demanding details of the grower's ethical labour sourcing strategies.

(i)

For more information, please contact Tony Lotton on 0401 311 111 or email tlotton@seasonalworkers.com.au or visit seasonalworkers.com.au.

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Vein-clearing symptoms of a sweetpotato virus on an indicator plant, Ipomoea setosa.

Sweetpotato project showing steady progress

AUSTRALIAN SWEETPOTATO GROWERS INC. AND THE QUEENSLAND DEPARTMENT OF AGRICULTURE AND FISHERIES ARE NEARLY HALFWAY INTO A RESEARCH PROJECT FOCUSING ON MANAGING SWEETPOTATO VIRUSES AND DEVELOPING PLANTING BED AND VIRUS MANAGEMENT GROWER GUIDES. THERE HAS BEEN SUCCESS SO FAR, WITH SWEETPOTATO GROWERS ACTIVELY ENGAGING IN THE PROJECT.

Sweetpotato viruses can have a major impact on the yield and quality of sweetpotatoes in Australia.

There are currently five main viruses known to occur in Australia. Sweetpotato feathery mottle virus (SPFMV) and Sweetpotato leaf curl virus (Begomovirus group) are both common. Sweetpotato virus G (SPVG), Sweetpotato chlorotic fleck virus (SPCFV) and Sweetpotato collusive virus (SPCV) are rare.

In response to this, the Australian Sweetpotato Growers Inc. in association with the Queensland Department of Agriculture and Fisheries, is conducting a project commissioned by Horticulture Innovation Australia. Entitled *Sweetpotato project*, the research focuses on managing sweetpotato viruses in Australia as well as developing new virus diagnostics and plant bed management in the industry.

How viruses are spread

Most plant viruses are transmitted between plants by sap-sucking insects, which are called vectors. SPFMV and SPVG are aphid-transmitted, while Begomoviruses are spread by whiteflies. Vectors of SPCFV and SPCV are currently unclear.

Apart from cropped sweetpotatoes, other plants are important in the life cycle of many viruses and their vectors. Both viruses and vectors are able to survive adverse conditions and between crop cycles in weeds, volunteer crop plants, abandoned crops and discarded sweetpotatoes. Infected plants cannot be cured.

Impact minimisation

The most critical strategy for managing sweetpotato viruses is using clean planting material sourced from a reliable supplier. The key to managing sweetpotato viruses in commercial crops is reducing the probability and rate of virus re-infection. This can be achieved in the following ways.

- Be vigilant in maintaining nursery beds as virus- and vector-free as possible.
- Ensure no sweetpotato plants or materials (apart from current nursery beds or growing commercial crops) exist on-farm. This means removing old crops and volunteer plants, including dump sites for reject roots.
- As far as practical, eliminate weeds related to sweetpotatoes and vegetation that supports vector insects around the farm.
- Report any unusual plant symptoms to appropriate agencies, as there are important sweetpotato virus diseases not currently in Australia that could severely impact the industry.

Making progress

The *Sweetpotato project* has already demonstrated significant value to Australian sweetpotato growers, who have been engaged in the project since its inception.

This project had two major achievements during the 2014/15 season – not only were grower guides on management of sweetpotato-infecting viruses and planting bed management prepared, but the project achieved significant levels of attendance at industry targeted extension events.

The planting bed and virus management grower guides developed under this project are a valuable resource for both growers and researchers. Both guides are informative and easy to read and will no doubt be highly useful reference tools for years to come.

Coupled with these guides have been extension events



DAF virologist Sandra Dennien discussing sweetpotato virus indexing with international sweetpotato virus expert, Dr Segundo Fuentes from Peru.

that have attracted more than 70 per cent of sweetpotato growers in the past year, with many attending multiple events.

New season approaching

As growers think about gearing up for the 2016/17 growing season, Craig Henderson, who leads the *Sweetpotato project*, provided a few reminders for successful plant bed management.

1. At peak production, a highperforming plant bed should generate around 250 acceptable sprouts per square metre.

- 2. Even, shallow soil coverage of bedding roots is the most critical aspect of plant bed construction. Coverage of 1.5-5 centimetres is acceptable, with around 2.5-3 centimetres favoured. More than seven centimetres risks poor sprout emergence, and increased rots of sprouts and bedding roots.
- **3.** Plant beds should be well-elevated (minimum 20 centimetres above the ground surface) and freely draining. This is the second most important plant bed



The research team collecting sweetpotato samples from an experimental plant bed on a collaborating grower's property.

construction imperative. Waterlogging and poor aeration dramatically reduces production and longevity.

4. Different cultivars require different bedding and plant bed practices. Learn these requirements for the cultivars grown.

Latest update

The most recent update provided to the sweetpotato industry was in June this year. This update outlined plant bed observations and experimental research along with sweetpotato virus sampling and diagnostics.

(i)

For more information, please contact Henderson RDE Principal Horticulturist Craig Henderson on 0428 073 813 or craig@ hendersonrde.com.au.

The *Sweetpotato project* has been funded by Horticulture Innovation Australia Limited using the National Vegetable Levy and funds from the Australian Government.

Project Number: VG13004

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The future in hybrid capsicums

A NEW CAPSICUM VARIETY WILL HIT THE AUSTRALIAN MARKET LATER THIS YEAR – A HYBRID BREED THAT IS RESISTANT TO A HIGHLY INFECTIOUS VIRUS AFFECTING OTHER VARIETIES. APTLY NAMED BLOODSHOT THANKS TO ITS DEEP RED COLOUR, THIS BREED OF HYBRID CAPSICUM IS UNIQUE IN ITS SIZE AND AVAILABILITY TO GROWERS ACROSS THE COUNTRY.

The development of new vegetable varieties plays an essential role in the challenge to constantly improve yield, quality and pest resistance in different commodities.

Syngenta is one example of a global company that invests millions of dollars of research into developing new vegetable varieties for the market, which can sometimes take up to 15 years to complete. In the capsicum space, the company has had market share in the Remy variety for the best part of 30 years courtesy of a breeding program from France.

Recently, Syngenta has focused on developing other types of the sweet pepper and will soon introduce a new hybrid capsicum variety, Bloodshot, to the Australian market. Syngenta Portfolio Manager – Solanaceae and Cucumbers, Australasia, Dion Potter explained the reasoning behind the development.

"What we've come up against

with the Remy variety in the past couple of years is the inception of Tobacco mosaic virus (TMV)," Mr Potter said.

"Remy does not have resistance to that particular virus, so what we've needed to come up with is a new variety that is a Remy-type that has resistance to the virus. Over the last two to three years, we have started looking at material that has this resistance.

"Bloodshot is a new variety that now offers that to the growers in order to carry on a Remy-type which supports that disease resistance requirement as well."

The variety also features intermediate nematode resistance.

Product development

The process of developing a hybrid capsicum variety takes approximately seven years. It involves taking two parents; that is, two sweet pepper varieties and crossing them.

"The prodigy that comes from those crosses will be determined as the hybrid. Those parents will have attributes that we're looking for in the new variety, whether that is fruit quality, disease resistance and so on," Mr Potter said.

"That's a very high level overview of how a hybrid is developed and that's how we get new attributes, and the varieties that we're looking for to meet market requirements."

Uniquely Australian

Australia was the only country in the world to pick up on the incumbent capsicum variety (Remy), which Mr Potter said was quite a unique shape.

The Lamuyo capsicum variety is approximately oneand-a-half times the length of the Bloodshot variety. The Bloodshot is Semi Lamuyo, meaning it's a medium Remy size. It is also suitable for the Remy planting timeslot, which is from autumn to spring.

The new hybrid capsicum variety also tolerates heat and cold stress, and can produce consistent fruit uniformity and yield with a strong shelf life.

"The Bloodshot is very much in-between and there are probably no seed companies anywhere breeding this type specifically," Mr Potter explained.

"It's something Syngenta has done uniquely, in its own right, and found a point of difference in the local market that's been able to be capitalised on for growers and retailers alike."





Industry in the media

AUSVEG reached a national audience of 1,410,322 throughout the month of July, with 517 media reports mentioning AUSVEG across print and broadcast outlets. This extensive reach continued into August, with a total of 493 media reports attracting a cumulative national audience of 1,155,532.

Historic partnership

The historic announcement that AUSVEG and PMA Australia-New Zealand Limited (PMA-ANZ) will combine forces to host a joint industry event in 2017 garnered plenty of attention on radio and in print and online news.

AUSVEG National Marketing Manager Nathan McIntyre said the event will be held at the Adelaide Convention Centre at a date to be confirmed in May or June. He added that the 2017 event will provide growers and whole-of-supplychain companies with the most significant horticulture event in the Australasian region.

Biosecurity news

Following the discovery of Varroa mite in Townsville Port, **AUSVEG National Manger** Science and Extension Dr Jessica Lye featured in print media to comment on the issue.

Dr Lye noted that Australia has well-established arrangements in place for responding to exotic pests like Varroa mite and promoted the importance of reporting any suspected sightings of pests to state or territory departments of agriculture or biosecurity.

Vegetable research

The latest range of findings from the Project Harvest consumer study commissioned by Horticulture Innovation Australia featured on radio and print news outlets during the July/ August period

AUSVEG National Manager - Communications Shaun Lindhe discussed findings from the report, highlighting that Australian shoppers are moving towards more on-thespot decisions about fresh vegetable purchases. Mr Lindhe also discussed Project Harvest research that laid out a blueprint for growth for the vegetable industry, including the key areas of opportunity to increase Australian consumption of fresh vegetables.

Following the release of findings from a separate Project Harvest study showing that consumers significantly overestimate the amount of imported fresh produce on supermarket shelves, Mr Lindhe appeared on radio to discuss the topic further, noting that it's easier than consumers think to buy local and support Australian growers.

AUSVEG also provided comment on vegetable-related research conducted at reputable universities. This included

recent research from Macquarie University, which showed that men who eat vegetables smell more appealing to women. A second study conducted by the University of Warwick in collaboration with the University of Queensland concluded that increases in daily fruit and vegetable consumption could increase general happiness.

Industry issues

AUSVEG National Manager -Public Affairs Jordan Brooke-Barnett appeared across print and broadcast media commenting on the Federal Government's review into the working holiday maker visa. He said that the government needs to listen to industry's concerns about the damage the backpacker tax could have on the availability of backpackers as a source of labour.

Mr Brooke-Barnett also spoke to broadcast media in regards to the Horticulture Code of Conduct.



projects in the Australian vegetable industry has been funded by Horticulture Innovation Australia Limited using the National Vegetable Levy and funds from the Australian Government.

Project Number: VG15027 Horticulture Innovation Australia



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55 Vegetables Australia September/October 2016



Farm Productivity, Resource Use & Management

Boosting productivity with vermiculture

WORMS CAN POTENTIALLY IMPROVE THE COMMERCIAL AND ENVIRONMENTAL SUSTAINABILITY OF VEGETABLE PRODUCERS. HOWEVER, THE MAGNITUDE OF THESE BENEFITS IS NOT WELL QUANTIFIED, AND GROWERS INTERESTED IN USING VERMICULTURE NEED INFORMATION ABOUT HOW TO OPTIMISE BENEFITS THROUGH PRACTICE CHANGE.

A new research project will be conducted across a range of vegetable farms to assess the practices and conditions that result in productivity improvements through increased earthworm activity and/or use of vermi-products.

Horticulture Innovation Australia (Hort Innovation) has commissioned Blue **Environment and SESL** Australia to undertake a three-year project, entitled Optimising the benefits of vermiculture in commercialscale vegetable growing. This project will increase vegetable grower awareness and knowledge about using earthworms to improve productivity, consult growers currently using or interested in using vermiculture on their farms, and establish research and demonstration sites in major vegetable producing areas in Australia.

Agronomic and economic assessments of the productivity impacts of different vermiculture practices will be undertaken. Field days to demonstrate the potential benefits of vermiculture in vegetable production will also be conducted. As well as being a good indicator of a healthy soil, earthworms have been shown to improve soils and plant growth. Earthworms have been described as 'ecosystem engineers', changing soils to promote the growth of plants, which in turn provide the organic matter that worms need to thrive. In this way worms build soil health and depth over time.

Potential benefits

It has been reported that increased earthworm activity results in improved soil structure, drainage and aeration. On some soils, roots will grow along old worm burrows because they are less dense, more nutrientrich and better aerated. This results in deeper and healthier root mass.

Earthworms convert nutrients in soil and plant matter to more concentrated and plant available forms. Each earthworm can produce over 300 times its body weight in nutrient-rich 'cast' (or poo) per year. Worm casts can stimulate beneficial soil microbes and this activity helps to make nutrients available to plants.

Worm casts also contain enzymes and hormone-like chemicals that can stimulate root and plant growth. Earthworms move organic matter down the soil profile and build the depth, water and nutrient-holding capacity of soils. Some species of earthworm also consume and kill pathogens and pests including various bacteria, fungi, nematodes and insect eggs. Earthworms do not eat living plant matter, so they do not damage plants or roots.

Identifying worms

The project will mainly focus on how growers can create conditions where naturally present earthworms can thrive and work the soil. There are over 700 species of earthworm in Australia, but only about 20 (mostly introduced, 'agronomic' earthworm species) are commonly found on farms. There may be native and other species present and working on farms, and the project will seek to identify useful worms in different vegetable growing areas.

Practices that can promote earthworm numbers and activity include:

- Building soil organic matter. Worms feed on decomposing organic matter and soil microorganisms that grow on organic matter. This can be achieved through the use of cover crops, composts and management of organic residues.
- Reducing and timing tillage to reduce destruction of worms and burrows. Tillage can reduce worm numbers by 90 per cent and it takes at least 90 days for worms to double their numbers.
- Managing soil pH. Worms thrive at near-neutral conditions (pH 6.5-7), can tolerate conditions between pH 5-8, but will not survive more acidic or alkaline conditions.
- Reconsidering and timing the use of chemicals that can impact on worm

numbers. Nematicides and soil fumigation will decimate worm populations and some insecticides and fungicides, as well as copper-based products, can impact heavily on worms. Most common herbicides have less impact



and may even help worm numbers by creating a stock of decomposing organic matter.

- Soil moisture. Managing soil moisture and organic matter to boost worm breeding during autumn, winter and spring, and managing moisture over summer can improve survival rates. If practical, deliberately dry beds before heavier tillage – worms will migrate down the soil profile when it is dry, increasing the survival rate during tillage.
- Worm 'refuges'. Maintaining

worm 'refuges' between permanent beds where organic matter, tillage, moisture and chemical use practices are designed to boost worm numbers. Transplanting worm 'blocks' taken from worm-rich areas re-establish and boost worm populations.

Grower interest

Many of the practices that increase worm activity have other soil health and productivity benefits. Vermi-products such as vermicasts and 'teas' or extracts made from vermicasts can have soil and plant health benefits, and the potential to use these in different growing systems will be investigated. If growers are interested, trials of the use of these products and on-site 'worm farms' will be considered.

Blue Environment is interested in talking to growers using, or interested in using, earthworms and vermi-products to boost productivity, as well as growers who are interested in hosting field and demonstration trials. For more information, please contact Bill Grant on 0407 882 070 or bill.grant@blueenvironment.com.au.

Optimising the benefits of vermiculture in commercial-scale vegetable growing has been funded by Horticulture Innovation Australia Limited using the National Vegetable Levy and funds from the Australian Government.

Project Number: VG15037

Horticulture Innovation







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John Shannon: It's all happening in Western Australia

HARD-WORKING AND PASSIONATE ABOUT THE VEGETABLE INDUSTRY, JOHN SHANNON HAS COME A LONG WAY FROM WORKING ON HIS FAMILY'S BEEF CATTLE ENTERPRISE IN QUEENSLAND. *VEGETABLES AUSTRALIA* SPOKE TO THE VEGETABLESWA CEO ABOUT THE ISSUES FACING HIS STATE, PLANS FOR THE FUTURE AND ACHIEVEMENTS SO FAR.

John Shannon has overseen plenty of projects in his seven years at vegetablesWA, with three of those years spent as the peak industry body's Chief Executive Officer.

It could be said vegetablesWA is forward-thinking, with an eye on improving growers' businesses and getting them export-ready. When talking to John, it is obvious he is proud of the direction the Western Australian vegetable industry is taking.

"Seeing growers stay in the business and become more profitable is the bottom line. It's particularly gratifying to see young growers doing well in the industry," John said when asked about the rewards his role brings.

The early days

John's passion for the vegetable industry extends back to his university days. He grew up in Queensland where his family runs a beef cattle enterprise and, wanting to continue being involved in rural industries, he studied rural science at the University of New England in Armidale, New South Wales.

Following that, John spent

a period of years working at the Federal Department of Agriculture – now the Department of Agriculture and Water Resources – working across a range of different policy and program issues before moving to Perth.

"I was looking for something closer to my farming roots and the perfect opportunity came up at vegetablesWA," John said.

"I've now been here for nearly seven years and loving every moment of it."

Tackling tough issues

When asked about the issues facing the Western Australian vegetable industry, John said they were similar to the ones faced by the industry nationally.

"For us, we've got the challenge of ever-increasing input costs. We've got problems with labour as an input cost and we've got problems with markets, particularly the relationships between growers and wholesalers in the wholesale markets," he said.

"We've got other more immediate crisis situations that come up when we've got issues to do with biosecurity etc., but I guess the longer term problems are going to be water, labour, biosecurity and markets."

John said the major issues require ongoing advocacy and policy work with both State and Federal Governments to make sure the right settings are in place.

"We're very lucky in Western Australia – we've got a Royalties for Regions scheme where government is investing in creating new horticultural irrigation precincts, so that's certainly positive but we need to keep pressure on to make sure that the new water management act works for the best result for industry," he said.

Ongoing achievements

Under John's reign as CEO, vegetablesWA has established a range of programs, dipped its toes into social media and marketing campaigns and hired staff which have benefited the industry.

Having recognised that a third of its members are Vietnamese, the appointment of a Vietnamese Field Extension Officer was made around four years ago. This has greatly assisted Vietnamese growers to implement good practice both in terms of agronomic issues as well as food safety.

L-R: Howard Shapland and John Shannon.

vegetablesWA has also piloted an aggregated purchasing scheme for insurance to combat rising input costs. This has seen growers save between 20-40 per cent on their premiums.

Meanwhile, in line with its export focus, the peak industry body has established a grower portal, which gives growers easier access to their own agricultural produce submission data. It also enables people in export markets, who are looking to access Western Australian produce, to search for growing operations that produce particular lines and are export-ready.

John said he is extremely proud of what vegetablesWA has been able to achieve so far.

"I think we're in an increasingly exciting time which is good; however, there are increasing challenges for growers and the industry so trying to stay ahead of the game is something that we will continue to do," he said.



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CALENDAR

27 September and 20 October 2016 Soil Wealth and Integrated Crop Protection webinars

Where: Online

What: A series of webinars are run by Applied Horticultural Research and RMCG for the Soil Wealth and Integrated Crop Protection projects. There are two upcoming webinars: *Leaf and sap testing for managing vegetable crop nutrition* and *Managing pesticide resistance in vegetable crops*.

Further information:

Please visit soilwealth.com.au/events.

10-24 October 2016 2016 Women's Industry Leadership and Development Mission

Where: USA and Canada

What: A group of nine female vegetable levy-payers will visit leading vegetable growing operations in the USA and Canada, including Toronto, Salinas Valley, Seattle and Portland during the 2016 Women's Industry Leadership and Development Mission.

Further information:

Please contact AUSVEG on 03 9882 0277 or email info@ausveg.com.au.

8 November 2016 Farm Biosecurity 2016

Where: Box Hill Institute, Lilydale Campus, VIC What: Farm Biosecurity 2016 is a practical and informative series of workshops and lectures designed for primary producers and organisations with a biosecurity responsibility. The event will be held from 9:00am to 4:30pm.

Further information: Please contact AUSVEG on 03 9882 0277 or email info@ausveg.com.au.

13-15 November 2016 WOP Dubai 2016

Where: Dubai World Trade Centre What: The World of Perishables Expo is the Middle East's leading exhibition for the fresh produce business. It gives growers the opportunity to meet leading local and international fruit and vegetable suppliers, network and be updated on the latest market trends.

Further information: Please visit wop-dubai.com.

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Around the states

Northern Territory



NT vegetable production got underway on time in April/May. Unfortunately, there were still large quantities of vegetables from the southern states being delivered to the central markets. This, and slow buying, caused the early NT vegetable prices to be very low, but picked up once the cold weather turned up for the southern vegetable production areas.

The Minister for Land Resource Management recently announced the removal of the exemption from licensing requirements for bores pumping less than 15L per second in the Darwin Rural Water Control District. This change, effective from 6 July 2016, means those using water from bores other than for stock and domestic purposes (including irrigating a garden in excess of 0.5 hectare) in the Darwin Rural Water Control District are required to obtain a water extraction licence. Residents in the Darwin Rural Water Control District, who take water from a bore for purposes other than stock and domestic use but do not hold a current water extraction licence, will need to obtain a licence and are advised to submit a licence application to the Water Resources Division by 30 September 2016.

The removal of the exemption will provide improved reporting, monitoring and management of water resources by requiring heavy water users to be subject to licencing conditions, including the requirement to install a compliant water meter and monitor and report on water usage, contributing to better overall management of the ground water resource. NT Farmers will be working closely with the Department of Land Resource Management to assist with enquiries and the communication of important information around these recent changes.

NT Farmers has now commenced project VG15100 *Regional capacity building to grow vegetable businesses* in the Northern Territory at the start of August, later than many of the other states. We are pleased to be a part of the wider extension network of this project, building on the previous success of the recently concluded local project, *Vegetable Best Practice.*

The first Farm Walk on

the Darwin Soil Wealth site in Lambells Lagoon was held on 18 August and looked at ways of managing healthy soils, chemical-free pest control and boosting soil carbon. This was an opportunity for farmers to determine how to best manage soil and pests and the range of options available to them. The demonstration site will test biochar for increased carbon, floating nets for pest and disease control and cover cropping using sorghum, mung bean and cow pea. For further details, please email info@ntfarmers.org.au.

Sam Tocknell

NT Farmers Association Industry Development Officer Phone: 08 8983 3233 Mobile: 0450 705 009 Email: ido@ntfarmers.org.au

Queensland



Could you recognise a phoenix company?

These entities not only rip off their workers and suppliers, but create an uneconomic playing field where those companies doing the right thing are unable to compete in a tender with those who aren't.

Phoenix behaviour plays out when the assets of a company are transferred by a company's controllers to a second company, with the original company being placed into liquidation so that the creditors of the old company have little chance of being paid what they are owed. The business of the old company then rises again in a new company under the same controllers and often using a similar name.

According to the Australian Taxation Office (ATO), some of the warning signs that you are dealing with a phoenix operator are as follows:

- 1. The people you deal with don't actually control the company. They may be family members or associates. The true directors remain shadowy.
- Different variations of names are used to conceal identities and create confusion about who is controlling the company.
- **3.**In the case of an injury to a worker on your farm, the contractor has insufficient or no insurance and you are left with primary duty of care under Work Health and Safety legislation.
- **4.**From season to season the company's name changes although, typically, you are dealing with the same person.

- **5.**There is a preference for using cash in transactions. This is not illegal but is an indication of a person's motivation.
- **6.**There is a negative or shifty reaction on asking for an ABN number or GST registration details.
- **7.**The quote seems too cheap to be true.
- **8.**The contractor suddenly asks if the grower can pay an invoice to another bank account or company name.

The Fair Work Ombudsman has appealed to the general community for help in combating the exploitation of workers by rogue employers. There is now an Anonymous Report function to alert authorities of unscrupulous activities at fairwork.gov.au/tipoff. Growcom recommends

growers also undertake a

thorough risk assessment of their business to ensure their farm business is protected as far as possible against phoenix activity.

Under Growcom's Hort360 program, we offer vegetable growers in Queensland an online program to ensure a grower's business is compliant with all relevant laws. Risk assessments can be booked by contacting Growcom's Workplace Relations Advisor, Annabel Hutch on 07 3620 3844 or wrteam@growcom.com.au. Comprehensive documentation and templates are also available at the Growcom Shop at growcom.com.au.

Pat Hannan

Growcom Chief Executive Officer 68 Anderson Street, Fortitude Valley, QLD 4006 Phone: 07 3620 3844 Fax: 07 3620 3880



South Australia



AUSVEG SA is currently participating in a round of consultations about developing industry on the Northern Adelaide Plains post-Holden. AUSVEG SA is in regular conversations with key politicians and departments to progress a number of industry initiatives and has recently undertaken consultation with growers to determine our priorities for the region. Over the coming months we will aim to progress a number of exciting initiatives in the business support, export and

investment space for the benefit of our members and growers throughout the state.

In other news, the AUSVEG SA State Manager recently returned from the South Australian Government's Southeast Asia Trade Mission. A number of growers attended with the AUSVEG SA State Manager and it was an excellent opportunity to visit key markets in Singapore, Malaysia and Thailand and reinforce our relationships with key buyers.

Here in SA, AUSVEG SA will be rolling out the first in our series of Integrated Pest Management (IPM) workshops run by leading Australian company IPM Solutions. As part of the program, IPM Solutions will be training growers and resellers throughout our state in IPM techniques which have the benefit of improving resistance management and crop management in comparison to other states. This also fits in with export priorities to promote our state as a leading supplier of clean, green produce and AUSVEG SA is keen to have South Australian growers be leaders in this field.

Finally, AUSVEG SA has recently commenced our Regional Capacity Building project in South Australia, funded by Horticulture Innovation Australia. We welcome our new Industry Development Officer Hannah McArdle to this important role and we are sure many of our growers will get to know her well over the three-year life of this important project. A number of exciting projects are planned over the coming months including workshops for growers in soil borne disease management and sharing some of the key findings of levy-funded consumer research. We hope South Australian growers make the most of this exciting new resource.

Jordan Brooke-Barnett

AUSVEG SA State Manager Suite 205, 22 Grenfell Street Adelaide, SA 5000 Phone: 08 8221 5220

Western Australia



The identification of Cucumber green mottle mosaic virus (CGMMV) at a cucumber growing property at Geraldton poses a significant threat to cucurbit growers. Growers are now working with government and vegetablesWA to identify any further spread and implement farm biosecurity plans to limit the risk of introduction to additional properties. Concerned growers should contact vegetablesWA for the latest update and technical assistance.

This incident, along with the now eradicated Queensland fruit fly (Qfly) incursion of December and more common viral issues around Carrabooda last year, has illustrated in the most difficult of ways that growers must incorporate strict biosecurity practices as normal operating procedure to protect their businesses, as well as the businesses of their fellow growers. We are also being confronted by government seeking to withdraw resources from this area of spending like all other areas of spending within the portfolio. It is difficult to imagine how industry can easily make up the shortfall.

In very positive news, vegetablesWA is welcoming a new Industry Extension Officer in the form of Lauren Thompson, Lauren comes with an outstanding background in agronomy and extension from which growers can take advantage. She was educated at the University of California, Davis and worked as an agronomist for Simplot both in Australia and the US. She had significant success as the Industry Development Manager with the Australian Processing Tomato Research Council as well as with Netafim and Scholefield Robinson Horticulture consulting. We're excited about the impact Lauren will have with our industry as she joins us in the coming weeks. Truyen Vo continues in his extremely valuable

role as Industry Extension Officer. These positions are funded by the WA Agricultural Produce Commission and Hort Innovation.

Labour continues as another significant issue. vegetablesWA provided a strong position in the upcoming review of the backpacker tax in line with our active engagement on these issues over the last few years. We certainly hope that the tax regime can be made internationally competitive, that the labour hire sector can be regulated in line with the problematic behaviour which appears disproportionately in this sector rather than with direct grower employment, and the introduction of an agricultural visa so growers are not so reliant on workers who are only in place for the requisite three months to earn an extension. Clearly the next few months will be critical for this issue which is so critical to the viability of vegetable growers.

vegetablesWA recently hosted a forum with Professor David Hughes, an expert in world food trend, in collaboration with Perth Markets Ltd and Grains Industry WA. David always provides an excellent presentation and I find it useful to put all that we may be doing here in our own WA vegetable industry back into a global food context. For my money, my favourite insight was that Australia has always been good at marketing nouns in export markets, but we need to get a lot better at marketing adjectives to gain full value. Another key insight David offered was that Aldi and Lidl will consume margin from Woolworths and Coles; small dollar convenience stores will do the same, and home delivery will continue as an area of growth.

All of these things offer both significant challenges but some significant opportunities.

John Shannon

vegetablesWA Chief Executive Officer 103 Outram St West Perth WA 6005 Phone: 08 9481 0834 Email: john.shannon@ vegetableswa.com.au Around the states

Tasmania



The Tasmanian Farmers and Graziers Association (TFGA) has welcomed the formal announcement of the Federal Government's review into the planned backpacker tax, which would have seen working backpackers paying 32.5 per cent tax from 1 July.

But the state's farmers would ultimately like to see the issue taken off the agenda.

Many Tasmanian rural enterprises rely on international

New South Wales



NSW Farmers continues to work with the other states to push for the recommendations from the independent review of the Horticulture Code of Conduct to be fully implemented by the Federal Government. NSW Farmers believes that the removal of the grandfathered contracts is a necessity and the government should not continue to delay its decision on the



AUSVEG VIC would like to remind Victorian vegetable and potato growers that AUSVEG VIC memberships are due for renewal.

Membership fees will help to fund AUSVEG VIC's work in advocating for Victorian vegetable and potato growers, workers to fill their short-term labour needs. A tax of this magnitude would ensure that we were not competitive in an international sense.

Our vegetable growers often rely on backpackers as a source of labour, and the tax threatens to act as a major disincentive to these workers coming to the state.

The TFGA will work with industry stakeholders to ensure that the review takes into account the views and requirements of the Tasmanian agricultural industry.

After months of consistent rain, our vegetable growers, like many other industry stakeholders, need to be

NSW Farmers passed at its

recent annual conference that

the recommendations of the

transparency in centralised

the recommendations are

enforcement.

review be adopted, along with

horticultural markets and that

adequately resourced to ensure

full implementation, including

The final report from the

Australian Farm Institute into

a nationally coordinated plant

biosecurity R, D&E system was

also released. Australia's plant

billion in annual economic value

so it is important that Australia

has a robust plant biosecurity

industries generate over \$30

the mandating of real time price

recommendations.

assured that this valuable source of peak-period labour will not be lost to their sector.

Bureau of Meteorology data collected at Sheffield on Tasmania's north west coast over 12 months highlights the inconsistencies in rainfall that our vegetable producers in the north of the state have been dealing with. The median rainfall for June is generally around 105 millimetres. This year, the area received in excess of 340 millimetres.

This is one of our prime vegetable growing areas, and it hasn't dried up yet.

Late last month, many of our main processors announced that the lack of rain-free days

R, D&E program that delivers key results.

The final paper sites a continued need to prioritise extension and international collaboration, with the majority of submissions preferring a new, standalone Plant Biosecurity Research Corporation. NSW Farmers agrees that there is a continued need to progress high level R, D&E capabilities in the plant industries and that a robust, long-term strategy that utilises multiple avenues for projects be adopted. NSW Farmers is keen to see how this report will shape the future of plant biosecurity.

NSW Farmers will be participating in the backpacker

as AUSVEG and the Victorian Farmers Federation, to deliver the best possible outcomes for you as a grower.

Established in 1923, AUSVEG VIC is run by growers for growers and we encourage you to get involved.

AUSVEG VIC is guided by its Executive Committee, which currently includes 12 dedicated growers who represent a broad cross-section of experience and expertise. had delayed the vegetable harvest by weeks. In some instances, this resulted in reduced supply.

Fortunately, while many of the key production areas are still dealing with waterlogged paddocks the sector, to its credit, has worked long and hard in an effort to overcome the trials of the season and resume normal supply.

Wayne Johnston

Tasmanian Farmers and Graziers Association President Cnr Cimitiere and Charles Streets Launceston, TAS 7250 Phone: 03 6332 1800

tax review announced in August. Backpackers are an important asset for agriculture, tourism and rural communities. NSW Farmers is keen for no disincentives to be placed in front of backpackers that may detour them from Australia, and is seeking measures that are reasonable, measured and support security of labour supply for agriculture.

Brett Guthrey

NSW Farmers' Association Horticulture Chair Level 25, 66 Goulburn Street Sydney, NSW 2000 Phone: 02 8251 1804 Fax: 02 8251 1750

For more information on renewing membership or about AUSVEG VIC in general, please contact AUSVEG VIC State Manager Kurt Hermann at info@ausvegvic.com.au.

Kurt Hermann

AUSVEG VIC State Manager Level 2, 273 Camberwell Road Camberwell, VIC 3124 Phone: 0437 037 613 Email: info@ausvegvic.com.au

including representing their needs and concerns, to all levels of government.

During the last 12 months, AUSVEG VIC has worked hard to ensure that you have a voice when it comes to the issues facing our industry.

Water security and increasing access to cost-effective labour have been major focuses for AUSVEG VIC this year and we have been working closely with other industry bodies, such



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