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EDITORIAL

There are very few who don't like to be recognised for a job well done.

While our younger years may have featured plenty of sporting trophies, participation certificates or even the latest achievement posted on the fridge, the opportunities for recognition tend to fade as we get older. However, receiving acknowledgement for our contributions as an adult in the workplace can do plenty to boost our levels of motivation and inspiration.

One of the easiest ways to show recognition is through an award: the film industry has the Oscars; athletes have the Olympics... and the Australian horticulture industry has the Hort Connections National Awards for Excellence.

This year, there were 69 growers, businesses, researchers and industry representatives nominated in 10 award categories at the event, which was held on 20 June at the Brisbane Convention and Exhibition Centre.

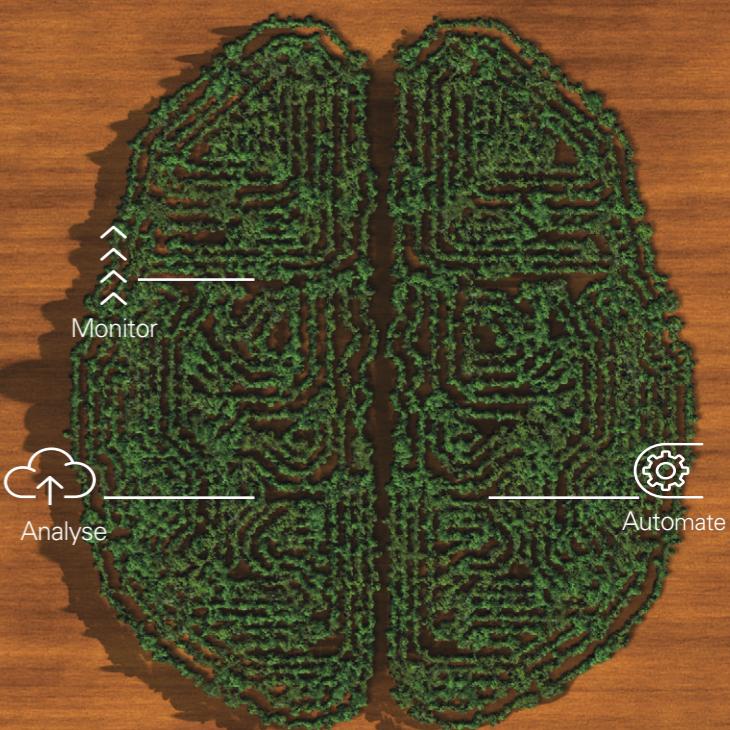
This edition features profiles on three award winners, including Grower of the Year Scott Samwell from South Australia, who introduced a new vegetable variety to the market (page 12); Young Grower of the Year Chris McLoghlin from Victoria, who transformed a struggling organic mushroom business into a leader in its field (page 14); and Women in Horticulture award winner Rachel Mackenzie from Queensland, who advocates on behalf of the state's fruit, vegetable and nut growers (page 16).

The National Awards for Excellence are an opportunity to highlight and celebrate the accomplishments of a small selection of the industry's many leaders. While we may get carried away with the glitz and glamour of an awards ceremony, when you take away the bright lights and glittering trophies, it all comes back down to recognising growers and industry members for their passion for horticulture and doing what is simply a part of their everyday life. There are countless others who deserve the same recognition, but at the very least, our nominees and award winners can stand as role models for the wider horticulture industry to aspire to, for different reasons.

As all three of our featured award winners can attest, their achievements were part of a team effort and their success would not have been possible without the ongoing support of family, friends, colleagues and in some cases, fellow industry members.

While we don't need an official accolade to know our worth or contributions to this industry, it's always nice to walk away with some kind of recognition for our work. *Vegetables Australia* congratulates all of the nominees and winners at the National Awards for Excellence for their achievements and we hope to see plenty more growers and industry members recognised at Hort Connections 2019.

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**Hort
Innovation**

Hort Connections 2018 has been hailed a success, with almost 3,000 delegates from all sectors of the Australian horticulture industry coming together for three days of knowledge-building and networking at the Brisbane Convention and Exhibition Centre.

A joint initiative between AUSVEG and the Produce Marketing Association Australia-New Zealand (PMA A-NZ), Hort Connections 2018 was the premiere event for the horticulture industry, encompassing the vegetable, fruit, nut, cut floral and nursery sectors.

This cross-industry collaboration helps to foster conversation around the common themes and issues affecting horticulture. As the war on waste continues to be a hot topic in Australia and across the globe, it was pivotal to continue the discussion at Hort Connections 2018 and set a challenge for our growers to play an intricate role in reducing waste so there are achievable strengths in gaining productivity into the future. I hope all horticulture industry members who attended Hort Connections made the most of the opportunity to learn from leading experts as well as their peers throughout the three-day conference.

I would also like to take this opportunity to congratulate all of the nominees and winners for the National Awards for Excellence, including our Grower of the Year Scott Samwell. I walked away from the conference with a renewed sense of optimism that our industry is in very capable hands with the upcoming generation, and it was particularly pleasing to see the Young Grower of the Year Chris McLoghlin joined on-stage by his peers and worthy nominees in the category. It was also fantastic to see the participants of the renowned Growing Leaders program, a strategic levy investment under the Hort Innovation Vegetable Fund, attend the Gala Dinner.

The Australian horticulture industry will need to rely on the skills and passion of the younger generation to prosper, and it is important that we recognise their achievements to ensure we foster our next generation of leaders.

One of my personal highlights from the conference was the opportunity to listen to the story of an inspirational horticulture industry member, Tommy Le from LT Fresh in Queensland. Tommy spoke at the Syngenta Breakfast about his second chance at life in Australia after he fled his home country of Vietnam, and the difficult journey he undertook as a refugee to make it to our shores. Tommy's story is one of early hardship, but he did not let that deter him from making the most out of his new life – he joined the horticulture industry growing cucumbers and then established a business that provides materials and equipment to those who are looking to start their own greenhouse operation.

Tommy's story is one of perseverance and old-fashioned hard work, and reinforces that there are plenty of opportunities available for a fruitful and satisfying career in the horticulture industry.



W Bulmer

Bill Bulmer
Chairman
AUSVEG

Hort Connections 2018, Australian horticulture's premier event, has drawn to a close for another year, with almost 3,000 delegates gathering at the Brisbane Convention and Exhibition Centre from 18-20 June.

I would like to thank all those who attended the conference and trade show, as well as AUSVEG's event partner, the Produce Marketing Association Australia-New Zealand (PMA A-NZ), our major sponsors and industry co-hosts, strategic partners, exhibitors and speakers for helping us to deliver a world-class horticultural event.

Once again Hort Connections produced many highlights across the three days and at the centre of the action was the trade show, which featured 195 leading agribusinesses from all areas of the supply chain.

Hort Connections 2018 also signalled the return of the State of the Industry discussion, which I was pleased to be involved in alongside my PMA A-NZ counterpart, Darren Keating. We joined author Julian Cribb and the University of Queensland's Jimmy Botella for a robust discussion on several key issues facing horticulture.

Growers also had the opportunity to attend vegetable levy-funded speaker sessions, including the Australian Vegetables Export Seminar where they learnt about the importance and challenges of developing and maintaining international trade relationships, and heard from growers who have successfully exported their produce. The Global Innovations in Horticulture Seminar also presented Australian vegetable growers with a snapshot of the new technologies and practices forecast to be used in cutting-edge growing operations around the world.

Meanwhile, a delegation of 40 international buyers from a diverse range of export markets attended the annual AUSVEG Reverse Trade Mission. They visited some of Queensland's export-ready vegetable and fruit growers and witnessed the high quality produce that our growers have to offer at the Taste Australia Fresh Produce Showcase, which was held alongside Hort Connections.

We are excited to announce that AUSVEG and PMA A-NZ will once again work together to bring you Hort Connections 2019, which will be held from 24-26 June at the Melbourne Convention and Exhibition Centre. I hope to see you all there.

Finally, I along with Chair Bill Bulmer, Deputy Chair Belinda Adams and National Manager – Public Affairs Tyson Cattle, headed to Darwin to attend the 2018 Northern Australia Food Futures Conference in Darwin from 2-4 July.

The conference offered an insight into the enormous potential of agriculture in northern Australia, and what it can deliver on a domestic and international scale. It was a great chance to engage with government departments, growers and other industry stakeholders to discuss what can be done as a collective to enhance the industry, from northern Queensland to the Kimberley in Western Australia and the Northern Territory. I look forward to helping NT Farmers and growers in the region to achieve these long-term goals.



James Whiteside

James Whiteside
CEO
AUSVEG

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HORT CONNECTIONS



HORT CONNECTIONS 2018 WRAP-UP

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A LOOK BACK AT HORT CONNECTIONS 2018

Welcome to our special feature on Hort Connections 2018! In the pages ahead, you will find a detailed wrap-up of the three-day conference, which was held from 18-20 June at the Brisbane Convention and Exhibition Centre.

First up we have the full list of award winners from the National Awards for Excellence, as well as in-depth interviews with our Grower of the Year Scott Samwell, Young Grower of the Year Chris McLoghlin and Women in Horticulture award winner Rachel Mackenzie.

We also recap the highlights from the Plenary Session and other speaker sessions held throughout the event, including the AUSVEG Speaker Stream and Concurrent Sessions, as well as the vegetable levy-funded Australian Vegetables Export Seminar and Global Innovations in Horticulture Seminar.

There were also plenty of networking events on offer including the trade show, where The Ringer stopped by to provide his two cents' worth on the event. We also bring you the highlights from the annual AUSVEG Reverse Trade Mission and Taste Australia Fresh Produce Showcase, as well as the Women in Horticulture event and Horticulture Field Day.

THANKS TO ALL THOSE WHO MADE THIS EVENT POSSIBLE

Special thanks must go to our event partner, the Produce Marketing Association Australia-New Zealand (PMA A-NZ), as well as our major partners Bayer, CHEP, Corteva Agriscience, Hort Innovation, Syngenta and Woolworths.

The event was made all the more worthwhile to delegates thanks to our industry co-hosts: Apple and Pear Australia Limited, the Australian Horticultural Exporters' and Importers' Association, Australian Organic, the Australian Society of Horticultural Science, Growcom, Nursery and Garden Industry Australia, Onions Australia, Protected Cropping Australia, United Fresh New Zealand Incorporated, as well as our trade show sponsors, the Central Markets Association of Australia and Fresh Markets Australia.

SAVE THE DATE FOR 2019!

We're pleased to announce that next year, Hort Connections will take place from **24-26 June at the Melbourne Convention and Exhibition Centre**, so make sure you lock in those dates.

Agriculture Victoria has already signed up as a state partner for Hort Connections 2019 and we are keen to work with as many industries as possible to deliver a conference that is a true representation of Australian horticulture, and provide even more value to our delegates.

In the meantime, we hope you enjoy our trip down memory lane as we revisit the highlights of Hort Connections 2018.

Happy reading!



Photography by Andrew Beveridge

NATIONAL AWARDS FOR EXCELLENCE WINNERS

The Hort Connections 2018 National Awards for Excellence Gala Dinner, sponsored by OneHarvest, celebrated the outstanding achievements and contributions made to the Australian horticulture industry by growers, researchers and supply chain members.

GROWER OF THE YEAR



L-R: Syngenta Vegetable Seeds Business Unit Head – Australasia Ged Sippel and Scott Samwell (winner).

YOUNG GROWER OF THE YEAR



L-R: Corteva Agriscience Marketing Manager Nick Koch and Chris McLoghlin (winner).



MARKETER OF THE YEAR



L-R: Produce Plus Magazine Editor Matthew Jones and T&G Global New Zealand Marketing Manager Michelle Singh, who accepted the award on behalf of the Lotatoes Potatoes campaign (winner).

INDUSTRY IMPACT AWARD



L-R: Danyang Ying (winner) and VISY National Sales Manager – Fibre Board Wayne Dunne.

ENVIRONMENTAL AWARD



L-R: Butler Market Gardens Chief Financial Officer George Arapoglou and Frank and Dianne Sciacca (winners).

WOMEN IN HORTICULTURE



L-R: Boomaroo Nurseries National Sales Manager Steve Winter and Rachel Mackenzie (winner).

RESEARCHER OF THE YEAR



L-R: Bayer Head of Customer Marketing Grant Steyn and Jessica Page (winner).

EXPORTER OF THE YEAR



L-R: NAB AgriBusiness Manager – Beaudesert Troy Morecroft and Ryan McLeod on behalf of Dicky Bill Australia (winner).

MERITORIOUS SERVICE



L-R: Fresh Markets Australia Chairman Shane Schnitzler and Jane Pogas (receiving the award on behalf of Paul Pogas posthumously).

INNOVATION PARTNER



L-R: Boomaroo Nurseries National Sales Manager Steve Winter and Terry Martella (winner).

COMMUNITY STEWARDSHIP



L-R: E.E. Muir & Sons Manager/Director Ian Muir and Daniel Hammond, Shayne Hyman and Noel Jansz from East Gippsland Vegetable Innovation Days (winner).

TRADE DISPLAY OF THE YEAR: SINGLE BOOTH



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TRADE DISPLAY OF THE YEAR: MULTI BOOTH



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SCOTT SAMWELL: SOWING THE SEEDS FOR SPROUT SUCCESS

South Australian vegetable grower Scott Samwell is always open to innovation and change to improve his business. In fact, a fortuitous meeting during his Nuffield Scholarship led to the successful launch of a new vegetable line, Kalettes, in 2011. The Hort Connections 2018 Grower of the Year spoke to Michelle De'Lisle about what he has learnt along the way.

For over 20 years, third generation vegetable grower Scott Samwell has been working incessantly on the family farm to perfect the art of Brussels sprout production.

Eastbrook Vegetable Farms is located at Mount Barker, 35 kilometres south-east of Adelaide, and is one of South Australia's largest Brussels sprout growing operations, for both green and red varieties. In addition, it is the birthplace of the Kalette, which is a cross between kale and Brussels sprouts.

Scott grew up on the family farm and was encouraged to get a qualification so he could be involved in the business. He studied a Bachelor of Applied Science at the University of Adelaide before returning home to the farm in 1996.

Now Eastbrook Vegetable Farms Managing Director, Scott's role encompasses everything outside of the packing shed. From planting and harvesting schedules to pest control and irrigation, as well as quality assurance, Scott handles it all.

"I love being out in the fields, and I love being in the soil. I love the growing and the satisfaction in growing the crop: you plant it, you nurture it, you protect it, you irrigate it, you fertilise it; you do whatever you can to maximise its potential so that you hopefully harvest a beautiful clean crop which is going to be great for your local community and for those around the nation who eat our products," he says.

Scott's dedication to vegetable growing and his enthusiasm for the industry earned him the Grower of the Year accolade, sponsored by Syngenta, at the Hort Connections 2018 National Awards for Excellence Gala Dinner on 20 June.

EDUCATION IS KEY

Over the past 20 years, Scott has travelled the world in search of innovative ideas for Brussels sprout production. As the farm originally harvested its Brussels sprouts by hand, Scott moved to the Netherlands for four months to gain a better understanding of mechanical harvesting and how he needed to plant the crops to suit this process.

Scott's learning continued when he received a Nuffield Scholarship in 2012, as part of a strategic levy investment under the Hort Innovation Vegetable Fund. The scholarship allowed Scott to travel to California and the mid-west of the United States as well as Belgium, France, Germany, the Netherlands and the United Kingdom, where he looked at farming practices (particularly in terms of maintaining soil health) and ways to improve Brussels sprout production.

"Coming back to Australia, it was nice to see how our business stacked up against others. In some areas, there was room for improvement in efficiency and there were other areas that we were doing really well," Scott says.

"It was a great experience to see that we all have similar challenges; whether we're here in Australia, in China, in Europe or America – labour costs keep going up, input costs are going up and often the returns aren't matching those increases. Everyone is facing the same challenges and it's how you go about minimising that gap between cost and return," he says.

PRODUCT DEVELOPMENT

In October 2011, Scott planted 60 seeds of a product which had never been grown in Australia – Kalettes. He admits he didn't know what to expect from the trial until, by chance, he saw them at mature growth in Wisconsin in the United States while on the Nuffield study tour the following year.

"Now we're planting close to 200,000 seeds a season. Further innovation is needed for more varieties which I'm hoping will extend the season," Scott says.

Eastbrook Vegetable Farms then teamed up with Coles to launch the Kalettes brand and send the product to market.

"Coles was really excited because they could see the new innovation and a completely new vegetable. It was a matter of putting it into the stores and testing it, and it's gone reasonably well," Scott says.

"We've built on the success of each previous year to the point where we have annual production. We'll certainly keep working on it – it's more about getting the message out about it, which Coles is really good at."

Scott encourages other growers with a new product or idea to consider teaming up with retailers that are interested in their innovations. However, he warns not to get disheartened by the hurdles that will inevitably be faced along the way.

"We've had good success and we've had some failures as well. That, I think, is the challenge in launching something new – you're going to get some good years, then you're going to get some failures as well, and then you find your feet and find the market."

INDUSTRY DEDICATION

Scott is always eager to be involved in vegetable industry activities, whether it's the Soil Wealth ICP project (now in its second phase) or as a member of the Consumer Alignment Strategic Investment Advisory Panel, which allows him to be a voice for growers on issues such as increasing vegetable consumption among Australians.

During phase one of the Soil Wealth project, a strategic levy investment under the Hort Innovation Vegetable Fund, Scott hosted a trial site and field walks on his property where he shared what he'd learnt about the use of beneficial species, soil health and cover crops.

"I think it's a great way for growers to learn by visiting other growers and seeing their operation. It's also really important to share the success stories and also the failures so that you can learn from them; and it's a great forum to be able to bounce ideas off each other and share what's working and what's not," he says.

Scott's future plans for the business include a reduction of pest and disease issues in the field to increase product pack-out as well as cementing Kalettes onto the palettes of Australian consumers. He also has an eye on the fourth generation taking over Eastbrook Vegetable Farms in years to come.

"I certainly want to keep on improving the business. I have three daughters and my brother has four sons, and there are a lot more opportunities for both genders to be involved in the business if they choose to," Scott says.

Put simply, Scott loves being a vegetable grower and was honoured to receive the Grower of the Year award. He also credits his success to his family including his wife Rochelle, father Kent, uncle Leigh, brother Luke and sister-in-law Deborah, along with cousin James and other employees on the farm.

"It's something special – you can't get much higher than that. To be mentioned among the likes of Belinda Adams, Matt Hood, Rob Hinrichsen and Anthony Staatz is a privilege – I look up to them. They've done a great job in their business with everything that they do, and to be linked to that group is an honour."



Photography by Andrew Beveridge



L-R: AUSVEG Deputy Chair Belinda Adams, Scott Samwell and AUSVEG Chair Bill Bulmer.

The Grower of the Year award is sponsored by leading international seed and crop protection product developer Syngenta. According to Syngenta Head of Vegetable Seeds Ged Sippel, Syngenta's sponsorship of the award demonstrates its ongoing commitment to celebrating the achievements of growers and promoting horticulture to Australia and the world.

"Syngenta has a long association of sponsoring the Grower of the Year award, as we believe that recognising and celebrating horticulture's leading growers is important to promote excellence in the industry," Ged says.

"Scott has been a successful grower and dedicated industry member for a number of years. We look forward to working with Scott and the other deserving nominees in the future to help improve the productivity and profitability of the entire sector."



L-R: Chris McLoghlin and Corteva Agriscience Marketing Manager Nick Koch.

The Young Grower of the Year award is sponsored by Corteva Agriscience, the agriculture division for DowDuPont. According to Corteva Agriscience Marketing Manager for Horticulture Nick Koch, the award reflects Corteva's mantra of recognising emerging industry leaders and helping them develop a successful and meaningful career.

"We want to work with young growers to support their development into industry leaders and help them thrive in their business and their communities. Corteva is working with industry to help build its capabilities and to understand and meet customers' expectations. We look forward to working with Chris to help him meet his own goals as he continues to grow into a trailblazer of the horticulture industry," Nick says.



2018 Young Grower of the Year finalists.

SEIZING OPPORTUNITIES IN THE ORGANIC MUSHROOM INDUSTRY

Chris McLoghlin is a passionate organic grower who has built a successful operation that produces well over 600 tonnes of mushrooms annually. Not only has Chris impressed as a grower – the Victorian has also become a strong advocate for the Australian organic industry. The 2018 Young Grower of the Year speaks to *Vegetables Australia* about his journey.

A Bachelor in Business (with a major in entrepreneurship) is not your typical pathway to a successful career in the horticulture industry.

However, it has proved extremely useful for Victorian organic mushroom grower Chris McLoghlin, who received the Young Grower of the Year Award, sponsored by Corteva Agriscience, at the Hort Connections 2018 National Awards for Excellence Gala Dinner on 20 June.

Chris is Director of Development at Mycelia Organics, which has two mushroom-growing operations in Melbourne's outer north-west, as well as a compost site.

Mycelia Organics came from humble beginnings. The operation began in early 2015 with around five staff producing approximately 800 kilograms of mushrooms per week. Today, after expanding to a second larger site with its new partners, the business has 55 staff and produces about 12 tonnes of certified organic mushrooms a week.

CHOOSING AN ORGANIC PATH

Chris has been involved with the fresh produce industry for many years, and in his later years at university, the 33-year-old decided to enter the food production sector.

"I was a long way from being able to get into farming, but I sought out some work in the supply chain and started learning about how the markets work," he explains.

"I ended up working in the markets and started a little veggie cooperative running out of a café that I had at the time, so I started buying and trading some organic produce several years ago. I used that network to learn a bit about where there might be some farming opportunities and how that would eventuate."

When the chance came up to purchase Mycelia Organics, Chris didn't hesitate to take the next step towards his passion for organic food production. This decision wasn't without its initial challenges – the organic farm had shut down, and required re-starting using the same organic production system to achieve certification. Once the organic operation was established – with Chris responsible for managing all aspects of the business – it was time to expand.

"As the business grew, we bought in new partners – this allowed me to work around building the business capacity; implementing new software, new systems, procedures and making sure that a pipeline of clients and markets were developing; and exploring and making sure that we were aware of where they were all going to be on the horizon," Chris says.

"We were involved in new product development and

collaboration of other foods and produce companies to release value-added goods, as well as keeping an eye across the operation."

CHAMPIONING ADVOCACY

In addition to building his business, Chris has entrenched himself in the Australian organic advocacy space. He helped to form Organic Industries Australia, the new peak industry body that describes itself as "the voice for Australia's organic industries in regard to policy and market access".

"When I joined the industry, there weren't many avenues for (talking about) some of the technology projects that I was interested in and some of the projects that I thought should be tackled at an industry level. It was a bit disjointed," Chris says.

"Organics is a pretty broad industry. It covers a set of values which we seek to certify for all different parts of the supply chain, not just horticulture. This was about getting a group of people together and trying to organise whether it was possible to have effective advocacy in those areas that had been neglected."

In terms of technology, Chris is working alongside other producers on a project tailored to tracking and tracing the quality and characteristics of products more effectively, which in turn will reduce wastage along the supply chain.

Chris is also interested in the export market and what it has to offer the horticulture industry.

"It's really important to look at some of the phytosanitary requirements for some of those export markets, and technologies around treating our fresh produce so that it can

access some of the potentially very lucrative export markets without necessarily having to fumigate, or damage the produce," he says.

"If we can do that in combination with having a really good quality assurance system in Australia using technology around sensors and shared ledgers, the whole industry has a capability to grow and supply food to Australia and perhaps those lucrative export markets as well."

GROWER CHALLENGES

As an organic grower, Chris faces a range of on-farm issues such as the inability to use genetically modified soil-based supplements, which he says results in 15-20 per cent less yield; however, this is managed by maintaining a smaller-sized growing operation.

Off-farm, other challenges include the isolation of the majority of vegetable industry members across Australia.

"Tyranny of distance is a huge challenge for producers everywhere. Our farm is 10 minutes from Melbourne Airport and is reasonably central, so I make sure I go out, travel, meet people and interact with other parts of the supply chain that I think are important for our business," Chris says.

"That's why Hort Connections and those kinds of forums are really important. For a lot of people, it's once or twice a year that they get to interact and find out what everyone else's doing; what products are available; the trade show element – you hear people talk about what technology they're working on. My advice is go to those events, and use those sources that are available."



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Image courtesy of Growcom



ADVOCATING FOR SUNSHINE STATE GROWERS: RACHEL REAPS REWARDS

A flair for policy writing and a love of agriculture has seen Rachel Mackenzie flourish on both the state and national stage. The Hort Connections 2018 Women in Horticulture award winner is Chief Advocate of Growcom, the peak representative body for Queensland horticulture, and has been responsible for developing policy on a range of key issues. *Vegetables Australia* spoke to Rachel about her position, the issues facing the industry and acknowledging the role women play in horticulture.

As Chief Advocate of Growcom for almost 10 years, Rachel Mackenzie has tirelessly campaigned on behalf of fruit, vegetable and nut growers across a range of issues.

Rachel's passion for horticulture industry advocacy is evident, and part of this passion has led to the establishment of Growcom's Fair Farms Initiative, a program that supports ethical employment practices in the Australian horticulture industry and will offer a certification scheme that enables farm businesses to demonstrate that their employment practices comply with Australian laws and industry standards. Rachel spearheaded this initiative, which aims to lift employment standards across the sector nationally.

It was achievements such as the Fair Farms Initiative, and her commitment to the horticulture industry on both a state and national level, that saw Rachel receive the Women in Horticulture Award, sponsored by Boomaroo Nurseries, at the Hort Connections 2018 National Awards for Excellence.

EARLY DAYS

Growing up on a small beef farm on the outskirts of Brisbane, Rachel enjoyed living on the land but knew she wasn't going to be a farmer. Instead she went to university to study science and journalism, and landed a job in the public service working in fisheries.

"I really enjoyed the process of policy making and the writing aspect of it, and in that role, I started working a little bit with the media," Rachel says.

"I quite enjoyed that and felt that I had some capabilities to bring to the table."

Before too long, Rachel joined Growcom and in 2009, she became the body's Chief Advocate.

"It's my job to work with growers to understand the issues that are concerning them, and look at the barriers for them (and the sector) to be profitable and sustainable, and then identify ways that we can influence government policy, general trends etc.," she says.

TACKLING THE BIG ISSUES

Rachel believes the biggest challenge for horticulture, apart from labour, is a lack of cohesion.

"We're really good at running around and focusing on what separates us as commodities, states and organisations, rather than focusing on what brings us together," she says.

"One thing that I'm very pleased to see happening is the formation of the National Farmers' Federation (NFF) Horticulture Council, because I believe it's really important that horticulture does have a strong voice in Canberra."

Biosecurity is also a focus both on a state and national level, according to Rachel.

"I think it's true to say that across the board, plant-based biosecurity is significantly underfunded compared to animal biosecurity, even though the plant industry sector is worth more," she says.

"We need to start pushing much harder for government, both at the state and national levels, to invest effectively. While I accept that biosecurity is a shared responsibility, there are responsibilities that only government has, and they are not being adequately addressed at the moment."

Exporting fresh produce is also on Rachel's radar, along with her desire for industry to work together to facilitate and support growers who wish to enter that space.

"Export keeps being put up as the next big thing for horticulture, and we just have to make sure that we make it happen," she says.

WORKING WITH GROWERS

Growcom regularly interacts with growers to ensure their concerns are addressed and the horticulture industry is in a strong position moving forward. Grower engagement is achieved through the formation of the Queensland Horticulture Council, which consists of representatives from each of the major horticulture growing regions in Queensland, including Lockyer Valley Growers, Bundaberg Fruit and Vegetable Growers, Bowen Gumlu Growers Association, Gayndah Fruitgrowers and the Mareeba District Fruit & Vegetable Growers Association.

The council meets each month to talk about the latest issues affecting their regions.

"We are a group that can get into the issues and deal with them appropriately, and everybody talks to their people so we have a really clear mechanism to get information from growers at the regional level across the different horticulture commodities in Queensland, to the state body which is Growcom, and then feed into organisations like AUSVEG and the NFF Horticulture Council," Rachel says.

Growcom also provides workplace relations support, most notably through the Fair Farms Initiative.

"After working for more than nine years in Queensland, we observed that there was this real need for growers to better understand what their obligations were," Rachel says.

"We wanted to focus on an employer advocacy solution, where previously efforts had focused on support for employees. We aim to educate growers and aim to breed a culture of zero tolerance for labour exploitation. We also recognise that the landscape is complex, and we want to be able to support growers to understand how they can best treat their workers."

PROMOTING WOMEN

Rachel says the 'women in horticulture' landscape is changing, as more women enter the industry and become proactive members.

"I've worked with a lot of different commodities, and the vegetable industry is good I think at enabling women to shine. There's a lot of really proactive female businesspeople who are the spokesperson for their business," Rachel says.

"We've always had a role but it was a bit invisible. I would say to any young woman who wants to take up a leadership position in the vegetable industry, it's a great opportunity and I think that you will find the environment supportive and that there'll probably be more women than you think around and about. The guard is changing."



L-R: Boomaroo Nurseries National Sales Manager Steve Winter and Rachel Mackenzie.

However, Rachel is clear when talking about women and leadership.

"I think sadly one of the things with women is they don't necessarily dream of becoming leaders, and perhaps that's something that they should do – they should actually visualise themselves in a leadership position, because they have a lot to contribute," she says.

"If you start looking at the qualities of a leader, and try to actively apply them in whatever role you have, then you are already a leader."

REWARD FOR EFFORT

Taking home the Hort Connections 2018 Women in Horticulture award, Rachel says, was an honour.

"I do feel that I'm fortunate in that I've found a role that matches what I feel are my talents and skills, but something that I care about."

"I like going to work, and I like being part of this industry, and I think that's a really big motivation."

While she is pleased that the industry is acknowledging some of the work that she has completed as an individual, Rachel is full of praise for her team at Growcom.

"It's not just me, there is a really great team at Growcom, and I couldn't do what I do without them," she says.

Furthermore, Rachel has advice for other non-grower advocates such as herself.

"Sometimes as a non-grower advocate you get criticised for not getting your hands dirty," she says.

"But I think it's also about playing to your strengths, and recognising that everyone has different strengths."

"I really value and admire the work that growers do. They are the true hard workers in our sector, but I also think there is value and use in having professional people working as advocates for our sector too."

The Women in Horticulture award is sponsored by leading vegetable seedling producer Boomaroo Nurseries. Emily White, Boomaroo Nurseries Head of Marketing and Strategy, says that promoting the achievements of women in horticulture is important to highlight their contributions to the industry.

"Rachel is a fantastic ambassador for our industry and shows tremendous passion and commitment to the horticulture industry and its growers," Emily says.

"Boomaroo has worked with the horticulture industry to promote the valuable roles that women undertake. Sponsoring this award, as well as other events around Australia, demonstrates our commitment to the women in our industry and I am looking forward to working with AUSVEG and all women in the industry to promote their contributions for many years to come."



National Farmers' Federation President Fiona Simson.



ANNE RUSTON OPENS HORT CONNECTIONS AND HIGHLIGHTS INDUSTRY UNITY

Hort Connections 2018 was officially opened by Assistant Minister for Agriculture and Water Resources Senator the Hon. Anne Ruston on 18 June, where she congratulated the horticulture industry for coming together for a united conference and networking event and tackling the important conference theme of halving waste and doubling productivity by 2030.

"It's fantastic that you are able to get together to put on this coordinated show. I think it's a testament to your industry the fact that you understand the importance of an entire supply chain," she said.

"This conference will go from strength to strength. Your industry, horticulture, will go from strength to strength if everybody gets on board to make this the pre-eminent conference for the whole of Australia and even internationally."

"Congratulations on what you've achieved – you set the benchmark very high."

Attendees were then able to peruse the extensive booths on display at the trade show.

DELEGATES FOCUS ON PREPARING FOR THE FUTURE OF HORTICULTURE

There was an action-packed morning of discussion, debate and thought-provoking questions when the Plenary Session took place at Hort Connections 2018. Delegates heard from a range of speakers including a futurist and an innovation strategist as well as horticulture industry leaders, who covered a range of topics currently influencing the sector.

The Hort Connections 2018 Plenary Session, sponsored by Hort Innovation, treated delegates to eye-opening presentations that discussed the current state of horticulture as well as the future issues facing the industry. Both local and international experts took to the stage to break down the new technology, consumer trends and global changes that are going to shape the industry in years to come.

Global futurist Chris Riddell delved into the revolution of high-speed change and what Australian businesses can expect from a world that is increasingly being disrupted by technology. Technology is a big part of the world in which we live, and Mr Riddell spoke about how businesses must be able to keep up with the relentless pace of change as well as the need to understand the next global trends.

The futurist captured the audience's imagination when looking at the consumerisation of technology – and how consumers have more power than businesses. Mr Riddell acknowledged that the world needs to develop new forms of trust and information-sharing, and even sectors with low levels of digitisation such as horticulture are in a position to take advantage of rapid developments in technology.

STATE OF THE INDUSTRY

Next on stage was AUSVEG CEO James Whiteside, who joined Produce Marketing Association Australia-New Zealand (PMA A-NZ) CEO Darren Keating to discuss the current issues facing the horticulture industry.

Mr Whiteside shared his views on the fragmented nature of the horticulture sector, and the impact its diversity of commodities and groups has on the industry's ability to support effective advocacy in national discussions. He applauded the recent formation of the National Farmers' Federation (NFF) Horticulture Council and other collaborative efforts, but said that horticulture could benefit from taking a closer look at its strategic investments and investigate ways in which it could use them more wisely to increase efficient industry development.

Mr Keating provided a snapshot of the possibilities of fresh produce and the work that goes into developing new products which create value and engage consumers, using the "raspberry" (a blueberry inside a raspberry) phenomenon as an example.

He also discussed the high number of challenges facing the horticulture sector such as health, labour, sustainability and waste. Mr Keating spoke about the ongoing battle to maintain

trust and communicate clearly in a more transparent world (for example, on social media), with a focus on authenticity and meeting evolving consumer preferences about traceability and provenance.

Sharing the stage with Mr Whiteside and Mr Keating for the State of the Industry panel discussion was Dr Jimmy Botella from the University of Queensland, and Julian Cribb, author and science communicator. The discussion centred on the need for businesses to embrace technology, and develop a list of innovative ideas that can assist in growing food and feeding the world.

The panel also discussed the multi-faceted challenge of increasing consumption of fresh produce, particularly in the context of Hort Connections' theme – halving waste and doubling productivity by the year 2030. As consumers' eating habits change and the global marketplace becomes increasingly competitive, panel members gave delegates their expert insights into how the Australian horticulture industry, from the grower through to the retailer, will need to change how it thinks about consumers.

A poignant message was delivered by Dr Cribb: "Stop talking about agriculture and horticulture and start talking about food. Food is what consumers eat. They don't eat agriculture and horticulture – they eat food," he said.

DRIVING DISRUPTION

Innovation strategist Drew Yancey then spoke about the seismic shifts being caused by disruption and innovation in businesses around the world, and how we as humans can respond to them in everyday life.

Mr Yancey said to respond to these shifts, businesses need to take into consideration the fact their business is being disrupted by a range of factors, including heightening consumer demands; choosing whether disruption is an opportunity or a threat; and strategic reflection. He broke down the processes and structures that growers can use to innovate in their own business, from business structures that encourage innovation to actually executing breakthrough ideas to see if they work.

VISION FOR AUSTRALIA

Finally, NFF President Fiona Simson spoke to delegates about her vision of Australia in 2030 and the role horticulture will have on the NFF's national agenda.

Ms Simson touched on the history of the NFF, and provided an explanation of the NFF's role in the modern Australian political world. She noted that advocacy is changing, and therefore the NFF is too – particularly in targeting more agile and responsive forms of advocacy that have adapted to the modern world's faster information flow.

On the topic of the newly-formed NFF Horticulture Council, Ms Simson said the organisation hopes it will go from strength to strength as the potential for growth in horticulture increases.

Ms Simson also highlighted the need for a united voice – not only in horticulture but across all of agriculture – to speak for growers and farmers, help them meet their goals and support agriculture in its vision of becoming a \$100 billion industry in 2030.

INFO

Presentations at the Hort Connections 2018 Plenary Session are available to watch at youtube.com/user/AUSVEG/playlists.



Tommy Le at the Syngenta Breakfast.

DELEGATES INSPIRED AT BREAKFAST PRESENTATIONS

Hort Connections 2018 attendees fuelled up before a busy day of speaker sessions and networking at two breakfast events during the conference.

The Perfection Fresh Breakfast on Tuesday 19 June featured a wide variety of Australian fruits and vegetables, showcasing the versatility of the company's produce. Contemporary Australian comedian Rod Quantock also entertained the audience throughout the breakfast.

Delegates who attended the Wednesday breakfast, sponsored by Syngenta, were treated to an emotional presentation from Queensland vegetable grower and agronomist Tommy Le. He detailed his journey from Vietnam to Australia, including spending seven days in a small boat off the Thailand coast with 14 other family members in an attempt to escape his home country of Vietnam, and two subsequent years in a Thailand refugee camp.

Speaking under the title of "A Second Chance at Life", Tommy said he was grateful for his new life in Australia.

"I should have died in that ocean but every day I think is a second chance at life and you've got to make the most of it. So here I am," Tommy said.

Tommy is a 2016 winner of the Syngenta Growth Awards.

Photography by Andrew Beveridge



L-R: State of the Industry panellists James Whiteside, Darren Keating, Dr Jimmy Botella and Julian Cribb.

Photography by Andrew Beveridge



L-R: Panel members Matt Hood, Natalie Bell, Rocky Varapodio and moderator Daniel Williams.

VEG INDUSTRY IN THE SPOTLIGHT AT HORT CONNECTIONS 2018

Vegetables took centre stage at Hort Connections 2018 with six individual presentations and two panels presenting on a wide range of industry issues, R&D projects and supply chain technologies at this year's AUSVEG Speaker Stream.

Over 100 delegates joined vegetable industry members from all facets of the supply chain who presented at the dedicated vegetable stream held during Hort Connections 2018 on Tuesday 19 June.

The AUSVEG Speaker Stream, sponsored by Boomaroo Nurseries, took place alongside the Produce Marketing Association Australia-New Zealand (PMA A-NZ) and Apple and Pear Australia Limited (APAL) Speaker Streams, which allowed delegates to focus on presentations of relevance to their respective industries.

The vegetable stream consisted of individual presentations and two panels that led to vigorous discussion and the sharing of ideas among industry members and the audience.

FRESH INSIGHTS

The session's first speaker was Wayne Shields from Peninsula Fresh Organics in Victoria, who reflected on his experiences as an organic grower – from the cost of land around his Mornington Peninsula farm to a crop-by-crop breakdown of his vegetable lines, their performance and their place in his organisation.

Next up was a panel discussion, sponsored by Coles, which focused on innovation and consumer trends. Joining moderator Daniel Williams from Coles was Rocky Varapodio from Oakmoor Orchards, blueberry grower Natalie Bell from Mountain Blue Farms and Rugby Farms owner Matt Hood.

The three growers spoke about their individual businesses, the challenges faced when trialling new varieties of product and how they're ensuring their operation remains sustainable into the future. Mr Hood outlined the value-added vegetable products that Rugby Farms has introduced in the past two-and-a-half years, with an impressive 15 products developed with Coles during that time.

Following the panel discussion, Inge Bisconer from Toro Agricultural (Americas) presented irrigation case studies and trends from the United States, outlining the benefits of drip irrigation.

Applied Horticultural Research's Dr Gordon Rogers joined Donna Lucas from RM Consulting Group to discuss the *Soil Wealth and Integrated Crop Protection Phase Two project* (VG16078), a strategic levy investment under the Hort Innovation Vegetable Fund. Dr Rogers reflected on the previous project's findings and outlined what the key activities of the phase two project will be, while Ms Lucas spoke about how growers and other vegetable industry members can get involved (see page 58 for more information).

A NUTRITIONAL FOCUS

The second panel discussion, sponsored by Bayer, consisted of moderator Richard Dickmann (Bayer), Lucinda Hancock (Nutrition

Australia), Dr Tony Worsley (Deakin University), Fiona Baxter (Coles) and Anthony Staatz (Koala Farms). The panel discussion had a strong theme – boosting vegetable consumption among consumers, and each presenter outlined their plan for taking action.

Ms Hancock's idea was based on consistent evidence that mass media can be an effective tool to address a range of health behaviours, including increasing consumption of fruit and vegetables. She suggested spearheading a mass media campaign that could tie in all the interventions that are currently being implemented across Australia. Ms Baxter's idea focused on retailers such as Coles inspiring healthy choices in-store as well as healthy meal ideas and home cooking, while Mr Staatz focused on validating the quality of Australian farming by educating consumers and sharing positive growing stories. As vegetables are viewed as being hard to prepare and food teachers in schools are not well-supported, Dr Worsley suggested starting healthy eating competitions and awards in schools to conquer the problem.

Following the presentations, audience members participated in an interactive real-time poll for the best idea, which would then be presented to the vegetable industry's Consumer Alignment Strategic Investment Advisory Panel. Dr Worsley's suggestion generated positive feedback and received the highest number of votes.

R&D ADOPTION

Another topic that was addressed in the vegetable stream was Integrated Pest Management (IPM), with Dr Paul Horne from IPM Technologies providing examples of growers who have successfully implemented IPM practices on their farms and explaining the three control measures it uses – biological, cultural and chemical.

Omnia's Vanessa Moodley followed on with the soil health theme, acknowledging sustainable practices and the benefits of soil ameliorants for improved plant growth.

Rounding out the afternoon was Dr Hazel MacTavish-West, who spoke about her recent travels in Europe as part of her Nuffield Scholarship, where she investigated opportunities to incorporate more fruit and vegetables into value-added products. Dr MacTavish-West noted her observations of key trends, including the rise of plant-based eating.

INFO

If you would like to find out more on these topics, keep an eye on ausveg.com.au and hortconnections.com.au for videos of the presentations held during the AUSVEG Speaker Streams.



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L-R: Chanel Day, Dr Mary Ann Augustin, Dr Denise Hamblin, Heather Smyth and Alice Zaslavsky discuss future food trends at Hort Connections 2018.

SPEAKER SESSIONS GIVE DELEGATES A GLIMPSE OF THE FUTURE OF VEGETABLES

A packed line-up of panel discussions and expert presenters at Hort Connections 2018 looked at the current and future trends influencing Australian horticulture as investigated by Hort Innovation-funded projects. Jarrod Strauch reports.

On Wednesday 20 June, Hort Connections delegates heard from industry experts on three of the hot-button topics in our sector: consumer desires, labour demands and data-driven decisions.

The morning kicked off with a lively panel, coordinated by Hort Innovation. The panel was moderated by Alice Zaslavsky, the driving force behind the Phenomenon project (VG16018), which covered the factors shaping the future of food in Australia. As Australians look for provenance stories and authenticity in their food, panel member Dr Denise Hamblin from consumer research firm Colmar Brunton said that native produce could connect strongly with shoppers. Chanel Day from Nielsen Australia contributed data-driven retail insights to the discussion, including hard numbers from the *Harvest to Home* project (MT17017).

During the panel discussion, the audience also heard from two food scientists working on projects for Hort Innovation that focus on developing new products to capture consumers' imagination. Heather Smyth, sensory scientist and flavour chemist with the Queensland Alliance for Agriculture and Food Innovation, discussed the project creating new nutrient-dense vegetable varieties (HN15001). Meanwhile, CSIRO's Dr Mary Ann Augustin talked about the use of food processing to convert fresh produce into a shelf-stable product and create new avenues for vegetable consumption, such as vegetable snacks and the now-infamous broccoli latte (VG15076).

As well as focusing on their own areas of expertise, the panel answered questions from the audience and talked about their visions of the future for vegetables, from health messaging to beauty products.

As well as these speaker sessions covering Hort Innovation projects, Hort Connections 2018 also featured two other concurrent sessions looking at issues affecting the present and future of Australian horticulture.

All three concurrent sessions will be published on ausveg.com.au and hortconnections.com.au so you can catch up on anything you might have missed.

DATA-DRIVEN DECISIONS

Next, a trio of presenters took to the stage to discuss a project monitoring produce performance and supply chain conditions for export shipments, which has helped identify areas for practice change by exporters.

Noel Ainsworth from Queensland's Department of Agriculture and Fisheries, Rowan Little from Montague Australia and Scott Ledger from mango company Manbulloo shared the results of the project, funded through the Hort Frontiers Asian Markets Fund (AM15002). The project's monitoring provides growers with data that can be used to make business improvements, such as changing cooling practices or only committing to sea freight where the travel time won't endanger product quality.

This analysis was complemented by a discussion later in the morning about other initiatives that are helping growers make informed decisions using data, with a panel led by Hort Innovation's Adam Briggs. The panel included Martin Kneebone from Freshlogic, which is delivering wholesale market price data to the industry (VG16084), and Angelica Suarez Cadavid from the University of New England's team on a levy-funded project supporting the industry's adoption of precision agriculture technology (VG16009).

During the discussion, Kees Versteeg from Qualipac and Emma Germano from I Love Farms gave an on-farm perspective of how these projects are supporting growers in modernising their businesses and making decisions with a more informed viewpoint.

LEARNING ABOUT LABOUR

Finally, in any discussion about the future of horticultural production, the problem of labour is quick to crop up. Two speakers addressed the issues of tomorrow's workforce in a segment sponsored by NAB Agribusiness.

First up, Joanna Howe from the University of Adelaide shared the findings of her research into labour needs in our sector (VG15025). The project team's work included face-to-face discussions with growers around the country to understand our industry's labour needs and the factors underpinning labour use in Australian horticulture.

The audience also received an early look at the findings from the Fair Work Ombudsman's (FWO) Harvest Trail inquiry, with the FWO's Jennifer Crook taking attendees through some of the most significant details from the investigation, which will be released later in the year.

INFO R&D

This speaker stream featured a range of projects funded by Hort Innovation using the vegetable research and development levy, other industry levies and contributions from the Australian Government, as well as the Hort Frontiers Asian Markets Fund and Healthy Food Fund, part of the Hort Frontiers strategic partnership initiative developed by Hort Innovation, with funding from a range of co-investors and contributions from the Australian Government.



Export Council of Australia Chair Dianne Tipping at the Australian Vegetables Export Seminar 2018. Photography by Andrew Beveridge.

GROWERS INSPIRED TO BREAK INTO EXPORT MARKETS

The Australian Vegetables Export Seminar 2018 provided vegetable growers with a valuable update of the Australian export industry at Hort Connections 2018. Attendees were shown practical ways of taking advantage of booming export markets to boost their businesses, while a grower panel outlined the benefits and challenges of exporting vegetables.

Raising awareness of the opportunities surrounding international trade was on the agenda at the Australian Vegetables Export Seminar 2018.

This event was held at the Brisbane Convention and Exhibition Centre as a precursor to Hort Connections 2018, and featured a range of speakers who shared their knowledge on how to successfully develop or build international relationships and export capabilities.

These informative presentations enabled growers to hear first-hand from those who have had success exporting their produce. It helped attendees to gain a deeper understanding of the practical aspects of exporting vegetables, and better inform the industry on the benefits of breaking into export markets for their businesses.

This year's event was part of the project *Export Opportunities for Carrots, Sweet Corn, Beans, Broccoli and Baby Leaf – Symposia* (VG13072), a strategic levy investment under the Hort Innovation Vegetable Fund and coordinated by AUSVEG.

KEY MARKET DISCUSSION

Opening the seminar was agribusiness expert Dr David McKinna, who delivered an update on the latest in international markets for vegetables. He also discussed the export market mapping tool and the progress of the *Vegetable Industry Export Strategy*, which aims to increase the value of vegetable exports by 40 per cent to \$315 million by 2020. This project is a strategic levy investment under the Hort Innovation Vegetable Fund, and was developed in conjunction with AUSVEG.

Dr McKinna also outlined the key regions for export growth, including North Asia, which adds to the already dominant market regions of the Middle East and south-east Asia.

The next speaker was Export Council of Australia Chair Dianne Tipping, who reiterated the benefits of "going global", but also asked the audience to consider if going global, or exporting, is the best choice for their business. She followed up by explaining Free Trade Agreements and the upcoming Trans-Pacific Partnership (TPP 11), and what growers need to know before entering into the export space.

Citrus Australia Market Access Manager David Daniels shared his own experiences with exporting – the successes and the hard times. He discussed the rise and fall of the United States market and how it affected citrus exports, and explained that the current focus is on Asian markets, with a 20 per cent rise of citrus exports to the region in 2017.

INDUSTRY PERSPECTIVE

Momack Produce Export Coordinator Richard Birtill explained why exports could grow in Australia and said there were three areas to focus on: investment, inputs and innovation. His main message was to "invest in mechanisation to reduce labour requirements".

Following Mr Birtill was Hort Innovation Trade Manager Jenny Van de Meeberg, who also delved into current global trade trends and how Hort Innovation supports trade development in Australia. She expanded on the export strategy mentioned earlier by Dr McKinna, and how Hort Innovation's Hort Frontiers initiative, which includes the Asian Markets Fund, is helping to facilitate projects under the strategy (more about the Asian Markets Fund can be found on page 46).

GROWER FOCUS

The final presentation of the day brought together two growers who have experience in exporting produce. Virginia Farm Produce Commercial Business Manager Ryan Densley and Odeum Farms Export Manager Nick Paterniti shared the stage to speak about their export activities, and provide advice to those who are considering exporting their produce. The growers each had different levels of experience in exporting and this forum allowed the audience to ask any questions, as well as learn from their grower counterparts who have overcome significant challenges when entering the export market.

At the conclusion of the seminar, the NAB Agribusiness Exporter of the Year award was presented to baby leaf salad producer Dicky Bill Australia, with Company Director Ryan McLeod accepting the award on behalf of the company.

INFO R&D

Presentations at the Australian Vegetables Export Seminar 2018 are available to watch at youtube.com/user/AUSVEG/playlists.

This project has been funded by Hort Innovation using the vegetable research and development levy and contributions from the Australian Government.

Project Number: VG13072

Photography by Andrew Beveridge



Erik Pekkeriet from Wageningen University.

GROWERS TUNE IN FOR A GLOBAL PERSPECTIVE ON INNOVATION

The Global Innovations in Horticulture Seminar made a triumphant return to Hort Connections 2018, with more than 150 people in attendance. The Seminar welcomed nine speakers from across the globe, including a three-person agrobotics panel, to discuss the technologies and practices in global horticulture that can help local growers tackle production challenges and satisfy evolving consumer preferences.

Returning in June was the Global Innovations in Horticulture Seminar, an event held at Hort Connections 2018 that demonstrated the very latest in innovative research and technology from around the world.

A packed room tuned in to hear presentations from international innovation experts, with topics ranging from consumer trends to labour-saving traits; vertical indoor farming; machinery; traceability; and invention. This was followed by an agrobotics panel which examined the latest in on-farm robotics, and what this means for Australian vegetable growers.

Global Innovations in Horticulture Seminar (VG15032) was a strategic levy investment under the Hort Innovation Vegetable Fund.

FOOD FOR THOUGHT

Following an introduction from moderator and Plant Health Australia Executive Director and Chief Executive Officer Greg Fraser, the seminar began with Erik Pekkeriet from Wageningen University in the Netherlands. Mr Pekkeriet works as a Senior Project Manager in Agro Food Robotics at the leading agricultural university, and he spoke about the challenges in food production (such as mass production and labour costs) and how technology is assisting in addressing these issues.

Kevin Walsh from Monsanto then addressed the changing demands that shape the produce landscape. He spoke about labour and how its availability is at breaking point, and outlined the breeding techniques that have led to new varieties of fruits and vegetables and, ultimately, labour savings.

Attendees also heard Urban Crop Solutions – Japan Country Manager Nicolas Tsurukawa discuss the notion of vertical farming and what makes the practice profitable. He addressed the challenges that vertical farming aims to meet, and debunked the myth that crops grown from vertical farms aren't as robust as outdoor, conventional crops.

FRESH CONCEPTS

After a quick break, delegates returned to hear from Multi Tool Trac International Affairs Manager Maarten Van Ham. Multi Tool Trac is an electric tractor built to preserve soil quality, which can lead to more revenue for growers, with Mr Van Ham explaining how the innovative concept came about and the steps undertaken in its development.

Scientific traceability of fresh produce was also addressed, with Sandon Adams from Oritain Global Limited discussing the expectations of consumers and the implications for producers, which include the need to develop brands and innovate as well as increase transparency. Mr Adams outlined the steps that Oritain takes to test a product in the supply chain to ensure this transparency and minimise risks for both retailers and the consumer.

Next up was Keon Research CEO and Founder Michael Manion, who explained what his business aims to achieve in terms of basic science and product development. He gave attendees an insight into how it invents technologies to meet economic demands and protect intellectual property rights.

ROBOTICS DISCUSSION

The final component of the 2018 Global Innovations in Horticulture Seminar was an agrobotics panel, which was moderated by Mr Pekkeriet. Professor Salah Sukkarieh, Director of Research and Innovation at the Australian Centre for Field Robotics, discussed agrobotics and intelligent systems for Australian horticulture, including the outcomes of *Using autonomous systems to guide vegetable decision making on-farm (VG15003)*, a strategic levy investment under the Hort Innovation Vegetable Fund. Two of the outcomes of this project are the Ladybird robot and the Robot for Intelligent Perception and Precision Application (RIPPA), which have been used in both trial-farm and commercial-farm settings in Australia.

Jesse Reader from Bosch spoke about the company's developments in robotics, including the Swarm-Bot concept. This concept is designed to enable growers to explore new farming systems through the use of smart, mobile automated robots. Bosch has partnered with SwarmFarm to develop these agricultural robots, which are mobile enough to work in a paddock.

The third and final panel speaker was Dr Peyman Moghadam, Senior Research Scientist at CSIRO Data61, who focused on adding value to the farm without changing current practices. He touched on using three-dimensional scanning and crop condition monitoring, driverless autonomous ground vehicles and a hovermap (an autonomous drone used to collect data).

At the conclusion of these presentations, the three panellists remained on the stage to answer questions from the audience. There was robust discussion around the commercialisation of some of these agrobotic solutions, and when Australia was likely to see them available on the market. It was discussed that while the technology is there, the next step was to investigate the economic framework that could take this technology from the laboratory to a commercial application.

It was noted that grower engagement in agrobotics was high, with feedback received by growers taken into consideration in the future development of agrobotic technology. It was also mentioned that field trials and days are regularly undertaken, along with surveys which enable growers and other industry members to provide their comments.

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HiveXchange Chair and Co-Founder Damian George.
Image courtesy of the HiveXchange.

Reducing waste and increasing productivity was a key focus of Hort Connections 2018, with many of the speakers addressing the need for the industry as a whole to embrace change and adopt digital technology to ensure a competitive, efficient and profitable sector into the future.

Digital technology was flagged as critical to the fresh produce industry's ability to facilitate and fast track this change. Future trends commentator Chris Riddell opened the Plenary Session with a look at the latest digital trends and how they're changing the way we experience the world. He called on the industry to embrace innovation, saying digital is a culture and a thread that must run through our businesses, as it will form our ability to keep up with high speed change that defines our future.

The internet of things was identified by Chris as a key opportunity for horticulture. He highlighted the power of data when used with trust and how real time insights into production and trade will enable businesses to make informed, individualised decisions down to the buyer and the millilitre.

We need to see digital markets and supply chains as an opportunity rather than a disruption. Change is coming both domestically and in global markets – we can either accept it and reap the benefits or we can wait to be swept aside.

Similarly, innovation strategist and fresh produce distributor Drew Yancey warned that if you're in the global food chain, then your business is being disrupted – saying no corner of the supply chain will be free from disruption in the next three years. He invited delegates to reflect on their current business model and to be open to innovation across many areas of their business; including where you sell, what you offer, how you sell and to whom.

CHANGE IS INEVITABLE

Damian George, Chair and Co-Founder of the HiveXchange, Australia's first digital marketplace for fresh produce, also made the case for change. He said the legacy of the industry was something we should be proud of, but the time has come to embrace the benefits of digital technology and shift our businesses out of the 70-hour week, silent generation mentality.

HOW DIGITAL TECHNOLOGY CAN SHAPE THE HORTICULTURE INDUSTRY OF THE FUTURE

A range of speakers at Hort Connections 2018 examined the future of Australian horticulture and how the industry will need to adapt to meet consumer trends and simultaneously remain profitable and productive. In this article, the HiveXchange reflects on presentations that highlighted how digital technology can play a role in the future of Australian horticulture.

"We need to see digital markets and supply chains as an opportunity rather than a disruption. Change is coming both domestically and in global markets – we can either accept it and reap the benefits or we can wait to be swept aside," he said.

"Digital solutions like the HiveXchange can be bolted on to our businesses; they have the power to deliver better lifestyles and ensure we're agile enough to respond to the high-speed change Chris (Riddell) spoke of."

Damian shared his vision of individually-accessible, automated distribution centres located around capital cities where produce could be received, stored and dispatched 24/7, 365 days a year. He also touched on global opportunities, saying Australian and New Zealand businesses were geographically close and digitally literate enough to pounce on the opportunity of the Asian Century if we can deliver the digitally-agile, data-rich supply chain experience they want.

The global retail trends panel continued in this vein, saying the primary challenge for fresh produce was not demand but

the ability of the supply chain to adapt to changing supply channels, as retailers sought to optimise efficiency and customer experience. Key messages included the need to work together as an industry to deliver the freshness, convenience and immediacy retailers and consumers demand.

Produce Marketing Association CEO Cathy Burns also delivered an eye-opening session on global retail trends. Touching on game-changing trends such as plant-based foods, the successful Amazon Go walk out shopping experience and the imminent launch of driverless, mobile fresh produce retail carts in California, Cathy called on the industry to ask questions, innovate and ensure fresh produce – the original health food – stays front and centre with consumers.

INFO

For more information, please visit hivexchange.com.au.



Keynote speaker Rachael Robertson.
Photography by Andrew Beveridge.

Fostering respect and taking pride in your work were the key takeaway messages for attendees at the Women in Horticulture event at Hort Connections 2018.

A sea of pink lit up the Brisbane Convention and Exhibition Centre on Wednesday 20 June as delegates came together to celebrate the essential work of women in Australia's horticulture industry and simultaneously raise much-needed funds for breast cancer research.

This year's annual Women in Horticulture event, sponsored by Boomeroo Nurseries, encouraged all delegates to don pink clothing in celebration of the National Breast Cancer Foundation (NBCF)'s GO PINK Week, and dig deep to raise money to support its important work in breast cancer research. Delegates were treated to an extensive supply of pink Boomeroo Nurseries caps and flowers from their nursery, as well as a pink lolly table to spark some enthusiasm among the audience.

A generous cheque for \$1,000, presented by Emily White on behalf of Boomeroo Nurseries on the day, took the fundraising total to \$7,133.80, which will help NBCF in its quest to reach zero breast cancer-related deaths by 2020.

SPEAKERS SEND STRONG MESSAGE

During the event, delegates heard from a number of inspirational speakers, headlined by leadership expert Rachael Robertson. As the youngest and second ever female expedition leader to Antarctica's Davis Station, Rachael led a diverse team through a gruelling 12-month stint in one of the world's most extreme and remote locations. Rachael spoke of the importance of maintaining good communication within a team, and gave the audience practical tips to manage conflict, foster respect in potentially difficult environments and encourage more women to step into leadership roles within their industry.

Attendees also heard from Museums Victoria's Liza Dale-Hallett who discussed the Invisible Farmer project, the largest ever study of Australian women on the land. Liza touched on the importance of recognising the work of female farmers within Australia, and the startling reality of how females' work in the agriculture sector is often missing from historical records. With alarming statistics about the under-representation of females in leadership positions in the agriculture industry, Liza encouraged attendees to be proud of their vital contributions to communities across the country and share their stories.

WOMEN INSPIRED TO STEP OUT OF THE SHADOWS ... AND GO PINK

The annual Women in Horticulture event at Hort Connections encourages all sectors of the horticulture industry to come together and celebrate the crucial role that women play in the industry. Tiahn Wright takes a look back at this year's event, which successfully raised over \$7,000 for breast cancer research.

Continuing the message of leadership, ABC *Landline*'s Pip Courtney brought a simple message to the audience: you don't need an official title to lead. Pip encouraged everyone – regardless of their role, gender or experience – to implement leadership qualities into their everyday lives, and have faith in themselves and the quality of their work. Pip also discussed the importance of nurturing unity and understanding within the horticulture sector, especially when it comes to bridging the gap between the city and country divide.

Finally, AUSVEG Deputy Chair Belinda Adams reflected on the recent Women in Horticulture Industry Leadership and Development Mission to Europe in April, and recognised the 10 nominees for this year's Women in Horticulture Award, also sponsored by Boomeroo Nurseries. The winner was announced at the National Awards for Excellence Gala Dinner later that evening, with Growcom Chief Advocate Rachel Mackenzie receiving the honour.

The Women in Horticulture event is a fantastic way to recognise the contributions of dedicated females within the horticulture industry. These women often get left in the shadows, and it is the role of the entire industry to ensure their work is acknowledged and appreciated every day.

A FRESH PERSPECTIVE ON DIVERSITY

The Produce Marketing Association Australia-New Zealand (PMA A-NZ)'s Fresh Perspectives – Effecting Change workshop was also held on Wednesday 20 June at Hort Connections 2018. The workshop delved into how businesses can implement diversity, what diversity means in the modern era and how to best implement effective change within a workplace.

Attendees broke into smaller groups to discuss a range of topics including the power of inclusive leadership and overcoming cultural differences in business. Attendees were able to discuss these topics with like-minded individuals, share ideas and learn practical strategies for diversifying their workplace.

INFO

AUSVEG would like to thank Boomeroo Nurseries and all those who supported the Women in Horticulture GO PINK fundraising event for their generous donations.



2018 AUSVEG Reverse Trade Mission delegates.
Photography by Anna Osetroff.

AUSTRALIAN HORTICULTURE IMPRESSES FOREIGN BUYERS DURING REVERSE TRADE MISSION

The 2018 Reverse Trade Mission and Taste Australia Fresh Produce Showcase was a huge success, after a diverse delegation of international buyers from key export markets visited Queensland farms, met export-ready growers and learnt more about Australia's high quality fresh produce. Dimi Kyriakou reports.

As the Australian horticulture industry prepared for Hort Connections 2018, the annual AUSVEG Reverse Trade Mission (RTM) was in full swing, allowing importers, wholesalers and retailers from seven export markets within Asia and the Middle East to witness the quality of Australia's horticulture industry.

From 14-19 June, a group of 40 delegates from Indonesia, Thailand, Taiwan, South Korea, the Philippines, Japan and Saudi Arabia attended the mission, which was based in Queensland to coincide with Hort Connections 2018. The group included 35 first-time delegates and it was the first year that buyers from Indonesia, the Philippines and South Korea were able to attend.

The RTM is an annual exercise to inform international buyers about the Australian vegetable industry and highlight the quality, safety and integrity of local produce. Throughout the week, delegates explored new business opportunities with potential Australian suppliers, while growers were exposed to a wider range of buyers from potentially lucrative export markets. The mission plays an important role in the Australian vegetable industry's efforts to boost the value of its export sector by 40 per cent, to \$315 million by 2020.

The 2018 RTM is part of a strategic levy investment under the Hort Innovation Vegetable Fund (VG16061).

A DIVERSE ITINERARY

The RTM delegation visited seven leading vegetable and fruit farms in Queensland, a research station and export treatment facility, stopped by Hort Connections 2018 and met a range of export-ready growers at the Taste Australia Fresh Produce Showcase (see box-out for more information).

The first stop on the itinerary was Mulgowie Farming Company, where CEO Fabian Carniel and the team discussed conventional

and organic broccoli farming practices and provided a tour of the farm and packing shed. The discussion also highlighted Mulgowie's use of Integrated Pest Management (IPM) practices.

At OneHarvest's processing facility in Wacol, Export Sales Manager Sarah Huntley provided an informative tour of the facility and delegates were able to view step-by-step how the company's pre-packed salads and stir-fry packs are developed and the strict quality assurance systems that are implemented.

The next day focused on exploring the fertile vegetable production regions of the Lockyer Valley and Fassifern Valley. Scientists at Gatton Research Station showcased the current R&D projects underway in the vegetable industry, which included a range of levy-funded projects focusing on IPM practices. Delegates showed strong interest in better understanding how Australian growers use IPM to protect their crops, reduce chemical usage and produce high quality fruit and vegetables that are safe to eat. At the end of the visit, each delegate received a small sample of beneficial insects to release on-farm in a broccoli crop at Qualipac, which was the next stop on the itinerary.

Qualipac Director/Owner Troy Qualischefski welcomed the delegation to the growing operation and provided a tour of the broccoli packing shed and farm, where participants released the beneficial insects into the broccoli crop. Delegates also enjoyed the opportunity to see broccoli harvesting in action.

The final stop for the day was Moffatt Fresh Produce, where family members and staff including Steve Moffatt, Mitch Moffatt and Brei



RTM delegates released beneficial insects from Gatton Research Station into a broccoli crop at Qualipac.

Montgomery provided a tour of the farm in the midst of harvesting carrots, as well as the company's washing and packing facility.

EXPRESS TO BUNDABERG

To ensure delegates could better experience the diverse growing regions of Queensland, the itinerary also included a day trip to Bundaberg. The group met Clare Maslen and Rob Pafumi from AustChilli, the largest chilli company in Australia. Delegates gained a better understanding of the company's fresh and value-added chilli production business, including its Avo Fresh brand, through discussions with the team about the value-adding processes, and touring the on-site chilli farm.

Next up was a visit to 2018 Exporter of the Year Dicky Bill Australia, where owners Hugh Reardon and Ryan and Tahirah McLeod spoke to delegates about baby leaf salad production and showed how spinach was harvested in the fields.

The RTM delegation also stopped by Abbotsleigh Citrus, part of Nutrano Produce Group, where Michael McMahon provided an overview of the growing operation which has over 60,000 citrus trees and produces 800 tonnes of blueberries annually under nets.

IRRADIATION IN-DEPTH

A highlight of the RTM itinerary was a visit to sterilisation and decontamination processor Steritech, where delegates met with Ben Reilly and Glen Robertson. The meeting generated a strong amount of interest from delegates who were keen to understand the irradiation technology and processes used in the treatment of fresh produce and how it is applied under treatment protocols.

The group also attended the Hort Connections 2018 Welcome Reception and explored the 195 trade displays from the local and international supply chain at the trade show.

POSITIVE OUTCOMES

The mission received strong feedback from delegates, who appreciated the opportunity to meet growers and visit farms in two key horticulture production areas of Queensland, as well as gain a deeper insight into the research practices and irradiation treatments that are currently underway in Australian horticulture. A number of delegates indicated they expect to do significant trade as a result of their participation on the mission and would welcome the opportunity to attend similar initiatives in the future.

As one delegate noted: "(The RTM) provided an in-depth understanding of growers' tireless efforts to produce good quality vegetables which gives us as buyers greater confidence to do business."

DELEGATES 'TASTE AUSTRALIA' AT FRESH PRODUCE SHOWCASE

The 2018 Reverse Trade Mission culminated with the Taste Australia Fresh Produce Showcase on 19 June, where 36 exporting fruit and vegetable growers displayed their fresh produce and value-added products to the international buying group.

Developed by AUSVEG and Hort Innovation, this year's Taste Australia Fresh Produce Showcase generated interest from a range of new exhibitors, including more than 10 fruit exporters such as Montague, Lenswood Apples, N&A Group, Ten Farms and Manbulloo Limited. The event was a strong example of the benefits of collaboration across the horticulture industry and provided access to a broader range of horticultural produce for the international buyers.



FEEDBACK ON THE TASTE AUSTRALIA FRESH PRODUCE SHOWCASE

"To us it's an integral part of business. It's connections, it's meeting people ... There's new buyers this year which is quite exciting." – **Ryan Densley, Virginia Farm Produce.**

"It's building that trust with (the buyers) that they can look at our produce, talk about the practicalities, understand what their customers' needs are and how we can build our supply chain to meet their customers' needs." – **Shane Quinn, Mulgowie Farming Company.**

"This is such an open, friendly format ... it's a good way for them to see our product on display and see what we have to offer." – **Colleen Dangerfield, VFS Exports.**

"I like it. The Taste Australia (showcase) is a good size because we can ... meet many people, the current ones and also the new suppliers." – **Supavadee Nimmankait, Thailand.**

"Very good companies available so I think I have a good chance to communicate with them after the exhibition and start working together." – **Mohammad Marier, Saudi Arabia.**

"We need to continue to put out a consistent message to our international markets about the premium offering of produce that Australia provides and Taste Australia as an overarching brand is very central to that message." – **Michael Coote, AUSVEG.**

"Being exposed to the full range of products that Australia offers really broadens the opportunity and demonstrates the value that Australian growers provide to those buyers." – **Michael Rogers, Hort Innovation.**

INFO R&D

The 2018 Reverse Trade Mission is an initiative of the Vegetable Export Development Program and is funded by Hort Innovation using the vegetable research and development levy and contributions from the Australian Government.

Project Number: VG16061



The nursery structure at Koala Farms in Queensland's Lockyer Valley can be tailored to create different growing environments.

The first stop for the annual Horticulture Field Day at Hort Connections 2018 was a guided tour of the Brisbane Produce Market, which spearheads the marketing and distribution of wholesale fresh fruits and vegetables in Queensland. With fresh produce on display from across the country – even salad mix from Gippsland – participants witnessed the creative ways that wholesalers displayed produce for sale.

The addition of a new roof has created an all-weather trading environment for the market and there are plans to expand the warehouse capacity and develop new opportunities for wholesalers. Participants also learnt how buyers can sign up to a credit service which avoids the need for cash transactions. Following the recent floods in Brisbane, all electrical infrastructure was raised above the existing peak flood levels to allow for continuity in the event of another flood.

After breakfast courtesy of Brisbane Markets, participants visited John Deere Australia's headquarters in Crestmead. A short presentation highlighted how the company has transitioned from its humble beginnings as the developer of the self-scouring plough in 1837 to a leading provider of machinery and other services. Participants gained an insight into John Deere's vision for the future of agriculture, where traditional farming practices will evolve into precision agriculture, and decision-making will be conducted in real time at the plant level. The group also enjoyed the opportunity to visit the showroom and get up close to some of the green and gold machinery on display.

STAKEHOLDER PRESENTATIONS

As the field day continued on to Gatton in Queensland's Lockyer Valley, participants heard short presentations from the Department of Agriculture and Water Resources' David Burns, who provided an overview of horticulture exports and the intricacies of developing market access for Australia's key vegetable export commodities. He noted recent success stories in terms of market access, including carrots to Taiwan, capsicum to New Zealand, increased vegetable commodities to South Korea and seed potatoes to Indonesia. David added that the department prioritises market access requests in conjunction with Hort Innovation and advice from industry bodies.

Dr Cherie Gambley from the Department of Agriculture and Fisheries, Queensland also provided an overview of a new strategic levy investment under the Hort Innovation Vegetable Fund, which focuses on area wide management of vegetable

HORTICULTURE FIELD DAY TAKES DELEGATES ON A TOUR OF SOUTH-EAST QUEENSLAND

It was an unusually chilly start to the Horticulture Field Day at Hort Connections 2018 in Brisbane on Monday 18 June, where around 60 growers and industry members took advantage of the opportunity to visit fresh produce markets, agribusinesses and leading vegetable farms in south-east Queensland.

diseases. Cherie explained this national project will begin with disease surveys that will ensure the information gathered is most relevant to the industry (for more information on this project, see page 36).

FARMS IN FOCUS

The next stop was Windolf Farms, which produces a range of vegetables throughout the year including broccoli, parsnips, potatoes and lettuce. Participants were given a tour of the 750-acre farm and witnessed a range of crops in the field as well as lettuce being harvested.

Participants were impressed with the cleanliness and tidy presentation of the farm, which included a dedicated washdown facility for farm equipment. Participants were then able to visit the packing shed to see broccoli being sorted, graded and packed for shipping.

The final stop for the Horticulture Field Day was Koala Farms – home of the Hort Connections 2017 Grower of the Year Anthony Staatz – which produces iceberg lettuce, baby cos, broccoli and cauliflower. Koala Farms produces its own transplants for quality control and production requirements, and participants witnessed how the seedling trays are washed and prepared for germination. The group also learnt about the farm's impressive nursery structure, which can be tailored to create different growing environments.

Given Queensland's warmer climate, the nursery structures act as a retractable cooling house rather than a greenhouse to regulate the plant environment, soil temperature and transpiration rate. The roof can close within two minutes in a sudden weather event and can automatically close in colder weather to retain heat. Participants admired the uniformity of the plants within the nursery, and also visited a nearby field to see baby cos being planted.

After an action-packed itinerary, participants returned to the Brisbane Convention and Exhibition Centre to prepare for the official opening of Hort Connections 2018.

INFO

AUSVEG would like to thank Brisbane Markets, John Deere Australia, Windolf Farms and Koala Farms for giving up their valuable time to meet with participants during the Horticulture Field Day, as well as Jak & Mo Taste Co. for catering lunch.



THE RINGER VISITS HORT CONNECTIONS

Those of you who have been in the industry a while may have come across The Ringer, the highly unqualified "bushy" and rural scribe who is often mistaken for the good-natured Ash Walmsley, editor of *Good Fruit and Vegetables*. To round up our special conference feature, we share some insights from The Ringer himself at Hort Connections 2018.

smoko and lunchtime spreads on offer, as well as the two morning breakfasts.

About a thousand samples of that new "Orange Candy" melon near the entrance of the trade show helped to keep the sugar levels up too.

He also managed to try a broccoli latte.

Now the Ringer's not generally the latte-consuming sort of bloke but he can attest that this was a well thought-out innovation, and that simply grinding up some cabbage stalks and shoving them into a mug of International Roast isn't going to be quite the same.

But let's get down to what a conference is really all about: free stuff from the trade show.

Folk could be seen swanning around with caps and USB drives, squishy toys, pens, toffee apples, jellybeans, sunscreen, hand sanitiser, Bluetooth speakers and something that looked a bit like a Jedi light sabre.

Sadly, The Ringer was in such an information overload stupor at the wonderment, noise and colour of the trade show, he forgot to put on his best "I'm not really interested in your product but I'd love a free Frisbee" routine and came away with squat.

Not even one of those dapper pink Boomaroo Nurseries caps from the Women in Horticulture afternoon.

It didn't matter though, as the information, contacts and memories were enough worthwhile keepsakes to savour.

So well done Hort Connections 2018.

Who knows what they'll be brewing up for Melbourne next year – beetroot espresso, perhaps?

TRADE SHOW FACTS AND FIGURES

195

Number of exhibitors

290

Number of booths

10,000m²

Floor space

2

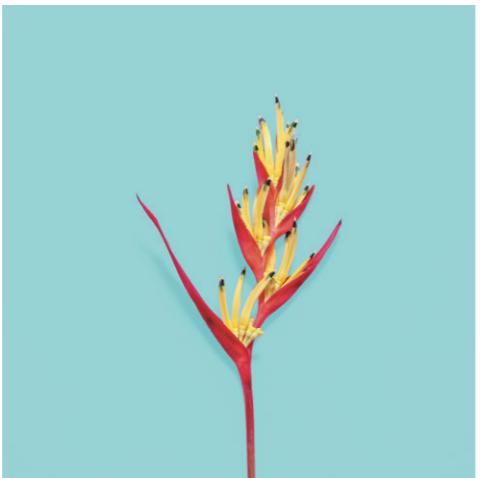
Trade Show prizes awarded

1

Sponsor: CMAA-FMA



The Brisbane Convention and Exhibition Centre hosted Hort Connections 2018 from 18-20 June.



Perfection Fresh Chief Operating Officer John Simonetta welcomed delegates to Tuesday's breakfast.



The trade show attracted almost 3,000 visitors through its doors during the three-day conference.



Grower of the Year Scott Samwell (centre) with his brother Luke and sister-in-law Deborah.



Deakin University's Dr Tony Worsley spoke at Bayer's panel on Boosting Vegetable Consumption Now!



Photography by Andrew Beveridge



Women in Horticulture attendees raised over \$7,000 for the National Breast Cancer Foundation's GO PINK week.



L-R: Growers Ryan Densley and Nick Paterniti spoke about their export experiences at the Australian Vegetables Export Seminar 2018.



The Horticulture Field Day stopped by Windolf Farms in the picturesque Lockyer Valley.



Global futurist Chris Riddell delved into the revolution of high-speed change at the Plenary Session.



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INFINITO® - NEW FUNGICIDE MODES OF ACTION INVALUABLE FOR SA GROWER



The Murray River in South Australia is a good place to grow onions, but it does bring with it a particular set of challenges, mainly around disease management.

That's because, as Swan Reach grower Peter Dettloff explains, being located in the river valley means his property receives a sea breeze most nights during the growing season.

"It does help cool things down overnight, but it also brings its fair share of issues with humid air and a high risk of downy mildew outbreaks," he says.

Mr Dettloff says the impact of downy mildew can be severe, depending on how the disease is managed.

"If you're not vigilant with regular inspections of your crop and nipping it in the bud at the early stage, you can get very significant crop loss," he explains.

"I'm in my crop basically every day of the week monitoring for outbreaks and as soon as I see something, we undertake a control program as soon as possible.

"Having said that, we maintain a fairly vigilant preventative program with regular preventative fungicides to keep the disease out in the first place."

Mr Dettloff says downy mildew resistance to fungicides has been a concern, as up until recently there have been a small number of active ingredients available in the marketplace to control the disease.

"The fact it's new chemistry is very significant – the biggest problem we've had with a lot of the current downy mildew controls is basically there's only two main active ingredients that suit our system," he explains.

"We applied INFINITO once and we got very good control, very effective – the plants that I'd identified in the crop that had downy mildew symptoms were definitely cleaned up in one application.

"It meant we didn't have to follow up and try to control downy mildew when the crop was at the crop fall stage.

"If you've got mildew still active inside the canopy once the canopy starts to fall and close, it's near enough to impossible to control," he explains.

INFINITO also showed good compatibility when the Dettloff's applied it on the downy mildew-affected crop, putting the product out with foliar nutrient to give the crop a boost.

However, compatibility wasn't the only bonus Mr Dettloff found with the new product.

"The fact it has only a seven-day withholding period meant that I would have no issues with chemical residue once the crop was harvested."

Perhaps the most significant aspect to the registration of INFINITO in the market is the options it will give growers to manage disease resistance.

"Disease resistance is a big issue, so as a grower you certainly look at trying to bring anything with new chemistry into the program to minimise those issues – it's a great step forward for the industry as a whole."

Mr Dettloff says the new chemistry in particular bring benefits to smaller operations like his.

"We can't afford to lose crop for whatever reason, basically we try and get a return off of every acre we grow."

"Using INFINITO as part of a disease management program to make sure we don't crop with severe downy mildew outbreaks is going to be very advantageous for us I believe."

More information on INFINITO can be found at crop.bayer.com.au/infinito



DEVELOPING AREA WIDE MANAGEMENT OF VEG DISEASES

A new multi-million-dollar research project began in February 2018 to address high-priority viral and bacterial diseases affecting vegetable crops. Project lead Dr Cherie Gambley from the Department of Agriculture and Fisheries, Queensland, provides an overview of the project and the long-term benefits to the Australian vegetable industry.

The Australian vegetable industry has been bolstered by a new strategic levy investment valued at over \$15 million and aimed at improving the protection of Australia's high value vegetable industry through increased capacity to diagnose and manage viral and bacterial diseases.

Nationally, vegetable production suffers major annual losses due to diseases caused by viruses and bacteria. Recent examples include the estimated loss of \$27 million to Queensland's tomato winter production in the Bowen region in a single season due to plant viruses and \$215,000 in yield loss (70-80 per cent) in one outbreak on a single Queensland property of bacterial crown and fruit rot of zucchini.

Area Wide Management of Vegetable Diseases: viruses and bacteria (VG16086) is a strategic levy investment under the Hort Innovation Vegetable Fund. This 4.5-year project includes co-investment from the Department of Agriculture and Fisheries, Queensland; Victorian Department

The management and diagnoses strategies developed in this project for existing disease problems are likely to be relevant for a number of biosecurity threats facing the industry.

of Economic Development, Jobs, Transport and Resources; the Northern Territory Department of Primary Industry and Resources; the Western Australian Department of Primary Industries and Regional Development; and the University of Tasmania and contributions from the Australian Government.

The project is supported by another specifically-focused project led by the New South Wales Department of Primary Industries and similarly funded by Hort Innovation.

EXISTING FINDINGS

Previous Hort Innovation-funded projects have identified key viruses of vegetables where further research to improve disease management will realise economic benefits to growers.

Viruses affecting cucurbits, lettuce and capsicums are a high priority and are among the selected pathogens for research in this project. Ongoing PhD research into foliar bacterial diseases of capsicum and tomato, through La Trobe University in Victoria with co-investment from Hort Innovation (*Management and detection of bacterial leaf spot in capsicum and chili crops*; VG14010) and the University of Central Queensland, has also delivered important findings for the management of bacterial diseases for vegetable crops.

Of significance is the emerging evidence of the ineffectiveness of copper bactericides (a substance that kills bacteria) to control these diseases and the broader genetic diversity of pathogen

PEST AND DISEASE CONTROL

Historically, area wide management (AWM) has been applied to the management of insect pests. It also has the potential to control plant diseases, particularly those with aerial dispersal mechanisms such as insect-vectored viruses and wind-dispersed bacteria and fungi. This type of management is contrasted with traditional management by scale and coordination, where control tactics are applied over a broad area, incorporating multiple premises to maintain pest populations below economic impact levels. Before AWM can be adopted, information is needed on pathogen-vector management options; vector migration triggers; the potential for development of insecticide resistance; alternative hosts of the pathogens and their vectors; genetic diversity of pathogens and vectors; and the effectiveness of plant host resistance.

The influence that weather has on virus vectors and bacterial populations is also important to consider when developing and implementing disease management. All of these factors are best considered at an area wide scale rather than on an individual property basis, as the actions of one grower will impact neighbouring producers throughout the district. To underpin AWM, effective diagnostics with short sample processing times are needed, as is a comprehensive understanding of pathogen and vector genetic diversity.

VALUABLE INVESTMENT

The capacity to provide pathology and entomology to industry by Australian research providers is increasingly stretched through multiple incursions of exotic pests and diseases in recent years. To address this diminishing capacity, the project will invest in early

career scientists and post-graduates through direct employment and mentoring of others. It will also invest in three PhD students, and will further address the concern through improved preparedness of the vegetable industry to exotic incursions. This will be achieved through the development of contingency plans for six key exotic threats and the development of improved diagnostic protocols for identification of bacterial and viral pathogens affecting vegetables. It will also include a review of entry pathways including seed and potential risk mitigation strategies such as seed disinfection and/or pathogen testing.

The project is nationally focused and includes leading research plant pathologists from across the country and private research providers in key regional localities. The major benefits to industry will be sustainable disease management through strategic and lowered use of pesticides, innovative use of biological control agents and protection of vital crop resistance genes. The management and diagnoses strategies developed in this project for existing disease problems are likely to be relevant for a number of biosecurity threats facing the industry.

INFO R&D

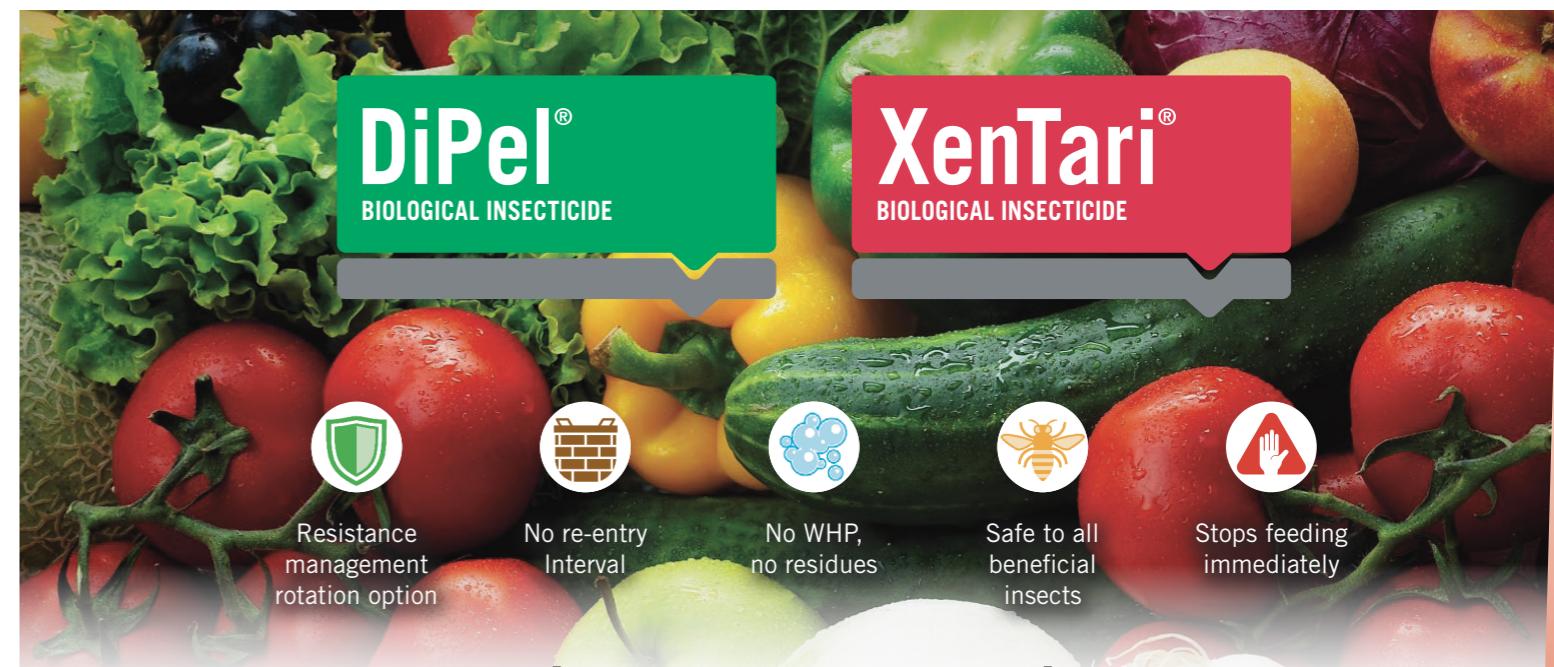
For more information, please contact Dr Cherie Gambley on 0423 200 211 or at cherie.gambley@daf.qld.gov.au.

This project has been funded by Hort Innovation using the vegetable research and development levy, co-investment from the Department of Agriculture and Fisheries, Queensland; Victorian Department of Economic Development, Jobs, Transport and Resources; the Northern Territory Department of Primary Industry and Resources; the Western Australia Department of Primary Industries and Regional Development; and the University of Tasmania and contributions from the Australian Government.

Project Number: VG16086

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Jessica Page sets up a bioassay to test pesticides on beneficial insect species. Image courtesy of IPM Technologies.

STUDYING THE IMPACT OF PESTICIDES ON BENEFICIAL INSECTS

Integrated Pest Management (IPM) combines the use of biological, cultural and chemical practices to control insect pests in agricultural production. For growers using IPM on their crops, it is important that their populations of beneficial insects aren't damaged by their use of crop protection controls. A project investigating key beneficial species and their survival when exposed to pesticides is currently taking place, as Jessica Page from IPM Technologies reports.

A research project is underway to provide information about the effects of pesticides that are available to vegetable producers on relevant beneficial species. To assist with this, researchers will test pesticides (particularly insecticides) against beneficial species of insects and mites (predators and parasites that attack pests) that are important in different crops. The species of beneficial insects and mites are mostly naturally-occurring in outdoor vegetable crops, but also include a range of species that are produced commercially for release into protected cropping situations.

Impact of Pesticides on Beneficial Arthropods of Importance in Australian Vegetable Production (VG16067) is a strategic levy investment under the Hort Innovation Vegetable Fund. This project is a joint effort by three collaborating organisations – IPM Technologies, the Department of Agriculture and Fisheries, Queensland (QDAF) and the South Australian Research and Development Institute (SARDI).

MEASURING TOXICITY

The information that is being gathered for this project is important for growers using Integrated Pest Management (IPM) practices and need beneficial species to survive and reproduce. There are usually many insecticides to choose from, but some are toxic to certain beneficial species and others are not.

Pesticides might be totally safe, moderately toxic or highly toxic to different species of beneficials. In addition to selecting pesticides based on efficacy against the target pests, growers need information about toxicity to the beneficial species of importance to them in their crops.

The species of beneficial insects and mites are very different in different crops. For example, predatory damsel bugs and hoverflies are very important in brassica crops grown outdoors and predatory mites are not very important at all. However, in capsicum crops grown under plastic or glass, predatory mites are extremely important. This means that different information is required by different growers, so pesticides need to be tested on each of the key beneficial species for different crops.

INVESTIGATING BENEFICIALS

Initially, a review of what information was already available worldwide and relevant to Australian species was conducted

to avoid repeating what was already known. Where there was no information or conflicting information, the project aims to fill those gaps by conducting bioassays on relevant species. Bioassays are used to determine the concentration or potency of a substance by its effect on living cells or tissues.

Bioassays commenced in late 2017 by all three collaborators in the project – IPM Technologies, QDAF and SARDI. It starts with acute testing and, where appropriate, progresses to sub-lethal and semi-field trials. Acute testing looks at simple survival of individuals after 24 or 48 hours, while the other tests look at survival and reproduction over a longer period of time. The reason for this sequence of testing is that the acute bioassays are considered a "worst-case" scenario, and there is no opportunity for the test insects to avoid exposure to the pesticide and there is no exposure of the pesticide to effects such as wind, rain or UV degradation, which occurs when natural and synthetic polymers are attacked by ultraviolet radiation. Products using these materials may crack or disintegrate if they are not UV-stable.

The acute tests in the first stage of testing provide a relative ranking of pesticides against each other, and subsequent testing will be used to find out how well the acute testing matches the field conditions.

At the conclusion of the project, information will be summarised and presented crop by crop. The information will summarise all test results and give an overall assessment of each pesticide against each species of beneficial insect and mite. Results will not be presented prematurely – they will be available after the full range of tests have been completed. At that point, the project will provide growers and advisers with much-needed information about the likely impact of pesticide applications on the species of beneficials of importance to them, and improve decision-making within IPM strategies.

INFO R&D

For more information, please contact Jessica Page on 0408 308 809 or at jessica@ipmtechnologies.com.au.

This project has been funded by Hort Innovation using the vegetable research and development levy and contributions from the Australian Government.

Project Number: VG16067



WIDE RANGE OF TRAINING OPPORTUNITIES AVAILABLE FOR VEG INDUSTRY

VegPRO has had a busy start to the year as it coordinates the delivery of vegetable industry training across the country.

The negotiations and influencing course was held in South Australia, Queensland, Western Australia, Victoria and Tasmania, which participants found insightful and relevant to their businesses.

At the same time, a chemical handling for vegetable crops course is being conducted in various locations. There are three fully booked sessions across Tasmania and South Australia, while a course will be held in Vietnamese and Cambodian in the Northern Territory. The chemical handling course will return to Tasmania, Victoria, South Australia and Queensland later on in the year so keep your eye out for dates.

In the lead-up to the 1 April deadline for the Horticulture Code of Conduct, VegPRO ran a series of information workshops to answer any last-minute queries and questions. To accompany these workshops, a webinar was conducted in mid-March for growers that could not make a workshop and wanted more information. This can be found on the VegPRO website.

VegPRO is also currently running a series of irrigation basic skills workshops in Tasmania, Victoria, South Australia and the Northern Territory. In addition, pest and disease workshops will be available in Tasmania and Victoria, with post-harvest management workshops to be conducted in Tasmania, Victoria, New South Wales, Queensland and the Northern Territory.

VegPRO is also proud to offer the VegInnovations Roadshow, which will examine new and innovative ways to value-add. There is certainly something for everyone.

Upcoming events are listed on the VegPRO website (vegpro.com.au) as well as the events calendars on the Hort Innovation and AUSVEG websites (horticulture.com.au and ausveg.com.au). All events are posted across all social media platforms, so make sure you follow us to keep up-to-date with upcoming training.

Now you have had a taste of what this project can offer, it is already time to plan the training calendar for 2019. It is an industry-led project where you, the industry members, get to choose the training that you require so it is important to send your ideas. This can be done by a simple email to VegPRO Coordinator Sophie Lapsley (pictured), via the online form on the website.

INFO R&D

For more information or access to resources, please contact VegPRO Program Coordinator Sophie Lapsley on 0426 200 996 or sophie@rmcg.com.au or visit vegpro.typeform.com/to/QosR2u. You can also follow the project on Twitter, Facebook or LinkedIn.

Vegetable Industry Education and Training Initiative (VegPRO) is a strategic levy investment under the Hort Innovation Vegetable Fund. This project has been funded by Hort Innovation using the vegetable research and development levy and contributions from the Australian Government.

Project Number: VG15028

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CARROT

FACTS & DATA

1 Carrots represent the most dominant vegetable commodity that is exported from Australia. Product is available year round and is shipped in refrigerated sea containers to some 15 countries. Source: *Horticulture Trade Intelligence: Vegetable, January – June 2017*

2 According to Project Harvest Wave 41 findings, carrots are expected to remain fresh for approximately 13 days, with these expectations increasingly being met all of the time.

3 The Better Health Channel revealed that eating raw carrots only releases about three per cent of the beta-carotene, while pulping, cooking and adding oil (as when cooking) increases this to nearly 40 per cent.

4 Project Harvest Wave 33 stated that consumers cook carrots in a variety of ways. Over half of consumers eat carrots raw, while stir frying and roasting are other popular cooking styles.

5 Around two thirds of consumers are unable to recall a type of carrot. Colour remains the main trigger for unprompted carrot variety awareness, according to Project Harvest Wave 37.

6 A case study entitled *Revitalising Carrots – Innovation Creating New Options for Shoppers and Driving Growth Opportunities In-Store* reports that Woolworths' Odd Bunch carrots have reached 7.3 per cent share in major supermarkets. Shoppers are enjoying the chance to buy cheaper carrots and help reduce wastage.

with dollar sales growth of 4.8 per cent. Source: harvesttohome.net.au/case-studies/revitalising-carrots

7 Harvest to Home reports that in the 52 weeks ending 21 April 2018, 93 per cent of Australian households purchased carrots.

8 Market research around the opportunity to create more vegetable snacking options to quantify market size (VG14024) found that 37 per cent of respondents said they would be likely to buy a type of pre-packaged baby carrots. When looking at the profile of these respondents, those in metro areas were the most likely to purchase this product, at 40 per cent, while people in rural areas were least likely to purchase at 30 per cent.

R&D



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Bulk spinach harvest at Emmett Murcia Agricultura in Spain.

Crop covers at Intercrop Espania.
Images supplied by Stuart Grigg.

GROWERS GAIN AN INSIGHT INTO THE GLOBAL SPINACH INDUSTRY

Fourteen Australian spinach growers, agronomists and researchers received a once-in-a-lifetime opportunity in February when they embarked on an eight-day tour of Spain's spinach industry, where they attended the two-day International Spinach Conference and visited a range of local growing operations and seed trial sites. Tour participants Carl Young and Stuart Grigg report.

In February, the International Spinach Conference converged on the Northern Hemisphere's winter vegetable growing hub of Murcia, Spain. A contingent of 14 spinach enthusiasts from Australia – comprising growers and industry representatives – attended the conference and associated production tour facilitated by East Gippsland Vegetable Innovation Days (EGVID) Pty Ltd from 10–18 February.

The largest spinach stakeholders from across the globe attended the International Spinach Conference from 14–15 February, which has previously been held in the United States, Europe and China to discuss the latest trends and issues facing the industry.

Murcia is well-suited to winter vegetable production as it is predominantly dry, with far greater daylight hours than British growing regions. For this reason, many of the British growers produce crops in this region and export to the United Kingdom and much of Europe during the cooler months.

The tour comprised three distinct focal points: grower visits, viewing seed company trial plots and attending the headline event, the International Spinach Conference.

Knowledge transfer at the 2018 International Spinach Conference (VG17004) is a strategic levy investment under the Hort Innovation Vegetable Fund.

SPANISH SPINACH IN FOCUS

Grower visits to G's Espania, Intercrop Espania and Emmett Murcia Agricultura challenged the touring party and a number of their Australian production techniques. The Spanish soils have been cropped heavily for many years and, with heavy regulations around nutrient use, composting is a major focus with high quality composts produced from a mixture of cow manure and palm fronds. The use of protected cropping at G's and floating crop covers at Intercrop enable these producers to give their customers

certainty around supply and manage the impact of adverse weather events.

Automation and investment in the production system at Emmett was an absolute highlight with minimal soil cultivation and nutrient use; minimum labour units; bulk harvesting; and a real focus on production costs. The Australian contingent particularly enjoyed and benefited from the farm visits where questions directed at the large producers regarding their trade secrets were answered, surprisingly without much hesitation.

Visits to the trial fields at Rijk Zwaan, Enza Zaden, Pop Vriend and Nunhems/Bayer exposed participants to breeder focuses and challenges. Downy mildew (*Peronospora effusa*) remains the main breeding focus internationally, largely due to challenges managing this rapidly evolving pathogen in the organic sector. Conversations around downy mildew isolates and the likelihood of a new race (race 17) being denominated in the near future alerted the touring party to the continued breeding focus and production challenges. This further highlighted the need for multifaceted management approaches for this pathogen rather than relying on genetics alone, especially with resistance genetics becoming more challenging to access.

Leaf spot pathogen resistance and management was a topic of conversation not only with spinach breeders but also Spanish producers, and was an area of research presented at the International Spinach Conference. Many of the leaf spots Anthracnose (*Colletotrichum dematium*), Stemphylium (*Stemphylium botryosum*) and Cercospora (*Cercospora beticola*) are becoming more of a challenge to manage both in the seed and leaf production systems. Presentations around inoculum levels on spinach seed, management of these inoculum levels and management of these pathogens in the crop give Australian producers some reassurance that these issues are being researched internationally with some solutions available,

should these pathogens become an increasing production issue in Australia.

New South Wales-based pathologist Len Tesoriero accompanied the touring party and soaked up the hottest topics of the International Spinach Conference, particularly around the lifecycle and interaction of spinach resistance genes to downy mildew, and recounting the findings in layman's terms to the rest of the group.

One of biggest benefits of the trip was the opportunity for networking within our own group. With every state of Australia represented, a wealth of experience and knowledge was present and shared communally.

The touring group is very grateful for the support of

Hort Innovation, Elders, E.E. Muir & Sons, Nunhems/Bayer, Rijk Zwaan and EGVID Pty Ltd. Thank you also to EGVID's Stuart Grigg and Andrew Bulmer for their thorough organisation and management of the tour.

INFO R&D

For more information, please contact Stuart Grigg on 0400 860 763 or at stuart@sgahortconsulting.com.au.

This project has been funded by Hort Innovation using the vegetable research and development levy and contributions from the Australian Government.

Project Number: VG17004

Hort Innovation
Strategic levy investment

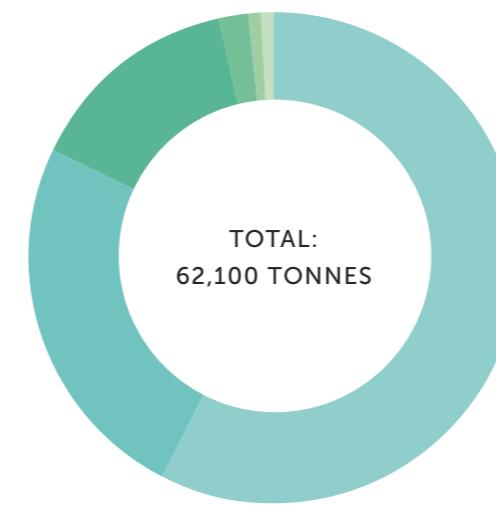
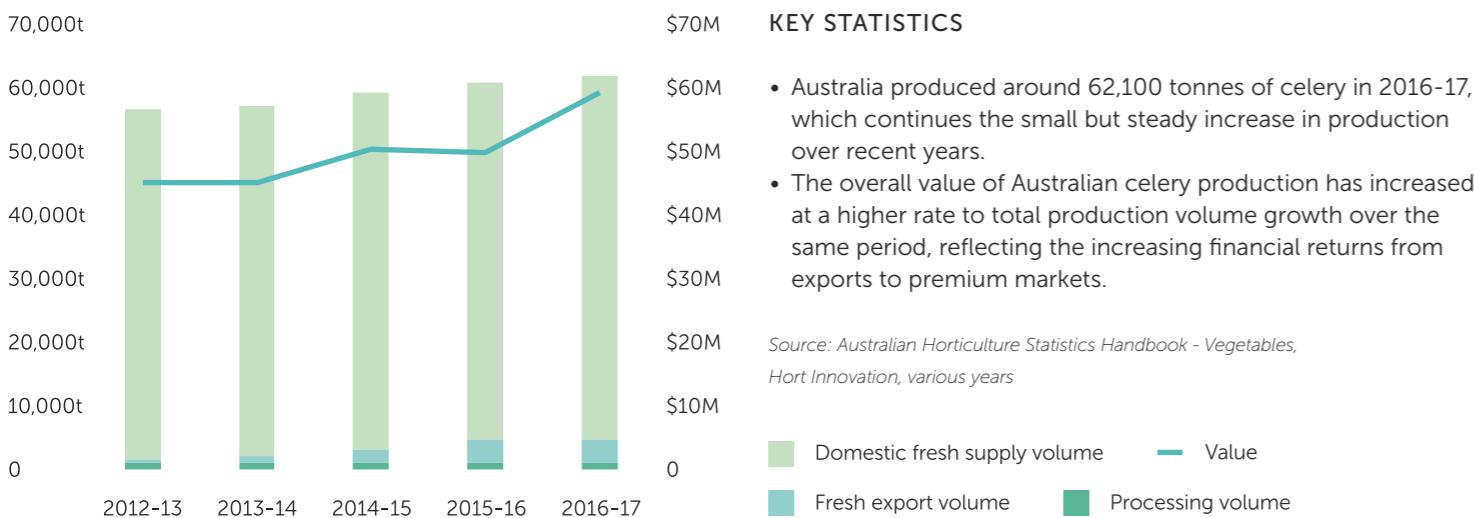
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PRODUCTION OF FRESH CELERY BY STATE 2016-17

- Australia produced around \$60 million of celery in 2016-17, up from around \$50 million in 2015-16.
- The majority of Australian celery is grown in Victoria, including the south-east Melbourne metro region. Most of the remaining Australian production comes from Queensland and Western Australia.

Source: Australian Horticulture Statistics Handbook - Vegetables, Hort Innovation, various years

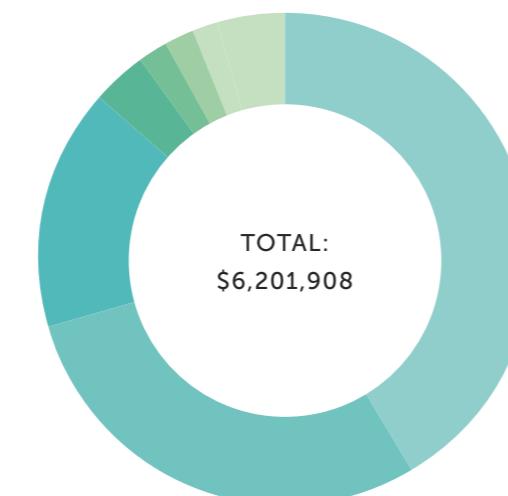
Legend: VIC (light teal), QLD (medium teal), WA (dark teal), TAS (green), SA (light green), NSW (yellow-green)

KEY EXPORT MARKETS FOR FRESH CELERY 2016-17

- Exports of fresh celery earned over \$6.2 million in 2016-17. This is the highest figure for over 20 years and is more than six times the export value 10 years ago.

Source: Global Trade Atlas, accessed June 2018

Legend: Malaysia (light teal), Singapore (medium teal), UAE (dark teal), Hong Kong (green), All other nations (light green), Japan (medium green), Indonesia (dark green)

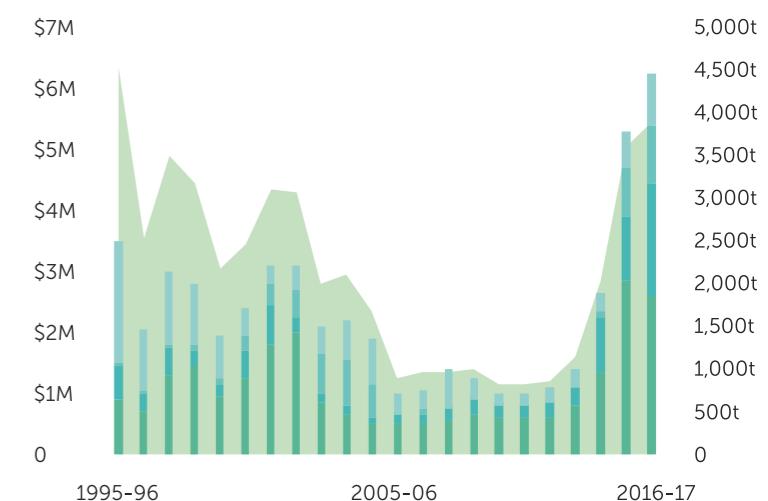


EXPORTS OF AUSTRALIAN CELERY

- Australian exports of fresh celery have seen a resurgence in recent years, largely off the back of increasing exports to high-value markets like Malaysia, Singapore and the United Arab Emirates.
- Australia is almost entirely self-sufficient for fresh celery, with only 59kg of imports in 2017, and no imports at all for more than five years before that.

Source: Global Trade Atlas, accessed June 2018

Legend: Fresh export quantity (light green), Malaysia (green), Singapore (dark green), All other nations (light teal), UAE (dark teal)



DOMESTIC HOUSEHOLD SPEND ON CELERY

- For more insights into market performance and shopping behaviour for fresh vegetables, see the levy-funded Harvest to Home dashboard at harvesttohome.net.au.

Source: Harvest to Home dashboard, Nielsen Australia, accessed May 2018

Legend: Average amount spent (light green), Percentage of buying households (dark teal)

Q2-16

Q4-16

Q2-17

Q4-17

Q2-18



The ancient Greeks and Romans considered celery to be an aphrodisiac. It does contain androsterone, a pheromone that also occurs in human sweat.

Veggie Stats data provides a broad indication of the performance of the profiled commodity and should be interpreted carefully. The data is presented at the national level and therefore does not account for differences among jurisdictions and individual growing operations. This communication has been funded by Hort Innovation using the vegetable research and development levy and contributions from the Australian Government. Project Number: VG15027



OPENING OPPORTUNITIES TO BREAK INTO THE ASIAN EXPORT MARKET

The Asian Markets Fund is one of seven funds developed under Hort Frontiers, a strategic partnership initiative led by Hort Innovation that promotes cross-horticulture investment to secure the future of the Australian industry. *Vegetables Australia* spoke to Hort Innovation R&D Manager for Trade Astrid Hughes about the importance of expanding into the Asian export market and the benefits it will provide to Australian growers.

A focus on expanding its funding model beyond traditional levy investments and better equipping Australian horticulture into the future has led Hort Innovation to develop the Hort Frontiers strategic partnership initiative.

The Hort Frontiers model facilitates collaborative cross-industry research focused on longer-term, complex and traditionally under-invested themes identified as critical for the future of Australian horticulture. Hort Frontiers can invest funds from specific horticulture levies with the advice of industry, as well as the broader research and supply chain, alongside contributions from the Australian Government. While investment sources may differ, outcomes are sought which have application across the horticulture industry.

There are currently seven themes and corresponding strategic funds in Hort Frontiers: Advanced Production Systems; Asian Markets; Fruit Fly; Green Cities; Health, Nutrition and Food Safety; Leadership; and Pollination.

AN ASIAN FOCUS

Australia's fresh horticulture exports to Asia are currently worth \$1.58 billion, and in 2017 made up a share of 77 per cent of the country's total horticultural exports. With this trend set to continue, it is critical that Australian horticulture is better positioned to capitalise on Asia's potential as an expanding export market.

"The Asian Markets Fund's purpose is to drive growth through sustainable investment in high value and high growth Asian markets," Hort Innovation R&D Manager for Trade Astrid Hughes said.

"The aim is to strengthen trade opportunities in the arc between Jordan and Japan and boost industry's capacity to trade through research activity that includes detailed consumer insight research, building strong relationships and increasing market access in key Asian markets. It is targeted to all horticulture industries and growers, including vegetables."

"The Asian Markets Fund will continue to be a key enabler of activity across Asia. Specifically, non-protocol markets (Singapore, Hong Kong, Malaysia and the United Arab Emirates) will be a focus to support all horticulture industries wanting to export."

While the Asian Markets Fund is focused on boosting industry's capacity to export and building stronger relationships with key markets in Asia, Ms Hughes said it also aims to obtain vital trade data insights and deliver innovations that anchor industry's

stakeholders in state and federal government as well as industry with a capacity to inform strategic and tactical investments that increase the attractiveness of airfreight to south-east Asia and countries in the Middle East.

"These all aim to boost industry's capacity to export and build stronger relationships with key markets in Asia by delivering trade data insights, driving efficiencies in the value chain and developing industry's position in market," Ms Hughes said.

It is important to note that the Asian Markets Fund complements existing industry-specific export projects and initiatives. Hort Innovation's Trade Unit has a role in supporting market access projects, coordinating activities and supporting the development of market access projects with industries. This includes the AUSVEG-managed and delivered *Vegetable Industry Export Program* (VG16061).

Ms Hughes said feedback from vegetable growers has been positive, particularly on the gains made through the AUSVEG program and the broader program of *Export Facilitators* (VG16085), which is managed by vegetablesWA.

GETTING INVOLVED

The Asian Markets Fund offers a range of opportunities for vegetable growers, which will ultimately benefit the industry in the long-term. Ms Hughes said these include technical market access negotiations; access to increased global demand for Australian premium fruit and vegetables driven by Asia; and strong relationships across the supply chain ensuring a commitment to delivering high quality product.

"Additionally, there is continued investment with the current program and activity within it and we will be working with industry and advisory mechanisms to develop new concepts and briefs for future investment," Ms Hughes said.

For those growers who wish to get involved or submit a project idea, concept forms can be found online at Hort Innovation's website. Alternatively, Ms Hughes said growers are invited to speak to AUSVEG National Manager – Export Development Michael Coote or contact the Hort Innovation Trade Unit (details below).

"Hort Innovation looks forward to working closely with the vegetable industry supporting and doing what we can to increase export capability and comfortably hitting the industry target of 40 per cent growth in vegetable exports to 310,000 tonnes by 2020," she said.

INFO R&D

For more information, please visit hortfrontiers.com.au or contact Astrid Hughes on 07 3198 6751 or astrid.hughes@horticulture.com.au, or Michael Coote on 03 9882 0277 or export@ausveg.com.au.

To submit an idea for a future project, visit Hort Innovation's Concept Proposal Form at horticulture.com.au/about/investing-is-our-business/concept-proposal-form. *Vegetables Australia* will profile each Hort Frontiers Fund in further detail in future editions of the magazine.

These projects have been funded by the Hort Frontiers Asian Markets Fund, part of the Hort Frontiers strategic partnership initiative developed by Hort Innovation, with funding from a range of co-investors and contributions from the Australian Government.



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NEW APHID INSECTICIDE AVAILABLE FOR AUSTRALIAN VEGETABLE GROWERS

Australia's vegetable growers are the first in the world to access a new insecticide developed to control aphids and suppress silverleaf whitefly in a range of crops.

A new insecticide was officially launched in front of more than 80 growers and industry representatives at the Hort Connections 2018 conference in Brisbane on 19 June, marking Australia as the first country in the world to register and launch the product.

Versys is the first new insecticide launched by BASF for many years. The product is registered to control key aphid species in all vegetable crops, cotton, ginger, parsley and ornamentals, and it is also registered for the suppression of silverleaf whitefly, biotype B.

The insecticide introduces a new active ingredient to Australian horticulture and cotton. Its mode of action is classified as the first member of a new chemical sub-group: Group 9D, the pyropenes.

New chemistry that provides a high level of control ... helps manage the development of resistance to older chemistry. But now that growers are running IPM programs, it's equally important that new products allow beneficials to thrive.

The product was developed to work with Integrated Pest Management (IPM) programs as it has a low impact on both beneficial insects and pollinators, as well as general environmental benefits.

"New chemistry that provides a high level of control is always very useful. That helps manage the development of resistance to older chemistry. But now that growers are running IPM programs, it's equally important that new products allow beneficials to thrive," BASF Technical Services Specialist Rohan Davies said.

"Versys can be used to protect crops throughout the flowering period – although it shouldn't be applied when bees are actively foraging in the middle of the day. That timing flexibility will be especially advantageous for fruiting vegetables, cucurbit and cotton growers, whose crops have a wider flowering window."

CONTROLLING PESTS AND DISEASE

The insecticide can control target pests and also limit the spread of damaging viruses, including the appearance of the aphid-borne cucumber mosaic virus in cucurbit crops. This is achieved as the insecticide can stop pests feeding within 15 minutes.

"Their nervous systems become overloaded with false signals," Mr Davies explains.

"They get disoriented and jittery and begin to 'dance'. Once that happens, they're incapable of feeding and therefore can't spread infection, but it's important to note you will still see aphids moving

around. It takes time for them to disappear."

The insecticide also affects aphids at all life stages.

"All insecticides should be used as soon as possible after pests appear or when you reach critical spray thresholds if using an IPM program," Mr Davies said.

"But Versys isn't dependent on controlling aphids at a single life stage to stop population numbers getting out of control."

The product has short withholding periods, which allows growers to use the insecticide up to a week before harvesting potatoes, sweetpotatoes, ginger and cotton; and one day before harvesting all other vegetable crops.

INFO

For more information, please visit crop-solutions.bASF.com.au.



AWARDS, AGREEMENTS AND ARRANGEMENTS

Understanding the various industrial instruments that apply to your horticulture business – and how to apply them properly – is one of the cornerstones of compliance with workplace relations laws. The team from Growcom's Fair Farms Initiative explains more.

There are serious penalties for breaching the Fair Work Act, the National Employment Standards, Awards and Agreements, so grower-employers must get it right.

AWARDS

Vegetable businesses would employ and pay farm workers according to the Horticulture Award. Growers may be aware that the Fair Work Commission has been reviewing and negotiating changes to the Horticulture Award since 2014.

The revised Award is close to being finalised and may be enacted in the coming months.

Industry is anticipating some significant changes to the Award. For example, casual work undertaken outside the hours of 5:00am and 8:30pm (or 4:00am and 7:30pm in Queensland during daylight savings time) may attract a 15 per cent loading for each hour. Loading on overtime above 304 hours in an eight-week period could be up to 50 per cent. Negotiations around overtime provisions for casuals are ongoing.

Permanent and piece workers would not be impacted by these changes.

ENTERPRISE AGREEMENTS

Growers may consider making an enterprise agreement as an alternative to the Award. This is a form of agreement which is negotiated with your employees, then assessed and certified by the Fair Work Commission. The resulting agreement sets out all employment conditions for your enterprise.

When a workplace has a certified agreement in place, it overrides the Award. However, the base pay rate in the agreement cannot be less than the base pay rate in the award and the National Employment Standards still apply.

Certified agreements continue to apply until they are terminated or replaced, even if their nominal expiry date has passed.

INDIVIDUAL FLEXIBILITY ARRANGEMENT

Another option is an Individual Flexibility Arrangement (IFA) – an agreement made with an individual employee that does not need to be approved by the Fair Work Commission.

IFAs allow for variations to the effect of modern awards or enterprise agreements. They are aimed at meeting the genuine needs of employers and individual workers, while ensuring

minimum entitlements and protections are not undermined.

An IFA can only be entered into after the employee has commenced work and it cannot be a condition of employment.

IFAs must be made using the appropriate methods, meet the National Employment Standards and achieve the Better Off Overall Test (BOOT). If the Fair Work Ombudsman finds an IFA does not meet the criteria, penalties may be imposed on the employer.

An employer must ensure that the employee is better off overall with the IFA than without it, compared to their award or registered agreement at the time the IFA was made. To do this they should look at the financial and non-financial benefits for the employee, as well as the employee's personal circumstances.

The employer or employee can request to enter into an IFA. An employee can refuse to enter into an IFA and cannot be discriminated against for refusal.

An IFA can only be used to vary the following clauses of the award:

- Arrangements for when work is performed, such as working hours.
- Overtime rates.
- Penalty rates.
- Allowances.
- Leave loading.

An IFA made under a flexibility term in a modern award or enterprise agreement must:

- Not include anything unlawful.
- Be genuinely agreed upon by you and the relevant employee.
- Not require approval by a third party (other than a parent or guardian if the relevant employee is under 18 years of age).
- Make the relevant employee better off overall than if no arrangement was in place.
- Be able to be terminated by either you or the relevant employee.
- Be set out in writing.
- Be signed by both you and the employee (or their parent or legal guardian if they are under 18 years of age).
- Be provided to the relevant employee within 14 days of the arrangement being agreed upon.

An agreement needs to include a provision for an IFA. This clause in the agreement will state what clauses can be varied using an IFA.

INFO R&D

Further information regarding your obligations as an employer is available at fairwork.gov.au and growcom.com.au.

The Fair Farms Initiative is delivered by Growcom, in collaboration with industry and supply chain stakeholders. It is supported with seed funds from the Fair Work Ombudsman community engagement grants program.



Participants visited Koppert Cress' facilities in the Netherlands after attending Berlin Fruit Logistica.

AUSSIE VEGETABLE GROWERS LEAD THE WAY TO EUROPE

In February, eight levy-paying vegetable growers briefly said goodbye to the warm, sunny summer days to attend the 2018 European Industry Leadership and Development Mission. While on the mission, the group visited the Berlin Fruit Logistica trade show as well as the Berlin wholesale market before travelling to the Netherlands to meet with researchers and agribusinesses.

Eight levy-paying Australian vegetable growers embarked on the trip of a lifetime when they jetted off to Germany and the Netherlands for the 2018 European Industry Leadership and Development Mission, which took place from 5-13 February.

The main objective of the mission was to ensure that members of the Australian vegetable industry were exposed to the latest technological innovations, industry research and networks while gaining a comprehensive understanding and appreciation of the European vegetable industry.

It also provided participants with a unique opportunity to interact with each other to strengthen their local networks, which has proven beneficial following their return to Australia.

The 2018 European Industry Leadership and Development Mission (VG15701) was a strategic levy investment under the Hort Innovation Vegetable Fund.

A GLOBAL PERSPECTIVE

The mission began with the 2018 Berlin Fruit Logistica trade show (held from 7-9 February). This year's delegate and exhibitor numbers surpassed 2017 figures; and with more than 3,200 stands (2,960 of those international), every aspect of the horticulture supply chain appeared to be covered.

Participants were able to explore new machinery and equipment that could assist with their on-farm production practices, with many in awe of the extensive size and scale of the exhibition space. While machinery exhibits were a highlight for the group, the latest innovations in product marketing and

packaging was also of interest. Product innovations included 'collective ingredient' packages that outlined the ingredients for a meal (such as lasagne, ratatouille or risotto) so that consumers can pick them up in an easy and convenient way and cook healthy meals at home.

Throughout the event, participants met with representatives from Bayer, Syngenta, Rijk Zwaan, Koppert Cress and the Produce Marketing Association. These companies hosted some or all of the growers at their stands and were generous with their time to discuss their products, services and experiences in the international fresh produce industry.

TO MARKET, TO MARKET

Participants braved the cold weather on a Friday morning to make their way to the Berliner Großmarkt, Berlin's fresh produce market. The market is located 20 minutes from the city centre, which allows for easy accessibility for buyers from central Berlin.

The total floor space of the market is 85,000 square metres, with around 50 wholesalers stocking more than 500 varieties of fruit and vegetables. The Großmarkt can handle 220,000 tonnes of produce per year through its 80 undercover loading docks.

During the visit to the market, the group compared the market's operations with those in their respective home states. Delegates were impressed with the packaging and quality of numerous lines that they had not seen in Australia, and were interested to learn about the origin of produce available at the market, including product sourced from Spain, Greece and Israel.

GOING DUTCH

After exploring Berlin, the group travelled to Rotterdam in the Netherlands. The first stop was Wageningen University, one of the world's leading research institutions for the global horticulture and agrobotic industries. Wageningen Food and Biobased Research Postharvest Technology R&D Manager Janneke de Kramer provided a facility tour of many of the university's research and development facilities. Participants also visited the automated technology and robotics area, where they were shown prototypes of the latest in automated farm machinery including an automated fruit picking machine that uses suction technology to pick fruit while limiting damage to the product.

The group was then welcomed into the global headquarters of Rijk Zwaan, one of the world's leading vegetable seed companies. Led by Rijk Zwaan Export Director Jan Omvlee, the group viewed the company's facilities, including Rijk Zwaan's proprietary seed and seed resistance technologies, as well as its seed germination facilities.

Innovative vegetable producer Koppert Cress was the final destination for delegates. Koppert Cress produces microgreens and has built a brand and marketing campaign that has set the business apart as a premium producer. It even sells produce to high-end Michelin star chefs.

The delegation was hosted by Stijn Baan, who provided an in-depth presentation on the company's history and values in producing high quality niche vegetable products. Participants also received a first-hand look at Koppert Cress' facilities, which included its innovative microherb production practices. The group

learnt about the company's focus on marketing and its different channels to market (all of which are for the food service industry), and participants were highly interested in the company's strong focus on marketing and establishing a niche market for its unique products.

FORGING CONNECTIONS

After a week of exposure to influential contacts from leading international businesses and witnessing the latest in global horticulture trends, the group returned to Australia armed with fresh ideas, greater insights and international contacts which will be important for the growth of their businesses as well as the wider Australian vegetable industry.

Participants are encouraged to share knowledge and networks gained with other growers through local networks as well as face-to-face discussions with their peers to help improve the overall viability of the national vegetable industry into the future.

INFO R&D

AUSVEG would like to thank those who gave their valuable time to meet with the delegation, particularly Rijk Zwaan, Wageningen University, Koppert Cress, Bayer, Syngenta and the Produce Marketing Association.

The final report for this project will be made available on the InfoVeg database at ausveg.com.au/infoveg.

This project has been funded by Hort Innovation using the vegetable research and development levy, contributions from Australian vegetable growing businesses and contributions from the Australian Government.

Project Number: VG15701

Hort Innovation
Strategic Levy Investment

VEGETABLE FUND

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RETAILERS PLAY THEIR PART IN THE FIGHT AGAINST HUNGER IN AUSTRALIA

According to the *2017 Foodbank Hunger Report* – an annual snapshot of the hidden problem of food insecurity in Australia – 3.6 million Australians have experienced food insecurity in the last 12 months. To combat this, Foodbank works with the entire supply chain to capture and deliver food to Australians in need in the most efficient way, which includes working closely with the retailers to capture fresh produce.

Foodbank is Australia's largest food relief organisation, providing 67 million meals a year to more than 2,400 charities nationally. This accounts for 65 per cent of all the food distributed to charities by food rescue organisations in Australia.

Foodbank works with the entire Australian food and grocery industry – from farmers and wholesalers to manufacturers and retailers, who donate food and grocery products (including fresh fruit and vegetables), raw ingredients, packaging, production capacity or transport.

Australia's big four supermarkets also play their part in reducing waste and combating hunger, with Woolworths, Coles, Aldi and Metcash all partnering with Foodbank. *Vegetables Australia* spoke to these retailers about why they decided to get involved in this initiative, and how the produce intended for Foodbank is captured from suppliers and growers.

SUPPLY AND DEMAND

Woolworths Supermarkets Head of Produce Paul Turner acknowledged the company's commitment to reduce food waste throughout the supply chain and the growing need to address hunger relief in the community. Woolworths established a partnership with Foodbank in 2002 through a basic National Foodbank Donor Agreement.

"Late last year we entirely rewrote this agreement to bring it into line with all of the products that we sell today," Mr Turner said.

"This partnership gives us the ability to quickly and efficiently identify and divert surplus produce and goods. In the past when a product was rejected, it might sit there for some time. Now this is instantly authorised for donation, and we can facilitate the logistics in a timely manner. This helps prevent waste and gets food to people in need in its freshest condition."

Foodbank's state teams work directly with Woolworths quality assurance to identify and capture everything edible that cannot be sold.

"Being involved with Foodbank is a win-win-win: good for the environment; good for the community; and good for business," Mr Turner said.

Coles has been a proud partner of Foodbank since 2002 and over the past seven years, it has donated the equivalent of more than 15 million meals to people in need.

"We work closely with Foodbank to reduce food waste and provide nutritious meals to people facing hardship by rescuing

surplus, edible food from our stores and distribution centres nationwide," a Coles spokesperson said.

"Partnering with food rescue programs helps us to combat food waste throughout our store network and ensures unsold, edible food ends up on the plates of those in need, instead of contributing to landfill."

Aldi is also a charity partner of Foodbank and since 2016, has donated a variety of products including fruits, vegetables, meat, fish, poultry, canned food and dry food that is suitable for donation.

"Retailers have a responsibility to support and assist the communities in need and also lower the risk of environmental impacts associated with landfills," Aldi Corporate Responsibility Director Daniel Baker said.

"We encourage growers and industry members to make and maintain relationships with food charity partners and regularly donate surplus good quality product."

Another Foodbank retail partner is Metcash, which is increasingly expanding its donation network across the organisation and departments.

"The Foodbank philosophy of 'fighting hunger' aligns with our philosophy of creating thriving, healthy and happy communities. So for us, the partnership is a natural fit," Metcash Manager Corporate Responsibility Meredith Banks said.

Currently Foodbank is undergoing two very positive trials with Metcash, using its interstate freight channels and distribution network into regional communities to help distribute donations.

"We are actively working together with Metcash's Fresh team to raise awareness to enable more produce donations and product to be diverted to Foodbank in the instance that it can't go to stores," Foodbank General Manager – National Supply Chain Michael Davidson said.

"Two of the things that growers are often surprised to hear is that our retail partners have approved for their pre-packaged private label products to be donated to Foodbank, and that we have accounts with all major pooling equipment providers, meaning donations can be made in any of the retailers' crates. Both of these things help streamline the donation process, saving donors both time and money, and allowing Foodbank to get nutritious food to people in need as quickly as possible."

INFO

If you're not already dealing with Foodbank either locally or nationally but would like more information or to find out how you can donate, please visit foodbank.org.au.



PLANNING CROP ROTATIONS AND RESIDUAL HERBICIDES

Herbicides are essential to conventional vegetable growing operations. Syngenta Technical Services Lead Dave Antrobus investigates the range of herbicide options available to assist in weed control and those that are tolerable to existing and future crops.

With residual herbicides it's worth making particular note of, and planning for, any plant-back restrictions stated on the label. Plant-back intervals can impact on future cropping options simply because some residual herbicides used on one vegetable crop may require a longer period before a sensitive crop can be safely planted to avoid injury to seedlings.

If we take the residual herbicide atrazine (applied in sweet corn) as an example, the high label rate has a plant-back for following sensitive vegetable crops of 18 months. Labels should always be followed with regards to the planting of sensitive crops following herbicide treatments.

ADVICE FOR GROWERS

The key message is for growers to look at the weed pressure and plan crop rotations in advance to avoid issues from residual carry over in the soil. It is no good selecting a herbicide that gives good weed control, only to find its residues in the soil mean you can't plant the following crop you intend.

If you think you need to apply a very high rate, stop and ask yourself why. Never be tempted to use above label rates because that only intensifies potential residual issues and may even lead to phytotoxic crop damage. Applying residual herbicides more frequently than the label allows can also lead to crop damage.

Label rates are well-researched and over many trials have shown to give effective weed control and be well-tolerated by the crop when applied correctly.

Always follow the Australian Pesticides and Veterinary Medicines Authority's recommendation which states, "No matter which pesticide you use or where you use it, you should always read and understand the label instructions and use only as directed."

INFO R&D

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.

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.



PUTTING BIOSECURITY INTO PERSPECTIVE

In this edition, AUSVEG Biosecurity Adviser Dr Kevin Clayton-Greene discusses the importance of maintaining biosecurity practices both on-farm and in the freight and travel industries, and reiterates the need for growers to report any pest incursions occurring on their property.



As I write this column in June, AUSVEG is currently engaged in 19 responses under the Emergency Plant Pest Response Deed (EPPRD). Of these, five are being cost-shared, however most are being covered by the Plant Health Australia Levy. One is subject to an extra levy due to its size, which is the tomato potato psyllid incursion and the measures being taken to prevent the bacterium *Candidatus Liberibacter solanacearum* arriving in Australia.

Each of these activities requires Consultative Committee on Emergency Plant Pests activity including teleconferences, comment on Response Plan activities and also technical/background research on the pest in question. It is an unfortunate fact that the amount of EPPRD activity is only likely to increase in the future. This is due to the sheer number of visitors to Australia and the ever-increasing volume of trade. To put these figures into perspective, it is worth considering the size of the task.

A BURGEONING RISK

According to Tourism Australia, in the last year Australia received approximately nine million passenger arrivals from around the world. This equates to approximately 25,000 people per day or 66 jumbo jet loads. Add to this almost 900 cruise ship visits, and then the fact that Australia imports around 100 million tonnes of freight a year by sea and a further one million tonnes of air freight. All of these numbers have consequences for our biosecurity system and each statistic is increasing year-on-year, with sea trade alone expected to double over the next two decades.

This raises the question of whether there is any point in trying to stem this continual assault on our industry and environment. I believe the answer is yes; however it is clear that increasing resources need to be devoted to the effort. Unfortunately, biosecurity is an activity that is usually well out of the public eye and the lack of news is a measure of its success. The continual activity and interceptions, eradication etc. of potential pests does not make news – it is only when the system has a failure that we hear about it.

Within the past year, we have seen the value of the system through the interception and likely eradication of brown marmorated stink bug from several locations in Australia. This

pest has the potential to not only cause significant crop loss but also have a severe social impact due to its propensity to invade dwellings in autumn. Literally hundreds of thousands of these stink bugs have been recorded invading individual houses in the United States.

So what can we do? As I have written on a number of occasions, biosecurity begins with us and what measures we individually and collectively take to practice biosecurity. Do we have an on-farm biosecurity plan and if so, is it used? Do we manage weeds? How do we manage crop residues and people and vehicles entering our property?

Pretending we do not have a pest or ignoring them is not a viable option. Our trading partners will find them if we don't and the consequences are then clear. Secondly, there is a view among some that reporting is the road to ruin. This is a strange logic. Pests generally don't self-eliminate and someone will find it somewhere, maybe even on your produce. If the pest has been around for any length of time it is likely to be well-established with little chance of eradication and response under the EPPRD. Thus, there is little chance of any compensation of Owner Reimbursement Costs under the Deed.

Furthermore, one of the learnings from the debriefs that have occurred from TPP and other incursions is the need to strengthen the provisions in the EPPRD to ensure that first reporters and those directly impacted by a pest outbreak are able to quickly access assistance. Our only hope for the future of surveillance is reporting; the alternative is possible potential ruin anyway. It's better to have some chance than none!

INFO R&D

For more information, contact AUSVEG on 03 9882 0277 or email info@ausveg.com.au.

The project *Consultancy Services for Strengthened Biosecurity of the Vegetable Industry – Phase 2* is a strategic levy investment under the Hort Innovation Vegetable Fund. This project has been funded by Hort Innovation using the vegetable research and development levy and contributions from the Australian Government.

Project Number: VG15023

Hort
Innovation
Strategic levy investment

VEGETABLE
FUND



Hort Connections 2018 garnered plenty of media attention in the weeks leading up to and during the conference from 18-20 June, including a live broadcast of ABC Queensland's *Country Hour* program.

Interviews with National Awards for Excellence winners such as Grower of the Year Scott Samwell and Young Grower of the Year Chris McLoughlin featured across a range of media outlets, and the extensive list of nominees for the awards also attracted media attention ahead of the conference.

Reports from conference speaker sessions also appeared across print and online media outlets, including Assistant Minister for Agriculture and Water Resources Senator the Hon. Anne Ruston's official opening of the conference; futurist and keynote speaker Chris Riddell; and the State of the Industry panel discussion, with AUSVEG CEO James Whiteside's contributions to this panel appearing in print media.

Media outlets also reported on events such as the Reverse Trade Mission, which allowed a delegation of 40 buyers from a diverse range of export markets to visit some of Queensland's leading fruit and vegetable farms, as well as the Taste Australia Fresh Produce Showcase, to meet export-ready growers and witness the high quality produce that Australia has to offer.

Hort Innovation's now-infamous broccoli latte at the Hort Connections trade show also sparked plenty of media interest during the conference.

LABOUR ISSUES

Following the conference, Mr Whiteside appeared on ABC's *Landline* and *7.30* programs in a feature story on labour in the horticulture industry and the introduction of overtime for casual workers into the Horticulture Award. Mr Whiteside

noted that growers find it hard to pass costs on and that AUSVEG would be talking to retailers about how to handle any cost increase if the Award is amended.

R&D NEWS

Following the announcement of the 2018-19 Federal Budget, AUSVEG welcomed the inclusion of \$121.6 million in increased investment for biosecurity-related services and activities, as well as additional funding for six agricultural counsellors to represent Australia in emerging export markets.

AUSVEG National Manager – Export Development Michael Coote commented on the strong performance of Australian fresh vegetable exports in May and noted that this growth is heavily supported by strong-performing products such as carrots and broccoli to the Middle East and Asia.

AUSVEG Biosecurity Officer Madeleine Quirk also appeared on radio discussing biosecurity in the backyard, as well as a new pilot program targeting biosecurity urban areas and community gardens.

AUSVEG Deputy Chair Belinda Adams and National Manager – Communications Shaun Lindhe also appeared in the media in June, promoting the relaunch of the levy-funded Veggycation website and the benefits it can offer vegetable growers, health professionals and the broader public.

INFO R&D

Communication of R&D projects in the Australian vegetable industry has been funded by Hort Innovation using the vegetable research and development levy and contributions from the Australian Government.

Project Number: VG15027

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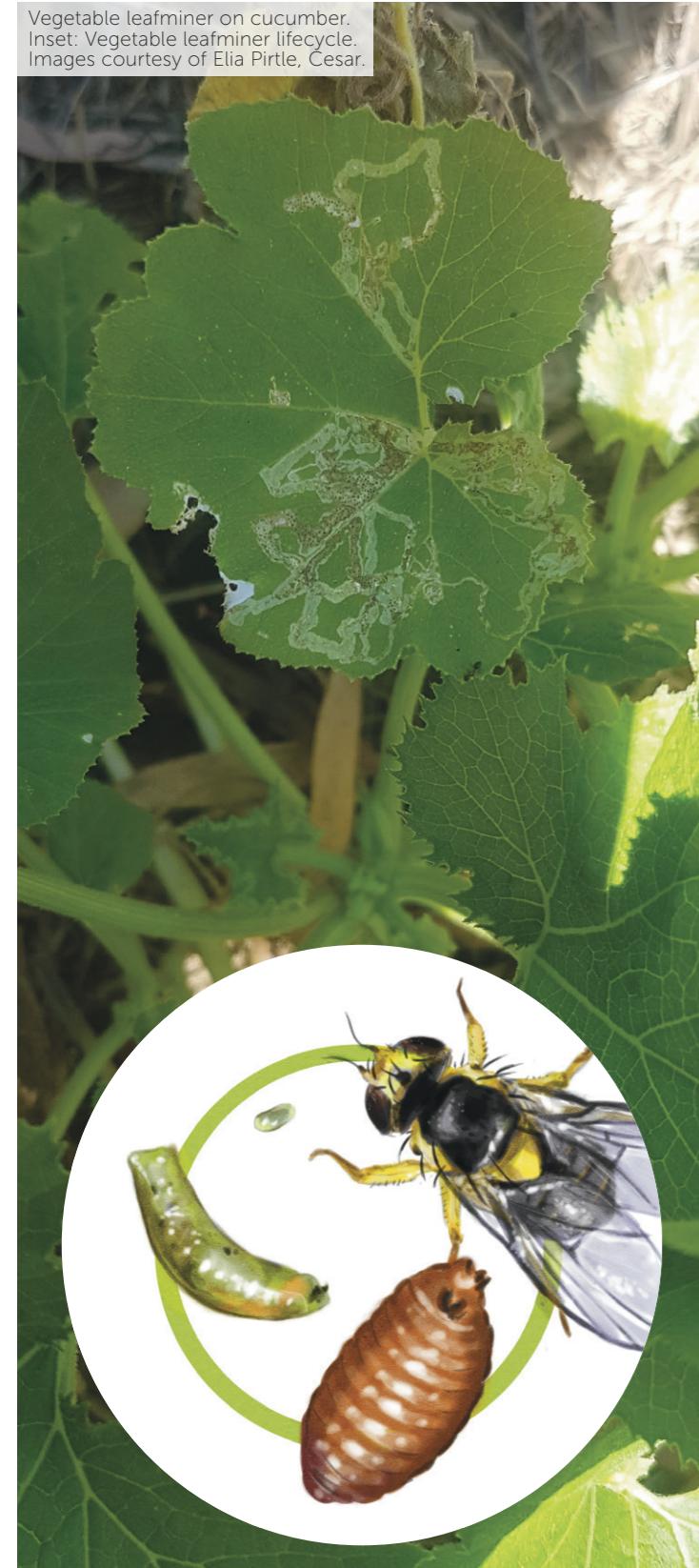
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ENHANCING FUTURE PREPAREDNESS FOR THE VEGETABLE LEAFMINER

This edition of *The Front Line* provides an update on the ongoing strategic levy investment project for the vegetable leafminer. The project involves many research, development and extension activities that will help the Australian vegetable and nursery industries prepare for the pest. AUSVEG Biosecurity Officer Madeleine Quirk speaks to Dr Peter Ridland, an entomologist at the University of Melbourne, to find out more.



Project MT16004 – RD&E Program for control, eradication and preparedness for Vegetable Leafminer (2017–2020), a strategic levy investment under the Hort Innovation Vegetable and Nursery Funds, brings together Cesar, the University of Melbourne, Plant Health Australia, the Northern Australia Quarantine Strategy and AUSVEG to undertake a number of activities to prepare for the vegetable leafminer (VLM).

Since 2008, the VLM has been moving down the Torres Strait Islands and in 2015, the pest was detected on the Cape York Peninsula in northern Queensland. MT16004 was developed in recognition of the impact that the VLM could have on Australian vegetable and nursery production industries if it were to move into vegetable production areas.

The project has many facets, including: identifying spread pathways of the VLM to Australia; modelling the spread from Cape York Peninsula; investigating biological and chemical control; developing management guidelines and trapping methods; developing a VLM contingency plan; and communicating updates as they arise throughout the lifetime of the project.

WHAT IS THE VEGETABLE LEAFMINER?

The VLM is one of a small group of agromyzid leafminers that attack a very wide range of host crops, primarily in the Cucurbitaceae, Fabaceae and Solanaceae families. They can also move readily between non-crop and crop plants.

The feeding habits of these pests can be devastating to crops. High levels of mining reduce yield and can also lead to premature defoliation in some crops.

"The adult female fly scrapes circular feeding holes in the plant surface with her ovipositor," University of Melbourne entomologist, and consulting entomologist on the project, Dr Peter Ridland said.

"This damage can facilitate infection by some plant pathogens including bacteria, fungi and viruses," he continued.

Eggs are also laid in some of these feeding holes. Legless larvae hatch and feed internally, forming the characteristic mines in the leaf. However, larvae are generally held in check by generalist parasitoid wasps, which lay their eggs inside other insects or beside other insect larvae, including agromyzid flies.

CURRENT PROJECT FINDINGS AND FUTURE ACTIVITIES

Dr Ridland is reviewing global scientific literature on biological control options for VLM and is compiling a comprehensive overview of research previously conducted in Australia on agromyzids and their parasitoids. In his experience, the review has been important in setting the direction for research in biological control strategies for VLM.

A key finding of the research team has been the recognition that Australia already has a large number of generalist parasitoid species attacking endemic agromyzids and that it will not be necessary to import foreign species as biological control agents for VLM.

"Our challenge will be to utilise existing parasitoid wasps effectively in VLM management while recognising the constraints placed by pest management requirements for other key pests in the crops," Dr Ridland said.

"The second year of the project will see a major emphasis on collecting and rearing parasitoid wasps from a range of agromyzid hosts in the major horticultural areas in eastern Australia.

"We intend to define the distribution of the parasitoid, *Diglyphus isaea*, which to date has only been found in south-eastern Australia."

Dr Ridland and the project team are also very interested in receiving reports of leafmining activity on crop and non-crop plants from growers and consultants.

COULD RESEARCH EFFORTS BE APPLIED TO OTHER LEAFMINER SPECIES?

Dr Ridland added that the information gained from MT16004 on the Australian fauna of generalist leafminer parasitoids will also be directly applicable to two other closely related leafminer species, *L. huidobrensis* and *L. trifolii*. These species are currently found in south-eastern Asia and some nearby Pacific Islands, and both pest species are considered to be more damaging pests than VLM, largely due to the high level of insecticide resistance in the invading populations found in Asia.

INFO R&D

For more information, contact AUSVEG Biosecurity Officer Madeleine Quirk on 03 9882 0277 or madeleine.quirk@ausveg.com.au. Alternatively you can visit the project page on the AUSVEG website at ausveg.com.au/biosecurity-agrochemical/biosecurity/mt16004/.

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 project has been funded by Hort Innovation using the nursery and garden and vegetable research and development levies and contributions from the Australian Government. The Vegetable and Potato Biosecurity Program is funded by the Plant Health Levy.

Project Number: MT16004

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KEY PROJECT PERSONNEL

University of Melbourne entomologist Dr Peter Ridland's extensive experience is of great value to the vegetable leafminer project.

Dr Ridland has worked on many different pests of field crops, pastures and vegetables at the Victorian Department of Agriculture (1974–2005) as well as completing his PhD on the biology and ecology of cereal root aphids at La Trobe University in 1988. He also worked on a series of entomological projects in Indonesia looking at pests of vegetables and potatoes in the 2000s.

"I was fortunate to lead an ACIAR project looking at two invasive pests which were considered to be potentially very important pests in Australia: vegetable leafminer (*Liriomyza sativae*) and potato leafminer (*L. huidobrensis*)," he said.

Dr Ridland has an abiding interest in helping farmers manage pests by promoting natural enemies (including parasitoids and predators) in crops by avoiding indiscriminate use of broad-spectrum insecticides and using more specific chemicals in a targeted fashion.

"Our knowledge and experience from the ACIAR project has provided a solid foundation to the Hort Innovation project," he stated.

Dr Ridland also plays a role in developing a contingency plan for VLM, which is being led by Plant Health Australia. He is also assisting other project members with their sub-projects where required and he sits on the Project Steering Committee.

In addition, Ary Hoffman (University of Melbourne) and Paul Umina (Cesar and University of Melbourne) are working alongside Dr Ridland to co-supervise a Masters student, Marianne Coquilleau, whose focus is to determine the distribution and diversity of leafminer parasitoids in key vegetable and nursery production areas in Australia. Her work will involve sampling main agromyzid leafminer species and parasitoids and use molecular tests to identify them.

Xuefen-Xu from Sun Yat-Sen University in China has just enrolled as a PhD student and she is likely to be looking in detail at the genetic structure of VLM populations around the world to assist in the pathway analysis of VLM being undertaken in the project.

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SPOTLIGHT ON SOIL HEALTH: DISEASE MANAGEMENT, BIOFUMIGATION AND REDUCED TILL

The Soil Wealth and Integrated Crop Protection (ICP) project works with growers nationally to put soil management and plant health research into practice. This edition provides an update from demonstration sites in Western Australia, and outlines practical tips and tools on biofumigation and reduced till in vegetable production. Project VG16078 is a strategic levy investment under the Hort Innovation Vegetable Fund.

UPDATE FROM CARNARVON, GINGIN AND MYALUP, WA

Dr Doris Blaesing and Dr Len Tesoriero from the Soil Wealth ICP team headed to Western Australia recently with a full program of events and trial updates.

The week was organised by the National Vegetable Extension Network (VegNET) team from vegetablesWA, with the first stop in Carnarvon. Here, Doris and Len engaged with growers on better managing soilborne diseases, soil health, crop nutrition and the importance of area wide biosecurity and farm hygiene. In addition to the evening workshops, a number of farms were visited during the day.

It was then off to the Gingin project demonstration site, which is looking at a new humus-like product (Novihum), set up by Center West Exports. This column will provide updates on the trial over the coming months.

Doris and Len also attended the vegetablesWA Leafy Variety Trial at the Loose Leaf Lettuce Company and engaged with growers, seed company representatives, resellers and input suppliers to collect new information and project ideas. Len reported on soilborne disease trials with baby leaf spinach (project VG15009 – *Improving soilborne disease diagnostic capacity for the Australian vegetable industry*), while Doris introduced the new Phase 2 Soil Wealth ICP project.

Next up was a visit to the University of New England (UNE) cover crop trial at Ivankovich Farms in Myalup. This is a great example of cooperation between researchers and industry, with Chris Fyfe from the UNE leading the project alongside contributions from the cover crop project; South Australian Research and Development Institute (SARDI) disease diagnostics; Soil Wealth ICP; and importantly agronomist David Gray (monitoring), and the host grower and team on-farm.

The trip concluded with a visit to Swan Systems to investigate smart irrigation management technology, and Organic Farming Systems to learn about new biological products.

These discussions will continue with potential linkages to the demonstration sites in Western Australia and other states.

BIOFUMIGATION IN FOCUS

Biofumigation is the use of specialised cover crops, which are grown, mulched and incorporated into the soil prior to cropping. High biomass, especially roots, can provide the traditional benefits of green manure crops and, if done right, naturally-occurring compounds from the biofumigant plants can suppress soilborne pests, diseases and weeds.

A fact sheet has been developed by the project team that covers common biofumigant crops, benefits and how to best manage them in your rotation.

REDUCED TILL IN VEGETABLE PRODUCTION

Reduced till is a system change that relies on keeping the soil in a healthy condition through the use of permanent beds, controlled traffic, cover cropping and crop rotations rather than frequent cultivation.

A fact sheet is available on this topic and outlines the benefits and challenges of reduced till, including a case study from the Cowra, New South Wales demonstration site.

You can access all the resources in this article, as well as news and events from around the country, at soilwealth.com.au.

INFO R&D

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.

This project has been funded by Hort Innovation using the vegetable research and development levy and contributions from the Australian Government.

Project Number: VG16078

Hort Innovation
Strategic levy investment



EXTENSION UPDATES: TASMANIA AND NEW SOUTH WALES

In this edition, Tasmania Industry Development Officer Emma Egan and her New South Wales counterpart Matthew Plunkett provide an update on the activities that have been undertaken in their respective states through the National Vegetable Extension Network (VegNET). VegNET is a strategic levy investment under the Hort Innovation Vegetable Fund.

TASMANIA

In April 2018, VegNET facilitated a Vegetable Industry Research, Development and Extension (RD&E) Prioritisation Meeting in partnership with the Tasmanian Farmers and Graziers Association. More than 30 growers, researchers, advisers and processors gathered in Port Sorell to discuss future needs of the industry and regional RD&E priorities.

The purpose of the workshop was to seek input from growers, researchers, processors and advisers on research needs, so that projects can be developed to address these needs. RD&E ideas put forward encompassed a range of topics, from quality assurance systems to measuring soil health and irrigation supply gaps to Integrated Pest Management.

The identified RD&E outcomes provide direction for industry stakeholders, including researchers, to develop projects that address regional industry priorities.

A Women in Vegetable Businesses Lunch was also held in April with Allison Clark of Optimum Standard, which provided the opportunity to learn about product development and consumer insights. In the south, a farm walk was held at Houston's Farm to visit a cover crop trial and local growers also attended an informal discussion about vegetable diseases.

We are currently seeking expressions of interest for a tour to Victoria in early August 2018. The tour will provide the opportunity to visit markets, logistics companies and farm businesses in Melbourne and surrounds.

FUTURE EVENTS

Upcoming VegPRO training courses include chemical handling and irrigation training. Head to vegpro.com.au for further details.

If you're interested in attending the Victorian tour or would like to subscribe to the VegNET Tasmania mailing list, contact Industry Development Officer Emma Egan on 0448 214 745 or emmae@rmcg.com.au.

NEW SOUTH WALES

The 2017-18 financial year has been a busy one for the New South Wales VegNET team, delivering 40 events that attracted more than 800 participants across the Greater Sydney, North Coast and Central Tablelands regions.

VegNET NSW Industry Development Officer Matthew Plunkett

said the events centred on growing areas of interest for the vegetable industry including protected cropping, pest and disease management, spray application efficiency, soil health and biosecurity.

"The Greater Sydney Local Land Services Demonstration Farm has been a huge centre point for many of our events, including a series of successful cover cropping and low cost protective covers farm walks," Matt said.

"We also hosted our first group of Chinese growers at the farm to showcase the results of a successful parsley variety trial."

UPSKILLING GROWERS

Other highlights include the delivery of targeted training to Sydney-based Vietnamese vegetable growers on Integrated Pest Management and greenhouse hydroponics. The group was also taken to an Austral protected cropping facility, which features an efficient and effective water recycling system that has dramatically decreased input costs.

"We have had several growers report on-farm practice change as a result of this training, and over the next six months we will provide further technical support to encourage more of this," Matt said.

Following on from that event, VegNET NSW teamed up with Protected Cropping Australia to run a sold out two-day tour of thriving protecting cropping enterprises throughout the Central Coast.

Participants were taken to low-, medium- and high-tech facilities including the five-hectare Family Fresh Farms at Somersby and the New South Wales Department of Primary Industries research facility at Ourimbah.

Well-known plant pathologist Dr Len Tesoriero took part in the tour, providing the latest information on soilborne diseases with a focus on grafting to control fusarium wilt in cucumbers.

With 10 more events set to be delivered in the next 12 months, please contact Matt on 0428 978 390 to find out more.

INFO R&D

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.

Regional capacity building to grow vegetable businesses – national coordination and linkage project has been funded by Hort Innovation using the vegetable research and development levy and contributions from the Australian Government.

Project Number: VG15049

Hort Innovation
Strategic levy investment

THE VEGETABLE R&D LEVY AT WORK

STRATEGIC LEVY INVESTMENT



WHO PAYS THE VEGETABLE R&D LEVY?

The levy is paid by growers who produce and sell 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?

Hort Innovation has two funding models for investment in research and development. The industry's levy is invested with Australian Government contributions through the Hort Innovation Vegetable Fund, which is part of the organisation's strategic levy investment activities.

All investments through the Vegetable Fund are made with advice from the industry's Strategic Investment Advisory Panels (SIAPs) – skills-based panels made of panellists from across the vegetable industry, the majority of whom are levy-paying growers. Strategic levy investments have a one- to five-year scope and the R&D is designed to directly benefit growers in the vegetable industry. Project topics range from pest and disease management to biosecurity matters, with findings communicated through a variety of channels, including *Vegetables Australia*.

You can find information on all current strategic levy investments, and details of the SIAP, on Hort Innovation's Vegetable Fund page at horticulture.com.au/grower-focus/vegetable.

The second Hort Innovation funding model is the strategic partnership initiative known as Hort Frontiers. Hort Frontiers projects do not involve levy dollars, unless an industry chooses to become a co-investor in them, through advice of the SIAP. Instead, Hort Frontiers facilitates collaborative cross-horticulture projects involving funding from a range of co-investors. These projects have a long-term focus and are designed to solve major and often complex challenges to secure the future of Australian horticulture.

You can read more about Hort Frontiers and the seven funds within it at horticulture.com.au/hort-frontiers.

HOW CAN GROWERS GET INVOLVED?

All vegetable growers are encouraged to share their thoughts and ideas for the research they want to see, both within the levy-specific Vegetable Fund, and within the wider Hort Frontiers strategic partnership initiative.

Ideas can be submitted directly to Hort Innovation through the online Concept Proposal Form at horticulture.com.au/concept-proposal-form. Growers are also encouraged to reach out to the SIAP panellists for the industry (available from the Vegetable Fund page).



**VEGETABLE
FUND**
Strategic levy investment

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

MINOR USE PERMITS

PERMIT NUMBER	CROP	PESTICIDE GROUP	ACTIVE	PEST/PLANT DISEASE/TARGET WEED	DATE ISSUED	EXPIRY DATE	STATES
PER10312 VERSION 4	Capsicums, snow peas and sugar snap peas	Herbicide	Glufosinate-ammonium	Broadleaf weeds and grasses as per the product label	30-Jun-15	31-Dec-19	NSW and Qld only
PER14473 VERSION 2	Leeks, spring onions and shallots	Fungicide	Mancozeb and dimethomorph	Downy mildew, purple blotch and Botrytis rots	18-Dec-13	30-Jun-23	All states except Vic
PER11764 VERSION 3	Snow peas and sugar snap peas	Fungicide	Spiroxamine	Powdery mildew	01-Jul-15	31-Dec-19	All states except Vic
PER84890 (Replaces PER14701)	Fresh beans (field grown only)	Insect growth regulator	Pyriproxyfen	Silverleaf whitefly	15-May-18	31-May-21	All states except Vic
PER14047 VERSION 2	Peppers (capsicums, chillies and paprika), and eggplant (field grown only)	Insecticide	Methidathion	Rutherford bug	01-Jun-13	31-May-23	All states and territories
PER10938	Snow peas and sugar snap peas	Insecticide	Imidacloprid	Greenhouse whitefly	01-Jul-15	31-Jan-20	All states except Vic
PER86443	Sweetpotatoes and spring onions	Aphicide	Pirimicarb	Aphids as per the product label	19-Jun-18	30-Jun-23	All states except Vic
PER80101 VERSION 3	Cucurbit vegetables (field and protected)	Systemic insecticide	Clothianidin	Cucumber fruit fly	10-Nov-15	30-Sep-23	All states

CHANGES TO FUNGICIDE PRODUCTS

It is expected that the Scala 400 SC fungicide will become unavailable at a reseller level over the next few months as Bayer is replacing the product to Scala 600 SC fungicide.

The following permits have been reissued to reflect this change:

- Added Bayer Scala 600 SC fungicide PLUS ALL OTHER REGISTERED PRODUCTS containing: 600 g/L PYRIMETHANIL as the only active constituent.
- Added Nufarm Protector 400 SC Fungicide PLUS ALL OTHER REGISTERED PRODUCTS containing: 400 g/L PYRIMETHANIL as the only active constituent.

PERMIT NUMBER	CROP	PESTICIDE GROUP	ACTIVE	PEST/PLANT DISEASE/TARGET WEED	DATE ISSUED	EXPIRY DATE	STATES
PER14505	Snow peas and sugar snap peas (protected and field)	Fungicide	Pyrimethanil (Scala 600 SC & Protector 400 SC)	Grey mould	01-Jul-14	30-Jun-19	All states except Vic
PER7909	Cucumber	Fungicide	Pyrimethanil (Scala 600 SC & Protector 400 SC)	Botrytis rot	05-Apr-12	30-Sep-22	All states except Vic
PER12565	Capsicums and lettuce (protected situations only)	Fungicide	Pyrimethanil (Scala 600 SC & Protector 400 SC)	Botrytis grey mould	05-Apr-12	30-Sep-22	All states except Vic

Hort Innovation is the permit holder for all permits listed. 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: apvma.gov.au/permits/search.php. This communication has been funded by Hort Innovation using the vegetable research and development levy and contributions from the Australian Government. Project Number: VG15027.



TOMATO POTATO PSYLLID TRANSITION TO MANAGEMENT (T2M) PLAN COMPLETE

The next stage in the response to the tomato potato psyllid has recently wrapped up, with the completion of the Transition to Management plan. The Western Australian Department of Primary Industries and Regional Development provides an update.

Transition to Management (T2M) followed national agreement that the tomato potato psyllid (TPP) could not be eradicated, and that efforts should focus on developing strategies to help industry and government effectively manage the pest.

The plan aimed to improve the capacity of Australia's horticulture sector to manage TPP, and build confidence around the status of the bacterium *Candidatus Liberibacter solanacearum* (CLso). The bacterium is associated with TPP in other parts of the world and causes the serious 'zebra chip' disease in potato.

CLso has not been detected in Australia to date. Led by the Western Australian Department of Primary Industries and Regional Development (DPIRD) on behalf of industry and state and federal governments, the plan included:

- Targeted surveillance for TPP/CLso complex during spring 2017 and autumn 2018 in Western Australia.
- Scientific research to improve the understanding of TPP, its biology and options for control.
- Development of National and Enterprise Management Plans.
- Market access and trade.

Results of the T2M plan are currently being finalised and will be made available to growers through state and national industry and government bodies.

In addition, T2M outcomes will inform future TPP/CLso research and management strategies through the development of a National Management Plan for TPP, led by AUSVEG through the role of the National TPP Coordinator.

The T2M plan was funded by Australian and state governments, and industry.

LAYING THE GROUNDWORK FOR TPP RESEARCH

The TPP R&D program was a major component of the T2M plan (see page 63). DPIRD Assistant Director for Horticulture Rohan Prince said R&D is critical to increase our understanding of TPP and improve the capacity of growers to manage the pest.

"Developing our scientific understanding of TPP means we can assess what management options are most effective for Australian growing conditions," Mr Prince said.

DPIRD managed the research program which included:

- Screening toxicity of conventional and biorational chemicals registered in Australia for other pest species, for use in TPP.

- Screening the potential of commercially-available biological control agents (BCAs).
- Evaluating the efficacy of insecticides in conjunction with BCAs.
- Evaluating effectiveness of ethyl formate against TPP and phytotoxicity on host fruits which require disinestation for interstate and international market access.
- A review of available literature to identify practical management strategies currently used where TPP is present elsewhere in the world, and to identify R&D knowledge gaps relevant to Australia. "While we have positive results from the desktop studies, and laboratory and glasshouse trials, further work in the field is needed to validate research," Mr Prince said.

The T2M phase has provided a boost to the TPP R&D knowledge base in Australia, and will continue to grow as the national R&D program is progressed."

SURVEILLANCE UPDATE

DPIRD has completed autumn surveillance for TPP, with no detections of the CLso bacterium associated with the pest.

Mr Prince said it marked completion of the third surveillance round in Western Australia.

"We tested more than 10,000 psyllids with no detections of the bacterium. This provides us with a high level of confidence that CLso is not present in Western Australia," Mr Prince said.

"We will be presenting these results to other states through the Consultative Committee on Emergency Plant Pests."

The detection of TPP has impacted on trade of a range of host plants and produce to other states, in particular potatoes which have been unable to enter these markets due to concerns about the status of CLso.

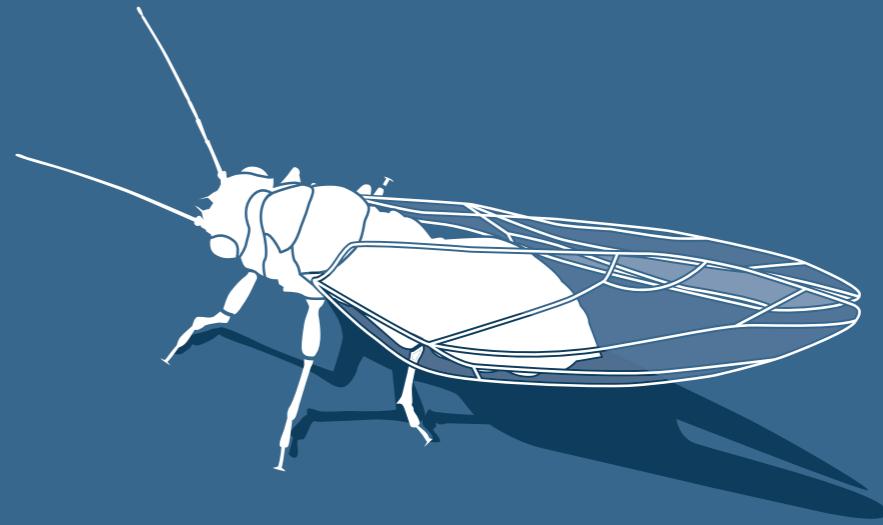
The department is continuing to work as a priority with government and industry partners to assist the assessment and recognition process for proof of absence of CLso.

INFO R&D

Visit your local state department website for more information about TPP, including how to identify the pest, options for control and how you can report suspect symptoms. For more details, please visit agric.wa.gov.au/tpp.

This article is an initiative of the national TPP Transition to Management plan.

Illustration on page 63 supplied by DPIRD.



T2M: SNAPSHOT OF TPP R&D RESULTS

1. Insecticides – laboratory trials

- A list of 15 potential insecticides including abamectin (Vertimec®), cyantraniliprole (Benevia®), spinetoram (Success®), sulfoxaflor (Transform™), methidathion (Suprathion), methomyl (Methomyl 225), chlorpyrifos (Chlorpyrifos 500EC), DC-164 (experimental chemical of Bayer CropScience), imidacloprid (Confidor® 200SC), Eco-Oil®, AGRI-50NF, paraffinic oil (SACOA BioPest) and azadirachtin (Azamax) were tested in laboratory bioassays for their toxicity against TPP life stages (eggs, nymphs and adults) in capsicum, tomato and potato.
- These chemicals are registered in Australia for use against other sucking insect pests in capsicum, tomato, potatoes and other crops, but are not currently registered for control of TPP. Field data will be required to support registration by the Australian Pesticides and Veterinary Medicines Authority.
- Fourteen insecticides were tested as foliar applications, and one (imidacloprid) was tested as soil drench.
- Abamectin, spinetoram, methidathion, methomyl, chlorpyrifos, cyantraniliprole, DC-164 (experimental chemical) and sulfoxaflor are very toxic and caused 100 per cent mortality to the TPP life stages.
- Spirotetramat is a slow acting chemical requiring longer time to cause significant TPP mortality.
- Cyantraniliprole and flonicamid are less toxic to TPP young nymphs (1st-2nd instar).
- All plant-based derivatives (azadirachtin, Eco-Oil, AGRI-50 and paraffinic oil) are the least toxic to TPP matured nymphs (3rd-5th instar).
- Azadirachtin is very toxic to TPP adults. Spirotetramat, flonicamid, paraffinic oil, AGRI-50 and Eco-Oil in potato and capsicum are less toxic to TPP adults. Egg laying was observed with AGRI-50, Eco-Oil, paraffinic oil, flonicamid and spirotetramat in all plant types but none hatched after seven days.
- Of 13 chemicals tested against eggs, hatching was observed with spirotetramat, abamectin, methomyl, chlorpyrifos, Eco-oil, paraffinic oil and azadirachtin, but none developed to adult.
- Imidacloprid soil drench is toxic to TPP life stages causing significant mortality for up to 10 days post drench.

- To prevent insecticide resistance from developing in TPP populations, insecticides from different chemical classes need to be used in rotation.
- Growers should contact their chemical advisers to talk through an appropriate Insecticide Resistance Management strategy for their business.
- Insecticides are only effective against TPP and do not prevent the spread of *Candidatus Liberibacter solanacearum* (CLso).

2. Biological control agents (BCAs) – laboratory trials

- Nine species of commercially-available BCAs were trialled, including six species of ladybird, an anthocorid bug, a mirid and a lacewing.
- The trials indicate all BCAs will feed on TPP, but that some are more voracious feeders than others.
- Initial results indicate more research is required to determine the most suitable biological control agents for TPP in different crops and growing conditions.

3. Efficacy of insecticides with BCAs against TPP in capsicum, tomato and potato – glasshouse trials

- Three applications, at 21-day intervals, of abamectin, cyantraniliprole and spirotetramat in capsicum, tomato and potato, and flonicamid in tomato effectively suppressed TPP populations.
- Three releases, at 21-day intervals, of mirid bug (*Nesidiocoris tenuis*) in tomato effectively suppressed TPP populations in the glasshouse trial.

4. Post-harvest disinestation – laboratory trials

- The Western Australian Department of Primary Industries and Regional Development has identified a potential benefit in combining post-harvest disinestation treatment for Mediterranean fruit fly and TPP for tomato, capsicum and eggplant.
- Ethyl formate controlled eggs, nymphs and adults of TPP. Eggs were the most tolerant, requiring a higher concentration of 0.5-2 per cent ethyl formate.
- Ethyl formate did not cause phytotoxicity to chilli, cherry or round tomato, eggplant or capsicum at the maximum rate of two per cent.

AROUND THE STATES



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VGA trading as AUSVEG VIC



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AUSVEG VIC State Manager Tom Cohen recently attended the annual Hort Connections conference, which was held in Brisbane from 18-20 June. This conference and trade show attracted around 3,000 people from across Australia, and focused on halving waste and doubling productivity by 2030.

AUSVEG VIC would like to congratulate the Victorian winners at the National Awards for Excellence, including Chris McLoghlin for winning Young Grower of the Year, Danyang Ying for taking home the Industry Impact Award, the East Gippsland Vegetable Innovation Days for receiving the Community Stewardship Award and Jessica Page, who was crowned Researcher of the Year.

Hort Connections will be held in Melbourne next year, and the date has been set for 24-26 June 2019 at the Melbourne Convention and Exhibition Centre. AUSVEG VIC can see the huge potential of showcasing our state to the rest of Australia's horticulture industry and highlighting why Victoria is regarded as one of the best growing regions in

AUSVEG SA would firstly like to acknowledge and congratulate South Australian grower and member of AUSVEG SA, Scott Samwell from Eastbrook Vegetable Farms. Scott won the AUSVEG SA Grower of the Year and has now won the prestigious Grower of the Year award sponsored by Syngenta at Hort Connections 2018 in Brisbane. Scott has been very active within the industry in the last few years, growing Brussels sprouts and Kalettes. Scott also has participated in trials for projects such as Soil Wealth and the National Vegetable Extension Network (VegNET) – South Australia. Congratulations again Scott, who is a very deserving recipient of the award. We would also like to acknowledge the SA nominees for various award categories at Hort Connections:

- Daniel Quattrocchi – Young Grower of the Year.
- James Altmann – Industry Impact.
- Sue Pederick, Lechelle Earl – Women in Horticulture.
- Justin Tiller – Community Stewardship.
- Paul Musolino – Environmental Award.

Congratulations to all contenders for the nominations. We are extremely proud to see so many South Australians nominated for such

Australia. We look forward to this opportunity.

In other news, AUSVEG VIC has launched its new website, which has been designed for growers to access new research information in a central location. This information was produced through industry and relates to a range of crops and growing regions. The new site also allows growers to find out about events happening across Victoria, and has access to industry resources to help growers maximise the information available to them.

The new AUSVEG VIC website was developed with contribution from the Victorian branch of the National Vegetable Extension Network (VegNET), which is running a series of events and R&D workshops throughout the year.

Finally, on 18 June, the Victorian Parliament passed the Labour Hire Licensing Bill, which will (when introduced) have an impact on growers across the state in terms of how labour is sourced on your property. If you would like to know more about the Labour Hire Licensing Bill, please contact the AUSVEG VIC State Manager.

a respected National Awards for Excellence. South Australia was also greatly represented in delegate numbers at Hort Connections, with 204 industry members attending, of which 66 were growers. We are already looking forward to increasing this figure in Melbourne next year.

In program news, AUSVEG SA has now appointed Claire McClelland from vegetablesWA to work on developing export opportunities for South Australian growers. We are looking forward to working even closer with SA growers within the export sector and encourage any growers interested in exports to contact us for more information on the project. Hannah McArdle, our Industry Development Officer has also been busy with the VegNET – SA project, with workshops held regularly. This month, we are holding yet another chemical handling course in the Adelaide Hills and the famous VegInnovations workshop hosted by Dr Hazel MacTavish-West in August, so keep your eyes peeled for those!

As always, AUSVEG SA invites growers to contact us at any time or to visit our offices at the South Australian Produce Markets to get involved with projects or for any industry assistance.



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It is a depressing fact that farm gate prices for vegetables have not been going up over the last 30-40 years. Rather, they are either stagnant or reduced. Retail prices at supermarkets might seem exorbitant to growers compared to what they're paid, but it's another depressing fact that as a proportion of income the average consumer is paying less for their vegetable consumption than 30-40 years ago.

To arrest this ongoing trend, growers need to further improve their efficiencies if working in a commodity market to reduce their cost of production and therefore improve their margin; or work on their marketing to improve their margin on the sale side. Of course, growers can do any combination of both.

This current harvest season has been spectacular weather-wise, and the quality of crops confirms that around the growing regions. We are very fortunate that our climate and soil types allow us to store crops in the ground for months at a time – something not possible in most other growing nations around the world. The United States has only weeks to harvest a crop of spuds where we have months and months, for example.

The challenge we all have is the eternal struggle with how things should look in Tasmanian agriculture and the realities of dealing with supermarkets, processors and importers. Being diversified is important and being willing to change business practices even more so. Export and new crop opportunities are always thrown into the conversation but again, the costs, red tape, efficiencies of scale and the level of financial risk needed to hit the shores of a distant land is a huge hurdle to many and simply too hard for some small family operators to overcome. Congratulations to those who

This is why vegetablesWA has people working to help growers on the production side (Field Officers Sam and Tryuen), the market side (Claire, Manus and Joel) and in business decision-making (Bryn and Bec).

We are proudly professional and so growers who seek our assistance can be assured that any discussion you have with us will be completely confidential. There are already hundreds of growers across Western Australia who take advantage of our services. All other Western Australian growers should help themselves through our services too.

Our office number is 08 9486 7515. We look forward to hearing from you.

take on fresh market or export; we all want to see business grow and thrive. In Tasmania, there are some good examples of farming operations doing well in that space.

The National Heavy Vehicle Regulator's (NHVR) planned Chain of Responsibility (CoR) legislation is still causing concern among members. The NHVR has bowed to pressure to delay the introduction of its CoR laws. The laws, now planned for 1 October in Tasmania, could see farmers fined up to \$50,000 for safety breaches. The Tasmanian Farmers and Graziers Association has been campaigning hard on this issue since January.

While the three-month delay is welcome, there are a lot more questions that need to be answered. We are calling on the State Government for an appropriate delay to the implementation of these ill-conceived regulations to ensure broad consultation and, where appropriate, adjustment. Failing a satisfactory outcome, we will then call for an exemption for the agricultural sector in our state.

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AROUND THE STATES



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The Top End vegetable season is well underway, and growers are reporting decent prices for most commodities so far this year. The weather is perfect with cool nights and fine sunny days (15-31 degrees Celsius), which suit the crops as well as the southern tourists and family members who flock to the Territory at this time of year.

The proposed changes to the Horticulture Award have many farmers worried on what it will do to their cost structures. Vegetable producers in the NT won't be impacted as much as the more intensely seasonal products like mangoes, the biggest crop in the NT. The proposed changes in the award will make it less attractive for workers to come to the NT, which involves a sizeable outlay of funds and effort for workers to even get here in the first place. Any change to overtime rates for casuals will likely result in less hours for seasonal workers and less workers for the NT across the board. NT Farmers has helped growers feed their concerns back through the peak bodies, such as AUSVEG, to explain to the Fair

Work Commission the negative impacts they see of the proposed determination.

Our National Vegetable Extension Network (VegNET) project is continuing with our Integrated Pest Management (IPM) demonstration plot at Coastal Plains Research Station. This season's emphasis has been on building our knowledge on threshold levels; the amount of marketable vegetables produced in the IPM block versus the conventionally-managed block; and some specific strategies for the control of bean fly for the young snake bean plants. Together with our industry champions, we are building the knowledge and skills of the researchers and cooperating growers to give the industry the confidence to adopt these measures as NT's best practice for pest control.

At the time of writing, NT Farmers was looking forward to the Northern Australian Food Futures Conference from 2-4 July in Darwin. The conference provided an insight into the current and future developments and opportunities in agriculture and horticulture in the top of Australia.

In the last three years that I've chaired the NSW Farmers' Horticulture Committee, our sector has seen major changes both to policy and representation. As I hand over the role of the Chair, I'd like to take an opportunity to look back on some of the prominent policy wins that NSW Farmers has achieved and contributed to.

Food labelling: The introduction of stronger Country of Origin Labelling requirements was a major win for our industry. NSW Farmers lobbied extensively on behalf of our members to amend the laws in order to provide Australian families with appropriate information in a clear and understandable way. We support consumers being able to have appropriate information to assist in making informed decisions about their purchasing preferences. Claims of "made in", "product of" and "grown in" help consumers recognise food that has been produced using the on-farm agronomic and handling practices implemented by Australian farmers.

Backpacker tax: In 2016, NSW Farmers worked with the National Farmers' Federation (NFF) to fight to lower the Federal Government's proposed 32.5 per cent backpacker tax, which created a disincentive for young foreign workers to come to Australia. Following 18 months of uncertainty, an amended backpacker tax rate of 15 per cent passed through the

Senate in late 2016. The package of measures made the new arrangements more workable for the farming sector.

Flying fox netting: NSW Farmers successfully advocated for additional funding for the flying fox netting scheme administered by the New South Wales Government. The scheme has contributed to the netting of more than 700 hectares of vulnerable fruit orchards in New South Wales.

Horticulture Council: We recently became an inaugural member of the NFF's Horticulture Council. The NFF's decision to bring together peak national agricultural bodies into one forum is a major step in the industry's advocacy for our sector. Particularly in the realm of industrial relations, the NFF has been actively representing the horticulture sector for many years. This new Council formalises a role for the NFF to speak on behalf of Australia's horticulture sector.

Horticulture in New South Wales is a strong and growing industry – I am proud of our industry and the advocacy and support that NSW Farmers provides to horticulture, and agriculture more broadly. As I step down from my role as Chair of the NSW Farmers' Horticulture Committee, I want to express my support for consolidation of the industry's strength to ensure our sector continues to deliver dividends for the Australian economy.



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New labour hire licensing laws were launched in April by the Queensland Government.

The laws required all labour hire companies to be licensed by 15 June 2018 and, after that time, growers must use licensed labour hire companies or face strict penalties.

While we still contend that a national approach would be more effective, we are pleased to say that the Queensland Government listened to our concerns and provided clarity in the underpinning regulations to ensure that growers are not inadvertently characterised as labour hire companies. The specific exemptions are described as follows:

- A worker who is also the director of a business who is the only worker 'supplied' by their own business.
- An 'in-house employee' who is temporarily supplied to another person, where an 'in-house' employee is defined as an individual who:
 - Is engaged as an employee by the provider on a regular and systematic basis.
 - Has a reasonable expectation the employment with the provider will continue.

- Primarily performs work for the provider other than as a worker supplied to another person to do work for the other person.
- An employee working for an employing entity used wholly within a single recognisable business.

The Queensland Government also launched a stand-alone website where you can apply for a labour hire licence, find a licensed labour hire provider, report a problem or learn more about your rights and obligations.

The website includes a searchable public register of licensees so growers engaging the services of labour hire companies can check if a labour hire provider is licensed or not. Breaches of this legislation can result in fines and penalties for growers and labour hire providers.

To apply for a licence or search a database of registered labour hire providers, visit labourhire.qld.gov.au.

Growcom will continue to monitor cost impacts through the supply chain and work with governments via the Fair Farms Initiative to ensure that our industry continues to improve workplace standards.



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*Please note we have moved to a new address.

CALENDAR

25 JULY – 9 AUGUST 2018
VEGINNOVATIONS 2018
REGIONAL ROADSHOW

Where: Queensland, Victoria and South Australia

What: VegInnovations is a series of free one-day workshops coordinated by the levy-funded VegPRO and VegNET programs and delivered by 2017 Churchill Fellow Dr Hazel MacTavish-West. The workshops will provide insights, tools, resources and contacts to help growers develop value-added vegetable products that catch and keep consumer interest.

Further information:
vegpro.com.au

5-7 SEPTEMBER 2018:
ASIA FRUIT LOGISTICA

Where: Hong Kong

What: Asia Fruit Logistica is Asia's leading trade show for the international fresh fruit and vegetable business. Last year's event attracted more than 13,000 visitors from 76 countries. The Logistica is accompanied by Asiafruit Congress, which takes place the day before the trade show.

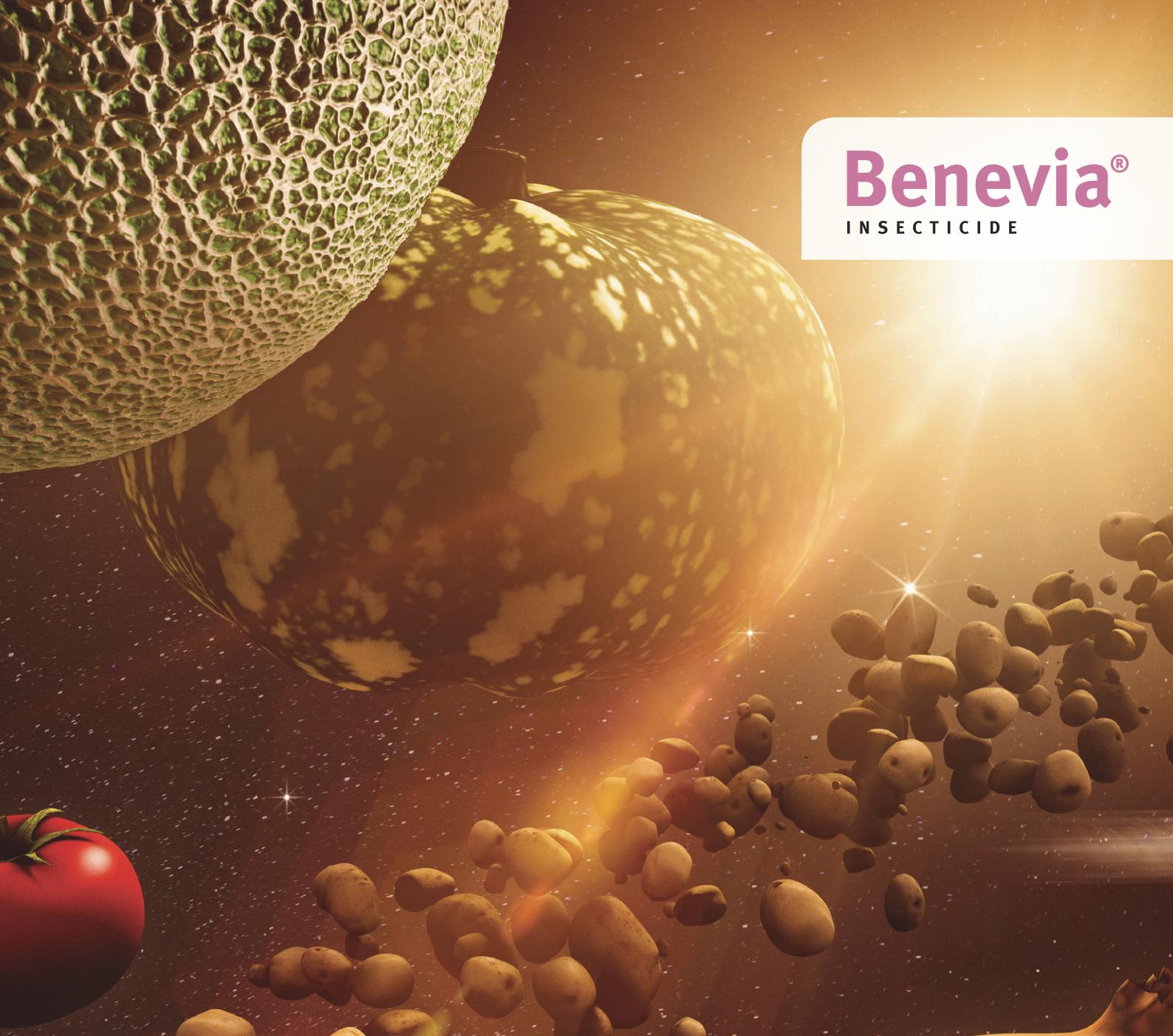
Further information:
asiafruitlogistica.com

24-26 JUNE 2019:
HORT CONNECTIONS 2019

Where: Melbourne Convention and Exhibition Centre

What: Save the date for Hort Connections 2019, where AUSVEG and the Produce Marketing Association Australia-New Zealand (PMA A-NZ) will once again join forces to present the biggest event in Australian horticulture, which is set to deliver another world-class program and trade show to growers and whole-of-supply-chain companies alike.

Further information:
hortconnections.com.au



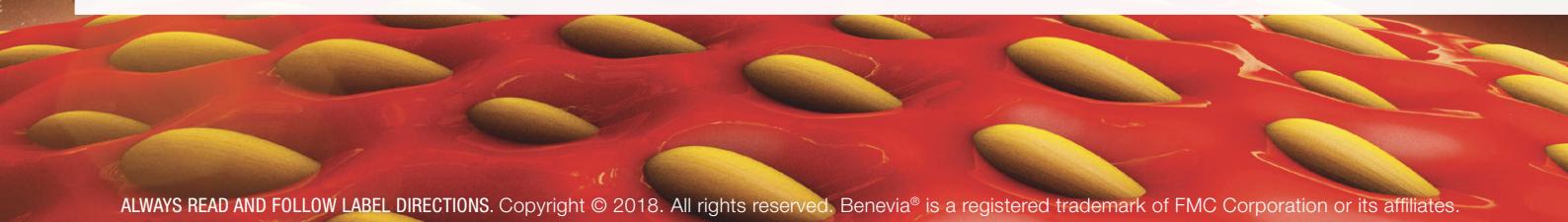
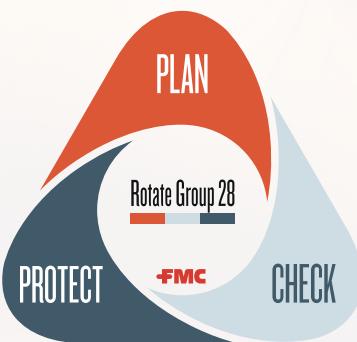
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Expand your horizons

Benevia® provides highly effective cross spectrum protection that rapidly stops insects feeding. Further damage to the plant is reduced, ensuring maximum marketability of your crop.

Benevia® is specifically designed for use in Integrated Pest Management (IPM) schemes, in fact, it's so effective on pests in Fruiting vegetable and Cucurbit crops that we're expanding the label to cover Bulb vegetables, Potatoes and Strawberries.

Being a Group 28 insecticide tool to fight pests, it's important to use Benevia® in accordance with the current Insecticide Resistance Management (IRM) strategy in your area. Remember to rotate with a different mode of action insecticide, as required. [Visit www.fmccrop.com.au for more information.](http://www.fmccrop.com.au)



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