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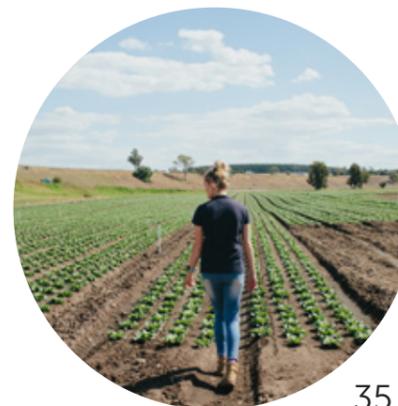
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EDITORIAL

When was the last time you attended an industry workshop, webinar or event to build your knowledge and networks?

Time is one thing we never seem to have enough of, but in order to take advantage of the information-sharing opportunities on offer to the industry, it is essential to make the time for it.

Vegetable growers in Australia are fortunate to have access to a range of levy-funded extension projects that are designed to share important research (both new and existing) with growers and bridge the gap between what happens in the lab and how it can make a real impact on-farm.

Through the regionally-based arms of the National Vegetable Extension Network (VegNET), growers can access a suite of workshops and events that connect them to valuable information and experts (page 20). The Soil Wealth and Integrated Crop Protection programs will also continue for another five years, helping growers expand their knowledge on soil health and crop protection solutions (page 42).

Those who are looking to access overseas markets can also benefit from the export-themed workshops and new Export Facilitator project for the industry (page 41). If developing skills is more in your line of thinking, the VegPRO national training initiative can connect you to different training programs for you or your staff (page 40).

Ongoing workshops on the new Horticulture Code of Conduct and Harmonised Australian Retailer Produce Scheme (HARPS) also allow growers to receive practical advice to achieve compliance, and keep abreast of industry updates.

If it's too difficult to get away from the farm, there is always an option to watch the many pre-recorded webinars and videos that discuss a range of important research at your convenience.

One of the easiest ways to stay aware of these events is to keep an eye on AUSVEG communications such as the *Weekly Update* e-newsletter, social media platforms, or the AUSVEG Events Calendar (ausveg.com.au), as well as your local state association.

If you haven't already, we also encourage you to pencil in 18-20 June for Hort Connections 2018 at the Brisbane Convention Centre. Levy-paying vegetable growers can register for a subsidised position to attend the annual Australian Vegetables Export Seminar and Global Innovations in Horticulture Seminar – please contact us on 03 9882 0277 or info@ausveg.com if you are interested in attending or to subscribe to AUSVEG communications material.

Making the time to take advantage of these opportunities could very well result in a new piece of information or contact that you didn't have before, and the possibilities of where that may take you are endless.

Bill Bulmer
AUSVEG CHAIRMAN

James Whiteside
AUSVEG CEO

EDITORIAL ENQUIRIES: AUSVEG
Phone: 03 9882 0277
Fax: 03 9882 6722
communications@ausveg.com.au

COVER PHOTO
Kerri Smith

Shaun Lindhe
COMMUNICATIONS MANAGER

Dimi Kyriakou
SENIOR COMMUNICATIONS OFFICER/EDITOR

ADVERTISING: Marc W. Wilson
Gypsy Media
Phone: 0419 107 143
marc@gypsymedia.com.au

PRINT
RA Printing

Michelle De'Lisle
WRITER/JOURNALIST

Claire Pini
GRAPHIC DESIGNER

CONTRIBUTORS
Dave Antrabus
Dr Kevin Clayton-Greene
Sophie Lapsley
Alan Nankivell
Madeleine Quirk
Raylea Rowbottom
Andy Shaw



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TORO

For vegetable industry members, becoming export-ready can be challenging and it requires a real commitment to become a successful and established exporter.

To assist growers in export readiness or develop their export business, AUSVEG coordinates a range of activities including training, market access development and a combination of inbound and outbound trade missions.

In February, around 30 horticulture industry representatives from the fruit, nut and vegetable sectors (including AUSVEG) visited the Gulfood Trade Expo in Dubai to showcase our fresh, clean produce that proved popular with buyers in the Middle East.

Following on from this was Foodex Japan, where Australia was also well-represented through the ongoing Taste Australia campaign, which aims to promote local fresh produce overseas and ultimately help to increase exports of Australian horticulture products, including a goal of raising vegetable exports by 40 per cent by 2020.

AUSVEG is facilitating vegetable growers' attendance at these events through its export development program. Not only do these growers connect with key buyers overseas, it also gives them the opportunity to gain an understanding of the Middle Eastern and Japanese markets. We hope that these events continue to be a successful platform to create long-lasting business relationships between export-ready growers and buyers alike.

One grower who has reaped the rewards of exporting is Anthony Staatz from Koala Farms in Gatton, Queensland. Anthony met Fresh Select Managing Director John Said in the mid-1990s and the pair forged a strong business relationship of exporting cauliflowers to Singapore and Malaysia. Subsequently, Koala Farms experienced major growth in its production and overall business.

It is this eagerness to innovate and readiness to explore new opportunities that earned Anthony a nomination for *The Weekly Times* 2017 Horticulture Farmer of the Year award.

This follows Anthony's 2017 AUSVEG Grower of the Year accolade, which he received for his innovation and contribution to the industry. AUSVEG would like to congratulate Anthony on his nomination, and hopes to see other growers follow his lead to build a sustainable future for the vegetable industry.

Finally, preparations for Hort Connections 2018 are in full swing. The event will be held at the Brisbane Convention Centre from 18-20 June, and nominations for the 2018 National Awards for Excellence are now open. Winners will be announced at the Gala Dinner on the final night, when the best and brightest in the Australian vegetable industry are recognised across a range of categories.

AUSVEG encourages all members to nominate their peers who are leading the way in their field. I look forward to seeing you there on what will be another night to remember for our industry.



Bill Bulmer

Bill Bulmer
Chairman
AUSVEG



James Whiteside

James Whiteside
CEO
AUSVEG

A lot has been said about the labour shortage in Australia and its impact on productivity in the horticulture industry, as well as the small number of cases where unscrupulous rogue operators have mistreated workers and damaged the industry's reputation.

Growers, and all downstream market participants, are adversely affected by the difficulties associated with securing a reliable workforce. While growers will always have a preference to employ Australians, a recent Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) report demonstrated the significance of imported labour to Australian horticulture, focusing on the contribution of working holiday makers and the Seasonal Workers Programme.

The fact is that the vast majority of Australian vegetable growers are compliant with the law and act with integrity. When we talk about labour in Australian horticulture, we need to do more as an industry to shine a light on these growers, who provide a range of job and career opportunities to a broad cross-section of the community, and in doing so, substantially support their local economies.

The Seasonal Workers Programme is an important exchange program, and those workers hired from countries in the Pacific and Timor-Leste send much-needed funds back to their families. It is in part good foreign aid work for our developing regional neighbours, and those who build strong relationships with growers become regular seasonal employees. This ensures that our growers are receiving loyal and consistent service, while commitment to worker wellbeing is paying dividends on-farm by resulting in a happier labour force and increases to productivity.

I firmly believe it is time to start talking about these on-farm labour success stories, as they are too often ignored.

In other news, AUSVEG has welcomed the formation of a united Horticulture Council which will ensure that the interests of the Australian horticulture industry are effectively aligned with the National Farmers' Federation. The Council will be represented by AUSVEG, the Australian Blueberry Growers' Association, Apple and Pear Australia Limited, Dried Fruits Australia, Voice of Horticulture (representing its 21 members) and Summerfruits Australia Limited. The Victorian Farmers' Federation, NSW Farmers and Growcom will also be represented on the policy forum.

While AUSVEG will continue to advocate independently on a range of issues, having a mechanism for unified advocacy for all Australian agriculture, including horticulture, will increase the effectiveness of representation on cross-industry issues such as access to reliable sources of labour and water.

Our decision to join the Council coincides with the appointment of Tyson Cattle to the role of AUSVEG National Manager – Public Affairs. This will significantly boost our advocacy activities and address the issues that are impeding the growth and prosperity of Australia's vegetable and potato growers.

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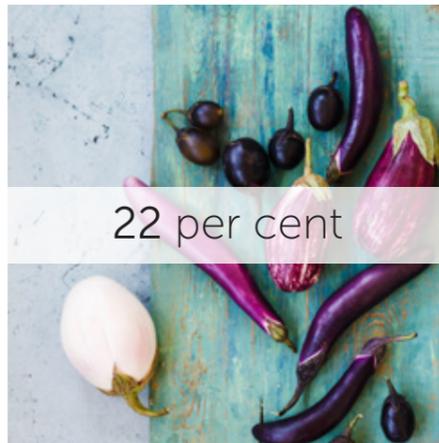
16th Century

Veggycation® revealed that zucchinis were taken to Spain from South America in the 16th Century and were grown in Italy 300 years ago. Italian migrants then brought the zucchini to Australia in the 1950s.



6 days

Spinach is expected to stay fresh for six days, according to Project Harvest Wave 44. The top triggers for purchase were based around health, ease of preparation and taste. In contrast, the key barriers to purchase included a shorter shelf life and a desire to avoid waste.



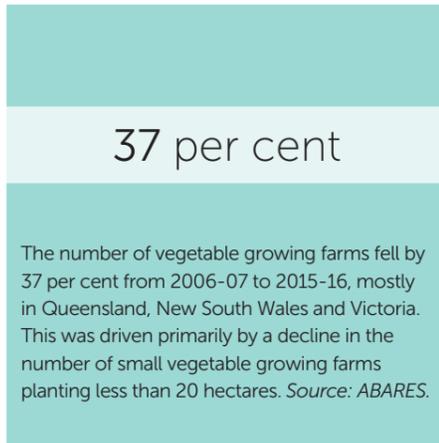
22 per cent

In the year ending 28 January 2017, Nielsen Homescan data showed that volume sales for Asian vegetables jumped by 22 per cent compared to the previous year, while dollar sales increased by 17 per cent.



\$471.87 million

According to Hort Innovation, the Vegetable Strategic Investment Plan 2017-21 has a potential impact of \$471.87 million, based on an estimated investment of \$90.68 million over the next five years. The plan will ensure vegetable levy investment decisions align with industry priorities.



37 per cent

The number of vegetable growing farms fell by 37 per cent from 2006-07 to 2015-16, mostly in Queensland, New South Wales and Victoria. This was driven primarily by a decline in the number of small vegetable growing farms planting less than 20 hectares. *Source: ABARES.*



88 per cent

Around 88 per cent of Australian vegetable farms had exclusively outdoor operations in 2015-16. Some farms used hydroponics (five per cent) or under-cover systems such as glass or shade cloth (10 per cent). *Source: ABARES.*



12 per cent

Nielsen research revealed that in 2016, dollar sales for cauliflower increased by 12 per cent on the previous year. While this was partly due to higher prices, consumption also continued to grow at a steady pace, with volume sales up by two per cent on 2015.



15th Century

Artichokes were first cultivated in Italy in the early 15th Century and spread through the rest of Europe. The First Fleet brought artichoke seeds to Australia and the plants were first cultivated in the fertile soils of Norfolk Island. *Source: betterhealth.vic.gov.au.*



28,935 tonnes

The 2015/16 Australian Horticulture Statistics Handbook states that 28,935 tonnes of fresh beans were produced for the year ending June 2016. Beans are grown predominantly along the east coast of Australia, with the majority of production occurring in Queensland.



Let's talk about your industry

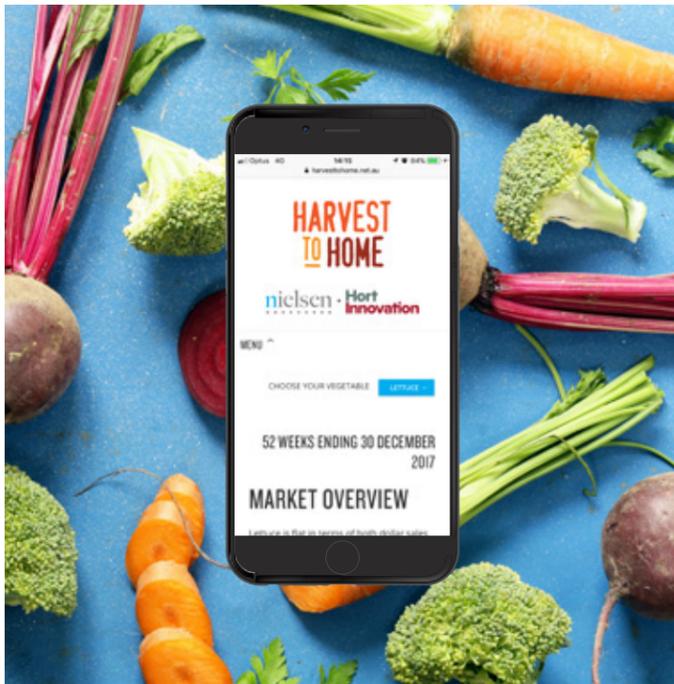
Sam Turner
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Meet a vegetable industry Relationship Manager and see how he can support you.

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

Project Number: VG15027



NEW ONLINE INFO-HUB HELPS INDUSTRY BETTER UNDERSTAND CONSUMER HABITS

Following the completion of two similar data projects, Hort Innovation and Nielsen Australia have established the Harvest to Home online dashboard for growers, which features behavioural and attitudinal insights for a range of commodities, including vegetables, onion and sweetpotato. *Vegetables Australia* reports on the latest from this initiative.

Hort Innovation and Nielsen Australia have launched an online dashboard featuring the most comprehensive series of insights into market performance and shopping behaviour ever provided to the Australian vegetable industry.

Focusing specifically on the vegetable, sweetpotato and onion levy-paying industries, the regularly updated databank – known as Harvest to Home – contains valuable data points conveyed in a user-friendly format. The concept has its foundation in two previous Hort Innovation research and development (R&D) projects that collected and analysed similar data.

Hort Innovation Research, Marketing and Investments General Manager David Moore described Harvest to Home as “a combination of these two projects, on steroids, providing even greater value to growers”.

The dashboard is the primary component of the project, *Vegetable Cluster Consumer Insights Program* (MT17017), a strategic levy investment under the Hort Innovation Vegetable, Onion and Sweetpotato Funds.

selling in each state, how often consumers are buying, and how much they are spending on each occasion. They will also be able to determine who is buying their products – whether they are young people, couples, the elderly or families – and preferred formats (loose versus pre-packed).

“On top of this, levy-paying growers will have access to longitudinal data so they can view historical trends, covering up to two years,” Mr Moore said.

“We are also very excited to offer case studies produced by Nielsen that will pull together key industry insights and help growers learn from one another’s success stories.”

INDUSTRY BENEFITS

According to Mr Moore, the data from Harvest to Home can be used to inform an individual grower’s production and sales, and help gain insights into the wider market.

“Since there is currently no marketing levy for the vegetable

to-business conversation about how you see the market, how Nielsen is reporting on the market trends and whether that is in line with what they [the retail clients] are actually seeing,” he said.

ONGOING REASSURANCE

Chris said there haven’t been any surprises in the data, however, having it available gives his business confidence that it’s heading in the right direction.

“For a company like us, we’ve been fortunate to be in multiple markets around Australia so you get a feel for what each state is doing and what each market is doing.

“It gives you reassurance of what’s actually happening there and check – are we going in the right direction? Are the trends which are happening reflecting what we’re seeing in the market? It gives you some certainty and some confidence in what you can do.”

The Clyde-based grower added that the information can be used by smaller operations, especially if they are considering expanding into other domestic markets. As the dashboard includes information on consumer shopping trends and patterns, it may also provide some insight into potential new product lines that growers could develop.

“I think that any information is useful, particularly if it can be interpreted quite easily in a logical manner, and I think Harvest to Home does that quite well,” Chris said.

CONTINUAL ENGAGEMENT

This project incorporates a review every six months, and Hort Innovation will continually refine and improve the process. It links

to a larger consumer insights program, which includes an industry roadshow, similar to the one conducted in late 2016 which was part of Hort Innovation’s strategic levy investment project, *Baseline Demographic Research for the Vegetable Industry* (VG15019), also known as Nielsen Homescan data. This involved a series of presentations organised with the assistance of the National Vegetable Extension Network.

Chris said the consolidation of the whole project has been a worthwhile exercise.

“Hopefully it will engage our growers a lot more with its better design and better messages coming across,” he said.

You can access the dashboard by following the links from the Hort Innovation vegetable resources webpage (horticulture.com.au/vegetable-resources) or the AUSVEG consumer research webpage (ausveg.com.au/infoveg/consumer-research). The retailer share of trade data can also be requested on the Harvest to Home site.

INFO

This project has been funded by Hort Innovation using the onion, sweetpotato and vegetable research and development levies and contributions from the Australian Government.

Project Number: MT17017

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It helps our business because when you’re going to see your retail clients, particularly the supermarkets, you have industry data there that is tangible and you can have a real business-to-business conversation about how you see the market..

A USER-FRIENDLY EXPERIENCE

Nielsen is the service provider of the Harvest to Home project. It joined forces with two members of Hort Innovation’s Data and Insights team who developed the dashboard, and three growers have formed a Project Reference Group.

“This helped to ensure the dashboard, the language used, charts presented etc. are as accessible as possible, and cater to everyone, from highly experienced data analysts through to small family farm staff,” Mr Moore said.

He added that by using the Harvest to Home website, growers can quickly identify how well commodities are

industry, this information can assist growers with their own marketing strategies and implementation,” he said.

There is already significant grower engagement with this tool.

“Each month we have seen the unique visitor numbers increasing, with many growers asking for access to additional information,” Mr Moore said.

One of the growers using this data is Schreurs & Sons Director Chris Schreurs, who finds the dashboard useful for his Victorian growing operation.

“It helps our business because when you’re going to see your retail clients, particularly the supermarkets, you have industry data there that is tangible and you can have a real business-

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GROWERS PLAY THEIR PART TO REDUCE WASTE AND COMBAT HUNGER

Each year, Australia's largest hunger relief organisation Foodbank distributes over 37 million kilograms of food and groceries to those in need, equivalent to over 183,000 meals a day. To achieve this, there is a high priority for donations of fresh fruit and vegetables. Three Australian growers detail why they donate to Foodbank, and the benefits it provides to their businesses, the industry and society.

Hunger doesn't discriminate in Australia, and the statistics are alarming: 3.6 million Australians have experienced food insecurity at least once in the last year, with 652,000 people seeking food relief from Foodbank's charity partners each month. Out of these 652,000, 27 per cent are children.

Foodbank is the largest hunger relief organisation in Australia, and it offers the Foodbank Fruit and Vegetable Program. This gives growers the opportunity to donate fresh produce to people and families who are struggling, and it is also a viable way to reduce food waste.

Working with Australia's fruit and vegetable growers in all facets of the supply chain, Foodbank collects any produce in surplus, not to specification or incorrectly labelled – as long as it is suitable for human consumption. Produce can be donated easily at one of Foodbank's warehouses around the country, wholesale markets or directly from the farm.

Vegetables Australia spoke to growers from Victoria, Queensland and South Australia who donate a large amount of fresh fruit and vegetables each year to Foodbank about why they take part in the program.

GETTING INVOLVED

Foodbank Victoria visits the Fresh Select Werribee pack house on a weekly basis to collect donations, or is on-call if required. Fresh Select donates cauliflower, broccoli, celery, lettuce, cabbage and Brussels sprouts to the organisation.

Fresh Select Operations Manager Anthony Palma said the company decided to get involved with Foodbank after realising there was a huge amount of fresh produce going to waste due to surplus stock, or produce not up to specification.

"We also asked all our growing partners if they were able to donate, even if it's only one box it all adds up and they were more than willing to help," Anthony said.

"The benefit for vegetable growers getting involved in an initiative like this is that it allows them to reduce food waste by donating produce which would otherwise be disposed. As an industry it makes us proud to know we can be part of something that is benefiting the greater community and assisting those in need."

Carl Walker from Phantom Produce in far-north Queensland has

encouraged a number of growers in the Bowen region to donate to Foodbank.

He said it helps everyone – not just the underprivileged – and pointed to Cyclone Debbie which affected much of Queensland in March 2017 as an example.

"After the floods, people didn't realise how many middle-class families could not afford to eat properly because their house was damaged by the floods – they were struggling. That's what I tell people: it's not just about the underprivileged; what about the middle-class families that have some bad luck? One of them might lose their job and are struggling to make payments," Carl said.

"It could happen to any of us, so Foodbank is from a social point helping your fellow man and it's economically good long-term for our future customers."

HELPING SOCIETY

John Magarey is a pear grower from South Australia. He and his brother, Andrew, run Magarey Orchard and have been donating to Foodbank in South Australia for 11 years. The brothers decided to become involved in the charity for two reasons.

"One is that we have an interest in trying to help people, and second is that we have product that we're not able to sell in the marketplace very easily so we decided it was an easy match – instead of throwing it in the bin, send it somewhere where it helps people," John said.

John is humble about what his business does for Foodbank South Australia.

"We're not after a financial gain out of doing this. You do it because you feel as a society, we're trying to find the best use of our product in all places.

"We have a desire to be helpful to people – but we're not doing anything out of the ordinary, nor is it extraordinary for us as a business. It's just something that is good for our society to do, which is try and make the best use of all we've got."

INFO

For more information or to find out how to donate, please visit foodbank.org.au.

GET READY! HORT CONNECTIONS 2018 SET TO RETURN TO QUEENSLAND

Preparations for Hort Connections, now in its second year, are in full swing. The event, to be held at the Brisbane Convention Centre from 18-20 June 2018, is set to bring together a record number of growers, supply chain members, government stakeholders and industry service providers in Australian horticulture – and registrations are now open.

In less than 100 days, over 3,000 delegates are expected to converge on the Brisbane Convention Centre for the largest event in Australian horticulture. Hort Connections 2018 is the combination of the National Horticulture Convention and PMA Fresh Connections, and AUSVEG is pleased to host this event once again alongside the Produce Marketing Association Australia-New Zealand (PMA A-NZ).

Building on its inaugural success in 2017, the conference promises to provide immense value to growers, retailers and whole-of-supply-chain members, with unparalleled networking opportunities, world-class speakers and an expansive Trade Show. For the first time, a theme has been incorporated to dissect two key horticulture industry issues – *Doubling productivity and halving waste by 2030*.

Hort Connections 2018 will be co-hosted alongside a diverse range of horticulture industry bodies, including Growcom, Onions Australia, Australian Organic, Apple and Pear Australia Limited, Nursery and Garden Industry Australia, Protected Cropping Australia, the Australian Horticultural Exporters' and Importers' Association and the Australian Society of Horticultural Science. Fresh Markets Australia and the Central Markets Association of Australia are once again official sponsors of the Trade Show as well as co-hosts, following a successful partnership at Hort Connections 2017.

AUSVEG and PMA A-NZ are also looking forward to working with the major partners of this event: Hort Innovation, Bayer, Syngenta, CHEP and Woolworths.

THE TRADE SHOW

The Hort Connections 2018 Trade Show will provide a platform for a record number of exhibitors to display their cutting-edge products and services as well as forge new connections with delegates. With almost 300 exhibitors confirmed, the Trade Show has doubled in size, indicating that the horticulture industry has a strong desire for the supply chain to get in front of potential and existing customers, and showcase the latest on offer in industry technology, innovation and services.

This connection will be further strengthened with the introduction of the Trade Show Networking Hour, which will be held from 5-6pm on Tuesday 19 June.

Held in conjunction with the Trade Show will be plenary speaker sessions, headlined by National Farmers' Federation President Fiona Simson, award-winning global futurist Chris Riddell and Peak Solutions Entrepreneur-in-Residence Drew Yancey.

There are plenty of additional speakers lined up for the event, who will discuss a wide range of topics covering irrigation, marketing, crop protection and plant and food research and science.

BUILDING NETWORKS AND KNOWLEDGE

Back on the program in 2018 is the Women in Horticulture event, which will be held at the Brisbane Convention Centre on Wednesday 20 June. Keynote speaker Rachael Robertson led the Australian expedition to Davis Station, Antarctica – the second female to lead a team to the Station and the youngest-ever leader.

Also returning this year are the Australian Vegetables Export Seminar and the Global Innovations in Horticulture Seminar, to be held on Monday 18 June and Wednesday 20 June respectively. They are both valuable opportunities for levy-paying vegetable growers to expand their business knowledge and are not to be missed.

The Perfection Fresh Breakfast and Syngenta Breakfast Session will also take place during the three-day conference, providing additional avenues for horticulture industry members to network with their peers, and gain an insight into different aspects of the industry.

NATIONAL AWARDS FOR EXCELLENCE

Following the engaging speaker sessions and lively social program is the Hort Connections Gala Dinner, where the National Awards for Excellence will be handed out to the brightest stars of the horticulture industry in 2018. Nominations for the awards are now open, and forms can be found on the Hort Connections website.

With many exciting speakers and a broad range of social events on offer, *Vegetables Australia* strongly encourages all members of Australian horticulture to register now so they don't miss out on what is sure to be the biggest event on the industry calendar.

INFO

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



Seasonal workers picking citrus at Costa farm in Renmark, South Australia.



Fijian worker in the packing shed at Costa farm in Renmark.



Josefa Rasedaseka from Manuku village in Fiji, working in the nursery at Costa farm in Renmark.

A PRODUCTIVE SOLUTION FOR BUSINESSES AND SEASONAL WORKERS

More Australian farmers are turning to the Federal Government's Seasonal Worker Programme for a reliable and productive source of seasonal labour. This programme allows workers from countries such as Fiji, Tonga and Samoa to work for a set amount of time during the peak season, and continue their employment the following year. This provides a range of benefits to both growers and workers.

The Seasonal Worker Programme (SWP) helps Australian farmers meet their seasonal labour needs by providing access to workers from the Pacific and Timor-Leste.

The programme offers employers in the agriculture sector and – in selected locations in the accommodation and tourism sectors – access to a reliable, returning workforce when there is not enough local Australian labour to meet seasonal demand. In turn, SWP workers gain both skills and remittances to benefit their families and communities.

Costa Group in Renmark, South Australia has been taking part in the programme since its inception in 2012. There are three recruitment areas for the company: the first is looking after the local population and making sure locals get the work first, and invariably take on roles with more responsibility, such as supervisor and quality controller positions. This is followed by backpackers and workers from the SWP.

"The biggest issue with backpackers of a seasonal nature is that they start, then their visa ends in three weeks, and we must change people over and train others," Costa Group Business Development Manager Steve Burdette said.

"This is a partnership that sees us getting access to reliable labour, while more importantly it enables us to positively change the lives of the people who come from very poor backgrounds.

"With the Seasonal Workers Programme, the workers are here for a set period. They are here every day. We know they are going to arrive and they are trained. Having that reliability of labour is critical for us."

Costa Group has since expanded its participation in the programme and further additions are planned in 2018.

"For the first time, we have expanded our SWP workforce

from Tonga to also include Fijians, and we plan to expand to include Samoans this year," Mr Burdette said.

BENEFITS AND OPPORTUNITIES

The SWP has benefited Costa's local employees who are able to fill skilled supervisory positions, while programme workers and working holiday visa holders represent the unskilled picking labour force.

Farmers employing Pacific seasonal workers under the SWP can also reduce training and supervision costs by having the same workers return each season, creating continuity of employment and ongoing skill development.

"I highly recommend this programme to any grower that is serious about securing a reliable workforce and may find it difficult to satisfy their labour needs through a lack of local workers in the first instance," Mr Burdette said.

"The SWP is a partnership and you have to see it as one. At Costa, we make it a priority to look after their wellbeing which means we must know our responsibilities and be committed to the program. This means ensuring they are paid properly, that they get the right number of hours and they are treated with respect and dignity, because that is the essence of the partnership.

"One of the things we have done at Costa is organise shipping containers for the workers to send items home; for example, generators to do some contract work or start a business. Things that improve their lives.

"We know that the things they take home will make their children and their families very happy. It's all about helping them to get forward in life, and if we can achieve that then I

think we have achieved a great deal from Costa's perspective."

Wages earned in Australia by programme participants can be life-changing for Pacific communities. It can fund education, housing or provide the capital for a sustainable business.

The skills, training and exposure to new agricultural techniques in Australia are taken back to workers' communities, improving their livelihoods. The programme builds connections across the region, with some employers visiting workers and their families in their home country to see first-hand the impact it has had on their communities.

The transfer of both skills and remittances through the SWP complements Australian aid programs, providing direct and tangible benefits to Pacific workers and their communities.

INFO

For further information, please visit jobs.gov.au/seasonal-worker-programme or jobs.gov.au/participating-countries-and-contact-points.

Fiji's Ministry of Labour, Industrial Relations and Productivity can be contacted at sakeo.talernaimaleya@govnet.gov.fj.



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EMPLOYMENT RECORDS: AN ESSENTIAL CHORE

In this edition, Growcom's Fair Farms team provides an overview of the records growers need to keep to achieve compliance with Australia's Fair Work laws and how to identify gaps in their employment records or procedures. New developments in the Fair Farms initiative are also outlined.

Few people get excited about paperwork and record keeping, but for better or worse, they are an essential part of operating a farm business. The same applies for employment records. Australia's Fair Work Act requires that all businesses maintain comprehensive employment records, and this is subject to random checks by Fair Work inspectors. Some of the key employment records that must be maintained include:

- Employment contracts.
- Evidence that comprehensive induction processes are followed.
- Hours of work and pay rates.
- Superannuation contributions.
- Leave – accrued and taken.
- Performance and behaviour management.
- Termination records.
- Individual flexibility arrangements (if used).
- Guarantee of annual earnings records.
- Transfer of business records.
- Records to show that due diligence practices are undertaken when working with labour hire contractors.

At a market level, retailers are under increasing pressure to demonstrate that they have 'ethical supply chains'. The emergence of assessments and audits for growers who supply supermarkets has become another significant driver for rigorous and efficient record keeping around employment policies, practices and procedures.

The volume of records that must be kept can be daunting, and is particularly challenging for farm businesses that have a high turnover of employees. Here are some tips that can make the task easier:

- Break things down into straightforward, manageable tasks.
- Make record-keeping quicker and easier by developing practical templates for key documents. This will also help maintain uniformity in your records. A number of templates from Growcom are available at growcom.com.au/growcom-shop.
- Set regular review dates to follow-up missing documents.

Completing the Hort360 workplace relations module is an excellent way to identify any gaps in your employment procedures and records and make an action plan to address them. Online access to the module will be available soon for those who want to complete a self-assessment.

Employment records can be maintained manually, on the computer or kept online. It is important to use a system that you can operate easily and one that allows you to quickly demonstrate to an auditor or Fair Work inspector that everything is in order.

Keeping up-to-date with your employment records will help avoid incurring penalties for breaches of law and will ensure your business is ready, if necessary, to tackle an audit process seamlessly and with confidence.

CERTIFICATION FOR FARM BUSINESSES AND LABOUR HIRE COMPANIES

The Fair Farms certification – based on a new code of practice for fair employment in the fresh produce industry that will be certified through Freshcare – is in its pilot phase. The team is aiming to launch the scheme in mid-2018.

Good news for growers who use labour hire companies to supply farm workers: the Recruitment, Consulting and Staffing Association (RCSA) recently launched StaffSure. This certification scheme provides assurance that a recruitment or labour hire company is making every effort to operate legally and honestly in its activities and transactions. StaffSure will improve the level of visibility and transparency regarding workforce service providers – giving growers greater confidence that they are dealing with a reputable and proven provider. To find a certified company, go to staffsure.org.

SEE US AT HORT CONNECTIONS 2018

The Fair Farms Team will be at the Growcom booth at the Hort Connections 2018 trade display at the Brisbane Convention Centre from 18-20 June. Pop by and chat with us to find out more about:

- What's happening with the Freshcare Fair Farms certification.
- The new certification (StaffSure) available for labour hire companies.
- The Hort360 workplace relations module.
- Workplace relations matters and Fair Work laws.
- Practical ways for farm businesses to ensure their employment practices meet industry standards and comply with legal requirements.

The whole Fair Farms team will be at Hort Connections 2018, including:

- Annabel Hutch, Workplace Relations Advisor (Growcom).
- Donna Mogg, Industrial Relations Specialist (DLM Consulting).
- Rachel Mackenzie, Policy and Advocacy Manager (Growcom).
- Jane Muller, Fair Farms Initiative Project Coordinator (Growcom).
- Clare Hamilton-Bate, General Manager – Industry Development (Freshcare).

INFO

To register your interest in a Fair Farms seminar or Hort360 workplace relations risk assessment for your business, contact Annabel Hutch at Growcom on 07 3620 3844 or ahutch@growcom.com.au.

The Fair Farms Initiative is delivered by Growcom in partnership with Freshcare and other industry groups. It is supported with funds from the Fair Work Ombudsman community engagement grants program.

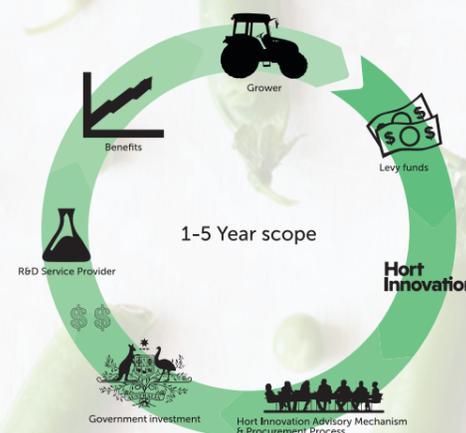
This communication has been funded by Hort Innovation using the vegetable research and development levy and contributions from the Australian Government.

Project Number: VG15027



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.

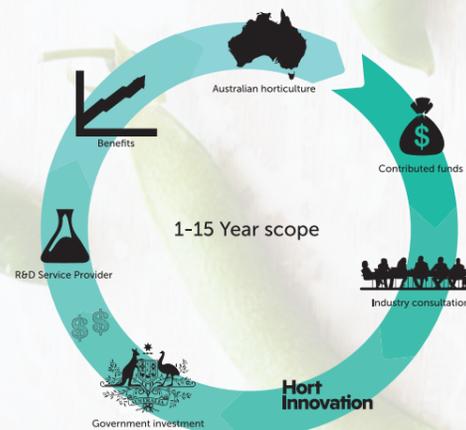
All investments through the Vegetable Fund are made with advice from the industry's Strategic Investment Advisory Panels (SIAPs) – skills-based panels made of panellists from across the vegetable industry, the majority of whom are levy-paying growers. Strategic levy investments have a one- to five-year 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 across-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.

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).



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



Photography by Kerri Smith.



DRIVING THE BOWEN GUMLU COMMUNITY FORWARD INTO A BRIGHTER FUTURE

As President of Bowen Gumlu Growers Association for the past 11 years, vegetable grower Carl Walker has learnt to embrace being in the public eye and leading an industry which provides 3,500 jobs to the far-north Queensland community. Carl speaks to Michelle De'Lisle about the industry challenges, the impact of Cyclone Debbie and the lessons learnt from the 2017 storm.

They breed them tough in far-north Queensland.

It's partly the result of enduring many devastating weather events, including Tropical Cyclones Oswald, Yasi and most recently, Debbie – a category four storm which flooded communities from the Whitsundays down to northern New South Wales, causing an estimated \$2 billion worth of damage.

Bowen vegetable grower Carl Walker and his wife Trudy have seen it all over the past 23 years as owners of Phantom Produce, formerly known as Walker Farms.

The couple started their business in 1995 with little more than \$1,000 and a lot of debt; now they run a 100-acre capsicum, cucumber and tomato growing operation.

In addition, Carl is in his 12th year as President of Bowen Gumlu Growers Association, a position that allows him to represent an industry that provides 3,500 jobs and injects \$450 million into the region annually. In times such as the aftermath of Cyclone Debbie, fruit and vegetable growers' voices need to be heard on important issues affecting their businesses, and it is in this role that Carl can provide a platform for this to occur by talking to politicians and government departments alike.

A CHALLENGING YEAR

Carl says that while 2017 was a disaster for the Bowen Gumlu region, some of the devastation could have been avoided if planting schedules weren't changed.

"Growers mightn't like me saying this but some of the problems

in 2017 were caused by ourselves. In my business, we didn't change our planting schedule; we stuck with what we had. What we lost, we lost – suck it up and move on. Unfortunately there were a lot of businesses talking to wholesalers that decided it'd be a great year to grow extra product," he says.

"Unfortunately no one took into account that before the cyclone there were 25 million people in Australia, and after the cyclone there were still 25 million people in Australia.

"Then we had a perfect growing season and had extra product in the ground, as some of the producers decided to extend their season because Bowen was hit by the cyclone. This was not a good idea because we got more overlapping, consumers got more to choose from and they paid less.

"I think, in hindsight, if most people had just stuck to their original game plan and forgotten about the losses from the cyclone, they would have had a breakeven year and maybe better."

OTHER KEY ISSUES

There are other challenges which face growers, not just those posed by the weather. These include staying sustainable and profitable, keeping up with new industry regulations and maintaining sound biosecurity practices.

Due to the advances in on-farm technology – Carl has introduced bigger tractors, GPS auto-steer used in controlled traffic farming, trickle irrigation as well as variable rate control on the tractors and fertiliser bins and mapping – there continues to be an oversupply of produce.

"Australia grows enough food for 40-60 million people and we only have 25 million, so there's always an oversupply. Consumers are getting pickier with what they want so our waste is going up," Carl says.

"People need to look at their marketing, their costs and where they're going to sell it to and then go to those markets. Due to those modern techniques, we can grow a really fantastic product and plenty of it, but if you can't sell it, you'll always go broke. That's what unfortunately some people don't realise and that's something we need to look at in our industry.

"Moving forward, we're looking at more market access for our association and we're looking at processing plants, value-adding etc. Hopefully we can combat all those issues and move forward in a sustainable and profitable way."

OPENING THE BORDERS

Market access, Carl says, is very important for the Australian vegetable industry.

"Our market now is saturated – we've got more product in Australia than we can eat. That's the cold reality," he says.

"If we're going to feed the world, we can't grow the food and then pray they're going take it. We've got to make sure we've got the market access and the growing all working in conjunction or we're just going to send people broke."

At the time of writing, Carl had just returned from New Zealand. Phantom Produce currently exports produce to our Trans-Tasman neighbour and he is eyeing further opportunities over there. Carl was then taking off to Japan to look at additional market access opportunities in Asia.

"Japan's still two years away but it looks like it might open up a little bit more for product. We're looking at the way that they're packaging, the way they do their value-adding, and see if we can utilise any of that in our business and maximise our profits per kilo, or per unit," he says.

BECOMING A LEADER

Carl has learnt a lot over the years during his presidency of Bowen Gumlu Growers Association, and he admits it can be a difficult job.

"Part of my role is lobbying politicians; lobbying government departments; trying to convince growers why we should be doing different things; trying to move traffic in a direction that you feel it should be going," he says.

"Also, trying to change people's thought patterns a little bit as well as providing information through our Industry Development Officer and our Secretary – making sure they're sending out information to growers, helping them with issues they're having and helping them with grants – there's a lot of money to be had which we don't know about.

"As President of the Association, everything we do affects the viability or sustainability of other businesses in town, and you've got to make sure you work with people – even those that you don't see eye to eye with."

Since Carl has been President, the community has grown from turning over \$200 million worth of produce annually to \$450 million, and there are no plans to slow down.

"My vision is to grow this association where we have a CEO, and the growers act as an advisory group to make sure that the employees aren't going off the track in servicing the needs of the growers, and remembering who they're working for – not only the growers, but the community," Carl says.

COMMUNITY PRIDE

Carl's proudest moments as a grower extend to the wider horticulture community, and the way it has rallied from setbacks including Cyclone Debbie.

"I'm just so proud to be part of a community and an industry that doesn't sit around crying about their spilt milk. You might lose all your crops and yes it hurts you, but you don't sit down and cry about it. You go, 'Right! How can we make this better and move forward? What do we have to do? This year's going to be hard, but we've always got next year.'

"Cyclone Debbie was tough. We're still fixing up things that have been damaged – the losses were enormous but you can't sit around; you've got to keep moving on. If you do sit around, you fall over.

"I'm proud to be part of an industry where the majority of growers just get on with it. It's happened – move on.

"Isn't that great?"



Banna grass windbreaks are established near vegetable crops in the Northern Territory to provide a functioning eco system for beneficial insects and predators such as spiders and frogs. Image courtesy of NT Farmers.

EXTENSION UPDATES: NORTHERN TERRITORY AND SOUTH AUSTRALIA

In this edition, the National Vegetable Extension Network (VegNET) examines the importance of bio-refuge barriers for Integrated Pest Management in the Top End, while VegNET SA has a new home and is looking ahead to another productive year. VegNET is a strategic levy investment under the Hort Innovation Vegetable Fund.

NORTHERN TERRITORY

Why in the Northern Territory are we spending so much time on our Banna grass windbreaks and bio-refuges?

That's something we ask a lot when we're out in the heat of the NT wet season, with the humidity building just before a monsoonal downpour. Establishing the barrier grass is hot and sweaty work in the wet, but the perfect weather for bugs to flourish.

What we've learnt thus far is that these refuges are an essential part of our Integrated Pest Management (IPM) program in more ways than one. Bio-refuges are the critical link in the chain to the IPM program being developed by VegNET NT. Often the crops are grown in fully cleared paddocks that have no permanent diverse vegetation nearby to act as a source or home to beneficial organisms.

Providing a functioning eco system in a metre-wide row provides a sanctuary that allows beneficial bugs and general predators, such as spiders and frogs, to flourish. What VegNET has found is that the Northern Territory already has a wide range of beneficial organisms in the environment.

The trick is to have enough of them in close proximity to the crop when they are needed. Hoverfly and ladybirds are excellent examples of this – they build up in numbers on the maize aphid, which is not a pest of most vegetables, but is found in these tropical grasses. These predators are then present in substantial numbers when other pest aphids try to establish themselves in the vegetable crops.

AN IMPORTANT BARRIER

The barrier grass row serves as a filter where the windborne pests land and a majority are taken out by these beneficial bugs before they can have any substantial impact on the crop being grown.

The Banna grass has other benefits as a wind break, reducing wind damage and evapotranspiration from the dry south easterlies that blow through the Top End growing season.

They protect against over-spraying from other crops nearby and spray drift carried by the wind from neighbouring properties.

Why Banna grass? Because it's very easy to establish. To produce runners, just add water and it will shoot from any of the nodes. Once established, management is relatively low; just slash beside it and run a mower over the row at 50 centimetres once a year to maintain the ideal height. It grows just as vigorously as most weeds do in the Top End and the torrential monsoonal downpours don't hold it back.

The hardest argument of all is to convince farmers that these rows of tall – sometimes a little untidy – cane grasses are not a cost or a waste of space, but a critical tool in best practice management for the Top End vegetable farming.

HOW TO KEEP IN TOUCH:

- Industry Development Officer: Laura Cunningham, 08 8983 3233 or ido@ntfarmers.org.au.
- Facebook: facebook.com/NTFarmersAssociation.
- Online: ntfarmers.org.au.

SOUTH AUSTRALIA: NEW BEGINNINGS

It's been a fresh start among the fresh veggies at the South Australia Produce Markets in Pooraka for the team at AUSVEG SA this year.

"We moved our office from the Adelaide CBD in December and it's been a success in so many ways," VegNET South Australia Industry Development Officer (IDO) Hannah McArdle said.

"Now we are easily accessible to growers and it has been great to see so many more people attending our workshops."

Some of the most well-attended workshops have featured AUSVEG National Manager – Science and Extension Dr Jessica Lye, who provided participants with a greater understanding of the threat of the incursion of cucumber green mottle mosaic virus (CGMMV), and a management plan to tackle the plant pest.



Adam Goldwater from Applied Horticultural Research captivates participants at the postharvest workshop in South Australia.

To prepare for another serious biosecurity threat, the tomato potato psyllid (TPP), VegNET SA held successful workshops and information sessions to help South Australian vegetable growers understand the threat and management of this tiny sap-sucking, winged insect that affects capsicum, chilli and eggplant crops.

The Postharvest Roadshow with Dr Jenny Ekman and Adam Goldwater from Applied Horticultural Research (AHR) was another winner. Over 40 people at several venues enjoyed and benefited from the exchange of ideas on diverse topics, from cooling systems to the physiology of a zucchini.

"We are working closely with Sophie Lapsley from VegPRO, the national vegetable training initiative, to ensure our vegetable growers are receiving the training and information they want," Hannah said.

Growers can look forward to an irrigation workshop in May and the renowned VegInnovations (for value-adding to vegetables) workshop, which is scheduled for August.

To sign up for events, or hear more about VegNET in South Australia, please contact Industry Development Officer Hannah McArdle:

- Phone: 0408 475 995.
- Email: hannah.mcardle@ausveg.com.au.
- Twitter: @AUSVEG_SA or @hannahmcardle11.

INFO

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.

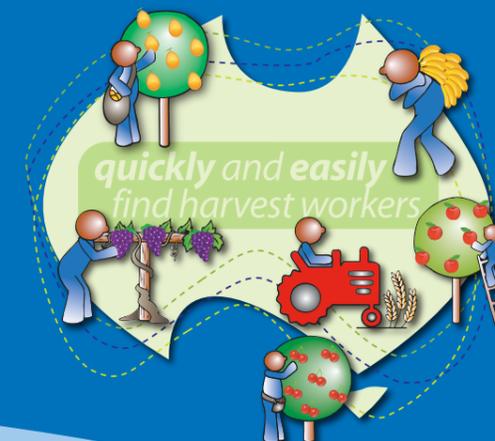
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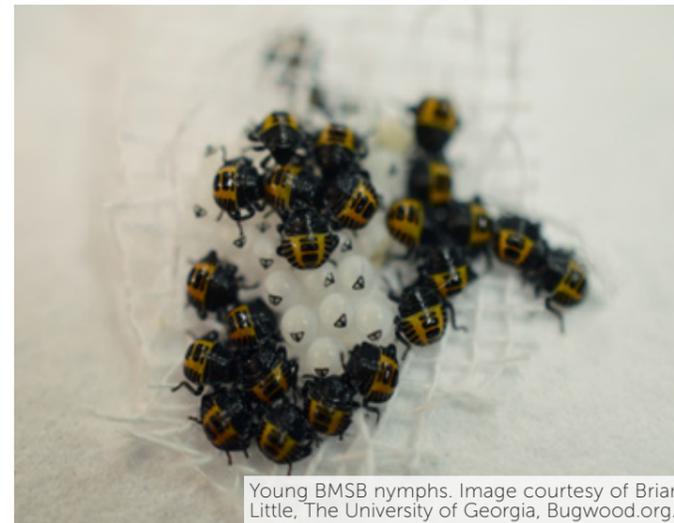


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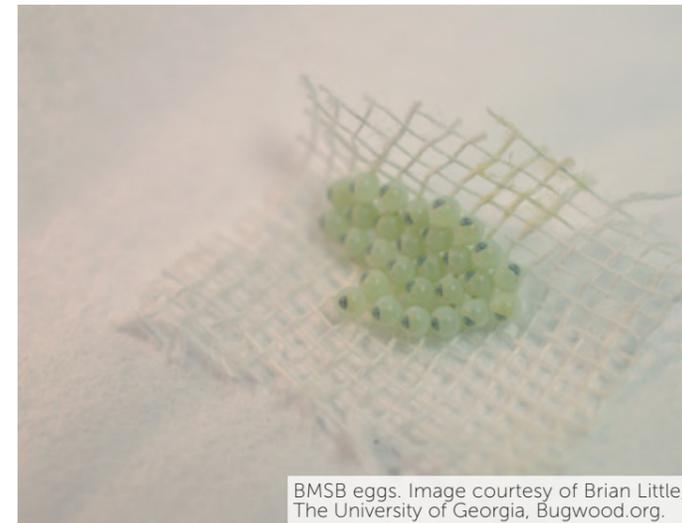




Brown marmorated stink bug (BMSB) late stage nymph. Image courtesy of Gary Bernon, USDA APHIS. Bugwood.org.



Young BMSB nymphs. Image courtesy of Brian Little, The University of Georgia, Bugwood.org.



BMSB eggs. Image courtesy of Brian Little, The University of Georgia, Bugwood.org.

PEST ALERT: BROWN MARMORATED STINK BUG

The brown marmorated stink bug is a significant plant pest that targets multiple vegetable commodities, causing crop damage, affecting marketability and reducing yield. In light of recent detections of brown marmorated stink bug in Western Sydney and Perth, *The Front Line* discusses why this pest poses a threat to Australia's vegetable industry, how to report the pest and an update on the current outbreak.

The brown marmorated stink bug (BMSB; *Halyomorpha halys*) poses an immense threat to the Australian vegetable industry. It is currently a top priority for industry and it is number 10 on the Department of Agriculture and Water Resources' (DAWR) Top 40 Exotic Pests priority list.

This highly polyphagous pest is native to China, Japan, Korea and Taiwan, but in 1996, it was detected in Allentown, Pennsylvania, United States. This was the first time the bug was detected outside of its native range. Since its establishment in the United States, the BMSB has become established in Canada and many countries across Europe including Switzerland, Italy, France, Greece, Hungary, Serbia and Romania. In recent months, the pest was discovered in premises in Western Sydney and Perth, resulting in increased surveillance activities across the areas.

HOW DO I IDENTIFY BMSB?

Over its lifetime, the BMSB changes colour and size. Light green eggs are laid on the underside of leaves in groups of 25-30, which gradually become white just before they hatch. Nymphs range from 2.4-12mm in length. Young nymphs have a dark head, yellow-brown abdomen with black stripes and an overall mottled appearance. Older nymphs are darker and often develop stripes perpendicular to those that appear in younger nymphs. White and black banding begins to appear on the legs, antennae and rear abdomen of older nymphs as they reach maturity.

Adult bugs have shield-shaped bodies and are brown-red in colour with a mottled appearance. They have distinct black and white bands on their legs, antennae and rear abdomen. Adults

are approximately 12-17mm long and 7-10mm wide. DAWR has created a resource to help distinguish the BMSB from other stink bugs, which can be found at agriculture.gov.au.

A SPREADING NUISANCE

The BMSB is a nuisance pest. In addition to the pungent odour produced when disturbed or crushed, it has a habit of overwintering inside warm, dry, man-made structures such as houses, machinery, containers and crates. As a result, it can be challenging for the general public to control.

Its tendency to hide also means that the BMSB is capable of hitchhiking on crates, containers, vehicles and the like through various import pathways to Australia, posing a major threat to Australia's vegetable and potato industries.

The BMSB is also a strong flyer. Adults are capable of flying more than 100 metres in less than one minute and have a tendency to disperse rapidly until the bugs find their preferred host plant. Ultimately, the BMSB is capable of expanding its invasive range quickly and efficiently, which could cause major problems if the pest establishes in Australia.

VEGETABLE HOSTS AND DAMAGE

The BMSB causes damage to more than 100 different species of host plant. Preferred vegetables include capsicums, sweet corn, okra, tomatoes, green beans and eggplant, but the stink bug will also feed on asparagus, cucurbits and brassicas.

Direct feeding by the BMSB can affect both the internal plant tissue and the external appearance of a vegetable crop. The

bug attacks the crop by inserting its stylet into the stem, fruiting body or seeds of the host plant, and feeding on the juices. These actions may cause scarring, fading and corking. Extensive damage can lead to cosmetic defects, which can significantly affect the marketability of the crop. However, early termination of flower buds and fruiting bodies can also reduce crop yield.

RESPONDING TO RECENT DETECTIONS

DAWR has responded to a number of BMSB outbreaks over the years. However, in recent months, live bugs were detected on equipment and containers at premises in Western Sydney and Perth. The cargo originated in Italy. As soon as BMSB was detected, the affected premises were placed under biosecurity control.

In response to the outbreaks, the NSW Department of Primary Industries, Greater Sydney Local Land Services, the Western Australian Department of Primary Industries and Regional Development and DAWR are conducting surveillance activities. Traps have been set in areas surrounding the premises but so far, the BMSB has not been detected outside of the premises.

Adult BMSB seek out safe places to overwinter between September and April in the northern hemisphere. As a result, BMSB is most likely to arrive in Australia between these months.

The DAWR has prepared biosecurity advice for stakeholders regarding emergency measures for the prevention of BMSB entering Australia, as well as industry advice notices where necessary, which explicate changes to current entry requirements for high-risk cargo.

New emergency measures have been implemented for all cargo imported from Italy. All containerised goods coming from Italy during the BMSB season, from 1 September 2017 until 30 April 2018, must undergo methyl bromide or similar treatment onshore. Cargo that has been treated offshore must hold a valid certificate. For further information, visit agriculture.gov.au.

MINIMISING THE RISKS

Although the Australian Government currently implements risk-based protocols to target BMSB at the border, biosecurity best practice should still remain a top priority for industry. Producers should survey their properties for pests and diseases and report anything unusual to the Exotic Plant Pest Hotline on 1800 084 881.

It is also important to keep up-to-date with biosecurity advice from DAWR, state governments and industry. If you are interested in receiving updates on current activities in the vegetable and potato biosecurity space, email info@ausveg.com.au.

REPORT, REPORT, REPORT!

Suspected plant pests should be reported to the **Exotic Plant Pest Hotline on 1800 084 881**. The automated hotline will then connect you to the appropriate authority based on your location.

USEFUL RESOURCES

- Brown marmorated stink bug fact sheet – planthealthaustralia.com.au
- Brown marmorated stink bug exotic pest alert – dpi.nsw.gov.au
- Brown marmorated stink bug (*Halyomorpha halys*) – agriculture.vic.gov.au
- 'Phenology, life table analysis and temperature requirements of the invasive brown marmorated stink bug, *Halyomorpha halys*, in Europe'; *Journal of Pest Science 2014*
- 'Biology, Ecology and Management of Brown Marmorated Stink Bug (*Hemiptera: Pentatomidae*)'; *Journal of Integrated Pest Management 2014*

INFO

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).

For further information, contact AUSVEG National Manager – Science and Extension Dr Jessica Lye at jessica.lye@ausveg.com.au or AUSVEG Biosecurity Officer Madeleine Quirk at madeleine.quirk@ausveg.com.au or 03 9882 0277. The Vegetable and Potato Biosecurity Program is funded by the Plant Health Levy.

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

Project number: VG15027



Growers on a tour of Barendse-DC in Middenmeer, Holland.

DOOR TO EUROPE OPENS FOR AUSTRALIA'S YOUNG GROWERS

In October, a group of 10 young growers travelled to the Netherlands, Belgium and Germany as part of the 2017 Vegetable Young Grower Industry Leadership and Development Mission. *Vegetables Australia* outlines the highlights of the mission and what the next generation of Australian growers learnt from visits to farms and other key industry stakeholders.



Display at Koppert Cress in Holland.

Ten Australian vegetable levy-paying growers under the age of 37 were provided with the opportunity to participate on an 11-day tour of leading horticulture operations through the Netherlands, Belgium and Germany in October 2017.

The mission, which took place from 1-13 October, provided an opportunity for the young growers to visit an array of leading horticultural companies, encompassing growing, seed, packaging, markets and innovative technology.

Expanding the leadership capabilities and development of the next generation of Australian vegetable growers was the primary aim of this mission. As this generation begins to play leading roles across the industry, it will need to be aware of the opportunities for Australian horticulture, and continue to lead the way in promoting Australian fresh produce to the world.

The project *2017 Vegetable Young Grower Industry Leadership and Development Mission (VG15703)* was a strategic levy investment under the Hort Innovation Vegetable Fund.

INSIGHTFUL VISITS

The mission began in the Netherlands, where participants visited local farms and gained an insight into the unique ways in which they operate. They visited Barendse-DC in Middenmeer which, at 47 hectares, is the world's largest greenhouse for orange capsicums. Petra Barendse provided a tour of the operation and explained that all of the water used within the greenhouse was recycled, electricity was generated on-site and the heating within the greenhouses was geothermal.

A highlight of the mission was Koppert Cress, which produces microgreens and has built a brand and marketing campaign which has set it apart as a premium producer. After receiving an award and visit from the Dutch Queen and Royal Family the day before, the group was impressed with the quality and high standard throughout the entire facility.

The group also enjoyed a tour of the Rijk Zwaan seed facilities and a demo field walkthrough, which displayed almost the entire open-field product range, including new varieties. Participants enjoyed the opportunity to view the range that is produced in Australia, and had strong interest in using particular seeds in their own operations.

WIDE-RANGING EXPERIENCE

Throughout the mission, participants travelled to various horticultural businesses from across the supply chain. This

included a Syngenta trial site in the Netherlands that was used during the Week 39 Field Days, which involves an annual presentation of the latest innovations in crops and technologies.

Participants also met Imre Knol from Dutch company Bird Control Group. He told the story of a bored student who started pointing a laser light at birds and the resulting journey which led the same student, Steiner Henske, to develop a sustainable solution to keep birds at a safe distance from operations such as farms and airports.

Following a visit to Hoogendoorn Growth Management, a business that creates sustainable and user-friendly automation solutions for the horticulture industry, participants were taken on a tour of Wageningen University and Research for Greenhouse Horticulture. The group was very impressed with the research that goes into greenhouse growing within the Netherlands. Of particular interest was the trialling of tropical fruits within a controlled climate, and it was discussed that if the climate could be controlled within the greenhouse, any commodity could be grown in any location across the world.

Another stop on the mission was PerfoTec, which set out to promote the sales of fresh produce by improving freshness and reducing waste. It has created a system to measure the respiration of fresh produce, which can then provide information to correctly perforate the packaging to ensure a longer shelf life. One perforation in the packaging can make the difference between 1-3 days of extra shelf life.

A highlight of the mission was Koppert Cress, which produces microgreens and has built a brand and marketing campaign which has set it apart as a premium producer... receiving an award and visit from the Dutch Queen and Royal Family the day before.

COUNTRIES BY COMPARISON

In Belgium, the group travelled to Waregem (approximately 100 kilometres west of Brussels) to visit Urban Crop Solutions, a turnkey vertical farming solutions provider. Participants toured the facility and witnessed some of the solutions in action. Through R&D, it was confirmed that over 180 crop types can be grown under the LED lights. This also ensures that the crops are grown efficiently, with 95 per cent less water usage than open field farming.

The group was very impressed with the consistent yields that could be generated through this technique, however questioned its cost-effectiveness within Australia as there is so much land available. It was agreed that it would be very effective in urban living areas throughout the world.

Back in Brussels, the group stopped at a major supermarket to compare packaging of fresh produce to that in Australia. This gave the group plenty of opportunity to discuss the difficulties in packaging fresh produce and also collect new and creative ways to present their produce in Australia.

THOUGHT-PROVOKING DISCUSSION

The final leg of the mission was Germany, where the group travelled to Lustadt to visit Rudolph Sinn GmbH, which produces seedlings for a range of commodities including spinach, baby leaf,

parsley and celeriac. The seedlings are produced in a greenhouse and service customers in Germany, Austria and France.

Participants then travelled a short distance to visit vegetable grower Peter Steegmüller, who provided a tour of his operation, which included the washing and packing shed. Peter explained the quality assurance requirements for the products, which the group noted was similar to Australia.

Conversation then turned to labour, with the group discussing the difficulties they have in finding reliable labour and relying on the backpacker workforce. Peter explained that Germany was also facing many issues in this sector, as its main source for labour was gypsy families from Romania. This was due to the German Government's decision to increase the minimum wage. Peter explained that this resulted in a large increase in employment from Eastern Europe, however they were only able to employ these workers for two months at a time, which caused great problems.

The mission concluded with a visit to the Markthallen München, which is Munich's wholesale market. The market spans over 300,000 square metres and supplies fresh produce to more than five million people. During the tour, the group had the opportunity to talk with vegetable grower Georg Kiening and discuss how the markets work and issues facing growers in Germany. A key discussion point was the oversupply of vegetables, and it was noted that Germany has many issues similar to Australia due to additional produce coming in from other parts of Europe.

A SUCCESSFUL MISSION

One of the major outcomes from this mission was the strong networks built among the group, and this has fostered strong discussions on key issues facing the Australian industry.

Now that the participants have returned home, they can share the high level of innovation and different growing techniques they have learnt from their European counterparts. Sharing this information and maintaining these relationships will not only benefit their own business, but help to shape the future of the Australian vegetable industry as a whole.

INFO

A full project report will be released in coming weeks and will be made available on the InfoVeg website: ausveg.com.au/infoveg.

The 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: VG15703

Hort Innovation
Strategic levy investment

VEGETABLE FUND



LEARNING FROM THE PAST TO PREPARE FOR THE FUTURE



Debriefs are a way to identify positive and negative outcomes from an emergency plant pest incursion, which can be used to improve the workings of the Australian biosecurity system. AUSVEG Biosecurity Advisor Dr Kevin Clayton-Greene shares important information that the horticulture industry has learnt from reviewing past responses to incursions.

The previous *Biosecurity brief* touched upon the tomato potato psyllid debriefing session which took place in Perth in December 2017. Since then, there have been two further debriefs on significant biosecurity incidents in the horticulture industry that required activation of the Emergency Plant Pest Response Deed (EPPRD). Neither of these debriefs involved AUSVEG, however they are instructive for levy payers for a number of reasons.

One of these incursion responses, chestnut blight, has been operating since 2010 and it is instructive to consider the issues that arose at that time and how the operation of the EPPRD has adapted since that time. The other debrief involved giant pine scale, and it was the first time that the new Transition to Management (T2M) provisions of the EPPRD were activated. The tomato potato psyllid incursion was the second time.

At the time of the chestnut blight incursion, the EPPRD was still relatively new and a number of provisions had either not been tested or were very early on in their use. Factors such as owner reimbursement costs were employed for the first time and helped to provide experience for future incursions.

Owner reimbursement costs are an important aspect of the EPPRD, and are the subject of ongoing review and discussion to make sure the system is fair and encourages reporting of pests.

From a producer point of view, it is imperative to have good records of your operation and business. This makes the task of assessment quicker, cheaper, and for the affected producer, it is likely to result in quicker resolution of claims.

STRENGTHENING RELATIONSHIPS

As noted in the previous column, it is also good to see that the relationship between industry and regulators has evolved considerably over the past decade and the importance of having industry involved from day one in any incursion is recognised by all. This is a massive shift from where the biosecurity system was a decade ago.

However, with involvement comes responsibility, and it is important that industry organisations at the state level

understand their obligations and responsibilities under the EPPRD. It is also important to understand the obligations of other parties involved in a response so that incursion management does not get side-tracked by confusion.

Plant Health Australia's website contains information that should be the first point of reference for those involved in an incursion. The Plant Plan can be found here: planthealthaustralia.com.au/biosecurity/incursion-management/plantplan.

This document has detailed information relating to industry and government roles in an incursion and an explanation of who does what. While I appreciate that this is probably not the most exciting document for people to read, it nonetheless forms the basis upon which incursion responses are performed.

Of particular importance to industry personnel are documents pertaining to T2M, the operation of the Consultative Committee on Emergency Plant Pests (CCEPP) and the role of the industry representative in a response.

Why is this important for state-based organisations when it is the national peak industry body that is the Deed signatory? Simply because the state in which the incursion has occurred will be the agency leading the response, and they will want to liaise with their local constituents as much as possible. The national body is also involved, but it must be noted that for local knowledge, the local organisation is in the best position to contribute.

INFO

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

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



ENVIROVEG PILOT PROGRAM: APPLY NOW

EnviroVeg is an industry-led environmental best-practice management program for vegetable production businesses. It provides resources for sustainable growing techniques and represents vegetable businesses as responsible stewards of land, water and biodiversity.

The EnviroVeg Pilot Program is a funded pathway through EnviroVeg to reach Freshcare Environmental certification and attain the best practice benefits of environmentally responsible, sustainable vegetable production.

Applications are now open for the EnviroVeg Pilot Program. To apply or find out more see the links below. Places are limited and applications are closing soon, so interested parties are encouraged to apply now!

APPLY NOW!

FOR MORE INFORMATION

- Website: ausveg.com.au/enviroveg
- Apply for the Pilot Program: surveymonkey.com/r/ApplyPilotProgram
- EnviroVeg Factsheet: ausveg.com.au/app/uploads/2017/11/EnviroVeg-Flyer_V6.pdf
- Pilot Program Factsheet: ausveg.com.au/app/uploads/2017/11/EnviroVeg-Pilot-Program_V6.pdf
- EnviroVeg presentation: soilwealth.com.au/resources/videos-and-apps/getting-soil-and-nutrition-management-right-with-the-enviroveg-program-webinar-recording

DEAR ENVIROVEG MEMBERS,

You may be wondering what is happening with the EnviroVeg program and why I have not been visiting regions, helping growers to complete self-assessments and grow the membership of EnviroVeg.

It's because EnviroVeg is changing for the better: better resources, better usability, better connection to R&D, better harmonisation with other environmental management programs and better benefits to members. These changes will ensure that EnviroVeg becomes something you want to use, to identify and implement savings (both cost and production) and be recognised for growing crops in an environmentally friendly, sustainable manner.

Freshcare Environmental certification now underpins EnviroVeg. Any certified members of EnviroVeg will meet the requirements of this program, which you need to access EnviroVeg branding. Freshcare Environmental is a fresh produce environmental assurance program and the Freshcare team brings assurance expertise to EnviroVeg.

The self-assessment is redeveloping and moving online, to be housed on the platform that contains Hort360. Hort360 is horticulture's computer based, risk assessment tool, designed to give you a 360-degree view of your farm business operations. Hort360's framework has been successful in driving the implementation of best management practices in Queensland horticulture and this structure adds value not only to the self-assessment, but to existing program resources such as the redeveloped EnviroVeg manual and new resources including a feedback report and facilitated training.

Upon completing your self-assessment, a feedback report will highlight on-farm environmental risks and recommended practices; that is, what you need to do to gain Freshcare Environmental certification and produce an action template to make it easy to implement these practices. The feedback report will link directly to the current R&D within the online-optimised, updated manual, which contains a logical flow of information and embedded links to useful resources.

I plan to host an update for members in Brisbane at Hort Connections 2018 on Monday 18 June at 5:30pm. I'll show you how all of this works and can be used. All interested parties are encouraged to attend.

In the meantime, if you want to be at the forefront of this project you should apply for the Pilot Program (see left) or ask me to come and visit. I'm always happy to talk, just drop me a line. Keep in touch and I look forward to working with you into the future.

Kind regards,

Andy Shaw
Environment Coordinator, AUSVEG
andrew.shaw@ausveg.com.au | 03 9882 0277



SOIL HEALTH: SETTING UP YOUR CROP FOR SUCCESS



Healthy soils are vital to improving the productivity and profitability of a vegetable growing operation. However, the ways to achieve this are often not well-understood. Syngenta Technical Services Lead Dave Antrobus discusses the various soil testing options available to vegetable growers, and how they can benefit their business.

When it comes to the essentials of growing any vegetable crop, you might think it's as simple as supplying the plant with the essentials: soil, water and sunlight. Unfortunately, it's not quite that simple. Each of these elements need to be supplied in the right quantity and quality, and the least understood is soil.

SOIL: ESSENTIAL TO VEG PRODUCTION

Soils are tested for the presence, or absence, of specific nutrients (phosphorus, nitrogen, potassium, magnesium etc.) and excessive toxins, particularly salt and aluminium. The level of organic matter, which is a key indicator of biological activity and water-holding capacity, is often overlooked. Recently, I saw vegetable crops grown on soils with less than 0.5 per cent organic matter. Soils such as these require a long-term plan to build their organic matter levels if you want that soil to consistently grow a quality and high-yielding crop.

Living organisms in soil help to control water infiltration, mineral density and nutrient cycling. Evolution has equipped these organisms to work with plants to apply the laws of physics and chemistry for their own ends. Generally, growers don't realise that the total biomass below ground (i.e. the dry weight of all living plant, fungi and microbial material) normally exceeds the above ground plant and animal biomass it supports.

WHAT GROWS ABOVE, AND HOW IT GROWS, IS DEPENDENT ON THE RELATIONSHIP IT HAS WITH WHAT GROWS BELOW.

There are many beneficial organisms, microbes and fungi in our soils and there are also many which are detrimental to plant growth. Numerous nematodes and soil-borne diseases will

attack young establishing plants and often cause very serious yield losses. This is especially the case if crops are grown in short rotation. Diseases such as *Rhizoctonia*, *Pythium*, *Fusarium* and *Phytophthora* are the big hitters when it comes to yield loss. Similarly, hidden pests include the multitude of plant-parasitic nematodes, such as root-knot nematode and the many lesion-type nematodes.

A key question for your business should be, "Do I know the population of nematodes and soil diseases which exist in my soils?" and then ask yourself, "Do I have a plan to manage these to maximise yield?"

The South Australian Research and Development Institute (SARDI) offers a service to test the soil for nematodes and many soil diseases; the testing is offered as a commercial service for potato crops. For vegetables, the tests for soil diseases are still in the development stage, however SARDI can discuss individual needs based on the crops intended to be grown. I encourage growers to contact their local agronomist to enquire further.

INFO

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](mailto: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.

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

Project Number: VG15027



INDUSTRY IN THE MEDIA

The formation of the National Farmers' Federation (NFF)-led Horticulture Council was a key story that dominated the horticultural media landscape in recent months.

AUSVEG CEO James Whiteside welcomed the formation of the Council in print media, saying that AUSVEG hoped the resources and expertise of the NFF would give the horticultural sector a stronger voice in shaping the political agenda. He added that as part of the Council, AUSVEG will work with the Council's participants to establish a unified voice for the sector and get the best possible representation for growers.

Mr Whiteside also appeared in print media in February commenting on the new market access to Indonesia secured for Victorian and South Australian seed potato growers. He said the deal would give these growers more choice about where to send their product and allow them to take advantage of the potentially lucrative Indonesian market.

Earlier in the year, AUSVEG National Manager – Export Development Michael Coote also appeared in print commenting on the greater focus on exports included in the new strategic investment plan for the vegetable industry. Mr Coote noted that the industry is eager to capitalise on growing demand for Australian produce in key markets, and said the strategy identifies opportunities to grow exports in existing markets.

VEGETABLE CONSUMPTION

In February, Mr Whiteside commented on the newly-launched campaign promoting vegan eating in Melbourne. He noted that plant-based foods offer the most efficient means of supplying all essential nutrients for a healthy diet, particularly as global food demand rises.

AUSVEG National Manager – Communications Shaun Lindhe also appeared in print media discussing ways for Australians to increase their vegetable consumption during Smart Eating Week in February, which ran in place of the annual Healthy Weight Week. Mr Lindhe said that by cooking meals at home, Australians can have more control over the ingredients used in a meal and enjoy the added bonus of a nutrient-rich diet from eating more vegetables.

INFO

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

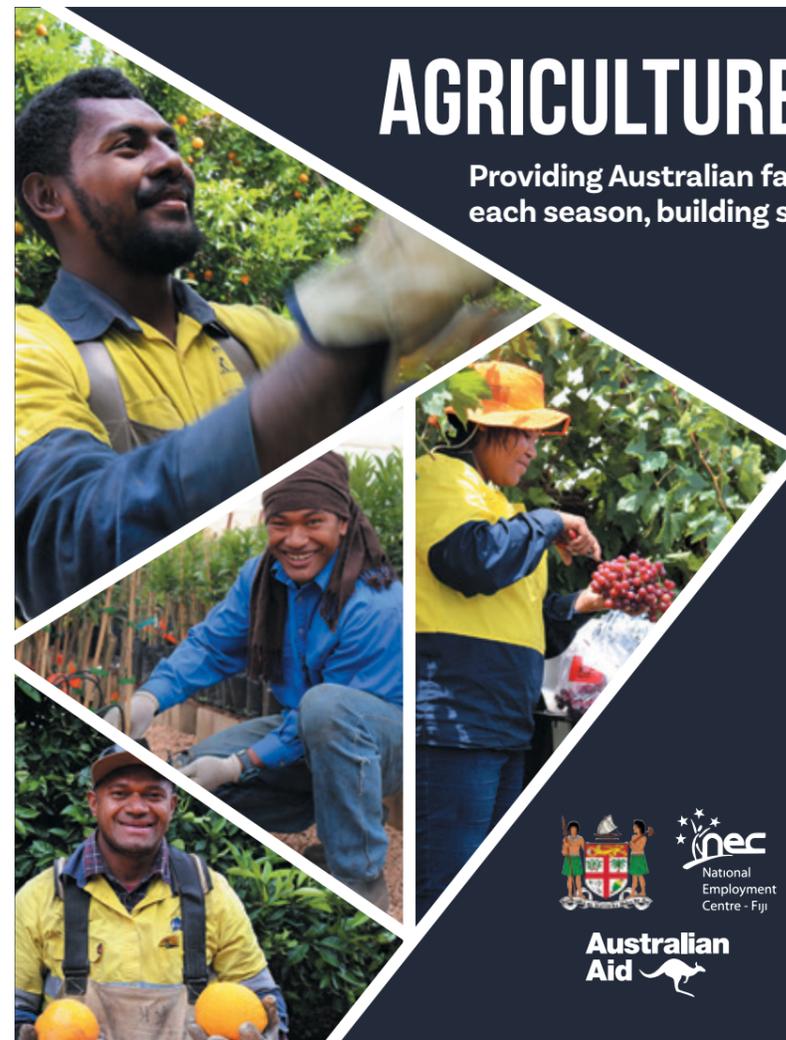


AGRICULTURE WORKERS FROM FIJI

Providing Australian farmers with a reliable workforce that can return each season, building skills and reducing the need to retrain workers.

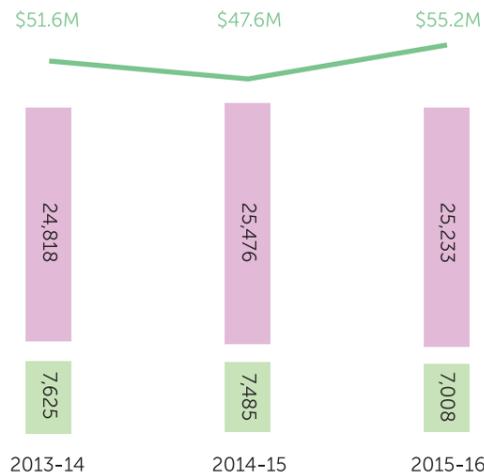
The advantages of hiring Fijian workers:

-  Fijian workers are experienced in growing and harvesting crops such as pineapples, paw paw, herbs, spices, sugar cane, bananas and root crops - skills transferable to Australian farms.
-  Fijians have a strong work ethic, are hardworking and physically fit.
-  Workers have passed a full medical check and fitness test.
-  Workers are matched to the employer's needs.



To employ Fijian workers, contact the Fiji National Employment Centre (NEC) Tel: +679 3310 331
 E: sakeo.talemaimaleya@govnet.gov.fj www.nec-fiji.com
 Information about Australia's Seasonal Worker Programme is at: www.jobs.gov.au/seasonal-worker-programme

VEGGIE STATS: GREEN PEAS

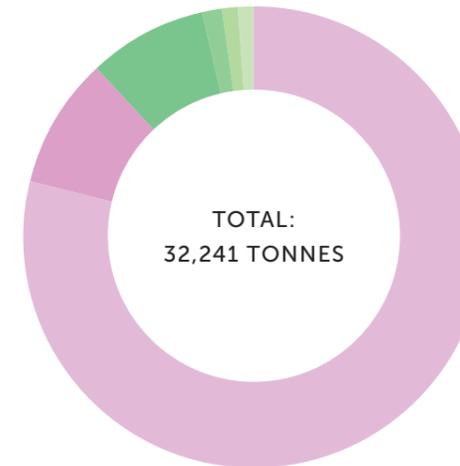


GREEN PEAS PRODUCTION AND VALUE

- Australia produced over 32,000 tonnes of peas in 2015-16, consistent with previous years, with the bulk of this production volume going to processing.
- Exports of fresh and frozen peas earned around \$300,000 in 2016-17. This figure is consistent with the usual level of export value for Australian peas when there is no significant activity in key markets.

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

Value Processing volume (tonnes) Fresh volume (tonnes)



PRODUCTION BY STATE 2015-16

- Australia produced around \$55 million worth of peas in 2015-16, up from around \$47.6 million in 2014-15.
- Tasmania produces the vast majority of peas in Australia, with the remainder of production predominantly occurring in Victoria and Queensland.

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

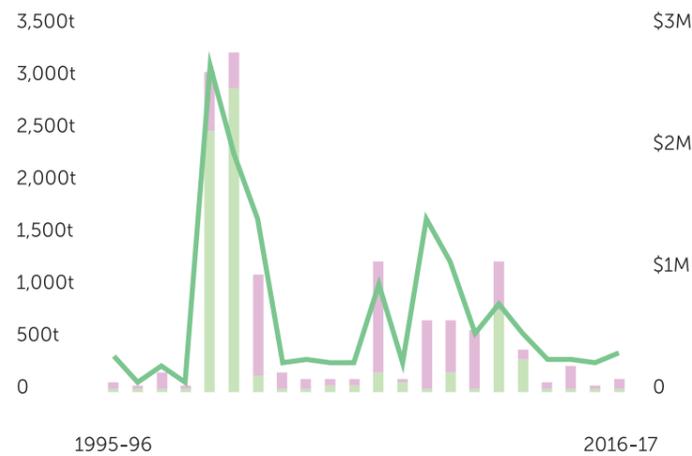
TAS VIC QLD WA NSW SA

TOTAL EXPORTS OF GREEN PEAS

- Australian exports of fresh and frozen peas tend to remain low unless demand spikes in individual markets. For example, fresh pea exports leapt between 1999 and 2001 due to high demand in Pakistan, and frozen pea export value spiked in 2008-10 from demand in New Zealand and the United States.

Source: Global Trade Atlas, accessed February 2018

Fresh quantity Frozen quantity Total export value

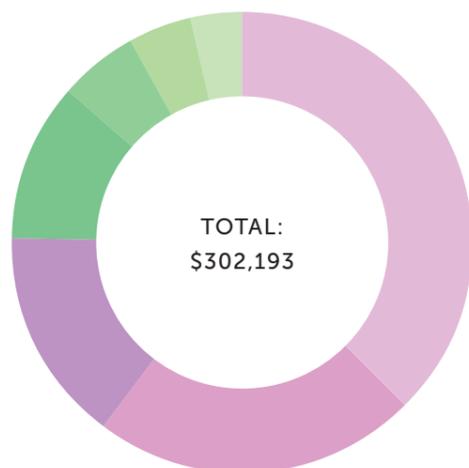


GREEN PEAS TRADE BALANCE

- Imports of fresh and frozen peas massively outweigh our exports, with the bulk of this imbalance coming from frozen imports, largely from New Zealand.
- Other significant sources of frozen pea imports include Belgium, the United States, the United Kingdom and China.

Source: Global Trade Atlas, accessed February 2018

Imports Exports Trade balance



KEY EXPORT MARKETS FOR GREEN PEAS IN 2016-17

- The most consistent export destinations for Australian peas over previous decades have been neighbouring nations such as Indonesia, Papua New Guinea, New Caledonia and Fiji.
- South-east Asian nations such as Singapore and Malaysia have also become regular markets in recent years, reflecting the increasing value of these markets for the Australian vegetable industry.

Source: Global Trade Atlas, accessed February 2018

Indonesia Malaysia New Zealand Papua New Guinea All other nations Fiji New Caledonia



The first colour commercial shown in Britain was for Birds Eye frozen peas, and aired on 15 November 1969.

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



A yellow sticky trap at CERES.



AUSVEG Biosecurity Officer Madeleine Quirk visited CERES in January.

COMMUNITY GARDENS PROVIDE SURVEILLANCE AND SAMPLING OPPORTUNITIES FOR VEGETABLE INDUSTRY

In January 2018, staff from Agriculture Victoria and AUSVEG visited the CERES sustainability centre in Melbourne to set yellow sticky traps for surveillance of tomato potato psyllid (TPP) populations. TPP has not been detected in Victoria, however, urban surveillance efforts such as this and similar efforts in other states will assist with early detection and claiming state area freedom. AUSVEG Biosecurity Officer Madeleine Quirk discusses how various plant biosecurity projects are involving community parks and gardens.

The Centre for Education and Research in Environmental Strategies (CERES) is a not-for-profit sustainability hub for environmental, social and economic sustainability. CERES is set on 4.5 hectares of land in East Brunswick, Victoria.

CERES offers a space for community members to come together and grow their own fresh produce. CERES staff, assisted by volunteers, also grow produce at the CERES Organic Farms. The produce grown at the Organic Farms is sold at the onsite organic market and grocery, as well as being used at the site café, the Merri Table.

TOMATO POTATO PSYLLID SURVEILLANCE

In response to the detection of tomato potato psyllid (TPP) in Western Australia, Agriculture Victoria ramped up surveillance activities for TPP across the state, conducting trapping and engagement activities in metropolitan and rural production areas. These surveillance efforts prove state freedom and provide industry with market access options. In January, staff from Agriculture Victoria and AUSVEG visited CERES to set yellow sticky traps for surveillance of TPP. CERES is well-known for supporting the community and was very willing to allow trapping activities to go ahead at its site.

Agriculture Victoria Officers set traps across the property, which were left intact for seven days before being taken to Agriculture Victoria's diagnostics laboratory for analysis. The CERES site horticulturalist oversaw the trapping activities. In the weeks prior to this visit, yellow sticky traps were erected at community gardens in Avondale Heights and Strathmore Heights. The same surveillance procedures were followed at these sites.

Erecting yellow sticky traps across metropolitan locations is essential for TPP surveillance. As we have learnt from the detection of TPP in a Perth backyard, we never know where an exotic pest will first appear.

Although TPP was not detected in Victoria at the time of writing, the activities being undertaken by Agriculture Victoria in collaboration with community gardens across Melbourne will act as an early warning system for industry and will assist in proving Victoria's area freedom. Other states and territories are also conducting surveillance activities in order to confirm freedom from TPP. These collaborations are integral for safeguarding the vegetable and potato industries.

COMMUNITY GARDENS BENEFIT VEGETABLE R&D

Another collaborative project, *RD&E Program for control, eradication and preparedness for vegetable leafminer* (MT16004) – a strategic levy investment under the Hort Innovation Vegetable and Nursery Funds – highlights how community parks and gardens can assist R&D activities across the country.

The project was developed to raise awareness of vegetable leafminer (*Liriomyza sativae*) and its management. Project partners include Plant Health Australia, Cesar, the University of Melbourne, the Northern Australia Quarantine Strategy (NAQS) and AUSVEG.

The project commenced in 2017 and will conclude in 2020. During this time, project partners will identify the distribution of the vegetable leafminer in Australia, track pathways of spread across the Torres Strait and Australia, develop surveillance strategies, investigate control options (including the use of

parasitic wasps to control flies) and communicate the outcomes of the project to growers across Australia.

In spring of 2017, Cesar's Dr Elia Pirtle collected larvae of local species of leafminer flies from nasturtium, chickory and rocket plants at a Marist180 community garden in Brunswick.

"From these collections, I was able to rear several species of parasitic wasps that attack leafminer flies, keeping leafminer populations under control," Dr Pirtle said.

These parasitic wasps included *Closterocerus mirabilis*, *Hemiptarsenus varicornis*, *Opius* spp., and an unidentified Eulophid. The wasps emerged from parasitised pupae of what were very likely cabbage leafminer (*Liriomyza brassicae*), a close relative of the vegetable leafminer.

"These collections helped build a better picture of our local community of beneficial wasps, which may play an important role in controlling incursions of the vegetable leafminer," Dr Pirtle said.

The project aims to prepare for the arrival of the vegetable leafminer into vegetable, fruit and nursery production areas across Australia. Community gardens assist the project because they can provide experimental sites for analysis of agromyzid control options.

GENERAL PUBLIC ON THE LOOKOUT

If you notice an unfamiliar or suspicious pest in your garden or on your farm, call the Exotic Plant Pest Hotline on 1800 084 881 to report it.

INFO

For further information, contact Cesar's Dr Elia Pirtle at epirtle@cesaraustralia.com, AUSVEG National Manager – Science and Extension Dr Jessica Lye at jessica.lye@ausveg.com.au or AUSVEG Biosecurity Officer Madeleine Quirk on 03 9882 0277 or madeleine.quirk@ausveg.com.au.

This communication 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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Newly transplanted celery receives water immediately after planting using Toro Aqua-Traxx premium drip tape, leading to stronger plant growth.

DRIP IRRIGATION HELPS VEGETABLE GROWERS OVERCOME CHALLENGES

Adopting novel irrigation practices has proven successful for the Naumann brothers in the United States. Faced with an evolving market, the vegetable growers are focused on constant innovation while keeping their practices simple. Mike Naumann outlines what his operation has implemented in the irrigation space, and the positive outcomes this has had on their farm in California.

Mike and Brian Naumann are young growers with a daunting legacy to fulfill: the family has been growing vegetables in Ventura County, California, since 1898. But the Naumann brothers are not ones to buckle under pressure, and have adopted a can-do attitude to successfully grow 320 hectares of mixed vegetables in a volatile, ever-changing market.

According to Mike, the secret to their success is innovation and keeping things simple.

"We're also lucky to have role models who are industry leaders and always a step ahead," he said.

Food safety is one of the more difficult challenges vegetable growers face. The Naumanns believe their drip irrigation and harvest practices help safeguard them from the potential disasters that other growers have experienced in recent years.

"We haven't used flood or sprinklers for years, and given the current pressures regarding food safety, we don't feel we could farm if it weren't for drip," Mike said.

The Naumanns use Aqua-Traxx® premium drip tape from Toro Irrigation due to its durability and uniformity.

"Even though we use a five millimetre wall thickness, it doesn't break when we install it," Mike said.

In addition, the Naumanns find that the precision-moulded emitter resists clogging, while delivering uniformity at the same time. This results in even water distribution throughout the field and avoids puddles or runoff that harbour *E. Coli*.

System maintenance is routine. During the irrigation season, the lines are treated with chlorine to kill organic growth and keep everything running smoothly. In addition, the Naumanns formulated their own calcium hypochlorite solution to reduce chlorine expenses.

STRENGTHENING TRANSPLANTS

The Naumanns have further innovated by developing a simple valve and lay-flat system that allows immediate irrigation of new transplants.

"After each pass of the transplant machine, we open up additional drip lines from the lay-flat by changing positions of an improvised marine valve – this way, newly transplanted rows receive water immediately after planting," Mike said.

"This is in contrast to waiting for an entire block to be completed, and the result is reduced mortality and stronger plant growth. It also eliminates the expense of bringing in traditional sprinklers to 'set' transplants, and the unwanted side effect of runoff."

Rollers help to properly secure the transplants in the soil, so the entire bed is quickly 'blackened' with moisture soon after the drip lines are pressurised.

"If we were using sprinklers, the plants would have to wait until the block is completely planted, and would likely stress before receiving water," Mike said.

The logistics of above-ground pipelines would be difficult to work around as well, and windy conditions often ruin sprinkler uniformity and drift water into unwanted fields or roadways. The Naumanns believe drip has improved both yields and quality while simultaneously reducing water use, as well as labour costs.

"We're using half as much water with drip as we did with other irrigation methods we used in the past, and have experienced increased yields and uniformity at the same time," Mike said.

"In addition, we save on irrigation labour which reduces our costs."

Drip creates a uniform crop, whether it's celery or beans, and that helps when it comes time to harvest. Irrigation is scheduled by watching the crop and sampling the soil by hand.

The Naumanns have tried using evapotranspiration (ET) data in the past. Evapotranspiration is a term used to describe the water consumed by plants over a period of time, but is also transferred back into the atmosphere. However, the growers found this data highly variable, and would rather depend on their eyes and hands.

Judging by their success, the Naumann family legacy is safe well into the 21st Century.

INFO
For more information, please visit toro.com.



SAMANTHA LIZARS: PAVING THE WAY FOR QUALITY IN THE LEAFY VEG INDUSTRY



NAME: Samantha Lizars

AGE: 24

LOCATION: Lindenow, Victoria

WORKS: Bulmer Farms

GROWS: Baby spinach, baby leaf varieties, baby broccoli, iceberg and cos lettuce

customer's requirements as well as meeting regulatory, industry and international standards.

WHAT DO YOU ENJOY MOST ABOUT WORKING IN THE VEGETABLE INDUSTRY AND HOW DO YOU MAINTAIN YOUR ENTHUSIASM?

I love being surrounded by fantastic fresh food. I think quality assurance and provenance are very important. Australia has a great reputation for producing world-class, safe, quality fresh food. Being able to validate that process is something I am passionate about. I get to work with a great group of people who keep me motivated in my role.

WHAT ARE THE BIGGEST CHALLENGES YOU FACE WORKING IN THE INDUSTRY, AND HOW DO YOU OVERCOME THEM?

One challenge that is within the industry is dealing with people who struggle with constant evolution and change. The second challenge is outside the industry and that is the disconnect between the producer and the consumer. Many consumers have a limited understanding of the processes undertaken to produce the quality fresh food that they eat day in and day out.

HOW DID YOU FIRST BECOME INVOLVED IN THE VEGETABLE INDUSTRY?

After completing my Victorian Certificate of Education (VCE) in 2011, I secured an agri-food traineeship through the East Gippsland Food Cluster. The traineeship gave me the opportunity to work within three local businesses, two of which were vegetable farms.

WHAT DOES YOUR ROLE INVOLVE, AND WHAT ARE YOUR RESPONSIBILITIES?

As Quality Supervisor in the pack house, I am responsible for ensuring all produce and processes undertaken meet our



Photography by Lisa Hayman.

YOU RECEIVED A VICTORIAN GOVERNMENT YOUNG FARMERS SCHOLARSHIP IN DECEMBER 2017. WHY DID YOU APPLY FOR THE SCHOLARSHIP, AND HOW WILL IT BENEFIT YOUR FUTURE IN THE VEGETABLE INDUSTRY?

The Young Farmers Scholarship will give me the opportunity to develop my career pathway, which was previously limited by a lack of formal qualifications.

As part of my 'Upskill' component of the scholarship, I will undertake the Diploma of Food Safety Quality Assurance Management. On completion, I will be able to implement the world's best practices and processes in food safety and quality. I will have developed the knowledge to be able to action the food safety needs and improvement opportunities that are specific to our business. It will allow me the capability, confidence and training to grow from a supervisor position into front line management.

WHERE DO YOU RECEIVE YOUR ON-FARM PRACTICE ADVICE AND INFORMATION FROM?

My current Pack House Manager, who was my mentor during my traineeship. Both my senior managers and our resident agronomist are fantastic to work with and offer lots of support and encouragement.

IN YOUR OPINION, WHAT AREAS OF RESEARCH ARE IMPORTANT TO THE INDUSTRY AND YOUR BUSINESS?

Growing, harvest and postharvest technology to increase production efficiencies within the industry; extending shelf life and quality of produce through plant breeding and technology; continued research into pests and diseases which have an

impact on the appearance and overall quality of produce that ultimately impact the bottom line of the business; and understanding the necessary practices to reduce the risk of microbiological outbreaks, as these can be detrimental to human health and therefore the industry.

WHAT NEW INNOVATIONS, RESEARCH OR PRACTICES HAS YOUR BUSINESS IMPLEMENTED RECENTLY? WHAT ARE YOU DOING DIFFERENTLY TO OTHER GROWING OPERATIONS?

The purchase of equipment to improve our processes on-farm, such as the Sormac wash line and drying tunnel (first to implement in Australia) and a state-of-the-art Ramsey Highlander harvester.

We work closely with seed companies and breeders to trial new varieties specific to Australian conditions. We have adopted an online farm management program, allowing for real-time information to be instantly available.

We are currently in the process of assessing predictive weather stations and soil moisture probes for our farm to improve crop management.

WHERE DO YOU SEE OPPORTUNITIES FOR GROWTH IN THE AUSTRALIAN VEGETABLE INDUSTRY?

Export and value-adding products, as well as the promotion of healthier diets, which encourages people to eat more fruit and vegetables to combat the obesity and diabetes crisis within Australia.

Also, the development of nutraceuticals, which are products derived from food sources with extra health benefits in addition to the basic nutritional value found in foods. Using surplus and

aesthetically imperfect vegetables to create nutrient-dense products will assist in reducing food waste, developing longer shelf life products and achieving healthier alternatives to snack and convenience foods.

It revolves around using food waste such as hail-damaged product that is not visually appealing to buyers, extracting the nutritional value and using it in products such as multi-vitamins, baby formulas and snack foods.

It is a growth opportunity for Australia's fruit and vegetable industry to be involved in, as well as being able to use these products for export.

WHERE DO YOU SEE YOURSELF IN FIVE YEARS?

I plan on continuing to progress my career within the Bulmer Farms business. I would like to move from a supervisor level

position to a management role where I am actively participating in the front line management of Bulmer Farms.

HOW DO YOU THINK MORE YOUNG PEOPLE COULD BE ENCOURAGED TO STUDY AND TAKE UP JOBS IN THE VEGETABLE INDUSTRY?

I believe young people are not fully aware of how many wonderful job opportunities there are in the horticulture industry. The horticulture industry is just like any other industry; it requires people of all different skill sets, from higher level management to hands-on roles.

However, this is not the general public's perception of the industry. High schools in horticulture regions should be working with students and encouraging them to explore pathways within the horticulture industry.

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Mediterranean fruit fly (*Ceratitis capitata*) poses a significant threat to the Australian horticulture industry.

CONTROLLING FRUIT FLY POPULATIONS FOR A SUSTAINABLE HORTICULTURAL FUTURE

The Fruit Fly Fund is one of seven funds developed under Hort Frontiers, a strategic partnership initiative led by Hort Innovation that facilitates collaborative, cross-horticulture projects. Hort Innovation R&D Manager for the Hort Frontiers Fruit Fly Fund Penny Measham spoke to *Vegetables Australia* about the importance of developing fruit fly management options, and the projects that are currently being undertaken in this space.

Hort Innovation has developed the Hort Frontiers strategic partnership initiative to expand its funding model beyond its traditional levy investments, and to better equip Australian horticulture for the future ahead. It facilitates collaborative cross-industry research focused on longer-term, complex and traditionally under-invested themes identified as critical for the future of Australian horticulture.

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.

Hort Frontiers can invest funds from across the industry and value chain, alongside contributions from the Australian Government.

IN THE SPOTLIGHT: FRUIT FLIES

The Hort Frontiers Fruit Fly Fund has been developed in response to the increasing impact of Queensland fruit fly (Qfly) and Mediterranean fruit fly (Medfly) on Australian horticulture, particularly given the withdrawal of key management tools such as broad spectrum pesticides that were historically important in endemic areas. The fund aims to develop ways to control fruit fly populations and secure the productivity of the Australian horticulture industry.

Within the Hort Innovation Fruit Fly Fund is the \$45 million SITplus partnership, which comprises a diverse range of individual projects.

Fruit fly continues to impact Australian horticulture, particularly in the area of market access as horticulture exports become increasingly critical to the industry. Millions of dollars are estimated to be lost each year due to the pest. Additional risks posed by fruit flies include the potential need for expensive post-harvest treatments and fruit damage.

Fruit Fly Fund R&D Manager Penny Measham said a range of projects are being conducted under the Fruit Fly Fund, including piloting the production of Sterile Insect Technique (SIT) in Qfly; creating tools to allow communities to prepare for SITplus with Area Wide Management programs; and piloting eradication of Medfly in Carnarvon, Western Australia.

Within the Hort Innovation Fruit Fly Fund is the \$45 million

SITplus partnership, which comprises a diverse range of individual projects. The SITplus program aims to deliver an integrated solution to the management of Qfly and involves a consortium of research organisations.

Hort Innovation and the South Australian Government have funded the establishment of the \$3.7 million sterile Queensland Fruit Fly facility in Port Augusta, which will allow for the production of at least 50 million sterile flies per week.

"In 2018, we plan to be conducting sterile fly releases as part of the response to Qfly outbreaks in South Australia," Mrs Measham said.

"In addition, we will start testing releases as a management option in areas of low pest pressure."

High quality, reliable and cost-effective larval diets are a core requirement of any SIT program. It is essential to develop new approaches to these larval diets, and Macquarie University in New South Wales is currently investigating the options.

Application of SIT also requires preparation, and CSIRO and Hort Innovation are developing a comprehensive guideline for area coordinators and growers to assess their current situation and carry out the required tasks and programs.

Macquarie University, with other SITplus partners, is also developing knowledge of Qfly and factors that will assist with management of the fly, including development of attractants,

understanding of climate interactions, population genetics and trap catch analysis.

Hort Innovation has received significant support from around the world in regards to fruit fly research, particularly the International Atomic Energy Agency (IAEA). The United States Department of Agriculture has also provided significant support as well as access to its fruit fly factories and release operations.

"SITplus representatives have also visited growers and facilities in multiple countries to bring back knowledge to Australia," Mrs Measham said.

Eradicating Medfly from Carnarvon is another main focus of the Hort Frontiers Fruit Fly Fund. The Western Australian Department of Primary Industries and Regional Development is trialling a

combination of fruit fly baiting and the release of sterile fruit flies, and this project will be used as a pilot for developing fruit fly-free areas or areas of low pest prevalence in southwest Western Australia.

GROWER PERSPECTIVE

Grower feedback has been incorporated in the development and ongoing review of the Fruit Fly Fund projects, Mrs Measham said.

"In particular, growers helped define the core problems and issues on the ground that the research is addressing."

While it may have the word 'fruit' in its name, the fruit fly doesn't just affect fruit growers; it also has the potential to affect the vegetable industry.

"Fruit fly is a pest of vegetables as well, especially capsicum, but also cucumbers, pumpkins and other vegetables. Development of management options and maintaining Pest Free Areas is important for market access, both domestically and internationally," Mrs Measham said.

INFO

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

For more information, please visit horticulture.com.au or contact Penny Measham at penny.measham@horticulture.com.au or 07 3198 6758.

These projects have been funded by the Hort Frontiers Fruit Fly 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.



CURRENT PROJECTS UNDER THE HORT FRONTIERS – FRUIT FLY FUND

PROJECT CODE	PROJECT TITLE	SERVICE PROVIDER
AI13001	Dietary sterilisation of male Qfly	CSIRO Biosecurity Flagship
FF15000	SITplus: Port Augusta Qfly SIT Factory	Primary Industries and Regions South Australia
HG13034	SITplus: Improved management system for Qfly	The New Zealand Institute for Plant & Food Research
HG13039	Medfly Eradication from Carnarvon Using AWM and SIT	Department of Primary Industries and Regional Development (WA)
HG13045	Larval diets for high-productivity mass-rearing	Macquarie University
HG14033	SITplus: Raising Qfly sterile insect technique to world standard	Macquarie University
HG14035	Establishment of the sterile Qfly facility	Primary Industries and Regions South Australia
MT13040	Area-wide integrated pest management using the SIT technique	CSIRO
MT13509	SITplus: Developing and optimising production of a male-only temperature-sensitive-lethal strain of Qfly, <i>B. tryoni</i>	South Australian Research and Development Institute

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VegPRO Program Coordinator Sophie Lapsley discusses the program at Fresh Select in Werribee, Victoria.

COACHING OPPORTUNITIES AVAILABLE FOR VEG INDUSTRY MEMBERS

As part of the VegPRO training plan for 2018, the project has the capacity to conduct a series of coaching events across all Australian states. The questions often asked are: "What is coaching? Is this for me, and how can it help my business?" Project Coordinator Sophie Lapsley provides the answers.

WHAT IS COACHING?

Coaching is a form of professional development. A coach supports a group of individuals by providing training, advice and guidance around a topic that they have chosen, which is often a work-related goal.

VegPRO coaching involves coaching of groups with similar goals. Attendees can represent individual businesses, or multiple businesses interested in similar topics. The coaching will be developed around the needs of that specific group, with input from participants to ensure their expectations are met.

The process involves group coaching workshops, as well as one-on-one support. Online interaction or practical sessions on-farm may be incorporated, depending on the group's requirements. Participants will set their own goals, and these may be individual or shared goals.

HOW CAN COACHING HELP ME OR MY BUSINESS?

Participants who attend VegPRO coaching focus on a specific issue or goal related to their workplace over a period of time. With training support and advice from the coach, they work towards resolving their issue or reaching their goal. Not only does this develop the individual participant, but skills and knowledge learnt can be utilised in the workplace to benefit the wider business. Skills and knowledge can also be shared with colleagues and workmates to help develop other staff within the business.

WHAT SORT OF TOPICS CAN BE CHOSEN?

VegPRO coaching allows participants to choose from a range of topics, including but not limited to: crop production, postharvest, logistics, marketing, supply chain management, new technology, sustainability, resource use, people management or dealing with regulation and quality assurance (QA).

This approach allows a business to address specific challenges, fine-tune a business process, introduce new technology to analyse business data, identify and act on areas for improvement or develop a product or supply chain.

HOW WILL IT WORK?

The coach will contact participants prior to the training to help identify an achievable goal.

- There are at least two days of practical, interactive training on the identified topics of the group.
- Each participant will have a topic to work on for the term of the coaching (2-9 months).
- Coaches will be available for follow-up and guidance over the term of the coaching.
- Face-to-face or conference calls will be used to review progress.
- Optional access to a central communications platform may be available for individual groups to stay in touch and share information.

KEEP IN TOUCH

For those who are interested in these coaching events, please contact VegPRO Coordinator Sophie Lapsley.

Don't forget VegPRO is running a variety of training in 2018. To keep up-to-date with what is currently on offer, visit vegpro.com.au/copy-of-provider-search.

Do you have a training need or request? Keep your requests coming in so that the training delivered by VegPRO is current and meets industry needs.

INFO

For more information or access to resources, please contact VegPRO Program Coordinator Sophie Lapsley on 0426 200 996 or sophiel@rmcg.com.au or visit vegpro.com.au. You can log a request at 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



HORT INNOVATION ESTABLISHES EXPORT FACILITATOR NETWORK TO SUPPORT GROWERS

Australia's vegetable growers who are looking to export are set to benefit from a new project focused on supporting growers to meet commercial export opportunities, promoting collaboration within the industry and ultimately growing the value of vegetable exports.

vegetablesWA, in partnership with Growcom and the Tasmanian Fruit and Vegetable Export Facilitation Group, has just commenced a three-year Hort Innovation-funded project designed to upskill Australian vegetable growers to become export-ready.

The purpose of the project is to increase Australian vegetable exports by supporting growers to capitalise on commercial business opportunities. The 'on-the-ground' export facilitators in Western Australia, Queensland and Tasmania will form a facilitator network across a number of key vegetable exporting states in Australia to promote collaboration within the industry. It will also provide linkages across the supply chain that will assist in achieving the overarching objective of the *Vegetable Industry Export Strategy 2020* of growing the value of vegetable exports by 40 per cent by 2020.

With key export markets in Asia and the Middle East driving demand for fresh produce, there are more opportunities than ever for Australian vegetable growers to become involved with export. Australia has a number of competitive advantages in the international marketplace, including geographical proximity to key markets, counter seasonality and the perception of Australia as a premium quality producer.

The project *Export Facilitators* (VG16085) is a strategic levy investment under the Hort Innovation Vegetable Fund.

ACHIEVING EXPORT SUCCESS

There is no single approach to export that works for all growers. The support offered by the Export Facilitators will be tailored to individual businesses at different stages of export readiness. The reality is that many new exporters may be smaller businesses with limited product range and seasonality, so the state-based facilitator and the national network aims to connect growers and resources to create collaborative partnerships to increase the likelihood of export success.

The *Export Facilitators* project will focus on supporting Australian vegetable growers to meet commercial export requirements by taking opportunities and insights from a range of sources and working to support growers, exporters and other industry participants. This project will also support the delivery of the national *Vegetable Industry Export Strategy 2020* and support the national *Vegetable Export Development Program* (VG16061), a strategic levy investment under the Hort Innovation Vegetable Fund. This project is delivered by AUSVEG.

The Export Facilitators will provide resources and extension support to help vegetable growers begin to successfully export. In addition to this support, the project will also provide funding to assist export-ready vegetable growers in preparing export plans for their businesses.

Export has the potential to play an important role in improving business profitability by providing an alternative sales channel to the domestic supermarkets, thereby increasing negotiating power and reducing business risk.

Australian vegetable growers who are interested in exploring possible export opportunities are encouraged to contact:

- vegetablesWA Market Development Manager Claire McClelland at claire.mcclelland@vegetableswa.com.au or 08 9486 7515.
- Tasmanian Fruit & Vegetable Export Facilitation Group's Ian Locke at ian.locke@tasfruitveggroup.com.au or 0438 911 319.
- Growcom at growcom@growcom.com.au or 07 3620 3844.

INFO

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

Project Number: VG16085





R&D EXTENSION PROJECT ENTERS NEW PHASE TO MEET VEG INDUSTRY DEMANDS

Following the success of the Soil Wealth and Integrated Crop Protection (ICP) projects, Phase 2 of the project is now underway. Over the next five years, the new project will incorporate four major themes, with a focus on supporting growers and industry to make business decisions on soil management and plant health.

Phase 1 of the Soil Wealth and Integrated Crop Protection (ICP) extension projects (VG13076 and VG13078) were successfully delivered by Applied Horticultural Research and RM Consulting Group over three years from 2014-17, providing effective national coverage. The feedback from the vegetable industry was strong and positive, with 25 per cent of the industry engaged directly, and 80 per cent reporting that better informed decisions were made because of the projects.

The new Soil Wealth ICP Phase 2 project will respond to increasing economic, consumer, environmental and technological demands on vegetable producers. It will deliver integrated, independent, research-based information to growers and advisers to support business decisions on soil management and plant health from 2017-22.

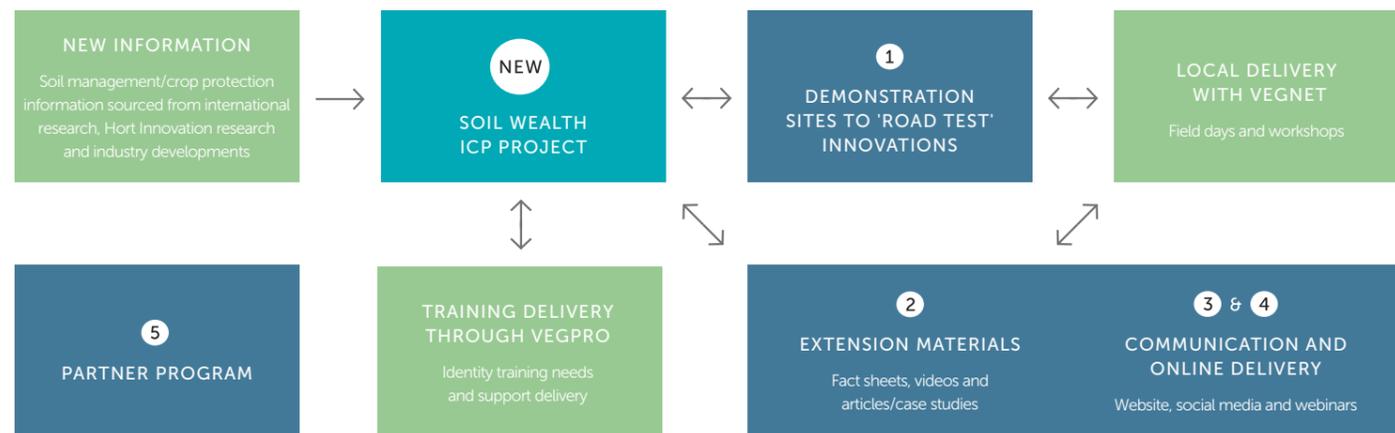
Soil Wealth ICP Phase 2 (VG16078) is a strategic levy investment under the Hort Innovation Vegetable Fund.

WHAT THIS PROJECT WILL DO

Phase 2 will be guided by four major themes, reflecting on recent developments in technology and industry needs:

1. Proactively scan and review new developments in technological fields (e.g. use of drones, satellite data, robots, soil and crop health management equipment) and present information to growers in a reviewed (validated), easy-to-use, adoptable and/or adaptable format.

SOIL WEALTH/ICP PHASE 2 PROJECT: HOW IT WILL WORK



2. A production systems approach reflecting the increase in challenges and sophistication of vegetable farming, the need for high productivity and consistent, quality produce as well as considering the needs of customers (including compliance).
3. Innovations in soil and crop health management which can increase productivity/pack out rates (e.g. reduce waste, have a higher percentage of product meeting specification, improve quality) and/or reduce input/variable costs.
4. Improve sustainability and robustness of vegetable farming systems, especially under adverse conditions including the impacts of increased climate variability and extreme weather events and minimising impacts on the environment.

BUILDING R&D

The project will aim to 'prime' the industry for the uptake of outputs from relevant R&D projects and new technologies developed in Australia and overseas. This will be achieved by building industry capacity and partnerships with researchers and other industry stakeholders to facilitate the adoption of current and future innovations from R&D projects and technology advancements. It will link with Hort Innovation investments including soil and crop management technology projects, as well as extension and training initiatives such as the National Vegetable Extension Network (VegNET), VegPRO training and AUSVEG communications to provide an integrated extension program to the vegetable industry.



The specific topic areas will cover:

1. Soil amendments.
2. Soil biology.
3. Cover crops and biofumigation.
4. Reduced tillage.
5. Equipment and machinery.
6. Emerging technology and precision agriculture.
7. Nutrition management.
8. Irrigation.
9. Insect, nematode and mite management and crop protection.
10. Weed management and crop protection.
11. Disease management and crop protection.
12. Biological solutions.

- Showcasing new equipment.
- Best practice guides and fact sheets.
- Webinars and podcasts.
- Field days and farm walks.
- Workshops and seminars.
- Master classes.
- Electronic media: website and social media.
- Videos.

HOW THE PROGRAM WILL BE DELIVERED

The project will use a combination of extension methods to deliver R&D information to industry including:

- Demonstration sites and case study sites in partnership with leading growers and agronomists.

INFO

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



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HAZEL MACTAVISH-WEST: 'THE VEGDOCTOR' FOSTERS A LOVE FOR VALUE-ADDED VEGETABLES

Dr Hazel MacTavish-West has dedicated over 25 years to food and plant science. Following an 11-year stint in the United Kingdom as an industry consultant, Hazel returned to Australia in 2010 and established her business MacTavish West P/L in Hobart. In 2017, she was awarded a Churchill Fellowship to review approaches to food innovation. Hazel spoke to *Vegetables Australia* about her work and what the Fellowship will offer.

There are many reasons why innovation in the Australian vegetable industry is vital.

It is essential to boost on-farm productivity and potential profitability, as well as increase vegetable consumption and use more of the crop. There are endless opportunities to enhance the value that consumers perceive vegetables to have and make them more attractive. Also, potentially, to utilise more of the crop, and thus decrease the amount of food wasted.

Dr Hazel MacTavish-West – a Tasmanian-based plant and food scientist with almost two decades' of experience as a consultant working with primary producers, food manufacturers, retailers and consumers – recognises the need for innovation and the importance of value-added vegetable products.

Her business, MacTavish West P/L, takes a scientific approach to commercial problems, combining specialised expertise around food and plant chemistry with a good understanding of the commercial reality of developing and launching new food products. Just a few recent examples include assisting Tasmanian-based businesses like Houston's Farm to create new leafy summer salad kits, and the Daly family to turn outgrade potatoes into vodka and potato salad (all products available nationally).

Hazel has previously undertaken major programs for the vegetable industry such as establishing Veggycation®, a levy-funded website which provides access to FSANZ pre-approved and accurate information on the nutritional and health benefits of vegetables (veggycation.com.au). This resource is aimed at consumers, teachers and growers.

Most recently, Hazel has helped to implement VegInnovations, a national training program for the vegetable industry around the process of developing new value-added products. This program is part of the project *Vegetable Industry Education and Training Initiative* (VG15028, VegPRO), a strategic levy investment under the Hort Innovation Vegetable Fund. There will be six new, regionally-based VegInnovations workshops across Australia in 2018 (see veginnovations.com.au).

"It's not necessarily about finding a different variety of carrot, or

producing carrots more cheaply; it's more about doing things with carrots to create food products that meet more consumer needs – for example packing them in a microwavable (and recyclable) bowl with some butter to create a ready-to-cook vegetable side dish," Hazel said.

"There are a number of things growers need to think about when they're doing more complex processing like that, and VegInnovations will help them, including how to develop a new brand for their business, if that's what's needed."

LESSONS LEARNT

Hazel knows well the importance of prioritising value-adding.

"I've learnt through working with the veg industry over the years, that it's really hard to get vegetable growers to prioritise about what to do with their seasonal produce until it's in front of them.

"But because things always take longer and cost more than you think, that's just a bit late, which can lead to lost opportunities. What we're trying to do is make a lot of noise about all the opportunities for adding value and when they've got a quiet time, they can start thinking about developing added-value products, including ones that aren't so perishable, and prolong the season."

FOCUS ON CHURCHILL

During Hazel's Churchill Fellowship, a scholarship awarded to conduct international research on a particular topic, her mission is to understand the European approach to producing ready-to-eat food products and meals, extend the shelf life of fresh produce, and where the future for packaging may be.

Hazel's travels will take her to Europe from mid-March until mid-May 2018, meeting large-scale producers, processors and retailers to talk about the technologies and techniques used to produce value-added vegetable products, as well as reviewing the current retail products available.

"I'm seeing it as a watershed opportunity to broaden the



information base that I have, and to return with some real insights that will help businesses that I work with and other businesses to make more relevant and valued value-added products in the future," Hazel said.

"I plan to look for nimble and low-capital systems for vegetable processing, including relevant equipment. I also want to look at factory design and approaches to minimise and utilise waste streams from processing.

"In the UK, there are some absolutely yummy meals in-store that are like a salad, but far more complex. All you do is take off the lid and inside there may be a dip, raw and cooked vegetables; grains, cheese and dressing and it's all ready to eat. You don't need to open four different sachets – just open the lid and it's all there."

The self-described 'VegDoctor' is also hoping to further foster collaboration between businesses locally and internationally. An example of this is the link between Australian growing operation OneHarvest and its British counterpart, G's Fresh, leading to the launch of the LoveBeets® ready-to-eat baby beetroot product in Australia, which is now exported into Asia.

"Collaboration between businesses contributes to brand globalisation. There's a great opportunity there and I'm very much hoping to help make some relevant business-to-business introductions," Hazel said.

"My business grows as a result of talks I give and conversations I have with people about their challenges or the opportunities they want to open up. My Churchill Fellowship is a great opportunity – it will involve many commercial conversations overseas and hopefully even more when I get back. I'm sure things will come out of that. But what I'm loving just now is how excited it's made me about my everyday job again."

COMMUNICATING RESULTS

Hazel will document the findings and reflections of her study tour and present at Hort Connections 2018 in Brisbane from 18-20 June, as well as at the VegInnovations roadshow.

A prominent user of social media, Hazel will also use regular updates via LinkedIn and Twitter to communicate her findings. She believes social media can be an effective and low-cost platform for vegetable industry members to communicate their story, and the story of how they produced their vegetables, with consumers. The first step is to create a profile and take it seriously, she said.

"What growers can do is follow the conversation: find some bloggers and other people active in this space like nutritionists, dieticians, CSIRO, various university groups and retailers, and read what they are saying. Join the conversation with people that are active in that space, and keep communicating," she said.

"Find some way to do what you're passionate about so that you do everything with love, enthusiasm and energy. It's always a happy day that way."

INFO

For more information, please contact Dr Hazel MacTavish-West at hazel@mactavishwest.com.au. You can also follow Hazel on Twitter: @vegdoctor.

Vegetable levy-funded Churchill Fellowships are open to any growers who have an idea for a research project that can benefit the sector. Applications for the Fellowships are now open, and can be made at churchilltrust.com.au/application-process/how-to-apply.

This communication 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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A field in New Zealand infected by *Candidatus Liberibacter solanacearum* (a variety trial).



L-R: New Zealand potato grower Bryan Hart and National TPP Coordinator Alan Nankivell.

STUDY TRIP TO NEW ZEALAND HIGHLIGHTS LESSONS LEARNT FROM TPP

New Zealand has been battling the tomato potato psyllid (TPP) for over 10 years. As part of his role as National TPP Coordinator, Alan Nankivell undertook a six-day study trip across the ditch to examine the psyllid management practices that growers have put in place. Project MT16018 is a strategic levy investment under the Hort Innovation Vegetable, Fresh Potato and Potato Processing Funds.

In 2006, New Zealand first detected the tomato potato psyllid (TPP; *Bactericera cockerelli*) on the North Island not far from Auckland. Initially there was no *Candidatus Liberibacter solanacearum* (CLso) detected. After two years, TPP was found on the South Island and it has since spread to all parts of New Zealand.

CLso was eventually detected about two years after the TPP incursion. This bacterium is associated with TPP and causes zebra chip disease in potatoes.

The first response from potato growers was to spray extensively with strong chemicals in an attempt to eradicate or at least control TPP. This approach persisted as TPP continued to spread.

After several years of a strong spray approach, growers became aware that TPP resistance was growing and their properties experienced a significant loss of predator insects. Yields also continued to decline and costs of spraying continued to rise. The impact was that some potato growers chose to leave the industry.

BUILDING KNOWLEDGE

In response to industry feedback, initial research conducted by Plant & Food Research New Zealand (PFR) focused on identifying the best pesticides to use.

There was work completed on CLso, which identified how little was known about it. There were calls for further work on understanding the role of hosts and just how CLso is transmitted, where it affects the plant and to understand the haphazard nature of its impact on plants and tubers.

With 11 years' experience of living with TPP and CLso, the New Zealand potato sector has developed a strong understanding of how to manage TPP by applying the knowledge gained, but more importantly it has been honing its understanding of what further

knowledge is required to better understand and manage both the pest and the bacterium across the supply chain.

Seed production has been challenging. The introduction of fine nets to keep TPP out of first-generation seed appears to have had good results in the field. However, the cost of netting large areas is prohibitive and not realistic from a management perspective.

WHERE IS THE NEW ZEALAND INDUSTRY NOW?

1. It is still producing potatoes and growing the industry!
2. Growers and industry members acknowledge that there is no one single approach to field management, however the "essential" requirement is for TPP and CLso monitoring with traps and field scouting. The build-up of TPP will vary according to seasonal and locational variations.
3. Knowing where TPP is and where it isn't and the size of psyllid populations assists growers in making informed decisions about the management strategies they employ.
4. Factors that need to be taken into account include day temperatures, TPP lifecycle, encouragement of TPP predators and careful use of spray pesticides, starting "soft" and increasing as TPP numbers increase.
5. If possible, plant earlier varieties that mature before TPP is a problem.
6. Treat every field as unique, applying the principles that every field has different location characteristics.
7. Keep detailed records of trap numbers, what type of spray, how much and when it was used, as well as the fertiliser levels, water usage and planting and harvesting times. The feedback from growers was that this information, kept all in one place, has assisted them greatly in gaining control of the pest.

8. On the processing side, technology has assisted with reducing the discoloured CLso potato product getting through to consumers, which has resulted in an increased cost of production due to diseased losses. New Zealand processors remain focused on reducing losses in their feed stock.
9. As part of the supply chain, seed potato management is seen as essential. As a general rule, there is no seed used past fourth-generation, however there is no hard and fast ruling on this at this stage.
10. New Zealand growers acknowledged that the introduction of TPP (while frustrating) has brought their industry together, and there is greater sharing of information among growers and between growers and processors.
11. As one grower explained, the impact of TPP has provided growers with the opportunity to become more professional in their approach to growing potatoes.
12. Growers are increasing the use of independent agronomists to advise on management strategies, not just to sell spray product.
13. Research has moved from any sprays to "soft" ones.
14. There is ongoing research on the use of predators.
15. There is initial research on TPP/CLso resistant varieties.
16. There is research on understanding the way CLso spreads in potato plants and tubers, which is funded by Hort Innovation. This is being conducted in collaboration with AgriBio in Victoria, SARDI in South Australia and Plant & Food Research New Zealand (PT17000).

In conclusion, there is much that we in Australia can learn from our industry friends in New Zealand. They were generous with their

time and I see there is great benefit in growers visiting New Zealand and seeing where they have come in their journey with TPP/CLso. Their experience will assist the Australian industry to avoid the same mistakes, and learn from their experience.

There may well be collaborative research opportunities (especially around the understanding of CLso) that can be developed in the coming months and opportunities for grower visits to observe the way the New Zealand potato industry has learnt to live with TPP/CLso.

In particular thanks to Callum Fletcher, Peter Wright, Rebekah Frampton and Duncan McLeod for arranging meetings with scientists, growers and processors. A special thanks to potato growers and processors who funded the trip to New Zealand and provided me with the issues they are seeking answers for.

INFO

For more information, please contact National TPP Coordinator Alan Nankivell at alan.nankivell@ausveg.com.au.

Tomato potato psyllid (TPP) National Program Coordinator has been funded by the fresh potato, potato processing and vegetable research and development levies and contributions from the Australian Government.

Project Number: MT16018



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An adult tomato potato psyllid with the moulted 'skin' of a nymph. Image courtesy of Plant & Food Research New Zealand.



Ladybird feeding on tomato potato psyllid adults. Image courtesy of DPIRD.



Lacewing larva feeding on tomato potato psyllid nymphs. Image courtesy of DPIRD.

PROMISING RESULTS FROM RESEARCH TRIALS FOR TOMATO POTATO PSYLLID

The Western Australian Department of Primary Industries and Regional Development is currently leading a Transition to Management plan for tomato potato psyllid under the Emergency Plant Pest Response Deed. Acting Chief Plant Biosecurity Officer Dr Sonya Broughton spoke to *Vegetables Australia* about the activities undertaken so far, including glasshouse trials on the performance of registered insecticides and biological agents on psyllid-affected crops.

The discovery of the tomato potato psyllid (TPP; *Bactericera cockerelli*) in 2017 prompted a comprehensive biosecurity response by Western Australian industry and government to minimise the impact on the state's growing operations.

A Transition to Management (T2M) plan is being undertaken to ensure growers and industry are supported in psyllid management. The T2M is cost-shared between government and industry at a ratio of 80:20 respectively. While Western Australia is leading the T2M plan, the outcomes of this work will extend to other states in preparation for the potential spread of TPP.

Western Australian Department of Primary Industries and Regional Development (DPIRD) Acting Chief Plant Biosecurity Officer Dr Sonya Broughton said the plan aims to develop the science, biosecurity and business systems to support growers and industry to manage the psyllid.

"There are a few different components, including surveillance and diagnostics to determine if the *Candidatus Liberibacter solanacearum* (CLso) bacterium is present or absent, as well as maintaining grower market access to interstate markets," she said.

FOCUS ON R&D

In terms of the research component of the T2M, a literature review is in progress to identify the gaps in knowledge about the psyllid.

Psyllid diagnostics are being undertaken by University of Adelaide Research Associate Dr Gary Taylor. The aim of this project is to establish what Australian species of psyllid are present and to develop a taxonomic key to separate TPP. A key is also being developed for any exotic psyllid species that has the potential to

arrive, such as the Asian citrus psyllid and the carrot psyllid. These psyllids vector different diseases, which affect different crops, and are spreading throughout the world.

In addition, DPIRD, led by Dr Broughton and Brenda Coutts, recently conducted glasshouse trials with integrated pest management (IPM) company Biological Services to determine the efficacy of insecticides in Australia that are registered for use on TPP-affected crops, including tomatoes, capsicums and potatoes.

In the recent glasshouse trial, whole potato, tomato and capsicum plants were infected with psyllids, allowing populations to develop on plants before spraying a certain number of times with different insecticides. At the same time, biological trial agents were also released to compare the efficiency of insecticides versus a biological-only approach.

Further trials are being conducted at the department's glasshouse facility over a nine-month period, with results due to be released by May 2018 on a wider range of TPP hosts.

"These spray trials are chemical bioassays; so we look at the eggs, all the different instars and the adults, and then we're doing what we call leaf bioassays. We have leaves of the different plants – they can affect how the insecticide works. If you have a hairier leaf, that will work differently to a smooth leaf – that's the kind of thing that we're looking at with those chemical bioassays and from that, we hope to determine what's actually going to be effective in the field," Dr Broughton said.

The trials aimed to screen the effectiveness of currently available insecticides including older chemistry such as organophosphates, and newer chemistry which is more targeted. Laboratory bioassays are also being run for over six species of commercially-available beneficial insect. This

includes several species of ladybird, brown lacewings, a predatory mirid bug and an anthocorid bug.

PRELIMINARY FINDINGS

As a result of the glasshouse spray trials conducted with Biological Services, it was found that the active pymetrozine wasn't very effective on the capsicum, potato and tomato crops.

"Abamectin was very effective (similar to the results from research in New Zealand) as were cyantraniliprole, flocinamid and spirotetramat*," Dr Broughton added.

"The next step is to chart these active ingredients against the crops they're registered for use in. If it's not registered, then we need to consider getting a registration permit in the interim."

As for the biological component, Dr Broughton said that a ladybird species has performed quite well in the laboratory. These, along with brown lacewings, are naturally occurring in some growing areas of Australia.

"We know that both of those beneficial species do eat psyllids,

so there might be options out there already that are capable of at least exerting some control over the psyllid. They will need to be incorporated into IPM programs, and that's something that New Zealand has been looking at. We will need further research in the future across Australia," Dr Broughton said.

INFO

*To find the chemical products that incorporate the active ingredients mentioned in this article, visit portal.apvma.gov.au/pubcris and search the active ingredient.

For more information, please contact the Western Australian Department of Primary Industries and Regional Development Acting Chief Plant Biosecurity Officer Dr Sonya Broughton on 08 9368 3271 or sonya.broughton@dpiird.wa.gov.au.

More information, including signs and symptoms of TPP and control options, is available at agric.wa.gov.au/tpp.

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

Project Number: VG15027



WESTERN AUSTRALIA TPP/CLSO SPRING SURVEILLANCE UPDATE

The Western Australian Department of Primary Industries and Regional Development has completed the spring round of surveillance for tomato potato psyllid (TPP), which included testing TPP for *Candidatus Liberibacter solanacearum* (CLso). TPP can carry the bacterium CLso which is associated with zebra chip disease in potato.

Over 4,000 TPP were tested for CLso with no positive detections of the bacterium.

The significant surveillance campaign, targeting known populations of TPP across the Perth metropolitan area and surrounds, was undertaken as part of the nationally-agreed Transition to Management plan. The Western Australian community has shown great support for horticultural industries by offering to host a sticky trap at more than 1,000 sites.

PREPARING FOR AUTUMN SURVEILLANCE

A further round of surveillance in Western Australia began on 1 March 2018. Following this surveillance period, the state's CLso status will be assessed.

Some interstate markets require proof of area freedom from CLso. No positive detection of CLso under the agreed surveillance program will provide a high level of confidence of Western Australia's area freedom.

The department, in collaboration with national and state government and industry partners, continues to progress other work under the Transition to Management plan, including the development of enterprise management plans for affected industries.



DPIRD Technical Officer (entomology). Image courtesy of DPIRD.

Tomato potato psyllid (TPP)

Transition to management plan

- September 2017 to May 2018
- Proactive approach to managing TPP in Australia
- Transition to management activities led by Western Australia
- Determine presence/absence of *Candidatus Liberibacter solanacearum* (CLso) bacteria associated with TPP



Adult tomato potato psyllid (*Bactericera cockerelli*)
~ 3.0mm long



About TPP

Found in WA in February 2017 – first time in Australia

Tiny insect pest which feeds on tomato, potato, capsicum, chilli, goji berry, tamarillo, eggplant and sweetpotato

Can cause significant yield loss in host crops

TPP can carry CLso bacteria which causes zebra chip disease in potatoes

CLso bacteria not found in WA



Looking for TPP

Surveillance in Western Australia to target known populations of TPP

Testing to determine presence/absence of CLso in TPP population

TPP tested for CLso

Other states/territories to also undertake TPP surveillance



Scientific R&D

Australian research on biology and management of TPP

Develop options to help growers control TPP

Biological control trials with ladybirds, brown lacewings and mirid bug

Pre-harvest treatment trials

Post-harvest treatment trials



National & enterprise management plans

Development of national plan to guide management of TPP now and into the future

National TPP Coordinator appointed

Enterprise management plans for affected industries (vegetables, potatoes, nursery industries)

ID TPP and its risk pathways on farm

Biosecurity awareness

Post farm-gate management



Market access & trade

Mitigate the risk of spread of TPP through appropriate movement controls

Develop nationally harmonised protocols for interstate trade

Maintain confidence of international partners that TPP is being effectively managed in Australia



Trapping Coordinator Raylea Rowbottom holds a yellow sticky trap.

NATIONAL TOMATO POTATO PSYLLID SURVEILLANCE GETS UNDERWAY

The Tasmanian Institute of Agriculture has been coordinating national surveillance of the tomato potato psyllid across Australia, with over 2,400 traps sent to vegetable growers and industry members. Trapping Coordinator Raylea Rowbottom provides an update.

In the 2017/18 growing season, the Tasmanian Institute of Agriculture (TIA) has increased levels of surveillance for tomato potato psyllid (TPP) as part of the project *Surveillance of the tomato potato psyllid in the Eastern States and South Australia* (MT16016), a strategic levy investment under the Hort Innovation Fresh Potato, Potato Processing and Vegetable Funds.

Raylea Rowbottom has been coordinating the TPP surveillance program since April 2017. Several others make up the team, including Calum Wilson (Project Manager) and Paul Walker (Senior Entomologist) along with Geoff Allen and Stephen Quarrell.

This surveillance is focused on the early detection of adult psyllids using yellow sticky traps in the hope of improved chances of containment, control and eradication of TPP, should it be discovered outside of Western Australia. The supply of traps is driven by industry demand, with TIA providing traps, as requested, to surveillance participants in Tasmania, South Australia, Victoria, New South Wales and Queensland. Information from this trapping also supports state-wide area freedom.

There are 18 participating industry partners across the eastern seaboard of Australia and Tasmania covering processing potato, fresh potato and processing tomatoes. Also participating are over 20 hobby farmers, community gardens/schools and urban/backyard growers. To date, 2,424 traps have been dispatched, many of which

have been sent in bulk to cover trapping in certain regions until April 2018. Since September, over 25 per cent of these traps have been returned – all of which have had no detection of TPP.

As part of the trap assessment, the number of beneficial insects and native psyllids has been recorded. There have been several native psyllids identified. These psyllids are referred to as 'bycatch' as they are unlikely to be feeding on agricultural crops but come from native vegetation.

Beneficial insects caught on these traps assist in the balance of the ecosystem by consuming insect pests such as aphids, scale, whitefly and other psyllid species. On average, numbers of beneficial insects per trap have been low, and dominated by lacewings and ladybirds.

INFO

If you would like to be included in the surveillance program, please contact Raylea Rowbottom on 0428 745 752 or raylea.rowbottom@utas.edu.au.

For more information on the project visit utas.edu.au/tia/centres/vegetables.

This project has been funded by Hort Innovation using the fresh potato, potato processing and vegetable research and development levies and contributions from the Australian Government.

Project Number: MT16016



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Dr Jessica Lye (centre) discussed the National Diagnostics Network with Jennifer Carr (left) and Dr Amanda Hodges (right) while visiting the University of Florida in Gainesville.



Jessica has been able to share the knowledge she gained in the US, and has helped to structure an urban biosecurity sub-program which is set to launch in Melbourne in 2018.

INTERNATIONAL STUDY TOUR AIMS TO BUILD A BETTER HOME BIOSECURITY SYSTEM

In 2016 AUSVEG National Manager – Science and Extension Dr Jessica Lye received the AgriFutures Australia (formerly RIRDC) Rural Women’s Award for Victoria. As a result, Jessica travelled to horticultural regions along the east and west coast of the United States in July 2017 to investigate how effective plant biosecurity and pest management is achieved at the farm, regional, state and national levels.

While the Australian horticultural industry is free of many plant pests and diseases that currently impact agricultural industries overseas, it is vital that there is raised industry awareness about exotic horticultural pests that pose a threat to Australian primary production in order to increase the chances of early reporting, detection and response.

It is also important to be aware of biosecurity practices that take place overseas and investigate what Australia can learn from other countries.

This was at the forefront of Dr Jessica Lye’s mind when she decided to enter the 2016 AgriFutures Australia (formerly RIRDC) Rural Women’s Award with her project entitled *Knowledge brokering in biosecurity: How international linkages and learnings can help us build a better system*. This resulted in Jessica being named Victoria’s Rural Woman of the Year.

From 4-29 July 2017, Jessica embarked on a 4,000-kilometre study tour across the United States where she visited California, Oregon, Washington State, Pennsylvania, Delaware, West Virginia, North Carolina and Florida. Thirty meetings were undertaken throughout this journey, which mainly focused on biosecurity preparedness.

PROJECT BACKGROUND

Jessica became interested in learning about different biosecurity systems following her involvement in the exotic plant pest incursion of cucumber green mottle mosaic virus in 2014.

“We had a lot of growers whose farms went out of business, and quarantine situations and trade restrictions – all of that was very stressful and very upsetting to watch how it played out,” she said.

“If we can learn as much as we can as an industry about other pests that we may get – such as how to manage or control them and also influence the national and state biosecurity systems to support our industry – then the likelihood that we’ll end up in similar situations in the future, where we have multiple farms in quarantine and we’re ill-prepared to manage a pest, will decrease.”

Jessica aimed to look at how biosecurity systems in other countries such as the United States function and identify practices that Australia could use in its system either on-farm, or at a state or national level. It was also important to investigate how industry and government interact when there is an exotic plant pest incursion.

“Also I was quite interested to learn what the US is doing in peri-urban areas and biosecurity – how they make sure that people living in cities are aware of biosecurity threats and educate those people as to what they need to do if they think they’ve identified an exotic pest.

“Thirdly, I was also interested to learn what the problematic pests are right now because inevitably we tend to get those pests a few years later. One example is the brown marmorated stink bug.”

UNITED STATES OF MIND

The US is facing similar challenges to Australia in terms of resourcing, according to Jessica.

“The risk from exotic pests is growing every year with globalisation and increased trade. Similarly to us, their funding into biosecurity isn’t necessarily increasing, although they do have many more resources at their disposal, but obviously they have a larger population than us,” she said.

“What I came away with is the United States is very good at extension, and has retained its extension system over the years. In fact, it is so important that it is formalised in legislation that the national extension system will be funded by the federal government – and we don’t have that.”

Jessica said that Australia has fallen behind on its extension in the biosecurity space over the past two decades due to funding drying up, and changing priorities.

“There really does need to be that link from research and development down to adoption on-farm for the purposes of pest management and biosecurity,” she said.

These findings reaffirmed Jessica’s view that Australia would benefit from strong international networks that could provide external expertise when needed.

However, Jessica did notice Australia’s biosecurity system evolves faster than the US, and that roles in America are more defined as there isn’t a lot of cross-industry collaboration.

“I found that really interesting, and there are benefits in having a system where government, industry and researchers work together really quickly where roles crossover, but it just means that we will need more people with experience in biosecurity in the future. People who are masters of all trades in that space – they have an understanding of their own roles but also other roles too.”

KNOWLEDGE TRANSFER

As the National Manager of Science and Extension at AUSVEG, Jessica leads a team which includes two biosecurity officers, Callum Fletcher and Madeleine Quirk. Jessica has been able to share the knowledge she gained in the US, and has helped to structure an urban biosecurity sub-program which is set to launch in 2018.

She recognised the importance of urban biosecurity, particularly for the Australian vegetable industry, as urban areas are usually the first sites of an incursion due to ports of entry.

“They could also be really important buffer zones to give our growing regions time to prepare for the spread of a pest,” she said.

“I noticed that in the United States, they have many ports of entry and also very big cities. Quite a few of their pests such as citrus greening in California are still restricted to urban areas, and that’s largely because they have good awareness campaigns and good educational campaigns.

“Hopefully if we get some good outcomes and some good data from the first year of the project in the pilot area (Melbourne) we can look to expand that initiative nationally.”

FURTHER FINDINGS

Jessica’s report was also submitted to the Department of Agriculture and Water Resources, and she presented her findings to the scientists working within the department in 2017.

“The report included 10 recommendations for my learnings overseas and how we could make sure our system functions more fluidly and makes better use of the resources that we have. For instance, forming stronger linkages with councils and local governments, and using those resources and networks more than we are currently,” she said.

The major outcomes from those recommendations won’t be seen for several years, however there are other activities such as the urban biosecurity sub-program and the transfer of information to Plant Health Australia.

“These findings can be used for future updates to our industry biosecurity plan, which means that we can gear our activities and investments in the future more strategically and better prepare for those pests,” Jessica said.

INFO

For more information, please contact Dr Jessica Lye at jessica.lye@ausveg.com.au or 03 9882 0277.

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

Project Number: VG15027

MINOR USE PERMITS

PERMIT NUMBER	CROP	PESTICIDE GROUP	ACTIVE	PEST/ PLANT DISEASE/ TARGET WEED	DATE ISSUED	EXPIRY DATE	STATES
PER10677 VERSION 2	Chicory, endive and radicchio	Herbicide	Propyzamide	Grass and broadleaf weeds as per the product label	14-Apr-08	30-Apr-23	All states except Vic
PER82459	Selected vegetables. Please refer to the APVMA website for the full list. <small>This permit has been reissued with corrections to the harvest withholding periods by the APVMA.</small>	Herbicide	Clethodim	Various grasses as per the product label	19-Apr-17	30-Sep-21	All states
PER13696 VERSION 3	Parsnip	Herbicide	Trifluralin	Wintergrass	28-Aug-12	31-Mar-23	All states except Vic
PER82556 (REPLACES PER14484)	Eggplant, garlic, leek, parsnip, shallot, spring onion and sweetpotato	Herbicide	Fluazifop-p present as the butyl ester	Various grass weeds	16-Apr-14	31-Jan-23	All states except Vic
PER13653 VERSION 3	Leek, spring onion and shallot	Insecticide	Maldison	Onion thrips	01-Oct-12	28-Feb-23	All states except Vic
PER84974 (REPLACES PER84740)	Taro, rakkyo, daikon, burdock, yam, yam bean, lotus root, water chestnut, galangal and turmeric	Herbicide	Fluazifop-p present as the butyl ester	Grass weeds including couch grass and Guinea grass (as listed on the product label)	06-Feb-18	28-Feb-21	All states except Vic
PER14765 VERSION 3	Selected vegetables. Please refer to the APVMA website for the full list.	Miticide	Hexythiazox	Tomato russet mite (<i>Aculops lycopersici</i>) broad mite (<i>Polyphagotarsonemus latus</i>); two spotted mite (<i>Tetranychus urticae</i>); and tomato red mite (<i>Tetranychus evansi</i>)	21-Feb-15	31-Sep-19	All states except Vic
PER84955	Carrot, green beans, silverbeet and spinach	Fungicide	Iprodione	Black rot (<i>Alternaria radicina</i>) – suppression only Sclerotinia and grey mould (<i>Sclerotinia</i> spp. and <i>Botrytis</i> spp.)	12-Feb-18	28-Feb-23	All states except Vic
PER13920 VERSION 2	Glasshouse and hydroponically grown capsicum, lettuce and cucumber	Insecticidal soap spray	Potassium salts of fatty acids	Greenhouse whitefly (<i>Trialeurodes vaporariorum</i>) and silverleaf whitefly (<i>Bemisia tabaci</i>)	01-Mar-13	31-Mar-23	All states except Vic
PER14051 VERSION 2	Broccoli	Fungicide	Iprodione	Rhizoctonia	01-May-13	31-Mar-23	All states except Vic
PER13902 VERSION 3	Sweetpotato	Granular insecticide	Phorate	Aphids, thrips, jassids and organophosphate susceptible two-spotted mite and wireworm	02-Jan-13	31-Mar-23	All states except Vic
PER14036 VERSION 2	Eggplant	Fungicide	Bupirimate	Powdery mildew	01-Apr-13	28-Feb-23	All states except Vic
PER85003	Spinach and silverbeet (field grown)	Fungicide	Cyazofamid	<i>Pythium</i> damping off	19-Feb-18	28-Feb-23	All states except Vic
PER80169 VERSION 2	Carrot	Herbicide	Metribuzin	Broadleaf weeds and grass weeds as per product label	03-Mar-15	28-Feb-20	QLD only

PERMIT NUMBER	CROP	PESTICIDE GROUP	ACTIVE	PEST/ PLANT DISEASE/ TARGET WEED	DATE ISSUED	EXPIRY DATE	STATES
PER84808	Bulb onion	Herbicide	Ethofumesate	Broadleaf and grass weeds as per product labels	20-Feb-18	28-Feb-23	All states
PER10988 VERSION 3	Snow peas and sugar snap peas	Herbicide	Cyanazine	Broadleaf weeds as listed on approved labels for peas and processing peas	10-Aug-09	31-Mar-20	All states except Vic
PER11440 VERSION 6	Peppers (capsicum, chillies and paprika)	Fungicide	Procymidone	Sclerotinia rot (<i>Sclerotinia minor</i> or <i>S. sclerotiorum</i>)	01-Jun-09	31-Jan-20	All states except Vic
PER11441 VERSION 2	Radish, swede and turnip	Herbicide	Propachlor	Grass and broadleaf weeds	27-May-09	31-Dec-19	All states except Vic
PER10312 VERSION 3	Capsicum, snow peas, and sugar snap peas	Herbicide	Glufosinate-ammonium	Broadleaf weeds and grasses as per the product label	30-Jun-15	30-Jun-18	NSW and QLD only
PER10845 VERSION 3	Brassica leafy vegetables	Fungicide	Zineb	Cercospora leaf spot (<i>Cercospora</i> spp.) and downy mildew (<i>Peronospora parasitica</i>)	11-Jun-09	31-May-20	All states except Vic
PER10875 VERSION 3	Celeriac	Aphicide	Pirimicarb	Aphids (<i>Myzus</i> spp.)	07-May-12	30-Sep-20	All states except Vic
PER10938 VERSION 2	Snow peas and sugar snap peas	Insecticide	Imidacloprid	Greenhouse whitefly	01-Jul-15	31-Jul-18	All states except Vic
PER10976 VERSION 3	Snow peas and sugar snap peas	Pre-emergence herbicide	Bentazone	Broadleaf weeds, as listed on the approved label for beans	10-Aug-09	31-Mar-20	All states except Vic
PER11127 VERSION 2	Celery and peppers	Fungicide	Boscalid	Sclerotinia	30-Jun-15	30-Jun-18	All states except Vic
PER11438 VERSION 3	Rakkyo, daikon, galangal, garlic, ginger, burdock, shallot, yam, taro, turmeric and yam bean	Herbicide	Glyphosate	Grass and broadleaf weeds	30-Apr-09	30-Jun-19	All states except Vic
PER12351 VERSION 2	Leafy lettuce, okra, broccoli, cauliflower and head cabbage	Insecticide	Imidacloprid	Silverleaf whitefly (<i>Bemisia tabaci</i>)	30-Mar-15	30-Jun-20	All states except Vic
PER11951 VERSION 4	Broccoli, Brussels sprouts, cauliflower, spinach, silverbeet, endive, chicory and radicchio	Systemic fungicide	Phosphorous (phosphonic) acid	Downy mildew	01-Nov-10	31-Mar-20	All states except Vic
PER11949 VERSION 3	Radish and beetroot	Insecticide	Lambda-cyhalothrin	Various insect pests. Please refer to the APVMA website for the full list.	01-Apr-10	31-Mar-20	All states except Vic
PER12047 VERSION 3	Sweetpotato	Fungicide	Thiabendazole	Field rots caused by scurf (<i>Monilochaetes infuscans</i>) and root rot (<i>Fusarium</i> spp.)	29-Jun-11	30-Sep-21	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.

AROUND THE STATES



John Shannon
vegetablesWA
Chief Executive Officer
702-704 Murray Street
West Perth, WA 6005
Phone: 08 9486 7515
Email: john.shannon@vegetableswa.com.au

Please note we have moved to a new address.

This year, vegetablesWA is celebrating its 70th anniversary of assisting Western Australian vegetable growers. As I reflect upon this milestone, it occurs to me that our organisation today is as different compared to 1948 as the broader industry is different. In 1948 our industry comprised very large numbers of small growers, and the post-war migration boom which brought so many of our current grower families to Western Australia had only just begun. Similarly, our association performed its duties in 1948, until relatively recently, via a dedicated Committee of Management, whereas today we also have staff performing the range of advocacy, extension, research, market development, quality assurance and business improvement services for growers.

I'm pleased to say that in this anniversary year things continue to grow and change at vegetablesWA, with a number of new initiatives to help growers. First among these is a leafy line variety trial and field day, to be held at Loose Leaf Lettuce Company in early May. We are pleased to have the support of many seed companies and trust those growers with leafy lines will get a lot out of the day. The field day

will also feature a discussion with Dr Doris Blaesing about soil health.

Led by Claire McClelland at vegetablesWA, we have just started coordinating a national export facilitation program funded by Hort Innovation. To help Claire deliver the Western Australian component of the program, we are extremely pleased to welcome Manus Stockdale to the vegetablesWA team. Manus comes to us with long experience in value chain analysis and development so he will be a real asset to the industry.

The other significant development at vegetablesWA has been our recent office relocation to 702-704 Murray Street in West Perth, just around the corner from our old place on Outram Street. The necessary larger space and professional facilities have already assisted in our work. If you're in town sometime, please feel free to drop in.

We have other plans for 2018 which we look forward to announcing in future editions of *Vegetables Australia*. Growers needing assistance can always call on 08 9486 7515 to see if we can help.



Greg Owens
NT Farmers Association
Chief Executive Officer
Phone: 0437 092 551
Website: ntfarmers.org.au
Email: ceo@ntfarmers.org.au

The Top End of the Northern Territory is experiencing a very consistent monsoon that kicked off back in January and has delivered very good rain across the north-west. Traditionally, this is a very quiet time for vegetable production.

On 28 January, 286mm fell in Humpty Doo (281mm at my place). This was on top of 125mm on 26 January and followed by 174mm on 29 January – just a bit damp. The amazing thing is that on 31 January, all the mowers and slashers started up around the neighbourhood as the surface water was gone and the ground was soft but not too boggy. The tropical soils have an amazing capacity to deal with these downpours. It has also filled the local aquifers for the irrigation season ahead.

Despite this, local growers have found they can produce okra and some other Asian vegetables all year round. Growers at Marrakai have an added problem as the Adelaide River floodplain cuts their access to Darwin and freight connections by flooding a two kilometre stretch of the Arnhem Highway. For those who

haven't visited Darwin, this is the home of the jumping crocodile cruises so a quick swim across the flood waters is not an option. The growers have purchased a large aluminium flat-bottomed boat and are currently boating their produce to meet a collection truck on the town side of the river's floodplain.

The point of this story is that this is a major highway in the Northern Territory from Darwin to Kakadu. When the highway is cut, growers struggle to get their produce to market; school children can't get to their schools; tourist routes are cut; cattle trucks can't service the live export trade from the northern properties and deliveries to and from Jabiru are halted. Raising this stretch of road above the normal flood height is on the strategic infrastructure forward workplan for the Northern Territory Government and was due to start last dry season, which is May to October. It is now due to start in the 2018 dry season. It can't happen too soon for a large part of the vegetable producers in the Top End.



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

Tasmania is currently experiencing possibly one of the best growing seasons it has had for a long time in most areas of the state. Reports are that growers are confident of average and above average yields across the board. Demand also continues to be high across fresh and processed vegetable crops and seed crops.

The start of the season was good, with most of the key growing areas experiencing full water availability. Harvesting started early in December and while there were maturity issues with some processing crops, processors have been working 24/7 to get the crops off since then.

2018 has also seen a relatively good period of growth so far through January and February. Potatoes commenced harvesting before Australia Day and, by all reports, yields are good across fresh, market and processed. Another bonus is that the number of contracted tonnes of

potatoes across the state is bigger than we have seen in a long time.

Growers who invested in the irrigation schemes recently constructed around the state are reaping the rewards at the moment. The dry is hitting hard and most areas haven't had a significant rainfall event since early December. It is quite possible that most crops for this season have only had one rain event worth noting during their growth.

On another note, the National Heavy Vehicle Regulator's (NHVR) proposed Chain of Responsibility (CoR) regulations were met with a great deal of concern by Tasmanian farmers. After leading the charge nationally, we are pleased to see other state farming organisations also call the CoR into question. The TFGA will be working with the government to ensure that the harm from these ill-conceived regulations is minimised at a state level.

CALENDAR

9-22 APRIL 2018: YOUNG GROWER INDUSTRY LEADERSHIP AND DEVELOPMENT MISSION

Where: New Zealand and the United States of America

What: This mission will provide the industry's future leaders with the opportunity to visit farms, research institutions and some of the world's leading and innovative agribusinesses in New Zealand and California.

18-20 JUNE 2018: HORT CONNECTIONS 2018

Where: Brisbane Convention Centre, Queensland

What: A joint initiative between AUSVEG and the Produce Marketing Association Australia-New Zealand (PMA A-NZ), Hort Connections is set to deliver another world-class program and trade show. Co-hosts include Apple and Pear Australia Limited, Australian Organic, the Australian Horticultural Exporters' and Importers' Association, Growcom, Nursery and Garden Industry Australia, Protected Cropping Australia, the Australian Society of Horticultural Science and Onions Australia. Fresh Markets Australia in partnership with the Central Markets Association of Australia are also exclusive sponsors of the Trade Show.

Further information: hortconnections.com.au.

21 APRIL – 4 MAY 2018: WOMEN'S INDUSTRY LEADERSHIP AND DEVELOPMENT MISSION

Where: France, Belgium and the Netherlands

What: Leading ladies in the vegetable industry will have the opportunity of a lifetime to visit vegetable growing operations and innovative agribusinesses and research institutions in Europe.

2-4 JULY 2018: NORTHERN AUSTRALIA FOOD FUTURES CONFERENCE 2018

Where: Darwin Convention Centre, Northern Territory

What: Find out what is happening in developing northern agriculture at the Northern Australia Food Futures Conference. The event will focus on how public and private sectors can develop agriculture in the north, including the Gulf and Cape of Queensland, the Ord and West Kimberley of Western Australia and the Northern Territory. The conference will include various workshops as well as farm visits within the Northern Territory and traditional plenary sessions accompanied by a social program.

Further information: foodfuturesntfarmers.org.au.

AROUND THE STATES



Jordan Brooke-Barnett

AUSVEG SA
State Manager
South Australian Produce
Markets, Burma Road
Pooraka, SA 5095
Phone: 08 8221 5220

*Please note we have moved
to a new address.*

AUSVEG SA has long fought for our growers to have fair and transparent access to new water resources as part of the Northern Adelaide Irrigation Scheme. We are pleased to see the long and extensive application process now drawn to a close so we can get on with the business of negotiating a fair deal for South Australian growers.

SA Water is currently setting dates to sit down with individual businesses and grower consortiums to discuss issues such as infrastructure design and pricing. AUSVEG SA will act as a key advocate in this process, as current pricing is not economical for horticultural businesses in the Northern Adelaide Plains region. It is encouraging that we can finally get down to the business of negotiating infrastructure and delivery after a long road to date. We encourage any growers to stay in contact as we move into the critical next phase of the project.

In other news, we are proud to announce the hiring of two new Vietnamese Extension Officers who have been funded by Hort Innovation to conduct important extension work with the

significant South Australian Vietnamese growing community. These resources increase our organisation's ability to deliver more on-the-ground programs for growers.

Our South Australian Industry Development Officer Hannah McArdle has also been very active in developing an extensive series of workshops and training courses for growers in the first quarter of 2018 as part of her National Vegetable Extension Network (VegNET) project. We are proud of the hard work she has done in attracting more development opportunities for South Australian growers, and would encourage interested growers to contact her or keep an eye out in the AUSVEG SA newsletter for these opportunities.

AUSVEG SA and our key dinner sponsor William Buck have also settled the date for our annual South Australian Vegetable Industry Dinner and Awards for Excellence, which will be held at the Arkaba Hotel on Wednesday 11 April 2018. We hope to again see a great showing from local industry as we celebrate our industry leaders.



Brett Guthrey

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

The NSW Farmers 2018-19 Budget submission is calling for investments worth \$110 million to grow the sector's contribution to the value of agriculture in New South Wales. The New South Wales horticulture sector continues to grow, lifting year on year value in 2017 by three per cent. The sector is now worth more than \$1.4 billion to the state's economy, or five per cent of total agricultural production value.

Tackling the rising costs of electricity, delivering better connectivity, protecting our biosecurity and investing in infrastructure are at the heart of NSW Farmers' 2018-19 Budget submission. There are enormous opportunities for the horticulture sector, contingent upon prudent investment and assistance from the New South Wales Government to derive further capacity building.

Over four years from 2018-19, NSW Farmers is calling for the New South Wales Government to commit funding for a number of initiatives that will drive horticulture forward, including \$45 million for biosecurity. This includes improving awareness and education of

biosecurity requirements, improving industry and government responsiveness to biosecurity, developing a Queensland fruit fly trial trapping program in Griffith that includes development of a cross-jurisdictional fruit fly action plan, and further funding to help manage neglected and abandoned orchards.

NSW Farmers is also calling for a continuation of funding for the Flying Fox Netting Program due to its benefits and large uptake; research into more affordable and reliable electricity for New South Wales; better collection of on-farm plastic waste; a 'drumMUSTER Assistance Drive' to ensure all old and unused chemicals are adequately disposed of; and investigation into an additional transport corridor across the Great Dividing Range.

Agriculture needs a strong budgetary outcome to remain competitive, with sensible investments into the tools that will enable our sector to grow and contribute to agriculture becoming the next \$100 billion industry. We believe the proposals in the submission are a key step towards this.



Pat Hannan

Growcom
Chief Executive Officer
Primary Producers House
Level 3, 183 North Quay
Brisbane, QLD 4000
Phone: 07 3620 3844
Fax: 07 3620 3880

*Please note we have moved
to a new address.*

Horticulture growers have received some clarity around food safety certification requirements after the release of a detailed Harmonised Australian Retailer Produce Scheme (HARPS) infographic which more accurately reflects industry terminology, as well as an extension allowing many growers an extra year to become compliant.

HARPS is a retailer-led scheme designed to assist with compliance to food safety requirements for suppliers to the major grocery retailers in Australia. Growcom has been actively engaging with the HARPS team to highlight issues around communication, and will continue to push for sensible, risk-based approaches to food safety.

Based on the extensive grower feedback requesting more support and time for implementation, a number of provisions have been made. There will be a series of workshops around Australia and we urge growers to attend one of these or if they have specific questions, phone HARPS directly on 1300 852 219.

Dates will be advertised on the HARPS website, via peak industry bodies like Growcom and directly to businesses registered on the

HARPS website. Tier 2 suppliers who require HARPS approval will have until 1 January 2019. These businesses should register their interest at harpsonline.com.au by 30 June 2018. Low volume producers supplying fewer than 10 pallets per year will not require HARPS approval. These suppliers will fall under Tier 3 and will be required to be certified to an approved base scheme.

As the peak industry body for horticulture growers in Queensland, Growcom will work with growers regarding their concerns with the HARPS requirements and provide feedback to the HARPS team, bearing in mind that this is a scheme led by the retailers, not government or industry associations.

There is an opportunity for growers to join the HARPS stakeholder committee and we urge those with major concerns to raise them in this forum.

For more information about the HARPS revisions, including a decision graphic to assist suppliers in determining whether their business requires HARPS, visit harpsonline.com.au, phone 1300 852 219 or email harps@harpsonline.com.au.



Tom Cohen

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



VGA trading as AUSVEG VIC

AUSVEG VIC, in partnership with Sustainability Victoria, is running a free energy efficiency capabilities program for Victorian vegetable growers. This project is an on-farm service which will monitor and assess where there is excess power usage in your business throughout the supply chain.

AUSVEG VIC is offering this opportunity to the first 15 vegetable growing or processing businesses throughout Victoria to help us implement the program, so get in quick! This program will work to see your business cut costs and take the pressure off rising energy and gas bills and is available exclusively to AUSVEG VIC members and will not cost your business.

The annual AUSVEG VIC Awards for Excellence will be held on Friday 13 April 2018 at Kooyong Tennis Club. A number of awards will be presented to the deserving growers and researchers of the Victorian industry to recognise their achievements throughout the past year. The event in previous years has been very successful, offering growers and key suppliers an opportunity to network and form new relationships.

Nominations are now open and growers and industry suppliers are encouraged to contact the State Manager to acquire the nomination forms.

AUSVEG VIC will be launching a new website in the coming months to feature new research and development that has been completed throughout the industry, and working closely with the Victorian leaders of the National Vegetable Extension Network (VegNET) that has been rolled out across Australia. AUSVEG VIC will focus on the research that has been conducted by RM Consulting Group (RMCG) and the East Gippsland Food Cluster since the project started in 2016, showcasing case studies, video interviews and podcasts. The new website platform will allow growers easier access to critical information that will help develop and change the growing environment of Victoria.

If you would like to hear more about the website or the Awards for Excellence, or express your opinion about the direction that AUSVEG VIC should be moving in, please contact the State Manager Tom Cohen.



HORT 18-20 June 2018
Brisbane Convention Centre

CONNECTIONS

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Following on from the successful Hort Connections 2017, this year's event is set to become the most influential space for networking, education and business for the entire fresh produce industry.

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